



STRATEGIC E-BUSINESS MANAGEMENT

MARTYNA SZPAKOWSKA

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e-book Edition 2024
ISBN: 978-1-98469-179-8 (e-book)

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In Collaboration with 3G E-Learning LLC. Originally Published in printed book format by 3G E-Learning LLC with ISBN 978-1-98468-962-7



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PREFACE

With the increasing use of technology and the internet, e-business has become an integral part of modern business operations. It involves conducting business activities online, such as selling products or services, managing customer relationships, and performing financial transactions. Effective e-business management requires a strategic approach to ensure that the organization is able to capitalize on the advantages offered by the digital world. It involves developing and implementing strategies to attract and retain online customers, optimizing website design and functionality, and utilizing various online marketing channels to enhance brand visibility. One of the key aspects of e-business management is understanding and utilizing data analytics. With the vast amount of data available from online activities, businesses can gain valuable insights into customer behavior, preferences, and trends. This data can be used to personalize marketing efforts, improve customer service, and make informed business decisions. Another important aspect of e-business management is ensuring the security of online transactions and customer information. Cybersecurity is a critical concern for e-businesses, as any breach of data can have severe consequences for both the organization and its customers. Therefore, implementing robust security measures and regularly updating them is essential for successful e-business management.

Chapter 1 discusses the evolution of e-business, tracing its origins from the early days of the internet to the present. It also explores different e-business models and classifications. Finally, the chapter examines the key challenges and opportunities that e-business presents, including issues related to security, privacy, and competition.

Chapter 2 focuses on strategic planning for e-business and how organizations can gain a competitive advantage in the online marketplace. The chapter explores different frameworks and tools that can be used to develop an e-business strategy, including SWOT analysis, which helps assess a company's strengths, weaknesses, opportunities, and threats in the digital landscape. The chapter also emphasizes the importance of developing a digital business strategy that aligns with the overall business objectives and takes advantage of the opportunities offered by technology.

Chapter 3 examines the technical aspects of e-business, focusing on e-commerce platforms. It explores different software and technologies that facilitate online transactions, including shopping carts, payment gateways, and content management systems. The chapter also discusses the importance of security and privacy considerations when choosing an e-commerce platform, as well as factors to consider when making a decision.

Chapter 4 explores the various strategies and tactics organizations can use to market their products and services online. It covers the fundamentals of online marketing, including search engine optimization (SEO) and search engine marketing (SEM), which help improve a website's visibility on search engine results pages. The chapter also highlights the importance of social media marketing, email marketing, and content strategy in reaching and engaging customers in the digital age.

Chapter 5 focuses on the growing trend of mobile commerce and the importance of mobile apps in e-business. It discusses the need for responsive web design, which ensures a seamless user experience across different devices and screen sizes. The chapter also explores the process of mobile app development and the various considerations organizations must take into account when designing an app for their e-commerce business.

Chapter 6 explores how organizations can leverage web analytics and data-driven decision-making to improve their e-business performance. It discusses different metrics and tools that can be used to measure website performance, customer behavior, and marketing effectiveness. The chapter also covers A/B testing and optimization techniques, which help organizations make data-backed decisions to improve their online presence and drive desired outcomes.

Lastly, Chapter 7 of the book focuses on the integration of technology into various business processes. It explores how e-business can optimize supply chain management, customer relationship management (CRM), and enterprise resource planning (ERP). The chapter also highlights the role of cloud computing in e-business and how it enables organizations to scale their operations, securely store and access data, and collaborate with partners and stakeholders. Overall, the chapter emphasizes the importance of leveraging technology to streamline operations, improve efficiency, and enhance the overall customer experience.



CHAPTER 1

INTRODUCTION TO E-BUSINESS

LEARNING OBJECTIVES

After studying this chapter, you will be able to:

1. Definition of e-business
2. Explain the characteristics of an e-business network
3. Discuss the internet and world-wide web for business

"E-business is all about redefining old business models and leveraging technology to create new value streams."

—Bernard Liataud

INTRODUCTION

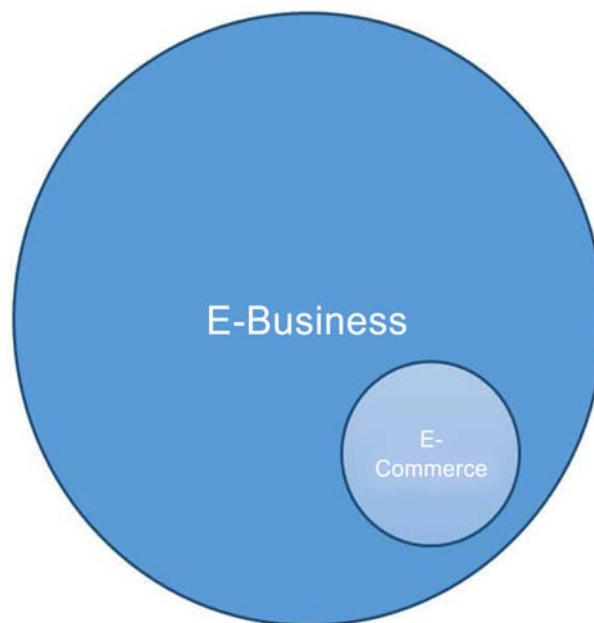
Electronic business (also known as online business or e-business) is any kind of business or commercial transaction that includes sharing information across the internet. Commerce constitutes the exchange of products and services between businesses, groups, and individuals and can be seen as one of the essential activities of any business.

Electronic commerce focuses on the use of information and communication technology to enable the external activities and relationships of the business with individuals, groups, and other businesses, while e-business refers to business with help of the internet. Electronic business differs from electronic commerce as it does not only deal with online transactions

of selling and buying of a product and/or service but also enables to conduct of business processes (inbound/outbound logistics, manufacturing & operations, marketing and sales, customer service) within the value chain through internal or external networks.

1.1 DEFINITION OF E-BUSINESS

E-business is a general term that encompasses all forms of using digital information and communication technologies to support and optimize business processes. In contrast, e-commerce describes only the online trading of products and services, and is therefore only a subsection of e-business.



E-business is short for “electronic business.” As an overarching term, it refers to any method of utilizing digital information and communication technologies to support or streamline business processes – from preparation to implementation. However, it can also refer more specifically to the business processes of online stores or other internet-based companies. These two slightly different interpretations of the term have led to a problem: a widely accepted, precise definition of e-business does not yet exist. As a result, it’s interpreted broadly, and is commonly misunderstood – mainly in relation to e-commerce. Although there is some overlap, e-commerce refers to trading products and services online, and so is strictly only speaking of one aspect of e-business.

The word e-business became popular following an IBM advertising campaign about computerized procedures to automate business processes. On October 7th, 1997, the IT and consulting firm published an eight-page essay in the Wall Street Journal and used the term to describe how corporate systems would fundamentally change in the digital era.

At the time, IBM understood e-business as “redesigning strategic business processes and meeting the challenges of a new market increasingly characterized by globalization, and based on new knowledge.” Although the company wanted to present itself as an expert on this topic, they nevertheless decided against patenting the term in the hope that other companies would engage with the concept and help to form a new industry.

1.1.1 Overview of E-Business

One of the first to use the term E-business was IBM in 1997. At that time they launched their first thematic campaign built around the term. Until then e-commerce was the buzzword used. The shift in terms also means a shift in paradigm. Until then selling was the only experience that people could reproduce on the web. Broadening the approach to allow more types of business on the web created the new term e-business. E-commerce is just one aspect of e-business like e-franchising, e-mailing, e-marketing. E-Business is about using the convenience, availability and world-wide reach to enhance existing businesses or creating new virtual business. IBM defines e-business as “a secure, flexible and integrated approach to delivering differentiated business value by combining the systems and processes that run core business operations with the simplicity and reach made possible by Internet technology.” IBM’s E-business is what happens when you combine the resources of traditional information systems with the vast reach of the Web and connect critical business systems directly to critical business constituencies - customers, employees and suppliers via **Intranets**, Extranets and via the Web. By connecting your traditional IT systems to the Web you become an e-business. Most companies deploy applications on the Internet making it easier to do the things you already do.

Keyword

An **intranet** is a private network contained within an enterprise that is used to securely share company information and computing resources among employees.

Forward-thinking organizations are beginning to automate, organize, standardize and stabilize the services offered in order to create and maintain sustainable computer-mediated relationships throughout an e-business life cycle. At about the same time, other companies like Hewlett-Packard also started to offer complete solutions for e-business, including software and hardware bundles and e-business consulting. Hewlett-Packard launched in April 1999 a new marketing campaign “Hewlett-Packard - The E-Service Company.” More and more hardware companies move their business away from hardware and start to offer consulting and software as well.

The concept of electronic business had been invented before the Internet became popular. In the 1970s E-business was already popular for financial networks, for example, which used propriety hard- and software solutions. Electronic Data Interchange (EDI) was also available long before the Internet was used for it. But without the Internet E-business would not have been possible on such a large scale. The private networks, which were used in the seventies and eighties of the 20th century, cost too much for smaller enterprises and were not accessible for private use.

The Internet is not just another application; it is neither software nor hardware. It is the environment for the business and communication of the future. The Internet combines many existing technologies into one framework. Computer networks and communication networks, like fax, telephone and pager are already integrated into the Internet. Sending a fax via the Internet is just as easy as receiving a voice mail. Not only different types of communication are possible via the Internet, but also the conversion between them is possible. It is, for example, possible to convert a fax to an e-mail or an e-mail to a message for the cell phone. This enables businesses that use different methods of communication to come together more easily. In addition to this it is also possible to translate the communication text from one language to the other on the fly. Not only between human languages like English and Russian, but also between programming and database languages. Using these interfaces it is possible to connect a wide range of different types of hard- and software, which are the basis for very different businesses.

1.1.2 Components of Electronic Business

The core components of e-business are information, communication, and transaction. Business partners use digital networks (i.e. public or private communication networks) to conduct business processes using innovative technologies to improve efficiency.

Three key areas are particularly important for e-business:

- **E-procurement:** the electronic sourcing of products and services by companies, focused on reducing costs and effort.

- **Online stores:** the electronic sale of products and services via appropriate platforms, such as online stores.
- **Online marketplaces:** electronic commerce via digital networks, connecting the buyers and suppliers of products and services.
- There are also two further areas of e-business:
- **Online communities:** electronic communication network between individuals and organizations, which supports data and knowledge sharing as well as the preparation of transaction decisions.
- **Online companies:** electronic business cooperation for connecting individual company services, resulting in a virtual business with a common transaction offer.

Communication Gateways

All over the world use the Internet without having a direct link to it. They use e-mail to fax gateways. People may go to the web site of the hotel and decide to send an e-mail to one of the hotels. The e-mails are collected at an Internet provider where the web site is located and sent on via fax to the hotel. This is done all automatically. The hotels then can then either respond via traditional fax or telephone or can respond via the fax the to e-mail gateway. Suddenly people from all over the world can reach that particular hotel, book rooms there or ask for information at the cost of a local phone call. This is a fraction of the costs it used to be. Instead of calling or sending a fax to the hotel, which may be located in another country, all you do is call your local Internet provider to connect to the Internet and send off a request.

Although this is clearly not the best way to communicate with your clients over the Internet, it is probably the cheapest, as you do not have to invest in new equipment. All you have to do is to Internet-enable your existing devices using gateways. For many companies it is the first contact when they are unsure about an online venture.

E-business, the Internet and the globalization all depend on each other. The more global players exist the more e-business they want to do. The more e-business is online, the more people will be attracted to get direct Internet access. And the more people are online the more global players will arise.

E-business can be divided into three areas. It can be within the organization using the so-called Intranet. The Intranet uses Internet standards for electronic communication. People on the Intranet are able to see organization-specific web sites. These web sites are separated from the rest of the world by firewalls and other security measures. People from outside of the organization are not able to see these private pieces of information.

Apple, for example, built an Intranet web site to sell older Apple systems and accessories to its employees. Before that, Apple e-mailed special promotion details to employees who then ordered the products over the telephone. The Intranet web site now allows employees to obtain current information and place orders online, eliminating expensive and time-consuming phone calls.

IBM is using its “Refurbished Computer Warehouse Web” site to sell PCs coming off leases. The site allows employees to view the machines’ specifications and then purchase them online with credit cards or through traditional methods such as a telephone. These offerings are restricted to employees and therefore should not be accessible nor visible to the outside world.

As employees get special prices, putting these prices into the public would put pressure on the company to reduce the price for the rest of the world. Depending on the security policies of the organization or company, people may be allowed to connect over the Internet via virtual private networks (VPN) to the Intranet using encryption lines and strong authentication for identification purposes.

The second area is the business-to-business (B2B) deals that are done over the Extranet. The Extranet consists of two Intranets connected via the Internet, whereby two organizations are allowed to see confidential data of the other. Normally only small parts of information are made available to the partner, just enough to enable the business. Business-to-business networks have existed long before the Internet. Many organizations have had private networks to talk to their partners and customers. But maintaining them was very expensive. Through the usage of the Internet the costs have been cut dramatically. In order to keep the business transactions private virtual private networks (VPNs) are used in most cases.

Thirdly there is the business-to-consumer (B2C) area. This is the most prominent one, which most people already have seen on the Internet. The web sites of Quelle, a German Fashion retailer, Discolandia, an online compact disc shop, and Megazine offer goods and services to anybody who comes to their web sites. Traditionally this is what most people know as e-commerce; selling products on the web, but as we will discover in this book, there is more than just this.

No matter in which of the three areas you want to do business, you should ask the right questions, before going online. Just having a web page or the infrastructure for the Intranet, Extranet or Internet is no help. You need to decide on your target group and think about the processes, which could be done electronically.

Technically there is no difference between the Intranet, the Extranet and the Internet. The Extranet and Intranet are subsets of the Internet, which can be viewed only by certain groups. Therefore the book does not make a distinction between these three forms of networks. The electronic business that can be conducted is basically the same.

With a restricted group it is easier to force certain technical standards, but otherwise they are very similar. You will write about differences whenever appropriate.

1.1.3 E-business Statistics

While listening to presentations, talks or reading books about e-business you will hear or read about statistics on the Internet, its users and the prospective business. There are many problems with these statistics, so you tried to avoid them in this book and tried to concentrate on the things that really matter.

If you look at the numbers of online users, you will see that they are going up. Depending on which statistics you believe the numbers are increasing either faster or slower, but the tendency is clear, they are growing. The same applies to business. Every day more business is done via the Web. But how much exactly nobody knows. Even if somebody would know for a certain moment, it would already be false in the next. With millions and millions of servers and clients connected to the Internet it is almost impossible to get precise data. There is no precise definition what an Internet user is or what business on the Internet means. An Internet user can be anything ranging from a browser window, a cookie session over to a real person or a web proxy. It all depends on your view of the world. If you connect from work to a certain web page you have to use a web proxy server which relays my request and saves the pages in a cache, just in case somebody else in my company needs the same information. The web server sees the proxy address only, so those 6,000 people working at my company site can appear to be one.

Although many people use statistics to show how successful the Internet is, you don't want to use them in this book. Figures for such a fast-changing medium look outdated immediately, even if they were correct. There is no doubt that the Internet is a success and can be used in a highly successful manner for your company, as well. Therefore the book contains a lot of real world (or even better cyberworld) examples from the Internet with companies that are successful or have failed.

Once you have built up a web site it will be useful to create statistics on the use of the web pages, but those statistics will help you only with your web site and will never give you an idea on the Internet as a whole.

The Internet is the first mass media that allows interaction. Radio, television, newspapers, catalogues deliver information to your home, but there is no way of direct communication back to the others involved in a certain process. You can send an order back to the catalogue company or send a letter to your newspaper, but this is not what you get when you go in a shop or walk into the newspaper office. There you get an immediate reaction on behalf of your request and this is what the Internet

does. It moves everyone together, every piece of information, every service and every business to be instantly available anytime. The dream of the global village becomes true.

The winners of the Internet today are the UPS' and Federal Expresses of the world. Due to the fact that many products on the Internet are not digitized yet, someone needs to ship the products from the online merchant to the customers. This will change in the future, as books, music and videos, which are the bestsellers so far, are digitized easily. The problem with a digital video, for example, is the copyright issue. It is too easy to copy it without paying for it. Therefore new methods of shipping digital products will be needed. We will see later on in the book how this could be done.

Strategies for Digital Business

Just going online, because all competitors are, is the wrong strategy. There are many reasons to go online, so choose one or more to be your primary goals. Otherwise it will be difficult to measure the success of your online venture. See what your competitors are doing and look out for new competitors that are now closer to you through the Internet.

In order to set realistic goals for your e-business, it is necessary to find out what portion of the overall business will be conducted via the web in the next twelve months and two years. Although you are most likely not getting the figures right, as the Internet is moving far too fast to be able to deliver reliable forecasts, these figures can indicate a trend. Where do you want to be then? Do you want to go fully digital and use the Internet as the main channel for the business, or is it "just" the fourth channel for your business. This leads to the question of how fast you are planning to grow your company. Many Internet start-ups have managed to grow very fast in very short time. In order to do so, you need a working Intranet based on the same key technologies as the Internet (e.g. TCP/IP). Only if your business is fully digitized you are able to grow at such a rate, as eBay or Yahoo have grown in 1998 and that was more than a thousand percent. This is essential because the design of the electronic business and the support infrastructure must be able to handle growth effortlessly over time. Otherwise, the company may lose valuable time and money re-engineering a site after a few months.

The expectations within the company need to be set right, otherwise the online venture will not maximize your revenues. Other than expected in the early years of the Internet, it takes much longer to get a return on investment. Therefore your company needs some good financial backing, otherwise you may not succeed on the Internet, which will also have implications on the rest of your business. Amazon.com took five years until it could get back the investments it made up-front.

If the Internet is used for cost-reduction, it is necessary to measure the costs for every single item up-front, which may cost more than using the Internet. The re-engineering of the businesses processes will help more than using new technology in most cases. In many cases less staff is required to perform a task. With the free time of the staff it is possible to implement new business processes without additional cost.

Once you have decided on the goals, you need to find criteria for measuring the success. Cost-reduction, for example, may not be really measurable. If a printer manufacturer is offering printer drivers on its web page, measuring the cost-reduction may be difficult, as the company may not have measured the costs before the introduction of the online service. Sending out floppy disks and CD-ROMs would have cost more, but were part of the price for the printer. Measuring now parts of the product separately may become difficult. Although measuring the cost-reduction may not be possible, the introduction of the online service will reduce costs for further products, as they require your company to put a price tag on parts of a product.

1.1.4 Features of E-business

To fully understand the concept of e-business, you must first grasp the link between e-business and the net economy and know who the typical market participants are in the industry.

Net economy and e-business

The range of e-business is determined by the net economy. This refers to the commercial use of digital data networks for handling **information**, communication, and transaction processes via various platforms. Since the late 90s, or even earlier, the development of digitalization not only led to a major structural change in society, but also in the economy. Since then, the focus has shifted to the information sector. The systematic use of technology to collect and utilize information laid the foundations of a so-called “information economy,” in which competitiveness is achieved through knowledge superiority. This section of the economy, known as the “net economy,” now exists in parallel with the traditional, “real economy.”

Keyword

Information is an abstract concept that refers to that which has the power to inform.

Market participants in e-business

E-business can take place between a large number of market participants: between businesses and consumers, various private individuals, public administrations, and other organizations such as NGOs.

Generally speaking, these various market participants can be divided into three distinct categories:

- Business (B)
- Consumer/citizen (C)
- Administration (A)

All three categories can play the role of either buyer or service provider within the market, meaning there are nine possible combinations for e-business relationships. Within this context, B2C and B2B belong to e-commerce, while A2B (administration-to-business) and A2A (administration-to-administration) are a part of the so-called e-government sector (also a part of e-business).

Function of electronic business

The most important role of electronic business is “electronic value creation” – the generation of electronic added value.

The forms of electronic added value are usually distinguished in the following way:

- Structuring value: an online offer achieves an overview of a large quantity of information
- Selection value: an online offer provides specific database information upon request
- Matching value: an online offer makes it possible to merge inquiries from supplier and buyers more efficiently
- Transaction value: an online offer makes a business more efficient
- Coordination value: an online offer allows different providers to better combine their services
- Communication value: an online offer improves communication between different consumers

Depending on which type of value a company decides to pursue, they can choose one or more value activities – for example the collection, structuring, pre-selection, summary, or distribution of information. A so-called “digital information product” can also be created, offering added values which the customer is prepared to pay for. This information product may be a website, blog comparison portal, e-book, or a software application.

The electronic value creation process involves the following steps:

- Collecting large quantities of information to identify data relevant to the product
- Processing the information and transforming it into a product
- Transferring the final information product to the customer
- Repeat this process whenever new information becomes available – information products are not static and must be kept up to date

Besides the generation of electronic added value, the various long-term goals of the e-business must be determined, such as how best to automate commercial processes, or establishing new business models (such as cutting out middlemen).

Examples of e-business

There are countless examples of different e-business activities, but here is a brief selection.

The e-procurement sector includes the following activities:

- Organize the implementation of a desktop purchasing system (DPS) that supports the whole procurement process, such as checking stock availability and handle the order and payment
- Constructing and operating an online marketplace for products and services
- Integrating various electronic supplier catalogs into your own enterprise resource planning (ERP) system to support procurement, warehouse management, order processing, production management, and logistics

The e-commerce sector includes the following activities:

- Designing and maintaining an internet presence and/or an online store including: products or services accessible from anywhere at all times, multiple payment options, automatic e-mail notifications on orders, and customer support (live chat, hotlines, or help centres)
- Developing and provisioning additional content, such as an informational blog or comparison portal
- Expanding online marketing and targeting advertising to customers, for example by using big data from cookies, purchase behavior, and customer data

1.2 CHARACTERISTICS OF AN E-BUSINESS NETWORK

An e-business network is one that allows businesses to communicate via electronic means, but the term is most often used to denote business networks that use the Internet to conduct e-commerce and related activities. E-business networks allow businesses to communicate with each other and transmit information quickly and efficiently at cheaper costs than using a traditional electronic data interchange, resulting in lower prices for consumers while also facilitating collaborations between companies. This leads to innovative new products, knowledge exchange and reduced time-to-market.

1.2.1 E-business Network

E-business networks vary in their setups and topologies, but generally are Internet-based networks that allow many businesses to access repositories of data and information, such as a shared database or a trade board with many listed suppliers. An e-business network allows its members to communicate with each other via **electronic media**, primarily using the Internet. Businesses typically use e-business networks to facilitate and support their supply chains, conduct e-commerce, trade, pay taxes and obtain and disseminate information. E-business networks allow users to share knowledge bases, data and files, and often have groupware and collaborative elements.

Keyword

Electronic media are media that use electronics or electromechanical means for the audience to access the content.

Barriers

E-business networks powered by the Internet leverage existing Web technologies and are therefore cheaper to implement than traditional electronic data interchanges, or EDIs, that big corporations used to require their partners to use in order to join their supply and distribution chains. This has lowered or eliminated the barriers to trade that small businesses once faced, which has opened trade and supply markets to greater competition. E-business networks are now often used alongside EDIs, allowing small businesses to access trade opportunities that were previously closed to them.

Prices

E-business networks leverage the Internet, so they have opened the door to global competition. As suppliers from cheaper markets compete with local suppliers, the competition tends to push prices down. This results in lower prices for consumers and can have stimulating effects on the wider economy. Greater competition often forces companies to innovate in order to succeed, which also creates improved products and more convenient services for customers while keeping prices down.

Collaboration

Businesses can use e-business networks to share data, knowledge and pricing information. This allows them to collaborate on projects as well as reduce their research and development budgets and other resource costs, as they can eliminate redundancies and inefficiencies in their processes while honing their core competencies. Consumers benefit from faster technological advances and lower prices. This is especially true in the information technology and aviation industries, where products are usually the result of collaborative efforts.

1.2.2 Electronic Business

Online Business or e-business is any kind of business or commercial transaction that includes sharing information across the internet. Commerce constitutes the exchange of products and services between businesses, groups and individuals and can be seen as one of the essential activities of any business. Electronic commerce focuses on the use of information and communication technology to enable the external activities and relationships of the business with individuals, groups and other businesses, while e-business refers to business with help of the internet. Electronic business differ from electronic commerce as it does not only deal with online transactions of selling and buying of a product and/or service but also enables to conduct business processes (inbound/outbound logistics, manufacturing & operations, marketing and sales, customer service) within the value chain through internal or external networks. The term “e-business” was coined by IBM’s marketing and Internet team in 1996.

What Is an E-Business Initiative?

One of the most essential decisions entrepreneurs make in the process of creating a new company is deciding on a business model. A company’s business model is the way that it creates and delivers value to customers and how it collects revenue for the value it provides. The Internet is a potential channel that businesses can use to provide

a product or service and collect payment. The term “e-business initiative” describes efforts a company makes to expand business operations on the Internet.

E-Business Initiative Basics

Many businesses start as purely offline ventures. For example, a small neighbourhood hardware store might not have a website or any online presence during its first few years of operations. As businesses grow and expand, however, managers often seek new ways to bring in business and to market their products and services. Any action a company makes to bring a business online or to increase its online presence can be considered an e-business initiative. For instance, when a company creates a website to market or sell its products, it is pursuing an e-business initiative. Other examples of e-business initiatives include paying for online advertisements, using social media sites to connect with potential customers and expanding existing online business operations, such as adding new features or content to a website.

Benefits

One of the primary benefits of expanding online is that customers can access information about a company through online advertising or a company-run website. An online presence can potentially attract more customers to a retail store. Another benefit of online expansion is that it can offer an additional means of delivering and collecting revenue. Many businesses allow customers to purchase products online through web-based stores. Some customers may prefer shopping online to having to travel to a physical location to buy goods.

Drawbacks

The main drawback of e-business initiatives and any other type of business expansion is that they cost money to pursue and there is no guarantee that they will have the desired results. For example, if a small hardware store is situated in a neighbourhood where few potential customers use the Internet, paying a web developer to create a website might not be the best way for the business to expand.

Considerations

A company that sells a specialized product might not be able to sell enough product in a localized area to achieve profitability. The Internet has the potential to allow a small local or regional business to expand to a national or international scale, which may allow certain businesses to achieve profits -- businesses that would not be able to do so otherwise.

1.2.3 Market Participants in Electronic Business

Electronic business can take place between a very large number of market participants; it can be between business and consumer, private individuals, public administrations or any other organizations such as NGOs. These various market participants can be divided into three main groups: 1) Business (B) 2) Consumer (C) 3) Administration (A) All of them can be either buyer or service provider within the market. There are nine possible combinations for electronic business relationships. B2C and B2B belong to e-commerce, while A2B and A2A belong to e-government sector that is also a part of electronic business.

History

One of the founding pillars of electronic business was the development of the Electronic Data Interchange (EDI) electronic data interchange. This system replaced traditional mailing and faxing of documents with a digital transfer of data from one computer to another, without any human intervention. Michael Aldrich is considered as the developer of the predecessor to online shopping. In 1979, the entrepreneur connected a television set to a transaction processing computer with a telephone line and called it “teleshopping”, meaning shopping at distance. From the mid-nineties, major advancements were made in the commercial use of Internet. Amazon, which launched in 1995, started as an online bookstore and grew to become nowadays the largest online retailer worldwide, selling food, toys, electronics, apparel and more. Other successful stories of online marketplaces include eBay or Etsy. In 1994, IBM, with its agency Ogilvy & Mather, began to use its foundation in IT solutions and expertise to market itself as a leader of conducting business on the Internet through the term “e-business.” Then CEO Louis V. Gerstner, Jr. was prepared to invest \$1 billion to market this new brand.

After conducting worldwide market research in October 1997, IBM began with an eight-page piece in the *Wall Street Journal* that would introduce the concept of «e-business» and advertise IBM's expertise in the new field. IBM decided *not* to trademark the term «e-business» in the hopes that other companies would use the term and create an entire new industry. However, this proved to be too successful and by 2000, to differentiate itself, IBM launched a \$300 million campaign about its «e-business infrastructure» capabilities. Since that time, the terms, «e-business» and «e-commerce» have been loosely interchangeable and have become a part of the common vernacular. According to the U.S. Department Of Commerce, the estimated retail e-commerce sales in Q1 2020 were representing almost 12% of total U.S. retail sales, against 4% for Q1 2010.

1.2.4 Business Model

The transformation toward e-business is complex and in order for it to succeed, there is a need to balance between strategy, an adapted business model (e-intermediary, marketplaces), right processes (sales, marketing) and technology (Supply Chain Management, Customer Relationship Management). When organizations go online, they have to decide which e-business models best suit their goals. A business model is defined as the organization of product, service and information flows, and the source of revenues and benefits for suppliers and customers. The concept of e-business model is the same but used in the online presence.

Revenue model

A key component of the business model is the revenue model or profit model, which is a framework for generating revenues. It identifies which revenue source to pursue, what value to offer, how to price the value, and who pays for the value. It is a key component of a company's business model. It primarily identifies what product or service will be created in order to generate revenues and the ways in which the product or service will be sold.

Without a well-defined revenue model, that is, a clear plan of how to generate revenues, new businesses will more likely struggle due to costs which they will not be able to sustain. By having a revenue model, a business can focus on a target audience, fund development plans for a product or service, establish marketing plans, begin a line of credit and raise capital.

E-commerce

E-commerce (short for "electronic commerce") is trading in products or services using computer networks, such as the Internet. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply in chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection. Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle, although it may also use other technologies such as e-mail.

Concerns

While much has been written of the economic advantages of Internet-enabled commerce, there is also evidence that some aspects of the internet such as maps and location-aware services may serve to reinforce economic inequality and the digital divide. Electronic commerce may be responsible for consolidation and the decline of mom-and-pop, brick

and mortar businesses resulting in increases in income inequality. Author Andrew Keen, a long-time critic of the social transformations caused by the Internet, has recently focused on the economic effects of consolidation from Internet businesses, since these businesses employ much fewer people per dollar of sales than traditional retailers.

Security

E-business systems naturally have greater security risks than traditional business systems, therefore it is important for e-business systems to be fully protected against these risks. A far greater number of people have access to e-businesses through the internet than would have access to a traditional business. Customers, suppliers, employees, and numerous other people use any particular e-business system daily and expect their confidential information to stay secure. Hackers are one of the great threats to the security of e-businesses. Some common security concerns for e-Businesses include keeping business and customer information private and confidential, authenticity of data, and data integrity. Some of the methods of protecting e-business security and keeping information secure include physical security measures as well as data storage, data transmission, anti-virus software, firewalls, and encryption to list a few.

Privacy and Confidentiality

Confidentiality is the extent to which businesses makes personal information available to other businesses and individuals. With any business, confidential information must remain secure and only be accessible to the intended recipient. However, this becomes even more difficult when dealing with e-businesses specifically. To keep such information secure means protecting any electronic records and files from unauthorized access, as well as ensuring safe transmission and data storage of such information. Tools such as encryption and firewalls manage this specific concern within e-business.

Authenticity

E-business transactions pose greater challenges for establishing authenticity due to the ease with which electronic information may be altered and copied. Both parties in an e-business transaction want to have the assurance that the other party is who they claim to be, especially when a customer places an order and then submits a payment electronically. One common way to ensure this is to limit access to a network or trusted parties by using a virtual private network (VPN) technology. The establishment of authenticity is even greater when a combination of techniques are used, and such techniques involve checking “something you know” (i.e. password or PIN), “something you need” (i.e. credit card), or “something you are” (i.e. digital signatures or voice recognition methods). Many times in e-business, however, “something you are” is

pretty strongly verified by checking the purchaser's "something you have" (i.e. credit card) and "something you know" (i.e. card number).

Data integrity

Data integrity answers the question "Can the information be changed or corrupted in any way?" This leads to the assurance that the message received is identical to the message sent. A business needs to be confident that data is not changed in transit, whether deliberately or by accident. To help with data integrity, firewalls protect stored data against unauthorized access, while simply backing up data allows recovery should the data or equipment be damaged.

Non-repudiation

This concern deals with the existence of proof in a transaction. A business must have assurance that the receiving party or purchaser cannot deny that a transaction has occurred, and this means having sufficient evidence to prove the transaction. One way to address non-repudiation is using digital signatures. A digital signature not only ensures that a message or document has been electronically signed by the person, but since a **digital signature** can only be created by one person, it also ensures that this person cannot later deny that they provided their signature.

Keyword

A **digital signature** is an electronic, encrypted, stamp of authentication on digital information such as email messages, macros, or electronic documents.

Access control

When certain electronic resources and information is limited to only a few authorized individuals, a business and its customers must have the assurance that no one else can access the systems or information. There are a variety of techniques to address this concern including firewalls, access privileges, user identification and authentication techniques (such as passwords and digital certificates), Virtual Private Networks (VPN), and much more.

Availability

This concern is specifically pertinent to a business' customers as certain information must be available when customers need it.

Messages must be delivered in a reliable and timely fashion, and information must be stored and retrieved as required. Because availability of service is important for all e-business websites, steps must be taken to prevent disruption of service by events such as power outages and damage to physical infrastructure. Examples to address this include data backup, fire-suppression systems, Uninterrupted Power Supply (UPS) systems, virus protection, as well as making sure that there is sufficient capacity to handle the demands posed by heavy network traffic.

Cost

The business internet which supports e-business has a cost to maintain of about \$2 trillion in outsourced IT dollars just in the United States alone. With each website custom crafted and maintained in code, the maintenance burden is enormous. In the twenty-first century, look for new businesses that will help standardize the look and feel of the internet presence of a business to be more uniform in nature to help reduce the cost of maintenance.

Security solutions

When it comes to security solutions, sustainable electronic business requires support for data integrity, strong authentication, and privacy. Numerous things can be done in order to protect our E-Business. Starting off with basic things like switch to HTTPS from old outdated HTTP protocol which is more vulnerable to the attacks.

Remember

The things that require full attention are securing servers and admin panels, payment gateway security, antivirus and anti-malware software, using firewalls is also a must, regular updates, and back up our data.

Access and data integrity

There are several different ways to prevent access to the data that is kept online. One way is to use anti-virus software. This is something that most people use to protect their networks regardless of the data they have. E-businesses should use this because they can then be sure that the information sent and received to their system is clean. A second way to protect the data is to use firewalls and network protection. A firewall is used to restrict access to private networks, as well as public networks that a company may use. The firewall also has the

ability to log attempts into the network and provide warnings as it is happening. They are very beneficial to keep third-parties out of the network. Businesses that use Wi-Fi need to consider different forms of protection because these networks are easier for someone to access. They should look into protected access, virtual private networks, or internet protocol security. Another option they have is an intrusion detection system. This system alerts when there are possible intrusions. Some companies set up traps or “hot spots” to attract people and are then able to know when someone is trying to hack into that area.

Encryption

Encryption, which is actually a part of cryptography, involves transforming texts or messages into a code which is unreadable. These messages have to be decrypted in order to be understandable or usable for someone. There is a key that identifies the data to a certain person or company. With public key encryption, there are actually two keys used. One is public and one is private. The public one is used for encryption, and the private for decryption. The level of the actual encryption can be adjusted and should be based on the information. The key can be just a simple slide of letters or a completely random mix-up of letters. This is relatively easy to implement because there is software that a company can purchase. A company needs to be sure that their keys are registered with a certificate authority.

Digital certificates

The point of a digital certificate is to identify the owner of a document. This way the receiver knows that it is an authentic document. Companies can use these certificates in several different ways. They can be used as a replacement for user names and passwords. Each employee can be given these to access the documents that they need from wherever they are. These certificates also use encryption. They are a little more complicated than normal encryption however. They actually used important information within the code. They do this in order to assure authenticity of the documents as well as confidentiality and data integrity which always accompany encryption. Digital certificates are not commonly used because they are confusing for people to implement. There can be complications when using different browsers, which means they need to use multiple certificates. The process is being adjusted so that it is easier to use.

Digital signatures

A final way to secure information online would be to use a digital signature. If a document has a digital signature on it, no one else is able to edit the information without being detected. That way if it is edited, it may be adjusted for reliability

after the fact. In order to use a digital signature, one must use a combination of cryptography and a message digest.

Remember

A message digest is used to give the document a unique value. That value is then encrypted with the sender's private key.

1.2.5 Advantages and Disadvantages

When looking at e-Business we have many advantages, which are mostly connected to making doing business easier. The benefits of implementing e-Business tools are in the streamlining of business processes and not so much in use of technology. Here are some:

- Easy to set up: electronic business is easy to set up even from home, the only requirements are software, a device and internet connection.
- Flexible Business Hours: There are no time barriers that a location-based business can encounter since the internet is available to everyone all the time. Your products and services can be accessed by everyone with an internet connection.
- Cheaper than Traditional Business: Electronic business is less costly than a traditional business, but it is more expensive to set up. Transactions cost are also cheaper.
- No Geographical Boundaries: The greatest benefit is the possibility of geographically dispersion. Anyone can order anything from anywhere at any time.
- Government Subsidies: Digitalisation is very encouraged by the government and they provide necessary support.
- New market entry: It has a great potential to enable an entry to a previously unknown market that a traditional business could not.
- Lower levels of inventory: Electronic business enables companies to lower their level of inventory by digitalizing their assets. (i.e.: Netflix does not sell anymore physical DVD's but proposes online streaming content instead).
- Lower costs of marketing and sales: E-commerce allows the actors of the industry to advertise for their product/service offer (i.e.: house rental) at generally lower costs than by promoting physically their business.

Disadvantages

Despite all the advantages there are also some disadvantages that we need to address. The most common limitations of electronic business are:

- **Lack of Personal Touch:** The products cannot be examined or felt before the final purchase. In the traditional model, we have a more personal customer experience, while in electronic business that is mostly not the case. Another missing factor of personal touch could also be in online transactions.
- **Delivery Time:** Traditional business enables instant satisfaction as you obtain the product the moment you purchase it, while in electronic business that is not possible. There will always be a waiting period before you receive the product. For example, Amazon assures one-day delivery. This does not resolve the issue completely, but it is an improvement.
- **Security Issues:** Scams could be mentioned as a factor for people's distrust in electronic business. Hackers can easily get customers' financial and personal details. Some customer still finds it hard to trust electronic businesses because of the lack of security, reliability and integrity issues.

1.2.6 The Supply and Demand Model and Trade Restrictions

Supply and demand keep market economies functioning. They determine the quantity of goods produced, the prices at which they're sold and the variety of goods available on the shelves of grocers, retailers and small businesses across the country. International trade in a global economy also affects the variety of goods that small businesses can offer their customers. Supply and demand affects the price of foreign-made goods as well, but government acts to restrict trade, such as tariffs and other barriers, distort these basic economic forces.

Supply and Demand Features

Economists use supply-and-demand models to analyze competitive markets in which there are a variety of sellers and multiple firms offering goods and services for sale. The existence of numerous businesses means no single firm can exert influence on the price of a good. In addition to domestic goods, certain companies may also sell foreign-made products acquired through foreign trade among nations.

Benefits of Trade

Countries engage in trade to take advantage of specialization, according to Harvard economist Greg Mankiw. For example, one country may produce electronic goods at

a lower cost than other nations, while another country may enjoy a similar advantage producing beef and pork products. Trade between these two countries benefits consumers, who save money by having access to foreign goods for lower prices than those of domestic products. Trade opens new markets for foreign producers, encouraging them to produce more, which raises the supply. The lower prices of these products, meanwhile, fuel increased demand among consumers.

Effects of Tariffs

As demonstrated, international trade enables small businesses to offer their customers a greater variety of goods at lower prices. However, governments sometimes enact tariffs and other trade restrictions, often to protect domestic industries from foreign competition. A tariff is a tax on an imported good. Tariffs raise the price of foreign products, which benefits domestic producers but harms consumers through higher prices. Tariffs on one good may affect prices of other products if that good is used to produce other items. Steel tariffs, for example, raise the prices of goods produced from steel. Over time, higher prices resulting from tariffs lower consumer demand.

Other Trade Restrictions

Other government actions to limit foreign goods' access to domestic markets include trade barriers and import quotas, which limit the overall supply of certain goods. Just as tariffs reduce demand by raising prices, government-imposed limits on imported goods reduce the available supply, raising prices. The restrictions free domestic producers from competing with cheaper goods, enabling them to charge the prices they want, while consumers pay more for products than buyers in other countries who have access to cheaper goods.

1.2.7 Role of the Internet in Supply-Chain Management in B2B

B2B supply chains have partially migrated to the Internet, as online marketplaces reduce the cost of both supply-chain management and the carrying out of supply-chain functions. A key to the reduced cost is Internet-based, generally available information that increases the transparency and speed of transactions. Members of supply chains can quickly and reliably find the specific information they need to complete an exchange of goods or services, and receive rapid payment.

Procurement

The Internet reduces the cost of purchases by giving supply-chain partners quick access to information about sources, availability, pricing and technical data. Members of the

supply chain must cooperate in making this information available online, possibly in secure folders only accessible to account holders who are supply-chain partners. Once information required to make a purchase is available online from several sources, procurement is more efficient because the best source can be identified more quickly. While the actual prices paid do not necessarily diminish, the cost of the procurement transactions is lower.

Supply

On the supply side, the most important role of the Internet is to greatly increase the size of the accessible market. Suppliers using the Internet to market their goods and services can sell world-wide. With the Internet's greater transparency regarding pricing, suppliers have lost some of the strategic levers that allowed them to cultivate preferred accounts with higher margins. The ability of competitive suppliers to achieve greater sales volumes balances this disadvantage. Once the supplier has found a customer, he benefits from similarly reduced transaction costs as the purchaser, because completing the transaction is quicker and more efficient.

Direct Transactions

For supply chains in general, the role of the Internet has been to reduce the power of intermediaries. Suppliers can offer their products and services directly to customers, and purchasers can find what they need directly from producers. This disintermediation has simplified supply-chain management by making real time data on changes in demand and supply available to the markets, rather than having the information filtered through re-sellers. This trend has been especially pronounced in B2B transactions, while intermediaries remain more important in retail.

Collaboration

While supply-chain management through the Internet is still in its infancy, the possibilities exist for even closer integration of supply and procurement functions. Suppliers are interested in having a high, predictable sales volume, while purchasers are looking for a reliable, low-cost source.

Companies can satisfy both goals by providing data on production and on procurement needs to each other under long term relationships. The resulting high, steady volume allows the supplier to offer his products at lower cost, while the purchaser benefits from this cost reduction and receives a reliable supply.

1.2.8 Business Benefits of Information Technology

Information technology, also known as IT, is a comprehensive term that includes all types of technology used to exchange, store, use or create information. Commonly used information technology equipment includes computers, servers, peripheral devices, Internet connectivity equipment and phone systems. From basic computer terminals to IP-based telephony systems, information technology is an integral part of most modern business operations.

Benefits to Communication

Rapid communications can help increase productivity, allow for better business decision-making and ease a company's expansion into new territories or countries. Email servers, routers, internal company billboards and chat services can serve as the backbone of a company's communications. These electronically based communication systems are used to disseminate routine and critical business information in a quick and efficient manner. IT equipment can be used to send business status reports to executives, to update employees on critical business projects and to connect with business partners and customers.

Improved Workplace Efficiency

Streamlined work flow systems, shared storage and collaborative work spaces can increase efficiency in a business and allow employees to process a greater level of work in a shorter period of time. Information technology systems can be used to automate routine tasks, to make data analysis easier and to store data in a manner that can easily be retrieved for future use. Technology can also be used to answer customer questions through email, in a real-time chat session or through a telephone routing system that connects a customer to an available customer service agent.

Competitive Advantage over Rivals

Adoption of information technology resources allows companies to maintain a competitive advantage over their rivals. Companies using a first-movers strategy can use information technology to create new products, distance their products from the existing market or enhance their customer services. Companies that follow a low-cost product strategy can look to information technology solutions to reduce their costs through increased productivity and reduced need for employee overhead. Businesses can also build-in information technology to their products that makes it difficult for customers to switch platforms or products.

Cost Reduction and Economic Efficiencies

Companies can harness information technology resources to lower their costs. Using IT infrastructure, redundant tasks can be centralized at one location. For example, a large company could centralize their payroll function at one location to lower employee costs.

Economic efficiencies can also be realized by migrating high-cost functions into an online environment. Companies can offer email support for customers that may have a lower cost than a live customer support call. Cost savings could also be found through outsourcing opportunities, remote work options and lower-cost communication options.

1.2.9 The Impact of Technological Change on Business Activity

Technology has revolutionized the way companies conduct business by enabling small businesses to level the playing field with larger organizations. Small businesses use an array of tech – everything from servers to mobile devices – to develop competitive advantages in the economic marketplace. Small business owners should consider implementing technology in their planning process for streamlined integration and to make room for future expansion. This allows owners to create operations using the most effective technology available.

Impact on Operating Costs

Small business owners can use technology to reduce business costs. Basic enterprise software enables a firm to automate back office functions, such as record keeping, accounting and payroll. Mobile tech allows home offices and field reps to interact in real time.

The field reps can use mobile apps to record their daily expenses as they incur them and have them sync automatically with accounting software back at the office.

Securing Sensitive Information

Business owners can also use technology to create secure environments for maintaining sensitive business or consumer information. Many types of business technology or software programs are user-friendly and allow business owners with only minor backgrounds in information technology to make the most of their tools and features.

Improved Communication Processes

Business technology helps small businesses improve their communication processes. Emails, texting, websites and apps, for example, facilitate improved communication with consumers. Using several types of information technology communication methods enable companies to saturate the economic market with their message. Companies may also receive more consumer feedback through these electronic communication methods.

Technology also improves inter-office communication as well. For example, social intranet software gives employees a centralizes portal to access and update internal documents and contracts and relay relevant data to other departments instantly. These methods also help companies reach consumers through mobile devices in a real-time format.

Increased Employee Productivity

Small businesses can increase their employees' productivity through the use of technology. Computer programs and business software usually allow employees to process more information than manual methods. Business owners can also implement business technology to reduce the amount of human labor in business functions. This allows small businesses to avoid paying labor costs along with employee benefits.

Even fundamental business tech can have a major impact on employee performance. For example, by placing employee-performance appraisal information in an online framework, supervisors can easily create measurable goals for their employees to reach and sustain company objectives. Business owners may also choose to expand operations using technology rather than employees if the technology will provide better production output.

Broaden Customer Bases

Technology allows small businesses to reach new economic markets. Rather than just selling consumer goods or services in the local market, small businesses can reach regional, national and international markets. Retail websites are the most common way small businesses sell products in several different economic markets.

Websites represent a low-cost option that consumers can access 24/7 when needing to purchase goods or services. Small business owners can also use internet advertising to reach new markets and customers through carefully placed web banners or ads.

Collaboration and Outsourcing

Business technology allows companies to outsource business functions to other businesses in the national and international business environment. Outsourcing can help companies lower costs and focus on completing the business function they do best. Technical support and customer service are two common function companies outsource.

Small business owners may consider outsourcing some operations if they do not have the proper facilities or available manpower. Outsourcing technology also allows businesses to outsource function to the least expensive areas possible, including foreign countries.

1.2.10 The Relationship Between the Printing Press and the Internet

Writing has existed since the 4th Century BC. However, its evolution beyond a basic counting method into a structured language was the preserve of religious institutions and the ruling elite. Books were written by hand, which made them rare and expensive. The invention of the printing press, using movable type, by Johannes Gutenberg in 1440 made books cheaper to produce, encouraging writing and the sharing of knowledge. The printing press was the first of a series of mechanical devices that helped expand access to knowledge. This process has lead up to the development of the Internet.

Advancements

The printing press was followed by the typewriter, the telegraph, the photocopier, printer and scanner. The computer with its programmable core evolved from a mechanical loom that took programmable patterns fed into it on punch cards. Early computer programs were translated into punch cards and computers using this system for input still existed in the 1960s. The Internet resulted from US Department of Defense research into linking computers together. Once the idea had been tested, the Internet took fifty years to develop into the global knowledge network we know today.

Detractions

Although the printing press made teaching materials cheaper, and gradually improved literacy rates, after almost six hundred years in existence, the printing press still hasn't created universal literacy. According to UNESCO, about 26 percent of the world's adult population is illiterate. Access to education is focused in the wealthier nations, which have benefitted most from the distribution of knowledge that spread from the invention of the printing press and its successors. Similarly, Internet access is concentrated in those same wealthier nations. The Internet is of little use of those who cannot read or

write. Even though websites can provide information in video format, the ability to operate a computer, follow instructions and connect to a website requires literacy.

Relationship

Literacy is the key connecting factor between the printing press and the Internet. Any method of knowledge sharing requires planning and cooperation and this can only be achieved in writing plans and distributing tasks. Although the Internet is an innovative system for distributing information, the origins of that information still lies in the hands of national government institutions, the same authorities that controlled knowledge before the invention of the printing press.

Future

The Internet has already had a detrimental impact on printing. Some newspapers have failed and others are struggling to make a profit, because their readership has moved to free online versions. Libraries compete for funding in a world where information online is instantly updated. The Internet is as unregulated as printing: It is far cheaper to put up a Web page than to print a book, making it easier to spread false information, propaganda and personal opinion masquerading as fact.

Did You Know?

In 1994, IBM, with its agency Ogilvy & Mather, began to use its foundation in IT solutions and expertise to market itself as a leader of conducting business on the Internet through the term “e-business.” Then CEO Louis V. Gerstner, Jr. was prepared to invest \$1 billion to market this new brand

1.3 INTERNET AND WORLD-WIDE WEB FOR BUSINESS

By now it's almost cliché to take note of the Internet's vast potential as a business resource, but triteness doesn't diminish the fact that this once-obscure computer network has changed and will continue to change business and society profoundly. A number of estimates pegged the value of Internet commerce in 1998 around \$100 billion for the United States, and more than one projection for the early 2000s foresaw worldwide e-commerce surpassing a trillion dollars within the first five years of the 21st century. Although much attention has been devoted to the vast consumer market accessible via the Internet (which

is a multibillion-dollar franchise in its own right), business-to-business transactions make up the large majority of e-commerce sales in terms of value. Total U.S. 1998 economic activity surrounding the Internet, including computer hardware purchases, Web authoring services, commerce, and so forth, was estimated at more than \$300 billion in sales and 1.2 million jobs. And these statistics don't even address the non commerce efficiencies and savings that Internet-based technologies bestow on businesses in areas such as supply-chain management.



Whereas during the Internet's early commercialization companies were consumed with simply getting online, perhaps without much forethought about what to do once they got there, increasingly corporations are formulating exacting Internet strategies to capitalize on the network's strengths as well as to cope with its shortfalls. Despite the popular metaphor of a virtual store serving all the same functions as a physical store, conventional transaction-based commerce is not the appropriate Internet business model for all companies. Rather, businesses must evaluate the financial and competitive advantages of using the Internet as a primary vehicle for communication and exchange versus traditional and hybrid options. Some firms may find, for example, that it's more profitable to provide users with Internet tools to help make a purchasing decision than to try to facilitate the entire transaction electronically. Meanwhile, other types of companies will find that doing business exclusively over the Internet is the best approach. No blanket policy is likely to work across dissimilar business lines; the key to determining which model is best is intricately tied to the specific market being served, the logistics of delivering the product or service being offered, and what other non-Internet alternatives exist.

1.3.1 Business Uses of the Internet

Although there are scores of specific Internet applications that benefit businesses, they can all be grouped under two broad categories: (1) information exchange and dissemination, and (2) facilitating e-commerce.

Information Exchange

The information exchange function is the broader of the two and includes such diverse applications as:

- e-mail and other person-to-person communications, e.g., computer conferencing
- online marketing and brand building
- employee recruitment
- investor and public relations information distribution
- intranets for employee knowledge sharing and collaboration
- extranets to enable outsourcing and supply-chain integration

The economic value of these applications is difficult to measure, but for large organizations they have the potential to save millions of dollars in costs, and depending on the application, to stimulate sales as well. Only a couple of the possibilities will be discussed here.

The internal information management and knowledge-sharing abilities of corporate intranets can be substantial. Intranets, which are corporate information networks based on Internet technology but are usually restricted access sites available only to select users, allow central storage and versatile dissemination of diverse information, including corporate handbooks and manuals, customer or **marketing databases**, employee databases, project discussion boards, and other internal documentation. Intranets are substantially more efficient than circulating paper copies of documents, both in terms of immediacy of information and, in most cases, maintenance costs. Because they rely on simple, Web-based client/server technology, they're also typically easier to implement and use than proprietary databases.

Keyword

Database marketing is a systematic approach to the gathering, consolidation and processing of consumer data.

The extranet, which enables supply-chain integration and automation, is an especially powerful use of the Internet, and one that is increasingly being adopted by large corporations. Although there are many variations, supply-chain management is generally a hybrid of data exchange and electronic commerce that allows companies to better coordinate their procurement and distribution practices with those of their suppliers and clients. Based on the efficiency principles of electronic data interchange (EDI) and just-in-time inventory, this coordination can afford several benefits. The streamlining effects can include eliminating paperwork, reducing staff hours, and improving data accuracy. Web-based ordering systems likewise tend to be easier to use than their old-line counterparts, which also contribute faster and more accurate results. Such automated systems can also provide management with more timely and detailed information about corporate purchasing habits and needs, allowing better resource planning and even providing a blueprint for cost control. Extranets can also be established to provide customer service and other external communications functions. The Web is also a particularly efficient means of comparison shopping for business procurement. With relative ease, a procurement officer can find price quotes from several vendors, some of which may not even be aware the other exists. The buyer can then use this information to either choose the low-cost vendor or to gain concessions from established vendors.

E-commerce

There are also multiple facets to e-commerce, although they are much more closely integrated than information-exchange functions. Specifically, businesses may focus on one or more of these aspects of commerce:

- preparing customers for the sale
- facilitating the actual transaction
- managing any follow-up to the sale

It may not be feasible or profitable to do all three in equal proportion, or even at all. For example, the most logical commerce-related application for Federal Express and similar companies is delivery tracking, which is done after the transaction is completed. It also makes sense to provide pre-transaction services, such as account set-up and drop-off center locators, on the site. However, in this example the transaction itself is more difficult to accomplish. It consists of two main parts, dropping off a package and arranging for payment. The latter could easily be done over the Internet, but it's less clear how the company would profitably obtain the packages for delivery. Federal Express offers pick-up services, but it's uncertain whether it would be profitable for the company to pick up the majority of the parcels it carries, which are traditionally dropped off at local retail centers.



In other trades, of course, the Internet may well be the ideal locus of transaction. The case is particularly compelling for products or services that can be delivered online, such as software applications via high speed connection, musical recordings, or databases. But strong if not initially profitable business models have also been adopted in many other fields, notably by booksellers such as Amazon.com and auction houses like eBay, not to mention vendors that electronically service the mundane but lucrative business-to-business supply chain.

Thus, while e-commerce is commonly the more celebrated business application, as noted above it isn't the appropriate model for all types of trade. Companies contemplating a new e-commerce initiative would do well to consider this maxim: all e-commerce is not the same. Internet-era mythology holds that (1) competitors big and small are all on equal footing on the Internet, and (2) anything and everything can be sold online.

Equal footing is only possible in the limited sense that minor players in some line of business can, assuming they have the funding and technical resources, build Internet sites that are as good as or better than those of their major competitors, as measured by site convenience, functionality, marketing tactics, and so forth. However, this doesn't mean that the smaller company will be any more effective in the larger sense. The smaller company must also have a cost-efficient system for order fulfilment, a powerful marketing operation that ensures potential customers are reached, and many other supporting capabilities in order to succeed. For instance, say a small Internet-only start-up wants to sell high-end home appliances online. They may create the best site in the business, but will they be equipped to serve a national market? Probably not. For such large and expensive products, traditional retailers like Sears, Roebuck and Co.

and the so called appliance superstores have tremendous competitive advantages in the online arena as well, not the least of which is an established and already profitable physical distribution system. That's not to mention that the marketing model may be off target; Internet transactions may not appeal to potential buyers of expensive appliances, as these people might value the ability to see the product in the showroom and talk with sales staff. While that conclusion in this example is arguable, there are clearly some product and service transactions in which customers place a high value on in-person contact and immediate fulfilment (real life examples being health care, video rental, and grocery shopping), and these so far have not been good candidates for an Internet-only approach.

1.3.2 Use of WWW Sites

The 300 companies making up the sample were classified as to the use of their Web site using the following scheme (the percentage of the sample in each class is shown in parentheses):

- A basic Web presence with basic information about the company but no further details on specific products or services. (3.0%)
- A Web presence with company information including some information about products or services. (59.3%)
- A Web presence with company information and product or service information together with some price details but with facilities for conventional purchasing only. (12.0%)
- A Web presence with company information and product or service information with price details and the ability to order the products or services by electronic mail (but with billing occurring conventionally). (10.7%)
- A Web presence with company information and product or service information (including price details) and with on-line ordering and payment. (11.7%)
- A Web presence with company information and product or service information (including price details) with pre-registration of credit card details by conventional means to gain account number which may be used to order goods on-line. (0.3%)
- A Web presence with company information and providing free products or services. (3.0%)

The results show that the majority of businesses in the sample use their WWW sites as a vehicle for displaying information about themselves and their products or services (class 2). In some cases there will be detailed information relating to products but the 'hard sell' is definitely not used at these sites.

The next largest proportion of use is class 3 (12.0%). This is similar to class 2 but encourages the potential customer to spend money by including price information alongside product or service details. The customer, however, has to order the goods or services in a conventional manner. It contains product and price information and advice on ordering by telephone, fax or mail. The majority of the larger businesses surveyed tend not to use the Web for publishing price information; they are more likely to use it for general marketing purposes (class 2).

Bearing in mind the many problems currently involved in true electronic commerce, such as security and payment, it is not altogether surprising that the majority of companies are electing not to sell on-line at present. In fact, only 11.7% of companies surveyed are currently engaging in on-line selling with credit card details being sent over the Internet and only a quarter of these have secure servers. *Examples* are the sites owned by Doggie Diamonds who specialize in pet products and CD World, a company set up specifically to sell goods on-line over the Internet. A user of the Netscape browser will find that the key at the bottom of the home page is complete, indicating that the site is secure. The order form used by Flags of the World is typical of most sites offering on-line ordering.

0.3% of companies use a registration scheme to give their customers account numbers which are used to purchase directly over the Internet. The credit card details are stored safely by the company and do not need to be transmitted over the Internet. A further 10.7% allow the customer to send the order by e-mail but the payment transaction occurs conventionally, with the company telephoning the customer to confirm the sale and get credit card details, or sending the bill with the goods.

As on-line shopping becomes more accepted by the general public and technology develops solutions to the associated problems, the percentage of companies offering facilities for ordering and paying for goods and services over the Internet will undoubtedly increase. It is also important to remember that the majority of companies have had WWW sites for less than one year and are still coming to terms with many of the concepts involved in electronic commerce.

1.3.3 Use the Internet to Effectively Market Your Business

Nearly every business will benefit from having an internet presence. However, before rushing to throw any old content onto the web, take time to create an internet strategy that dovetails into and helps drive your larger marketing and business plans.

Reaching customers and potential customers using online marketing is more a matter of commitment and strategy than it is a financial expenditure. It does not need to be expensive to reach online customers effectively. Using a market-led approach to

Internet marketing, you can build an effective website and attract customers through various Internet-based marketing tactics.



Internet marketing involves the use of digital media to inform the market of your business and to entice people to purchase your products and services. The internet (and, by extension, mobile) is merely a vehicle to provide greater reach for your advertising, promotional and public relations efforts.

Remember

Internet marketing must be part of your integrated marketing approach. Internet marketing strategies should be included within your company's overall marketing plan.

Businesses that want to boost the results of traditional advertising need to dovetail their advertising strategies with Internet strategies rather than viewing them as independent channels. A good Internet site, for example, improves the effectiveness of other advertising because many customers who see your company's advertising will evaluate your company's products and services online. Integrating Internet marketing tactics with other advertising ensures that your company provides a consistent brand experience.

You need to consider the following topics when you develop your overall Internet marketing strategy:

- your company's website
- e-commerce
- search engine marketing
- search engine optimization
- online advertising
- email marketing

1.3.4 Internet Marketing Environment

The Internet has a number of unique features that must be reckoned with in order to successfully compete in its terrain. Most importantly, customers, whether individuals or businesses, tend to associate different values and expectations with online commerce versus traditional means. Many of these can be summarized under the heading of value. Put simply, many customers expect to come away with something of greater value from an Internet transaction than they do from a conventional physical purchase. Value may present itself in many forms. Examples include greater convenience, better information about the purchase, reliability of service, personalization/customization, security of the transaction, and lower costs. If an online vendor fails to offer better value perhaps it is only as good as the real-life alternative it is likely to have trouble making the grade in Internet markets.



Value creation is but one of several aspects of Internet marketing that many ill-conceived Internet ventures fail to address. A technically competent Web site is only a starting point, a baseline. Effective Internet business plans must also identify a clear market need, be highly sensitive to competition from all sources, articulate a strong value proposition for customers, and be flexible to respond to market changes.

1.3.5 Build Your Website to Attract and Engage Visitors

Step back and take a “macro” view of your customers and the Internet experience as you develop your website. The most effective websites combine the benefits of mass

marketing with those of customer relationship marketing (CRM) to provide each visitor to your site with a personal brand experience.

Mass marketing's goal is to constantly acquire new customers by differentiating your company, and its products, from competitors. This results in a strong brand identity, but it does not always adapt well to Internet marketing because visitors to your site are often seeking targeted information, rather than more general mass market messages. The goal of CRM, by contrast, is to continually increase the volume of business with existing customers by offering a range of personalized services and products. While this can result in good customer service, but does not adequately differentiate your organization from its competitors among potential customers.

Market-Led Approach

Website content needs to guide target markets from discovery, through exploration and interaction, toward action. The first 10 seconds your target markets spend on your company's website are among the most crucial. Site visitors determine whether they will become site users. They perceive the value of your site. They form first impressions about your company and predict the likelihood of finding useful information on your website. Many visitors will leave your website immediately because the site seems unrelated to their search. Others will explore your site.

The first challenge is to get consumers to discover your website. Once they're on the site, they need a reason to explore. Typically only 60 percent of visitors will stay on your site long enough to skim or read some of the content. Approximately 15 percent of your visitors will interact with the tools to help them make a purchase decision, and 2 percent will act on that decision.

Consumer Interaction with the Internet

All visitors to your website are seeking information. During the exploration phase, each page of content has less than a minute to communicate with a site visitor. The amount of time visitors spend exploring your website, and their perception of value of the time being spent, varies based on their ability to progress toward the desired buying decision. Site visitors interact anonymously with your website. Through these various interactions, they form lasting impressions about your company, its products, and its level of service. This includes comparing the information that you provide with information they have received from other sources. Getting customers involved through interactive elements, such as a self-assessment, can be an effective method for cultivating strong customer relationships and gathering additional customer insights.



Successful websites typically include the ability for customers to act online to call, purchase a product, find a local distributor or retail location, or request a proposal. All websites should include the ability to follow-up offline, by telephone, since some customers prefer speaking with someone to submitting an order or other information online. Be sure to include these elements when planning your company website.

1.3.6 Steps in Developing a Website for Your Business

The development plan for your company's website can be broken into multiple phases:

Planning

- Define the scope of the project.
- Identify your objectives and strategies.
- Create a content plan.
- Determine who will design and implement the plan.

Design: Design look-and-feel (user interface) of the site defining the features, functionality and content to be implemented on the website. Deliverables during this phase include design concepts and a proposed site map. Each concept must include a summary of any related budget/timeline considerations.

Implementation: Create the website, on time and on budget. You must manage the scope of the project and identify the timeline/budget implications of any changes

requested by others. Stakeholders in your company may need an opportunity to review all site content once or twice during implementation.

Testing: Ensure error-free implementation of the site.

Distribution: Publish the new site and register it with search engines, as appropriate.

Monitor, evaluate and update: There is no such a “final” website. You must be prepared to refresh the web site’s functionality and user interface on at least an annual basis.

1.3.7 What Are Your Objectives for Your Website?

Your objectives for your website should be based on your overall communication, marketing and sales goals. And, it is critical that these objectives are measurable. Equally important is the ability to effectively measure whether objectives are met. Such objectives might include:

- *Subscribe to your e-newsletter:* You want visitors to subscribe to your e-newsletter or to your mailing list. To measure success, you should tally the number/percentage of site visitors that subscribe.
- *Request additional information:* Ideally, your website will contain a significant amount of readily accessible content. However, customers may have specific questions or need additional information. Tracking the number/percentage of site visitors that request additional information is one way to determine if the website is meeting this objective.
- *Online customer service:* The use of the internet for real-time resolution of customer services issues is increasing constantly. If one of your objectives is to provide online service, then you will want to track the number of customers who successfully resolve customer service needs online. In addition, you will also want to keep records of the turn-around time for the answers. You should be aware of customer service benchmarks in your industry and evaluate your results against these.
- *E-commerce:* If you want to allow customers to purchase directly from your website, then you will want to track the volume of products and services sold online—both in units and in revenue received. You’ll also want to track the number of transactions originating from Internet visits. This metric should be periodically evaluated for success in relation to other sales channels.
- *Visitors to your site:* At a bare minimum you will want to track the number of new monthly visitors and repeat monthly visitors to your website. Ideally, you should capture how they got to your site.

1.3.8 Internet Marketing and Advertising is Most Accessed Part of the Internet by Businesses

Internet plays an important role to advertise and market products and services around the world to get more customers. The Internet is important to communicate with customers about products and services. The internet is a global village and gives a chance for business owners to take benefits of online advertising that is less costly. Internet advertising and marketing is affordable for all kinds of small and big business as compared to traditional marketing costs. Business can reach a wider audience and geographical locations by the use of Google AdWords, Facebook ads, content marketing, YouTube video ads etc.

Online advertising is a big industry and the competition is high that's why the cost of internet advertising is more effective than TV advertising, newspaper and magazine ads. Google, Facebook, and YouTube, such kind of business are surviving because of the revenue they are generating by providing internet advertising services for business. Business owners can get benefits by implementing paid and free internet marketing tools in their business to reach customers globally. That's why internet importance in the business world is really important to utilize for creating better and valuable products and services.

Internet Is Essential Tool for Business to Do Product Survey and Testing

Business research is really important to get data related to target customers, trends in market, interest and information about the competition. Internet helps business to obtain data and analyses the information to create better and effective products, marketing plan before investing money in product development. Internet helps businesses to test and collect the data behind the idea of product and services.

There are various paid and free tools to analyze and collect customer data by creating data analysis applications by using Matlab, Scilab, python, R, and Microsoft excel etc. For eCommerce or services business website, entrepreneurs can use best website analytics tools such as Google Analytics, Crazy Egg, and Kissinsights.com etc. Business analysis on the internet helps to take best product development and marketing decision.

1.3.9 Internet Platforms Helping Business to Sell Products and Services Online

Selling online is the biggest benefits of the Internet for big and small businesses. Selling online is less costly with a high level of value marketing. The cost of setting

up online shop or eCommerce website is less expensive than a physical store. Internet helps business and eCommerce website to automate selling and transactions process. Selling products via online store is not only beneficial for one business but it helps third-party business services such as couriers, content marketers, graphic designers, payment gateway service providers etc. e-Commerce industry is growing day by day and even small business owners are generating high revenues for business in few months.

The cost of maintaining and starting eCommerce store and selling online not only helps to sell but also business owners can track their best marketing and advertising efforts and channels. This will not only help to sell more but it also helps to sell the right product to target customers based on interest. Biggest examples of successful e-Commerce utilization are Amazon.com, Alibaba.com, Flipkart, Paytm etc. which are generating high revenues and profits at less cost.

Internet Helping Business to Execute Employee Training and Development Programs

Online employee training and web-based training programs are providing great benefits to manage and execute tasks effectively. The success of a business is dependent on the creativity and analytical thinking of its employees. Internet plays an important role in business to create multiple types of employee learning and training programs. Learning and training explore the creativity in employees. Also, eCommerce websites, advertising agencies, email marketing companies and all kinds of Internet connected business always need to manage data and secure the customer information and privacy from online attacks.

Online training and online classes for staff help them to learn from professionals related to the business industry. Internet helps employees to access learning materials anywhere on right time. Today's business owners, companies and online entrepreneurs are facing the productivity problems. The common question is How to be more productive? How to make employees more productive? That's how the internet helps the business owners to create and use existing e-Learning programs and application to provide continuous education and training. The benefits of online training programs such as videos, apps, webinars help employees to learn at their own pace and comfort. The cost of online programs is less than the cost of sending employees to seminars or hiring productivity consultant. That's how by the use of internet in small, medium and big business everyone can get benefits by learning from e-learning resources.

1.3.10 Internet Building Business and Customer Relationships

Relationship with customers is really important for business success. Internet helps business to connect with customer's communication channels and build a strong network. Communication by Internet platforms helps business to get new customers and retain existing customers. The right product for right customers is not possible without communicating with clients or customers about the product and their problems. The website, Social Media Marketing, Administrative Support, Technical Support are few examples which are used by almost all the businesses today. 24/7 customer support on social media increasing the brand values is another example of effective business communication and relationship building programs. A customer wants quick information regarding their problems. So, it's really important for businesses to improve how they track customer problems and provide solutions that build the trust and an honest relationship with clients. Social Media, blog, forums are the tools which businesses can use to communicate effectively with customers. This kind of business development practices on the internet really benefits business to build a strong network of **customers**. Communication and network building also help to implement innovative, creative and valuable marketing and advertising plans for the business. These types of everyday business operations and marketing or free platforms are impossible to access without the Internet. The cost of communication in today's time, especially by the use of the internet, is less than offline methods. Reviews, comments, link building, back-links, link tracking etc. are daily practices that help business to grow business faster with a high level of integrity.

Keyword

A **customer** is the recipient of a good, service, product or an idea, obtained from a seller, vendor or supplier via a financial transaction or an exchange for money or some other valuable consideration.

1.3.11 Internet Speedup and Making Business Process Accurate

The World wide web gives you access to data and information with high speed and accuracy. Emails, News, file transfers, cloud storage, IRC such kind of Internet features are really important for business. Internet rich features and applications not only help employees to become more productive but it also helps

to work faster and accurately by learning and using latest technologies in the day to day business dealings. Business and companies get customer data and relationship status, feedback, comments, likes, shares, reviews in real time and quickly. In the business development and marketing speed really matters when you're competing globally. Email marketing, collecting emails address, tracking user behaviors, page views, landing pages are few examples in which business owners get benefits by including internet to speed up the operations and accuracy in the process of business development. Without the use of internet in business it's impossible today to grow business and earn profits.



By using the Internet and testing the importance of the Internet in business themselves is the most important thing that business owners can learn and experiment with today. Any small idea can be a big business for tomorrow. Google, Facebook, YouTube, Linked In, Amazon, Alibaba etc. once were nothing more than an idea but these innovative business owners added the power of internet technology in business. Now you can see today their revenues and growth. This is how the Internet is powering up businesses.

In the future, we can't imagine the world of business without the Internet. The Internet is now automated the business operations. Every small and big task is done by the use of internet such as financial transactions, invoicing, data sharing, hiring etc. The Internet is a boon for new entrepreneurs, students, online freelancing workforces, and teachers or for everyone. To get benefits people should understand the way they can add the power of the internet to automate daily manual tasks. Almost all the living and even some non-living things (think Artificial Intelligence) are on the internet. The uses of internet are growing in everyday life. New apps, websites, applications, online education tools and entertainment and time pass ways are launched daily on the internet. The Internet is now making millionaires and billionaires in between the

age of 30 and 40 and few are below 30. That's how Internet has transformed the ways of conducting business.

To summarize, the operation of business success on the internet is simple. You need to focus on three things:

- What kind of technology can you use to make your business powerful?
- What kind of knowledge is really important for you and employees?
- How much value you're giving and receiving for which product and how you can reduce the cost?

You can't make successful businesses without the use of Internet Applications, Marketing and Advertising platforms, Communication and Customer support tools. That's what we think about Internet importance in business.

ROLE MODEL



MICHAEL ALDRICH

Michael Aldrich (22 August 1941 – 19 May 2014) was an English inventor, innovator and entrepreneur. In 1979 he invented online shopping to enable online transaction processing between consumers and businesses, or between one business and another, a technique known later as e-commerce. In 1980 he invented the Teleputer, a multi-purpose home infotainment centre that was a fusion of PC, TV and Telecom networking technologies. In 1981 he developed the concept of interactive broadband local loop cable TV for mass market consumer telecommunications.

Aldrich had a 38-year career in the IT industry, 20 years of which were spent as CEO of an international computer company, Redifon/Rediffusion/ROCC Computers. He retired as CEO in 2000 and became non-executive chairman (2000-2014). He also worked for Honeywell (now Groupe Bull) and Burroughs Corporation (now Unisys).

Aside from his inventions and innovations, he is known for his pro bono public service. He was an IT adviser to British prime minister Margaret Thatcher 1981–86, IT adviser to the Confederation of British Industry January 1982-December 1983, president of the Institute of Information Scientists 1984–85, and chairman of the Tavistock Institute of Human Relations 1989–99. He has had a long, formal association with the University of Brighton in various capacities since 1982.

In the biggest success stories of start-ups of that, we hear from around the world today would have not come into existence today, if online shopping did not exist. From the prospering online shopping sites, like eBay, Amazon, Flipkart, to the very small newly started e-commerce sites should be grateful of the English entrepreneur who came up with the idea of online transactions. That great innovator is none other than Michael Aldrich, who developed e-commerce from scratch in the late 1970s. With an experience of 28 years in the IT sector, he worked for reputed companies before inventing teleshopping (today known as online shopping).

Early Life

Born into a family living in Hertfordshire, England, on 22nd August 1941, Aldrich did his schooling from Clapham College, London. He was a very bright student and even received a scholarship to study history at the University of Hull in 1959. During his time there, he met Sandy Kay Hutchings and got married to her just before completing his graduation. So, Aldrich already established a family before starting his career.

Many say that getting committed and entering into married life at a very young age can create difficulties and stops you from giving your best. But, in this case, it's diametrically opposite.

Beginning of Aldrich's Career

Aldrich worked for Honeywell and Burroughs in the sales and marketing department of the company for almost 15 years. After that, he joined Redifon Computers, which was a part of the UK Rediffusion Group of Companies. The Rediffusion Group manufactured televisions as well as computers, but Aldrich worked for the department of computer manufacturing.

This is when the journey of the invention of online shopping (he named it teleshopping) began. Seeing no interest of Aldrich in that television, one of the engineers in his company, Peter Champion, decided to learn more about this new TV, and its new feature. After studying about the TV for a few weeks, he told Aldrich that the television came with an auto-dialer that could hold four telephone numbers. He gave Aldrich the idea of building such a controller for a computer, and then, connecting the television. Aldrich noticed his point, but he didn't give it much of thought at that time.

After a few days, when Aldrich was complaining about the weekly tour to grocery shops, the idea of Peter hit him hard. This was when he thought of connecting the television to the supermarket itself and get the groceries delivered to home. Without wasting a single second, Aldrich started working on this idea.

After days of research and writing papers, finally, a prototype TV to test this real-time transaction process was connected to one of their computers, and the test was successful. There wasn't any year of research going on to support this idea of teleshopping, and hence, it seemed like a sudden scientific mutation took place in the communication world. Once it was developed, Aldrich needed to set up a market and build up demand as the entire world wasn't aware of how to use this new system.

After Reality Hit Hard

Aldrich found himself in a total mess, as he invented a product, but there wasn't a market to sell it. So, after the invention, he tried reaching out to people for real feedback and everything was done in sheer privacy as their product wasn't officially launched.

He went to a conference in New Orleans, kept it low and received positive feedback from the people. Returning back to the UK, the company designed the multi-port controller, built the computer interface software, and finally, launched it on April 1980. The entire world was amused by the idea of shopping from home, but no one was actually able to interpret how it worked. So, Aldrich hosted a press conference, and again, launched the product in July 1980.

Marketing Strategy

After launching the product, the idea was very clear to Aldrich that he would sell this to big corporations so that he could connect the agents, customers and distributors directly to the system without the involvement of a third party. He divided the market into leaders and followers and approached the leaders with this product. This business idea was later known as business to business online shopping (B2B). The company had almost no competition, so it flourished for the next ten years after its launch.

After the great invention

In 1984 Aldrich became a fellow of the British Computer Society, and a Chartered Fellow in 2004. He was also awarded an honorary degree of Doctorate of Letters by the University of Brighton in 2004. In 1987 he was made a Freeman of the City of London, England. Aldrich became the Chairman of Tavistock Institute of Human Relations in 1989. In 2010, University of Brighton named an award after his name, which is given to the talented students excelling in e-commerce.

SUMMARY

- E-business is short for “electronic business.” As an overarching term, it refers to any method of utilizing digital information and communication technologies to support or streamline business processes – from preparation to implementation.
- E-business is a general term that encompasses all forms of using digital information and communication technologies to support and optimize business processes.
- While listening to presentations, talks or reading books about e-business you will hear or read about statistics on the Internet, its users and the prospective business.
- An e-business network is one that allows businesses to communicate via electronic means, but the term is most often used to denote business networks that use the Internet to conduct e-commerce and related activities.
- The business internet which supports e-business has a cost to maintain of about \$2 trillion in outsourced IT dollars just in the United States alone.
- Encryption, which is actually a part of cryptography, involves transforming texts or messages into a code which is unreadable. These messages have to be decrypted in order to be understandable or usable for someone.
- Supply and demand keep market economies functioning. They determine the quantity of goods produced, the prices at which they’re sold and the variety of goods available on the shelves of grocers, retailers and small businesses across the country.
- While supply-chain management through the Internet is still in its infancy, the possibilities exist for even closer integration of supply and procurement functions.
- Technology has revolutionized the way companies conduct business by enabling small businesses to level the playing field with larger organizations.
- Business technology helps small businesses improve their communication processes. Emails, texting, websites and apps, for example, facilitate improved communication with consumers.
- The economic value of these applications is difficult to measure, but for large organizations they have the potential to save millions of dollars in costs, and depending on the application, to stimulate sales as well.
- Reaching customers and potential customers using online marketing is more a matter of commitment and strategy than it is a financial expenditure.

MULTIPLE CHOICE QUESTIONS

1. **What does “e” stand for in e-business?**
 - a. Effective
 - b. Electronic
 - c. Essential
 - d. Entrepreneurial
2. **Which of the following is NOT a component of e-business?**
 - a. E-commerce
 - b. E-marketing
 - c. E-government
 - d. E-transportation
3. **Which technology is fundamental for conducting secure e-business transactions?**
 - a. Blockchain
 - b. Cloud Computing
 - c. Artificial Intelligence
 - d. Virtual Reality
4. **What is the primary goal of e-business?**
 - a. Maximizing physical store sales
 - b. Enhancing customer interactions through technology
 - c. Reducing the need for online marketing
 - d. Eliminating competition from brick-and-mortar businesses
5. **Which of the following is a key advantage of e-business?**
 - a. Limited reach to a global audience
 - b. High operating costs
 - c. Reduced customer convenience
 - d. 24/7 accessibility

REVIEW QUESTIONS

1. What are the key components of e-business, and how do they contribute to its success?
2. How has e-business transformed the way organizations interact with customers and conduct transactions?
3. What role does technology play in the success of e-business initiatives?
4. What is e-commerce, and how does it relate to e-business? Discuss the various types of e-commerce models.
5. How does digital marketing play a crucial role in e-business? Describe some effective digital marketing strategies.
6. How do businesses use big data and analytics in e-business? Provide examples of how data-driven insights can improve decision-making.

Answer to Multiple Choice Questions

1. (b) 2. (d) 3. (a) 4. (b) 5. (d)

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CHAPTER 2

E-BUSINESS STRATEGY

LEARNING OBJECTIVES

After studying this chapter, you will be able to:

1. Understand the e-business strategy: formulation
2. Define competitive strategies for e-business
3. Explain the e-business strategy: implementation
4. Focus on change management

"The best e-business strategy in the world can't help a company with a broken culture."

—Gerry McGovern

INTRODUCTION

In today's rapidly evolving business landscape, the digital realm has become a dominant force shaping the way companies operate, interact with customers, and compete in the global market. E-business strategy, a critical component of any modern business plan, is the roadmap that guides organizations in harnessing the power of the digital age to achieve their goals and stay ahead of the competition. This strategic approach encompasses a wide range of activities, from online marketing and e-commerce to data analytics and digital transformation, all aimed at leveraging technology to drive growth and efficiency.

An effective e-business strategy involves a deliberate and well-thought-out plan for integrating digital technologies into every facet of an organization's operations. It is not merely about having a website or a presence on social media platforms; rather, it's about aligning technology initiatives with the broader business objectives. Whether a company is a startup looking to disrupt established industries or a traditional business adapting to changing consumer preferences, e-business strategy plays a pivotal role in ensuring relevance and competitiveness.

One of the key pillars of e-business strategy is customer-centricity. In the digital age, customers have more choices and greater access to information than ever before. This often involves the use of data analytics to gather insights, refine marketing efforts, and optimize product offerings. E-business strategy also encompasses e-commerce, which has revolutionized the way goods and services are bought and sold. Companies need to carefully plan their online sales channels, payment methods, and logistics to provide seamless and secure transactions for their customers. Furthermore, mobile e-commerce, driven by the proliferation of smartphones, has become a vital part of e-business strategy, requiring businesses to optimize their digital presence for mobile devices.

In an era of constant technological advancements, adaptability is another hallmark of a successful e-business strategy. Companies must be prepared to embrace new technologies, whether it's artificial intelligence, blockchain, or the Internet of Things, to gain a competitive edge. Moreover, cybersecurity is of paramount importance, as digital operations expose businesses to potential cyber threats that can disrupt operations and damage reputation.

2.1 E-BUSINESS STRATEGY: FORMULATION

Strategic management is and highlights the key elements of objective setting for organizations in an e-business environment.

2.1.1 Strategic Management and Objective Setting

Strategic management is about determining the purpose and aims of an organization, choosing the most appropriate courses of action towards achieving those aims, and fulfilling the aims over a set period of time. Chandler describes strategy as 'the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary to carry out those goals'. The first part of Chandler's definition relates to objectives setting. This includes:

The mission statement:	communicates the overriding purpose of the organisation.
The vision:	managers have to be able to communicate a vision of what the organisation is all about and where it wants to be in the future; it describes the aspirations of the organisation.
Objectives:	communicates the specific outcomes that need to be achieved such as sales, turnover, market share, rates of growth, etc.

Keyword

Management skills are abilities and traits needed to perform certain duties, usually as it pertains to overseeing a team, such as solving problems, communicating well, and motivating employees.

In an e-business context the vision of organizations will be determined by how managers view the future of the industry. A wide range of issues will be analyzed in order to form judgments on how the e-business environment will evolve into the future. Some examples may include:

- The market domination of a few globally recognized brands in providing products and services online;
- The rate of growth in demand for online products and services;
- The emergence of a dominant marketplace for e-business and e-commerce;
- The impact of increasing regulation in the online industry;
- The changes in the technological environment;
- New opportunities and threats in the e-business environment.

The vision of an e-business organization must reflect the ability of managers to position the organization to exploit opportunities in the marketplace, in technology utilization and through building relationships with partners and customers. The vision should also stem from the organization's ability to influence the structure of the industry, either through building market share, embracing change and being innovative, or by seeking industry leadership in technology, **management skills**, marketing or any other key element-driving industry structure.

Objective setting can be built around both closed and open statements. Closed statements are objectives that are capable of being measured and achieved. Open statements are objectives

that are not easily quantified or measured. For example, for an e-business to state that one of its objectives is to become the technological leader in its industry sector is not an unreasonable aspiration. However, actually quantifying and measuring technological leadership is problematic. There is no obvious criterion for measuring technological leadership. It may be possible to make inferences based on such things as investment in new technology and the corresponding financial performance of the organization, or the number of new customers attracted to a website after introducing new software for improving design and navigation, but there is no direct measure of technological leadership. Nevertheless, technological leadership is a valid objective for organizations engaged in e-business.

Objectives based on closed statements are the most commonly used by organizations. Having measurable targets for revenue, market share, number of new products developed, or increase in customers, makes them prescribed and the results are transparent. There is a clear link between the objective set and the performance indicator. Examples of objectives and performance indicators for an e-business are outlined in Figure 1.

Objectives	Performance indicator
Increase revenue from new marketing campaign	Conversion rate increase by 1% by end of 12-month period
Retain existing customers	Retain 95% of existing customer accounts
Reduce cost of procurement	Reduce procurement costs by 12% over next 12-month period using existing ICTcapability
Improve delivery times	Meet 99% of delivery time targets over next 12-month period
Improve customer satisfaction	Improve customer satisfaction ratings by 12% through market research and customer feedback
Improve efficiency in supply chain	Form partnerships and alliances with two key supply chain firms
Increase market share	Expand into growing markets and create new innovative services that add value to customers. Make an acquisition of a rival firm

Figure 1. Objectives and performance indicators in e-business.

2.1.2 The Strategic Process

Strategy can be viewed as a series of decisions and actions that are taken to achieve stated aims and objectives. These decisions and actions are based on analysis of key elements of the strategic process. The strategic process is illustrated in Figure 2.

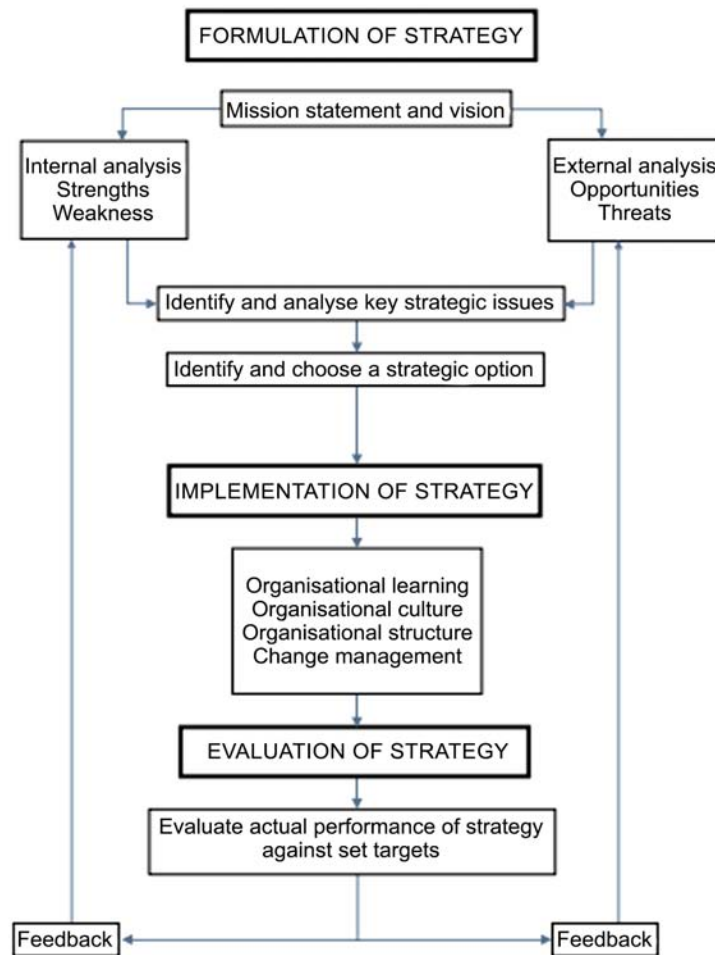


Figure 2. The strategic process.

The analytical part of the strategic process comprises internal (strengths and weaknesses) and external analysis (opportunities and threats). Combined, the internal and external analysis forms the basis for a SWOT analysis (strengths, weaknesses, opportunities and threats). It is from the SWOT analysis that the key strategic issues should be identified. The key strategic issues are the ones deemed most important that require attention and are given a high priority rating.

Once the strategic issues have been identified the next stage involves the evaluation of the options available and the selection of strategy. The understanding gained from the strategic analysis helps managers to narrow down the range of options available to the organization. Each option will be examined in relation to the identified key strategic issues. Evaluation of each option is undertaken using the criteria of:

- Suitability: the option is only suitable if it enables the organization to achieve its objectives;
- Feasibility: the option has to be possible within the skills, competences and resources available to the organization;
- Acceptability: the option must be acceptable to shareholders. The level of power and influence held by different stakeholder groups (directors, shareholders, managers, customers, etc.) and their willingness to exercise that influence and power will determine the acceptability of options. Mostly, it is executives in private organizations who have the most influence and power and who determine the choice of options;
- Scope for gaining a competitive advantage: the option must result in superior performance leading to a competitive advantage over rivals.

The implementation of strategy involves the practical measures taken to action the selected strategic option or options. The implementation of a chosen strategy invariably means communicating the strategic option to other levels of management within the organization. Strategy is decided at corporate level and communicated to business level managers. The practical implementation of strategy is usually carried out at the business or functional level of management in organizations. There are four critical success factors relating to the implementation of strategy. These are that:

- The strategy is translated into implemented action and guidelines that form the daily activities of staff within the organization;
- The strategy must be reflected in the way the firm is organized and structured;
- The strategy must be reflected in the culture and values of the organization;
- The managers must direct and control all actions and outcomes relating to the implementation of strategy.

Finally, evaluation of the performance of the chosen strategy is a monitoring process that stretches from the implementation of strategy back to the analysis. Every organization exists in a dynamic environment characterized by rapid change. Sometimes change is predictable, mostly it is not. Change affects the internal and external environment and can have consequences for strategy that may require action. It is necessary for firms to review their **strategic analysis** periodically to ensure that their current strategy still fits the options criteria and can achieve their stated aims and objectives.

2.1.3 Internal Analysis

Internal analysis is undertaken to provide managers with a detailed account of the effectiveness of the current strategies. It also reveals how efficient the organization has been in deploying its resources (physical, financial, and intellectual) in supporting its strategies. Crucially, the internal analysis should provide information that helps managers understand where the strengths and weaknesses are in the organization. The analysis also sheds light on the organization's ability to gain a competitive advantage. Other reasons for undertaking an internal analysis include:

- To identify resources, competencies and core competencies to be exploited;
- To evaluate the effectiveness of the organization of value-adding activities;
- To evaluate the performance of products; g To evaluate the performance of the functional areas of the business.

Keyword

Strategic analysis refers to an evaluation of an organization's work environment. This work environment generally defines how the organization operates its business.

Value Chain Analysis

Value chain analysis focuses on how much value an organization's activities add to its products or services compared to the costs incurred in utilizing resources in the productive process. Every product produced is the result of organizing and using resources in a particular way. There may be many different ways of organizing activities to produce a product. Value chain analysis helps managers to focus attention on configuring and co-ordinating resources on those activities that produce the product in the most efficient and effective way. Specifically, the value chain analysis determines how much value is added in the process of turning inputs into outputs. The analysis of the value chain also includes activities associated with links to suppliers, partners and customers. A typical value chain analysis is likely to include:

- A breakdown of all the activities that are undertaken by the organization;
- Identification of the core activities of the organization and their relationship with the current organizational strategy;

- Evaluation of the effectiveness and efficiency of individual activities;
- Identification of linkages between activities for additional added value;
- Identification of blockages that prevent the organization achieving competitive advantage.

The main questions managers have to address from conducting a value chain analysis are:

- What activities should the firm perform, and how?
- What is the configuration of the firm's activities that best enables adding value to the product and allows the firm to compete in its industry?

The concept of the value chain described by Porter (1985) was constructed with a manufacturing business in mind. The value of activities were concerned with the physical flow of materials including acquiring the raw materials, manufacturing the products, packaging and distributing the products, marketing the products and, finally, selling the products to customers. Ultimately, value is determined by the amount buyers are willing to pay for what a firm provides them.

That is, value is measured by how much total revenue exceeds the costs involved in producing the product.

The two principal methods of adding value are through:

- Differentiating the product or service so that customers perceive added value in the product compared to similar ones produced by competitors, and are willing to pay a higher price to acquire it;
- Reducing the cost of producing the product or service below that of competitors who produce a similar product.

The drivers of product differentiation are the policy choices made (what activities to undertake and how), linkages (within the value chain or with suppliers, partners or customers), and the timing of activities (in what sequence should the activities be undertaken). Other factors that can drive a strategy of product differentiation include the location of activities, the sharing of activities across different business units, the scale of activities undertaken, and learning within the organization. Porter and Miller (1985) assert that information technology creates value by supporting the differentiation strategies of organizations.

The Virtual Value Chain

Virtual markets refer to settings in which business transactions are conducted via open networks based on fixed and wireless internet infrastructure. The virtual value chain has a strategic role in gathering, organizing, selecting, synthesizing, and distributing

information. The characteristics of virtual markets are wide ranging and include high connectivity, a focus on transactions, and emphasis on information goods and networks. Crucially, both electronic and mobile wireless business models that use open standards to support networks can exploit the breakdown of traditional boundaries between firms along the value chain. New forms of connecting buyers and sellers in existing markets creates value and offers increased efficiencies as transaction costs diminish.

Virtual markets are also characterized by high reach and richness of information. Reach refers to the number of people and products that are reachable quickly and cheaply in virtual markets. This links into the richness of information where the management of that information leads to better-targeted efforts in satisfying demand.

E-Business Value Chain

In e-business, firms conduct their business through electronic means. Information is the raw material that organizations use to add value whether it be as a medium of communication, an asset for sale, or as a support activity in the form of marketing and transactions. The added value that can be gained from engaging in e-business and e-commerce is determined by the extent to which different value chain activities of a firm are interconnected with suppliers, partners and customers, facilitating a simultaneous flow of business information along the supply chain.

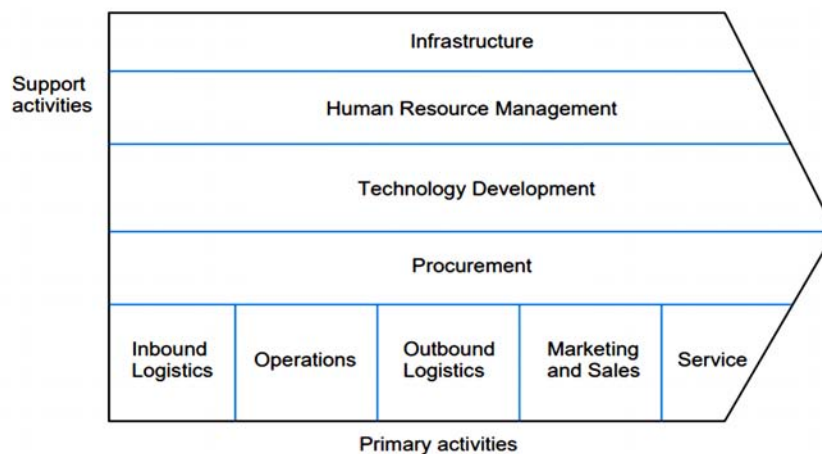


Figure 3. The value chain.

In traditional businesses the value chain refers to the physical value chain of the organization. Porter describes how the value chain uncovers the strategically relevant activities through which a firm conducts its business. The model proposed by Porter divides the activities of a value chain into primary and support activities. The primary activities directly add value to the final product and include inbound and outbound

logistics, operations, marketing and sales, and service. Support activities indirectly add value to the end product by providing support for the successful execution of the primary activities. Support activities include the firm's infrastructure, human resource management (HRM), technological development and procurement. The value chain model is illustrated in Figure 3. The internet has had a transforming effect on each of the activities comprising the value chain.

Primary Activities:

Inbound logistics

Inbound logistics are the activities associated with acquiring, storing and disseminating inputs. Value-adding activities typically involve warehousing, material handling, inventory control and returns to suppliers. The internet can add value by providing a control and monitoring facility to maximize the efficiency and speed of the process. For example, internet-based inventory control systems help managers monitor the flow of inputs, maintain stock levels to ensure continuous production and maximize capacity in warehousing.

Operations

Operations are activities associated with transforming inputs into the final product. There are many aspects to the operations element of the value chain, including manufacturing, packaging, assembly, testing for quality, and printing. Many of the manufacturing processes in modern organizations are automated with applications software used for quality control.

Outbound logistics

Outbound logistics are activities associated with collecting, storing and distributing the product to wholesalers, retailers or direct to customers. An extranet facilitates communications between the manufacturer and wholesalers, distributors or retailers. This can improve efficiency by matching demand with supply of products. Retailers, for example, can give manufacturers an up-date on their delivery needs in real-time well in advance of running out of stocks. This adds value to both the manufacturer and the retailer. This emphasizes the principle that competitive advantage can be gained not only from internal value-adding activities, but also by overlapping the value chains of other organizations along the supply chain.

Marketing and sales

Marketing and sales are activities associated with promoting and selling the product or service. The internet can play an important role in the marketing process. First, it provides another channel through which organizations can communicate with customers. As firms build their knowledge of customers, so they can target marketing campaigns much more closely to the needs of customers. This improves the efficiency of marketing and lowers the cost. Second, it adds value to customers who receive information on the range of products and services that they have traditionally been interested in buying.

The internet allows firms to use customer relationship management (CRM) systems to store, analyze and disseminate information relevant to the marketing and promotion of their products or services. Third, the internet has also provided the means of introducing more innovative forms of marketing. Permission marketing allows customers to determine what information they are sent regarding products and services. This can be done via fixed or mobile internet.

Remember

E-business strategies must revolve around understanding customer needs and preferences, offering personalized experiences, and building lasting relationships.

Service

Service relates to activities associated with providing pre or after-sales service to increase or maintain the value of the product. The internet provides an effective means of communication between organizations and customers. Customers can feed back their views on a wide range of issues including the quality of the product or service, the efficiency of delivery or the availability of other products. Some e-businesses set up chat rooms for customers to compare, review and judge the quality of products and services.

Support Activities

Procurement

Procurement relates to the purchasing of resources required to turn inputs into outputs. Key to the success of organizing procurement are the relationships formed with suppliers. Organizations are

likely to have relationships with a wide range of suppliers covering everything from components for assembly to advertising space in the media. E-procurement systems can lead to savings by linking into other sites that identify and compare prices, availability and quality of service provided by different suppliers. It also helps to increase efficiency, control and planning of the purchasing of inputs. The control function is important because it prevents unauthorized spending that can prove wasteful to firms.

E-procurement also reduces administration costs by automating orders and transactions. Efficiency savings can also be gained by limiting the number of suppliers used. Research shows that most firms prefer to transact with just a few well-chosen suppliers. As well as helping to build trust, many organizations believe that chosen suppliers are encouraged to invest in technology infrastructure that enables and supports the buyer-supplier relationship. This investment can lead to reduced costs through improving the co-ordination of information exchanges between buyers and suppliers.

Internet-based e-procurement systems can be linked to B2B electronic marketplaces (e-marketplaces). They are open systems that allow firms to reach and transact with suppliers and customers in virtual markets. Some e-businesses specialize in e-procurement services for particular industry sectors, others provide procurement information on a wide range of industry sectors. E-marketplaces support a range of mechanisms for e-procurement including e-catalogues and e-auctions allowing firms to achieve their procurement needs by comparing thousands of suppliers and choosing the best one for their purposes. E-marketplaces have been developed in many industries including steel, chemicals and cars.

However, although there have been some notable successes, the e-marketplace concept has not met expectations. The main reason for the disappointing participation rates of firms using e-marketplaces is the preferred strategy of many firms to build long-term relationships with a few trusted suppliers rather than sift through tenders from many unknown ones. Firms also found it unnecessary to deal with the reinter mediated middlemen in the procurement process – the infomediaries that organize and co-ordinate the information on the many thousands of suppliers. Instead firms contacted suppliers directly using the internet. Nevertheless, e-marketplaces retain a powerful presence in e-business and some are flourishing as a vehicle for e-procurement. For example, the e-marketplace for retailers, the World Wide Retail Exchange has some sixty members including Tesco and Marks and Spencer, and claims to have made £1 billion worth of savings for its participants since its formation in 2000.

Technology Development

Technology development is the technological support mechanism for developing new products, improving processes and monitoring performance. This involves investing in

research and development programmes that improve processes or lead to new products or extending applications of new products. Much will depend on the knowledge-sharing culture within the organization and the ability of managers to effect positive collaborative relationships that lead to value-adding technology development.

Technological development has been at the forefront of determining the evolving structure of e-business itself. (E-business technology) highlighted just some of the vast array of applications that technology offers in supporting e-business. One of the most prominent technological developments affecting e-business is the emergence of the mobile wireless internet as an additional channel for communicating and transacting business. It is worth discussing how the value chain of this newer medium differs from fixed internet networks. The mobile wireless internet value chain is more complex than its fixed network predecessor, with more players and more interactivity involved. Figure 4 illustrates the mobile wireless internet value chain. As applications increase and content providers flock to take advantage of the higher capabilities of the networks, so the complexity of the mobile wireless value chain increases. The evolution from second to third generation mobile devices adds to this process. When one includes the added standards (WAP and WML) and technologies (PDAs and cell phones) involved, alongside issues of bandwidth, provisioning, billing, voice and data applications, then an appreciation emerges of the complexity of the mobile wireless value chain.

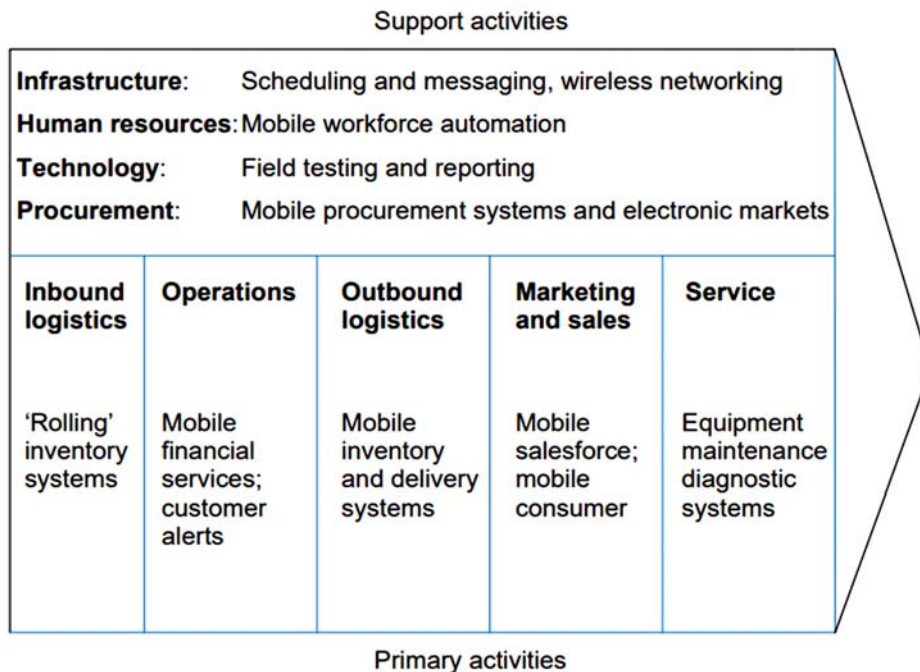


Figure 4. Mobile wireless internet value chain.

The value chain of a network differs from that of a manufacturing organization principally through the sequential characteristic of the primary activities. For the network to function efficiently each of the constituent parts of the primary activities has to operate simultaneously.

Network promotion and contract management involves marketing the network to potential users and providers, administering contracts, customers' accounts and subscriptions, and screening potential members for suitability. Mobile wireless enablement for customers adds value by the efficient use of network promotion centered round content and customer relationship management (CRM). In terms of content, value-adding activities are evident in a host of activities including advertising and branding, product and service information, personal information management, location-based services, and remote monitoring. These can lead to increased revenues, reduced costs, increased customer satisfaction and brand loyalty. Each element benefits from the increased flow of information that the mobile wireless internet provides and creates efficiencies in transactions.

Keyword

Wireless Application Protocol or WAP is a programming model or an application environment and set of communication protocols based on the concept of the World Wide Web (WWW), and its hierarchical design is very much similar to TCP/IP protocol stack design.

In the B2C arena the mobile wireless internet is providing value-adding services. This is particularly evident in the financial, travel, entertainment, news and media sectors. Content providers offer a range of services including news headlines, travel deals, hotel reservations and financial and market data. These fit neatly into the mobile wireless applications platform and provide customers with information-driven services when and where they want them. For example, banks have been collaborating with mobile phone networks to offer customers a **WAP (wireless application protocol)** mobile banking service. Customers can access their accounts via branches, the telephone, the internet, interactive television – and now via WAP-enabled phones. Using WAP phones, customers can track their finances, pay bills and access location-based services, such as the nearest automatic telling machine or branch.

Infrastructure

The infrastructure of an organization refers to the planning, finance, technology and information systems, and general

management. While other support activities focus on individual parts of the value chain, infrastructure is distinctive in that it supports all the value chain activities. All primary activities require management, planning and resourcing. As has been noted, each of the activities benefits from the use of information systems to increase efficiency and lower costs. For example, the firm's intranet provides a quick and efficient means of communicating information relevant to the various functions carried out internally. In terms of management, very often it is the leadership qualities of the Chief Executive that set the tone for the organizational culture, values and beliefs. The core values, vision and ambition of Jeff Bezos for his company, Amazon.com, permeates throughout to the organization's management philosophy.

In e-business there is a need to build an infrastructure that is conducive to blending the skills of people with technology and information systems. Managers need to either recruit key personnel who can develop the information and technology infrastructure in-house, or outsource the task to specialist technologists. The information infrastructure includes building all the databases and information systems required to facilitate communications and processes within the organization.

Human Resource Management

The function of human resource management (HRM) is concerned with attracting and recruiting people with the correct combination of skills, capabilities, values and attitudes that will add value to the organization and help achieve stated aims and objectives. HRM also involves the continuous development of staff in the form of training, education and appraisal. This helps employees fulfill their potential and maintains motivation levels, especially if development is linked to rewards such as promotion, status or financial rewards. The reward system and the working conditions within the organization largely determine the ability of firms to retain staff.

The function of HRM has become increasingly important since the development and use of the internet as a means of doing business. More and more it can be seen that competitive advantage is gained through the creation and sharing of knowledge. The recruitment of large numbers of knowledge workers has been the key to increasing performance for many organizations in the last decade. This has presented some stiff challenges for HRM departments as they seek to attract and retain the best staff. Of relevance here is the observation made by Champey and Hammer (1993) that 'an important technology first creates a problem, and then solves it'. To this end the internet can help in the process of recruitment of workers who add value to organizations.

The cost of recruiting staff can be high for many organizations, especially ones who traditionally have large numbers of employees such as the National Health Service (NHS) in the UK or the civil service. One method of ensuring that the best people

are recruited is through psychometric testing of candidates. The cost of undertaking such testing for large numbers of candidates can be prohibitive. However, the internet can help by facilitating online psychometric testing. This has been rolled out in the NHS with some 4500 potential recruits undertaking the test in a two-month period between November and December 2004. The results of the tests increase efficiency and lower costs of recruitment for organizations. It helps firms to quickly identify suitable candidates, focus resources on a smaller number of potential recruits and speeds up the process of recruitment.

2.1.4 External Analysis

An external analysis is undertaken to provide a clearer understanding of the competitive environment that firms face within their industry sector. The competitive environment comprises many factors that will influence a firm's choice of strategy. The main factors concern existing or potential competitors, suppliers and customers. One way of analyzing the competitive environment is by using Porter's (1985) five forces model of industry competition. The model comprises five key elements that form the basis for describing the competitive environment. These are:

- The threat of new entrants into the industry;
- The bargaining power of buyers;
- The bargaining power of suppliers;
- The threat of substitute products or services;
- The intensity of rivalry among competing firms in the industry.

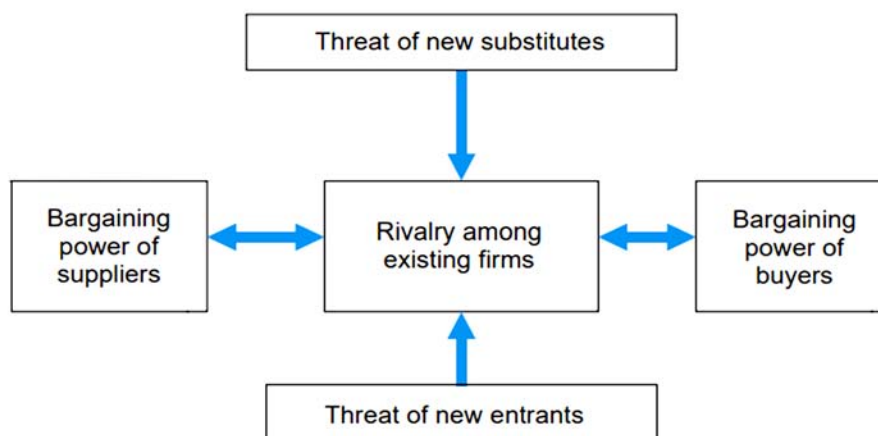


Figure 5. Five forces model.

The five forces model is illustrated in Figure 5. Each of the forces that comprise the model has an effect on a firm's ability to compete in the market. Combined, the five forces determine the potential for achieving profit within an industry sector. Consequently, it helps managers decide whether or not to stay in a particular industry. It is also the basis around which decisions on resource allocation can be made. The five forces model is also important in helping firms achieve a competitive advantage by focusing analysis on areas where the firm can improve its competitive position.

The development and use of the internet for business purposes has presented a number of strategic challenges to managers as they contend with a rapidly changing competitive environment. This can be seen in the speed of change in technology, the shifting patterns of demand, alterations to the relationship arrangements with suppliers, partners and customers, and the global effects of increasing connectivity. To gain a competitive advantage in such a dynamic environment requires managers to develop strategies to exploit the opportunities that new information technology can facilitate. Firstly, however, managers need to understand the competitive environment. Using the five forces model in the context of e-business can shed light on the competitive environment in the new economy.

2.1.5 Threat of New Entrants into the Industry

The threat of new entrants into an industry refers to the possible reduction in profitability for existing firms as a result of increased competition by new rivals. The existence and effectiveness of entry barriers as a deterrent and the competitive response of incumbent firms will determine how successful potential new rivals are in entering the industry. There are five main entry barriers: capital requirements; economies of scale; product differentiation; switching costs; and access to distribution channels. These can be used to analyze entry conditions in the e-business competitive environment.

Capital Requirements

One of the characteristics of e-business is the low cost of entry to the industry. It costs relatively little for firms to set up a web page and introduce applications systems that facilitate communications and transactions with suppliers, partners and customers. The sunk costs of investing in a web presence are significantly lower than those associated with setting up traditional bricks-and-mortar firms because there is no need for high expenditure on buildings, large numbers of staff, printing and administrative costs or shop fittings.

The low cost of entry has resulted in many thousands of businesses setting up in cyberspace and using the internet to gain a market share by promoting and selling their products online. Although the crash of 2000 saw many so-called dot.coms fail

and exit the market, the growth in the number of firms using the internet for business purposes has been growing year on year ever since. Incumbent firms need to create barriers to entry through means other than start-up costs.

Economies of Scale

Firms in e-business can create a barrier to entry through economies of scale. This is where the costs of production are spread over the number of units produced. The greater the volume of units produced the lower the average costs of production. New entrants would have to match the scale of production of incumbents in order to compete effectively. This can be difficult if incumbent firms have been able to build customer loyalty and create switching costs. These ensure their products are likely to remain in high demand by a critical mass of loyal customers who provide repeat business. In e-business sectors where economies of scale is the criterion for gaining competitive advantage then the threat of entry will be low. This can be seen in the online provision of financial information and information on stocks and shares movements. Firms who gain exclusivity of access to such information can package and sell it at high volume and low cost to many different markets around the globe. The cost of disseminating the information is low and the negligible marginal cost of production gives scope for considerable economies of scale that potential entrants would find almost impossible to match.

Product Differentiation

Established firms can create a barrier to entry by differentiating their products or services. This may entail building a strong brand name and image, creating added-value designs and applications of products, or providing the customer with superior service such as access to customized or personalized products. A new entrant would have to overcome the customer loyalty that incumbent firms will have built through exploiting product differentiation. The first or early movers in e-business will have had an opportunity to exploit their market share by building a strong brand name and creating ubiquitous web presence that acts as a marketing and promotional tool for their products or services. Established firms are more likely to have been at the forefront of developing applications and software that underpins their e-business venture. This can also be a differentiating feature as it facilitates a wider range of services available to customers, thereby further increasing brand loyalty.

Switching Costs

Customers incur a cost when switching from one product to another. This cost can be financial if there is a contract broken, but more likely the cost will be reflected

in the time, energy and administration of switching allegiance. E-businesses can exploit switching costs to bolster brand loyalty. For example, customers may have to undertake a process of entering details and passwords to gain initial access to a website. Customers will be reluctant to undertake the whole process again to switch to a rival unless there are significant benefits to be gained from doing so. Switching costs act to 'lock-in' customers to a website. New entrants would have to offer the established firms' customers sufficient incentives to persuade them to switch. This is likely to prove costly, at least in the short term, while they try to establish a critical mass of customers. Where switching costs are high the threat of entry will be low.

Access to Distribution Channels

Fulfilment is the ultimate obligation of organizations that offer products or services for sale. Delivering the product or service to customers requires effective logistics management and access to distribution channels. Unless organizations are selling information based products or services, such as financial information, music downloads or providing gambling opportunities, then firms will have to ensure that the physical product is physically delivered to the customer. This is where the new economy meets the old economy. Customers can easily access a huge array of products and services online and undertake the transaction process in quick-time. However, access to the internet has ratcheted up expectations on delivery times. Customers' expectations place onerous demands on firms engaged in e-business and e-commerce. Consequently, organizations have been competing vigorously for access to distribution channels that can help them match or exceed customer expectations.

Access to distribution channels can provide a formidable barrier to entry. Successful firms in e-business have been able to establish relationships and form partnerships with distributors to ensure that their products reach customers within the timescale promised. This is vital to maintain customer loyalty, ensure repeat business and achieve performance targets. The world's most prominent delivery service organizations, such as Fedex, UPS and DHL, are heavily involved in the supply chain of e-business and e-commerce and have formed formal partnerships with a large number of firms selling products online.

The issue of access to distribution channels is less relevant to firms who sell information-based products or services. These firms can directly send their products or services to the customers via the internet. This has huge cost advantages because there are no distribution costs, the costs of sending the material are low, and customers gain almost instant delivery. All firms can easily distribute information-based products to customers. With no entry barriers in distribution, firms seeking competitive advantage may have to rely on exclusive rights to information, or on differentiating the information

in such a way that consumers perceive added value, or on selling the product or service at least cost.

2.1.6 The Bargaining Power of Buyers

The profitability of an industry can be eroded when buyers exert power over suppliers. This usually takes the form of forcing firms to lower prices or adding costs by insisting on better quality. The bargaining power of buyers depends on certain conditions. Key issues to consider are:

- How concentrated the buyers are or if they buy in large volume;
- If the products bought are undifferentiated buyers will seek to ensure suppliers compete on price;
- The existence of switching costs 'locks-in' the buyer and reduces their bargaining position;
- If buying firms have low profits they will seek to lower the cost of buying;
- If firms who are buyers become integrated backwards along the supply chain then they can improve their bargaining position;
- If the products sought make no difference to the buying firm's products or services.

Large-volume buyers can wield significant power in the market. The internet provides a communications channel for buyers to coalesce and exert their combined economic influence on suppliers in order to secure better deals. Some firms have become specialists in organizing and co-ordinating buyer groups to gain economic benefits from aggregating their market power. However, buyer aggregator business models have not proved to be successful among consumers. Even so, individual consumers have greater market knowledge because of the internet and they can use this to their advantage. Price comparison sites and the huge array of product information available means they can enter into negotiations with suppliers in a better position than previously existed in traditional markets.

2.1.7 The Bargaining Power of Suppliers

The power of suppliers depends on the nature of competition in any industry. The internet has both positive and negative effects on supplier power. On the positive side, the internet provides suppliers with access to a larger number of customers, both B2C and B2B. However, two main factors limit supplier power. First, the ease of entry into the e-business industry increases competition and, second, the empowerment of

customers who have access to market information, such as price comparisons, makes customer retention more difficult.

Suppliers can try to increase their bargaining power by differentiating their service through specialist procurement systems or by using technology to improve their products or services. For example, Amazon.com has developed its applications software, such as the One-Click purchasing technology, to deal with the logistics of bringing products and services to customers quickly and efficiently. The company is in the logistics business and it has built its competitive advantage by being a first-mover in developing a logistics infrastructure capable of gathering, organizing, co-ordinating and disseminating information to and from customers, other suppliers and partners. However, it is difficult for most suppliers to achieve competitive advantage through differentiating the service because of the inevitable imitation of the business model, or widespread diffusion of the technology used to create the advantage across the industry. These tend to erode any advantage gained by any one firm.

Some suppliers may be able to improve their bargaining power at the expense of other suppliers. If customers use the internet to deal directly with manufacturers this has the effect of disintermediating some suppliers from the supply chain. The manufacturer as a supplier of products direct to customers can achieve cost savings by dispensing with intermediaries and negotiating more favorable deals with customers based on their increased power in the supply chain. However, customers too will seek benefits from dealing directly with manufacturers and so a balance needs to be struck between the two parties to ensure mutual benefits persist. The increase in bargaining power of suppliers in this instance would only continue so long as customers perceive an added value of dealing directly with manufacturers.

2.2 COMPETITIVE STRATEGIES FOR E-BUSINESS

Competitive strategies are the courses of action that firms choose to implement in order to achieve stated objectives and gain a competitive advantage. Porter (1980) developed a generic strategies model designed to help firms overcome the constraints evident in the five forces and to achieve better performance than rivals in their industry sector. The generic strategies are cost leadership, differentiation and a focus strategy. Porter recommends that firms choose either differentiation or cost leadership and stay consistent with that choice or be 'stuck in the middle'. However, there are some firms who operate both generic strategies simultaneously. For example, some car manufacturers, such as Honda, reduce costs through effective use of technology for manufacturing, communications, logistics and marketing, but they also differentiate their products to narrowly defined market segments. The key elements that comprise the generic strategy model as illustrated in Figure 6.

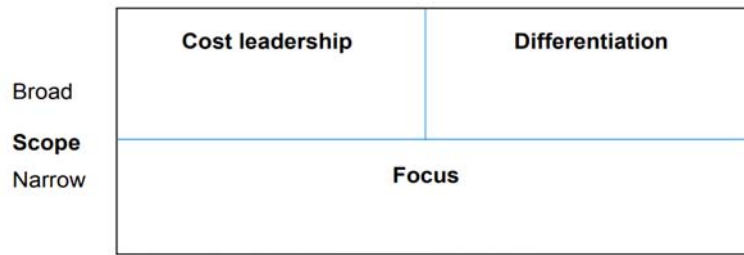


Figure 6. Generic strategy model.

Cost Leadership

Firms who achieve competitive advantage through overall cost leadership are able to create a lower-cost position compared to their rivals in the industry. To achieve this normally requires firms to reduce costs throughout all activities in their value chain. Firms who adopt this generic strategy use their experience and learning in order to seek **cost reductions**. This may take a number of different forms including seeking economies of scale in production, minimizing marketing and promotional activities, controlling overheads, and imitating rather than developing new products.

Keyword

Cost reduction is the process of decreasing a company's expenses to maximize profits. It involves identifying and removing expenditures that do not provide added value to customers while also optimizing processes to improve efficiency.

Differentiation

A generic strategy based on differentiation requires firms to create differences in their products or services that set them apart from those of their rivals. These product differences need to be perceived by customers as offering added value. Advertising, marketing and promoting brands play a key role in differentiating products and services. This helps to improve the brand image and prestige of the firm. Other methods used for differentiating products and services include creating products based on superior technology; innovation and creativity for unique product features; superior customer service; and superior supply chain management.

Focus

A focus strategy is where firms choose a segment of a market to target sales of their product or service rather than aiming at numerous markets or the whole market. Firms may focus on a particular group of customers based on distinct profiles and target their products or services at that market. Once the market segment has been identified firms will then operate either a cost leadership or differentiation strategy within that segment.

There are some key benefits that can accrue to firms adopting a focus strategy. First, it is less costly than targeting many markets or a whole market. Second, firms can build specific knowledge and market expertise based on the particular characteristics of a market segment. The firm can use this knowledge to specialize in meeting the needs of customers in the market segment. It also makes entry to a new market less costly and less complex.

2.3 E-BUSINESS STRATEGY: IMPLEMENTATION

E-business strategy implementation is a crucial phase in the process of transitioning a company's digital vision and goals into concrete actions and outcomes. Successful implementation ensures that the organization can effectively leverage digital technologies to achieve its objectives, whether they are related to sales, customer engagement, cost reduction, or innovation.

2.3.1 Strategic Controls

Once a strategy has been formulated, the next stage is implementation. Strategic implementation is the practical measures taken to execute a strategic choice. However, in order to implement a strategy successfully, firms need to put in place effective strategic controls that link strategy with performance. Traditionally, firms undertook the strategic control function after the strategy had been formulated and implemented. The strategic control constituted the evaluation of performance against pre-determined targets. Contemporary thinking in management emphasizes the integrated approach to strategic controls. Figure 7 illustrates this approach.

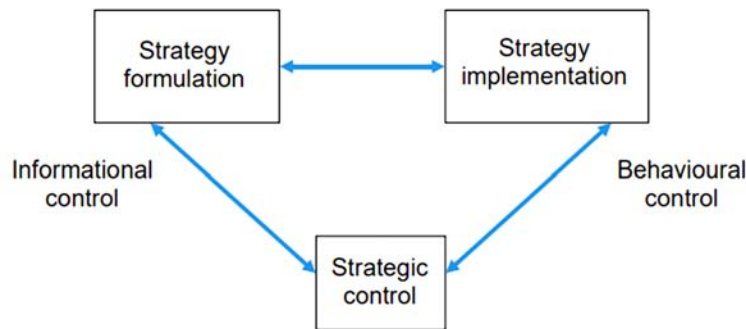


Figure 7. An integrated approach to strategic controls.

Two key elements form the strategic control process: informational control and behavioral control. Informational control focuses on monitoring the effectiveness of linking what actions have been decided upon with those that are actually carried out. Information control helps managers determine the strategic fit between the firm's objectives and the chosen strategies. Consequently, it is an on-going process of information gathering and analysis to improve organizational learning. Simons (1995) highlights four key characteristics that determine effective information control as part of a strategic control system. These include:

- A focus on constantly changing information that has potential strategic importance;
- The information is important enough to warrant frequent and regular attention of managers at all levels of the organization; Strategy formulation
- The information generated is best interpreted and discussed by face-to-face meetings of superiors, subordinates and peers; g The control system is a catalyst for on-going debate about underlying data, assumptions and action plans.

Behavioral control focuses on the extent to which the actions undertaken are correct and meet set performance standards. Traditionally, firms placed an emphasis on rules, regulations and procedures to control behavior and achieve aims and objectives. However, contemporary management thinking has a focus on culture and reward systems as a basis of achieving these. The catalysts for this have been the rapidly changing business environment and the development of technology that speeds up business processes. There is a need for firms to be more agile, flexible and responsive to change (or proactive in influencing change).

2.3.2 Organizational Learning

Implementation of strategy requires firms to effectively leverage organizational learning. Organizational learning occurs through experience, building and sharing knowledge,

expertise, ideas and insights. Different types of organizational learning can be identified. Argyris (1992) developed the concept of 'double loop learning' where learning does not simply involve finding solutions to immediate problems but also develops principles that inform and determine future behavior. Senge (1990) identified 'adaptive learning' and 'generative learning' in leading organizations. 'Adaptive learning' means changing as a result of changes in the business environment. 'Generative learning' means building new competencies or having the ability to create new competencies for leveraging existing competencies in new competitive environments.

Remember

Organizational learning should also create a cultural environment that embraces change and seeks continual improvement.

Organizational learning is linked to leadership, organizational structure and culture. Effective leadership should entail creating a vision for the firm that incorporates the learning process. Leaders should also set the tone for developing an organizational culture around learning. The key features of a learning culture are curiosity, experimentation, freedom to explore new ideas, creativity, innovation and sharing of knowledge.

One way of influencing culture is to build an organizational structure that facilitates the key features of a learning culture. This may include organizing work schedules and projects around small groups or teams of workers, empowering those workers to take charge of their project and creating an integrated and free-flowing communications system that incorporates internal employees and external suppliers, partners and customers. Figure 8 illustrates the three key elements of a learning organization.

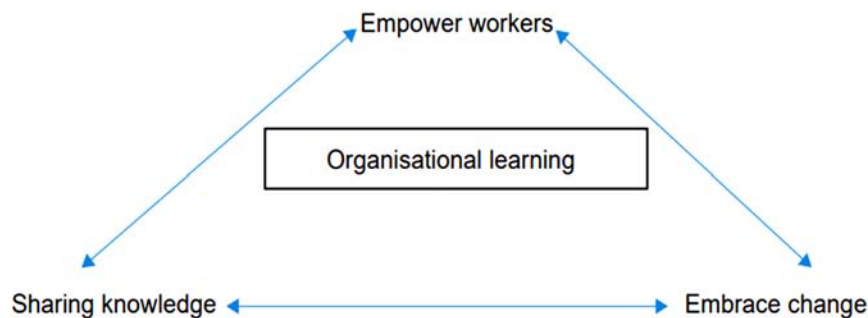


Figure 8. Three key elements of organizational learning.

There is value to be derived in a learning organization by developing an organizational structure that comprises a series of self-directed teams of workers. The individuals that make up the teams are likely to have different backgrounds, skills and experiences that, when combined, add value to the process of achieving objectives. Tasks that were previously the responsibility of managers higher up a traditional hierarchical structure are now incorporated into the work schedules of teams of workers. This empowerment of workers entails giving them the freedom, resources and decision-making authority to organize, co-ordinate and manage their own projects. These tasks may include organizing training, work schedules, rewards, safety, and the co-ordination and communication with other teams. Team members are given the scope to carry out these duties and responsibilities, thereby reducing or eliminating the need for middle management.

The co-ordination and collaboration that is a necessary part of a learning organization is facilitated through an integrated system of electronic communications. Workers benefit from access to a wide range of information on their own project as well as other projects. They have access to information at organizational level and with external suppliers, partners and customers. This helps to identify problems and opportunities quicker, contributes to better and faster decision-making, and generates a greater learning capacity. Integrated information systems enable the gathering and dissemination of a large volume and range of information that can be built into databases covering items such as industry, organizational, financial, customer, demographic and supplier information. The integrated approach is vital in knowledge-based firms where the sharing of ideas, solutions and knowledge forms the basis of creating a competitive advantage.

First- and Second-Movers

Many of the first-movers in the e-business environment started with a leader who communicated a vision based on learning. When the internet was commercialized for business purposes in the mid 1990s it provided a new channel of communication and transaction. This presented opportunities and challenges for firms. One of the challenges was to learn quickly from the experience of using the internet for e-business and e-commerce and channel this learning into adding value to activities such as technology applications, branding, customer relationships, internal processes and supply chain management. Some firms such as Priceline.com and Amazon.com were successful in leveraging their organizational learning to build a sustained competitive advantage. Others, such as boo.com, failed to transfer their learning into a strategy that sustained a competitive advantage. Some firms adopt a strategy of 'wait and see' and benefit from second-mover advantages. That is, they deliberately delay entry to the industry until incumbent firms have put in place strategies that they can learn from.

Cost Advantages of a Learning Organization

There are also cost advantages associated with a learning organization. The learning curve points to the cost advantages that are derived from accumulating knowledge, experience and expertise. Learning occurs at both the individual and organizational levels. Workers' performance is improved through building and using their experience to improve the efficiency and quality of their activities. At the organizational level, learning can improve value chain activities. For example, Tesco.com use their customer relationship management systems to learn about the types of customers that use their online facilities, what they buy, when and in what quantities. The information is the basis of gaining knowledge, knowledge forms the basis of learning and the learning is transformed into improving their marketing campaigns, supply chain management, inventory and delivery services.

Organizational learning can result in lower costs, increased efficiency and better quality service. Figure 9 illustrates a learning curve.

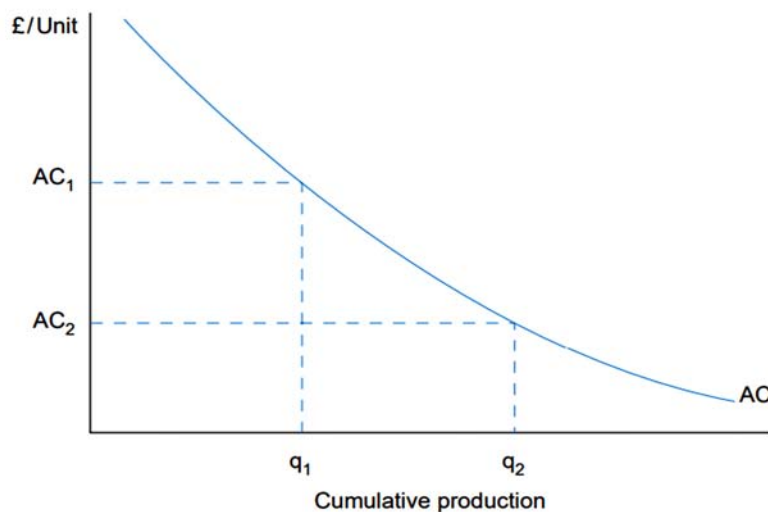


Figure 9. Learning curve.

The extent of the benefits derived from learning is expressed in the slope of the learning curve. In this example the slope for a given production process is determined by the extent to which average costs decline as cumulative production increases. Using cumulative output better reflects the learning effects rather than successive increases in output. In Figure 9 the firm has a cumulative output of q_1 with an average cost of production AC_1 . If the firms' cumulative output increases to q_2 with an average cost of AC_2 then the slope of the learning curve is AC_2/AC_1 .

2.3.3 Organizational Culture And E-Business

Organizational culture is the set of beliefs, values, norms of behavior, and attitudes shared by members of a firm that influences individual employee preferences and behavior. These bases of culture are very often difficult to observe and measure. Nevertheless, culture plays an important role in determining performance by providing a guide to employee behavior that is not governed by contractual duties but that, nonetheless, constrains and informs the managers and employees. There are many factors that determine organizational culture. Some of the more prominent ones include:

- The vision of the person or people who established the organizations;
- The historical precedence set by previous generations of managers and workers;
- The type and range of activities a particular firm undertakes;
- The nature of interpersonal relationships within the organization;
- The management style: autocratic, consensual, participative;
- The control mechanisms: freedom of association and movement, monitoring;
- The reward structure: financial, promotion, status, freedom, peer acceptance;
- The level of technological dependence;
- The geographical location: national and regional characteristics.

Very often it is difficult to pinpoint exactly what determines the organizational culture because of the complexities involved in the combined effects of all the key elements that influence the culture. Nevertheless, it is important for managers to understand and influence culture because it plays an important role in achieving organizational aims and objectives. Organizational culture influences:

- The ability to recruit staff with key skills and experience;
- The motivation and morale of workers;
- The level of output;
- The quality of work and output;
- Industrial relations;
- Attitudes, beliefs and values of managers and workers;
- Innovation, creativity and the sharing of knowledge.

Managers in e-business are concerned as to whether the organization's culture affects its performance. Linking the two can be problematic since, although culture may be associated with high performance, it may not necessarily cause high performance. A firm may be seen as having a strong culture, combining customer service, employee development and professional standards that contribute to its success. However, if it has strong competitive practices that result in high earnings, then this may have created

an environment where a strong culture could develop and persist. In this instance it remains ambiguous as to whether the culture caused the firm's high performance or vice versa.

Barney (1986) describes conditions under which culture can be a source of sustained competitive advantage. He concludes that the culture must:

- Be valuable to the firm;
- Be particular to the firm. If the culture is common to most firms in the market it is unlikely to lead to relative competitive advantage since most rivals will share the same cultural attributes;
- Be inimitable. If a culture is easy to imitate, other firms will begin to emulate it, thereby undermining any competitive advantage gained by the firm that first developed it. The more complex the set of factors that determine culture the more difficult it is for rivals to imitate it. However, complexity also makes it difficult for managers to modify the culture of the firm to significantly improve performance.

One of the key determinants of creating a competitive advantage based on organizational culture in e-businesses is the way in which knowledge is shared among workers. Traditionally, businesses have operated on the basis of rewarding individual performance rather than around principles of collaboration and sharing. A feature of traditional businesses has been a culture where employees recognize knowledge as providing them with a strategic advantage. These knowledge-based advantages are protected rather than shared. The task facing managers in modern knowledge-based industries is to create an environment where the organizational culture is built around employee recognition that shared knowledge rewards the group as well as the individual. This enhances teamwork, creates a mutually supportive working environment and boosts efficiency. To create a collaborative and knowledge sharing culture requires a specific organizational design built around core values that underpin sharing, alongside an implementation strategy based on incentives for participation in achieving organizational goals. Managers can rate performance based on each employee's co-operation and participation in the knowledge sharing working environment. Rewards, whether financial, status orientated or peer acceptance, can be linked to the level of participation observed. Meanwhile, managers need to be constantly emphasizing the benefits of knowledge sharing.

There are practical measures that managers can take to shift the culture of a firm towards that which has knowledge sharing at its core. Two key measures are:

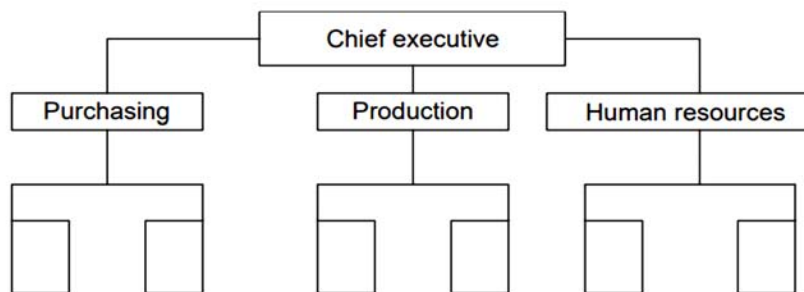
- Setting aside specific time slots for learning; practicing knowledge management and knowledge sharing such that employees witness the real benefits that can be gained;

- Committing to developing and implementing the culture throughout the organization and not just in some wellchosen, isolated departments. The ultimate goal is for collaboration and the sharing of knowledge to become the dominant culture within the organization, so that it becomes a naturally occurring process.

2.3.4 Organizational Structure and E-business

Successful implementation of strategies requires an appropriate organizational structure to determine how activities and tasks are divided, supervised and co-ordinate. An organizational structure acts as a controlling mechanism by formally detailing lines of authority, span of control, responsibilities and duties, the allocation of tasks and the different levels of management within the organization. Traditionally, large complex organizations were characterized by tall, hierarchical structures with an emphasis on rules, regulations, procedures and clearly defined levels of authority. Figure 10 outlines traditional types of structure.

Functional structure



Divisional structure

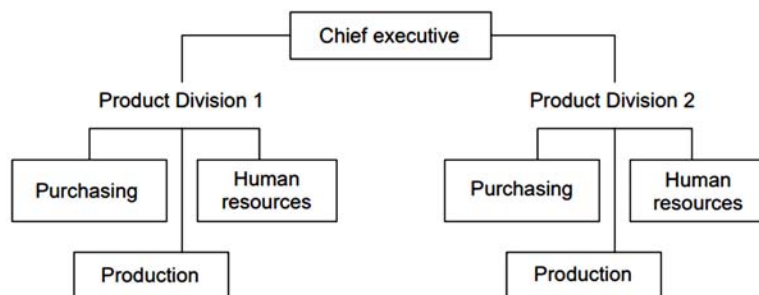


Figure 10. Two traditional types of organizational structure.

Teamwork

Traditional structures have largely been superseded by a trend towards adopting flatter structures where more people are involved in the decision-making process and communications are more fluid. Modern organizations are typically characterized by multi-skilled staff, teamwork, geographical dispersion of functions, and fewer layers of management. The **organizational structure** has to reflect these changes and facilitate the co-ordination of activities within the new working environment. One of the key trends in recent years has been for organizations to increase employee involvement through the creation of teams.

Since the development of the internet in the mid 1990s employees have gained greater autonomy in managing their own work. Some have evolved into problem-solving teams where employees from the same department meet regularly to discuss and solve problems and seek to improve the quality and efficiency of their activities. Problem solving teams can further evolve into self-directed teams. This consists of a group of employees (usually between 5–20) who are multi-skilled and who rotate jobs to produce an entire product or service. The team itself directs, controls and co-ordinates all the activities required to produce the intended output. They also monitor performance, manage behavioral aspects and determine the reward system.

Keyword

Organizational structure is the method by which work flows through an organization and allows groups to work together within their individual functions to manage tasks.

Virtual Teams

Information technology has opened up opportunities to expand the concept of teamwork to that of virtual teams. A virtual team uses information technology and telecommunications to facilitate collaboration between geographically dispersed members who work on the same project. Virtual teams are usually made up of employees from the same organization but can consist of other workers from partner organizations such as consultancies or suppliers. Virtual team members access a wide range of communications technologies including e-mail, video-conferencing, internet, intranets, extranets, mobile wireless technologies and collaboration software for generating cross-functional information.

Virtual teams can be brought together either permanently or for a specific project then disbanded. One of the key characteristics of virtual teams is the flexibility it offers. For example, the leadership of the virtual team can change according to the mix of managerial and technical skills required at different stages of the productive process. Team members may join for a period of time to undertake specific tasks and then leave the virtual team when their contribution to achieving aims is completed. A virtual team is a dynamic arrangement designed to maximize efficiency in the use of resources. The critical success factors in virtual teams include the:

- Ability to quickly assemble the correct mix of skills for each stage of the project;
- Building of trust between all members;
- Creation of a knowledge sharing culture;
- Ability to apply technology to optimize communications.

Global Teams

Virtual teams can be comprised of workers from around the globe. A global team brings together people from many different countries and cultures and their activities span many different countries. Virtual global teams comprise members from many different countries who remain geographically dispersed and who communicate electronically. The biggest challenge for managers who organize virtual global teams is to co-ordinate activities around significant time, language and cultural differences. Different countries may use different technological standards and there are likely to be considerable differences in work-based culture regarding authority, decision-making, timeliness and etiquette. The critical success factors for virtual global teams include the:

- Recruitment of skilled and culturally sensitive staff;
- Communication of organizational objectives;
- Communication of roles and responsibilities to each team member;
- Provision of training and education;
- Implementation of a robust and reliable integrated communications system.

The Boundaryless Organization

The development of information technology (IT) in general, and the internet in particular, has played an important role in determining the shape and character of modern organizational structures. IT has a strategic role to play in helping firms increase efficiency and gain a competitive advantage. The organizational structure can be designed around the IT infrastructure. For example, the concept of the network organization is based on the ability of staff to use technology to communicate with each other, collaborate as part of a team and coordinate activities from different locations. The

internet provides a mechanism for facilitating a global network of communications. This has had the effect of broadening the span of control of managers, allowing them to co-ordinate and control more workers spread over a wider geographical area.

The development of a global network of communications has redefined the boundaries facing organizations when conducting business. Traditional organizations have boundaries that create barriers against their ability to compete. These can be external or internal barriers. An external boundary is the geographical constraint of being physically distant from markets and customers. Internally, firms face barriers created by the hierarchy that characterizes their organizational structure. These can be horizontal boundaries created by work specialization or the formation of departments, or they can be vertical where there is separation between different levels of workers and management.

The boundary less organization is one where the structure is not defined by, or limited to, the boundaries imposed by traditional structures. The main advantages that organizations gain from a boundary less structure are that it:

- Improves the scope for co-operation, co-ordination and collaboration among the functional areas that comprise the organization;
- Allows greater knowledge sharing across the organization;
- Allows organizations to respond more quickly to changes in the environment;
- Helps co-ordination and collaboration with partners, suppliers and customers;
- Empowers staff members and encourages a culture of innovation and creativity.

A typical example is that of a network organization where vertical, horizontal and inter-organizational barriers are broken down to create an organization that is more flexible and adaptable to rapid changes in the environment. Firms engaged in e-business can benefit from an organizational structure based on the concept of the network organization.

The Network Organization

A network organization is one that outsources or subcontracts some of its functions to other organizations and co-ordinates their activities from its own central headquarters. Figure 11 illustrates the network organization structure. The hub firm in the network organization is where the strategic decisions are made and where the strategic controls are co-ordinate and monitored. The network organization consists of the hub firm around which numerous subcontracted firms perform functions, such as design, accountancy, distribution, transportation, etc. The specialist organizations are connected to the central headquarters electronically. The IT infrastructure and the internet facilitate the

exchange of a vast array of information between the hub firm at central headquarters and the specialists firms.

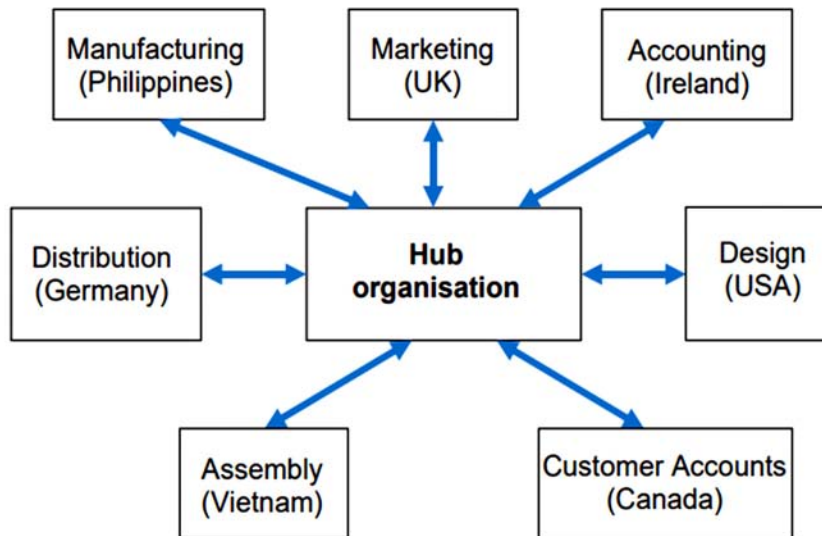


Figure 11. Network organization structure.

A robust and efficient IT infrastructure allows the network of participating organizations to operate as if they constitute one seamless organization. The rationale behind adopting a network structure is that it allows an organization to commit resources to its core activities and contract out other activities to specialists. There are a number of important advantages that network organizations have. These include:

- No geographical constraints on outsourcing functions;
- Increased competitiveness on a global scale;
- Flexibility in workflows; no permanent staff undertaking non-core activities;
- Flexibility in dealing with changes in market conditions; can outsource work according to need;
- Cost savings in minimal supervisory or administration staff.

Hub firms necessarily relinquish some of their control when they outsource functions to geographically dispersed organizations and this can be a drawback. Where control is deemed important to the hub firm, then this type of arrangement would not be appropriate. The loyalty of employees is likely to be weakened because of the distance from central headquarters and the perception that the hub organization is a client not an employer. There may also be economic drawbacks to becoming a network organization. If one of the subcontractors under-performs or becomes bankrupt, this

will have an economic impact on the hub organization because of lost work and the time and cost of making alternative arrangements. Nevertheless, network organizations have flourished since the development of the internet for business purposes. The network effect has also been extended to create other forms of business arrangements based on collaboration – most notably the virtual organization.

The Virtual Organization

The network organizational structure can be extended to create a virtual organization. Virtual organizations consist of groupings of units of different organizations that have formed a temporary partnership to achieve the same strategic objectives. A virtual organization brings people together temporarily to exploit specific opportunities, and then disbands them when the objectives are met. Consequently, this type of organizational arrangement is a continually evolving network of independent companies. The members of a virtual organization achieve more by pooling resources, skills and knowledge than any one individual organization could achieve operating alone. Collaboration can bring long-term gains for each of the participants.

The development of the internet as a means of conducting business has proved a catalyst for the growth of virtual organizations because it is an ideal medium for communicating and co-ordinating collaborative business activities at a significantly lower cost than traditional bricks-and-mortar firms could achieve. The main characteristics of a virtual organization include:

- No physical structure;
- Emphasis on knowledge creation and sharing;
- Reliance on electronic communications;
- Geographically dispersed and mobile workforce;
- No organisational boundaries;
- Temporary working relationships.

A virtual organization typically employs few people since its approach is to hire in the skills it needs from specialist organizations. This saves on overheads and administration costs relating to employing a permanent workforce. Savings can also be made on the costs of providing in-house training for staff. However, the main reason firms join virtual organizations is to be able to compete effectively on a global scale by exploiting opportunities for collaborating with other organizations in complementary activities that achieve mutual benefits. The success of virtual organizations depends largely on what each participant can offer to the collective group. Each participant contributes what it does best – its core competencies. Each firm can then mix and

match the range of core competencies available to add value and achieve strategic objectives. The advantages of a virtual organization can be summarized as:

- Offering the scope for firms to access a wide range of skills, experience and knowledge;
- Increasing the flexibility and responsiveness of firms to meet changes in the environment;
- Helping firms grow by allowing them to compete on a global scale;
- Increasing competitiveness by reducing overheads and the cost of employing a large workforce.

There are some disadvantages associated with virtual organizations and the main one centers on the loss of direct control. Collaboration with partners necessarily means relinquishing some control in favor of interdependency. Consequently, there is a need for strong management to maintain a focus on objectives and a high standard of contributions from participants. Managers of virtual teams must also be flexible and adaptable to deal with constant change as groups form and disband quickly. Virtual organizations can easily fail if managers are unable to communicate the objectives to each successive group of participants or fail to motivate them effectively. Since the medium for carrying out these management tasks is electronic, the scope for misunderstanding, confusion or conflict is increased.

2.4 CHANGE MANAGEMENT

Change management refers to major alterations to an organization's processes, structure, technology, staff or culture. Change management is necessary when firms seek to improve their current performance through changing their infrastructure and internal processes and activities. Usually, change management is necessary when a performance gap emerges. That is, when there is a disparity between existing and desired performance levels. To effect change management it is necessary for managers to understand what forces drive change and what forces restrain change. These form the basis of a force-field analysis.

2.4.1 Force-Field Analysis

Force-field analysis is a method of looking at change proposed by Kurt Lewin. The analysis is based on the competitive forces that drive change and restrain change. Lewin (1952) suggests a three-step approach to understanding these forces. These are:

- Unfreezing: finding ways of making the need for change so clear that most people will understand it and support it.
- Changing behavior patterns: bring to bear new attitudes, values and behavior that become the dominant culture within the organization.
- Refreezing: introduce supporting mechanisms that consolidate and maintain the new behavior patterns.

These steps are used to form the basis of the force-field analysis. Figure 12 illustrates a force-field analysis.

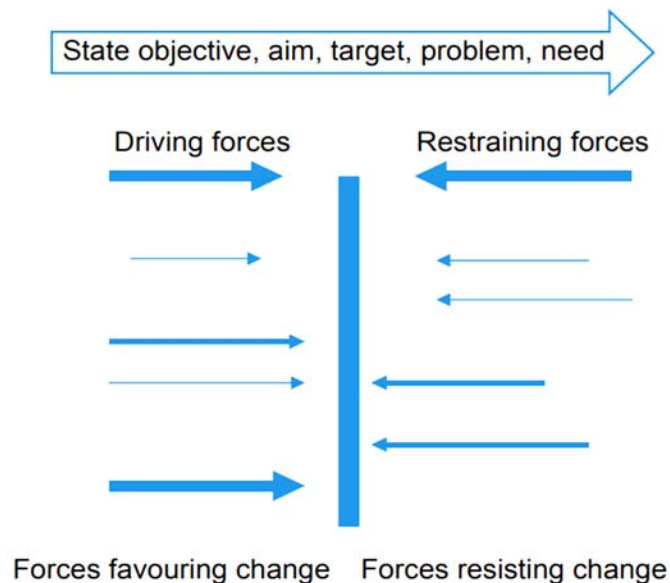


Figure 12. Force-field analysis model.

Each arrow is labelled and the arrow size reflects the strength of the force, either a driving force or a restraining force. The number of arrows reflects the breadth of the force. The length of the arrow represents the length of time taken to put into operation a driving force or overcome a restraining force. Managers can use a force-field analysis to complement market information that illustrates the competitive position to employees in an effort to reinforce the need for change. This can be the catalyst for changing behaviors that form the basis for improved performance.

Refreezing can be achieved by creating a culture of continuous change whereby innovation and creativity can flourish. This can be achieved in a number of ways including developing teamwork, emphasizing peer group acceptance as part of the reward structure, empowering workers to take responsibility, and authorizing workers to make decisions. Eventually the new culture means that workers become proactive in

the change management process. Many firms seek to understand the force-field that drives or restrains their efforts to achieve their aims. In e-business there are many such forces evident. Figure 13 outlines some typical driving forces and restraining forces that affect firms seeking to engage in e-business.

Did You Know?

The roots of change management can be traced back to early management theories developed by pioneers like Frederick Taylor and Henri Fayol. They focused on principles of scientific management and organizational efficiency but didn't explicitly address change as we understand it today.

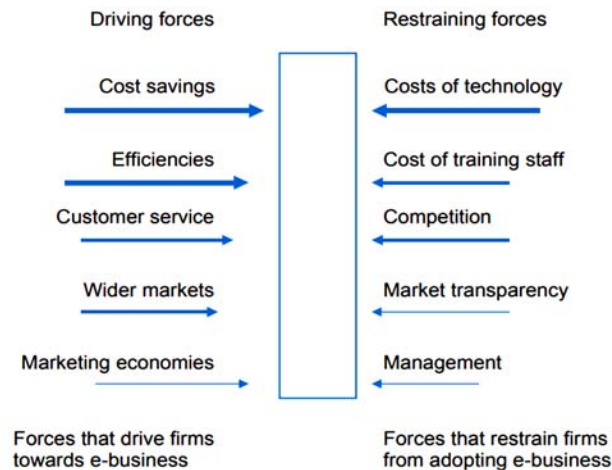


Figure 13. Force-field analysis for an e-business.

2.4.2 Key Aspects of Change

The key factors to be taken into consideration when undertaking change management in e-business include the:

- Scope of change required;
- Timeframe for undertaking each successive stage of change;
- Financing of change;
- Identification of resources required for implementing change;
- The resources to be retained and the procurement of new resources;
- Design of the most appropriate organisational structure;
- Human resource management implications of introducing large-scale change;

- Level of technology required for effective e-business change;
- Level of risk and the likely benefits involved in implementing change management.

There are a number of important aspects of change that firms have to address when undertaking change management. In e-business, technology infrastructure plays a prominent role in determining efficiency and performance. An audit of the performance of technology informs the need for the change. Just as strategy is a process, so the implementation of technology must follow a systematic pathway. For example, there is a series of implementation activities that are undertaken to transform a newly acquired or developed information system into an operational system for end-users. Figure 14 illustrates implementation activities for the rollout of an information system.

The implementation process can only begin once a thorough evaluation of appropriate activities has taken place. This ensures that the correct hardware and software has been selected, that the systems have been rigorously tested, that an efficient user documentation system has been developed and that all staff have received suitable training. The implementation process also involves the conversion from a previous system to the new system. Conversion methods smooth the transition from old to new systems and include:

- Parallel conversion: old and new systems run in tandem until the development team and management agree to switch permanently to the new system.
- Phased conversion: only parts of a new system or only a few departments, offices, or business units are converted at a time.
- Pilot conversion: one department or business unit acts as a test site for conversion.
- Plunge conversion: the whole organization converts to the new system at the same time.

Other key aspects of change that need to be addressed include the business model adopted for achieving competitive advantage, and the organizational structure and culture that exists within the organization. **Change management** is used

Keyword

Change management is a systematic approach to dealing with the transition or transformation of an organization's goals, processes or technologies.

to alter the culture and behavior of workers and this can be facilitated by structural change. Structural change can influence culture by altering control functions, decision-making processes, lines of authority and span of control.

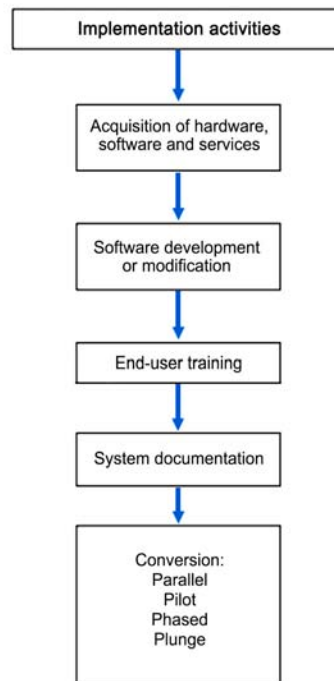


Figure 14. Implementation activities for a new information system.

Scale of Change

Managers have to determine the appropriate scale of change that is necessary for firms to undertake in order to achieve their aims. Change can differ in scale and intensity ranging from a paradigm shift to radical change through Business Process Re-engineering (BPR), then to the lower scales of incremental change through Business Process Improvement (BPI) and automation. Each level of change brings with it its own level of risk and reward.

Paradigm Shift

A paradigm shift refers to a radical rethinking of the nature of the business and the nature of the organization. This scale of change usually occurs when the organization finds it difficult to compete effectively in the industry sector. Its inability to compete will be reflected in poor performance, loss-making and low market share. Firms need to

reassess their entire *raison d'être* under circumstances where their current capabilities are inadequate to make returns on investment. The e-business environment is highly competitive and many firms have failed to achieve their objectives. In the wake of the dot-com crash of 2000 many firms ceased to exist. Others, however, were able to undertake a paradigm shift by reinventing the organization based on an entirely new business model. In some instances, firms who adopted an e-business aspect to augment existing bricks-and-mortar activities simply reverted to being a traditional business.

2.4.3 Practicalities and Tactics for Implementing Change

There are a number of practical measures that managers of an e-business can take to implement change. There are also a number of tactics that can be used to manage resistance to change. The key to successful change management is to choose the correct practical measures and tactics that ensure the smoothest transition from the status quo to where the organization wants to be. Practical measures for change include:

Changing Personnel

Firms operating in the e-business environment seek to reduce costs of labor by automating many process functions traditionally carried out by humans. Personnel employed in an e-business need to add value otherwise they are a liability. Change management may involve promoting some highly valued staff and/or removing those who do not add value.

Forming Partnerships and Alliances

One of the key characteristics of the e-business environment is the importance attached to forming partnerships and alliances with other organizations along the supply chain. Change management can be implemented more effectively when influential people in partner organizations lend support. The relationships formed with partner organizations can prove invaluable when seeking to resource change through the skills, expertise and experience they bring to the partnership or alliance.

Changing the Technology Infrastructure

The way in which an organization's technology infrastructure is set up plays a significant role in determining work schedules, activities and communications within an organization. Alterations to the technology infrastructure can force personnel to change their behavior such that it is in alignment with proposed change at the organizational level. For example, an aim of change management may be to leverage competitive advantage through superior use of analytics in customer relationship

management (CRM). Investment in a CRM system, alongside training of existing staff and recruitment of new staff with specific analytical skills, could form the basis for change management towards a more knowledge-based organization.

Training and Education Programmes

Training programmes are an important aspect of educating and communicating to staff the rationale, need and benefits of change. Training is also a useful practical measure of ensuring that staff update their skills so that they continue to add value to the organization. Training is also necessary for staff to cope with the challenges that change presents. Developing the skills of staff through training is also a cost-effective way of maximizing returns from investment in human resources. It may be too difficult to attract new skills or too costly to hire new staff so it makes economic sense for firms to concentrate on developing the skills base that already exists within the organization.

Alongside training programmes designed to enhance skills and knowledge, change management should include a broader-based educational programme for workers. Champey and Hammer (1993) note that a broad-based approach to education is necessary for staff to deal with a wider variety of tasks and challenges. This is particularly relevant to knowledge-based organizations where greater emphasis is placed on self-directed teams. Here, it is not just increasing the technical skills of workers that is important; understanding the role of leadership and the decision-making process have become key elements of change in many modern organizations in the e-business environment.

Alongside practical measures, managers need to adopt specific tactics to implement change. The tactics chosen will depend on the attitude of workers to the proposed change and the level of resistance to the proposed change. There are five main tactics available to managers for dealing with resistance to change. These are:

Education and Communication

This tactic is appropriate when the proposed change and its consequences require clarification and explanation. A clearer understanding of the rationale for implementing change is likely to encourage acceptance.

Participation

This tactic involves workers in the design of change. Participation helps workers understand the need for change better and their involvement in the process of change acts as a motivator and encourages acceptance of change.

Negotiation

This tactic is a formal approach to achieving the co-operation of workers. Negotiation uses formal bargaining to gain acceptance for a proposed change. In effect, this tactic 'buys' the acceptance of change by workers because the organization has offered concessions in exchange for the goodwill of workers. The danger of negotiating acceptance is the potential for setting a precedent whereby workers seek concessions for every proposed change. This is likely to be costly, time-consuming and will erode industrial relations.

Manipulation

This tactic involves covert attempts to influence people regarding change. Managers may seek to target particular individuals or groups of workers to emphasize the benefits that change will have for them. This creates divisions within the workers and undermines collective resistance. This tactic is likely to have long-term negative effects on industrial relations.

Coercion

This tactic involves the use of formal powers to force change. Coercion may include the removal of rewards, sanctions or even job losses if workers refuse to accept change. This tactic points to a failure of management to develop a culture where change is introduced by means other than the threat of sanctions.

CASE STUDY

AMAZON.COM

Amazon.com is a prime example of a globally recognized dot-com who, in 1994, was first to market in the online bookselling business. Subsequently, the firm has expanded rapidly to e-tail a vast number of products and services. However, for the majority of the time Amazon.com has been trading, the company has been registering year on year losses. Only in 2004 did the company finally announce a trading profit. The reason for their continued existence throughout the loss-making years is down to investor and lender goodwill. Investors and lenders take a dispassionate view of the business model and make judgements about the future investment plans. The Amazon.com business model was deemed sufficiently robust to garner a high level of goodwill amongst its investor community.

The goodwill of investors is part of the evaluation process of organizations. Indeed, Amazon.com had their own investor-relations specialists to communicate with key lenders and investors. By 1999 the goodwill of investors was being tested to the limits by the \$1.5 billion long-term debt that the company had built up. Like many other dot-com firms the market value of Amazon.com had also declined during this period to \$16 billion compared to £23 billion only a few years earlier. In previous meetings with key investors Amazon.com had emphasized the number of unique visitors to their website on a monthly basis as the key growth indicator. Where once this proved sufficient evidence for investors to remain loyal, by 2000 they had become impatient and were only interested in when Amazon.com was going to start registering profits.

This case illustrates that even the most prominent and globally recognized companies cannot exist on goodwill alone. Sooner or later, every business needs to be profitable to be economically viable. Profits attract a greater number of investors and a greater volume of investment funds for the organization to grow and achieve its objectives.

SUMMARY

- Strategic management is about determining the purpose and aims of an organization, choosing the most appropriate courses of action towards achieving those aims, and fulfilling the aims over a set period of time.
- The vision of an e-business organization must reflect the ability of managers to position the organization to exploit opportunities in the marketplace, in technology utilization and through building relationships with partners and customers.
- The analytical part of the strategic process comprises internal (strengths and weaknesses) and external analysis (opportunities and threats). Combined, the internal and external analysis forms the basis for a SWOT analysis (strengths, weaknesses, opportunities and threats).
- The implementation of strategy involves the practical measures taken to action the selected strategic option or options. The implementation of a chosen strategy invariably means communicating the strategic option to other levels of management within the organization.
- In e-business, firms conduct their business through electronic means. Information is the raw material that organizations use to add value whether it be as a medium of communication, an asset for sale, or as a support activity in the form of marketing and transactions.
- Network promotion and contract management involves marketing the network to potential users and providers, administering contracts, customers' accounts and subscriptions, and screening potential members for suitability.
- Customers incur a cost when switching from one product to another. This cost can be financial if there is a contract broken, but more likely the cost will be reflected in the time, energy and administration of switching allegiance.
- A focus strategy is where firms choose a segment of a market to target sales of their product or service rather than aiming at numerous markets or the whole market. Firms may focus on a particular group of customers based on distinct profiles and target their products or services at that market.
- Implementation of strategy requires firms to effectively leverage organizational learning. Organizational learning occurs through experience, building and sharing knowledge, expertise, ideas and insights.
- Organizational culture is the set of beliefs, values, norms of behavior, and attitudes shared by members of a firm that influences individual employee preferences and behavior. These bases of culture are very often difficult to observe and measure.

MULTIPLE CHOICE QUESTIONS

1. **What is the primary goal of an e-business strategy?**
 - a. Maximizing short-term profits
 - b. Enhancing brand visibility
 - c. Achieving long-term business objectives
 - d. Expanding the physical infrastructure
2. **Which of the following is a key component of a successful e-business strategy?**
 - a. Ignoring customer feedback
 - b. Avoiding digital marketing
 - c. Embracing technological innovation
 - d. Minimizing online presence
3. **Which e-business strategy focuses on offering unique and innovative products or services to a niche market?**
 - a. Cost leadership strategy
 - b. Differentiation strategy
 - c. Market penetration strategy
 - d. Outsourcing strategy
4. **What is the purpose of conducting a SWOT analysis in the context of e-business strategy?**
 - a. To identify opportunities and threats
 - b. To assess the financial performance
 - c. To develop marketing campaigns
 - d. To track website traffic metrics
5. **Which e-business model involves connecting buyers and sellers through an online platform without owning the products or holding inventory?**
 - a. B2B (Business-to-Business)
 - b. B2C (Business-to-Consumer)
 - c. C2B (Consumer-to-Business)
 - d. C2C (Consumer-to-Consumer)

REVIEW QUESTIONS

1. Choose an e-business and identify the key elements of its mission statement.
2. Explain the key differences between the virtual value chain and a physical value chain. How can firms exploit the virtual value chain to gain a competitive advantage?
3. What measures can managers take to enhance organizational learning?
4. Choose an example of an e-business and, using the factors that determine organizational culture as a guide, determine the dominant culture within the organization.
5. What are the advantages and disadvantages associated with a network organization?
5. Find examples of e-businesses who have adopted a generic strategy based on:
 - Differentiation;
 - Cost leadership;
 - A narrow-based differentiation focus;
 - A broad-based cost leadership focus.

Answer to Multiple Choice Questions

1. (c) 2. (c) 3. (b) 4. (a) 5. (d)

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CHAPTER 3

E-COMMERCE PLATFORMS

LEARNING OBJECTIVES

After studying this chapter, you will be able to:

1. Understand the e-business strategy: formulation
2. Define competitive strategies for e-business
3. Explain the e-business strategy: implementation
4. Focus on change management

"E-commerce is the intersection of technology, entrepreneurship, and consumer demand. It's where innovation meets convenience."

—Kevin Systrom

INTRODUCTION

E-commerce platforms have revolutionized the way businesses and consumers engage in online transactions, ushering in a new era of convenience and accessibility in the world of commerce. These digital marketplaces serve as the virtual storefronts where sellers showcase their products and services, while buyers browse, select, and purchase with just a few clicks.

One of the defining features of e-commerce platforms is their ability to break down geographical barriers. Unlike traditional brick-and-mortar stores, which are confined to physical locations, e-commerce platforms enable businesses to reach a global audience.

This global reach has opened up unprecedented opportunities for both small and large enterprises to expand their customer base and scale their operations. Moreover, consumers can now access an extensive array of products and services from around the world, providing them with more choices and competitive pricing.



E-commerce platforms have also streamlined the shopping experience. With advanced search and recommendation algorithms, users can easily find products tailored to their preferences. Additionally, the convenience of online payment methods and secure transactions has made the purchasing process swift and hassle-free. The 24/7 availability of e-commerce platforms ensures that customers can shop at their convenience, whether it's during a lunch break or in the middle of the night.

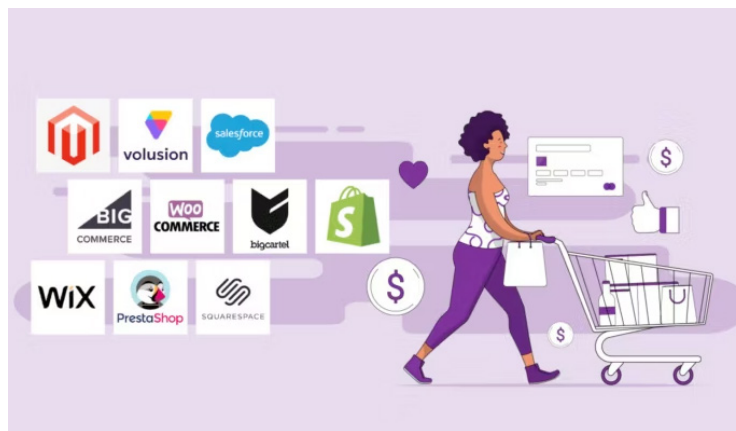
Furthermore, e-commerce platforms have empowered entrepreneurs and small businesses to enter the market with reduced barriers to entry. Many platforms offer user-friendly interfaces, ready-made templates, and integrated payment gateways, making it feasible for newcomers to establish their online presence without the need for extensive technical expertise or substantial upfront investments.

E-commerce platforms have fundamentally transformed the way we conduct business and shop for products and services. Their global reach, user-friendly interfaces, and convenience have made them an integral part of modern commerce. As technology continues to advance, we can expect e-commerce platforms to evolve further, offering even more innovative solutions to meet the changing needs and preferences of consumers and businesses alike.

3.1 OVERVIEW OF E-COMMERCE PLATFORMS

An eCommerce platform is an end-to-end software solution that allows online retailers to manage their business. This type of service encompasses eCommerce website builders, accounting and inventory management systems, as well as customer service infrastructure.

An eCommerce platform is a lifesaver if you decide to launch an online shop from scratch or as an addition to a brick-and-mortar store. In this article, we'll discuss why your business probably needs this service, list the essential features of a good eCommerce platform, and give five popular software solutions once over.



3.1.1 Why should you use an eCommerce platform?

Running an online store is a complex undertaking that requires many processes, from building a website to accepting payments and managing stocks. Software solutions allow you to manage all of these processes and take away the headache of dealing with each aspect individually.

eCommerce platforms have all the components you need to operate and grow your online business without complicating your day-to-day operations. Using an eCommerce platform is cheaper than creating software from scratch and more comfortable than using many plugins.

Elaborate eCommerce platforms facilitate the purchasing process for your customers, prevent system failures, technical issues, and help you troubleshoot them whenever they pop up. So, you can spend less time helping your clients with shopping and concentrate on improving your sales process and boosting your revenue.

All these features make eCommerce platforms worth your investment. Let's get into the details and discover the features you should look for while choosing the best eCommerce solution for your business.

3.1.2 Features of an eCommerce Platform

The number of online retailers in the world amounts to 7.1 million and continues to grow. It's no wonder that the market offers a great many eCommerce platforms. Figuring out a solution to meet your business' needs can be a tough job. To pick the best service, evaluate the following aspects of any eCommerce platform you consider.

- Interface
- Design options
- Store management system
- Payment processing
- Security
- Support
- Promotion opportunities
- Data consolidation

Interface

A user-friendly intuitive interface for webstore creation is a must for any eCommerce platform. However, you may flounder with building a website on some solutions. Some of them may require technical skills, such as HTML knowledge or WordPress experience.

To find the best and most convenient for you, test several platforms and go for the one you like the most. Look for a platform that lets you create not only product pages but also blog posts. This feature may come in handy when you decide to acquire new customers with content marketing or improve your website search results with a series of SEO-optimized articles.

Design options

Most eCommerce platforms offer countless ready-to-use designs and themes so you can create your webstore's appearance quickly and easily. Pay attention to how many free and paid templates your solution provides. Look for additional designs in the platform's community. It will help you save time and money.

On the other hand, you may have a vision of your future store or develop it as time passes. In this case, explore design customization opportunities your eCommerce platform provides. The best decision is to find a platform that offers a perfect balance between design freedom and a variety of pre-made templates.

Store management system

Management systems are the core of every eCommerce website, since they differentiate online stores from any other types of websites. To operate your shop, you need three frameworks:

- **The product management system** lets an admin upload products to your website and manage listings. A quality solution should allow bulk uploads, categorizing and mapping products, setting up dynamic catalog filters like sorting, price range, color, size, and so on.
- **The order management system** accounts for processing customers' orders. To perform this task at a fast pace, it should include order tracking, email notifications, and shipping service API.
- **The return management system** allows you to take care of your return policy. It should encompass return rules and types, place and approve requests, print invoices, update statuses, and so on.

Your eCommerce platform may offer these systems as part of the standard package or allow integration with services that provide them.

Payment processing

You can't do business without accepting payments, and it is not as straightforward as it sounds. You should consider the currencies you operate with, the payment methods your customers prefer, tax systems, and more.

The main difficulty here is the payment gateway your eCommerce platform uses. A payment gateway is a processor that moves money from your customers' accounts to your own. This component often limits the payment methods and determines the currencies your service can offer.

Keyword

Payment gateway is a tool that enables businesses to accept payments online from anywhere via different channels and devices.

So, define the payment options your eCommerce platform supports out of the box. You can also learn which third-party services you can integrate with your software to expand its opportunities.

Security

You should protect your customer data at any cost. Data breaches and leaks will have devastating effects on your business. Thus, it's crucial to make sure your eCommerce platform offers suitable security options.

To keep your transactions protected, make sure your eCommerce platform meets the PCI security standards – a 12-piece set of requirements for websites that work with payment information. Another aspect of a secure website is its SSL certificates. They are a type of file that lets a browser securely process sensitive transactions.

The features listed above are the base your eCommerce platform should provide or allow you to integrate with ease. However, many solutions go the extra mile and offer additional options, such as protection from fraud and DDoS attacks.

Support

Operating a web store, you will inevitably face technical issues. No matter how hard you try to minimize them, they will occur at some point. Support from an eCommerce platform can help you troubleshoot these problems instantly and reduce downtime.

When exploring the support your provider offers, start with any available documentation on their site. An extensive library of FAQs, how-tos, and guides will walk you through the main issues without needing to waste time on reaching a support team member. Another indicator of good support is the presence of forums or Q&A areas, where you can ask for advice from other users.

Finally, learn more about getting in touch with the support team. See which channels your eCommerce platform offers to reach specialists and how fast they resolve questions. You can also browse through reviews on third-party websites to find out how your service really deals with customers' issues.

Promotion opportunities

The majority of eCommerce platforms offer different options to promote your web store. Many of these solutions lay beyond the standard package the service provides, so you need to figure out which of them will fit your eCommerce marketing strategy.

The main point to consider here is SEO, as 70% of marketers believe it to be a more efficient acquisition channel than PPC. Pay attention to SEO-friendly eCommerce platforms. They should allow you to use your domain name, add your blog, and collect customer reviews.

Remember the number one SEO trend – mobile optimization. As more than half of internet traffic comes from mobile devices, an eCommerce platform should provide your web store with a mobile version or mobile app.

Data consolidation

If you can't measure your webstore's performance, you can't manage it. Calculating your results is the only way to make timely changes and refine your business outcomes. However, using a bundle of tools for analytics may be tricky and time-consuming.

Make sure your eCommerce platform allows you to collect and store data, or supports integrations with analytics services. Struggling to understand what indicators to track? Follow our guide on the customer success metrics you need to keep an eye on to make sure your business is healthy.

These parameters may become inadequate as your business grows. Thus, pay attention to your eCommerce platform's scalability. Another feature to look for is flexibility – it often comes in the form of integrations with third-party services. Make sure your solution supports integration with popular CRM, CMS, marketing automation software, and so on.

We've unpacked a few components of a high-quality eCommerce platform. If you're in the market for a suitable solution, read on – our analysis of five popular services is waiting for you.

3.1.3Types of E-commerce Platforms

There are a few different types of ecommerce platforms out there. Many of them come in a website builder format, which can save you a significant amount of time. Your website builder can give you the option to do everything yourself with minimal handholding, or it can include drag-and-drop features, making site building a breeze.

The three main types of ecommerce platforms are:

- Subscription-based
- Open-source ecommerce platforms
- Headless

Subscription-based Services

Designed with the sole intention of making e-commerce sites as easy as possible to build and maintain, SaaS e-commerce platforms are subscription-based providers of pre-built features at a low initial setup cost. They, therefore, provide an efficient and scalable solution for businesses to gain access to online sales as quickly as possible without huge costs. However, this does come with limitations as the building blocks cannot be fully customised to fit all specific requirements. These types of platforms use third-party apps to enable developers to build sites, but the actual 'code' to build these features is closed off except for small areas of customisation.

Positives:

- Quick and efficient to build and manage
- Low setup costs

Negatives:

- Narrow feature boundaries
- Increasing complexity and cost as the site scales

Examples of subscription-based e-commerce platforms:

- Shopify
- BigCommerce
- WooCommerce

Bespoke frameworks

Truly custom platforms provide the basic architecture by which developers can create detailed and complex e-commerce solutions, which means that all features and requirements must be built from the ground up. These platforms allow sites to be tailored to exact requirements and create a feature-rich and highly customisable solution. These bespoke solutions take longer to build and require greater expertise in implementing requirements than SaaS platforms. This can increase initial build and setup costs and will also extend the time it takes to get your store live.

Positives:

- Fully customizable
- Scalable and futureproof

Negatives:

- Everything has to be built from the ground up
- High up-front costs

Examples of bespoke e-commerce platforms:

- Magento
- Laravel

Headless

Headless ecommerce platforms are also called CaaS platforms. They organize and distribute content as a service (CaaS). Headless platforms decouple the **shopping cart** from the CMS completely. This decoupling offers several benefits:

- Platform flexibility -- you won't be tied to a single, monolithic system
- You can use APIs to set up a separate SaaS shopping cart
- You are more flexible and open to front-end changes in the future

Many companies find that a headless ecommerce platform provides the best of both worlds. First, they control a monolithic, typically cloud-based, storage over their marketing, sales and product assets. Even better, businesses can pick and choose which front-end services to use and easily connect to them using APIs. If companies decide they want to change shopping cart services, they can switch easily, as they aren't tied to a monolithic, front-end and back-end SaaS.

Digital experience platforms (DXPs) and Agile CMSs (a form of headless CMS) are two types of headless ecommerce platforms that are gaining popularity among companies of all sizes for their flexibility.

Keyword

Shopping cart is a piece of software that keeps the record of the items a buyer has picked up from the online store.

3.1.4 How to Choose an E-commerce Platform

In this section, you can use our guidelines to choose the best platform for your e-commerce business needs. Build from the information in the table above of entry-level prices, adding

additional e-commerce components as needed, and follow the steps below to investigate other platforms, pricing plans, key features, and more.

1. Identify necessary e-commerce platform features

When you know what you need an e-commerce platform to do, you can confidently choose the elements necessary for your business from the numerous features available. List the key features essential to selling your products and operating your business effectively. For example, you may need:

- Integrations for offering customers multiple payment options
- A customer relationship management (CRM) system for organising a growing list of leads and customers
- An analytics dashboard for examining multiple performance metrics
- Integrations for dropshipping (selling your products online without having to store inventory yourself)
- Simple, intuitive admin panel for quick setup
- Custom domain

2. Conduct a cost-benefit analysis

Your next step is to compare the cost of using essential features on different platforms. Consider what features you need now and those you may need as your business grows. Most platforms unlock different features, such as increased storage and additional integrations, when you upgrade from a basic plan to a more expensive price tier.

Your goal is to balance making an economical selection with gaining access to essential features.

3. Test the user experience

With the information you've gathered from the first two steps, begin narrowing down your list to two or three most appropriate platforms for your business. Sign up for a free trial on these platforms to test the experience of using them as a site administrator. Be sure to consider the following:

- How easy is it to set up customer-facing components of the site, including product pages, checkout pages, and blog articles?
- Does the platform's features, such as the checkout process and payment processor, allow you to create a seamless customer journey and buying experience?

- How intuitive is it to navigate the admin panel?
- How helpful do you find the support documentation and customer service experience?

5. Examine SEO settings

Whilst most website platforms, including those for e-commerce, allow you to customise your SEO (search engine optimisation) settings, some platforms may offer more extensive SEO features, such as blogging tools and the ability to change ALT tags for images.

SEO is important for an e-commerce website because it means you can rank higher in search engine results for enquiries related to your products. In other words, the right SEO settings help customers find your site and purchase your products.

Before making your final e-commerce platform selection, be sure that the SEO tools will support you as your business grows so that you can attract more internet traffic.

3.1.5 Best E-commerce Platforms

eCommerce platforms differ tremendously, so make sure you check out a few before you make your decision. We assembled five solutions from market leaders to minor services to help create killer web stores. Let's dig deeper!

- WooCommerce
- Wix Stores
- Shopify
- BigCommerce
- PrestaShop

WooCommerce

WooCommerce has the largest market share of all the eCommerce platforms. As the service operates on WordPress, you need to be tech-savvy and familiar with this CMS. If you are unfamiliar with WordPress, setting up a WooCommerce web store may not be for you. Don't worry, there are lots of other options.

WooCommerce offers 23 customizable design themes. The service encompasses a wide variety of extensions so you can tailor your webstore to your most specific business needs. However, this eCommerce platform lacks **scalability** as the number of customers and orders grows, your website response time will slow down.

Keyword

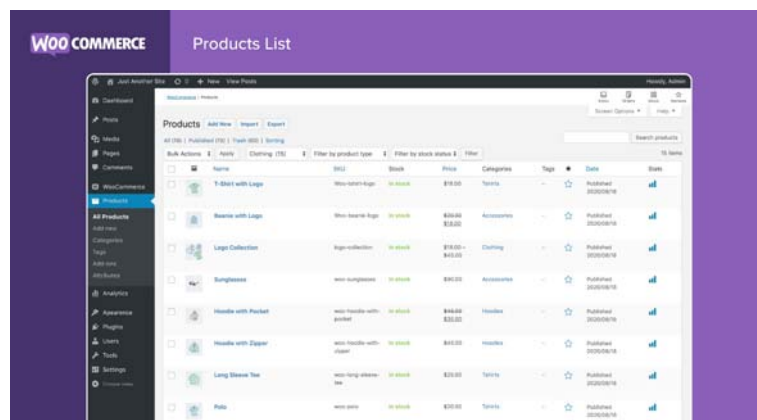
Scalability refers to the ability of an organization (or a system, such as a computer network) to perform well under an increased or expanding workload.

Thanks to the many add-ons available for WooCommerce, web stores made with this platform accept various credit cards, bank transfers, checks, and cash. You can accept payments with 140 region-specific gateways, including Stripe, PayPal, and Amazon Pay. Subscriptions and deposits are also available.

WooCommerce extensions cover such aspects as product and order management, shipping, automated tax calculations, mobile apps for iOS and Android, marketing integrations, and more. You can couple this platform with SendPulse to automatically export email addresses, set up automated campaigns, and send trigger, transactional and promotional emails. These tactics will improve your revenue and relationships with buyers – read our setup manual to get started.

WooCommerce supports the technical aspects of creating and maintaining a website with a knowledge base and a users' forum. You can also hire developers recommended by the platform to customize your webstore.

To help you measure your business performance, WooCommerce consolidates data on your revenue, customers, products, taxes, and so on. In the example below, you can see the revenue results for a chosen period and compare it with the previous year's outcomes on the graph.



Wix Stores

Wix is a well-known website and landing page creator that has added eCommerce features in the last several years. The main

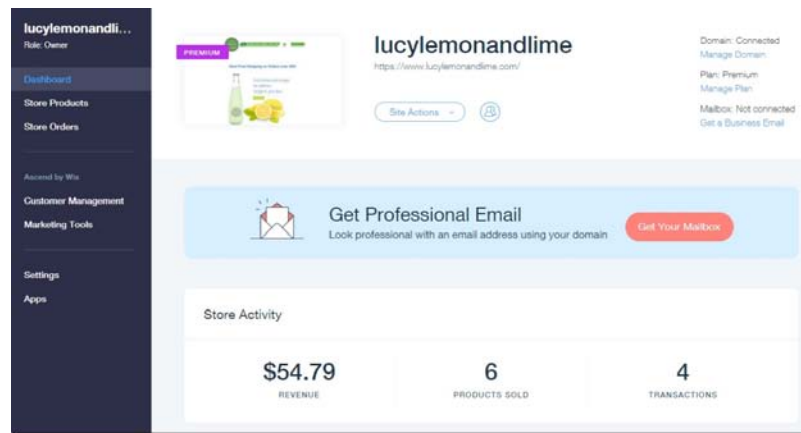
advantage of this platform is its drag-and-drop editor and the abundance of customizable design templates. The service even offers to build your webstore automatically via the Wix ADI tool.

This eCommerce platform also takes care of SEO for your webstore, offering a personalized plan. Among other useful features are in-depth site performance analytics, social and email marketing tools, and a boatload of integration options.

Wix Stores offers many payment methods including credit and debit cards, PayPal, and Wix Payments. The system automatically selects the best option for your region. You get access to order and shipping management systems, as well as a tax management tool. Better yet, Wix Stores lets you sell through several channels, such as Facebook and Instagram.

One of the downsides of this service is its relatively low storage, which makes Wix an unsuitable solution for large or rapidly growing businesses. However, the service provides on-page support during setup, as well as 24/7 phone and chat-based support.

The interface of Wix Stores is simple. The main dashboard shows you total revenue, the number of products sold, and the amount of transactions.



Shopify

One of the best-known eCommerce platforms, Shopify, offers an intuitive drag-and-drop editor for website creation. Design options include 9 free and 64 paid pre-made themes sorted by industry, visual style, and so on.

Shopify lets you work with a wide range of currencies and accepts payments with Visa, Mastercard, American Express, Google, and Apple Pay. The service has PCI compliance and 3D Secure checkouts for data protection.

Among other advantages of this eCommerce platform are a shipping management system, special prices for carrier services, advanced analytics, and more. To help you deal with all these tools, Shopify offers a support team, help center, and a handful of forums.

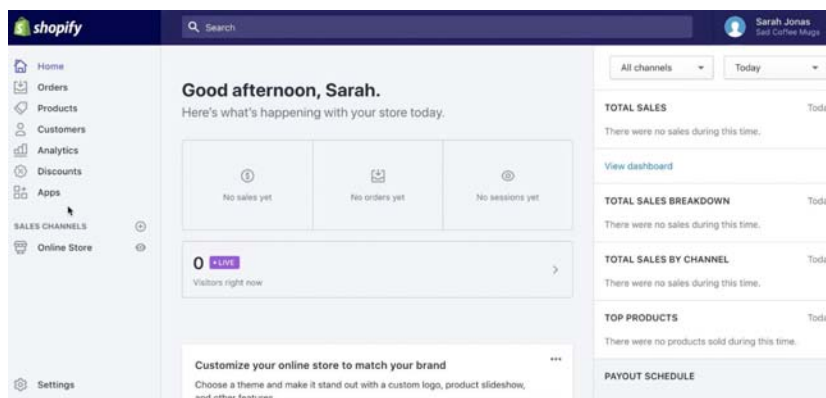
Shopify tweaks your SEO a little, although web stores made with this eCommerce platform still demonstrate mediocre results on search rankings. However, the service provides you with plenty of other marketing opportunities. For instance, it supports integration with SendPulse.

SendPulse automatically exports your customers' addresses to the mailing list. This helps you set up effective email campaigns to keep your customers engaged and boost your business' ROI. Integrate Shopify with SendPulse through Zapier – follow our guide on integration or contact our support team.

Did You Know?

Shopify was founded in 2006 by Tobias Lütke and Scott Lake after attempting to open Snowdevil, an online store for snowboarding equipment.

Shopify gives you all the essential information about your business in real time. In the picture below, the Home tab shows today's sales, orders, sessions, and the number of visitors. Knowing best-performing channels and top products, you can adjust your tactics to drive better performance.



BigCommerce

This eCommerce platform is a great solution for larger brands and brick-and-mortar stores that want to accept orders online. The service offers a wide variety of marketing solutions out of the box. They include high-quality SEO, the opportunity to

launch a blog, abandoned cart saver, email marketing features, and more. BigCommerce lets you apply more than 55 payment solutions, including Amazon Pay, Apple Pay, and Google Pay. The platform meets the PCI security standard and offers protection from fraud and chargebacks.

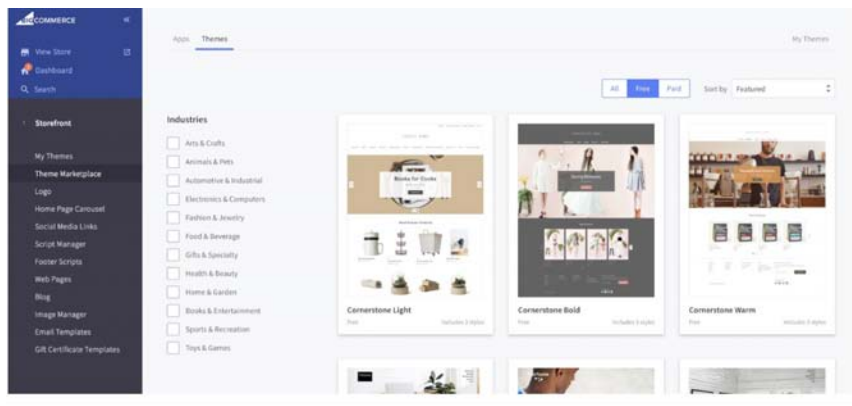
The heart of BigCommerce is its order management system with inventory management tools, the possibility to create personalized shopping experiences for different segments of customers, and partnerships with shipping and payment providers.

BigCommerce users get access to community forums and **live support**. The platform claims that the support team solves 85% of issues after a single call. Apart from that, the service helps you get personalized business audits and advice from experts.

You can start building your website by choosing one of the many pre-designed themes. Access them through the BigCommerce interface, sort by industry or price, as shown in the picture. To adjust templates, you don't need any technical skills. However, there are advanced customization opportunities available with HTML and CSS editor.

Keyword

Live support is a Web service for businesses that allows visitors to communicate with the business, usually through real-time live chat.



PrestaShop

PrestaShop is another eCommerce platform that requires technical skills. To set up a webstore with this service, you need knowledge in HTML, CSS, or PHP. Another option to consider is hiring a developer – PrestaShop provides you with partner agencies' to contact.

The strongest part of this service is its design themes – PrestaShop offers over 2000 templates, most of which come free of charge. The service lets you easily customize the colors, images, layout, and typography. To make major design changes, you need technical skills.

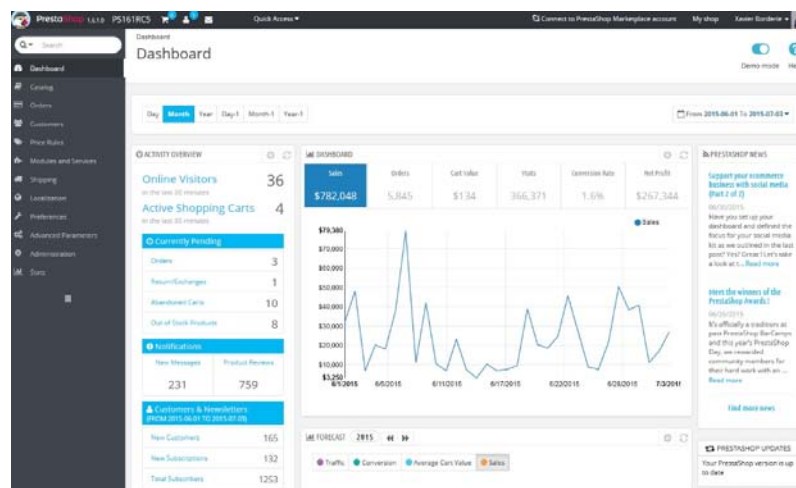
PrestaShop supports a great many payment options, like Visa, MasterCard, and PayPal, as well as prepayment, payment on delivery, or in-store payment. With this platform, you can manage orders in real-time, create invoices automatically, and connect with partner delivery companies.

To promote your web store, PrestaShop lets you create promo codes, product offers, a blog, and more out of the box. For better results, the eCommerce platform offers you tons of available integrations with various marketing automation services.

Integrate the platform with SendPulse to exchange email addresses between two services easily. It will help you implement an advanced email marketing strategy, create automated flows for constant engagement with customers, and drive better business results. Get started by reading our guide on setting up the integration.

PrestaShop has a technical support team, open documentation, blog, and tutorials translated into eight languages. You can also consult with other platform's users via forums.

This eCommerce service provides you with in-depth analytics, as you can see below. The dashboard includes data on sales, orders, cart value, visits, conversion rate, profit, and more.



eCommerce platforms enable you to create and handle your webstore without coding or hiring a team of professionals in the first stages of launching a business. These services

provide you with additional marketing opportunities. For faster growth and better performance, you may need more specific and advanced marketing solutions. Integrate your platform with SendPulse and make the most of your online business with email marketing, SMS messages, web push notifications, and chatbots.

3.2 E-COMMERCE SOFTWARE AND TECHNOLOGIES

E-commerce software is a stand-alone program or software suite that enables you to sell your products and services online. It allows you to streamline all of your processes from inventory to sales through the backend and makes it easy for a customer to buy from the front end, which is your website.

Remember

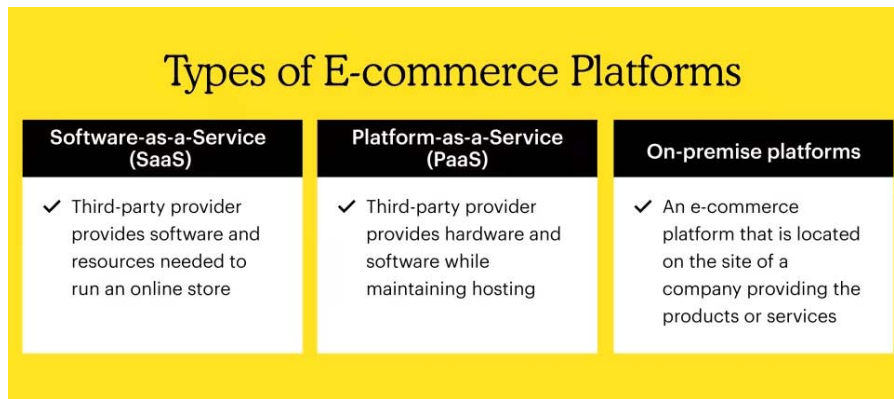
E-commerce software makes it easy to sell products online from your website.

Software for e-commerce comes in different formats, each of which fits your needs and budget. The size of your business tends to dictate the type of e-commerce website software you choose, although this isn't an absolute. You can use Software-as-a-Service, Platform-as-a-Service for your e-commerce, or you can use an on-premise platform that lets you control the software and server that's used to deliver your e-commerce website.

The cost of e-commerce software depends on the type of e-commerce business you're running, the software you choose, how much bandwidth your site consumes, and the functionality of the software. The more features you need means you can expect to pay more for software for e-commerce, but you can spend as little or as much as makes sense for your operation.

3.2.1 Different Types of E-commerce Software

Software for e-commerce is available in three different types. Each type meets different operational needs and helps you automate sales. All of them enable you to learn how to build an e-commerce website, make landing pages, list your items for sale, and process payments as purchases are made.



Software-as-a-Service (SaaS)

SaaS is a type of e-commerce website software that is hosted entirely off-site with the hosting and operations controlled by a third party. You buy a URL, pay a monthly hosting fee, and process payments through the provider's credit card services. In turn, you have the freedom to pick a customizable e-commerce template that you can easily alter to your liking and create listings for your products as long as they don't violate the host's terms of service. Access to the software is typically limited to the customer-facing front end and the business-facing back end.

This type of software for e-commerce is known as a WYSIWYG editor, or what you see is what you get. The e-commerce hosting platform has limits on the number of changes you can make to a template, and the amount of code you can change is also minimal. If you need more flexibility, you might benefit from platform-as-a-service software.

Platform-as-a-Service (PaaS)

PaaS is similar to the SaaS model in that the software is hosted in the cloud, but you're also given access to the physical hardware that runs the website. You get access to the software provided by the host, can use your own software, and gain access to developer tools, database management, servers and storage space, and different operating systems.

Running a website on PaaS is best suited for an organization that wants to write its own code for its website and have direct control of the data. This type of e-commerce website is more labor intensive in terms of building and operation, but it makes sense for an organization that needs full control without the cost of physical hardware.

On-premise platforms

An on-premise platform consists of the hardware and software hosted entirely on-site. The business has one or more servers in its physical location, hosts the software on the server, and uses an internet connection to connect the website to the world at large. This gives the business complete and total control over the operation of the website, but it does have to manage the hardware and internet connection to make sure that the website is always online and accessible to users. Going this route requires you to learn how to build an e-commerce website from scratch.

3.2.2 Why is e-commerce software important for your business?

E-commerce software is important for your business because it helps you expand your sales beyond brick-and-mortar. You can have a physical store or office and sell your products or services online through an e-commerce site to reach more buyers. E-commerce service also helps you gain access to selling and marketing tools that help raise awareness of your business.

- ***Easily create an online business:*** It doesn't take a lot of time and effort to start a business online when using e-commerce software. The software has templates that help you with the layout and insertion of images and information.
- ***Improve efficiency:*** You can track everything, including inventory, sales, process credit cards, and shipping through e-commerce software through simple data entry methods.
- ***Boost revenue:*** An e-commerce website makes it easier for customers to find your business and buy from you. That means a wider customer base than you would otherwise have if you limited yourself to in-person sales.
- ***Increase customer satisfaction:*** Customers enjoy the ability to make a purchase and track its shipping progress from your location to theirs. E-commerce software enables you to complete the purchase, make a shipping label, and supply it to the customer for their convenience.
- ***Reacher broader audiences:*** You can reach more potential customers that are peripherally interested in what you sell. They can look around your e-commerce website and discover that you have goods that relate to their interests or needs. You can also use marketing CRM software with your e-commerce platform to learn more about your potential customer.
- ***Save money and resources:*** E-commerce software has a host of features to help you manage your inventory, sales, and shipping. E-commerce time savers mean you spend less time tracking down your products, processing sales, and shipping out a sale.
- ***Accept more payment options:*** Online stores are sometimes limited to accepting a couple of payments, and adding more can be difficult. Using e-commerce

website software gives you access to more payment processing options with competitive processing fees to give customers more payment options, which can help drive sales.

- **Access to marketing tools:** Marketing tools are built into the e-commerce website software and enable you to create email blasts to let people know about the latest news or sales. They also help you with SEO marketing to get your website to rank higher on search engines.

3.2.3 E-commerce Platforms Technologies

There is rarely a facet within an industry that hasn't been touched by technology. Most notably, big data and machine learning are paving the way for robotics automation, the instant transfer of data, and a variety of interesting devices.

The retail industry is no exception when it comes to taking advantage of technology. In fact, successful businesses are setting the bar by implementing technologies such as artificial intelligence (AI), chatbots and voice assistants into their operations. The reasons vary, but can include that these technologies help provide excellent customer experiences through instant communication, providing support without the help of live employees, data management and security and much more.

Many online stores already have integrated e-commerce software, but to stay in the competition, any e-commerce business must give serious thought into the following technologies to stay prosperous and maintain customer satisfaction.

Technologies every e-commerce needs:

- Artificial intelligence (AI)
- Chatbots
- Voice assistants

Artificial Intelligence (AI)

AI is revealing valuable insights into customer preferences — which can guide marketing campaigns. It also can provide for the automation and transfer of data management operations to increase performance. In the retail and e-commerce world, AI is being relied upon for several unique aspects of business.

Personalized user experience

74% of businesses believe that user experience is important for improving sales and conversions. AI provides a personalized user experience that 59% of customers say

influences their shopping decisions. Artificial intelligence can facilitate a **shopping experience** that is supported by customers' personal preferences.

AI, big data, and machine learning can offer analytics and foresight into customer behavior patterns which can drive advertising campaigns, provide support and services, and automate communication — all of which increase engagement rates for businesses.

Product descriptions

AI can guide you in writing good and detailed descriptions for products. You can ask ChatGPT or use OpenAI to make descriptions or templates. There are even OpenAI product description add-ons available for specific e-commerce platforms, like Sana Commerce Cloud.

Using AI for product descriptions can help streamline the process of writing product descriptions for all your product pages, while keeping them SEO-friendly, on-brand and convincing for your customers.

Recommendations to customers

Since AI can predict customer behavior patterns, it is able to recommend relevant and useful information to customers on products and services and more. AI and machine learning algorithms can efficiently forecast this information by taking in a customer's search history and other third-party data. This can lead to effectively proposing applicable information and solutions to satisfy customer needs.

Automated campaign management

Customer behavior patterns are a driving force behind any marketing campaign. Using AI, businesses are able to target both potential and existing customers by looking at data such as past certain history. These analytics can be used to provide a better aimed content marketing strategy for businesses. Content and advertisements may then be created with a tone that engages various audiences and placed on the correct media platform to

Keyword

Shopping experience is the complete set of perceptions that customers receive while purchasing a product or service, and even what they feel after the deal is closed.

capture their attention. Using AI and marketing automation can show a business the data necessary for a strategic and tactical campaign.

The Cloud

You will be hard-pressed to find a successful business that does not have at least one aspect of their business operations posted on the cloud. Managing and processing data in the cloud is essential for the instant access of data by anyone who needs it, on any device. Especially for e-commerce businesses, a cloud ERP can improve delivery speeds, make your store more adaptable, and bring about business stability and growth.

Chatbots

Recognized for their customer satisfaction rates and wide-scale availability, chatbots have pivoted from limited use in call centers to wide-spread e-commerce website applications. Rather than asking questions and providing information to those over the phone, e-commerce websites that utilize chatbots can provide a variety of services and solutions.

24/7 assistance

Many businesses cannot provide answers exactly when a potential customer is searching for them. Additionally, customers may be frustrated when put on hold because a business does not have the staff to answer and tend to a high volume of customers.

Chatbots are available 24/7, day and night, to provide any answers and solutions a potential customer may inquire about. Having this automated communication can be valuable for businesses as it frees up employees to focus on other business operations, efficiently communicates with customers, and may even propose products and services.

Respond to queries

Built into a chatbot's algorithm is what is called a decision tree. Decision trees use machine and deep learning to automate complex business processes, essentially developing, maintaining, and always expanding upon a comprehensive network of if/then statements.

By addressing commonly asked questions and concerns from customers, chatbots are able to expand upon their decision tree. Here, a chatbot can gain information on whether they've helped a customer or not. If they have helped the customer, this information may be passed on to another consumer with a similar question. If they

have not adequately satisfied the customer, the chatbot may continue asking questions until they provide the customer with the information they are looking for. When they have answered the customer, the chatbot now has more choices in their decision tree to help customers in the future.

Send shipping and tracking information

Imagine if Amazon never remembered your address or payment information and never told you when your order is scheduled to arrive. It is a pain for customers to have to enter shipping information every time they want to order something from your e-commerce website. Additionally, it is a best practice for user experience to give a customer a timeframe for when the order will be at their doorstep.

Chatbots remember this information and can provide real-time shipping tracking details for customers. This can also help warehouse operations, as they could focus on the supply chain and fulfilling orders through their order management system rather than telling customers where their packages are.

Voice Assistants

Not everyone searches for products and information via mouse and keyboard in the digital age. To accommodate these potential customers, businesses will need to adopt voice commerce — using voice recognition technology and allowing customers to use voice commands to find and purchase products online. Voice assistants such as Siri, the Amazon Echo, and Google Home are becoming increasingly popular for their convenience in searching for and purchasing products. In order to stay successful, e-commerce businesses will need to provide this technology and its benefits to capture a new wave of consumers.

Audio brand signatures

Any company jingle, music composition, or auditory tone is considered an audio brand signature. It is a way for businesses to better establish a brand identity, and help customers remember their name.

Businesses can command their audio brand signature to play through voice assistants to let their customers know where they are ordering their products from. By associating your brand with an auditory signature, consumers will know and remember they are ordering from your store – even when laying on their couch, speaking to a voice assistant.

Shopping lists

Customers would rather automate their continual shopping needs than frequent a website (or store) every month for their essentials. Through voice assistants, people are able to compile shopping lists — ordering what they need from who they want. This technology learns the preferences of the owners, and many businesses are able to capitalize on brand loyalty. If a voice assistant knows that a person wants a product from your store monthly, it can add it to their shopping list. This can be beneficial to companies in forecasting sales and balancing order management.

Assistive technology

In the marketing world, assistive technology and voice commerce are helping to reach a wide variety of new audiences — not just the younger generation who are using new devices, but the visually impaired as well. By using speech-to-text technology, the visually impaired can forgo the struggles of traditional search experience, and order what they need through new and developing assistive technology.

All interconnected, AI, chatbots, and voice assistants are becoming necessary for any e-commerce business to be successful. In order to stay with the times, businesses must adapt to these new technologies which appeal better to potential and existing customers.

3.3 ONLINE PAYMENT SYSTEMS

Online payment allows you to pay money via the internet. Buyers will use this type of payment when they purchase goods online or offline. They can use different types of online payment methods, including debit/credit cards, wire transfers, net banking, and digital wallets. Online payments can be done at the discretion of consumers. They can pay online to e-commerce stores to buy clothing or other items, subscriptions, mobile, DTH recharges, etc.

Four entities will be involved in the online payment process, such as the consumer, merchant or business, the consumer's bank, and the bank of the merchant or business. Although, more than one entity is involved during the online payment process, the entire process is electronic and completed within seconds.

With the advent of the internet, online payments have become extremely popular among buyers and sellers, owing to their benefits. They help consumers considerably save much of their time, allowing the process to be completed quickly and efficiently. Buyers do not need to handle physical cash, as online payments allow them to make

cashless purchases. Consumers can buy their preferred goods and pay for them with the greatest security by propelling a payment confirmation message to consumers.



When it comes to knowing online payment meaning, in essence it is an exchange of currency, electronically through the internet. The process in these payments is the transfer of money from the bank account, debit card, or credit card of a customer to the bank account of a seller. This online e-payment is handy for purchasing the merchandise or services of sellers.

Buyers and sellers make online transactions with the help of online payment apps. On the buyers' side, the transaction is to purchase goods and services and products or services deliverance from the sellers' end. These easy online payment options involve several steps while transferring a buyer's funds and seller's offerings. Both parties will use some online payment apps to complete their transactions successfully.

If the majority of your customers prefers using digital wallets in addition to credit cards, you should offer those options.

3.3.1 Types of online payments

The World Wide Web lets people know which is the best online payment app. Different online payment methods have become extremely popular among people, offering many benefits to them. Paying money online through trusted platforms is the safest and best online payment mode amongst buyers and sellers. Some of the common types of online payments are as follows:

Credit Cards

Keyword

Cashback is a credit card perk where a percentage of eligible purchases made on the credit card is paid back to the cardholder.

Credit cards are one of the payment sources in the list of payment methods online. These online payment modes allow cardholders to buy their preferred merchandise and services. Credit cards are one of the alternative online payment methods, offering a higher rate of **cash back**. They allow users to have little to no liability for fraudulent fees. They help users get reward points that they can redeem for several purposes.

Paying with a credit card makes it easier to avoid losses from fraud. When a thief uses your debit card, the money is missing from your account instantly. Legitimate expenses for which you've scheduled online payments or mailed checks may bounce, triggering insufficient funds fees and affecting your credit.

Credit cards come in different types, such as Mastercard, Visa, Discover, and American Express. All the handiest online payment methods in India. However, Mastercard and Visa credit cards have global recognition, but Discover and American Express cards also have extensive coverage. Similarly, each of these credit cards provides users with unique benefits. They will provide users with a bounty of benefits, including travel insurance, rental car insurance, and purchase protection. However, the benefits may count on the discretion of credit unions and banks offering these credit cards.

Debit Cards

Banks will issue debit cards to their account holders as part of their online payment services. They allow them to use their cards to make purchases online. The banks will deduct the amount automatically from the cardholders' bank accounts. Similar to a credit card payment system, the debit card online payment system is one of the most preferred online payment options among people. The major ones are Visa, RuPay, and MasterCard. Visa cards are the most acceptable cards by worldwide merchants for all online and digital transactions. Debit cards provide an easy way for people who are seeking to make online payments.

They offer the best online payment solutions, which makes them the most sought-after payment tool amongst global buyers.

They provide immediate money access to users to perform many online transactions comfortably. Similar to credit cards, debit cards are extensively accepted online.

Third-Party Payment Services

The most prevalent online payment method is third-party transfer. It entails making out and depositing a sum into the account of a third party that receives the payment. However, users need to know how to make payments online through this transaction mode.

Third-party transfer in banking allows banks to manage it manually or use digital technology to complete it. Buyers and sellers can send and receive money through these services. They facilitate users to avail of these services online or through their mobile phones by attaching their bank accounts to a third-party payment service. These services help vendors that wonder how to accept online payments on a website, allowing them to acknowledge payments without opening a merchant account. However, they may need to open a bank account to hold cash received through card payments.

Electronic Cheques

Electronic cheques are one of the most popular online payment processing systems. They will deduct money from a checking account. This online payment mechanism eradicates the need for users to prepare their cheques in written form, helping sellers deposit them into their bank accounts. Electronic cheques have many security features compared to traditional paper checks, including verification, digital signatures, public key cryptography, and encryption. Owners of these checks can perform a function similar to what they can carry out through a traditional paper check. The benefit of using these e-checks is that they need fewer steps to process them. The processing costs of e-cheques are comparatively lower than the standard paper checks. The direct deposit system offered by several employers is one of the more regularly used versions of the e-cheques.

Bank Transfers

Transactions involved in a bank transfer are the same as debit card transactions. This transfer method transfers money from one bank account to another, so a debit card is not required physically. Bank transfers provide a faster and safer form of payment than other modes of transactions, such as paying or withdrawing money from a bank account. People can also set up online payment system on their telephones. If you are wondering how to online payment, you need to access your online account and choose the option for making your payments. Some banks also provide their account holders with online payment apps, allowing them to transfer funds.

3.3.2 Benefits of Using Online Payments

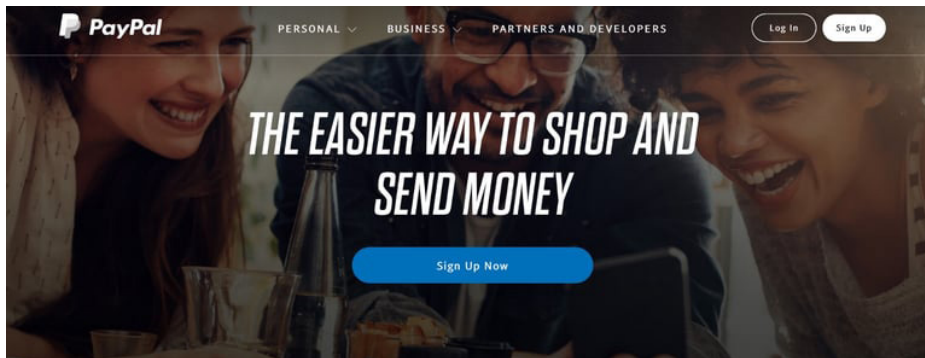
Buyers and sellers can reap many benefits from online payments by choosing the most trusted online payment website. The benefits include:

Security	Efficiency:	Convenience:	Contactless option
• Multiple safety measures • Secure and reliable • Protects consumer information • Needs authentication for every online transaction • Encrypted transactions • Non-repudiation • Safe and secure fund transfer • Absolute integrity in payments • No need to enter card details for payments • Availability of funds in the buyer's bank account • Avoids hacking of consumers' information • Consumers can get a secure one-stop solution for paying their bills • Enhances confidentiality in payers • Offers immediate authorization of payments • Consumers can track their payments • Disallows third-party and merchants from knowing the card details of payers	• More efficient • Fast payment • Reliable, efficient, and secure online payment • Immediate payment • Eliminates carbon footprint • Offers improved customer experience • Reduces labor • Reduces stationery costs • Saves money • Buyers can store the payment information • Allows merchants to make their bookkeeping process more efficient • Decreases strain and increases sales efficiently • Businesses can increase their daily sales efficiently • Provides the required efficient safety to the staff of organizations • Efficiently reduces the transaction fees • Merchants can improve their sales through discounts, Waivers, and cashback • Allows merchants to maintain their digital records efficiently	• Vendors can get instant payment for their merchandise and services • Vendors can provide different payment options to their customers • Merchants can get their bills paid through diverse payment modes • Decreases late payments • Instant confirmation of the receipt of the money • Creates trust for the client • Fast and simple setup • Chronic payment capabilities • Attracts More Clients • Saves time • Simple to handle • Reduces the need for checks and cash • Consumers can make payments from any place at any time • Customers can improve their money flow • Consumers can meet their payment needs effectively and efficiently.	• Buyers can make payments for their products through their smart devices. • Customers can make payments through QR codes. • Buyers can pay for their purchases using OTPs. • Buyers do not need to wait in a queue to make their payments. • Cashless transactions through PoS devices • Enhanced operational efficiency • Consumers have the option to make their payments by making use of their mobile wallets, such as Samsung Pay or Apple Pay. • Helps consumers eliminate potential barricades from buying their preferred goods and services.

3.3.3 Best Payment Systems for Online Shops

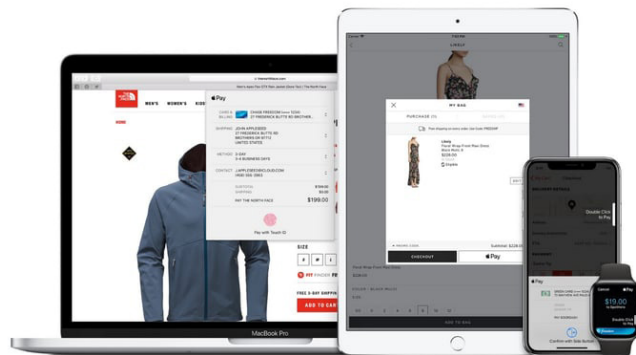
PayPal

PayPal is the most widely used online payment method worldwide, and websites that include it at checkout have an 82% higher conversion rate. Its platform provides many facilities for incorporating it into any online store. On many platforms like Magento you can find free PayPal connectors.



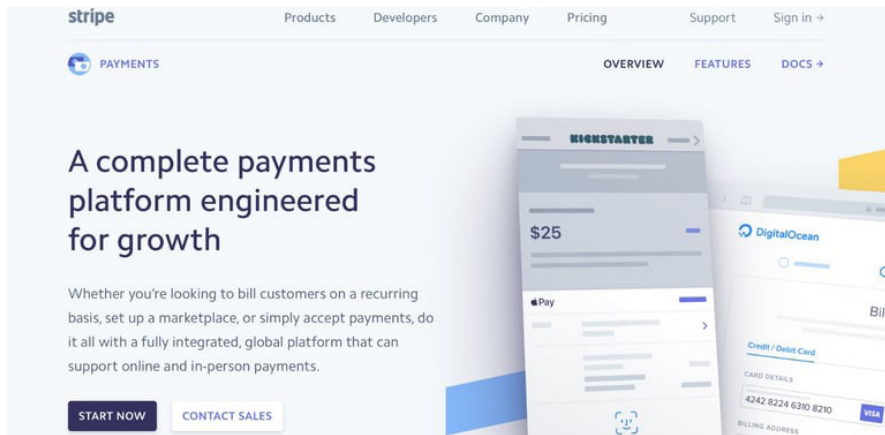
Apple Pay

Apple Pay is the second most popular digital payment system, and more and more banks are allowing their users to link their cards. In the US market it has become the main method, with 54% of the online payment market.



Stripe

Stripe is a very popular method for setting up checkout processes in online stores. You only have to incorporate it into the ecommerce platform you're already using. It's versatile, customizable and compatible with most bank cards and e-wallets on the market. Square is another widely used system. Although it is usually associated more with physical stores, it also includes integration for ecommerce.



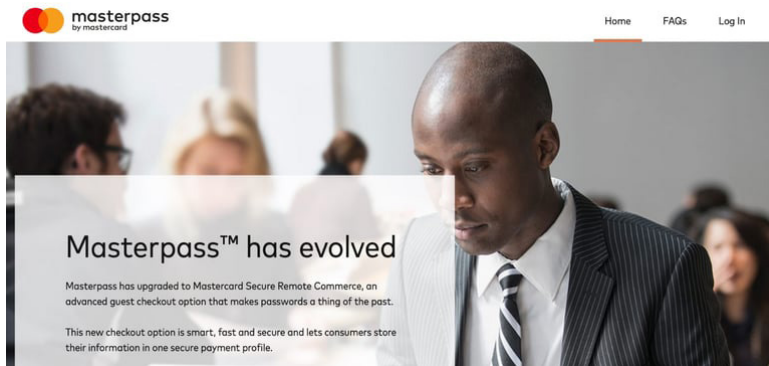
Google Pay

The Internet giant couldn't resist adding itself to the list, and Google launched Google Pay as its own payment option in online stores, mobile apps and physical stores. Its integration in any ecommerce is very easy through API, and it's a popular system among users of Android devices.



Masterpass

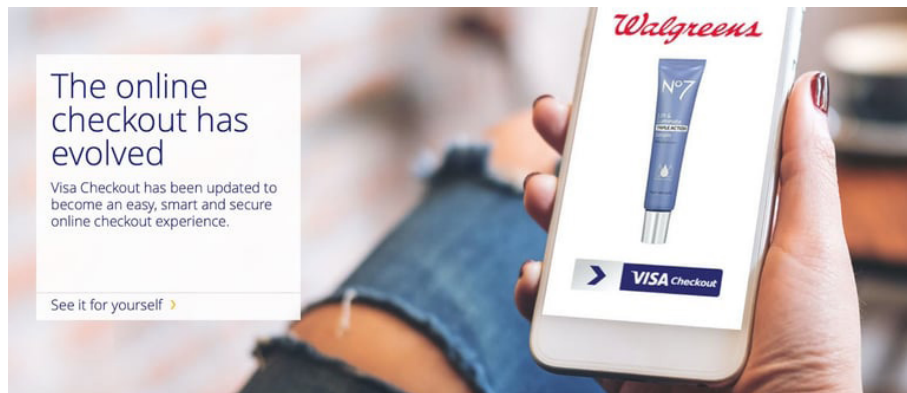
Masterpass is MasterCard's electronic payment system, although it's only useful for users of this type of card. It's quite advantageous, as it doesn't take any commissions and increases the security of the payment process.

**Remember**

It should also collect valuable data that can be used to re-engage customers and help turn them into return purchasers, such as implementing abandoned cart recovery.

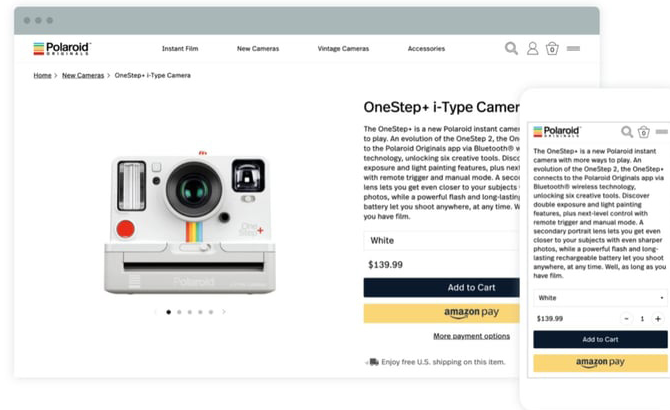
Visa Checkout

Like the previous method, Visa Checkout is a payment system developed by Visa for ecommerce companies who want to speed up the process for Visa card users.



Amazon Pay

The Amazon Pay button doesn't only apply to marketplace product pages. It's a payment option that Amazon offers to online shops and ecommerce websites that enables buyers to pay from their Amazon account (where bank card details can be stored). Amazon marketplace claims this is one of the methods most trusted by consumers, and in addition guarantees its integration with Alexa voice assistants.

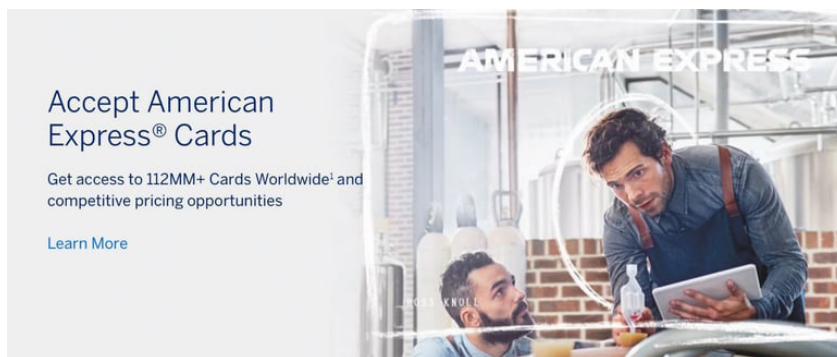


American Express

American Express is quite unfamiliar to the European customer but very popular on other continents, with a high satisfaction rate. It provides service in more than 170 countries, although its fees are rather expensive for ecommerce businesses.

The most competitive feature of an online store is to provide the buyer with the convenience of choosing between a number of payment systems and being able to pay from any channel. The fact that these systems are secure and have certificates of trust is another essential factor.

Investment in online payment methods can be demoralizing at first, because of the commissions they carry, and the integrations that you must implement. But the results will show positive in the short term, with more conversions and greater customer diversity. Invest in those payment methods that are most used by your customers, and focus on what matters: offering good quality products that everyone will want to spend money on.



3.4 SECURITY AND PRIVACY CONSIDERATIONS

Security and privacy considerations are paramount in the world of e-commerce, as they directly impact the trust and confidence of customers. Failing to address these concerns can lead to data breaches, financial losses, and damage to a company's reputation. Here are key security and privacy considerations for e-commerce businesses:

1. Secure Payment Processing:

- *Payment Card Industry Data Security Standard (PCI DSS) Compliance:* E-commerce businesses must comply with PCI DSS standards to protect customer payment card data. This includes encryption, secure storage, and access controls for cardholder information.

2. Data Encryption:

- *SSL/TLS Encryption:* Secure Sockets Layer (SSL) or Transport Layer Security (TLS) encryption protocols are essential for securing data transmitted between the user's browser and the e-commerce website. This protects sensitive information like credit card details and login credentials.

3. Access Control:

- *User Authentication:* Implement strong user authentication mechanisms, including multi-factor authentication (MFA) for customer accounts and admin access. This helps prevent unauthorized access to sensitive data.
- *Role-Based Access Control:* Limit access to customer data and administrative functions based on job roles and responsibilities.

4. Data Privacy Compliance:

- *General Data Protection Regulation (GDPR) and Other Regulations:* Ensure compliance with relevant data protection regulations, such as GDPR in Europe or CCPA in California. This includes obtaining informed consent for data collection, providing data access and deletion options, and notifying users of data breaches.

5. Secure Hosting and Infrastructure:

- *Cloud Security:* If using cloud hosting services like AWS, Azure, or Google Cloud, configure security settings and regularly update software to protect against vulnerabilities.
- *Firewalls and Intrusion Detection Systems:* Implement firewalls and intrusion detection systems to monitor and block suspicious network activity.

6. Regular Security Audits and Vulnerability Scanning:

- Conduct regular security audits and vulnerability scans of your e-commerce platform to identify and mitigate potential security weaknesses.

Keyword

Cross-site scripting (XSS) is an attack in which an attacker injects malicious executable scripts into the code of a trusted application or website.

7. Secure Coding Practices:

- Ensure that developers follow secure coding practices to prevent common web application vulnerabilities like SQL injection, **cross-site scripting (XSS)**, and cross-site request forgery (CSRF).

8. Data Minimization:

- Collect and store only the data necessary for the transaction or customer relationship. Avoid storing sensitive information unnecessarily.

9. Secure Third-Party Integrations:

- Vet third-party plugins, extensions, and integrations for security vulnerabilities. Keep them updated to patch known issues.

10. Incident Response Plan: - Develop an incident response plan to address security breaches promptly. This should include communication protocols for notifying affected parties.

11. Customer Education: - Educate customers about online security best practices, such as creating strong passwords and recognizing phishing attempts.

12. Privacy Policies and Terms of Service: - Clearly communicate your privacy practices and terms of service to customers, including data collection, storage, and sharing policies.

13. Secure Supply Chain: - Ensure the security of your supply chain, including payment processors and shipping partners, to prevent vulnerabilities from being exploited.

14. Secure Mobile Commerce: - Implement security measures for mobile commerce, including secure payment processing and user authentication.

15. Regular Security Training: - Train your employees and staff on security best practices and the importance of data protection.

Addressing these security and privacy considerations is an ongoing process that requires vigilance, regular updates, and a commitment to protecting customer data. Fostering a culture of security and privacy within your e-commerce business is essential to build trust with your customers and safeguard your reputation.

3.4.1 Electronic Commerce Security

eCommerce security is the guideline that ensures safe transactions through the internet. It consists of protocols that safeguard people who engage in online selling and buying goods and services. You need to gain your customers' trust by putting in place eCommerce security basics. Such basics include:

- Privacy
- Integrity
- Authentication
- Non-repudiation

Privacy

Privacy includes preventing any activity that will lead to the sharing of customers' data with unauthorized third parties. Apart from the online seller that a customer has chosen, no one else should access their personal information and account details.

A breach of confidentiality occurs when sellers let others have access to such information. An online business should put in place at least a necessary minimum of anti-virus, firewall, encryption, and other data protection. It will go a long way in protecting credit card and bank details of clients.

Integrity

Integrity is another crucial concept of eCommerce Security. It means ensuring that any information that customers have shared online remains unaltered. The principle states that the online business is utilizing the customers' information as given, without changing anything. Altering any part of the data causes the buyer to lose confidence in the security and integrity of the online enterprise.

Authentication

The principle of authentication in eCommerce security requires that both the seller and the buyer should be real. They should be who they say they are. The business should prove that it is real, deals with genuine items or services, and delivers what it promises. The clients should also give their proof of identity to make the seller feel secure about the online transactions. It is possible to ensure authentication and identification. If you are unable to do so, hiring an expert will help a lot. Among the standard solutions include client login information and credit card PINs.

Non-repudiation

Repudiation means denial. Therefore, non-repudiation is a legal principle that instructs players not to deny their actions in a transaction. The business and the buyer should follow through on the transaction part that they initiated. eCommerce can feel less safe since it occurs in cyberspace with no live video. Non-repudiation gives eCommerce security another layer. It confirms that the communication that occurred between the two players indeed reached the recipients. Therefore, a party in that particular transaction cannot deny a signature, email, or purchase.

3.4.2 Why you can't afford to overlook eCommerce security?

While growth in eCommerce has improved online transactions, it has attracted the attention of the bad players in equal measures. eCommerce cybercrime reports reveal that the industry is among the most vulnerable ones when it comes to cybercrimes.

The eCommerce world experiences about 32.4% of all attacks. 50% of small eCommerce store owners are lamenting that the attacks are becoming severe. Furthermore, the reports show that 29% of traffic accessing a website consists of malicious requests.

Such attacks have contributed to significant losses in financials, market shares, and reputation. Almost 60% of small eCommerce stores that experience cybercrimes don't survive more than six months.

Therefore, it is very crucial to put in place water-tight security measures and hire a robust team. It will ensure you run your business without worrying about closing down due to cybercriminals.

3.4.3 Common Ecommerce Security Issues

1. Lack of trust in the privacy and eCommerce security

Businesses that run eCommerce operations experience several security risks, such as:

- **Counterfeit sites**– hackers can easily create fake versions of legitimate websites without incurring any costs. Therefore, the affected company may suffer severe damage to its reputations and valuations.
- **Malicious alterations to websites**– some fraudsters change the content of a website. Their goal is usually to either divert traffic to a competing website or destroy the affected company's reputation.

- **Theft of clients' data**– The eCommerce industry is full of cases where criminals have stolen the information about inventory data, personal information of customers, such as addresses and credit card details.
- **Damages to networks of computers**– attackers may damage a company's online store using worm or viruses attacks.
- **Denial of service**– some hackers prevent legit users from using the online store, causing a reduction in its functioning.
- **Fraudulent access to sensitive data**– attackers can get intellectual property and steal, destroy, or change it to suit their malicious goals.

2. Malware, viruses, and online frauds

These issues cause losses in finances, market shares, and reputations. Additionally, the clients may open criminal charges against the company. Hackers can use worms, viruses, Trojan horses, and other malicious programs to infect computers and computers in many different ways. Worms and viruses invade the systems, multiply, and spread. Some hackers may hide Trojan horses in fake software, and start infections once the users download the software. These fraudulent programs may:

- hijack the systems of computers
- erase all data
- block data access
- forward malicious links to clients and other computers in the network.

3. Uncertainty and complexity in online transactions

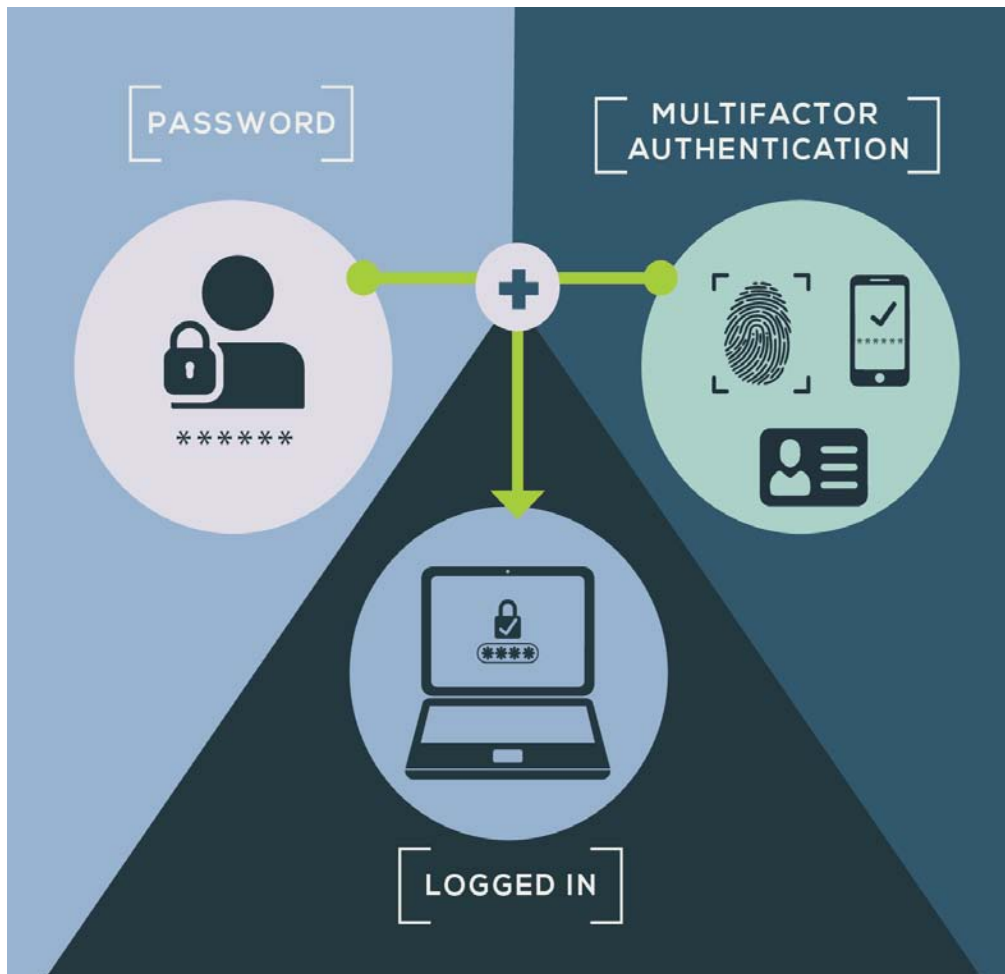
Online buyers face uncertainty and complexity during critical transaction activities. Such activities include payment, dispute resolution, and delivery. During those points, they are likely to fall into the hands of fraudsters.

Businesses have improved their transparency levels, such as clearly stating the point of contact when a problem occurs. However, such measures often fail to disclose fully the collection and usage of personal data.

3.4.4 E-commerce Website Security Measures to cover you 24/7

Use Multi-Layer Security

It is helpful to employ various security layers to fortify your security. A Content Delivery Network (CDN) that is widespread can block DDoS threats and infectious incoming traffic. They use machine learning to keep malicious traffic at bay.



You can go ahead and squeeze in an extra security layer, such as Multi-Factor Authentication. A two-factor authentication is a good example. After the user enters the login information, they instantly receive an SMS or email for further actions. By implementing this step, it blocks fraudsters as they will require more than just usernames and passwords to access the legit users' accounts. However, hacking can still occur even if an MFA is in place.

Get Secure Server Layer (SSL) Certificates

One of the primary benefits of SSL Certificates is to encrypt sensitive data shared across the internet. It ensures that the information reaches only the intended person. It is a very crucial step because all data sent will pass through multiple computers before the destination server receives it.

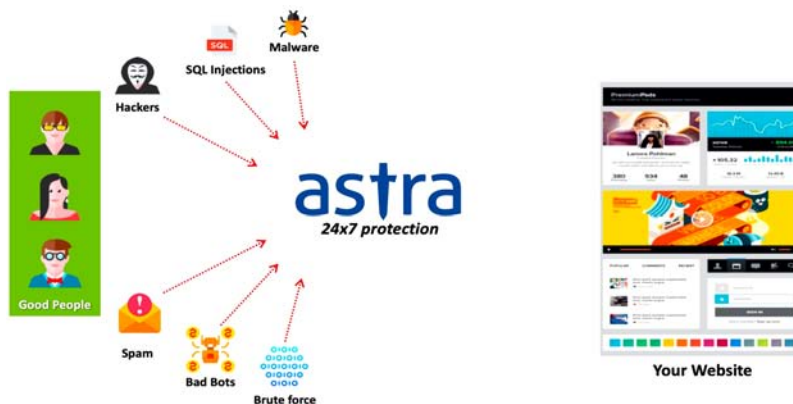
TYPES OF SSL CERTIFICATES



If SSL certificate encryption is absent, any electronic device between the sender and the server can access sensitive details. Hackers can thus take advantage of your exposed passwords, usernames, credit card numbers, and other information. Therefore, the SSL certificate will come to your aid by making the data unreadable to unintended users.

Use solid-rock Firewalls

Use effective e-commerce software and plugins to bar untrusted networks and regulate the inflow and outflow of website traffic. They should provide selective permeability, only permitting trusted traffic to go through. You can trust the Astra firewall to stop Spam, XSS, CSRF, malware, SQLi, and many other attacks on your website. It ensures that the only traffic that accesses your eCommerce store consists of the real users. Moreover, we have specialized WAF solutions for WordPress, Magento, Opencart, Prestashop, Drupal, Joomla, and custom made PHP sites.



In a nutshell, the Astra firewall protection from:

- OWASP top 10 threats
- Protection from bad bots.
- Spam protection.
- Protection against 100+ types of attacks.

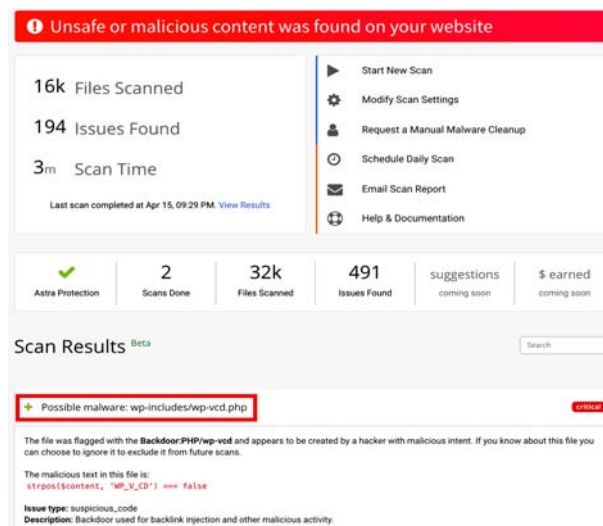
Anti-Malware Software

Your electronic devices, computer systems, and web system need a program or software that detects and block malicious software, otherwise known as malware. Such protective software is called Anti-malware software. An effective anti-malware should render all the hidden malware on your website. One such scanner is the Astra Malware Scanner. It scans your web system for all malicious software round the clock and is at your disposal. It also lets you automate your scans with its “Schedule a Scan” feature. You can schedule the scans daily, weekly, monthly or fortnightly.

With Astra Scanner, you can enjoy:

- unlimited scans
- Notifications in case of any changes in file
- scanning powered by machine learning.
- collective intelligence

It is capable of cleaning malware like credit card hack, Japanese spam, pub2srv, Pharma attacks, and malicious redirects.



Comply with PCI-DSS Requirements

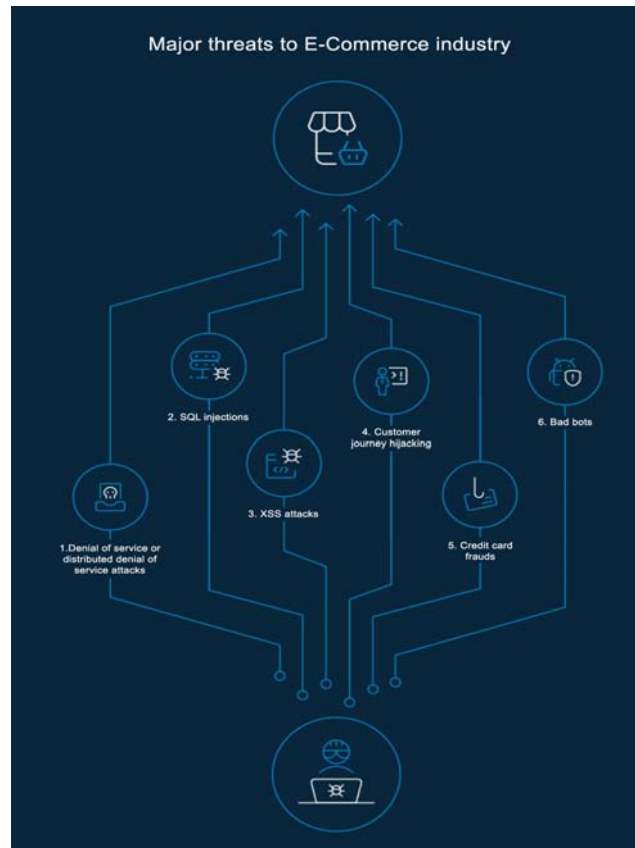
Make it a routine to maintain the Payment Card Industry Data Security Standard (PCI-DSS) to protect all credit card data. All businesses that handle credit card transactions need to follow these requirements:

Goals	PCI DSS Requirements
Build and Maintain a Secure Network	1. Install and maintain a firewall configuration to protect cardholder data 2. Do not use vendor-supplied defaults for system passwords and other security parameters
Protect Cardholder Data	3. Protect stored cardholder data 4. Encrypt transmission of cardholder data across open, public networks
Maintain a Vulnerability Management Program	5. Use and regularly update anti-virus software or programs 6. Develop and maintain secure systems and applications
Implement Strong Access Control Measures	7. Restrict access to cardholder data by business need to know 8. Assign a unique ID to each person with computer access 9. Restrict physical access to cardholder data
Regularly Monitor and Test Networks	10. Track and monitor all access to network resources and cardholder data 11. Regularly test security systems and processes
Maintain an Information Security Policy	12. Maintain a policy that addresses information security for all personnel

3.4.5 Security Threats That E-Commerce Stores Face

Ecommerce security for e-commerce is a must-have and consumers need to be constantly reassured about the safety measures that have been taken to mitigate a security threat. Features which an e-commerce security needs to adapt are:

- **Invisible security** – The website works fast and returns minimal errors. The e-commerce site should implement website speed optimization, use a faster DNS provider and reduce image sizes.
- **Visible security** – Trust signals are visuals and graphics that make the consumers feel safe when they shop from an online e-commerce site. Few trust signals like About us page, branding, consumer testimonials, secure payment gateways and guarantees would help.



Both invisible and visible security help build trusting consumer relationships.

Cybersecurity is a crucial feature which needs to be implemented by the e-commerce industry. Without proper security practices put into practice online retailers will put themselves and their consumers at high risk for data breach.

Some of the types of threats faced by e-commerce are mentioned below:

- Denial of Service or Distributed Denial of Service attacks

A distributed denial-of-service (DDoS) attack occurs when multiple machines are operating together to attack the e-commerce site and server. They are flooded with malicious queries that stop the site from working properly making the website inoperable. These attacks are disruptive, costly and affect overall sales.

- SQL injections

SQL injections are cyber-attacks used to manipulate backend databases and access information that was not intended to be displayed. They can inject rogue code into the database to data as well as delete it.

- XSS attacks

Cross site scripting (XSS) is a type of attack in which malicious scripts are injected into the websites and web applications for the purpose of running on the end user's device.

- Customer journey hijacking

Customer journey hijacking (CJH) is a customer-side phenomenon whereby unauthorized advertisements are injected into consumers' browsers. The injected advertisements can include product ads, pop-ups, banners and in-text redirects.

- Credit card frauds

Credit card fraud is the unauthorized use of a credit or debit card to make a purchase. The card numbers can be stolen from unsecured websites or can be obtained in an identity theft scheme.

- Bad bots

Bad bots are designed to perform a variety of malicious jobs. They are capable of stealing content from the website, such as product reviews, product pricing, catalogs and so on which they publish on some other site. This affects the search engine ranking of the retailers' website. Bad bots are able to make multiple page visits within a very short span of time thus straining Web servers, which makes the site slow for genuine users.

3.4.6 Some Ways to E-Commerce Can Keep Their Online Stores Safe Using Identity Management

- Renew SSL certificates and ensure total PCI compliance.

SSL is the de facto standard for securing online transactions and essential to establish secure connectivity between the end-user systems and your e-commerce website. With SSL certifications in place, one can move from HTTP to HTTPS, which serves as a trust signal and prerequisite for consumers to provide their personal details and credit card information.

Payment Card Industry Data Security Standard (PCI DSS or PCI) is an industry standard that ensures credit card information collected online is being transmitted and stored in a secure manner. E-commerce websites need to maintain PCI compliance.

- Encourage your consumers to go passwordless while accessing their accounts

In the retail industry, registering or logging in without a password calls for consumer retention and loyalty. By enabling the one-touch login feature, consumers can log in with a magic link or OTP sent to their mobile number or email id.

- Prominently display payment trust signals and logos on your payment pages.

Prominently displaying payment trust signals and logos on payment pages shows the consumer the security measures taken by the e-commerce website. Consumer privacy is critical in e-commerce. E-commerce sites should only collect data that is useful for the purposes of fulfilling the transaction.

- Verify card and address details to reduce the risk of fraudulent transactions

In order to risk fraudulent transactions, e-commerce websites need to verify card and address details of consumers. Usage of unique tracking numbers for every transaction helps to combat chargeback fraud. Geo-targeting can also help eliminate fraudulent transactions.

- A secure login form to prevent credential attacks

By implementing multi-factor authentication (MFA), retailers would be able to ensure that digital consumers can be authenticated. This method requires the consumer to provide two or more verification factors to gain access to the online account.

ROLE MODEL



TOBIAS LÜTKE

Tobias «Tobi» Lütke MSC is a German entrepreneur who is the co-founder and CEO of Shopify, an e-commerce company based in Ottawa, Ontario, Canada. He has been part of the core team of the Ruby on Rails framework and has created open source libraries such as Active Merchant. As of 2022, he was the 11th richest Canadian.

Early life

Lütke was born in Koblenz, Germany in 1981. He received a Schneider CPC (German brand of the Amstrad Colour Personal Computer distributed by the Schneider Rundfunkwerke AG) from his parents at the age of six. By 11 or 12, he began rewriting the code of the games he played and modifying computer hardware as a hobby. Lütke dropped out of school and entered an apprenticeship program at the Koblenzer Carl-Benz-School to become a computer programmer after tenth grade. He moved from Germany to Canada in 2002.

Lütke cites John Carmack's .plan-files from the mid-1990's as «making a huge impression» on him as a teenager and calls them a “a master class in systems design”.

Career

In 2004, Lütke, along with his partners, Daniel Weinand and Scott Lake, launched Snowdevil, an online snowboard shop. Lütke built a new e-commerce platform for the site, using Ruby on Rails. Soon after, the Snowdevil founders shifted their focus from snowboards to e-commerce and launched Shopify in 2006. He currently owns 7% of Shopify, which went public in 2015. Despite controlling a minority of the shares outstanding, he controls a 40% voting interest in Shopify due to a two-class voting structure.

The Globe and Mail named Lütke “CEO of the Year” in November 2014. Lütke was presented with the Meritorious Service Cross on November 5, 2018, for his work in supporting the growth of the Canadian technology industry. In 2019, Lütke donated \$1,000,001 to Team Trees, the biggest donation as of May 10, 2023, with the message,

“For the Lorax”. In 2021, Lütke donated \$1,200,001 to Team Seas, the 4th biggest donation as of May 10, 2023, with the message “For the Lorax... but wet.”.

On September 8, 2021, it was announced that Lütke, along with former and current Shopify top executives and Celtic House Venture Partners, invested \$3 million in Creative Layer, “a global personalized print-on-demand platform for managing Shopify orders, proofs, fulfillment, and team members”.

On January 31, 2022, cryptocurrency exchange Coinbase announced Lütke would join its board of directors.

SUMMARY

- E-commerce platforms have revolutionized the way businesses and consumers engage in online transactions, ushering in a new era of convenience and accessibility in the world of commerce.
- An eCommerce platform is a lifesaver if you decide to launch an online shop from scratch or as an addition to a brick-and-mortar store.
- Most eCommerce platforms offer countless ready-to-use designs and themes so you can create your webstore's appearance quickly and easily.
- Headless ecommerce platforms are also called CaaS platforms. They organize and distribute content as a service (CaaS). Headless platforms decouple the shopping cart from the CMS completely.
- E-commerce software is a stand-alone program or software suite that enables you to sell your products and services online.
- SaaS is a type of e-commerce website software that is hosted entirely off-site with the hosting and operations controlled by a third party.
- Online payment allows you to pay money via the internet. Buyers will use this type of payment when they purchase goods online or offline.
- Credit cards are one of the payment sources in the list of payment methods online. These online payment modes allow cardholders to buy their preferred merchandise and services.
- E-Commerce security is the guideline that ensures safe transactions through the internet. It consists of protocols that safeguard people who engage in online selling and buying goods and services.

MULTIPLE CHOICE QUESTIONS

1. Which of the following is NOT a commonly used e-commerce platform?
 - a. Shopify
 - b. WordPress
 - c. Magento
 - d. WhatsApp
2. What does CMS stand for in the context of e-commerce platforms?
 - a. Customer Management System
 - b. Content Management System
 - c. Cart Management System
 - d. Checkout Management System
3. Which e-commerce payment method allows customers to pay for their purchases in installments?
 - a. Credit card payments
 - b. Digital wallets
 - c. Buy Now, Pay Later (BNPL)
 - d. Bank transfers
4. What is the primary function of a payment gateway in e-commerce?
 - a. Managing product listings
 - b. Securing customer data
 - c. Processing online payments
 - d. Managing customer reviews
5. Which of the following is a key aspect of e-commerce security?
 - a. Inventory management
 - b. Search engine optimization
 - c. Data encryption
 - d. Social media marketing

REVIEW QUESTIONS

1. What are the features of an e-commerce platform?
2. What are the types of e-commerce platforms?
3. Explain the different types of e-commerce software.
4. Discuss about the online payment systems.
5. What is electronic commerce security?

Answers to Multiple Choice Questions

1. (d) 2. (b) 3. (c) 4. (c) 5. (c)

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DIGITAL MARKETING STRATEGIES

CHAPTER 4

DIGITAL MARKETING STRATEGIES

LEARNING OBJECTIVES

After studying this chapter, you will be able to:

1. Learn about online marketing
2. Discuss about SEO and SEM
3. Explain the social media marketing
4. Describe the email marketing and content strategy

“Digital marketing is no longer about the stuff that you make, but about the stories you tell.”

—Seth Godin

INTRODUCTION

A strong digital marketing strategy is crucial to organizational success in today's business landscape. Companies thriving in the digital world typically allocate significant resources to the development of digital marketing strategies. In the process, organizations reach customers across various digital and social platforms, driving positive revenue gains, improved conversion rates and engage with their customers.

From a higher-level standpoint, marketing strategy is the process of identifying specific marketing goals. An overall marketing strategy highlights achievable goals for traditional (print, radio, broadcast) and digital channels. Using established strategies and goals, marketers evaluate various marketing tactics necessary to achieve those strategic goals.



A digital marketing strategy is a plan for how your company will establish an Internet presence through various online channels with the goal to reach and convert your target audience. Digital marketing strategies include search engine optimization (SEO), pay-per-click (PPC) advertising, email marketing, and more.

4.1 ONLINE MARKETING

Keyword

Target market is a specific group of potential customers who a business aims to reach with its products or services.

Online marketing is the art and science of selling products and services over the internet. The art involves finding marketing strategies that appeal to your **target market** and translate into sales, while the science is the research and analysis necessary to measure the success of those strategies.



Online marketing, also known as digital marketing, is the practice of leveraging web-based channels to spread a message about a company's brand, products, or services to its

potential customers. The methods and techniques used for online marketing include email campaigns, social media, advertising, search engine optimization (SEO) and more. The objective of marketing is to reach potential customers through the channels where they already spend their time reading, searching, shopping and socializing online. In short, go where the customers is.

There are also many benefits and challenges inherent to online marketing, which uses primarily digital mediums to attract, engage and convert virtual visitors into actual customers.

Offline marketing is different from online marketing, because it uses alternative mediums for running campaigns. With traditional offline marketing work historically using mediums like print, billboards, television and radio advertisements, it can be difficult to convert those customers online as it involves switching mediums to something like a website.

Before online marketing channels emerged, the cost to market products or services was often prohibitively expensive, and difficult to measure. Think of TV ad campaigns, which are measured through consumer focus groups to determine levels of brand awareness. Today, anyone with a business can participate in online marketing and build customer acquisition campaigns at little to no cost. The best online marketing products and services also have the ability to experiment and optimize your campaigns to fine-tune their efficiency and increase return on investment (ROI).

Keyword

Social media is digital technology that allows the sharing of ideas and information, including text and visuals, through virtual networks and communities.

4.1.1 What Is Digital Marketing?

The term digital marketing refers to the use of digital channels to market products and services to consumers. This type of marketing involves the use of websites, mobile devices, **social media**, search engines, and other similar channels. Digital marketing became popular with the advent of the internet in the 1990s.

Digital marketing involves some of the same principles as traditional marketing and is often considered an additional way for companies to approach consumers and understand their behavior. Companies often combine traditional and digital

marketing techniques in their strategies. But digital marketing comes with its own set of challenges, including implicit bias.

4.1.2 How Does Online Marketing Work?

Online marketing uses a variety of digital, online, and electronic means to push a message to current and potential customers. The message might be crafted as an image, a piece of text, or a video, and distributed in any number of places. It could be as simple as a social media feed or it could be as complex as a wide-ranging and comprehensive strategy that encompasses multiple modes including social media, email newsletters, websites, and other channels.

The type of online marketing that will be right for your business will depend on the nature of your business, the habits and demographics of your target market, and your budget, among other things. Market research will lead you to the right strategy or mix of strategies for your offerings, and detailed performance measurements will indicate which are most successful for you.

A hair salon that wishes to incorporate online marketing might add an Instagram feed featuring photos of hairstyles completed by its stylists to show off their talent. A Facebook page could highlight rave reviews from happy customers and display a link to the salon's website, where prospects could find information on reservations, available services, and photos of the salon's interior.

4.1.3 Do I Need Online Marketing?

Online marketing is increasingly important to small businesses of all types.

In the past, internet marketing was something that local brick-and-mortar businesses could ignore in favor of traditional methods. However, as consumer habits change, shoppers are much more likely to research their purchases online before buying. In fact, they're likely to research a product online even while they're standing in the store. Generally, all businesses should include some online marketing in their marketing mix or they risk missing out on business.

4.1.4 Key Characteristics of Online Marketing

With the maturity of Internet technology and low cost of networking, the Internet is like an "adhesive" to bind businesses, groups, organizations and individuals together across

time and space, and making the exchange of information between them become “so easy.” Of Marketing, the most important and most essential is information dissemination and exchange between organizations and individuals. If there is no exchange of information, then the transaction has no source. For this reason, the Internet has certain features which are required in marketing to make internet marketing possesses the following characteristics:

- **Not subject to the limitations of time and domain.** The ultimate goal of marketing is occupy market share. Because the Internet can exchange information by transcending time and space constraints, firms have more time and more space for marketing. They could provide global marketing anytime and anywhere.
- **Rich media.** The Internet was designed to transmit multimedia information, such as text, sound, image and so on information. Thus making the deal of exchange of information can exist and exchange in many forms, moreover, marketing staff can fully develop their creativity and initiative.
- **Interactive.** With the display of merchandise image, the provision of commodity information query, internet capable to achieve interaction and communication between supply and demand. It can also conduct product testing.
- **Consumer satisfaction degree feedback and other activities.** Internet provides the best tools for product co-design, product information release, and the various technical services.
- **Personalization.** Internet marketing has features of one to one, rational, consumer-led, non-compulsory, and progressive. Besides, it brings about low-cost and personalized promotion form, which exactly avoids a salesman compulsory sale which lies in traditional promotion. Moreover, a long-term good relation with consumers would be easily built up during the special information provision and interactive chat process.
- **Go on growing.** Owing to the growing numbers of Internet users and throughout the world, most of these users are young, middle-class and high educational standards. As this part of the group has a strong market, strong purchasing power and influence, and therefore the internet marketing has a strong populace basis and a great potential for the development of market.
- **Integration.** Internet marketing able to links the vital activities in marketing, commodity information collection, customer inquiries, purchase, payment, as well as after-sales service as a whole sale line, makes the marketing more convenient. On the other hand, to make use of the Internet, different marketing activities would be unified designed coordinated, in order to convey the same information to consumers, preventing the spread of various negative effects of inconsistency.

Keyword

Marketing channel consists of the people, organizations, and activities necessary to transfer the ownership of goods from the point of production to the point of consumption.

- **Advancement.** In my view, Internet is the most powerful marketing tool. It encompasses **marketing channel**, promotion, electronic transaction and interactive customer service, market information analysis and delivery of a variety of functions. Moreover, it has a one to one marketing capability, which is consistent with future trends of customized marketing and direct marketing.
- **High efficiency.** Computer has the ability of store vast amounts of information and inquiries automatically. The amount and accuracy of information it carries and transmits is far more than other media, so it is better to attain market demand. Through updating the product or adjusting the price promptly, they can meet customer needs more effectively.
- **Economy.** In virtual of present exchange of information through the Internet instead of the previous exchange ways, on the one hand, it reduces printing and mailing costs, people can enjoy rent-free, as well as free of water and labor costs. On the other hand, losses caused by multiple exchanges can be reduced.
- **Technology-supportive.** Network marketing is built on Internet which was supported by high-tech, a firm wants to conduct network marketing must have a certain technical investments and technical support. At the same time, it may changes the traditional organizational form, and to enhance information management function, as well as introduces talents who proficient in both IT and marketing. Therefore the firm can have sustainable competitive advantage.

Of course, it has limitations. One barrier is internet marketing requires users to grasp newer technologies rather than traditional media. Low-speed Internet connections are another barrier. In the scenario which companies build large or overly-complicated websites, delay might be caused because of long-time connections. From the buyer's perspective, they are not allows to touch, smell, taste or try on goods before making an online purchase. However, there is an industry standard for e-commerce vendors to reassure customers by having liberal return policies as well as providing in-store pick-up services.

4.1.5 Types of Online Marketing

There are nearly as many types of online marketing as there are ways of finding information online. However, there are several methods which tend to see success.

Search Engine

Online marketing includes search engine optimization (SEO) and search engine marketing (SEM). SEO is the process of fine-tuning the text on your business website so that the site ranks higher in search engine result listings when your potential customers enter search terms that match your product offerings. It doesn't cost anything to optimize your website to perform better in search results, and a high-ranking website could bring in tons of organic traffic (website traffic that happens naturally).

SEM, on the other hand, is a paid search marketing strategy. Search engines such as Google charge a fee to display your ad when a user conducts a search using one of your keywords. These fees are also called pay-per-click (PPC) fees.

Note: SEM statistics can provide excellent feedback on the effectiveness of your advertising. For example, a metric called the click-through rate tells you the number of times your ad has been clicked relative to the number of times the page containing the ad has been viewed. It gives an indication of how appealing people find your ad to be. The more appealing it is, the more likely they are to click through.

Online Advertising

There are many types of online advertising opportunities. One method is to use banner ads embedded into web pages. Other options include interstitials, which are ads that appear before or between pieces of content. Different social media providers, such as Facebook, also sell advertising on their platforms.

Email

You can use email to send out newsletters and customized product or service offerings specific to the customer's needs. You can also keep your customers up-to-date with company news, upcoming events, and special offerings.

Once you have built a subscriber email list of potential customers who may be interested in your products or services, email marketing is a very effective way to reach them, because your message arrives in their email inbox, where they are likely to see it.

Social Media

Social media platforms such as Twitter, Facebook, LinkedIn, Instagram, and Pinterest (to name a few) are all opportunities for marketing online. They work best when part of an overall content marketing strategy, which emphasizes the quality and usefulness of the content you create for your brand.

Blogging

Maintaining a blog is another way to converse with your customers and keep them informed about your products or services. A blog can be used to provide advice and get useful feedback.

Remember

Don't forget the "social" in social media. Social media marketing works best as a conversation with your customers. It requires active participation rather than just posting ads for your products or services.

The more value you can provide to customers through the expertise you share in your blog, the better you position your brand as a trustworthy source. This can help customers be willing to take a chance on your offering.

4.1.6 Benefits of Online Marketing

A key benefit of using digital channels for marketing a business or product is the ability to measure the impact of any given campaign, as well as how visitors acquired through different digital marketing channels interact with a digital experience. The visitors that convert into paying customers, can be analyzed further to determine where and how their online journey concluded in a purchase.

Analytics tools for websites or mobile apps can help determine the following:

- Which digital marketing channels and campaigns are the most cost-effective at acquiring customers, based on the conversion rate of visitors to customers, and the cost of those visitors
- Which channels are effective at acquiring and driving higher lifetime value for customers — such as email marketing or social media, which are good channels for driving repeat purchases and keeping customers engaged

- Which cohorts of customers exhibit strong engagement behavior and high potential for upsells — such as with software or mobile apps, where typically it's easier to sell more (expensive) products to customers with higher engagement as they would be more familiar with your brand already

4.1.7 Examples of Online Marketing

Some examples of digital marketing campaigns include:

- Canon advertises for search keywords related to “photography” on Google and Bing search engines to market their cameras to a relevant audience to drive traffic to a specific webpage.
- Whole Foods collects email addresses on their website to create email lists that can be used to advertise new products, sales, and events in their stores.
- Dove creates video advertisements and shares them with their audience on Facebook, Twitter, and other social media platforms to promote favorable conversation about their brand and products.
- Bite Beauty partners with influencers to promote a new lipstick to their target audience of high-quality, beauty enthusiasts.

Although digital marketing creates many opportunities for online businesses to grow their presence via the internet and build their audiences, there are also inherent challenges with these methods of marketing. First, the marketing can become impersonal, due to the virtual nature of message and content delivery to a desired audience. Marketers must inform their digital marketing strategy for online marketing with a strong understanding of their customer's needs and preferences.

Online marketing can also be crowded and competitive. Although the opportunities to provide goods and services in both local and far-reaching markets is empowering, the competition can be significant. Companies investing in digital marketing may find visitors' attention is difficult to capture due to the number of business marketing their products and services online. Marketers must develop a balance of building a unique **value**

Keyword

Value proposition is a simple statement that summarizes why a customer would choose your product or service.

proposition (UVP) and brand voice as they test and build marketing campaigns on various channels. It is important to communicate learnings about your audience and marketing campaigns to your marketing management team in an effort to build widespread support among teams.

4.2 SEO AND SEM

SEO and SEM strategies help marketers put digital content in front of the right audience. However, SEO strategies focus on organic search whereas SEM generates paid traffic.

SEO is the act of improving the visibility of a website's outcomes on specific search engines through unpaid forms of online advertising. It is used to increase traffic to a website by improving its rank on the search engine pages.

SEM is the act of improving the visibility of a website outcomes on specific search engines through paid advertisements. It includes Search Engine Optimization, contextual advertising, AdSense, social networking, pay-per-click (PPC), AdWords, and so on.

Did You Know?

Webmasters and content providers began optimizing websites for search engines in the mid-1990s, as the first search engines were cataloging the early Web.

4.2.1 Search Engine Optimization (SEO)

Search engine optimization is the science of improving a website to increase its visibility when people search for products or services. The more visibility a website has on search engines, the more likely it is that brand captures business.

Website visibility is commonly measured by the placement -- or ranking -- of the site on search engine results pages (SERPs). And companies always vie for the first page, where they are most likely to garner the most attention.

Using Google as an example, SERPs often feature ads at the top of the page. These are positions that businesses are willing to pay for to ensure placement on that first page. Following ads are the regular search listings, which marketers and search engines refer to as organic search results. The SEO process aims to increase a business's organic search results, driving organic

search traffic to the site. This enables data marketers to distinguish between traffic that comes to a website from other channels -- such as paid search, social media, referrals and direct -- and the organic search traffic.

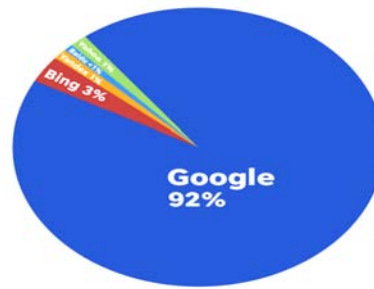


Organic search traffic is usually higher-quality traffic because users are actively searching for a specific topic, product or service for which a site might rank. If a user finds that site through the search engine, it can lead to better brand engagement.

- *A Formal Definition of SEO:* Search engine optimization is a set of technical and content practices aimed at aligning a website page with a search engine's ranking algorithm so it can be easily found, crawled, indexed, and surfaced in the SERP for relevant queries.
- *A Simpler Definition of SEO:* SEO is about making improvements to your website's structure and content so its pages can be discovered by people searching for what you have to offer, through search engines.
- *The Simplest Definition of SEO:* SEO is what you do to rank higher on Google and get more traffic to your site.

Yes, Google is just one search engine of many. There's Bing. Directory search engines. Even Instagram is a search engine. But capturing 92% of the market share, the terms "Google" and "search engine" are synonymous for the intents and purposes of this post.

Search Engine Market Share



SEO is all about optimizing a website for search engines. SEO is a technique for:

- designing and developing a website to rank well in search engine results.
- improving the volume and quality of traffic to a website from search engines.
- marketing by understanding how search algorithms work, and what human visitors might search.

Remember

If you plan to do some basic SEO, it is essential that you understand how search engines work.

SEO is a subset of search engine marketing. SEO is also referred as SEO copyrighting, because most of the techniques that are used to promote sites in search engines, deal with text.

Why Is SEO Important in Digital Marketing?

SEO or Search Engine Optimization is the life force of websites across the globe. It is the practice of refining the technical elements of your website, along with conducting off-page activities, to help websites rank better on search engines.

SEO includes a plethora of activities, each holding its own relevance in the eyes of search engine algorithms. Some common tasks that go into SEO are keyword optimization, creating authoritative or high-quality content, building backlinks, and website audits.

SEO holds unparalleled importance for businesses online, as it is the main factor that affects your site's rankings organically on search engines. Now that you know what is SEO, let us dive deep into what it entails and how it works.

How Does SEO Work?

While there is a way to maximize results, it is almost impossible to fully manipulate search algorithms. Businesses often look to the shortest path toward ideal results with the least amount of effort, but SEO requires a lot of action and time. There is no SEO strategy where something can be changed today with the expectation of clear results tomorrow. SEO is a long-term project, with daily action and constant activity.

Search engines use bots to crawl all website pages, downloading and storing that information into a collection known as an index. This index is like a library and when someone searches for something in it, the search engine acts as the librarian. The search engine pulls and displays relevant information from the search query and shows users content related to what they were looking for. Search engine algorithms analyze webpages in the index to determine the order those pages should be displayed on the SERP.

How SEO works



What Algorithms Evaluate for Search Engine Optimization?

There are hundreds of factors that go into what content from the index gets displayed into a SERP. However, they bubble up into five key factors that help determine which results are returned for a search query.

- **Meaning of the query.** To return relevant results, the algorithm needs to first establish what information the user is searching for. This is known as intent. To understand intent, the algorithm is looking to understand language. Interpreting spelling mistakes, synonyms and that some words mean different things in different contexts all play into the algorithm understanding searcher intent. For example, search engines would need to be able to distinguish between “bass” as a fish and “bass” as an instrument. Intent would be based on additional search terms, historical search, location search and more to display the correct information.

- **Relevance of webpages.** The algorithm analyzes webpage content to assess whether the sites contain information relevant to what a user is looking for. This comes after intent is established. A basic signal for relevance would be if the webpage includes the keywords used in the search. This includes showing up in the body copy or page headings. But beyond keyword matching, search engines use aggregated interaction data to determine if the page is relevant to the search query. This looks at anonymized data from previous searches to match the page with the query.
- **Quality of the content.** Search engines' aim is to prioritize the most reliable sources available. The intelligence built into the algorithms can identify which pages demonstrate expertise, authoritativeness and trustworthiness in relation to the intent.
- **Usability of webpages.** Web design and accessibility play a big part in search rankings. The algorithm looks for how the site appears in different browsers, if it's designed for different device types -- such as desktops, tablets and phones -- and if the page loading times work well for users with slower internet connections.
- **Context and settings.** Search engines and their algorithms use information from past search history and search settings to help determine which results are most useful to a user at that moment. Country and location can be used to deliver content relevant to the area from which someone is searching. For example, someone searching for "football" in New England would get different results than someone entering for the same query in England.

SEO Benefits

Search engine optimization is an essential marketing activity to make a website or business visible on the web. But it also provides several other benefits to companies.

- ***Builds Trust and Credibility:*** Sites that rank high on SERPs are considered to be of the highest quality and most trustworthy. Results shown on the first page are the most relevant, resulting in more credibility for the business or website. Having the right content on the site and a good user experience will help the website rank higher.
- ***Provides a Competitive Advantage:*** When good SEO is deployed consistently, those that do it more and better will outrank the competition. Many businesses feel they cannot afford to not be on the first page of a search result. But if a team works toward that goal and shows ahead of the competition, they will have a competitive edge.
- ***Reaches More People:*** SEO helps attract any user with intent at any time, regardless of phase of the customer journey that user is in. It relies on keywords

and phrases to attract audiences to specific products and services. Businesses can create a list of keywords for which they would like to rank, then build content around those keywords.

- ***Supports Content Marketing:*** By having a list of keywords to rank for and building content around those keywords, users are more likely to find the information they seek. Content and SEO work in harmony with each other. A site will rank better by creating useful, high-quality content that is optimized for those keywords. Ensuring the keywords are present in headings, meta descriptions and the body of the content will improve rankings for those terms.
- ***Ranks Better in Local Searches:*** The use of local searches are becoming more common, with users looking for products or services “near me.” To improve listings in these searches, a company can create a Google My Business account and optimize the listing for local searches. Along with that and the localized content on the website, a user will be more likely to see local search results in their queries.
- ***Understand Web Environment:*** Users that stay up to date on the ever-changing internet will be better able to execute the ongoing SEO needs for a website. By staying up to date, businesses can better understand how search works and make more informed decisions on how to change and adapt their strategies.
- ***Relatively Inexpensive:*** To have an effective SEO strategy, companies need to invest in the time and resources to be effective. There are companies that can be hired as SEO experts to manage the strategies, but companies with the right team in place can do it themselves.
- ***Get Quantifiable Results:*** There are tools and analytics data that can be tapped into to measure the effectiveness of SEO efforts. Google Analytics can provide comprehensive data around organic traffic. Data includes pages that customers engaged with and keywords used in search. That data can then be cross-referenced with intended actions taken to see how SEO played a role in customer engagement or acquisition.

Types of SEO in Digital Marketing

SEO is broadly divided into 12 types.

Type	Short Description
On-Page SEO	All the measures you take to make your web page rank higher on search engine results pages (SERP) falls under On-Page SEO.
Off-Page SEO	This refers to everything you do outside of your site to fare better and feature higher up in Google’s SERPs.

Technical SEO	It is largely to help Google bots successfully crawl, interpret and index all the pages of your site for future use.
White Hat SEO	Refers to all the optimization techniques which abides by Google's Search Engine Guidelines.
Black Hat SEO	This is the exact opposite of white-hat SEO in that it finds and takes advantage of any loopholes or weaknesses in Google's search algorithm to rank better on its SERPs.
Grey Hat SEO	It is often used by SEO agencies due to pressure to see quick results from a client and fall in between white and black hat SEO in terms of approach.
Negative SEO	This is done with the intention of making your competitor's search rankings suffer so that you yourself can take their place or benefit from it.

1. On-Page SEO

All the measures you take to make your web page rank higher on search engines falls under this umbrella. On-Page SEO includes authoring high-quality content with the sole purpose of it proving helpful to your website visitors, adding meta tags to help Google bots better understand your content, using HTML tags to highlight headings and other content elements and ensuring there are no broken links or duplicate content/pages. Cleaning up the URL structure and having an ordered naming system for various similar pages that fall under one category, choosing images that are not too big while writing descriptive file names, etc. are just a few other on-page SEO techniques.

On-page SEO refers to the technical processes that go into optimizing a page's tags, content, images, internal links, and other elements that improve its visibility for search engines.

It is one of the most important types of SEO in digital marketing that directly affects your website's rankings and overall visibility. There are many elements that go into optimizing on-page SEO for a page. A checklist for on-page SEO can help you in refining not only your page, but also its overall functionality. Here are the most important factors to consider for on-page SEO:

- **Site Speed:** How fast your website loads can make a lot of difference in reducing the bounce rates. It is a very crucial factor for on-page SEO. Using on-page SEO techniques like optimizing HTML codes, refining meta tags, reducing the redirects on pages, and optimizing the size of media on pages significantly fastens your site's loading speed.
- **Image Optimization** – This on-page SEO technique involves two factors – compressing the size of images and media on your website to ensure a fast loading speed and optimizing the alt text of images for better visibility to search engine crawlers. Using the right keywords in alt text for images can

significantly boost your page's visibility for search engines, and improve your website's rankings.

2. Off-Page SEO

Off-page SEO refers to everything you do outside of your site to fare better and feature higher up in Google's SERPs. It includes working on external ranking factors like building links from trusted sites in the same domain as you, successful social media marketing, having customers give you a positive review on various online forums, etc.

Off-page SEO is another type of SEO that carries a lot of weight in determining your website's ranking. Off-page SEO is every SEO activity you carry outside of your website. This can include obtaining backlinks from authoritative websites in your domain, social media advertising, reviews, and much more.

The most important activity in off-page SEO optimization is link building and obtaining backlinks. Link building is a process that involves getting links for your website on other relevant websites to display your content's value and authority to the search engines.

Getting backlinks for your website from authoritative websites in your domain is a great indicator of the value of your content's quality, authority, and relevance for search engine algorithms. While it may be difficult to measure the exact impact of one backlink, getting one from an authoritative website can significantly boost your rankings and domain authority.

Another factor in off-page SEO is social media. Social media channels can help in improving your traffic. If there is a good amount of chatter on social media channels such as Twitter, LinkedIn, Facebook, etc., about your website or its content, search engines make it easier to find your website. Having content that is shared a lot on social media or generates conversation can bring you a lot of organic traffic, which boosts your website's SEO.

3. Technical SEO

Technical SEO is largely to help Google bots successfully crawl, interpret and index all the pages of your site for future use. Creating a thorough XML sitemap, making your site mobile-friendly, adding structured data to help web crawlers sort and categorize your pages based on the type of content they carry are just some of the techniques used. Do refer to our deep-dive post on what is technical SEO for more insights.

Technical SEO is a type of SEO that involves on-site auditing and optimizing of technical elements to improve the website's performance and SERPs. Technical

SEO mainly focuses on improving the functionality and efficiency of your website's performance. For instance, search engines like Google often give preference for rankings to websites that have a very responsive design and crawlable website architecture. Search engines also give preferences to websites that have a seamless mobile responsive website. Having weak technical SEO on your website can even result in getting penalized by search engines.

There are many elements involved in this type of on-page SEO. For instance, using a secure HTTPS connection and caching information for any media on your page can improve the page load time. Other technical SEO elements involve uploading sitemaps, refining the HTML code, meta tags, alt texts, and more.

Another important aspect of technical SEO is to optimize the HTML on each page. A process like schema markup tells the search engine algorithms what exactly is on your webpages. This helps the crawlers easily figure out the purpose of your page, its contents, and more. Similarly, using the right type of redirects for your page can also improve its health.

4. White-Hat SEO

White-hat SEO refers to all the optimization techniques which abide by Google's search engine guidelines. Although one needs to be patient to see results, they are sustainable and create genuine goodwill around your brand. Besides, there is no risk of your site getting banned or bumped down in the search results if there is a new algorithm change. All in all, white-hat SEO is low-risk and high rewards if you do it right. Examples of white-hat SEO techniques include authoring useful and relevant content after doing extensive keyword research, earning links from high-authority sites based on the merit of your on-page content, etc.

5. Black-Hat SEO

Black-hat SEO is the exact opposite of white-hat SEO in that it finds and takes advantage of any loopholes or weaknesses in Google's search algorithm to rank better on its SERP. It does not stick to the search engine's list of SEO dos and don'ts and resorts to spammy or paid link building methods, keyword stuffing, showing different content to bots/crawlers and humans (called cloaking), etc. to get ahead. It goes without saying that black-hat SEO can get your site blacklisted or its rankings to drop so it is best avoided. Besides, these high-risk SEO techniques give you only short-lived results.

6. Grey-Hat SEO

Grey-hat SEO tactics are often used by SEO agencies due to pressure to see quick results from a client and fall in between white and black hat SEO in terms of approach. Although Google's webmaster guidelines do not explicitly say that such methods are prohibited, they are still frowned upon and can lead to undesired search outcomes. Examples of this type of SEO include clickbait content that is sensational yet mediocre and of no value to the user, excessive and suspicious link exchange between sites, paid reviews, etc. Again, it is best to stay far away from such underhanded SEO tactics.

7. Negative SEO

Among the different types of SEO, this is by far the most detestable and unethical. Negative SEO is done with the intention of making your competitor's search rankings suffer so that you yourself can take their place or benefit from it. Negative SEO methods include hacking into someone's site and building a suspiciously high number of low-quality links to it, posting negative feedback or reviews about them in various online forums, etc. Needless to say, negative SEO can even lead to legal ordeals if the one practicing it is caught.

8. Local SEO

One of the essential types of SEO is for local businesses. Thousands of businesses require customers to visit their physical locations, even though many operate entirely online. You will not make any money if customers do not come in the door. The better you present the content to search engines, the more likely they will show it to potential customers. Including a region or city in your content, like page titles, descriptions, and keywords, and displaying awards and trust symbols for the visitors can help you convert local leads into paying customers more efficiently. In addition, if your customers have a positive experience with your brand, they are more likely to recommend it to others.

9. Mobile SEO

The process of optimizing a website for search engines while also ensuring that it is viewable flawlessly on mobile devices like smartphones and tablets is known as mobile SEO. A negative mobile phone experience with a brand can turn off a potential customer for good. This type of SEO is essential because it allows you to reach out to your customers at the right time and in the right place, giving them the best experience possible. Mobile optimization helps you analyze your site's design, structure, page

speed, and other significant factors to ensure mobile visitors are not turned away by any point of information.

10. Ecommerce SEO

The process of optimizing online stores of businesses is ecommerce SEO. Ecommerce SEO encompasses all aspects of the SEO trend of the horizon. It's a real business that requires you to make money and sell products while expanding them over time. Millions of queries are answered every day by search engines, many of which are related to ecommerce. Ecommerce SEO benefits you in increasing the traffic and ranking of your website.

11. International SEO

Optimizing your website to drive organic traffic from multiple regions and languages is the goal of international SEO. You must allow your target audience to make purchases in their currencies and their language, and you must address them appropriately in their cultural context to do international SEO well. If you list dates and times, make sure you use the correct format for their location. Speak to them in their native tongue if they have any concerns. The goal of international SEO is to provide your target audience with a positive experience on your website.

12. Content SEO

If you have been haphazardly producing content, hoping that some of it will rank, it's time to commit to a more organized content SEO strategy. Content SEO works best when the content is high-quality and optimized to rank high in search engines. It will attract search engine traffic and efficiently achieve the targets. The overall goal of content SEO is to create SEO-friendly content that search engines understand while satisfying the user's intent and keeping them happy. When it comes to content SEO, it's important to remember that optimizing your existing content develops a strategy that fits best for you.

13. YouTube SEO

YouTube SEO is exactly what it sounds like. YouTube is one of the most used search engines in the world. The trick to gaining views on YouTube goes beyond creating good videos. There are a lot of elements involved in publishing content on YouTube that alerts the algorithms about various things. YouTube SEO involves enriching the metadata of the video, optimizing YouTube channels, SEO-friendly video descriptions, creating attractive thumbnails and enriching them with metadata, and much more.

One of the key elements involved in YouTube SEO is having an SEO-friendly title and description for the videos. The description should complement your video and tell the algorithms about the content, its relevance, and its purpose. Having a longer keyword-rich description does the job in this regard. Additionally, adding meta tags and hashtags relevant to the video also helps in boosting the video's visibility to the YouTube engine algorithms.

SEO Techniques

There are three main components -- or pillars -- to SEO that go into building effective SEO strategies:

- **Technical optimization.** This is the process of completing activities when building or maintaining a website to improve SEO. It often has nothing to do with the content that is on the page itself. Some ways to manipulate technical optimization include having an XML sitemap, structuring content in a way that is intuitive to user experience and improving site performance -- such as page load times, correct image sizing and hosting environment.
- **On-page optimization.** This is the process for ensuring the content on a website is relevant to the users. This content includes the right keywords or phrases in the headings and body of the copy; and ensuring that each page includes meta descriptions, internal links within the site and external links to other reputable sites, and a good URL with the focus keyword. Website administrators use content management systems (CMS) to maintain on-page content.
- **Off-page optimization.** This technique is deployed to enhance a site's rankings through activities outside of the website. This type of activity is driven largely by backlinks. Businesses can generate these from partnerships, social media marketing and guest blogging on other sites.

These three components help marketers focus on the activities and techniques to build strong rankings for their websites.

Here are some additional techniques to use within each of the three pillars:

- **Keyword research and selection.** Perform keyword research on the terms for which are most desirable to rank. Businesses should focus on keywords that receive high search volume to be relevant for search engines. Looking at competitors' top performing keywords also gives an opportunity to build a strategy to compete with them.
- **Create quality content.** When the keyword strategy is in place, the content strategy follows. Pages are more likely to appear higher on SERPs by creating quality content that is relevant to the readers and their search queries.

- **Develop unique page titles and meta descriptions.** Page titles should include the page's focus keyword. And meta descriptions should be brief summaries of what a user should expect to learn on the page. These elements are displayed in SERPs and will likely be what people use to inform their clicks.
- **Use pay per click to supplement organic traffic.** Paid advertising can help improve organic click-through rates by giving marketers an outlet to test title tags and meta descriptions that are shown in SERPs. Ensuring a first-page placement, these ads mimic organic search results to see what copy entices users to click. That can be used to adjust page titles and meta descriptions with organic results.
- **Use alt text with images.** Alt text is used to describe an image on a webpage. This is critical for bots crawling the site to understand what the image represents. It also verbally describes what the image is to people who are visually impaired. This is also another opportunity to input keywords.
- **URL slug.** A URL slug is the portion of the URL that is unique to a specific page. This is also an area where it is important to put the focus keyword as it relates to what is on the page.

SEO Tools

There are hundreds of tools to improve, manage and report on the effectiveness of SEO. Some are free and some aren't. But they all help marketers research keywords, develop strategies and measure the results of ranking higher on SERPs. Here are some common SEO tools used by marketers today:

- **Semrush.** This platform is used for keyword research and online ranking data. It gives marketers insight into developing and maintaining keyword strategies. Semrush also can be used to measure SEO performance over time.
- **Google Analytics and Search Console.** This platform provides real-time data on the effectiveness of SEO. Combined with Google's Search Console, marketers can monitor website traffic, optimize rankings and make informed decisions about the appearance of a site's search results.
- **Yoast SEO.** For websites using WordPress as their CMS, Yoast SEO is a plugin used to improve on-page optimization. Users can define the URL slug, meta description and page title. They can also see how the content on their page may perform in searches. A checklist of items is available so users can ensure their page is as optimized as possible.
- **Ahrefs.** This tool is used to audit websites and provide keyword, link and ranking profiles. It can also identify which pages perform the best and which ones need improvement.

- **SpyFu.** This is a competitor keyword research tool for Google Ads. In addition to the keyword research and data it can produce, it gives detailed insight into competitor SEO and pay per click data.
- **HubSpot Website Grader.** This is a free tool that delivers report cards with actionable insights about SEO performance. It can show if a website is optimized for mobile, measures website performance and gives security recommendations.
- **Google Trends.** This tool looks for content trends in countries or regions of the world. It finds popular topics and long-tail keywords related to them. It also compares those trends over time.
- **Bing Webmaster.** This tool enables marketers to see backlink profiles and keyword research. It also has a built-in site scanning feature.
- **Consultants.** While not exactly a tool to purchase or use for free, consultants have the SEO expertise that some teams lack internally. Good consultants can help develop the right strategies, execute or recommend the long-term plan. They can also report on the metrics to determine success.

Keyword

Targeted ad is an advertisement that is served to a specific audience, which could be a particular demographic, a group or an individual.

4.2.2 Search Engine Marketing (SEM)

Search engine marketing (SEM) is a method of promotion and advertising to help companies' content rank higher among search engine traffic. Like search engine optimization (SEO), search engine marketing helps companies improve the way content is ranked by search engines.

SEM helps companies bring their products and services to the attention of audiences through paid search engine advertising. SEM is an online marketing strategy in which organizations buy **targeted ad** space at the top of search engine result pages (SERP). This approach is different from SEO, which focuses on optimizing content for search engine algorithms so the content ranks high on the SERP. Google, Bing and Yahoo are the most popular search engines. Each uses an auction process to determine where SEM ads rank on their SERP.

SEO vs. SEM

SEO and SEM use many similar tactics; however, they are distinctly different methods of ranking high on a SERP.

SEO

SEO is the practice of structuring content so it ranks high in organic search results, which are the unpaid content listings on a results page. The key aspects of SEO include the following:

- It is based on the limited knowledge of the secret ranking factors, also known as *signals*, that search engines like Google use.
- SEO methods are constantly changing to keep pace with the evolving algorithms search engines use.
- SEO-driven results rank directly below paid searches.
- Successful SEO relies on creating useful, authoritative and trusted content. SEO practitioners take steps such as the following:
 - increasing the number of external webpages linking to a page, also known as *backlinks*;
 - identifying and adding relevant keywords to content;
 - expanding trust signals based on website security, cumulative site traffic and user engagement; and
 - ensuring the website provides a good user experience (UX).

SEM

SEM focuses largely on using paid advertising to increase traffic through services such as Google ads or Bing ads. The following are key aspects of SEM:

- It is based on keyword analysis. Marketing departments identify keyword terms that might draw users to a webpage. Like SEO practitioners, search engine marketers use keyword research analysis and tools to identify keyword phrases audiences are searching for. They then buy ad space on the results pages from the search engine provider for the search terms they want to target.
- SEM paid search results go at the top of the SERP.
- SEM benefits from webpages that are easy for web crawlers to scan and include trust signals such as linking to other websites.

How SEM Works

Search engine marketers first identify keywords with large search volumes and then buy ad space on the SERPs for those keywords. These campaigns pay per click (PPC), which means the marketer pays the search engine provider every time a user clicks its ad. For organizations selling products and services, the revenue generated from customers buying products they access via the SEM ad should outweigh the cost of PPC.

SEM ads are placed at the top of a SERP, above the organic results generated by SEO. They appear similar to organic results and include the following characteristics:

- headlines or title tags;
- summaries of the webpage content, known as the *meta description*;
- calls to action, meaning text that inspires visitors to make a certain action, such as buying a product or subscribing to a service; and
- URL hyperlinks.

Importance of SEM

SEM marketing strategies are important for the following reasons:

- **Digital marketing.** Online purchases are one of the most popular ways customers shop. SEM campaigns attempt to expand the reach of digital marketing by identifying and using keywords that will attract the people most likely to be interested in the marketer's product or service. Essentially, SEM campaigns target the most profitable keywords.
- **High conversion rates.** One of the biggest advantages of SEM marketing efforts is that they position an organization's product right in front of customers when they are ready to make a purchase. For example, by purchasing an ad for a product keyword -- "food processor," for example -- customers looking to buy a food processor online will see a company's product ad first. With SEM, there is a good chance that the visitors clicking on an ad want to make a purchase, increasing an organization's customer conversion rates and optimizing customers' purchase intent.
- **Speed.** An SEM strategy often drives increased traffic more quickly than SEO, which can require long periods of time to analyze keywords and shape content to SEO research. SEM puts products and services right in front of customers immediately by placing them at the very top of SERPs.
- **PPC model.** The PPC model, which is similar to the cost per engagement model, is a cost-effective strategy that enables organizations to only pay when their

ad is clicked. Organizations can also control exactly how much they spend by setting a maximum cost per click (CPC) and daily budget.

- **Increased organic rankings and trust signals.** Increased traffic to a page through paid ads ultimately increases overall traffic to a page and enhances trust signals ranked by Google. If a product performs well enough through an SEM campaign, it can rank high on a SERP organically, making SEM no longer necessary.
- **Segmentation.** Besides keywords, SEM campaigns can control what geographic location, language and online behavior to target, ensuring they only reach the users that might be interested in their product or services.
- **Deep insight.** Tools like Google Analytics give organizations highly detailed reports on the state and evolution of their SEM campaigns in real time. This gives useful insights into how SEM campaign ads are performing, which helps organizations analyze how they could improve their campaign.

Disadvantages of SEM

SEM also has some downsides and challenges, including the following:

- **Cost.** Even with cost-effective models like PPC, SEM can become expensive over time, as organizations have to pay every time their ad is clicked on. With SEO, there are no click- and ranking-related costs.
- **Competition.** Depending on the campaign's target audience, buying ads and ensuring the top spot at the top of SERPs can become challenging and expensive. An increase in companies competing for the top ad spot is causing CPC and related costs to rise.
- **Customer trust and ad blockers.** Many customers don't enjoy or trust ads and block them with ad blockers. Ads can be seen as disruptive and less trustworthy than inbound marketing techniques, which generate organic search results.

SEM Keyword Research Strategies

Successful SEM strategies depend on identifying and purchasing ad space on the most effective keywords and long-tail keyword phrases related to a product or service. SEM keyword research strategies are based on keyword intent, sometimes called *searcher intent*. Keyword intent refers to what action a user is likely to take when they search a specific keyword. SEM strategies focus on identifying and using keywords that are most likely to drive a user to make a purchase.

Several tools help marketers identify the most important keywords, including these six:

- Clearscope
- Google Ads Keyword Planner
- Google Trends
- Keyword Tool
- Semrush
- SpyFu

Successful keyword research can also help SEM marketers identify and avoid negative keywords. These are keywords that are unlikely to rank high on search engine results pages and attract potential customers.

How Ad Auctions Work

For Google, Bing and Yahoo, all ads must go through an auction process that takes place every time a user makes a search. For instance, the Google ad auction uses multiple factors to determine which ad goes at the top of the SERP -- including the quality score an ad gets on Google Ads, Google's pay-per-click advertising platform.

The SEM campaign with the biggest budget does not always get the top spot. Competitors with a lower bid can win ad space over organizations with higher bids if their content is more relevant. Also, some of the factors that determine organic search engine ranking also come into play in the Google auction, such as trust signals and web traffic.

Once an SEM campaign has identified the keywords to target, it can enter the auction for those keywords. Search engine auctions generally follows these four steps:

- **Bidding.** The SEM campaign enters the maximum amount it is willing to pay for a keyword.
- **Quality score.** Platforms like Google Ads grade the ad and the website hosting it based on the keywords used, the UX of the website, how useful the content on the ad's landing page is and ad assets, such as phone numbers and links that might be useful to visitors. Google also has quality thresholds that ads must meet to earn a specific ad rank.
- **Context considerations.** Because auctions happen every time a user makes a search, search engines like Google and Bing also consider contextual information in determining an ad's ranking. These include the searcher's physical location, search history, the time of the search, the device used to make the search, and other ads and organic search results on the page.

- **Ad rank determined.** An ad rank is awarded to the bidder. Because of all the metrics Google considers in addition to the price of the bid, the highest ad rank is not guaranteed to go to the highest bidder.

Creating an SEM Campaign Strategy

To create a successful SEM campaign strategy, marketers make use of a variety of strategies and tools, including the following:

- **Keyword research.** The first step in an SEM campaign is for an organization to identify the most effective keywords it wants to purchase ad space on. This can be done through the use of online keyword research tools. Research should also be done into competitors' ads and geo-marketing information about target audiences.
- **Budget.** Marketers create a budget for the ad campaign and set a maximum bid amount.
- **Ad groups.** An organization advertising several products or services might have to organize its products into multiple ad groups, which are multiple ads in a campaign that share similar targets. This approach is more cost-effective than putting every single keyword into one ad, which can be expensive.
- **Design and test landing page.** Every ad must link to a landing page where the product sits. It is a good idea to create a landing page that uses important keywords and provides a good UX. A/B testing can be used to optimize metrics such as revenue per page and average order value.
- **Create the ad.** The next step is to create an ad for an ad group based on the keyword and competitor research.
- **Make a bid.** Once an ad is created, a bid is entered into a search engine auction.
- **Monitor the campaign.** The final step is monitoring the ad's performance with analytics tools, such as Google Analytics. These tools let organizations track the performance of keywords and make modifications to the ad, the keywords used or other elements of the campaign.

4.3 SOCIAL MEDIA MARKETING

Social media marketing (SMM) is a form of internet marketing that uses social media apps as a marketing tool.

These social media platforms enable brands to connect with their audience to:

- build a brand;

- increase sales;
- drive traffic to a website; and
- build a community of followers to share and engage with content.

Producing relevant content that users will share with their own networks helps brands increase their exposure. It also extends their reach toward fans, potential customers and even potential employees when used as a recruitment tool.

Social media marketing also enables organizations to get customer feedback while making the company seem more personable. Social media enables organizations to create relationships with their audience. It gives end users a platform to ask questions, voice complaints and generally be heard. It also gives brands the opportunity to respond, adapt and adjust business processes or products.

Some popular social media apps include Facebook, Twitter, LinkedIn, YouTube, Pinterest, Instagram and Snapchat. Each platform has elements that makes it attractive to use. And when a company uses several in combination to deliver a multichannel message, consumers can see those messages on their preferred channels.

4.3.1 5 Pillars of Social Media Marketing

When developing marketing programs, one key area that marketers care about is how to deliver their messaging. Social media helps spread those messages to the right people at the right time, through both free and paid means. Social media also enables brands to learn more about their audience's personal, geographic and demographic information. This enables organizations to customize their messaging and content for the best engagement.



There are five pillars of social media marketing that will lead to a successful program.

1. Social Strategy

With any marketing campaign or activity, an appropriate strategy should be laid out in advance. Organizations need to determine the goals of the program, the channels that will be used and what types of content will be shared. Here are some examples:

- **Determine goals.** Using social media for marketing should align closely with business and other marketing program goals. Some goals that businesses can use to measure success include increasing brand awareness, driving website traffic and leads, and increasing revenue.
- **Select social media platforms.** There are many social platforms available, but it doesn't make sense for businesses to use them all. Organizations need to know their audience and choose the platform(s) that best fit their demographic.
- **Content mix.** Each social platform has a unique flavor for distributing content -- including video, imagery, links and direct messaging. So brands need to identify which content their marketing persona is most likely to engage with.

2. Planning and Publishing

After establishing a strategy, it is time to begin publishing. This can be as simple as posting a new blog post, sharing information about an upcoming event or posting a new product video. But being consistent is the key to an effective SMM program. To build an audience, organizations should post frequently to their page. Posting relevant content consistently will keep the audience coming back for more.

Content that organizations post to social media should align with other marketing promotions. Tools such as Hootsuite, HubSpot and Sprout Social enable marketers to schedule their posts at the appropriate time.

3. Listening and Engagement

Businesses that create activity on social platforms can see growth in interaction and conversations about the brand and products. Users will comment on and share posts, tag the company in their own posts, and even begin communicating through the instant messaging functionalities. These types of interactions are ideal because there are notifications in place to alert social media managers. This enables them to practice good customer service, which in turns boosts the customer experience.

People on social media may also discuss a brand, product or service without tagging or speaking directly to a company. There are several social media listening tools available to stay plugged into the conversation, such as Brandwatch, NetBase Quid and Sprinklr. Free tools such as Google Alerts can also notify marketers when their company is being mentioned.

4. Analytics and Reporting

As more content is published and the audience expands, it is a good idea to continuously measure performance. Questions to ask include the following:

- Which posts are getting the most engagement?
- Where are a brand's followers from?

The success of any marketing program is dependent on its data and analytics outputs. A marketing team can use this information to make more informed decisions on future campaigns and take advantage of what works.

Each social platform has its own analytics data, but there are other tools that can collect data from many channels into one location. This enables marketers to evaluate the overall success and failures of their marketing campaigns.

5. Advertising

Much of social media marketing is free -- with the exception of resource time and specialized tools. Building an audience and publishing content on free social media sites is a great way to achieve marketing goals, but as the program grows, so does the budget.

Paid marketing features can be very valuable to organizations. They can target their advertisements at audiences based on many factors, including demographic information, retargeting and behaviors.

There are tools to help manage social media marketing at volume, but using the native ads functionality to begin is enough to promote posts, capture leads and ensure messages get in front of the right audience.

4.3.2 Advantages and Disadvantages of Social Media Marketing

Social media marketing has embedded itself into every organization's sales and marketing roadmap. It is an additional channel to distribute content and messaging to a significantly larger audience than a homegrown database of contacts.

While there are advantages to rolling out a social media marketing program, there are disadvantages as well.

Advantages of Social Media Marketing

- **Reach a wider audience.** There are more than 3.6 billion users across all social media channels. A single post share can exponentially increase brand exposure.

- **Improved customer satisfaction.** Organizations don't just market to customers on social media, they also interact with them. This can improve customer service and create one-to-one relationships.
- **Cost-effective tool.** When executed correctly, the cost of managing a social media program can be low. Once the knowledge, team and program strategy are in place, marketing teams find it easy to use with very little overhead.
- **Increase website traffic.** Social posts are a great way to drive traffic back to a brand website. Promoting blog content, landing page offers and more can entice users to click through and engage further with a brand.
- **Gain better insights.** Using the analytics and reporting features from each social media platform gives insight into who page followers are, what content they are interested in and how they like to engage with a brand.

Disadvantages of Social Media Marketing

- **Time-consuming process.** A lot of time can be spent on social media campaigns to ensure they are effective. Marketing teams also need to constantly fill the calendar with new content and respond to inquiries. This can make it difficult for small marketing teams to tap into the full capabilities of SMM.
- **Need qualified resources.** It takes the right person or team to run a social media marketing program. Social media marketing programs don't benefit from entry-level employees. Instead, skilled and seasoned social media marketers are key.
- **Have to wait to see ROI.** SMM is a long-term investment. Social media platforms yield a high ROI, but not in the form of immediate results. The success of an SMM program isn't determined by one piece of content, but rather several over long periods of time.
- **Competitor's market research.** Posting to social media is a public forum and everyone can see the content, including the competition. There is no workaround for this.
- **Brand reputation is vulnerable.** SMM can open a brand for public embarrassment and bad press. Negative reviews can be plentiful as customers take to social media to vent frustrations. And because of the public nature of the platforms, anything a company says or does will be seen and reacted to. Brands should expedite response times to mitigate this risk.

4.3.3 How to Create a Social Media Marketing Strategy

Here are the steps a company needs to take to build an effective social media marketing strategy:

1. Identify Social Media Goals That Align to the Business Goals

Start by setting goals that will act as not only a guide for how to use social media, but also a benchmark of data to measure against. Use a SMART goal format to find out what is realistic to accomplish. Examples of goals include the following:

- increase traffic to website
- drive more leads
- increase revenue
- grow audience

2. Research and Define the Target Audience

It's important to know who the target market is, what they care about and why they need a company's products or services. Social media platforms are rich with data about users, so this exercise can be done without a substantial market research project. Knowing demographic information and who follows the social channel are great starting points.

It's also important to know that different platforms attract different users. Knowing what social channels a company's target audience is on enables them to choose which channels to invest time and resources into.

Social media for business

There are many social media platforms available for businesses to connect with potential customers. Here are some of the more popular social media sites and uses for each.

Facebook	LinkedIn	Twitter	Instagram
NUMBER OF USERS 2.89 billion	NUMBER OF USERS 774 million	NUMBER OF USERS 396.5 million	NUMBER OF USERS 1 billion
CHARACTER LIMIT PER POST 8,000	CHARACTER LIMIT PER UPDATE 700	CHARACTER LIMIT PER POST 280	CHARACTER LIMIT PER CAPTION 2,200
USE CASES B2B and B2C companies and nonprofits can build communities through targeted advertising and promoting events.	USE CASES A B2B platform where industry leaders and buyers spend their time. Users can create their own forums to start conversations, which promotes thought leadership, and share industry knowledge.	USE CASES Thought leadership and information-seeking individuals such as media outlets, writers and bloggers use this as a search engine to find real-time information. Provides brand awareness for companies and shines light on different topics.	USE CASES This platform showcases a brand's culture and identity, keeping customers engaged and wanting to do business with the brand.
AGE DEMOGRAPHIC All ages	AGE DEMOGRAPHIC 30-49	AGE DEMOGRAPHIC 25-49	AGE DEMOGRAPHIC 18-34

3. Perform a Competitive Assessment

Knowing what the competition is doing enables marketing teams to identify what is working well and what is not for the competition. This provides industry insights as well as opportunities to bring a product or message to market.

Social listening tools can also help brands set up different monitoring streams for competitive content and industry keywords.

4. Create and Curate Relevant Content for the Channel

Knowing the goals, audience and competitive landscape will help determine the type(s) of content that brands need to create. Engaging content comes in different forms and media. It can be company generated, curated from elsewhere to share industry news or other thought leadership pieces.

Businesses should publish content frequently and consistently to develop an engaged follower base. Brands can post promotions to increase engagement. They can also create posts that show a more relatable and human side to the organization.

5. Be Timely with Posts and Responses

Posting when convenient for a business isn't always convenient for customers. Taking advantage of the best times to post for engagement is information that can be collected from analytics. Then organizations can schedule posts ahead of time using available publishing tools. Timeliness of the content is also important as the news cycle moves fast.

Another element of being timely on social media is response time. If customers engage with a brand on social media, they also expect a quick reply. A brand can build authority and respect with its clientele through these one-to-one relationships.

6. Gain Buy-In and Support from Others in the Organization

Marketing departments need to engage other departments and stakeholders within an organization. Marketing can learn a lot from sales to inform future social campaigns, but sales can also benefit from marketing's reach. Sales and marketing alignment is great, but senior stakeholder support is also a necessity.

Supporting other departments' efforts is a common sign of a strong social media program. Every department in a company can benefit from social support, but HR is usually the next best place to partner with. Social media can be a recruitment tool and brand builder for prospective employees.

7. Measure and Optimize

The last element of building a successful social media marketing program is to measure what works and what doesn't. Organizations should monitor the following:

- posts that get top engagement;
- followers that continue to buy; and
- ads that yield the highest ROI.

4.3.4 Businesses That Benefit from Social Media Marketing

Organizations that roll out an effective social media marketing campaign will see many benefits. Here are some examples of businesses that can benefit from social media marketing programs:

Small Businesses and Startups

Social media marketing is a great tool for small businesses and startups. It is a way for new businesses to build some awareness around their offerings. Using social media to sell products and services to a new market can be an entryway into building a customer base.

Direct Sales Companies

These types of businesses are very entrepreneurial and grow through communities. And social media can help build communities, tapping into friends, family and beyond.

These started out as Tupperware and Mary Kay parties in homes. But social media apps are paving the way for new waves of direct sales companies such as LuLaRoe and Thirty-One Gifts. Party hosts no longer must host parties in their homes. Instead, they can host virtual parties using social media apps where consultants are able to show off their wares.

Real Estate

Real estate companies benefit from social media by promoting open houses and showcasing images of properties for sale. Features such as Facebook Live and Instagram stories show video footage of these properties in digestible formats for users to consume.

B2B Companies

B2B marketing teams are better able to identify who their target prospects are -- and when done correctly -- can show up in the right person's newsfeed.

The data presented about users on social media platforms helps paint a picture of who the audience is. And using the social media advertising tools, businesses can get the right message in front of that decision-maker at the right time.

4.4 EMAIL MARKETING AND CONTENT STRATEGY

Email marketing is a powerful tool that businesses can use to build stronger relationships with their customers and drive sales. It is the most profitable and cost-effective direct marketing channel, generating an average return on investment of \$36 for every \$1 spent. As of 2022, 68% of businesses reported using email to send content to their contacts.

A content strategy is the ongoing practice of planning for the creation, delivery, and governance of useful, usable, and effective content about a particular topic or set of topics. A content strategy ensures that every piece of content in the experience serves and sustains a legitimate purpose.

4.4.1 Email Marketing

Email marketing is a digital marketing strategy in which a business sends commercial messages, promotional content, or newsletters to a target audience. The communication aims to develop a relationship with prospects or existing customers by generating brand awareness, promoting products or services, and generating more sales.



With the right email marketing campaign strategy, your brand has the opportunity to continuously discover new leads and thanks to automation, those potential customers quickly translate to more subscribers and e-commerce sales without much work on your part.

When it comes to genuine conversions that turn casual shoppers into loyal customers, email is the best of the marketing channels.

How Email Marketing Works

It's easy to set up and track an email marketing campaign, which makes it accessible for small businesses. You can add a newsletter sign-up option to your website, for instance. As people sign up, you can send newsletters to a growing audience. You can also direct customers to the newsletter from your social media profiles.

A regular newsletter is a simple and effective way to send updates about your company, upcoming events, and special offers. Email software also makes it easy to schedule automated promotional emails for customers who haven't purchased recently. Email marketing allows you to target particular groups of customers or even specific individuals. Offering individual customers special birthday deals on merchandise or services is one way to do this.

A restaurant, for instance, might send an email to customers on their birthdays offering 50% off an entree. This kind of personalization helps a business develop and maintain a relationship with a customer—and that can lead to increased sales and customer loyalty.

Email Marketing Remains Relevant

In the age of social media, it's tempting to write off email. However, there is statistical evidence that it remains an important aspect of marketing efforts. For instance:

- Experts with the email marketing company Litmus estimate that email marketing returns an average of \$42 for every \$1 spent.

Remember

The two biggest advantages of email marketing are price and ease. Compared to other types of marketing, emailing is an inexpensive way to advertise your company and its products or services.

- One survey found that 59% of respondents were influenced by email when it came to purchasing decisions.
- A study of more than 1 billion shopping sessions in 2019 found that email marketing has a conversion rate of 2.3%, compared to 1% for social media.

One huge advantage of email over social media is that customers are more likely to see an email than social media. Just posting something on social media doesn't mean that everyone you want to see your message will see it. However, an email will sit in an inbox until it's read (or deleted).

Ideally, email marketing should go hand in hand with social media. Adding social media "Like" or "Share" buttons to your marketing emails gives an additional way for customers to connect with your brand. Snippets of positive reviews from social media fans can be included in emails, and social media posts can drive customers to your email newsletters.

Remember

Email marketing can substantially increase your income if you do it correctly. It's a great way to get people to visit (and revisit) your website or blog. More traffic usually equates to more income.

Email Marketing Strategies

Effective email marketing takes effort. Here are a few strategies for making the most of your email marketing campaigns.

- **Build Your Own List:** All you're going to do by sending an unsolicited email is turn off most of the people you were hoping to turn into customers. Whether through your website, in your store, or at an event, make it clear when customers are opting in to receiving your emails.
- **Follow the Law:** Email marketers must adhere to the rules of the CAN-SPAM Act. These rules include having a non-deceptive subject line, providing a clear way to unsubscribe, and including your name and address at the end of the emails.
- **Mix up Your Messages:** Don't just send out ads to buy all the time. Use your emails to build rapport with customers by sharing your expertise or that of others, giving them tips and insights they can value. Share information that lets them know more about you and your company.

- **Respect Your Subscribers:** Treat your list well. Remember that the people you're communicating with have trusted you with their information; they deserve your respect. If you want a chance to convert them from customers to fans and even evangelists for your brand, then make them feel special.
- **Follow a Schedule:** Stick to a schedule if you're doing a newsletter. Sending out an email on the same day (or days) every week will help your subscribers know what to expect from you and when.
- **Optimize for Mobile:** Studies by marketing analysts with the company Litmus have consistently found that just under half of all emails are opened on mobile devices. That means, if your email doesn't display correctly on mobile platforms, half of your audience is going to think you don't know how to properly craft an email.

Why Use Email Marketing?

Email marketing is a powerful digital marketing strategy that involves sending targeted and personalized emails to a specific audience to promote products and services or nurture relationships. It allows businesses to communicate directly with their customers or prospects, share valuable content, and drive desired actions like sales or engagement.

Here are five reasons why businesses should use email marketing:

- **Cost-effective:** Email marketing is an affordable way to reach a large audience with minimal investment in time and resources. Many email marketing software platforms offer scalable pricing plans, allowing businesses of all sizes to implement and benefit from email marketing.
- **Targeted and personalized communication:** Email marketing allows businesses to segment their audience based on various criteria, such as demographics or previous interactions, and tailor marketing emails accordingly. This ensures customers receive content relevant to their needs and interests, leading to higher engagement and conversion rates.
- **Measurable results:** Email marketing platforms provide a wealth of data, such as open rates, click-through rates, and conversions, which can be analyzed to gauge the success of campaigns and make data-driven improvements. This helps businesses continuously optimize their strategies for better results.
- **Strengthen customer relationships:** Email marketing is an excellent tool for nurturing customer relationships by providing regular updates, sharing valuable content, and offering personalized promotions. Businesses can foster loyalty and encourage repeat business by consistently engaging with customers through email (as long as they're not unsolicited emails).

- **High return on investment (ROI):** According to various studies, email marketing consistently delivers a high ROI compared to other marketing channels. This is primarily due to its cost-effective nature, targeted approach, and ability to drive direct actions such as purchases or sign-ups. By implementing a well-planned email marketing strategy, businesses can experience significant returns on their investment and enjoy successful email marketing campaigns.

Benefits of Email Marketing

Emails are not just alive; they thrive on the many benefits they deliver. The major benefits that make email every marketer's favorite tool are as follows:

- *Budget-friendly marketing channel:* For each dollar spent on email marketing, you can get an ROI of 51.52 USD, as per the DMA 2021 report. Since there are no advertisement fees, printing costs, or media space costs, Email marketing campaigns can be much less expensive and more rewarding than other types of marketing.
- *Increased brand awareness:* According to Statista, roughly 306.4 billion emails were sent and received daily in 2020. This number is expected to rise to over 376.4 billion emails by 2025. Hence emails have played a huge role in building brand communication channels and spreading awareness about their beliefs, mission, products, services, etc., and will continue to do so in the coming days.
- *Emails are (almost) universal:* According to a survey, 93.6% of US customers between the ages of 25-44 years use email, which in itself is a huge number to engage with for different purposes.
- *Better customer relationship:* It is an excellent way to establish personal relationships with existing and future customers. Consumer knowledge of your business, goods, and services is reinforced each time they receive your mail.
- *Easy monitoring of campaigns:* Performance measurements and statistics are available for each email sent. This data is crucial for determining the effectiveness and what needs to be changed.
- *Your email audience is more permanent:* When you make an email account, it becomes your property. But, unlike many other social handles whose real control is with the provider, emails have the security where no one can cease or delete your content unless it's spam or illegal.

4.4.2 Content Strategy

A content strategy is part of a broader marketing strategy and should align to specific business goals, particularly as they relate to sales and marketing. Whether you want to increase revenue or grow traffic, a content strategy can help you get there.

Your plan should provide a clear vision of whom you will reach, what aims you hope to achieve through the content you will produce and what channels you'll publish on. However, your strategy should be flexible. Sometimes even the best-laid plans fall short, or perhaps what worked for your business in the past no longer does. Additionally, as you learn more about how your audience is reacting to your content and your business goals change, your strategy should shift and evolve as well.

The good news is that with a content strategy in place, you can adapt. Because you are accounting for different variables, you can easily identify what is and isn't working.



Why You Need a Content Strategy

It isn't just big or established companies that need a content strategy; every business can benefit from one. A good content strategy provides the following benefits:

- **Gives your content a purpose.** By fleshing out a strategy for your content, you gain a clear idea of what you want your content to do. Without a strategy, you risk creating content that doesn't tie to your business goals or isn't meaningful to your brand.
- **Simplifies content creation.** Filling out a content calendar can be difficult if you're not sure what your purpose is. But with a content strategy and keyword research, you can devise topics and schedule them on your calendar in a way that strategically suits your larger business goals.
- **Keeps you consistent.** Consistent messaging across all channels helps you establish your brand's voice. Your brand voice will heavily influence the way your audience sees your brand. For example, a law firm might want an authoritative and academic brand voice, while a fast-food brand might be a bit more casual, fun, and witty.

- **Grows your organic traffic.** To grow traffic organically, you want to feed Google and other search engines high-quality content regularly. A content strategy helps you organize the keywords that your audience is searching for and then informs the creation of content around those terms. Organic traffic, or visits driven by clicks on a search engine results page, is one of the best and most cost-effective ways to boost brand visibility.
- **Builds relationships with your audience.** Content can help solve your customers' questions and problems. By creating content that takes your audience's needs into account, you can gain their trust. If you have well-written, useful content, they are likely to have a good opinion of your business and buy your product or service.
- **Boosts your credibility.** As you create strong content, you can position yourself as an expert and improve your reputation, which in turn can cause it to rank higher on search engines and gain your audience's trust.
- **Generates leads.** Content can also be used to generate leads and capture user contact information for marketing campaigns. For example, consider offering your audience some type of valuable content, like a case study or a white paper, in exchange for their email address. Once a user gives you their contact information, they receive access to the content and you can begin marketing to them on another channel.

What Is Included in a Content Strategy?

While content strategies will vary among companies about the specific goals they want to achieve, a content strategy will include the following elements:

- **Why you're creating content.** Devising topics and attacking keywords will be much easier when you have a clear goal. For example, if you want to drive more sales, you might consider developing product reviews and best picks lists of items you keep in stock. This content can be linked to e-commerce pages and deployed on your blog, via email, and on social media.
- **Whom you are targeting.** It's impossible to create a successful content strategy without pinpointing your audience first. Consider your target consumers and how you can solve their problems. You also want to think about how you will engage them throughout the content piece.
- **Content goals.** What do you hope your content will achieve? Consider concrete goals with clear key performance indicators (KPIs). For example, you may want to create a blog to increase website traffic and user engagement. A concrete goal with clear KPIs might be "Rank on page 1 for two major keywords in Q1" or "Improve average time on page by 15% by EOY."

- **How you stand out.** Think about your company and what it stands for. Focusing on what makes your business distinct from your competitors can help you build a stronger content strategy.
- **Where you will tell your story.** Your plan should include the channels or platforms you will use to deliver your content. From social media platforms to email marketing and more, your content should be repurposed and optimized for distribution far and wide. Consider each channel and how your content should be framed. You should also think through how they will work together to tell a cohesive story about your business.

As you build a content strategy, you may also want to consider:

- How will you build a content calendar?
- How will you source ideas for your content?
- How will you organize your content ideas?
- How often will you publish content?
- How will impromptu requests or trending moments work with your existing content calendar?

Types of Content to Consider in Your Strategy

There are several types of content you can incorporate into your content strategy. One isn't necessarily better than another. Whether it works for you will depend on execution, your audience, the topic and more. Here are a few you should consider using:

- **Blog posts.** Blog posts can inform your audience about your products, answer your customers' questions or tell your audience's story. They also help build organic traffic and can keep audiences engaged long after they are published.
- **Infographics.** Informational graphics are a visual way to present complex information in an easy-to-scan image. Infographics lend themselves well to social media.
- **Case studies.** Case studies help illustrate how your products or services can specifically help your customers.
- **Videos.** While they are not as easy to produce as other pieces of content, videos provide a lot of opportunities. It can make your business more personable. Plus, this is an area that customers want to see more of.
- **User-generated content.** By using your customers' photos, videos or words (testimonials) to talk about their relationship with your business, you put the spotlight on them and reinforce your brand's credibility.

- **White papers.** White papers break down complicated information, research, or data, providing expert-level information to help audiences make a decision, understand a topic, or solve a problem.
- **E-books.** Longer than a blog post but shorter than a novel, e-books allow you to explore a topic at length, all while giving your customers the information they need. Some companies use e-books as an incentive when they sign up for a newsletter or service. They can also be featured on your website for anyone to view.
- **Podcasts.** While written content is very effective, some consumers will not have the time to read it. A podcast is a good option for those whom you want to reach but who may not engage with your written content.
- **Social media.** Social media channels make it easy to connect with your audience. It also gives you a way to distribute or repurpose the content that you have created. Whether you use LinkedIn, Instagram, Twitter or Facebook, you can amplify your message.

How to Develop a Content Strategy

There is a lot that goes into developing a content strategy. Here's where to start:

1. Set Goals

Define why you want to create content and how it will tie to your goals. Some goals may include:

- Converting leads
- Growing your organic traffic
- Building customer loyalty
- Inspiring more people to sign up for free trials

Make sure your goals are both measurable and timely. For example, "Increase organic traffic to service landing pages by 15% year over year" is a goal that is easily measured and has a clear time frame associated with it.

2. Define Your Audience

Defining your audience starts with establishing a buyer persona to serve as a fictional representation of your customer. Start with your most common type of customer and consider their geographic location, their interests, their aspirations and their needs. Flesh out a full picture of how this person comes into contact with your brand and what would help usher them along your sales funnel until they make a purchase?

3. Analyze Your Content

Even if you have never created a content strategy before, you have likely used content to interact with your audience. Look over what you have created. Consider content on your website, social media channels, email, text messages and more. What have you done well? What hasn't worked? What could be improved on? Pull whatever analytics are available to you to understand what types of content have succeeded and which ones haven't driven engagement.

4. Learn from Your Competitors

Just as you analyze your content, you should analyze your competitors. Visit their websites, follow them on social media, and subscribe to their email newsletters. What do they do well? What doesn't work? Replicate the approaches that have been successful for them, and fill in the gaps where they haven't built a strategic advantage.

5. Think About Keywords

Analyze your own keywords with tools like SEMRush and Moz so you better understand where you rank. You can also use search engines and Google Keyword Planner to find keywords that you may have missed.

6. Brainstorm Ideas and Create a Content Calendar

After examining keywords, your content and your competitors' content, you should know what topics you want to target. If not, you can use a few platforms, such as BuzzSumo, Feedly or BlogAbout to inspire you. From there, you can begin to plan your content calendar.

7. Find Your Tools

What content management system (CMS) will you use? Will you use a spreadsheet or something more robust to build your content calendar? When choosing tools, consider how your current systems may fall short, what features will make your life easier and how you plan to keep yourself organized.

8. Decide How You Will Measure Results

To gauge how effective your efforts are, you must have a way to track results and measure ROI. This may be page views, time on page, social media engagement, number

of new customers, newsletter signups or more. What matters most to you will depend on your business's goals.

9. Determine Content Type and Cadence

Consider your resources, and determine what kind of content you can produce and how often you can create and publish them. You can include this in your content calendar.

10. Publish and Distribute Content

The last step is to get your content out in the world. After you publish your stories, you should look at what channels provide the best results for your content. You can do this by leveraging Google Analytics to review the performance of your blog and the landing pages on your website. Additionally, you can use the analytics tools on your social media page, email marketing software and the other software solutions your business uses to track key performance indicators (KPIs), such as user bounce rate, clickthrough rate, and more

ROLE MODEL



KRISTINA HALVORSON

Kristina Halvorson is an American writer, entrepreneur, speaker, podcaster, and expert on the subject of content strategy. She is the founder and CEO of Brain Traffic.

In 1998, after graduating from St. Olaf College, Halvorson left her job working at a movie theatre to work as a freelance copywriter.

Halvorson founded Brain Traffic, a content strategy consultancy, in 2001, which pivoted to content strategy as a service in 2007.

In 2009, Halvorson authored the first book on the topic of content strategy on the web, *Content Strategy for the Web*, and is credited as being the foundation of the industry. That same year, she initiated the first Content Strategy Consortium and was the keynote speaker at first Content Strategy Forum in Paris.

In 2011, Halvorson launched Confab, a Minneapolis-based content strategy conference.

She is the host of The Content Strategy Podcast. She has appeared as a featured speaker at conferences worldwide, including South by Southwest (SXSW).

Halvorson teaches a course on content strategy on Frontend Masters.

Halvorson lives in St. Paul, Minnesota with her two children. She is active on Twitter.

She also advocates for a healthy workplace.

CASE STUDY

AIRBNB'S GROWTH STRATEGY USING DIGITAL MARKETING

Digital Marketing is a way of promoting and selling products and services by leveraging online marketing strategies such as search marketing, social media marketing or even email marketing. Digital Marketing is known as one of the best ways to help businesses to send their message in front of their best prospects and customers. The idea is to send the right and best offer at the right place and time. Today, customers are found online, on social media, staying updated on news sites or blogs, searching online if there is a need.



Digital Marketing is no different than traditional marketing, both seek to develop a mutually beneficial relationship with leads, customers and prospects. But, digital marketing had to change tactics because it's designed to reach today's consumers. For example, think about the last purchase you made, regardless of what it was, you probably began by searching the internet to learn more about the product or service, and what's your best option, which means your decision was based on the reviews you read, family or friends that you consulted, including the features and pricing that you found. Today, most of your purchasing decisions begin online, and that's why it's so important to understand the concepts and advantages of digital marketing in today's businesses.

Airbnb, for example, is a marketplace where people share private spaces all over the world that can be rented for usually a short-term period. The places can be houses, apartments, villas or even castles for a unique experience. The company was founded in 2008, and today the company has now over 550,000 listings in 33,00 cities and 192 countries. However, that was down routes to Airbnb, in 2009 Airbnb almost went bust until they actually began to improve the quality of their listings. Airbnb's business objective is to focus on fewer but larger projects, Airbnb now wants to expand beyond room and home rentals to offer, but also offer a full service including local

recommendations. The idea is to create a complete travel planning guides for travelers, which will help to promote tourism to destinations, and will especially benefit the less developed countries where you can find a lot of beauty and usually is not promote. Airbnb wants to continue growing its international presence by making each city more accessible so that way more people can afford to visit, and also create thousands of jobs for like photographers, tour guides, chefs, and etc.

Airbnb depends on two factors, hosts and travelers. The aim of the marketing strategy adopted is to try to reach and encourage more people as possible around the world to actually become hosts and travelers, and by considering this Airbnb started implemented a clever customers acquisition strategy such as Craigslist integration which was being used by people to offer and look for short term housing. However, Airbnb decided to change a little bit, so Airbnb decided to attract more qualified leads and reverse engineered Craigslist form to make the two platforms more compatible. So the idea was to get an option to automatically create a posting on Craigslist, which could help create additional inbound links for users, and that way more traffic to Airbnb.

Airbnb also decided to make a partnership with Google to make the offers more visually appealing to attract more customers around the world. They invested in Google search ads to help Airbnb increase their listings from less than 10,000 to 80,000. The idea was to execute a banner ad campaign, which would help with images of real apartments and rooms, and also to gain more international audiences. Airbnb's idea is to continue to use digital marketing tools because it helps to expand the customer base.

Airbnb is also connected to all major social media channels. On Facebook, the marketing team is regularly posting photos and videos of their listings, attracting travelers to visit different places. They try to post as much as possible, and actually relevant content like on World Earth day. Most all their posts are considering quite engaging and attractive. On Instagram, guests are able to share their experiences with #airbnb and even book a rental place directly with the feed. With Youtube, customers can be able to find videos that can show parts of the cities that are not usually shown by tourists. Airbnb also uses Twitter to promote its blog posts and different listings. Airbnb has more than 485,900 followers, and they keep their feed updated by posting timely content. Airbnb has a blog, which is an informative way for travelers. They offer posts on travel photographers about cities, experiences, and unique cultures.

The content management works with Airbnb Neighborhoods, which is the local city guides published by Airbnb that have to break down the popular cities by neighborhoods and be able to provide more detailed information to travelers. This has helped increase the engagement of users. The guide provides information like places to eat, parties, local shops, and major attractions. Pineapple is another way that Airbnb found to attract customers. Pineapple is a print magazine by Airbnb designed for coffee tables in homes. The magazine has the purpose to share with the community stories

and inspirations, to understand the connections that the community makes where they travel. There is also Stories, which is a microsite with videos of hosts and travelers, telling their stories as to why they rent their place, and what is the motivation of travelers to leave their homes.

Airbnb is careful about the quality of content that is posted. Anyone can be able to list their space, so Airbnb provides a free photographer to come in and take pictures of the house. For this same purpose, Airbnb has over 3000 freelance photographers in six continents. Airbnb believes that a high quality of photos can increase the attractiveness of the space and the chances of it being rented can be higher as well. Airbnb also created a video contest which host has to create a 15-second video about their favorite local places and post it on Instagram. The idea was to encourage the hosts, so that way they could feel part of the community, which also would help increase visibility and awareness.

There is also Influencers, Airbnb uses Instagram heavily as part of their awareness generation strategy. Their main idea, in the beginning, was to get travel influencers involved in their business, but nowadays, travel influencers want to take perfect photos of the beach, mountains, etc. So Airbnb decided to work with influencers with lots of followers and good engagement rates. Seamless user experience can be the best part of Airbnb's social media marketing. By using Pixlee's shoppable Instagram tool, travelers can be able to tap on the link Airbnb's Instagram and be directed to a landing page with all the latest Instagram photos. But now, there is also a third party option for making your business Instagram shoppable, and the platform itself even rolled out the option to business on a specific eCommerce platform, which is not unique to Airbnb. Airbnb shoppable Instagram is notable because there us hand selected, high quality and seamless execution.

Airbnb uses important and different strategies to reach and satisfy customers as we were seeing early. However, there are 4 main strategies that help Airbnb the most. First, digital marketing via google ratings. Ratings are an important part of online vacation rentals business plans, and Airbnb uses the rating system for their rental listings, but also to make sure that the ratings shown on websites like Trustpilot. com on their Adwords listings. Second, content strategy, one of the most appealing spaces on the Airbnb website are ranked in the website's search results, while listing something with lower quality content or ratings can be hard to find, and this because a good algorithm and employees who feature the best. Customers want to see and to have the best content possible, and that's why Airbnb provides professional photos of the space, this way the visuals provide better content, so it becomes more attractive to users that want to rent out a place. Airbnb digital marketing strategy wants to optimize their own search engine listings allowing grow, which also keep the content interesting for Google's search engine. Another good point that can affect the SEO of

a website is the size of the website. Airbnb has around 3 million pages indexed in Google, the content is most likely create by users, which presents a tradeoff because the company doesn't spend money or time creating content, but also don't have control over the content listings.

Third, Google display advertising for expansion, Airbnb chose to invest in Google display advertising with banner ad campaigns, which also includes images from the houses with the purpose to attract international traffic an increase their listing as well. This tactic does not affect search visibility, because it is not Adwords, but does affect the brand recognition. This tactic actually reaches the target market while it tries to transform visibility into sales. The last but not least, Google and craigslist for digital marketing, Airbnb noticed that they needed to integrate with two digital marketing giants to be able to get enough customers. So Google was their first and irreplaceable choose because Google is the place to any eCommerce website, but Craig's list could be more useful for vacation rentals, especially looking to a peer to peer business. This idea allowed Airbnb to be able to get more clients and hosts. Craig's list used to post short term housing, so Airbnb let people also share their Airbnb posts on Craig's list, so that could help with the traffic to both user's listing and the Airbnb website.

The digital marketing strategies chose by Airbnb seems to be working quite well, considering their competition in an online search. Airbnb has found ways to attract their customers and to create content, which digital marketing was responsible to help. Airbnb chose to be part of all digital platforms to make easy to attract or to get more attention from new and old customers. Airbnb found ways with digital marketing to make reservations and experiences in different countries or even in the same country, much more fun and easy. With digital marketing, Airbnb was able to offer customers a service where people would be able to know better about places, foods, culture, and etc., even before getting there. Airbnb offers customers the experience of understanding a little bit better about the place that you wish to go before even getting there, How special is that? However, for a lot of people can be really scary sometimes traveling to places that you don't even know anything, but Airbnb created a way to make it easier for people to feel more comfortable to travel. Airbnb, in my point of view, did and still doing a great job, they used different approaches to achieve their goals, by creating amazing contents in different platform, offering both hosts and renters different and better possibilities, making customers feel comfortable and save to be part of Airbnb community. Airbnb had a great idea of working together with Google Ratings, display advertising, and more, but the content strategy planned by Airbnb was that impact Airbnb the most. Airbnb carefully chooses what is quality content, or what can or can not go in their website, posts, social media and etc. The idea of keeping high ratings and quality content is what is keeping Airbnb on the top, all high-quality content together with a good digital marketing and even traditional marketing involved has the opportunity to make the company grow and stronger.

To conclude, Airbnb is a big company that provides us an opportunity to understand, that out there in the real world, it's possible to find different possibilities. Airbnb showed us that it's important to have different strategies for different promotions, advertising, digital marketing or even traditional marketing, and that content is one of the most important matters to them. Google digital marketing, Google SEO, Google Ratings, Craigslist and etc., were also an important support to Airbnb growth and still are. Airbnb invested in great resources to help them get where they dream to be, in digital marketing all new and different ideas are always welcome, and all help and support too, even if it means making new investments. Digital marketing today's day is the reason that a lot of good content and promotions are out there on the internet, to offers more quality content, more flexibility, more freedom, more space, and more comfortable. Airbnb was a great example and made me realize that digital marketing today moves more than we can even imagine.

SUMMARY

- A digital marketing strategy is a plan for how your company will establish an Internet presence through various online channels with the goal to reach and convert your target audience. Digital marketing strategies include search engine optimization (SEO), pay-per-click (PPC) advertising, email marketing, and more.
- Online marketing is the art and science of selling products and services over the internet. The art involves finding marketing strategies that appeal to your **target market** and translate into sales, while the science is the research and analysis necessary to measure the success of those strategies.
- The term digital marketing refers to the use of digital channels to market products and services to consumers. This type of marketing involves the use of websites, mobile devices, **social media**, search engines, and other similar channels.
- Social media platforms such as Twitter, Facebook, LinkedIn, Instagram, and Pinterest (to name a few) are all opportunities for marketing online. They work best when part of an overall content marketing strategy, which emphasizes the quality and usefulness of the content you create for your brand.
- Search engine optimization is the science of improving a website to increase its visibility when people search for products or services. The more visibility a website has on search engines, the more likely it is that brand captures business.
- Search engine marketing (SEM) is a method of promotion and advertising to help companies' content rank higher among search engine traffic. Like search engine optimization (SEO), search engine marketing helps companies improve the way content is ranked by search engines.
- Social media marketing (SMM) is a form of internet marketing that uses social media apps as a marketing tool.
- Email marketing is a digital marketing strategy in which a business sends commercial messages, promotional content, or newsletters to a target audience. The communication aims to develop a relationship with prospects or existing customers by generating brand awareness, promoting products or services, and generating more sales.
- A content strategy is part of a broader marketing strategy and should align to specific business goals, particularly as they relate to sales and marketing. Whether you want to increase revenue or grow traffic, a content strategy can help you get there.

MULTIPLE CHOICE QUESTIONS

1. **Digital marketing is often referred to as_____.**
 - a. online marketing
 - b. internet marketing
 - c. web marketing
 - d. All of the above
2. **Which of the following is a type of digital marketing activity?**
 - a. Email marketing.
 - b. Social web marketing.
 - c. Viral marketing.
 - d. All of the above
3. **Which of the following is not a traditional forms of digital marketing?**
 - a. radio
 - b. TV
 - c. billboard
 - d. All of the above
4. **What is not true about digital marketing?**
 - a. Digital marketing is any form of marketing products or services that involves electronic devices.
 - b. Digital marketing can be done online
 - c. Digital marketing cannot be done online
 - d. Digital marketing is often referred to as online marketing, internet marketing or web marketing.
5. **How many main pillars of digital marketing?**
 - a. 2
 - b. 4
 - c. 3
 - d. 5

REVIEW QUESTIONS

1. What is online marketing?
2. List the types of online marketing.
3. What is search engine optimization?
4. Why is SEO important in digital marketing?
5. State the 7 types of SEO in digital marketing.
6. What is SEM?
7. Describe the disadvantages of SEM.
8. Name the five pillars of social media marketing.
9. What is email marketing?
10. What is content strategy?

Answer to Multiple Choice Questions

1. (d) 2. (d) 3. (d) 4. (c) 5. (a)

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CHAPTER 5

MOBILE E-COMMERCE AND APPS

LEARNING OBJECTIVES

After studying this chapter, you will be able to:

1. Describe M-commerce (mobile commerce)
2. Understand the drivers of m-commerce
3. Define e-commerce app
4. Discuss the m-commerce services and applications classification
5. Deal with design and development methodology for m-commerce services
6. Differentiate between m-commerce and internet-based e-commerce
7. Define m-commerce UX: designing an app-like experience for mobile shopping

"M-commerce remains attractive because of the fact that people carry their mobile phones with them at all times."

—Miles Lee

INTRODUCTION

Mobile e-commerce, often referred to as m-commerce, is the process of buying and selling goods and services through mobile devices, such as smartphones and tablets. Mobile apps play a significant role in enabling and enhancing the mobile e-commerce experience.

Mobile Commerce refers to wireless electronic commerce used for conducting commerce or business through a handy device like cellular phone or personal digital assistant (PDA). It is also said that it is the next generation wireless E-commerce that needs no wire and plug-in devices. Mobile commerce is usually called as 'M-commerce' in which user can do any sort of transaction including buying and selling of goods, asking any services, transferring ownership or rights, transacting and transferring money by accessing wireless internet service on the mobile handset itself. The next generation of commerce would most probably be mobile commerce or M-commerce. Presuming its wide potential reach, all major mobile handset manufacturing companies are making 2WAP (Wireless Application Protocol) enabled smartphones and providing the maximum wireless internet and web facilities covering personal, official and commerce requirement to pave the way for M-commerce that would later be very fruitful for them.

M-commerce has several major advantages over its fixed counterparts because of its specific inbuilt characteristics such as ubiquity, personalization, flexibility and distribution. Mobile commerce promises exceptional business market potential, greater efficiency and higher fruitfulness. Thus it is not surprising that mobile commerce is emerging much faster than its fixed counterpart. M-commerce is more personalized than E-commerce and thus needs a gentle approach to appraise M-commerce applications.



The difference between E-commerce and M-commerce is that E-commerce is limited to PC users with an Internet Connection. With M-commerce moving to an SMS platform among other things, M-commerce is open to almost the entire mobile population. An

important barrier to M-commerce is the state of mobile networks today because there is a risk of transactions not maturing due to poor networks. For M-commerce an ecosystem between application developers, financial institutions, and mobile phone networks is required, for its effective utility. Simplicity is the key to proliferation of M-commerce coupled with the idea of developing trust with audiences.

Now a days the cell phone, on its own or in conjunction with an organizer is used for much more than simply making phone calls. It also acts as a flexible terminal for a huge range of applications. So the availability of information (weather forecasts, economic data, and news), e-shopping, e-ticketing, e-banking and e-brokerage is greater than ever before, regardless of time or place. The WAP (Wireless Application Protocol) and 3WML (Wireless Markup Language) open standards mean the Internet's innovative solution strategies can now be applied to mobile telephony too.

Mobile Commerce (also known as M-commerce, M-commerce or U-commerce, owing to the ubiquitous nature of its services) is the ability to conduct commerce, using a mobile device e.g. a mobile phone (or cell phone), a PDA, a Smartphone while on the move, and other emerging mobile equipment, like dash top mobile devices.

Keyword

Mobile commerce is defined as the use of wireless devices like mobile phones or tablets to perform commercial activities.

5.1 M-COMMERCE (MOBILE COMMERCE)

M-commerce (**mobile commerce**) is the buying and selling of goods and services through wireless handheld devices such as smartphones and tablets. M-commerce is a form of e-commerce that enables users to access online shopping platforms without the use of a desktop computer.

Over time, content delivery through wireless devices has become faster, more secure and scalable. As a result, mobile commerce has grown rapidly.

Examples of m-commerce include in-app purchasing; mobile banking virtual marketplace apps, such as the Amazon mobile app; and digital wallets, such as Apple Pay, Google Pay and Samsung Wallet.



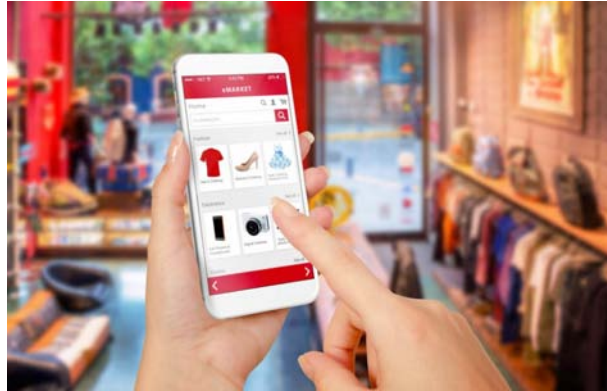
Examples of m-commerce use in specific industries include the following:

- Financial services: Mobile banking and brokerage transactions are done from mobile devices.
- Telecommunications. Handheld devices are used to make service changes and bill payments, and to do account reviews.
- Service and retail: Consumers place and pay for orders on-the-fly through online stores.
- Information services: Financial, sports, traffic, weather and many other news updates are accessed through mobile devices.

5.1.1 Types of M-commerce

M-commerce is categorized based on the following three basic functions:

- **Mobile shopping** enables customers to buy a product using a mobile device with an application such as Amazon or a web app. A subcategory of mobile shopping is app commerce, which is a transaction that takes place over a native app.



- **Mobile banking** is online banking designed for handheld technology. It enables customers to access accounts and brokerage services, conduct financial transactions, pay bills and make stock trades. This is typically done through a secure, dedicated app provided by the banking institution. Mobile banking services may use SMS or chatbots and other conversational app platforms to send out alerts and track account activities. For example, the WhatsApp chatbot lets customers view their account balance, transfer funds, review loans and conduct other transactions in real time through WhatsApp.
- **Mobile payments** are an alternative to traditional payment methods, such as cash, check, credit and debit cards. They enable users to buy products in person using a mobile device. Digital wallets, such as Apple Pay, let customers buy products without swiping a card or paying with cash. Mobile payment apps, such as PayPal, Venmo and Xoom serve the same purpose and are popular options. Mobile consumers also use QR codes to pay for things on their mobile phones. With mobile payments, users send money directly to the recipient's cell phone number or bank account.



5.1.2 How Mobile Commerce Works?

With most m-commerce enabled platforms, the mobile device is connected to a wireless network that is used to conduct online product purchases and other transactions.

For those in charge of developing an m-commerce application, important key performance indicators to monitor include the following:

- Total mobile traffic;
- Total application traffic;
- Average order value; and
- The value of orders over time

Similarly, tracking the mobile add-to-cart rate will help developers see if users are becoming customers. M-commerce developers may also be interested in logging average page loading times, mobile cart conversion rates and SMS subscriptions.

Mobile payment products operate through a form of peer-to-peer sharing. Once a mobile device is paired with a user's bank card information, the phone can be waved over a payment terminal to pay for a product. Contactless payment using a mobile device uses near-field communication technology.

5.1.3 M-commerce vs. E-commerce

Electronic commerce, or e-commerce refers to buying and selling goods and services over the internet. E-commerce and m-commerce are similar, but they come with a few distinctions from each other, such as the following:



Mobility: E-commerce transactions can be conducted through a desktop computer where the user is in a fixed spot. This reduces mobility as it can be difficult to move around a desktop device. M-commerce offers greater mobility as it's conducted

through handheld devices that can be used anywhere there's an internet connection, including buses, trains and airplanes or when exercising at the gym.

Location Tracking: Many e-commerce apps make use of location tracking capabilities to pitch users opportunities based on their location. However, the location tracking capability of e-commerce is limited when it is used with a nonmobile device.

Security: Credit cards are still commonly used for nonmobile e-commerce payments. They are considered riskier than other online payment methods, even with security measures, such as multifactor authentication. Most data breaches and identity thefts happen because of credit card misuse. M-commerce closes some security gaps through the addition of measures such as biometric authentication, mobile wallets, quick response or QR codes and even cryptocurrencies.

Reachability and Convenience: M-commerce makes it easier to reach a target audience. With mobile apps, businesses can reach more people and make their buying experience easier and faster.

5.1.4 Advantages and Disadvantages of Mobile Commerce

Advantages

The advantages of m-commerce include the following:

- *Large customer base:* M-commerce provides for a larger customer base and better retention than e-commerce in general, because m-commerce capabilities are more widely and easily accessible. Also, mobile analytics offers insights into customer shopping behavior, pattern and history. To boost retention rates, businesses can use this data to target shoppers with personalized offers and tailor-made discounts.
- *Convenience:* M-commerce makes it easier for customers to compare prices, read reviews and make purchases when and where they want to do these things.

Keyword

Competitive pricing is the process of strategically selecting price points for your goods or services based on competitor pricing in your market or niche, rather than basing prices solely on business costs or target profit margins.

- **Product variety.** Customers can browse through a huge inventory of products while also taking advantage of the **competitive pricing**.
- *Automation:* M-commerce automates a business's point of customer contact and sales with a variety of mobile contactless payment options, such as Apple Pay, PayPal One Touch and Visa Checkout. Many e-commerce sites also offer one-click checkout process functionality, which enables users to add payment information only once and then use the one-click option for every purchase made thereafter.
- *Omnichannel experience:* M-commerce creates an omnichannel experience where products can be sold via multiple channels -- e-commerce websites, Amazon, eBay, Instagram. This approach makes it easier for customers to buy whenever and wherever they want.

Disadvantages

Disadvantages of m-commerce include the following:

- *Poor execution:* The smaller screens of mobile phones and tablets require specific navigation functionality. Consequently, intuitive mobile user interfaces are complicated and expensive to design. A poorly executed mobile customer experience can frustrate customers and deter them from making purchases.
- *Payment issues:* Mobile payment options are not available in every geographic location and may not support every type of digital wallet.
- *Tax compliance:* Businesses must know and comply with tax laws and regulations of all countries they ship to. Some businesses will avoid this by only authorizing purchases from and shipping to their country of origin.
- *Security vulnerabilities:* Many users are still hesitant to make purchases over a mobile device because of security risks. Even with two-factor authentication, mobile fraud is on the rise and many merchants have still not adopted fraud prevention practices for the smaller screen. Attacks, such as SIM swaps and mobile

Did You Know?

Mobile commerce services were first delivered in 1997, when the first two mobile-phone-enabled Coca-Cola vending machines were installed in the Helsinki area in Finland.

malware, are becoming more common and can discourage users from making payments through their mobile devices.

5.1.5 The Different Areas that Come Under M-commerce

- (a) Travel and Ticketing – convenience is the key. Mobiles are and will reiterate their time saving devices.
- (b) Movie Ticketing
- (c) Bill payments – making payments to utility and service companies.
- (d) Merchant Transactions/Retail Transactions – Mobile and Internet transactions over the Internet is difficult as of now due to low speed of the Internet.
- (e) Money Transfer – transfer from person to person through a financial intermediary.

The difference between E-commerce and M-commerce is that, E-commerce is limited to PC users with an internet connection. With M-commerce moving to an SMS platform among other things, M-commerce is open to almost the entire mobile population.

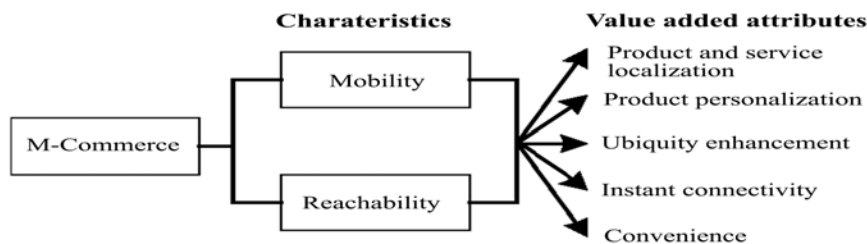


Figure 1. Characteristics of m-commerce.

Mobile commerce is generally known as, any E-commerce done in a wireless environment, especially via the Internet

- Can be done via the Internet, private communication lines, smart cards, etc.
- Creates opportunity to deliver new services to existing customers and to attract new ones.

5.1.6 Future of Mobile Commerce

Mobile commerce is evolving and starting to reach a wider audience. According to Insider Intelligence, 6.9% of retail transactions will take place through a mobile device in 2022 and m-commerce will account for 10.4% of all retail sales by 2025. Many businesses are adopting mobile commerce to avoid falling behind the competitors.

The following are some of the current and future mobile commerce trends:

Mobile Retargeting

This concept is an extension of location-based mobile marketing. Instead of putting ads at random places, this trend targets them contextually only at potential customers. For example, marketers can send an ad to users who have previously visited their mobile app or they might present an active mobile targeted ad to a user who comes into proximity of their store. Mobile retargeting offers a better return on investment compared with other advertisement strategies and is likely to become more popular in the future.

Keyword

Mobile banking is a service provided by a bank or other financial institution that allows its customers to conduct financial transactions remotely using a mobile device such as a smartphone or tablet.

Augmented Reality (AR)

The number of mobile applications with embedded AR is growing rapidly. To improve its brand presence and provide digital content optimization, retail giant Ikea introduced an AR mobile application in 2017 that lets shoppers test products in real time through Apple iOS 11's ARKit technology. Customers use AR models of IKEA furniture from the mobile app to see how those pieces fit in their home and office spaces. Many brands, including Coca-Cola, Zara, Covergirl and Pez, also use embedded AR in their mobile apps.

Mobile SEO

With the growing number of smartphone users accessing the internet, mobile responsive websites have become a necessity. Websites that are not mobile-friendly or do not provide a good user experience risk user abandonment, which in turn increases the bounce rate of their websites. Websites with higher bounce rates rank lower in SEO and Google searches. Therefore, building mobile websites that are adaptive to handheld devices is an important goal for all businesses.

Mobile banking

The biggest advantage of **mobile banking** is the ability to send money anywhere, anytime. Users can send money to others and conduct transactions with their bank irrespective of their location. This trend is likely to keep growing. According to Business Insider, as of 2021, there are an estimated 169.3 million mobile banking users in the United States, of whom nearly 80% said that mobile banking was their preferred way to access their accounts.

AI, Chatbots and Shopping Assistants

Powered by AI, chatbots are becoming essential e-commerce tools. They help shoppers around the clock with product recommendations, purchase completion, customer support and other tasks. According to a Grand View Research report, the global AI chatbot market is expected to reach \$3.99 billion by 2030. Shoppers are becoming more comfortable with chatbots as they have become accustomed to chatting with their friends and family over chat apps, such as WhatsApp, Facebook Messenger and Telegram.

The location of an e-commerce shopper is tracked with their IP address. While the IP address provides a broad region of the user's location, it is not capable of identifying the exact location, which might affect the targeted advertising strategies of a business. M-commerce apps, on the other hand, can track locations using Wi-Fi and GPS-based technologies that enable location-specific content and personalized recommendations. For instance, a provider can send push notifications offering personalized discounts that target certain customers as they walk past a specific store in a mall.

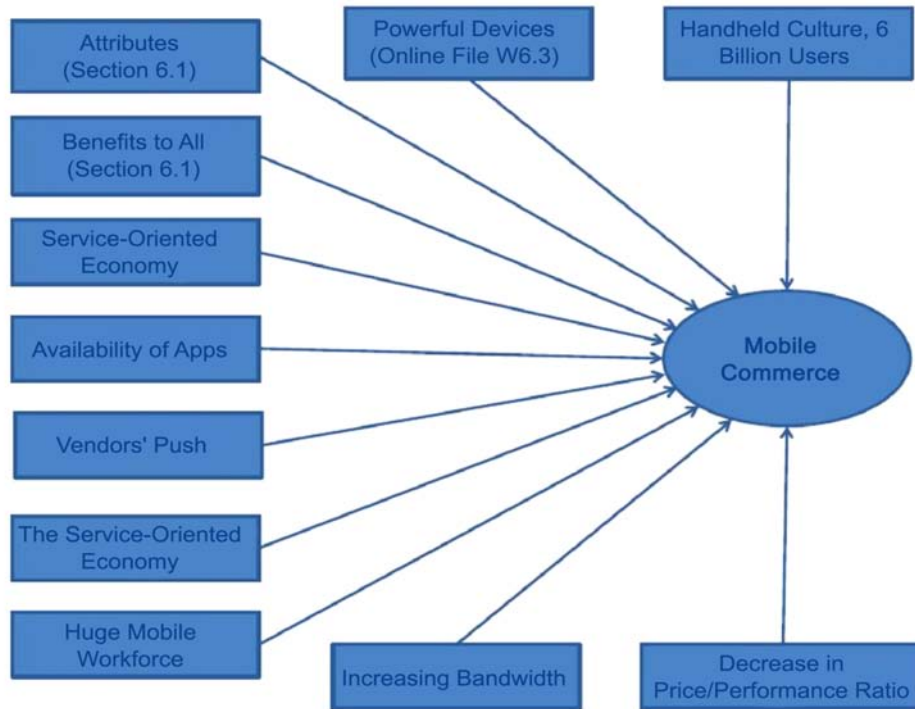
Mobile Ticketing

Gone are the days when users had to wait in long lines to buy movie or concert tickets. With mobile ticketing, users can buy and receive tickets through their smartphones. Mobile ticketing also eliminates the need to print the tickets as users receive them on their phones in a text format with a barcode that gets scanned at events.

5.2 DRIVERS OF M-COMMERCE

Mobile commerce is the process of buying and selling goods and services through mobile devices like smartphones and tablets. Several key drivers have contributed to the growth and popularity of M-commerce:

The Drivers of M-Commerce



Widespread Smartphone Adoption

The proliferation of smartphones has been a significant driver of M-commerce. As more people around the world own smartphones, they have easy access to the internet and can shop online from virtually anywhere.

Mobile Internet Accessibility

The availability of high-speed mobile internet connections, including 4G and 5G networks, has made it faster and more convenient for users to browse and make purchases on their mobile devices.

Mobile-Friendly Websites and Apps

Retailers and service providers have invested in creating mobile-friendly websites and apps that offer seamless and user-friendly shopping experiences. Responsive design and optimized mobile apps enhance the overall M-commerce experience.

Mobile Payment Options

The growth of mobile payment solutions such as Apple Pay, Google Pay, Samsung Pay, and various mobile wallets has made it easier and more secure for consumers to make payments on their mobile devices.

Social Commerce

Social media platforms have become an integral part of M-commerce. Businesses leverage platforms like Instagram, Facebook, and Pinterest to showcase products and offer direct purchasing options within the apps.

Personalization

Mobile apps and websites can collect user data to personalize product recommendations and marketing messages. Personalization enhances user engagement and encourages more mobile shopping.

Location-Based Services

Mobile devices can provide location-based services, enabling retailers to send targeted offers, discounts, and promotions to users when they are near physical stores or relevant locations.

Mobile Marketing

Mobile advertising, including push notifications, SMS marketing, and in-app advertising, has become a powerful tool for driving M-commerce. Businesses use these channels to reach potential customers and promote products.



Improved Security

Enhanced security measures, such as biometric authentication (e.g., fingerprint and facial recognition), two-factor authentication, and encryption, have boosted consumer confidence in mobile payments.

Convenience and Time-Saving

M-commerce offers unparalleled convenience. Users can shop on the go, make quick purchases, and save time compared to traditional in-store shopping.

Global Expansion

M-commerce has enabled businesses to reach a global audience easily. Consumers can access products and services from around the world, leading to expanded market opportunities for businesses.

Keyword

Shopping experience is the complete set of perceptions that customers receive while purchasing a product or service, and even what they feel after the deal is closed.

Emerging Technologies

Technologies like augmented reality (AR) and virtual reality (VR) are being integrated into m-commerce apps to provide immersive and interactive **shopping experiences**.

Voice Commerce

The rise of voice-activated virtual assistants like Siri, Google Assistant, and Alexa has opened up new opportunities for voice-based M-commerce transactions.

Economic Factors

Economic factors, such as the COVID-19 pandemic, have accelerated the shift toward online and mobile shopping as people seek contactless and convenient shopping options.

User Reviews and Ratings

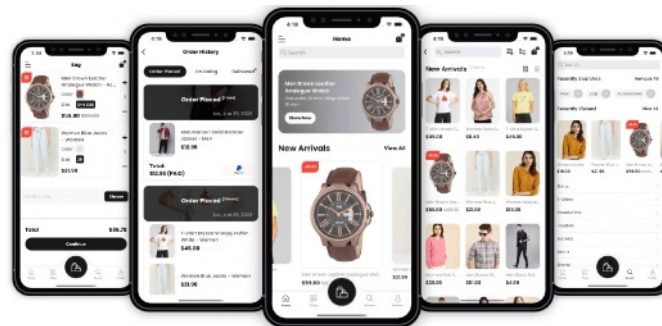
Mobile apps often feature user-generated reviews and ratings, which help customers make informed purchase decisions and build trust in mobile shopping platforms.

These drivers have collectively contributed to the growth of M-commerce, making it a significant and dynamic segment of the e-commerce industry. As technology continues to advance, M-commerce is likely to evolve further, shaping the future of online retail and consumer behavior.

5.3 E-COMMERCE APP

Our mobile devices play a pretty big part in our daily lives, especially when it comes to shopping online. This is even truer when it comes to shopping via a dedicated app: According to Forbes, 85% of online shoppers prefer native ecommerce apps over ecommerce websites.

An ecommerce app with an intuitive and highly functional build can help online stores boost their sales. Plus, that coveted spot on a customer's home page and notifications screen can offer additional marketing opportunities and can help build brand loyalty.



5.3.1 E-commerce App: Definition

An ecommerce app—sometimes referred to as a mobile commerce app—is a piece of software that allows customers to browse and purchase items from an online store.

Mobile commerce apps are beneficial both for business owners and their customers. Brands can better engage their customers in a dedicated space and customers can personalize and control their experience. And thanks to platforms like Shopify and Ecwid by Lightspeed, the mobile app development process can be pretty painless, too.

Note that an ecommerce app is different from social commerce—the practice of creating sales channels via social media, i.e. selling on Facebook or shopping via Instagram. While social commerce is a growing and valuable trend, the term ecommerce app refers specifically to a dedicated piece of software associated with a specific brand.

5.3.2 Features of an E-commerce App

While aspects like presentation and design are somewhat different across different ecommerce platforms, all mobile commerce apps have a few features in common—some that are essential, and those that are nice to have.

Essential Features of an E-commerce App

- *Search and browse functions:* Whether it's searching for a specific item or browsing the latest products, the point of an ecommerce app is to make finding products as easy as possible.
- *Shopping carts:* All mobile commerce apps need a shopping cart where customers can easily add items, change quantities, and so on.
- *Customer support:* Sometimes, customers need help navigating an online store, whether they've made a mistake with their purchase, or would like to initiate a return or exchange. That process is a whole lot easier when there's some level of ecommerce customer service within their mobile app.

Optional Features of an Ecommerce App

- *Push notifications:* By enabling push notifications, you can notify customers about restocked items, remind them about items still in their shopping carts, and more.
- *Multiple payment options:* Having multiple payment options creates an easy and seamless checkout process. It also offers customers some added flexibility—they can choose between paying with a credit card, through a service like PayPal, or perhaps with a buy now, pay later provider like Affirm.

5.3.3 Types of Ecommerce Apps

When it comes to selling to consumers, there are two different types of mobile commerce apps:

- **B2C:** B2C mobile apps are the most commonly used ecommerce apps today. They connect businesses selling goods and services to individual customers. Examples include apps for online stores like Amazon and Nordstrom.

- **C2C:** Similarly, C2C ecommerce apps connect two or more consumers so they can exchange goods or services with each other. Examples include apps like eBay and Poshmark.

5.3.4 Advantages of Developing an Ecommerce App

No matter what type of ecommerce app fits your business model, developing an ecommerce app is beneficial for both business owners and consumers. Here's how:

Speed: Ecommerce apps typically store their data locally on mobile devices, making them speedier and more user-friendly than their mobile web counterparts. Faster load times can lead to higher conversion rates and lower bounce rates—meaning customers are less likely to abandon their carts and business owners are more likely to increase their revenue potential with a speedy mobile app.

Visibility: Having your ecommerce app on your customers' home screens is a big win. And thanks to features like push notifications, online stores can reach their consumers wherever they are—even if they're interacting with a different app.

Push notifications are an easy way to encourage consumers to return to your app, especially if you use them to offer deals or exclusive discounts. That engagement goes a long way: In a 2021 study, Airship found that app users who receive push notifications in their first 90 days have a three times higher app retention rate.

Personalization: Ecommerce apps allow consumers to personalize their shopping experience, whether it's saving their sizes or adding their favorite items to a wishlist. In exchange, business owners can get greater insight into what their customers want, and tailor real-time communication to a customer's specific preferences.

Brand Loyalty: Ecommerce apps also allow business owners to retain customers and boost brand loyalty. And that loyalty goes a long way: According to eMarketer, app users are three times more likely to make a repeat purchase. And they also make up over three times the revenue of other shoppers.

5.4 M-COMMERCE SERVICES AND APPLICATIONS CLASSIFICATION

One way to classify m-Commerce services and applications is based on the functionality they provide to the mobile users. This kind of classification results in two major classes: the directory and the transaction oriented services and applications. The major categorization between these two classes of services is that in the former a mobile user

performs only read requests to the directory, whereas in the latter a user performs read and write requests to the transaction server. It is necessary to note that an m-Commerce application can be a combination of both classes.



The directory-oriented class of m-Commerce services comprises applications that provide information to mobile users. This information can be location, content and user dependent, being localized and personalized in ways appropriate to the specific mobile user. For example, a mobile user, being away from home, needs up-to-date information regarding his current location, and local facilities that he can use. Note that directory-oriented m-Commerce services can be offered via broadcast.

The transaction-oriented class comprises various services and applications with which the mobile user conducts transactions with the service provider. The transactions contain read and write operations on behalf of the mobile user. For example, a banking service for mobile users falls into the transaction oriented class of m-Commerce services.

The current mobile and wireless technologies suffer from constraints due to the wireless and mobile environment. These constraints influence the transaction-oriented mCommerce services in a much higher degree in terms of operation, than the directory-oriented mCommerce services. Problems like frequent and sudden disconnection, weak connectivity, and high delays degrade the quality of service offered to mobile users, and add complexity to the service provider. Consequently, the service provider must find ways and solutions to deal with these problems in order to maintain the quality levels of the service and reduce the computational overhead, which derives from the disconnected users' active sessions.

The classification of services can help the service providers to deal with specific problems of each class independently. In the case of the directory-oriented m-Commerce services and applications replication, copies of the local content, and copies on the base stations of the mobile infrastructure can help the availability and increase the quality

of this kind of services. On the other hand, strategies like the use of intercept agents and proxies on the fixed-wired network can help the increase of the availability and stability of the transaction-oriented m-Commerce. The use of intercept agents can also hide the problems and constraints of the mobile environment from the service provider and move the responsibility on the specially designed intercept agents.

Table 1 summarizes the constraints and the requirements for both the directory and the transaction oriented m-Commerce services, which drive the design and development of m-commerce systems falling into each category of services. For example the last minute purchase of a flight ticket requires quick access and response time from a directory-oriented service and bounded transaction execution time, data integrity and security for the actual transaction to be made since this is a combination of both directory oriented and transaction-oriented m-Commerce service.

Table 1. Constraints and requirements for directory and transaction-oriented m-commerce services

Directory-Oriented	High availability Quick access time Quick response time Localization Personalization Filtering (Rules filtering) Security
Transaction-Oriented	Bounded transaction execution time Data consistency Data Integrity Security Redundancy

5.5 DESIGN AND DEVELOPMENT METHODOLOGY FOR M-COMMERCE SERVICES

Here, we will suggest a new methodology for designing and developing m-Commerce services and applications. This approach relies on the special needs and requirements of the mobile users as defined, the classification of m-Commerce services and applications presented, as well as the current technologies for mobile and wireless computing and their constraints.

The m-Commerce services and applications analysis and design can be incorporated in a modified Web engineering (WebE) process.

This modified WebE process includes six phases:

- a) Formulation,
- b) Planning,
- c) Analysis,
- d) Engineering,
- e) Service Implementation and Testing, and
- f) User Evaluation:
 - a. Formulation – Defines the tasks and goals of the m-Commerce service and application and specifies the length of the first increment.
 - b. Planning – Estimates the total project cost and the risks associated with it, and sets a timeframe for the implementation of the first increment as well as the process of the next increments.
 - c. Analysis – Identifies all the mobile user requirements.
 - d. Engineering – It involves two parallel tasks:
 - i). Content design and Production, and
 - ii). Architectural, Navigation, and Interface design.
 - e. Service Implementation & Testing – Development task for the creation of the m-Commerce service and application.
 - f. User Evaluation – Evaluates each task and proposes new modifications and expansions that need to be incorporated to the next increment.

Remember

The analysis phase should take into consideration the classification of the m-commerce services and applications to directory and transaction-oriented, in order to identify the specific mobile user requirements for each class of services.

The directory-oriented class of services shares different constraints than the transaction-oriented class. Examples of m-Commerce constraints related to the service and application offered are navigation mechanisms, security, reliability, small screens, etc. In the paradigm of a mobile user that wishes to enter into a mobile transaction, the requirements of ease-of-navigation, high security and reliability are just few of the factors that are of a higher importance than in the case of a directory-oriented service or application.

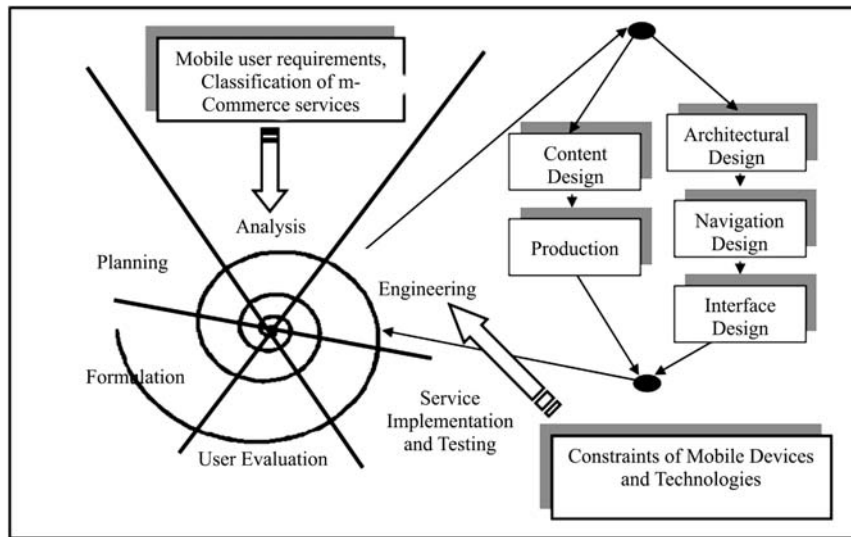


Figure 2. The modified WebE process for m-commerce services and applications.

In the Engineering phase, the peculiarities of the mobile environment and devices reported need to be considered (e.g. tiny displays, drain of batteries, connectivity problems, and diverse device profiles). This consideration will enable the orientation of both the type and volume of content, the form of the navigating facilities to access this content and finally, the m-Commerce device interface, as well as the architectural design of the whole system. Therefore it is necessary to classify the constraints of mobile networks and devices according to the type of mobile device since they share different characteristics and requirements. Table 2 classifies the impact on the design and implementation phase of each constraint as high, medium or low for each type of mobile device. For example, a mobile service provider who wishes to offer its mobile users the ability to purchase flowers, has to take into account several constraints that affect the design and development of the m-Commerce application according to the mobile device used. If the mobile customer uses a mobile phone the constraints' impact is high, such as small screen, small multifunction keypads, graphical limitations, etc., while if he uses a palm computer the constraints impact is lower.

In the User Evaluation phase the m-Commerce system must enter an evaluation phase by the end-users, that is, potential recipients of the system's services. The system can be evaluated by a selected group of people (e.g. 100 users) in terms of user requirements, constraints and the type of mobile device used for the m-Commerce service or application.

Table 2. Classification of m-commerce constraints and their impact on the design process according to existing mobile devices

M-Commerce Constraints	Mobile Phone	PDA	Palm	Laptop
Small Screen	High	Medium	Low	Low
Small multifunction key pads	High	Medium/ High	Medium	Low
Limited Computational Power	High	Medium	Low	Low
Limited Memory	High	Medium	Low	Low
Limited Battery Life	High	High	High	High
Non-volatile Capacity	High	High	Medium/High	Low
Low Display Resolution	High	High	Low	Low
Unfriendly User Interface	High	Medium/ High	Low	Low
Graphical Limitations	High	High	Low	Low
Complicated Text Input Mechanisms	High	Medium/ High	Low	Low
Limited Security	High	High	Medium	High
Limited Bandwidth	High	High	High	High
Low Connection Stability	High	High	High	

5.6 M-COMMERCE VERSUS INTERNET-BASED E-COMMERCE

M-commerce has been a very hot topic in recent years. Most often m-commerce is understood as mobile e-commerce, regarded as the continuation of e-commerce with the palm handheld, wireless laptops and a new generation of Web-enabled digital phones already on the market. Internet access and Web browsing therefore are assumed to be the major selling point of m-commerce.

In fact, m-commerce is not simply a new distribution channel, a mobile Internet or a substitute for PCs. M-commerce applications have their own unique features: mobile communication, personal touch, location-related and time critical services. Even though wireless technology is sometimes regarded as an enhancement tool rather than a brand new medium, successful players in the m-commerce market space must take a much broader view of the technology, the market, and potential consumers. Obviously, people will not shop with their phones in the same way they shop with PCs. E-commerce applications that are successful on the desktop PC will not necessarily meet a similar accomplishment in m-commerce. Unleashing the value of m-commerce calls for a radical shift in thinking.

Keyword

Business model is a company's profit-making plan which defines the products or services it will sell, its target market, and any expected costs.

5.6.1 A Theoretical Framework for Comparison

In order to understand the nature of m-commerce and explore its potentials, we will analyze the fundamental differences between m-commerce and Internet-based e-commerce along three important dimensions:

- 1). Technologies,
- 2). Nature of services and
- 3). **business models.**

The understanding of technology differences helps us to identify what can be done and what cannot be done in m-commerce. The understanding of nature of service differences

helps us to identify what types of services are more suitable or not suitable in m-commerce. The understanding of business model differences helps us to identify the source of revenue and the cost structure of m-commerce. Our theoretical framework is illustrated in Table 3.

Table 3. A theoretic framework for comparison

Dimensions for Comparison		
Technology	Nature of Services	Business Models
Network Infrastructure • Origin • Ownership • Connectivity • Bandwidth • Data transmission • Protocol • Geographic location System Application Development • Service delivery • Interaction facilitating • Application Development tools • Application Interoperability • Application integration • Payment system Client Devices • Types of devices • Interface • Processing capability • Mobility • Geographic locating • Device identity • Personal identity	Customer Base • Population • Demographic • Leading region Transaction • Complexity • Product information • Range of product and services offered • Payment • Backend system connection Mobility • Service delivery • Moving target tracking Location • Location awareness • Service range Timing • Time sensitivity	Value Proposition • Communication needs • Information needs • Convenience • Cost reduction • Emergency and Safety • Quality of service • Workforce support Cost Structure • Business entry cost • Contents creation cost • Content delivery cost • Logistic cost • Application development cost • Technology investment cost Source of Revenue • Infrastructure construction • Communication charge • Advertising • Business cost reduction • Online sales • Service charge

5.6.2 Technology

Technology determines what can be done. Here, we present our discussion in three categories: network infrastructure, application platform, and client devices.

Network Infrastructure

The emergence and development of e-commerce was due to the rapid growth of the Internet, which originated from several U.S. government-sponsored programs (ARPANET, CSNET and NSFNET, etc.). In essence, nobody really owns the Internet. The Internet is supported by a well-established protocol, TCP/IP (Transmission Control Protocol/Internet Protocol), which solves the global internetworking problem and ensures that computers communicate with one another in a reliable fashion. In contrast, m-commerce services are originated from private mobile communication systems implemented by a

variety of wireless media communication technologies ranging from global (Satellite), regional (3G, IEEE 802.11a/b, DoCoMo I-mode), to short distance (Bluetooth). Wireless companies particularly cellular phone carriers compete with each other with incompatible standards such as GSM (Global Service for Mobile), TDMA (Time Division Multiple Access), and CDMA (Code Division Multiple Access). This incompatibility leads to high cost of mobile communication and difficulty of globalization. Moreover, contrary to abundant bandwidth of the wired Internet, wireless bandwidth is limited by signal frequency spectrum. However, in addition to mobility, wireless communication does have a unique capability: geographic locating. The ability to locate the position of a mobile device is facilitated by several geographic locating schemes including GPS (Global Positioning Systems), TDOA (Time Difference of Arrival, AOA (Angle of Arrival) and LPM (Location Pattern Matching). This geographic locating capability makes location based services a unique feature for m-commerce.

Application Platform

Over the past several years, the World Wide Web (WWW) has become dominating Internet traffic, and the vast majority of ecommerce applications are Web-based. The URL (Universal Resource Locator) was introduced to fulfill the need to locate a network resource. However, in a distributed and dynamic mobile environment, there is no unified service discovery infrastructure that is highly adaptive, interoperable, and autonomous. E-commerce web sites are very easy to connect to backend legacy system through the Internet. However, it will take many steps to overcome serious interoperability issue in order to connect different systems in a m-commerce application. This is the reason why most m-commerce applications are confined within regional networks and specific devices. In Internet-based e-commerce, interaction between clients and servers are facilitated by the request-response protocol HTTP (Hyper Text Transport Protocol). However, in a wireless communication environment, using HTTP requires constant connection, this makes it incapable to meet mobile users' demand for more effective and real-time interactive applications. The high cost of mobile communication and the limitations of handheld devices further compromise the success of this Web-based model. Thus against WAP (Wireless Application Protocol) derived from HTTP, J2ME (Java 2 Micro Edition) was proposed as another solution to facilitate massive interactions involved in m-commerce. To cope with the complexity of the mobile environment, agent-based infrastructure also was proposed to be a promising platform due to agents' autonomy, intelligence, modulated information and operations, and facilitating collaboration in distributed environment. It is clear that the application development platform in m-commerce is more complex than in Internet-based e-commerce.

Client Devices

In addition to the underlying network infrastructure and application platform, it is the client devices that actually determine what specific services can be delivered. The boom in e-commerce applications is actually due to the widespread use of PCs, which have a large screen, complete text input keyboard, substantial memory, and high processing power. Contrarily, m-commerce applications rely on the use of various handheld devices. These devices range from pagers, cell phones, and palmtops, to pocket PCs. Mobile devices such as cell phones have a tiny screen, some of which display only three lines of text at once. Moreover, software applications are relatively crude. There are no cookies or session controls, meaning that if the connection is lost, the application will restart rather than continue from previous screens. Even using WAP-based service, a visit to Barnes & Noble's WAP site to enter credit card number, address, and shipping information requires more than 100 keystrokes. If it takes too much time (e.g. more than 5 minutes) to conduct an m-commerce transaction, it might better be done with a PC. Simply converting e-commerce services to cell phones or PDAs will merely expose the limitations of wireless handheld devices and result in frustrating end-user experiences. For instance, the new Palm i705 is designed to include MultiMail email program, DataViz's Documents-to-Go for reading and editing Microsoft Office files, and a Web browser. But the small screen and the slow network make it a painful combination. However, in spite of their limitations in contrast to PCs, handheld devices (cell phones and PDAs) do have their own unique features: mobile, portable, and connected to a person rather than to home or an office.

5.6.3 Nature of Service

Different technologies make m-commerce services different from e-commerce services. We identify those differences in several categories: customer base, transaction, mobility and location.

Customer Base

Due to different origin, the customer bases of e-commerce and m-commerce are quite different. Most early Internet users are highly educated computer users, although the demographic of Internet population now is gradually close to general population in developed countries. In contrast, besides business mobile workers, most cell phone users are young or relatively less well-educated consumers. Over the next decade, billions of people will gain access to mobile devices, but many of them will be functionally illiterate and technologically unsophisticated. Also because of the difference in origin, consumers have quite different expectations about m-commerce and e-commerce. For example, one reason for the low uptake of the wireless Internet in the U.S is that most

Americans already are familiar with the wired Internet and expect to pay for wireless Internet access as they do for the wired one: unlimited access for a flat monthly fee. Contrast to North America, in Asia and Europe mobile telephony adoption is more advanced.

Table 4. Key Differences in technology dimension

	Internet-based E-commerce	M-commerce
Network Infrastructure		
Origin	Government sponsored Internet project	Private cell phone communication services
Ownership	Publicly shared	Propriety
Connectivity	Universal global connection	Separate systems for short distance, regional, and global connection
Bandwidth	Unlimited	Limited by spectrum
Data transmission	Mainly for data communication	Mainly for voice communication
Protocol	Standard and dominated Internet protocol	Multiple competing mobile communication protocols
Geographic Location System	Not available	Enable several geographic locating technologies
Application Development Platform		
Service Discovery	URL-based domain name hyperlink Infrastructure	No uniform resource locator
Interaction Facilitating	Http/Web-based request-response system	Short message and simplified Web access, agent technology
Application development tools	General programming tools widely available	Specific and limited programming languages
Application interoperability	Open system, run on any PC	Device-specific
Application integration	Easy to integrate with legacy systems	Difficult to integrate with other information systems
Payment system	Third party payment mechanism	Built-in carrier payment mechanism
Client Devices		
Types of devices	Dominated by personal computers	Many types of handheld devices
Interface	PCs with big screen display and full text input keyboard. Voice and video communication is also possible,	Cell phones for voice and PDAs for data communication with a small screen and a small key pad
Processing capacity	Powerful CPU with large memory and disk space, unlimited power supply	Limited processing power with small memory chip, limited power supply
Mobility	Not mobile, fixed location	Mobile
Geographic locating	Cannot be geographically located	Can be geographically located
Device identity	May not be identified	Can always be identified
Personal identity	Not available	Biometric technology maybe used

In Japan, the number of cell-phone users has already reached 66 million; and 64% of the people in Finland have a mobile phone, while the rate in Sweden stands at 55.2%. The difference in customer base makes m-commerce players to be more precautions in developing unique offerings for each market segment according to geographical location and demographics.

Transaction

The advance of Internet and Web technology enables rich information to be searched and delivered without geographic boundaries. It also enables sophisticated electronic transaction processes to be easily integrated with backend enterprise information systems. In contrast, m-commerce transactions are rather simple, usually available only in a specific region.

Some simple transaction-based applications such as gambling and drawing lottery would be very valuable and profitable. Wireless users demand packets of hyper-personalized information, not scaled-down versions of general information. Information overload and unnecessary communication in Internet-based e-commerce are often more tolerable. However, the relevance of service, support, and communication is critical for the success of m-commerce.

Thus, m-commerce applications are more concentrated on the relevance and simplicity of information and transaction. With respect to simplicity, every additional click-through that a mobile user needs to make in navigating through a commercial online environment with a handheld device reduces the possibility of a transaction by 50%. Customers must be able to define on their own terms what is important, when they want to send and receive communications, and how support and service are delivered. In Europe, where mobile users are not charged for incoming calls, there is a great deal of realties to keep mobile users informed of time critical information such as aircraft flight status, shipping status, seat reservations or stock prices, and other dynamically updated information.

Mobility

Due to wireless network connection and portable handheld devices, products/service can be delivered to people moving around anywhere and anytime. M-commerce opportunities for travelers and mobile workers can be very significant in comparison with e-commerce restricted by office or any fixed location. It is important to understand consumer groups intimately and develop ubiquitous solutions that recognize the role that mobility plays in consumers' lives.

In business services, simply not being forced to be hardwired enables a company's employees to remain connected while moving from office to office, or state to state; they can tap into the corporate network from airport lounges and hotel lobbies. Moving technicians can check inventory, get directions and ask for customer updates; in public safety market, Cops carrying PDAs can wireless access federal and state databases,

and file reports; healthcare workers carrying PDAs can make medical calculations and access back-end databases. For individual consumers, since a mobile handheld usually accompanies a person wherever he or she goes, mobile devices basically allow them to keep in touch with their friends and families anywhere and anytime. For instance, videophone users can take pictures wherever they go and send them attached with short notes to friends while shopping, traveling, or simply hanging out. While traveling, a user may use a mobile phone to control a home burglar or fire alarm system and to turn lights on or off as if at home.

Location

In e-commerce, location is regarded as a limitation to overcome. Internet actually creates a virtual world or cyberspace, which enables customers to forget the distance boundaries of physical world, shopping in any virtual malls, working for any online companies, and receiving education and trainings from any universities/programs that they like.

Contrarily, location awareness is much emphasized in the context of m-commerce and location is regarded as a new dimension for value creation. To date location-based services have been regarded as key enablers of m-commerce's future success. Portable geographic positioning systems (GPS) are becoming smaller and more affordable, at costs in the neighborhood of only about U.S. \$200. These systems can be used not only to identify locations, but also for business to deliver location-sensitive services to users.

The ability to target relevant information to end-users provides great potential value in location-based applications. For instance, it would be quite useful to provide driving directions and local commercial services where users happen to be, such as nearby specific restaurants, movie shows, bus schedules, weather reports and guided tours in museums. Additionally, some location-based applications aim to track remote assets such as fleet vehicles and construction equipment.

Timing

Finally, time is also treated differently in e-commerce and m-commerce. In e-commerce, the objective is to overcome time limitations imposed by brick and mortar stores. However, time is critical for emergency and safety, in the case of specific m-commerce application in health care and 911 calls. It was estimated that more than 50% of 911 emergency calls are initiated from mobile phones.

Table 5. Key differences in nature of services

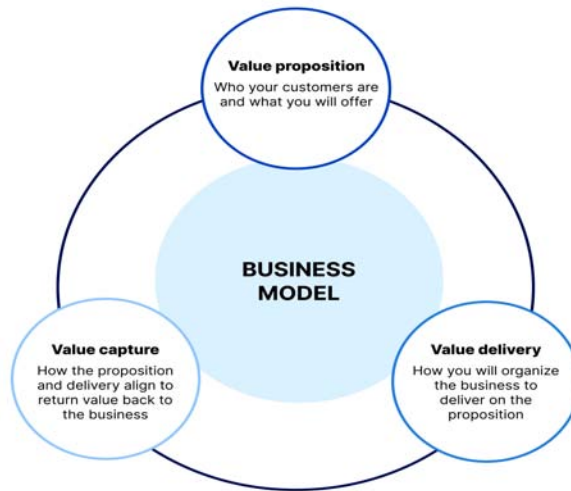
	Internet-based E-commerce	M-commerce
Customer Base		
Population	PC users with Internet connection	Cell phone and PDA users
Demographic	Most are highly educated	Business mobile workers and young, less educated people
Leading region	North America	Europe and Asia
Transaction		
Complexity	Complete and sophisticated transactions	Simple, often yes or no choices
Product information	Rich and easy to search	Simple, short, and critical messages
Range of product and services offered	Wide range of selections	Limited and specific
Payment	Mainly credit card	May use built-in payment mechanism
Backend System connection	Easy connection to EDI / EPR/ Intranet systems	Limited connection to backend system
Mobility		
Service delivery	Services deliver to home or office, reduce the need for travel	Services deliver to a moving person, facilitate a traveling person's needs
Moving target tracking	None	Tracking moving target in real time
Location		
Location awareness	As a limitation to overcome, location independent	As a new dimension for value creation, location-based services.
Service Range	Global market	Local / on spot
Timing		
Time sensitivity	Overcome time limitation, always available. (24 hours × 7 days)	Time-critical, emergency handling, impulsive purchasing on spot

5.6.4 Business Models

Business model is critical for commercial success. Here, we further investigate the business model differences between e-commerce and m-commerce in terms of value proposition, cost structure and source of revenue.

Value Proposition

Basically, the differences between m-commerce and e-commerce in value proposition are originated from their differences in mobility, location dependence, cost of communication, and capabilities of client devices. It is the very low cost and unlimited Internet access that attracts the customers to enter the e-commerce world. On the other hand, what is so inviting in m-commerce at beginning is mobile person-to-person communication. Beyond person-to-person mobile communication, Mobile consumers can access various services anytime and anywhere, presenting new marketing channels for businesses as well as creating more of a perception of enhanced intimacy with consumers.



Rich information exchange facilitated by Internet eliminates the information asymmetry between buyers and sellers and helps create a fair market. Both buyers and suppliers perceive the value arising out of reduced product/customer search cost, transaction costs, and reduced lead time/improved responsiveness. From other side, m-commerce has huge potentials in providing time-critical emergency/public safety support. Additionally, improving efficiency of logistics operation on moving targets is another potential value that m-commerce can provide. Contrary to cost reduction-centered benefits from Internet-based e-commerce, businesses in m-commerce would harvest improved productivity.

E-commerce advocates location independence without time limitation as discussed above. In e-commerce, products and services are delivered to home or office directly, thus reducing the need for travel. For instance, after September 11th terrorist attack in U.S., traveling is considered less safe and less desirable. Thus electronic conferencing over Internet became more attractive as an alternative of business travel. M-commerce on the other hand is not aimed to reduce traveling but facilitating traveling. Location awareness creates much value for m-commerce.

Cost Structure

The term “e-commerce” was coined because of widely expanding networks and applications. The flourishing of e-commerce primarily is stimulated by uniform Internet standards and low Internet overhead cost, which points to the trend that has seen email, Internet site design and hosting, transaction charges, personal computers, and software move toward being free. All of these significantly reduced e-commerce entry costs and helped fuel the rapid growth of ecommerce. Contrarily, m-commerce is rooted

in paid-for service in the private mobile phone industry where business competition is stiff. To purchase entry licenses and actually build a mobile communication network requires heavy business investment with no government support. M-commerce carriers therefore must look for a great deal of business activity to generate revenues that justify the huge infrastructure investments. Competition for limited bandwidth resource makes wireless communication impossible to be free like Internet. Hence, compared to almost free global Internet access, high cost has been seen as a major characteristic of m-commerce. Moreover, both of e-commerce and m-commerce promise to sell two types of goods: tangible (physical goods) and intangible (information), but the related costs that they face are quite different. Information goods are characterized by high initial costs to produce the first copy and almost no cost to make additional copies. Most information (products, weather condition, and maps, etc.) that m-commerce applications need is already there in e-commerce. This fact indicates that the cost of contents in e-commerce is much higher than in m-commerce, but the contents delivery cost in e-commerce is much lower than in m-commerce. On the other hand, for tangible goods, the cost of delivering from remote site in e-commerce is higher than that of offering locally in m-commerce. The reason is that e-commerce enables customers to place orders anywhere in the world, but m-commerce service is to meet on-spot needs such as looking for the nearest restaurant.

Source of Revenue

Internet-based end-to-end logistics solution (using web presence to provide an ordering point for customers, linking to supplier's sites for procurement, and connecting the web site to UPS for coordination of pickup, shipping, and delivery of goods, etc.) significantly reduces transaction cost and generates massive payoff for capital investment. For instance, by using Internet-facilitated logistics, GE (General Electronic) cut \$500-\$700 million off its purchasing costs over a three-year period, labor costs by 30%, and materials costs by 5-20%. Contrarily, limited transaction processing capability and high cost of mobile communication prevents m-commerce from taking such advantages at present. But from another point of view, using wireless communication does help improving efficiency of mobile works and mobile logistics operation. Today, in the stock market, the only wireless companies earning money are those selling wireless to businesses as a tool for improving communications and supply chain logistics. However, for those businesses adopting wireless solutions, the stream of revenue is still obscure at present. Additionally, in Internet-based e-commerce, many organizations regard advertising as the main source of revenues. Portals (including the sophisticated searching engines) such as AOL and Yahoo play a significant role in funneling the customers into the target web sites, and receive huge revenue to support their operations by hosting banner ads. In contrast, m-commerce customers particularly cell phone users are more impatient than Internet users and the paradigm here is

not surfing. Thus they would not possibly spend much time on surfing to locate a specific service/product through comparing plenty of choices provided by portals, or listening to voice or reading message-based advertising by consuming limited power of mobile handhelds. In addition, location-specific advertising in m-commerce should be approached cautiously due to privacy concerns. Heavy network traffic would not lead to additional profit for major players in e-commerce. In the Internet world, much is given away free or at a discount particularly for Internet access in the hope that a way will eventually be found to turn traffic into profits. Unfortunately, the sad truth is that although a Web site may receive millions of visitors, only about 3% actually buy anything. However, for m-commerce, since mobile communication is paid by customers, any increased network traffic and paid service will generate extra revenue for network operators and products/service providers.

Table 6. Key differences in business models

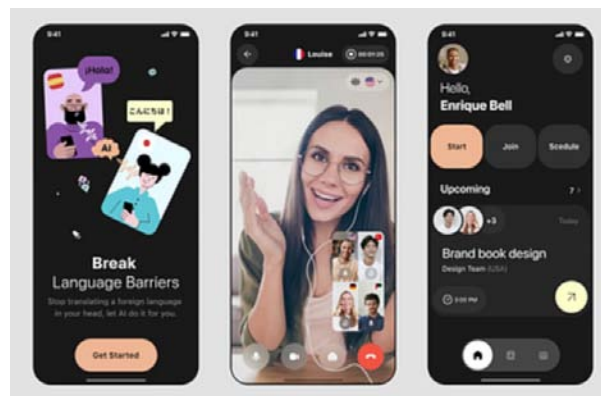
	Internet-based E-commerce	M-commerce
Value Proposition		
Communication needs	Low cost, global communication	Mobile communication, personal reach
Information needs	Rich, free, and easy to search information	Time critical and location sensitive information
Convenience	Global market without geographic limitation. Reduce the need for travel. No time limitations	Navigation and local service guide, easy payment
Cost reduction	Lower transaction cost	Improve logistics operation
Emergency and Safety	No	Emergency service for life saving
Quality of service	Personalization, customer self-service	Location sensitive services
Workforce support	Support office workers	Support mobile workers
Cost structure		
Business entry cost	Low	High
Contents creation cost	High	Low
Content delivery cost	Low	High
Logistic cost	High for physical goods, low for information goods and services	Low for physical goods, high for information goods and services
Application development cost	Low	High
Technology investment cost	Low	High
Source of revenue		
Business cost reduction	Reduction of search cost, promotion cost, customer service cost, transaction cost	Improve efficiency and productivity of mobile workforce and logistics operation
Advertising	A major revenue source	Very limited
Communication charge	Flat and low rate for Internet connection, a cost rather than a revenue	Charge by time or volume, major revenue source
Infrastructure construction	Not significantly Increasing	Significantly Increasing
Online sales	Global market opportunity	Few items, small volume
Service charge	Free or limited service charge	Service is charged through subscription

The networked economy can be divided into four layers: the infrastructure layer, the application layer, the intermediary layer, and the commerce layer. Overall, the growth of the intermediary and the commerce layer today, is significantly higher than that of the Internet infrastructure and applications layer. Contrarily, m-commerce is still in its infancy, which means that infrastructure construction (involving selling equipment, deploying backbone wireless network, and developing basic applications) and increasing subscription for mobile communication are the major sources of revenues for wireless business players particularly for operators. Intermediaries and real mobile commerce are still far from generating real profits.

5.7 M-COMMERCE UX: DESIGNING AN APP-LIKE EXPERIENCE FOR MOBILE SHOPPING

M-commerce, a mobile-first approach, an app-like UX/UI. These are three main commandments in web development for e-commerce since smartphones have become really smart and convenient, catching up and surpassing desktops in traffic and sales.

Adaptive and responsive designs are no longer on the agenda. They can't ensure a decent mobile shopping experience because they're anyway based on desktop themes. People are used to dealing with native apps; not ergonomically placed controls and jumping content irritate them. So they'd rather close a website than get frustrated while making purchases.



But mobile apps aren't always a perfect way out. No doubt, they're geared for cell phones: designed for these devices only, closely interact with the hardware, and work smoothly due to this. But not all companies can afford to make two apps for iOS and Android. Even fewer players in the e-commerce industry can convince enough consumers to download an app that will be used just a few times a year. The

brand must have an extensive clientele for this venture to be profitable. In this state of affairs, the mobile-first approach and the app-like UX/UI design are a sought-for compromise for mobile commerce. In this guide, we'll analyze the statistics, discuss the core principles for designing mobile websites, and look at mobile e-Commerce UX best practices.

1. Why Take Care of a Mobile-Friendly Store?

Leading marketing researchers keep a close eye on the m-commerce phenomenon. When it comes to numbers, they're fascinating:

- 5,22 billion people own mobile phones as of now;
- 234 minutes a day US citizens spent on their smartphones in 2021;
- 79% of cell phone owners use devices for online shopping;
- 72,9% of total e-commerce sales in 2022 are expected to go via mobile commerce;
- 90% of purchasers reckon their customer experience with m-commerce has room for improvement.

The last point is particularly important as it indicates some dissatisfaction with the UX mobile commerce provides. Firstly, consumers aren't very enthusiastic about downloading a bunch of weighty shopping apps. And secondly, numerous mobile websites (even of world-renowned brands) are adaptive/responsive. Put simply, they are squeezed versions of desktop sites with some elements changed, added, and removed.

This desktop-first approach can't deliver the best mobile e-commerce UX. When designers create desktop layouts first, they have much free space for experiments. They don't think about a keyboard taking up to 50% of a mobile screen when users search for items or fill out the forms at checkout. They don't bear in mind that user behavioral patterns on laptops diverge a lot from those on cell phones.

Therefore, designers often end up having magnificent desktop prototypes with loads of smart UX solutions that are absolutely inapplicable to mobile devices. To adjust such e-commerce design for mobile, they need to get rid of some functionality and rethink the rest. Otherwise, the pages will be overcrowded with elements, and there might be issues with loading speed.

In the meantime, crafting a mobile version first has at least two major advantages:

- During the process, designers think over essential features and don't stuff pages with redundant elements. This approach guarantees a better mobile UX.
- Desktop templates look structured and tidy as well. In most cases, designers don't need to add anything since they have thoroughly worked out the functionality earlier.

Remembering the share of mobile commerce in the total online sales, it doesn't seem logical anymore to start with desktop mockups. But it's not enough to just go mobile-first formally. We've also mentioned the third vital term: an app-like design.

UX/UI design for applications has been actively evolving, ideating new sophisticated solutions. When designers and developers borrow them for web apps, they become almost indistinguishable from native apps.

Still, a vast majority of retail sites remain outdated, hindering themselves from having higher conversions. But those properly applying mobile-first will have a head start over the competitors.

2. Core Principles for the Best Mobile Ecommerce Design

Let's list the rules for designing mobile websites to fit the bill in terms of UX/UI.. The point is to concentrate on the device capabilities and the peculiarities of using smartphones:

- People behave on cell phones and laptops in a different fashion;
- People perceive info on small and large screens differently;
- People interact with phones faster than with PCs.

Prioritize it

Given the short attention span of smartphone users, element prioritization becomes a top priority for UX/UI designers. We keep the main focus on the above-the-fold area: it's the very first screen visitors see without scrolling. Strive to fit all crucial controls/elements here. This way, you'll ensure that the main navigation, details, and CTAs will be visible to shoppers straight away.

Streamline Navigation

Navigation not only prevents customers from going astray but also directs them towards completing an order. It encompasses numerous elements: a header and footer, main controls (menu, search, cart, account, wish list), options to go back, and so forth. When planning navigation for mobile versions, designers take into account three aspects:

- A manner to navigate on smartphones. For instance, people are used to getting back to the previous page by swiping right, and designers should utilize that.
- A very limited space. Designers need to fit critical navigation elements above the fold. So they must be picky when choosing what to leave, what to shift below, and what to remove. The final templates should be well-structured,

comprehensible, and minimalistic.

- The specifics of using smartphones. People often handle phones in one hand, operate (or try to) with a thumb, and make purchases on the go. That's why one of the standards for native apps is a bottom nav bar (also called a tab bar or a bottom menu).

Make Use of Sticky Bars

When buyers explore a store on the phone, they make way more scrolls than on the PC. Such important elements as calls to action, a price, or filtering/sorting go out of sight. In order to keep them at hand and not force users to scroll back and forth, we add sticky bars.

Implement Pop-Ups

Design team considers pop-ups the cornerstone of a flawless m-commerce UX. Instead of getting shoppers to new pages or expanding info in accordions, we open windows over current pages. Pop-ups can show filters, product details, success messages, a cart, and forms at checkout.

Pop-ups always appear for a reason and as a reaction to one's actions, like tapping a button/icon/title. It's also important to visually emphasize that users stay on the current page. We usually make the new window smaller than a standard mobile screen and darken the background page. Pop-ups must be easy to close: with a swipe/tap on the background.

Speaking of how reasonable the solution is, let's outline its pros:

- Pop-ups concentrate people on one task. They understand what is needed in a jiffy.
- Pop-ups fit additional info that can't be posted on the page due to space limits. As a result, the structure remains neat and well-organized.
- Pop-ups don't cause annoying layout shifts: leads remain in the same position in a store.

Eliminate Layout Shifts

When people leaf through a menu or a product page, they may come across accordions. They expand the hidden details, shifting the rest content down. Then if users want to study another section, they have to scroll to find it. When they open the next block, the previous one either collapses or remains expanded, making the menu/page look messy.

Leverage Gestures

Let's talk about how we perform basic actions on smartphones. They imply more possibilities for gesture control than PCs: zooming with fingers, vertical and horizontal scrolling, swiping up, down, left, and right. These gestures bring designers more flexibility:

- Swiping makes it simple to close pop-ups and go back to the previous page.
- Horizontal scrolling is useful for various galleries and sliders. For example, we can compactly organize the category section on a homepage and leave space for other blocks. If on the desktop version, sliders often require clicking on arrows, on mobiles leafing through these blocks is effortless.
- Zooming in and out by pinching with two fingers is a habitual gesture for mobile users. Online stores are removing zoom icons from photo galleries because these hints aren't necessary anymore.

Add Phone-Related Features

Smartphones' hardware and software make these devices more feature-rich than laptops, so use this benefit while creating mobile e-commerce UI/UX. By allowing prospects to engage apps, a camera, and other stuff while shopping, we can further improve the customer experience. Amongst features worth implementing, we'd highlighted the following basic and fancy ones:

- Visual search: uploading/taking photos to seek for similar items/exact matches in a catalog;
- Barcode scanning: reading price tags with the camera to find corresponding product pages;
- AR-powered try-on: using the camera to try on clothes, sneakers, beauty products, see pieces of furniture in one's interior, and so on;
- Location tracking: requesting the current device location to auto-fill the address form at checkout or show the nearest offline store for picking up an order;
- Mobile payment services (Apple/Samsung/Google Pay and more): completing orders easier and faster;
- Voice search: using a microphone to make search requests;
- Push notifications: sending reminders about abandoned carts, sales, and special offers;
- Quick sharing: giving an opportunity to send links to social media and email.

Forget About Hovers

On desktops, hovering with a mouse or trackpad gives extra opportunities to UX/UI designers. They can add tooltips or showcase extra info when visitors hover over product cards on a category page.

On cell phones, it's not an option. If designers transfer such functionality to a mobile website, customers will have to tap twice to get to the product page. But with the mobile-first approach, the problem of adapting hover-based features disappears.

Stick to Familiar Controls

Finally, familiarity brings comfort when it comes to mobile UX. When working on web projects, we follow Human Interface Guidelines for iOS and Material Design for Android. Turn to these guides when:

- You need a toggle/slider/input stepper or any other control. Why create something which has already been created, tested, and approved?
- You want to check the recommended icon/button sizes, spacing between elements, and font sizes/contrast.

3. M-commerce UX Dos and Don'ts

So, let's get closer to the second-to-none usability of a mobile website. We'll consider best practices for navigation and search as well as the home, product, cart, checkout, and account pages. We'll also look at some controversial examples of web design for mobile e-commerce.

The Homepage

This page is all about acquainting leads with the store concept and directing them deeper into the site. To prevent the bounce rate increase, the main page should have lots of touchpoints with category and product pages. A well-thought-out homepage usually comprises the following:

- Popular categories;
- Bestsellers and/or items on sale;
- Promotion banners;
- Benefit bars;
- Enumeration of brands the store sells.

And the second is not making the most of this page. Take a look at Cos's example: it mentions only several categories and shows very large photos. As a result, leads have fewer possible directions to move further.

To emphasize how convenient shopping will be, many brands use so-called benefit bars located either above the header or right below it. It's a perfect place to make announcements as visible as possible.

But it's important to keep the message in this bar concise (two lines max) and very concrete: the threshold for free shipping or the discount percentage. Compare the benefit bars on Bliss and Douglas: the former looks neatly, and the latter takes up too much space.

Navigation

Navigation is like a circulatory system of any website; that's why usability specialists spend so much time on it. Navigation can facilitate a customer journey or seriously complicate moving to the order placement.

The Cart Page

A classic rule regarding cart usability is notifying buyers when the product is successfully added to their cart. Of course, we have a small quantity indicator near the cart icon, but its changes are so minor that are barely noticeable.

Most online stores now show success messages after pressing a CTA. Traditionally, they take a small pop-up form and disappear in a few seconds (like on Aliexpress). Another good solution is a mini cart with some details and buttons. But it should be possible to close this pop-up cart with a swipe/tap outside the window. We often turn to this solution (see the example below).

If the store most frequently sells just one piece (e.g., a laptop) it's ok even to redirect a purchaser to the cart page straight away. But in other cases, it's not a wise move. See the Lego store's example: neither the buttons nor the cross can be reached by thumb. A swipe to the right seems an easier way to come back to the product page, but it actually brings you two steps back to the category.

CASE STUDY

NEW PERSPECTIVES ON M-COMMERCE RESEARCH

The Internet-enabled mobile handset has rapidly achieved worldwide penetration, due to its very personal nature and sophisticated communication technologies. However, unlike e-commerce research, empirical explorations of m-commerce have seen only modest growth, because of the considerable uncertainties involved in mobile research. One major problem in m-commerce research is the lack of standards in terms, concepts, and theories. Although the infrastructure of wireless technology varies across markets, researchers tend to use the term “m-commerce” without considering the specific conditions and prerequisites of what they are examining. In addition, industry participation in academic research is at best occasional, and, in many cases, rapidly developing mobile technology may not be accepted as much as practitioners expect: either because of the higher cost per service ratio, or simply because these services can easily be replaced by the wired Internet.

Current mobile Internet applications enable consumers to access a variety of services: Web information search, SMS (short message services), MMS (multimedia message service), banking, payment, gaming, emailing, chat, weather forecast, GPS (global positioning service), and so forth. Collectively, we denominate this wide array of services as “m-commerce.” However, a clear distinction between m-commerce and PC-based electronic commerce has rarely been made.

In a narrow sense, m-commerce can be defined as “any transaction with a monetary value that is conducted via a mobile telecommunications network”. Sadeh characterizes m-commerce more broadly, as “the emerging set of applications and services people can access from their Internet-enabled mobile devices.” Typically, m-commerce takes place in a strategic platform called a “mobile portal.” There, third-generation (3G) mobile communication systems offer a high degree of commonality of worldwide roaming capability, supporting a wide range of Internet and multimedia applications and services with higher data rates.

From the perspective of marketing, Nysveen, Pedersen, and Thorbjørnsen propose a grid of mobile Internet services classification that employs four primary axes: person-interactive versus machine-interactive, and goal-oriented versus experiential services. Figure 1 is an adapted version of this classification scheme.

	Goal-Oriented	Experiential
Person-interactive	Information	Messaging
Machine-interactive	Payment	Gaming

Figure 1. Classification of mobile Internet services.

“Person interactivity” occurs between people through a medium, while “machine interactivity” refers to the interaction between people and the medium. In the latter, users can freely modify the content and form of a mediated environment. A goal-oriented process is defined by utilitarian benefits, while an experiential process provides hedonic benefits.

This classification grid offers a key to understanding the future research directions of m-commerce. That is, future research should clearly define process characteristics, and the type of interactivity, in order to provide the audience with clear implications regarding a specific mobile service. In particular, very little research has addressed the question of interactivity in mobile devices, although it has been argued that mobile technology is an alternative way to connect to the Internet (i.e., wireless Internet).

Progress in M-Commerce Research

To date, major e-commerce journals and some business journals have published special editions on this topic: the first was in *Electronic Markets* in 2002, followed by *International Journal of Electronic Commerce*, *Decision Support Systems*, and *Journal of Business Research*, amongst others. The focus of the journals varied, from technical to managerial topics, and exemplified the complex nature of m-commerce components.

A series of papers by Barnes were among the pioneering efforts in mobile research in general. He proposed preliminary frameworks for value-chain creation and wireless advertising, respectively. His works are purely conceptual, but his frameworks provided a useful foundation for those who subsequently undertook empirical explorations.

Needless to say, mobile Internet service adoption has been the most popular topic in the m-commerce research literature. To date, several empirical studies are available, including Hung, Ku, and Chung. They conducted one of the most comprehensive studies of mobile Internet adoption, adopting Davis’s Technology Acceptance Model (TAM) to consumers’ WAP adoption behavior in Taiwan.

From a theoretical point of view, the TAM has been the most frequently used base for m-commerce adoption, followed by the Theory of Reasoned Action (TRA) and the

Theory of Planned Behavior (TPB). For example, Lu, Yu, Liu, and Yao proposed a TAM-based conceptual framework for wireless Internet adoption. This is not surprising, given that this theory has frequently been used to study wired Internet adoption.

Nysveen, Pedersen, and Thorbjørnsen's recent exploration may—in my judgment—become one of the most significant contributions to date on mobile Internet adoption. The study was carried out in Norway, and partially replicates Hung, Ku, and Chung's study. Nysveen, Pedersen, and Thorbjørnsen formulated a causal model based on the TAM, TRA and TPB, to examine cross-service comparisons via multigroup structural equation modeling.

SMS-based marketing is another “main stream” of m-commerce research. For example, Barwise and Strong and Tsang, Ho, and Liang provided solid empirical evidence regarding “permission-based” advertising in the UK and Taiwan, respectively. On the other hand, although sporadic industry reports indicate actual use of SMS campaigns, there have been few attempts to investigate multinational firms' strategic perceptions of mobile marketing. Okazaki conducted a qualitative interview of 54 multinational firms' marketing executives operating in Europe. This study was based on Roger's new technology diffusion model, and found that multinational firms consider branding one of the most important attributes of mobile advertising adoption.

Few researchers have examined the specific nature of mobile Internet services, and the studies have been published in a rather sporadic way. For example, the literature is available in mobile banking/finance, cross-cultural comparison, security issues, and location-based services (GPS), among others.

Kleijnen, de Ruyter, and Wetzels published an interesting study of mobile gaming adoption in the Netherlands. They applied a series of sophisticated multivariate analyses to examine mobile gamers' profiles. Their paper is one of the few empirical studies of this topic. In a recent study, Kleijnen expanded her expertise into the more psychological aspects of new technology adoption, an approach that seems to provide insightful implications for future m-commerce research

From the industry perspective, one of the most successful mobile Internet services, i-mode, has seldom been examined empirically, although Baldi and Thaung's conceptual studies explained its adoption process from cultural perspectives. In the same token, Barnes and Huff used the TAM framework in their theoretical paper. Okazaki conducted an empirical study of a pull-type advertising platform on i-mode. His proposed model was based on uses and gratifications theory and on Dacoffee's Internet advertising value model. His findings suggest informativeness, entertainment, and irritation are the three primary factors that influence consumers' intention to “click” text-banner ads in mobile platforms.

Research Agenda for M-Commerce

Given the preceding discussion, we can conclude that, although an evolving amount of empirical research is being undertaken in m-commerce, several important research areas remain unexplored. Table 1 summarizes the research agendas and their status. Although this list is in no way exhaustive, it is clear that the mobile Internet and SMS-based push-type mobile advertising/marketing are the two most studied areas. In contrast, empirical efforts have been scarce in other areas, but in particular, almost nonexistent in the following three areas: e-commerce versus m-commerce comparison, mobile-based word-of-mouth, and research methodology in m-commerce.

First, we have seldom addressed a fundamental question: whether m-commerce can be an effective alternative to e-commerce, or, to put it another way, whether there are any significant differences in their usage and consumer acceptance. However, little research has been concerned with these questions. The wireless Internet has many similarities with the PC-based Internet, but there are important differences in usage and adoption. First, in comparison to the wired Internet, the mobile is a very personalized device, because information flows from and to the device on a person-to-person basis only. Second, the mobile is by its nature a ubiquitous device, which consumers can use at anytime and anywhere. Although the microbrowser screen cannot display complex product details, it has been demonstrated that in Japan m-commerce is an effective distribution channel for consumer goods (in particular, cosmetics, beverages, etc.). Valid and reliable comparison of e-shoppers and mshoppers will be a valuable decision making resource for both IT managers and online marketers.

Second, the mobile telephone is a very personal device, and therefore marketing information can be more easily transmitted by voice, messaging or email functions. Hence, word-of-mouth (WOM) can be achieved by wireless, and can replace person-to-person or PC-based WOM. We have as yet little knowledge of how consumers formulate such a WOM network with friends, family and community members, or how they send and receive product- or service-based information. Social norms or peer pressures may be important factors that influence such information networks or chains. Future research could focus on how consumers exchange useful and beneficial product/service information via the mobile Internet. Lastly, although the majority of existing studies used paper-and-pencil or web-based questionnaires, we seldom question the validity of responses. Can we safely assume that respondents' self-reported answers are valid and reliable data for mobile research? Are web-based surveys valid when our interest is in fact in mobile users? Should questionnaires instead be sent via mobile devices? Otherwise, how can we assume that respondents are actual users of mobile Internet services? What are the costs and benefits of these alternatives? We need to discuss more issues related to the reliability and validity of m-commerce research methodology.

Table 1. Research agenda for m-commerce

Research agenda	Status
Mobile Internet adoption	Abundant
Push-type (SMS-based) advertising/marketing	Abundant
Mobile banking/finance/payment	Explored
Security issues in m-commerce	Explored
Location-based services	Explored
Cross-cultural issues in m-commerce	Scarce
Managerial perspectives in mobile Internet adoption	Scarce
Mobile gaming	Scarce
Pull-type advertising/marketing	Scarce
E- versus M-commerce comparison	Unexplored
Mobile-based word-of-mouth	Unexplored
Research methodology in m-commerce	Unexplored

Contributors to This Special Issue

The first contribution attempts to examine a sophisticated causal model of Korean consumers' perceptions of mobile Internet usage. Lee included two crucial elements, interactivity and trust elements, and addressed a fundamental question: why consumers make their decisions to access (or not) the wireless Internet via a mobile device.

Bauer, Barnes, Reichardt, and Neumann revisit consumer acceptance of SMS-based mobile advertising, in terms of consumer personality and advertising content. They formulated a research model based on the TRA, and found that entertainment and information are the two primary antecedents of consumer acceptance.

Bigné, Ruiz, and Sanz focus on the more practical aspects of "M-shoppers," and examined their profiles and purchase behavior. The findings are based on a large-scale survey of Spanish Internet users, and show the importance of demographic data, such as age, social class, and behavioral patterns, as determinants of shopping decisions via mobile. Given the almost non-existent research on the Spanish mobile industry, this contribution is a valuable addition to this special issue.

Harris, Rettie, and Kwan challenge one of the emerging issues in m-commerce research: cross-cultural comparison of consumer usage. They conducted an empirical study in the UK and Hong Kong, using Hofstede's cultural dimensions. Although English is widely spoken in Hong Kong, it seems clear that cultural heritage distinguishes British and Chinese consumers' mobile Internet usage.

Hosoe proposes an alternative consumer research technique in the postmodern era, the “Experience Sampling Method,” by which images and messages are transmitted to, and recorded in, a database via mobile devices, and are used for real-time behavioral analysis. This breath-taking data collection method should help many researchers to obtain more valid responses from everyday consumption experiences.

Muntermann examines the utility of automated mobile alerting services in the financial community. This study is unique and creative, in that it proposes practical applications in a real situation involving private investors’ information needs. How can we provide prompt decision support system via mobile so that consumers can react quickly to critical market events? In this research, Muntermann attempts to answer this question.

Finally, Pagiavlas, Stratmann, Marburger, and Young report mobile business opportunities and challenges in the U.S. airline industry. In collaboration with United Airlines and Siemens Business Services, they present interesting and useful case studies in the attempt to identify the crucial elements that expedite facilitating airline customers’ convenience via mobile-based infrastructure.

SUMMARY

- Mobile e-commerce, often referred to as m-commerce, is the process of buying and selling goods and services through mobile devices, such as smartphones and tablets.
- Mobile commerce is usually called as 'M-commerce' in which user can do any sort of transaction including buying and selling of goods, asking any services, transferring ownership or rights, transacting and transferring money by accessing wireless internet service on the mobile handset itself.
- Mobile shopping enables customers to buy a product using a mobile device with an application such as Amazon or a web app.
- The biggest advantage of mobile banking is the ability to send money anywhere, anytime. Users can send money to others and conduct transactions with their bank irrespective of their location.
- The availability of high-speed mobile internet connections, including 4G and 5G networks, has made it faster and more convenient for users to browse and make purchases on their mobile devices.
- Retailers and service providers have invested in creating mobile-friendly websites and apps that offer seamless and user-friendly shopping experiences.
- Technologies like augmented reality (AR) and virtual reality (VR) are being integrated into m-commerce apps to provide immersive and interactive shopping experiences.
- Mobile apps often feature user-generated reviews and ratings, which help customers make informed purchase decisions and build trust in mobile shopping platforms.
- An ecommerce app—sometimes referred to as a mobile commerce app—is a piece of software that allows customers to browse and purchase items from an online store.
- The transaction-oriented class comprises various services and applications with which the mobile user conducts transactions with the service provider.
- The boom in e-commerce applications is actually due to the widespread use of PCs, which have a large screen, complete text input keyboard, substantial memory, and high processing power. Contrarily, m-commerce applications rely on the use of various handheld devices.
- Due to wireless network connection and portable handheld devices, products/service can be delivered to people moving around anywhere and anytime.

MULTIPLE CHOICE QUESTIONS

1. Which of the following is NOT a benefit of Mobile E-Commerce?
 - a. Increased accessibility
 - b. Improved user experience
 - c. Limited market reach
 - d. Personalized marketing
2. Which mobile operating system is most commonly used for developing mobile apps?
 - a. Windows Mobile
 - b. iOS
 - c. Blackberry OS
 - d. Symbian
3. What is the process of converting a website into a mobile app called?
 - a. Appification
 - b. Mobilization
 - c. Adaptation
 - d. App development
4. Which technology is used for secure mobile payments in E-Commerce apps?
 - a. NFC (Near Field Communication)
 - b. Bluetooth
 - c. Wi-Fi
 - d. Infrared
5. Which of the following is a popular Mobile E-Commerce app for buying and selling products?
 - a. Facebook
 - b. Instagram
 - c. WhatsApp
 - d. Amazon
6. What is the term for the practice of designing mobile apps to fit the unique characteristics of different mobile devices and platforms?
 - a. Responsive design
 - b. Adaptive design

- c. Universal design
- d. Static design
- 7. **Which of the following is an example of a mobile app monetization strategy?**
 - a. Offering free app downloads
 - b. In-app advertising
 - c. Regular app updates
 - d. All of the above
- 8. **What is the term for the process of acquiring new app users?**
 - a. App optimization
 - b. App retention
 - c. App onboarding
 - d. App acquisition
- 9. **Which technology allows users to make purchases in mobile apps without entering their credit card information every time?**
 - a. In-app purchases
 - b. Mobile wallets
 - c. One-click checkout
 - d. Mobile payments

REVIEW QUESTIONS

- 1. What is m-commerce and also discuss its types.
- 2. Differentiate between e-commerce and m-commerce.
- 3. How mobile commerce works? Explain.
- 4. Explain the advantages and disadvantages of mobile commerce.
- 5. Focus on the different areas that come under m-commerce.
- 6. What are the key drivers for m-commerce?
- 7. Explain the design and development methodology for m-commerce services.

Answer to Multiple Choice Questions

1. (c)	2. (b)	3. (a)	4. (a)	5. (d)
6. (b)	7. (b)	8. (d)	9. (a)	

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CHAPTER 6

E-BUSINESS ANALYTICS

LEARNING OBJECTIVES

After studying this chapter, you will be able to:

1. Understand Ecommerce Analytics
2. Explain web analytics and data-driven decision-making
3. Identify customer behavior analysis
4. Perform A/B testing and optimization

"An intelligent person is never afraid or ashamed to find errors in his understanding of things."

—Bryant H. McGill

INTRODUCTION

The eCommerce analytics market is growing and is projected to become a USD 32.79-billion market by 2027, driven by the continued growth of the eCommerce industry and the increased adoption of eCommerce channels. The rise in the number of tech-savvy consumers with access to mobile devices and the increasingly expansive reach of the internet has also contributed to the eCommerce analytics industry's growth.

eCommerce analytics is the process of discovering, analyzing, and leveraging large amounts of data to measure consumer behavior, monitor performance, understand trends,

and show return on investment for campaigns. Brands and marketers use eCommerce analytics to make data-driven decisions that will help them improve business performance and sales. It involves a detailed analysis of different datasets, including marketing data, traffic origin, audience behavior, and customer demographics.



By integrating various analytics tools with platforms like Shopify, online store owners can better collect and analyze data to improve performance and sales. E-commerce data analytics involves using a data dashboard to display data in a way that is easily understood and interpreted, which helps to eliminate the need for guesswork and allows for informed actions based on consumer patterns.

The e-commerce industry is undeniably flourishing, with the global industry worth \$4.9 trillion in 2021 and expected to reach \$7.4 trillion by 2025. However, companies face challenges in streamlining the customer experience, winning customer loyalty, reducing shopping cart abandonment, and increasing conversion rates. To overcome these challenges, companies need to collect and analyze data, including sales, channel options, conversion rates, and behavior patterns. By leveraging these insights, e-commerce businesses can optimize operations, execute effective strategies, and drive customer retention.

6.1 UNDERSTANDING ECOMMERCE ANALYTICS

Marketers use analytics to show return on investment (ROI) for campaigns and make better decisions to increase sales, reduce costs, and make business improvements.

Ecommerce analytics helps centralize and manage data. Siva K. Balasubramanian, associate dean and professor of marketing at Illinois Tech's Stuart School of Business, explains that the onset of multiple data sources to gather and merge data about customers, products, and markets is a common problem for today's businesses.

"Analytics offers useful techniques to handle this problem by organizing data to develop metrics that are most useful for continuously monitoring business performance," Balasubramanian says. "The focus of analytics is on issues that matter most to the business, and the performance metrics are helpful in identifying and solving problems in real time."

Data points can tell you a story about the total number of visitors to your site in a given week. For example, maybe only 50% enjoyed your website enough to spend more than even a few seconds on it. And maybe only half of those who stayed actually made a purchase, while another 10% got stuck in the checkout process, became frustrated, and left.

That's the story of a group of individuals who took very different actions on your online store.

Until you know the *whole* story, you can't change the ending. Once you understand why visitors to your site behave the way they do, you can do something about it.

Remember

The focus of analytics is on issues that matter most to the business, and the performance metrics are helpful in identifying and solving problems in real time.

6.1.1 Definition

Ecommerce analytics is the process of discovering, interpreting, and communicating data patterns related to online business. Ecommerce analytics helps measure customer behavior, performance trends, and ROI.

6.1.2 Types of Ecommerce Analytics

As mentioned, there are a number of different types of ecommerce analytics that you can use to inform your marketing strategy and ensure you are one step ahead of the competition. So, let's take a look at some of the most popular types in further detail.

Keyword

Data analytics converts raw data into actionable insights. It includes a range of tools, technologies, and processes used to find trends and solve problems by using data.

Audience

There is only one place to begin, and this is with **data analytics** that pertains to your audience. This will give you in-depth insights regarding the demographics of your audience, i.e. their gender, age, income, occupation, where they are based and what language they speak.

In addition to this, audience data should inform you of the different devices that your audience is using. Do they mainly access your store from their mobile phone or desktop? If it is the former, do they tend to use Android or Apple devices? This can give you great insights into how your online store is being accessed so that you can target your efforts accordingly.

Audience data gives ecommerce company owners the ability to alter how they conduct their shipping options and how they advertise based on the locations of their audience.

You are also going to have the ability to rethink the different topics you are covering and how your marketing content is being displayed on devices. This is where the types of technology being used and data regarding your audience's sessions come in handy.

Acquisition

Another type of ecommerce analytics that you can use to power your business forward is data relating to the acquisition of customers. This is highly valuable because you will learn about how your visitors found you online and how they ended up on your website to begin with.

When using acquisition data, you will discover more about the sort of online marketing channels that are bringing the most visitors to your website. You will also learn what channels are

driving the greatest sales or conversions.

You can also see first-hand which online marketing channels are bringing success — and which ones aren't quite working.

- Do most of your visitors come from social media posts?
- How many website visitors are you bringing in from email campaigns?
- What does the conversion rate look like for your blog posts?
- Do paid ads bring in most of your audience?

This data will prove pivotal in helping you to understand which marketing channels are the most profitable to your business so that you can determine where you should be focusing your resources.

Behavior

Another type of data you should be looking at is information on your consumers' behavior. Once people land on your website, how do they behave?

- What products do customers end up buying?
- How many viewers end up leaving your website straight away rather than exploring?
- What page do people click on first?
- What marketing content do viewers click on?
- Which products generate a lot of interest but very few sales?
- How long do viewers spend on your website on average?

These sorts of questions can help you to understand how your website is being used at the moment, so you can get a handle on the typical journey people embark on when interacting with your online store.

If you find that most visitors do not scroll through your inventory or that they quickly leave your page, you need to look into the page load times for your website. Could it be that your site is not loading quickly enough?

If users leave a page quickly, this indicates that they have not found what they are looking for. This could mean that your business type is not what they were expecting, and so there could be an issue with the keywords you are targeting in your marketing campaigns. Alternatively, it may mean that the content you are producing is simply too confusing. All in all, behavior analytics are going to enable you to discover the parts of your store that you can enhance in order to boost your engagement rates and conversion level.

Conversions

We have mentioned conversions quite a few times now, and this is another type of analytic you can use to power your business forward.

- When do online users convert into actual customers?
- How do online users convert into actual customers?

These are the two questions you are looking at when it comes to conversion analytics. When putting together your marketing strategy, you simply cannot ignore this part of it.

When you start delving deeper, there are many different things that you can find out.

- How long does it take a typical user to convert into a paying customer?
- Do customers tend to convert once a year or at multiple times?
- Do customers tend to buy items after one visit to your e-store or do they need to make several visits before they buy?
- Do customers tend to make repeat purchases?
- How many customers abandon their shopping cart rather than converting?

Knowing the specifics like this can help to impact your marketing messaging, so you can determine how to effectively engage with users and potential customers.

It is also important that you are aware of factors such as the average **revenue** your store receives per every transaction. Plus, what is the average number of items that your customers buy in one transaction?

This data is important because it helps you to plot what sort of discounts and deals will most appeal to your current crop of customers.

Paid Marketing Activities

In addition to the four analytics we have mentioned so far, another key area to consider is your paid marketing activities.

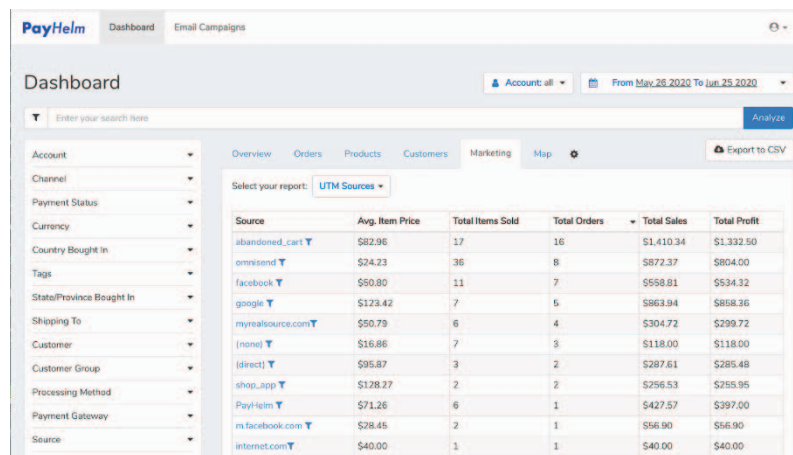
Keyword

Revenue is the total amount of income generated by the sale of goods and services related to the primary operations of the business.

This will help you to figure out your exact return on investment (ROI) for various paid marketing campaigns.

- How much revenue have you generated from your social media adverts?
- Have you earned more revenue than what you spent on creating the ads and promoting them?
- How much revenue have you generated as a consequence of your pay-per-click ads?
- What about your email marketing campaigns?

If you do not assess your current paid marketing campaigns, you will only end up spending money on marketing efforts that are not helping your bottom line.



The screenshot shows the PayHelm Dashboard with the 'Email Campaigns' tab selected. The 'Marketing' tab is also active, displaying a table of UTM Sources. The table has the following data:

Source	Avg. Item Price	Total Items Sold	Total Orders	Total Sales	Total Profit
abandoned_cart	\$82.96	17	16	\$1,410.34	\$1,332.50
omnisend	\$24.23	36	8	\$872.37	\$804.00
facebook	\$50.80	11	7	\$558.81	\$534.32
google	\$123.42	7	5	\$863.94	\$858.36
myrealsource.com	\$50.79	6	4	\$304.72	\$299.72
(none)	\$16.86	7	3	\$118.00	\$118.00
direct	\$95.87	3	2	\$287.61	\$285.48
shop_app	\$128.27	2	2	\$256.53	\$255.95
PayHelm	\$71.26	6	1	\$427.57	\$397.00
ms.facebook.com	\$28.45	2	1	\$56.90	\$56.90
internet.com	\$40.00	1	1	\$40.00	\$40.00

Now that you know what ecommerce analytics are, it is important to establish why they matter! Analytics are critical because they enable you to make more informed decisions that generate the best possible results for your e-store. To illustrate this effectively, we are going to take a look at some of the main benefits of analytics for ecommerce in further depth.

6.1.3 Benefits of Ecommerce Analytics

Now that you know what ecommerce analytics are, let's look at the most important reasons why an ecommerce business should leverage them.

Understand Marketing Data

A good marketing analytics software keeps all your data in one place. You can keep tabs on all your campaigns, from social ads to emails to marketing automations. You

can also see real-time stats, so you can know what's working quickly and make better decisions about where to put your marketing dollars.

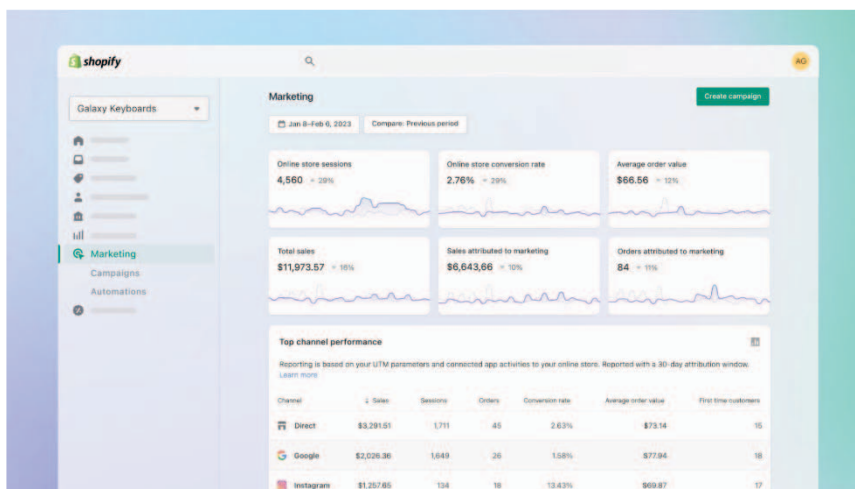


Figure 1: Example of marketing data in Shopify Analytics dashboard.

Craig Hewitt, CEO of podcast analytics software Castos, feels that analytics solves the problem of not knowing how to use marketing data to drive ecommerce growth. “Marketers often have a lot of data about their customers, but struggle to use it effectively,” he says. “Without the insights offered by ecommerce analytics, they’ll struggle to create a marketing strategy that brings consistent results.”

Analytics help you measure marketing performance and improve decision making, so you can become a more strategic business.

Uncover Trends

Modern ecommerce data analytics platforms treat your data as an interconnected system, allowing you to uncover trends and patterns in your business. It gives you the ability to understand how your business is performing, now and in the future.

To condense data and make it visible in as little time as possible, you can rely on marketing analytics to show:

- The number of visitors to your website by referrals and marketing campaigns
- The actions visitors take on your website over specific periods of time
- Most-visited pages during busy shopping seasons
- What devices people visit your store on

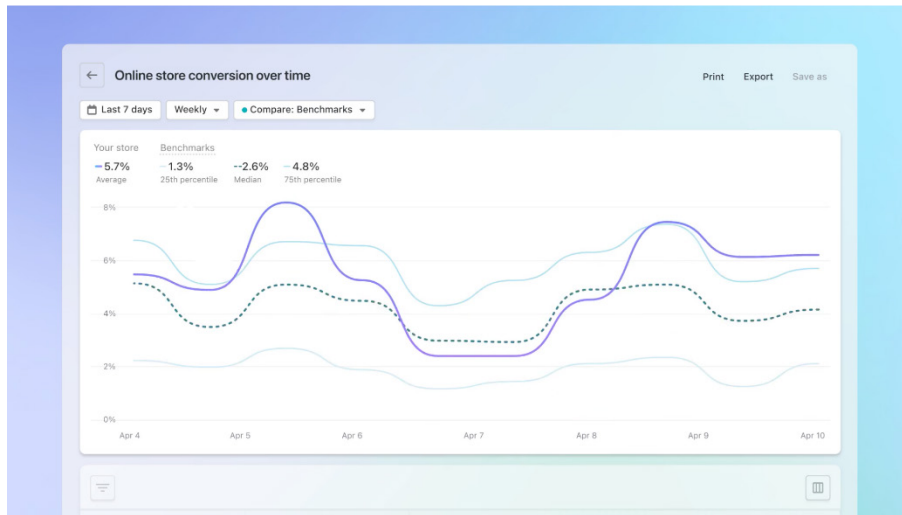


Figure 2: Uncovering online store conversion rate trends with Shopify Analytics.

Use Customer Data

The beauty of marketing analytics is that brands can collect, manage, and use customer data. Customers can take certain actions in your store and your marketing analytics will pick up each interaction. Without proper marketing analytics and reporting, you can't figure out who is on your site.

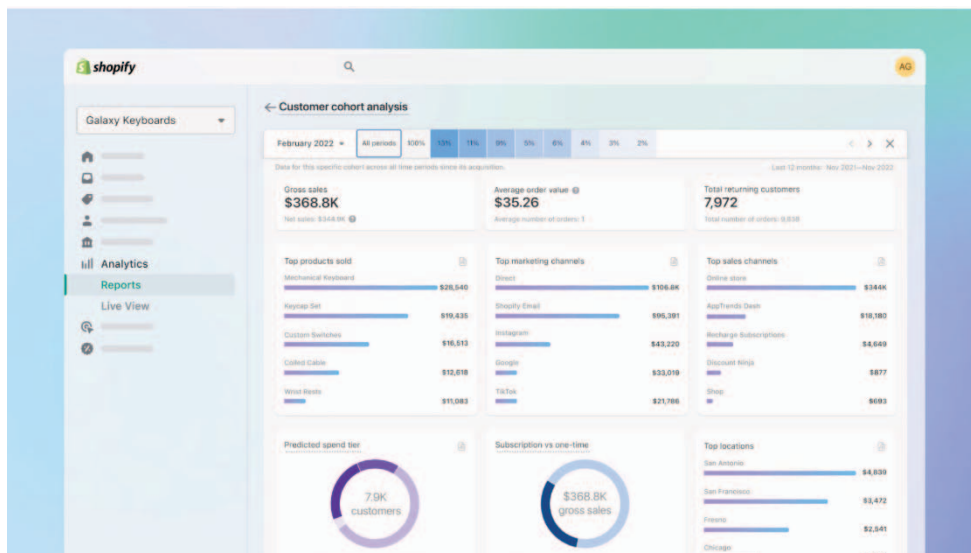


Figure 3: Customer cohort analysis in Shopify Analytics dashboard.

Keyword

Marketing analytics tools are software solutions that allow companies to track, measure, and analyze their marketing performance.

Growth, engagement, and revenue reports help you understand customer behaviors. You can easily find out who interacted with your content and if they clicked, bought, or downloaded something, so you can create content that resonates with them.

“Marketing analytics can help brands reach the right audience at the right time with the right message,” Craig explains. “By focusing on data points and using **marketing analytics tools**, teams can garner insight into their ideal prospects to optimize their messaging. By creating more relevant content that will generate more engagement, brands can address their audience’s needs faster and better than their competition.”

For example, say you see that more sales come from an Instagram campaign that features your shoes in an urban street environment versus one that features them in an office setting. You can position your products toward streetwear buyers in the future to attract the right customers. A merchant could work with more relevant influencers or adjust their ad targeting to build more product awareness.

Optimize Pricing

How you price products is the most powerful lever to improve profitability.

For every product, you should have an optimal price customers are willing to pay. With marketing analytics, you can better understand how price affects purchasing amongst different customer segments. It will help you discover the best price points at a product level, so you can maximize revenue.

Did You Know?

In the ecommerce industry, the price of a product is determined based on the demand for a product, its availability in the market and how competitors are pricing the same product.

6.1.4 Metrics

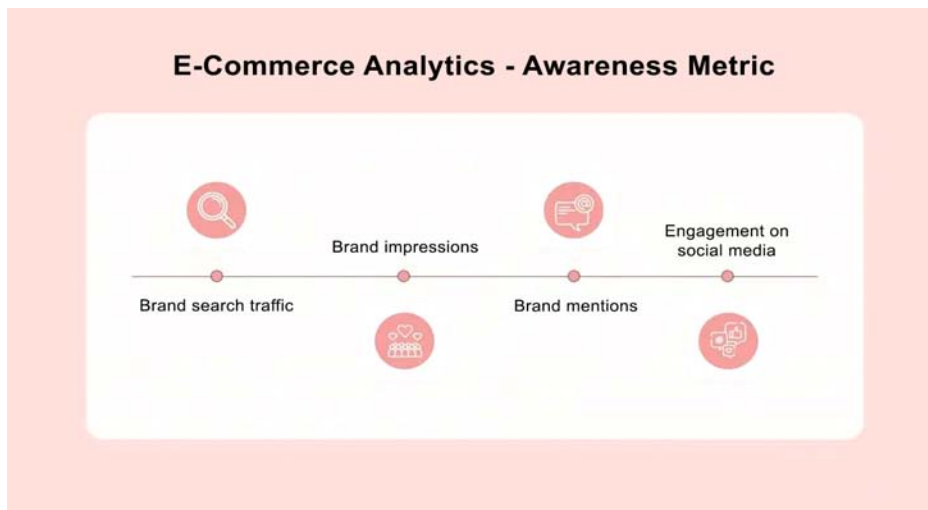
The customer journey consists of five stages: awareness, consideration, conversion, retention, and advocacy. There are specific metrics associated with each stage of the sales process to help you prioritize prospects and increase conversions.

Your reports need to include these metrics for effective monitoring.

Awareness Metrics

Awareness is the starting point of the customer journey. It is at this point that potential clients find out about your brand or business.

As a first step to determining which channels you should use, find out what channels your customers utilize the most. If your prospects found you through social media ads, it may be worth considering paid ads. In case most of your customers came to you through word-of-mouth, improving your referral strategy is a good idea.



Here are some of the metrics you can use to determine the recognizability of your brand.

Brand search traffic: This is the number of visitors who found your website through a branded search term in a given time frame.

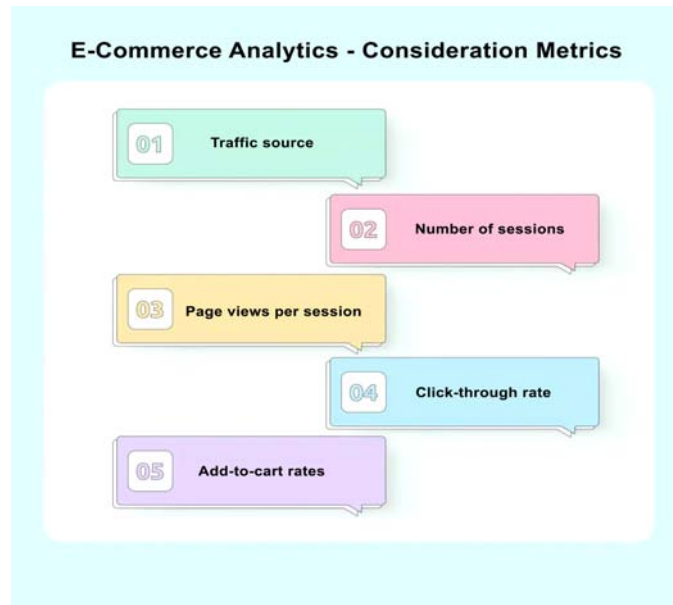
Brand impressions: You can see how often the content of your campaign has been accessed by consumers by checking impressions.

Brand mentions: This metric is a good indicator of brand awareness and buzz. The term «mentions» refers to unsolicited marketing from consumers, such as reviews or website links from online users.

Engagement on social media: This lets you learn about client opinions and how frequently you're mentioned. Social media engagement can include likes, comments, shares, tweets, and views of videos. This metric helps you determine what content is appropriate across social media channels and how to keep engagement up.

Consideration Metrics

Consideration occurs when shoppers access your website and check out the products you have to offer. At this stage, there hasn't been any purchase made. However, their attention has been caught by what you have for sale, and they are contemplating buying something from you. Using this metric, you can see your website's progress toward generating sales. In addition, it will tell you what percentage of visitors left your site following a look at your products.



Here are some of the consideration metrics you can keep track of.

Traffic source: This refers to the way people found your website.

Number of sessions: The number of sessions on your site is the total number of visitors, both new and repeating. When a visitor interacts with your website within a certain time frame, this count as one session.

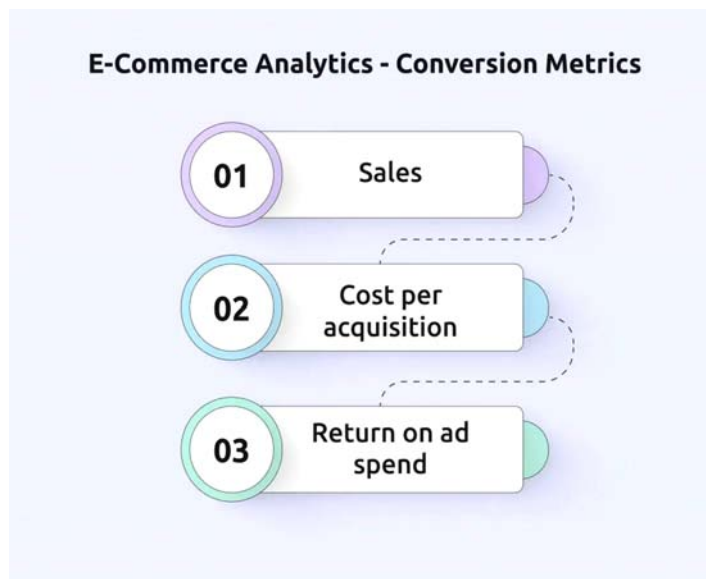
Page views per session: This is the total number of page views on a website divided by the number of sessions. It shows the average number of pages accessed per session by users. More pages per session indicate that your content is engaging and visitors are interested in exploring more.

Click-through rate: This helps you gauge the effectiveness of your keywords, ads, emails, and other content. This is calculated by how many clicks your ad gets divided by how many times it is displayed.

Add-to-cart rates: This indicates how many visitors placed at least one item in their shopping cart while they were on the site. This metric provides valuable information about the products you offer, your marketing strategies, and user experience. By utilizing consideration metrics, you can gain essential insights into which sources are most likely to generate traffic so that you can focus on them and get more views, lower bounce rates, and higher conversion rates.

Conversion Metrics

At this point, the visitor to your website is converted into a customer. Conversion metrics help you determine which channels are most effective. They will assist you with budgeting and provide you with an overview of which channels perform best when it comes to conversions.



There are many factors you'll have to take into account when choosing which channel is right for you. But knowing how much it costs to convert through various channels is already a good indicator of where you should allocate more resources. The number of sales is not the only figure you should be focusing on when tracking conversion metrics. Consider metrics that give you an idea of the worth of those sales and which conversion campaigns you need to improve on.

Sales: These are the profits a company earns by selling products to consumers.

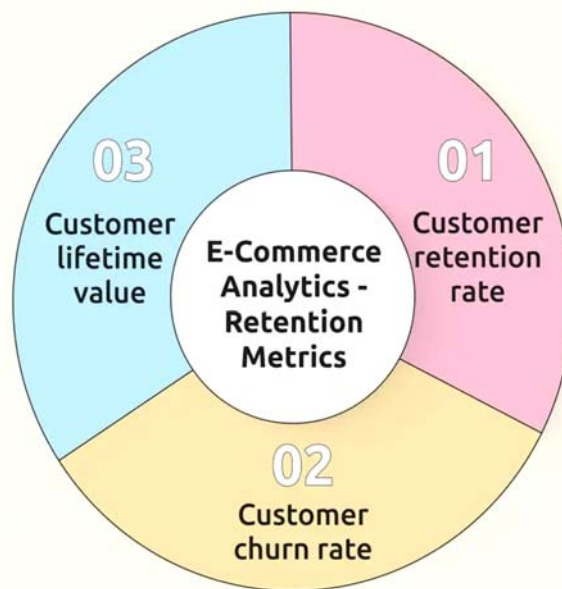
Cost per acquisition: This metric measures the cost of getting a customer through your sales funnel.

Return on ad spend: This indicates how much revenue is generated with each ad dollar spent.

Retention Metrics

Customer journey goes beyond making people buy your product. You need to keep those customers interested and turn them into loyal customers who will keep buying from you and spread the word about your brand.

Retention metrics show you which customers continue to buy from you and for what reasons. This is a good way to find out which channels work best for increasing customer loyalty. It reveals which channels should be prioritized over those that generate one-time sales.



It's ideal if customers stick with you and support your business in the long run. With retention metrics, it should be easy to see if you're on track or if anything needs to be changed.

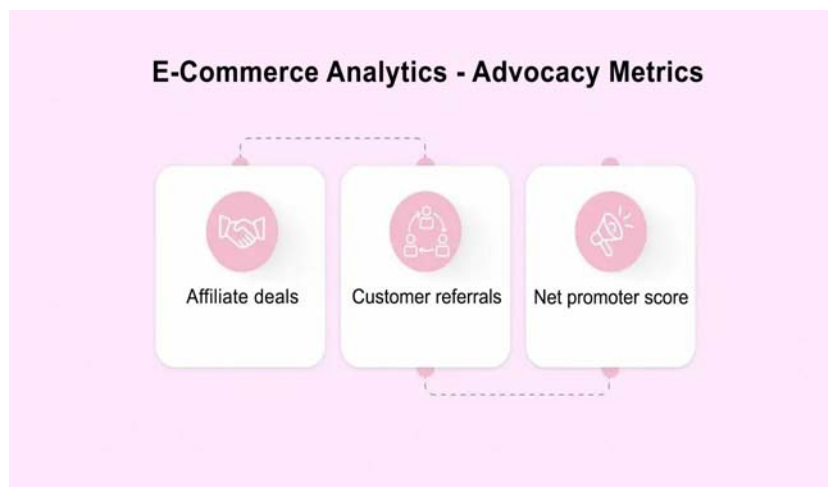
Customer retention rate: This indicates how many customers a business retains over the long run.

Customer churn rate: This refers to how many of your customers discontinued using your product or service over a certain period.

Customer lifetime value: This represents the amount of revenue derived from a customer over the course of their relationship with the company.

Advocacy Metrics

Advocacy metrics show how many people recommend your product or brand to others. You can track these metrics by asking current customers during quick checkout or through email surveys. There can be some difficulty monitoring these metrics, but the following can help you get started.



Keyword

Customer service means delivering proactive and immediate support to customers anytime on the channel of their choice — phone, email, text, chat, and more.

Affiliate deals: This indicates how well your brand has been promoted by affiliates through their networks.

Customer referrals: This is how many people found you by word of mouth.

Net promoter score: This metric is used to measure customer loyalty and contentment with a business. Customers answer: How likely is it that you would refer this company or product to others? NPS helps companies enhance service, **customer service**, quality, and more so that customers remain loyal to them.

6.1.5 Tips for Ecommerce Analytics Success

- Set your objectives beforehand

- Establish benchmarks
- Optimize your campaigns
- Incorporate data into your company's routine

Set your Objectives Beforehand

Setting your objectives and goals before diving into analytics is a must. It's the best way to ensure your team is working toward a common goal, while increasing the odds that you'll hit your key performance indicators.

Your marketing team's main objective needs to relate to overall business goals. What's the top profit generator for your business? That's one place to start.

Marketing objectives might be:

- Generate high-quality leads at scale
- Improve checkout conversion rate
- Increase profit margins
- Boost sales through upselling and cross-selling
- Increase customer loyalty
- Reduce cart abandonment rate

Use the SMART goals framework when deciding on objectives. For example, yours can be "Reduce abandoned carts by 5% in Q1." Goals don't need to be complex, but they have to be clear.

Then break down your goals into actionable steps and send them to your teams:

- Decide on the goal you want to achieve.
- Prioritize the tasks you need to fulfill to get there.
- Specify how to fulfill each task.
- Send those marketing objectives to decision-makers and managers.

Establish Benchmarks

A benchmark is the set standard at which you compare something to. When used for digital marketing and web analytics, it involves taking note of a distinct metric (abandoned cart, customer acquisition cost, etc.) over a period of time, then using the benchmark to infer conclusions during decision making. Benchmarks provide valuable content and help you set meaningful targets and find out how you compare

to yourself over time.

For example, say you are working on an SEO campaign to improve website traffic in November. You may track metrics such as pageviews, average time on page, bounce rate, and exit rate. November will act as the test period for your changes, so you decide that October site metrics will be your benchmark.

Each campaign will have a different benchmark. If you're running ads, it may be the previous CTR or CPC. The important thing is to set a timeframe and specific metric to benchmark, so you can understand if your campaigns are successful or not.

Optimize your Campaigns

"Analytics is focused on measuring business performance and the variables that assist such performance," Siva says. "Optimization is the next step because it attempts to improve performance by incrementally tweaking marketing variables and their levels such that they are configured more appropriately or optimally.

"For example, a business may spend on variables such as advertising to new customers, devote resources to improve channel relationships, and other promotion efforts as part of its marketing campaign. All these factors drive performance metrics such as sales, profits, and market share."

Siva adds that to make sure that resources devoted to each variable are configured, "ecommerce businesses often use simulations and experimentation to identify optimal resource allocation decisions across variables that drive performance."

Incorporate Data into your Company's Routine

You can really see the difference in performance of companies that incorporate data into their weekly routines. Merchants in the habit of analyzing data, getting marketing insights from their analytics, and putting those insights into action are the ones who become the most successful.

Making data analytics a habit is simple. Whether you're a solo entrepreneur or part of a team, all you need to do is implement weekly check-ups.

Successful companies focus on solving their biggest bottlenecks first. Start every week by opening your analytics and taking a clear view of what your priorities and marketing initiatives need to be for the coming days.



By understanding, for example, that your average page load time is high in comparison to your peers (or your previous week), and that page load time directly impacts conversions, you'll know that its reduction should be a top priority for you.

As you can see in the example above, conversion rates are a big problem for this store. It should be focusing its efforts on optimizing its landing pages, store experience, and sales funnel to improve its conversion numbers and sell more.

You can also simply keep track of your metrics in a spreadsheet or on a whiteboard. The important thing is to prioritize. If you want to improve your numbers over time, always compare your data with the previous week.

Once you identify your biggest problems, brainstorm ideas that can positively impact the red metrics on your dashboard. Put these ideas into action and follow the same checkup the next week to verify if your numbers have improved. Repeat this process every week until all of your metrics are green.

That's it. When you're fluent in analytics and incorporate ecommerce data into the decision-making process of your company, nothing can stop you.

6.1.6 Common Challenges around Ecommerce Analytics

Here are a few challenges you might face when doing ecommerce data analysis:

- **Data inconsistency.** Combining data from different sources can make analysis tough. Imagine using different channels like Facebook Ads, Google Ads, and email marketing. Each platform provides data in different formats and standards, which makes it difficult to consolidate the information for a comprehensive analysis. Route all your data into one platform and format to better understand and act on your data.

- **Data privacy.** Ensuring data privacy and security is critical. Failure to do so can lead to legal consequences and break trust with customers. Make sure you use secure data storage and do regular compliance checks to guarantee ongoing protection.
- **Data quality.** Poor quality data, like incorrect, incomplete, or outdated information, can misguide your decisions. Imagine making inventory decisions based on inaccurate sales data. You'd be over or understocking products and negatively impacting profitability.
- **Cherry-picking data.** Cherry-picking data means focusing on data points that support a particular conclusion, while ignoring or excluding other relevant data. Imagine you're running an online clothing store and analyzing sales data to decide what products to promote. You might cherry-pick data to focus solely on a successful winter jacket sales week, ignoring the overall decline throughout the entire season.

Addressing these challenges lets you improve the efficiency and effectiveness of your ecommerce KPIs. Once you become fluent in analytics, you can tell your own stories from the numbers you see and improve them.

Remember

By using data, you can make more intelligent decisions that will drive your company forward and, ultimately, improve your bottom line.

6.2 WEB ANALYTICS AND DATA-DRIVEN DECISION-MAKING

Data is now a critical component of business operations, and organizations must establish a data foundation to support their decision-making process. A data foundation refers to a set of practices and systems that enable organizations to collect, manage, and analyze data effectively, making data-driven decisions that align with their goals and objectives.

It is not easy to setup the data foundation; Significant technology, people, and process investments are required for this. Some of the challenges include

- Difficulty accessing and integrating data from multiple systems and platforms

- Incomplete or inaccurate data due to poor data quality
- Limited resources to invest in building a strong data foundation
- Lack of systems or processes to address vulnerability to data breaches and cyber-attacks with more data collected and stored.

To succeed in competition, every business should learn to build a data foundation and start the data-driven decision-making part of the culture. Everyone needs a starting point for that. Google Analytics or Website Analytics can be a good place to start building the stepping stones for your data foundation.

Every organization has a website that aligns with its business objectives, and everyone has some web analytics setup built into it. However, merely having a website or collecting basic data isn't enough. To achieve success, it's crucial to define your goals, set **Key Performance Indicators (KPIs)**, and continuously monitor progress.

Keyword

Key performance indicators (KPIs) measure a company's success vs. a set of targets, objectives, or industry peers. KPIs can be financial, including net profit (or the bottom line, gross profit margin), revenues minus certain expenses, or the current ratio (liquidity and cash availability).

6.2.1 Steps to Build the foundation for Data-Driven Decisions

Everyone is talking about data-driven decisions, but what, exactly, does this term mean? It means that you gather data, extract patterns from it, analyze it and finally use your findings to decide what steps you still have to take.

So simple, but so complex. Never fear, we've prepared some actionable steps for you to follow when developing an informed strategy.

Step 1. Have a Clear Purpose for Collecting Data

When it comes to data and analysis, clarity should be your leading principle. As you gather data, you need to know exactly what purpose you're doing it for, what can you achieve with it.

Different organizations have different definitions of *better performance*. **This also applies to the kinds of data you want to gather, aggregate and finally analyze.**

Your company's goals should dictate what data you need. The process of collecting data should be aligned with your business objectives to build a sound strategy.

In order to better define the reasons why you're gathering data, you should think if you want to:

- reduce costs
- drive revenue
- boost productivity in your team
- foster innovation in product development
- shorten the development process of your products
- improve effectiveness of your service or product

Step 2. Dive into Your Sources And Choose The Right Data

Gone are the days when you struggled to find and acquire data. Today, with the abundance of data sources you face the challenge of cutting through the noise and identifying the right ones.

Often organizations have the data they need, but they don't know how to apply it in their decision making.

First, it's important to promote a broader perspective on data. This means you need to select data based on the problems you want to solve and scenarios you're considering.

Second, look for all possible sources of data. If you want to make good use of data, bear in mind that you'll be dealing with a real mixed bag. You can get a ton of data, but it might be inaccurate or misleading.

That's why you need to stay on the lookout and always:

- check and verify your data sources
- establish how data was collected
- search for different sources on data, don't rely on a single one.

In addition, note that data points come in all shapes and sizes. You can have

- maintenance reports
- PowerPoint presentations
- social media posts
- and so on.

Consider also local demographics, monitoring, apps, surveys, weather forecasts and so on.

The list is long, so how you approach it is a matter of your invention and creativity. Sometimes, when you got stuck in a rut, you might overlook untapped sources of information.

Data points naturally vary in their quality – some are stronger than others. That's why you need to find the ones that fit into a particular context. Moreover, it's vital to have a data model that lets you recognize and evaluate input sources for reliability.

Step 3. Break Down the Processes

When you're focused on the prime objective of your business you sometimes might miss the small edges that make big differences. However, you can follow a different approach.

If you have an array of processes which you can separate, analyze and then put back together, you can see some impressive outcomes.

By breaking down your processes, you can spot the minor flaws, gaps or inconsistencies standing between you and your goals. Data analytics helps you spot and then address these issues, improving the overall performance of your company.

Let's look at one great example from McKinsey. Here, a large steel manufacturer applied different analytics methods to examine the crucial stages in their business processes. They carefully analyzed planning, forecasting, procurement and inventory management – each area in isolation and in detail – to develop small improvements that brought huge gains.

Step 4. Don't be Misled by Data

Awash in a sea of data, it's easy to make poor decisions based on bad info. But how can data actually be wrong? What we mean is misleading, inaccurate or fragmented data, and data taken out of context. Data is not a *what you see is what you get* **proposition**.

That's why it is crucial to know how to understand and interpret the numbers in your reports, and what needs special attention in order to be sure you can trust your data. Here are some tips:

Avoid data Blindness and Become Data Smart

Data paves the way to effective decision-making process, but be aware of a trap you can fall into if you make it the only source of truth: data blindness. This is the product

of being unable to see beyond the data you have at hand. Data requires context to be truly valuable and help you make decisions.

For instance, reports obtained from your analytics tools tell you that your social media campaign isn't generating any sales. Or it could tell you that it's not boosting conversions.

That would imply that you need to cut the campaign short and shift your resources elsewhere. Maybe the campaign can actually generate conversions when executed in the form of direct traffic.

You see the point here. The complete picture is easy to miss when blind reliance on data and analytics tools impacts your perception of real results. You narrow your perspective to short-term results without grasping the long-term outcomes.

However, you can shift your focus and look beyond data to see the wider context. According to Himanshu Sharma, the founder of Optimize Smart, this is called being *data smart*.

Your actions and decision-making aren't based on just data – you treat data as a means to an end, not the only determinant.

It also means that decision-making includes:

- collective know-how of the organization and the industry it operates in
- business and marketing activities outside the digital ecosystem
- most recommended methods for data analysis, interpretation and statistics

Verify your Samples

First of all, be skeptical when you get interesting statistics. Check how the data was gathered. In statistics, sampling is a means used to evaluate only a fragment of a total population.

Take the example of A/B testing. The purpose is not to measure conversion rates, but rather to obtain a statistically representative sample. Here's where the trouble comes in. Sampling is very often a source of inaccurate data because samples frequently tend to be too small or unrepresentative of a population.

Be careful with unrepresentative samples and bias

In general, sampling is a tricky matter. When a sample doesn't accurately represent the population, the result is bias. For instance, bias caused by an unrepresentative sample is called selection bias.

One of the most common sources of unrepresentative samples are surveys. A lot depends on who conducts the survey and who responds to it.

For instance, you may be dealing with so-called convenience samples. That's the case when a pollster chooses respondents that they can conveniently reach.

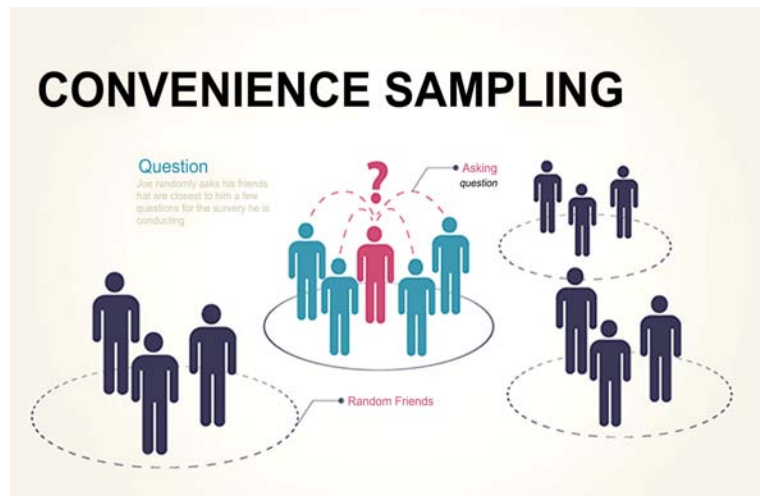


Figure 4: An example of convenience sampling; Joe asks only friends who are within his reach because it's easier than asking also those who are further away.

Such samples include respondents who are simply easier to select or most likely to participate, but won't be representative of hard-to-reach people.

Ultimately, you can't expect to have reliable survey results based on such samples because the process is flawed from the start.

Don't be too picky

When selecting your samples, avoid being over-selective just to prove a point. It's easy to end up with skewed results by choosing samples biased in favor of your judgment or opinions. That could be the case when you:

- poll only your best customers (more of them favor your products than those in other groups)
- examine the best-performing segments in a campaign; it's easy to spot a winner

Proper sampling is no easy feat. You need to stay alert and review your sampling if the data seems strange. When working on your own data, don't just pick and choose things that confirm your preconceptions.

Take storytelling with a pinch of skepticism

When conducting data analysis for decision-making you might come across the storytelling method. That's one of the culprits of skewed results, for example in the form of the post hoc fallacy. This is a logical error that happens when we know that something happened earlier, and mistakenly believe that this event was the cause of another one that happened next.

Marketing often entails this kind of storytelling, which is simply stating that certain actions bring about particular results.

But how does it affect analysis? Consider the seasonality of analytics data. If you start from zero and you've never done any optimization, almost any data-based decisions you make will likely lead to improvement.

Keyword

Data visualization is the representation of data through use of common graphics, such as charts, plots, infographics, and even animations.

Be wary when looking at data visualization

Visualizing data might be tricky and there are many traps to fall into. Even a simple change to a graph or grouping of data can lead to misrepresentation of facts. You can also manipulate data to change the conclusions people draw from it.

Moreover, **data visualizations** frequently requires additional descriptions because they're only understandable for analysts. It also can generate confusion and distort perceptions of reality.

For instance, pie charts are inherently hard to read and skew proportions. Another problem you can encounter are cropped axes (broken y-axis chart), a method used to reduce how much data is visible or to emphasize certain information.

The problem with data visualizations is that they can be very subjective. You can play with them in such a way that you reveal or hide selected data just to prove your point.

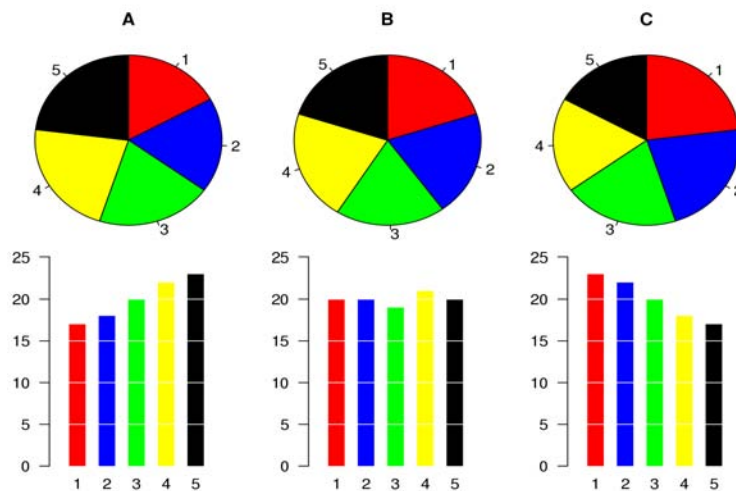


Figure 5: Seemingly the same pie charts, but bar charts reveal the discrepancies.

Step 5. Focus on Fixing Customers' Problems rather than Meeting KPIs

As we've already explained, if you want take advantage of your data you need look beyond numbers. This, of course, applies to dry KPIs, which are just raw numbers. Putting this approach into practice means that you put customers' problems in the spotlight and you conduct a survey.

That's your instrument for quickly uncovering problems that users might be encountering. Whether it's technical problems or customer support lags, the feedback you receive helps you fix the most burning issues on the spot. You won't be wasting time on things users don't care about.

Systematic surveys that generate direct data from your customers should be a significant part of your strategy.

Step 6. Answer your Data Questions with a Customer Data Platform

Technological advancements allow marketers to collect an abundance. However, the current structure of most marketing stacks makes data fragmented and scattered across a range of tools.

What's more, problems like marketing automation fatigue and the rise of PQL are issues that SaaS stacks can't resolve. The emergence of customer data platforms fits the bill perfectly.

First of all, you can seamlessly integrate a customer data platform with every SaaS product from your stack. It lets you merge and precisely analyze **gathered data**.

In this way you can better understand and draw out essential insights about your organization. Finally, you can act on those findings to make data-driven business decisions.

As a customer data platform unifies your data, it provides a single customer view that serves as a pillar for your marketing campaigns. But not just any data will do: you need data that helps you better understand your customers and their relationship with your brand.

You're looking for answers to questions like:

- Is the user active?
- Has the user made a purchase already?
- What are the user's communication preferences: email, phone, something else?
- How many tickets did the user open within a month?
- What is the user's latest interest/intent?
- What's the value of a particular user?
- Is this customer likely to churn?

With a CDP you can take advantage of complex marketing technology. The platform lets you gather all valuable information on your customers without concerns over data fragmentation or tactic fatigue.

The data you obtain provides a starting point for devising your strategy to create bespoke experiences for spot-on marketing campaigns.

Step 7. Make Sure Data Works For The Sake Of Your Entire Organization

First and foremost, data fuels your decision making, but you need collect it so it can serve the needs of the entire company. Your organization is like a living organism in which everything is connected to everything else, so the actions of one team impact the rest of them.

It might be challenging at first to connect all the dots, which is why you need to identify the roadblocks keeping you from finding the solution.

A problem companies often have to deal with is acting on a single isolated data set. Different departments within your organization, whether it's finance, operations, HR, or sales, manage separate data collections. It's vital to connect them as one set may fill the gap of another and you can find untapped value somewhere in between.

In the end, when you have a strategy set in place, start small, regularly verify your actions within a set time frame, and finally measure the effect on your bottom line. If you see good results then you know you're on the right track and you should stick to it. If not, consider some adjustments or just go for a different approach.

Remember

Data is one of many tools you can use to support your strategy. You're in charge of what stays, what goes, and how you transform information into action. Remember to question your data, and look beyond your analytics dashboards to get the bigger picture.

6.2.2 Google Analytics and Your Business Goals

By default, Google Analytics tracks¹ a lot of data on your visitors and their behaviour on your website. However, your KPIs might be specific to your business, and you may want to track them separately. For a lead generation website, here are some areas to focus on:

Traffic Sources

You can track where your website traffic is coming from, such as search engines, social media, or referral websites. This information can help you identify which channels drive the most traffic to your site and which channels may need more attention.

Landing Page Performance

You can track the performance of your landing pages, such as engagement rate, time on page, and conversion rate. This information can help you identify which pages are performing well and which need optimization.

Lead Generation Forms

You can track how many visitors fill out your forms and which performs best. This information can help you optimize your forms for better conversion rates.

Content Performance

You can track the performance of your content, such as blog posts or whitepapers, by tracking pageviews, time on page, and social shares. This information can help you identify which types of content resonate with your audience and which topics may need more attention.

Internal Search Analytics

An internal site search is a powerful tool that significantly impacts the user experience and business success. By understanding user behaviour, refining content strategies, enhancing the user experience, and delivering personalized interactions, organizations can optimize their content offerings to meet user demands effectively. Each visitor interaction on your site presents an opportunity to unlock valuable insights and enhance the user experience.

Goal Conversions

You can track how many visitors convert your website goals, such as filling out a lead generation form or downloading a whitepaper. This information can help you measure the effectiveness of your website in generating leads and identify areas for improvement.

Custom Reports

In addition to the standard reports, Google Analytics allows you to create custom reports tailored to your business needs. These reports can track specific metrics unavailable in the standard reports. Custom reports can help you gain deeper insights into your website's performance and identify areas for improvement.

Event Tracking

Event tracking is another powerful feature of Google Analytics that allows you to track specific user interactions on your website, such as button clicks or form submissions. By monitoring these events, you can better understand how users interact with your website and identify areas for improvement.

6.2.3 Examples of Data-Driven Decision-Making

Today's largest and most successful organizations use data to their advantage when making high-impact business decisions. To better understand how your organization can incorporate data analytics into its decision-making process, consider the success stories of these well-known businesses.

Leadership Development at Google

Google maintains a heavy focus on what it refers to as "people analytics." As part of one of its well-known people analytics initiatives, Project Oxygen, Google mined data

from more than 10,000 performance reviews and compared the data with employee retention rates. Google used the information to identify common behaviors of high-performing managers and created training programs to develop these competencies. These efforts boosted median favorability scores for managers from 83 percent to 88 percent.

Real Estate Decisions at Starbucks

After hundreds of Starbucks locations were closed in 2008, then-CEO Howard Schultz promised that the company would take a more analytical approach to identifying future store locations.

Starbucks now partners with a location-analytics company to pinpoint ideal store locations using data like demographics and traffic patterns. The organization also considers input from its regional teams before making decisions. Starbucks uses this data to determine the likelihood of success for a particular location before taking on a new investment.

Driving Sales at Amazon

Amazon uses data to decide which products they should recommend to customers based on their prior purchases and patterns in search behavior. Rather than blindly suggesting a product, Amazon uses data analytics and machine learning to drive its recommendation engine. McKinsey estimated that, in 2017, 35 percent of Amazon's consumer purchases could be tied back to the company's recommendation system.

6.2.4 Benefits of Data-Driven Decision-Making

You'll Make More Confident Decisions

Once you begin collecting and analyzing data, you're likely to find that it's easier to reach a confident decision about virtually any business challenge, whether you're deciding to launch or discontinue a product, adjust your marketing message, branch into a new market, or something else entirely.

Data performs multiple roles. On the one hand, it serves to benchmark what currently exists, which allows you to better understand the impact that any decision you make will have on your business.

Beyond this, data is logical and concrete in a way that gut instinct and intuition simply aren't. By removing the subjective elements from your **business decisions**, you

can instill confidence in yourself and your company as a whole. This confidence allows your organization to commit fully to a particular vision or strategy without being overly concerned that the wrong decision has been made.

Just because a decision is based on data doesn't mean it will always be correct. While the data might show a particular pattern or suggest a certain outcome, if the data collection process or interpretation is flawed, then any decision based on the data would be inaccurate. This is why the impact of every business decision should be regularly measured and monitored.

Keyword

A **business decision**, sometimes called an operational decision, is any choice made by a business professional that determines short-term or long-term company activities.

You'll Become More Proactive

When you first implement a data-driven decision-making process, it's likely to be reactionary in nature. The data tells a story, which you and your organization must then react to.

While this is valuable in its own right, it's not the only role that data and analysis can play within your business. Given enough practice and the right types and quantities of data, it's possible to leverage it in a more proactive way—for example, by identifying business opportunities before your competition does, or by detecting threats before they grow too serious.

You Can Realize Cost Savings

There are many reasons a business might choose to invest in a big data initiative and aim to become more data-driven in its processes. According to a recent survey of Fortune 1,000 executives conducted by NewVantage Partners for the Harvard Business Review, these initiatives vary in their rates of success.

One of the most impactful initiatives, according to the survey, is using data to decrease expenses. Of the organizations which began projects designed to decrease expenses, more than 49 percent have seen value from their projects. Other initiatives have shown more mixed results.

"Big data is already being used to improve operational efficiency," said Randy Bean, CEO and managing partner of consultancy firm NewVantage Partners, when announcing the results of the survey. "And the ability to make informed

decisions based on the very latest up-to-the-moment information is rapidly becoming the mainstream norm.”



Using website analytics to make data-driven decisions is essential for any business that wants to stay competitive. By defining your business goals, setting KPIs, and monitoring your progress, you can gain valuable insights into your website's performance and make informed decisions to improve it. Google Analytics provides a wealth of data and tools to help you achieve your website goals. By leveraging these tools, you can optimize your website for better user engagement, increased conversions, and business success. Contact us now to learn how we can help you drive your online growth and stay ahead of the competition. With our GA4 migration services, you can seamlessly transition to the latest version of Google Analytics and unlock even more powerful insights

6.3 CUSTOMER BEHAVIOR ANALYSIS

Customers' habits, such as how much they post on social media, when they look at your products and what drives them to buy, is all encompassed by the term “customer behaviour”.

It describes how customers shop, from how often they make a purchase to how they respond to your marketing campaigns.

Understanding this behaviour will help you make predictions about what comes next and adapt your strategies for – from product to sales and marketing – to better reflect your customer's behaviour patterns. When you provide a customer experience that meets your customers' needs, you're more likely to drive sales and maximise your ROI.

Customer behaviour analysis, as this process of understanding is called, can go to a granular level of detail on your customers. Customers don't always do what they say they will, so customer behaviour analysis can identify what's really happening when they encounter your brand.

By examining customer-generated data and your own operational data using qualitative and quantitative approaches, you can identify how customers behave at each interaction and understand what drives that behaviour. You can use a customer behaviour analytics tool to help you surface trends and actionable insights from large quantities of **customer data**.

When you take this consumer behaviour analysis and action on it to improve your customer experience you can drive customer retention and increase your revenue.

Keyword

Customer data or consumer data refers to all personal, behavioural, and demographic data that is collected by marketing companies and departments from their customer base.

6.3.1 How to Conduct a Customer Behavior Analysis

Customer Behavior Analysis should go further than analyzing shop behavior, monitoring monthly active users, or simply looking at the raw demographic data you can collect about your customers (such as age, location, gender, etc.).

Instead, to truly reap the benefits brought by looking at the behavioral data. In that case, you should go deeper with your analysis and identify the answer to a couple of essential questions:

Why did customers choose me in the first place?

What keeps them coming back?

What makes them churn?

It's all about the voice of the customer.

Listening to it is the first step in becoming and staying relevant in today's extremely competitive environment and, often, over-saturated market.

Before beginning your Analysis, you must understand the three elements influencing customer behavior.

You can't influence these factors, but you can keep them in mind when designing specific customer journeys and behavioral segmentation.

Customer Personality

Your customer base consists of different people, all of which are as complex as they come.

Some will be impatient and choleric, while others will be respectful and calm. Some will be somewhere in the between or exhibit entirely different personality traits.

Analyzing customers' interactions with your brand and asking for regular feedback will help you understand what type of people you attract and how you should interact with them as a business.

Psychological Triggers & Responses

While your products and services address the same need, consumers verbalize that need differently.

Understanding your customers and what triggers them helps you facilitate long-term customer relationships that are both lucrative and relevant.

If you feel stuck and you can't seem to understand your customers – no matter how hard you're trying, you might want to check out the Jobs-to-be-done framework, designed by Bob Moesta.

It's an excellent tool to pinpoint your customer's motivations, needs, fears, and desires and why they might fire you (churn).

You can apply this and use interviews to determine *what disrupts customers' routines and makes them buy from you*.

How you package and market your products should respond to your findings during this stage.

Social Trends

Since humans are social creatures, they have this undeniable need to fit in and be part of a community.

Whether we talk about gardening, cooking, home decor, or other communities, each group of people comes with its own rules and trends.

Consider peer pressure, friendly recommendations, norms, or cultural trends as external factors influencing the customer's decision to buy (or not buy) from you.

You need to be aware of trends and be prepared to respond to them with real-time marketing campaigns.

Now that we understand what affects customer behavior, it's time to look at the necessary steps of a Customer Behavior Analysis.

Go even more in-depth knowledge about Consumer Behavior, with Omniconvert's Introductory Course into Consumer Behavior. It's a light and free course, meant to help you grasp the basics of Customer Behavior and take the first steps towards customer-centricity.

Step 1 – Segmentation.

Customer segmentation is crucial at this stage because you want to create personalized acquisition and retention strategies.

However, few companies understand segmentation fundamentals and still apply one size fits all approaches in acquisition.

They go for quantity over quality and end up overspending on acquisition while completely ignoring retention.

So, when segmenting your customer base, go beyond demographics or online behavior.

Look at each group's recency, frequency, and monetary value and segment your customers according to the value they bring to your business.

This way, you can quickly identify the MVPs inside your customer base, the power customers, and the soulmates and prioritize their experiences.

Moreover, RFM Segmentation also shows you who are the customers at risk of churning, reveals bad-fit customers, and highlights new customers with high potential.

Step 2 – Identify the advantages each segment perceives.

In other words – *why are they buying?*

“The progress your users are trying to make is the same” – as Bob Moesta explains it.

This means your products are solving the same need, right?

However, your JTBD interviews reveal that your customers will use different languages to describe their needs. Also, they will respond to triggers, even if the result is the same.

Your job in this step is to identify *what your customers hope to achieve with your help*.

What's **the main benefit** each segment craves, and how do they verbalize it?

Step 3 – Analyze quantitative data.

Quantitative data is measured in numerical values.

How many new clients you acquired, the average time they spend on your website, the number of cart abandoners, and the average days between transactions are all metrics you can follow.

Your zero and first-party data is the goldmine you're sitting on – since it pinpoints precisely what your customers are doing.

In Step 3, you aggregate all your data into one place and interpret it with an analytical eye.

You're looking for patterns and anomalies at this point. Then conclude according to what you've found.

Step 4 – Look at the qualitative data.

Unlike quantitative data, which is all about numbers, qualitative data is descriptive and cannot be measured.

Qualitative research is done through interviews or surveys with open-ended questions. It should enable your customers to tell you their true feelings without guidance.

When conducting interviews, try to select people from each customer group. This way, you get a complex view of your customer base instead of falling into the bias of only listening to power customers or unhappy customers.

Step 5 – Kick off a data-driven campaign based on the Analysis.

Avoid falling in love with your data or going down a research rabbit hole. Take actionable steps after the analysis and capitalize on your customer behavior data.

The insights you found through segmenting, pinpointing needs and wants, and conducting quantitative and qualitative research should reveal opportunities for our acquisition, retention, and nurturing campaigns.

It's time to take advantage of these insights and personalize the customer experience.

Adapt your messaging, **advertising channels**, and campaign timing to each customer segment.

Eliminate roadblocks promptly and turn your customer experience department into a profit center.

Keyword

An **advertising channel** is a medium used by a company to advertise their products and inform the customers about some promotion.

Step 6 – Evaluate the results.

After applying your insights and changing your strategies, it's time to analyze the results.

Remember that the testing period can vary according to the changes you've made. If you only created a new set of creatives and rolled them out in your Ad campaigns, you should see the results quickly.

However, if you make enterprise-level changes, you might have to wait a while to reap the benefits.

Look at metrics like conversion rate, CAC, or CLV to determine the effect of your updated campaigns.

Of course, monitoring the results is an ongoing process. eCommerce is fast-paced. New players will sprout monthly (if not daily), and cultural shifts are always happening.

So it would be best if you revisited your Analysis as frequently as possible to ensure you're constantly updated with what's happening inside your customers' minds.

6.3.2 Importance of Customer Behaviour Analytics

Understanding how your customers behave and why they do it might sound like a nice-to-have, but why is it fundamental to driving ROI and customer satisfaction

Here are the top reasons why customer behaviour analysis is important for businesses:

Identifying Patterns Helps You Make Accurate Predictions For The Future

Getting to grips with customer behaviour trends helps you to see the pattern in the way customers shop with you or use your services. Do customers buy seasonally or at certain periods? Are there marketing campaigns – and value propositions – that are more effective in driving customers to purchase? Which stage of the customer journey, or parts of the experience, drives churn and what fix would make them stay?

Salesforce has found that 63% of B2C consumers and 76% of B2B customers expect brands to know and understand their unique needs and expectations. By analysing patterns of behaviour, you can deliver interactions that meet and exceed these expectations and drive profit by giving your audience exactly what they're hoping to find.

Drilling Down On Existing Customer Behaviour Helps You Win Over New Customers

Completing customer behaviour analysis doesn't just give you insights into your existing customers – it can help you win over new ones.

According to Invesp, selling to an existing customer has a probability rate of 60-70%, but selling to a new customer is only 5-20%. The more you understand each segment of your current audience, the better you'll be able to see how each type of customer behaves and what new customers of that type will be likely to do.

Better still, if you identify the behaviour of customers who you think will spend the most, you can predict which new customers will follow in that trend and deliver them the optimum customer journey.

63%

of consumers said
companies need to
get better at listening
to their feedback

62%

of consumers said that
businesses need to
care more about them

60%

of consumers would
buy more if businesses
treated them better

Personalising Customer Experiences Drive Sales

You are constantly receiving relevant customer data. Customers are keen to tell you what they want, and when their experiences have not met or have exceeded

their expectations. Tailoring your customer experience based on feedback and other customer data can go a long way to shaping customer behaviour, rather than just waiting for it to happen naturally.

Our research on global consumer trends has found that two-thirds of customers believe companies should be better at listening to feedback, and 62% of them think brands should care more about them and their preferences. 60% of customers we surveyed indicated that if they felt cared for, they would buy more from a brand.

Personalising experiences can drive ROI. With the right analysis and taking into account behaviour and feedback, you can offer experiences that customers will love. Bespoke customer journeys that mirror how customers would naturally behave will remove friction and optimise the process, in turn increasing the likelihood of an increase in conversions and revenue.

Understanding Behaviour Helps You to Retain Customers for Longer

Why do your customers stay loyal to your brand? Are there certain experiences (such as broken links or technical issues) that are driving them away or minimising usage? What actions will convince them to stay?

Analysing customer behaviour will help you to identify pain points and inform the best solutions. Then, you can optimise the journey based on your customer preferences. This will help you reduce customer churn because you'll be minimising frustration and reasons to leave.

With 65% of your business likely to come from existing customers, you can't afford to ignore customer behaviour insights.

Remember

It's about aligning your entire business to the lifecycle marketing stage, having all your departments gravitate towards customer experience, and placing the customer first.

6.4 A/B TESTING AND OPTIMIZATION

A/B testing (also known as split testing or bucket testing) is a methodology for comparing two versions of a webpage or app against each other to determine which one performs better. A/B testing is essentially an experiment where two or more variants

of a page are shown to users at random, and statistical analysis is used to determine which variation performs better for a given conversion goal.

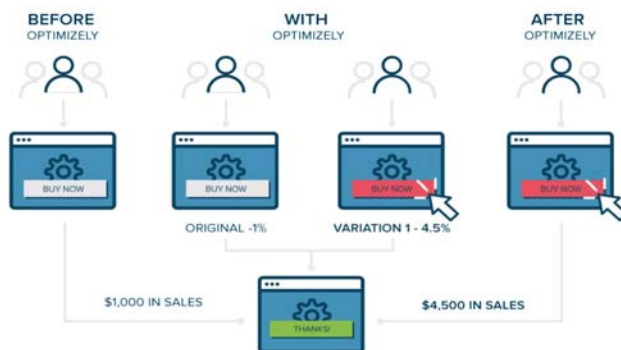


Running an A/B test that directly compares a variation against a current experience lets you ask focused questions about changes to your website or app and then collect data about the impact of that change.

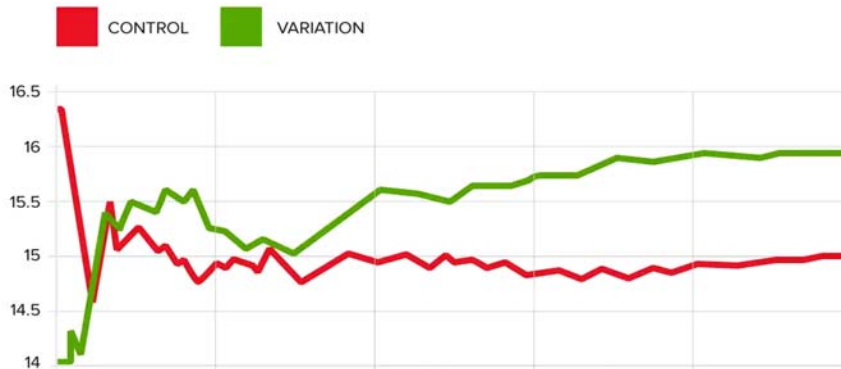
Testing takes the guesswork out of website optimization and enables data-informed decisions that shift business conversations from “we think” to “we know.” By measuring the impact that changes have on your metrics, you can ensure that every change produces positive results.

6.4.1 How A/B Testing Works

In an A/B test, you take a webpage or app screen and modify it to create a second version of the same page. This change can be as simple as a single headline, button or be a complete redesign of the page. Then, half of your traffic is shown the original version of the page (known as control or A) and half are shown the modified version of the page (the variation or B).



As visitors are served either the control or variation, their engagement with each experience is measured and collected in a dashboard and analyzed through a statistical engine. You can then determine whether changing the experience (variation or B) had a positive, negative or neutral effect against the baseline (control or A).



Keyword

Conversion rate optimization (CRO) is the practice of increasing the percentage of users who perform a desired action on a website.

6.4.2 Reason for A/B Testing

A/B testing allows individuals, teams and companies to make careful changes to their user experiences while collecting data on the impact it makes. This allows them to construct hypotheses and to learn what elements and optimizations of their experiences impact user behavior the most. In another way, they can be proven wrong—their opinion about the best experience for a given goal can be proven wrong through an A/B test.

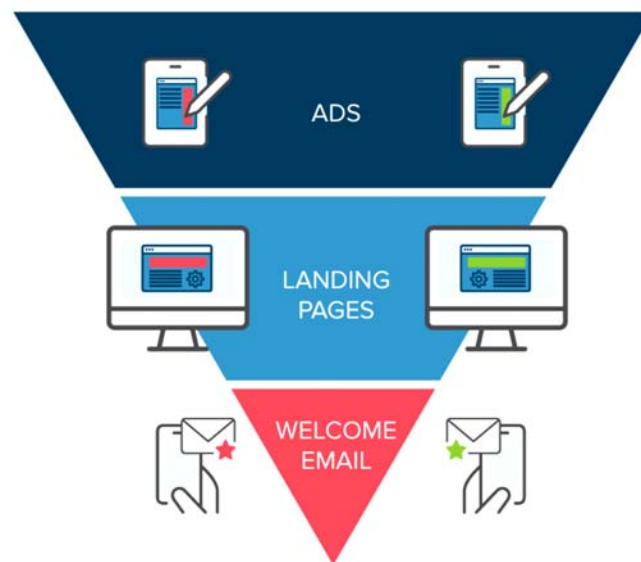
More than just answering a one-off question or settling a disagreement, A/B testing can be used to continually improve a given experience or improve a single goal like **conversion rate optimization (CRO)** over time.

A B2B technology company may want to improve their sales lead quality and volume from campaign landing pages. In order to achieve that goal, the team would try A/B testing changes to the headline, subject line, form fields, call-to-action and overall layout of the page to optimize for reduced bounce rate, increased conversions and leads and improved click-through rate.

Testing one change at a time helps them pinpoint which changes had an effect on visitor behavior, and which ones did not. Over time, they can combine the effect of multiple winning changes from experiments to demonstrate the measurable improvement of a new experience over the old one.

This method of introducing changes to a user experience also allows the experience to be optimized for a desired outcome and can make crucial steps in a marketing campaign more effective.

By testing ad copy, marketers can learn which versions attract more clicks. By testing the subsequent landing page, they can learn which layout converts visitors to customers best. The overall spend on a marketing campaign can actually be decreased if the elements of each step work as efficiently as possible to acquire new customers.



A/B testing can also be used by product developers and designers to demonstrate the impact of new features or changes to a user experience. Product onboarding, user engagement, modals and in-product experiences can all be optimized with A/B testing, as long as goals are clearly defined and you have a clear hypothesis.

6.4.3 A/B Testing Process

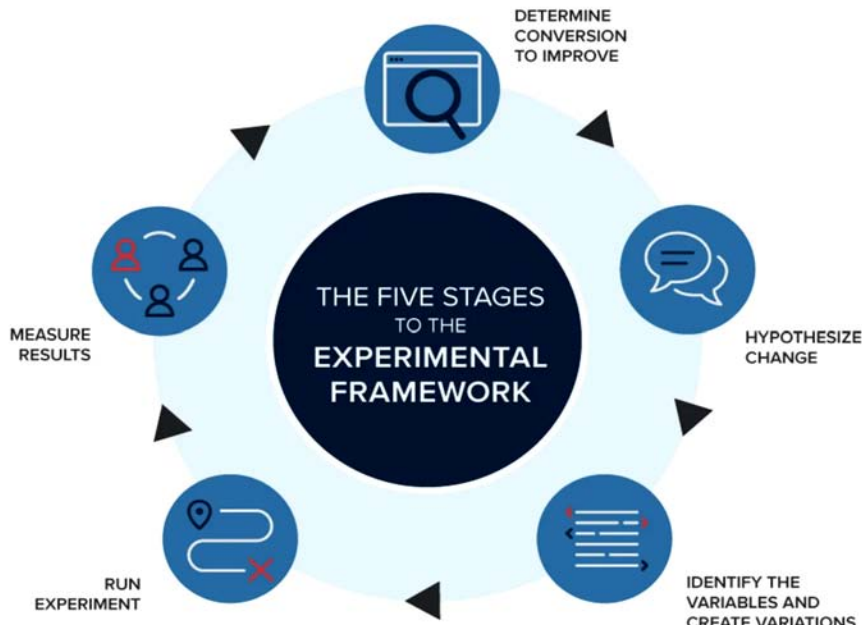
The following is an A/B testing framework you can use to start running tests:

- **Collect data:** Your analytics tool (for example Google Analytics) will often provide insight into where you can begin optimizing. It helps to begin with

high traffic areas of your site or app to allow you to gather data faster. For conversion rate optimization, make sure to look for pages with high bounce or drop-off rates that can be improved. Also consult other sources like heatmaps, social media and surveys to find new areas for improvement.

- **Identify goals:** Your conversion goals are the metrics that you are using to determine whether or not the variation is more successful than the original version. Goals can be anything from clicking a button or link to product purchases.
- **Generate test hypothesis:** Once you've identified a goal you can begin generating A/B testing ideas and test hypotheses for why you think they will be better than the current version. Once you have a list of ideas, prioritize them in terms of expected impact and difficulty of implementation.
- **Create different variations:** Using your A/B testing software (like Optimizely Experiment), make the desired changes to an element of your website or mobile app. This might be changing the color of a button, swapping the order of elements on the page template, hiding navigation elements, or something entirely custom. Many leading A/B testing tools have a visual editor that will make these changes easy. Make sure to test run your experiment to make sure the different versions as expected.
- **Run experiment:** Kick off your experiment and wait for visitors to participate! At this point, visitors to your site or app will be randomly assigned to either the control or variation of your experience. Their interaction with each experience is measured, counted and compared against the baseline to determine how each performs.
- **Wait for the test results:** Depending on how big your sample size (the target audience) is, it can take a while to achieve a satisfactory result. Good experiment results will tell you when the results are statistically significant and trustworthy. Otherwise it would be hard to tell if your change truly made an impact.
- **Analyze results:** Once your experiment is complete, it's time to analyze the results. Your A/B testing software will present the data from the experiment and show you the difference between how the two versions of your page performed and whether there is a statistically significant difference. It is important to achieve statistically significant results so you're confident in the outcome of the test.

If your variation is a winner, congratulations! See if you can apply learnings from the experiment on other pages of your site and continue iterating on the experiment to improve your results. If your experiment generates a negative result or no result, don't worry. Use the experiment as a learning experience and generate new hypothesis that you can test.



Whatever your experiment's outcome, use your experience to inform future tests and continually iterate on optimizing your app or site's experience.

6.4.4 A/B Test Results

Depending on the type of website or app you're testing on, goals will differ. For example, retail website would run more tests to optimize for purchases, where a B2B website might run more experiments to optimize for leads.

This also means your results will look different depending on the type of site or app you have. Typically, the goals are set before starting the A/B test, and evaluated at the end. Some A/B testing tools allow you to peek at results real-time as they come in, or change the goals of your tests after completing the experiment.

A test results dashboard shows 2 (or more) variants, their respective audience and it's goal completions. Say you optimize for clicks on a call-to-action (CTA) on a website, a typical view would contain visitors and clicks, as well as a conversion rate — the percentage of visitors that resulted in a conversion.



6.4.5 Segmenting A/B tests

Larger sites and apps often employ segmentation for their A/B tests. If your number of visitors is high enough, this is a valuable way to test changes for specific sets of visitors. A common segment used for A/B testing is splitting out new visitors versus return visitors. This allows you to test changes to elements that only apply for new visitors, like signup forms.

On the other hand, a common A/B testing mistake made is to create audiences for tests that are too small. Therefore it can take a long time to achieve statistically significant results and tell what impact your change had on a particular website visitors. So it is important to check how large your segments are before starting an experiment to prevent false positives.

6.4.6 A/B Testing & SEO

Google permits and encourages A/B testing and has stated that performing an A/B or multivariate test poses no inherent risk to your website's search rank. However, it is possible to jeopardize your search rank by abusing an A/B testing tool for purposes such as cloaking. Google has articulated some best practices to ensure that this doesn't happen:

- **No cloaking:** Cloaking is the practice of showing search engines different content than a typical visitor would see. Cloaking can result in your site being demoted or even removed from the search results. To prevent cloaking, do not abuse visitor segmentation to display different content to Googlebot based on user-agent or IP address.

- **Use rel="canonical":** If you run a split test with multiple URLs, you should use the rel="canonical" attribute to point the variations back to the original version of the page. Doing so will help prevent Googlebot from getting confused by multiple versions of the same page.
- **Use 302 redirects instead of 301s:** If you run a test that redirect the original URL to a variation URL, use a 302 (temporary) redirect vs a 301 (permanent) redirect. This tells search engines such as Google that the redirect is temporary and that they should keep the original URL indexed rather than the test URL.

A **media company** might want to increase readership, increase the amount of time readers spend on their site, and amplify their articles with social sharing. To achieve these goals, they might test variations on:

- Email sign-up modals
- Recommended content
- Social sharing buttons

A **travel company** may want to increase the number of successful bookings are completed on their website or mobile app, or may want to increase revenue from ancillary purchases. To improve these metrics, they may test variations of:

- Homepage search modals
- Search results page
- Ancillary product presentation

An **e-commerce company** might want to improve their customer experience, resulting in an increase in the number of completed checkouts, the average order value, or increase holiday sales. To accomplish this, they may A/B test:

- Homepage promotions
- Navigation elements
- Checkout funnel components

A **technology company** might want to increase the number of high-quality leads for their sales team, increase the number of free trial users, or attract a specific type of buyer. They might test:

- Lead form fields
- Free trial signup flow
- Homepage messaging and call-to-action

6.4.7 A/B Testing Examples

A list of digital marketing elements that can be tested includes one or more of the items below:

- Navigation links
- Calls to action (CTAs)
- Design/layout
- Copy
- Content offer
- Headline
- Email subject line
- Friendly email “from” address
- Images
- Social media buttons (or other buttons)
- Logos and taglines/slogans

Your business goals, performance objectives and baseline, and current marketing campaign mix will help you determine the best candidates to test.

ROLE MODEL



WILLIAM SEALY GOSSET

William Sealy Gosset (13 June 1876 – 16 October 1937) was an English statistician, chemist and brewer who served as Head Brewer of Guinness and Head Experimental Brewer of Guinness and was a pioneer of modern statistics. He pioneered small sample experimental design and analysis with an economic approach to the logic of uncertainty. Gosset published under the pen name Student and developed most famously Student's t-distribution – originally called Student's «z» – and «Student's test of statistical significance».

Life and Career

Born in Canterbury, England the eldest son of Agnes Sealy Vidal and Colonel Frederic Gosset, R.E. Royal Engineers, Gosset attended Winchester College before matriculating as Winchester Scholar in natural sciences and mathematics at New College, Oxford. Upon graduating in 1899, he joined the brewery of Arthur Guinness & Son in Dublin, Ireland; he spent the rest of his 38-year career at Guinness.

Gosset had three children with Marjory Gosset (née Phillpotts). Harry Gosset (1907–1965) was a consultant paediatrician; Bertha Marian Gosset (1909–2004) was a geographer and nurse; the youngest, Ruth Gosset (1911–1953) married the Oxford mathematician Douglas Roaf and had five children.

In his job as Head Experimental Brewer at Guinness, the self-trained Gosset developed new statistical methods – both in the brewery and on the farm – now central to the design of experiments, to proper use of significance testing on repeated trials, and to analysis of economic significance (an early instance of decision theory interpretation of statistics) and more, such as his small-sample, stratified, and repeated balanced experiments on barley for proving the best yielding varieties. Gosset acquired that knowledge by study, by trial and error, by cooperating with others, and by spending two terms in 1906–1907 in the Biometrics laboratory of Karl Pearson. Gosset and Pearson had a good relationship. Pearson helped Gosset with the mathematics of his papers, including the 1908 papers, but had little appreciation of their importance. The papers

addressed the brewer's concern with small samples; biometricians like Pearson, on the other hand, typically had hundreds of observations and saw no urgency in developing small-sample methods.

Gosset's first publication came in 1907, "On the Error of Counting with a Haemacytometer," in which – unbeknownst to Gosset aka "Student" – he rediscovered the Poisson distribution. Another researcher at Guinness had previously published a paper containing trade secrets of the Guinness brewery. The economic historian Stephen Ziliak discovered in the Guinness Archives that to prevent further disclosure of confidential information, the Guinness Board of Directors allowed its scientists to publish research on condition that they do not mention "1) beer, 2) Guinness, or 3) their own surname". To Ziliak, Gosset seems to have gotten his pen name "Student" from his 1906–1907 notebook on counting yeast cells with a haemacytometer, "The Student's Science Notebook" Thus his most noteworthy achievement is now called Student's, rather than Gosset's, t-distribution and test of statistical significance.



Plaque in the Guinness Storehouse Commemorating Gosset.

Gosset published most of his 21 academic papers, including *The probable error of a mean*, in Pearson's journal *Biometrika* under the pseudonym *Student*. It was, however, not Pearson but Ronald A. Fisher who appreciated the understudied importance of Gosset's small-sample work. Fisher wrote to Gosset in 1912 explaining that Student's z-distribution should be divided by degrees of freedom not total sample size. From 1912 to 1934 Gosset and Fisher would exchange more than 150 letters. In 1924, Gosset wrote in a letter to Fisher, "I am sending you a copy of Student's Tables as you are the only man that's ever likely to use them!" Fisher believed that Gosset had effected a "logical revolution". In a special issue of *Metron* in 1925 Student published the

corrected tables, now called Student's $t^z = \frac{t}{\sqrt{n-1}}$. In the same volume Fisher contributed applications of Student's t -distribution to regression analysis.

Although introduced by others, Studentized residuals are named in Student's honour because, like the problem that led to Student's t -distribution, the idea of adjusting for estimated standard deviations is central to that concept.

Gosset's interest in the cultivation of barley led him to speculate that the design of experiments should aim not only at improving the average yield but also at breeding varieties whose yield was insensitive to variation in soil and climate (that is, "robust"). Gosset called his innovation "balanced layout", because treatments and controls are allocated in a balanced fashion to stratified growing conditions, such as differential soil fertility. Gosset's balanced principle was challenged by Ronald Fisher, who preferred randomized designs. The Bayesian Harold Jeffreys, and Gosset's close associates Jerzy Neyman and Egon S. Pearson sided with Gosset's balanced designs of experiments; however, as Ziliak (2014) has shown, Gosset and Fisher would strongly disagree for the rest of their lives about the meaning and interpretation of balanced versus randomized experiments, as they had earlier clashed on the role of bright-line rules of statistical significance.

In 1935, at the age of 59, Gosset left Dublin to take up the position of Head Brewer at a new (and second) Guinness brewery at Park Royal in northwestern London. In September 1937 Gosset was promoted to Head Brewer of all Guinness. He died one month later, aged 61, in Beaconsfield, England, of a heart attack.

Gosset was a friend of both Pearson and Fisher, a noteworthy achievement, for each had a massive ego and a loathing for the other. He was a modest man who once cut short an admirer with this comment: "Fisher would have discovered it all anyway."

CASE STUDY

CUSTOMER BEHAVIOR ANALYTICS

Complication – A large beverage company wanted deeper insights and a method to understand the relationships that existed between their brand and social media. Aspirent linked their Brand Health, Consumption and Online Search metrics, and measurable Social and Traditional Media activity (social media impressions, digital news posts, forum conversation sentiment, and more) to provide a sentiment analysis to enact marketing strategies.

Approach - The Aspirent team approached the problem in a 5 step approach:

- Collected longitudinal consumption, online search, and digital social & traditional media data, including weekly impressions, “buzz”, posts, sentiment, and passion metrics, across Brand Topics, Themes (advertising, events, taste, sustainability, and Media sources (Blogs, Forums, Consumer reports, Social media, etc.). This required tracking over 80 data variables across brands and themes.
- Measured bivariate correlations between groups of metrics to determine the strongest data relationships. For example, if Forum Buzz Posts and Total Buzz are 90% correlated, then only one was chosen to represent the concept of “Buzz.”
- Suggested a reduction of the data dimension to a more manageable subset of metrics, using Factor or Principal Component-type analyses. Identified an optimal number of “components”, or groups of variables representing a factor (concept), to explain most of the variability in this media data. We did this within each theme, for the Brand(s) of interest to the Client.
- Explored the relationships between these components/metrics and target variables, such as consumption and search data, to understand what predictive or explanatory power may be present, through correlations and graphical techniques.
- Recommended an appropriate method for explaining, through statistical modeling, the multivariate relationships that existed among the social media data.

Results

- The project proved there were measurable relationships within Social Media Data, Traditional Media Data, and the Google Search data relevant to the Client.
- Conversation around Boycott, Known Campaigns, and Social/Inclusiveness, and Twitter Shares, trend especially closely with search data related to the Client as a brand.
- Advertising, Boycott, Consumption, Sponsored Events, Brand Campaigns, Taste, and Social/Inclusiveness themes generally show strongest correlations at the weekly level between Social and Google Search data – relationships consistent across multiple brands.
- Total Buzz & Unique Posts are essentially one in the same. Other social/media metrics can be used as proxies for entire groups of data, reducing the data volume by over 50% with virtually no loss of information.

SUMMARY

- Marketers use analytics to show return on investment (ROI) for campaigns and make better decisions to increase sales, reduce costs, and make business improvements.
- Ecommerce analytics is the process of discovering, interpreting, and communicating data patterns related to online business. Ecommerce analytics helps measure customer behavior, performance trends, and ROI.
- The customer journey consists of five stages: awareness, consideration, conversion, retention, and advocacy. There are specific metrics associated with each stage of the sales process to help you prioritize prospects and increase conversions.
- Data is now a critical component of business operations, and organizations must establish a data foundation to support their decision-making process.
- Everyone is talking about data-driven decisions, but what, exactly, does this term mean? It means that you gather data, extract patterns from it, analyze it and finally use your findings to decide what steps you still have to take.
- Customers' habits, such as how much they post on social media, when they look at your products and what drives them to buy, is all encompassed by the term "customer behaviour".
- Customer Behavior Analysis should go further than analyzing shop behavior, monitoring monthly active users, or simply looking at the raw demographic data you can collect about your customers (such as age, location, gender, etc.).
- A/B testing (also known as split testing or bucket testing) is a methodology for comparing two versions of a webpage or app against each other to determine which one performs better.
- In an A/B test, you take a webpage or app screen and modify it to create a second version of the same page. This change can be as simple as a single headline, button or be a complete redesign of the page. Then, half of your traffic is shown the original version of the page (known as control or A) and half are shown the modified version of the page (the variation or B).
- A/B testing allows individuals, teams and companies to make careful changes to their user experiences while collecting data on the impact it makes.
- Depending on the type of website or app you're testing on, goals will differ. For example, retail website would run more tests to optimize for purchases, where a B2B website might run more experiments to optimize for leads.

MULTIPLE CHOICE QUESTIONS

1. **The dimension of e-commerce that enables commerce across national boundaries is called _____.**
 - a. interactivity
 - b. global reach
 - c. richness
 - d. ubiquity
2. **The primary source of financing during the early years of e-commerce was _____.**
 - a. bank loans
 - b. large retail firms
 - c. venture capital funds
 - d. initial public offerings
3. **The source of revenue in a subscription revenue model is _____.**
 - a. Fees from advertisers in exchange for advertisements
 - b. Fees for business referrals
 - c. Fees from subscribers in exchange for access to content or services
 - d. Fees for enabling or execution a transaction
4. **Industry structure is defined as _____.**
 - a. the nature of the players in an industry and their relative bargaining power
 - b. a set of plans for achieving long term returns on the capital invested in a business firm
 - c. set of planned activities designed to result in a profit in a marketplace
 - d. how a company's product or service fulfills the needs of customers
5. **A situation where there are no differences among products or services, and the only basis of choosing products is price is known as _____.**
 - a. a value web
 - b. value chain
 - c. profit
 - d. commoditization
6. **The component of TCP/IP that provides the Internet's addressing scheme and is responsible for the actual delivery of packets is _____.**
 - a. TCP

- b. IP
 - c. the Network Layer
 - d. the Application Layer
7. Which of the following is not a limitation of the current Internet?
- a. insufficient capacity throughout the backbone
 - b. network architecture limitations
 - c. insufficient reach
 - d. best-efforts QOS
8. Internet users account for about _____ of the world's population.
- a. 7%
 - b. 17%
 - c. 27%
 - d. 47%
9. The largest component of a Web site budget is _____.
- a. system maintenance
 - b. system development
 - c. content design and development
 - d. telecommunications
10. The set of standards for communication between a browser and a program running on a server that allows for interaction between the user and the server is known as _____.
- a. Active Server Pages (ASP)
 - b. Java Server Pages (JSP)
 - c. Common Gateway Interface (CGI)
 - d. VBScript

REVIEW QUESTIONS

1. What is e business analytics?
2. What is the role of business analytics in e-commerce?
3. Why do you need ecommerce analytics?
4. Why is data analytics important in e business?
5. How long does it take to provide data analytics in eCommerce?
6. What role does eCommerce analytics play in marketers' decisions?

7. What is a data-driven decision-making?
8. How do you write a consumer behavior analysis?
9. Define A/B testing.

Answer to Multiple Choice Questions

1. (b)	2. (c)	3. (c)	4. (a)	5. (d)
6. (b)	7. (c)	8. (b)	9. (a)	10. (c)

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CHAPTER 7

INTEGRATING TECHNOLOGY INTO BUSINESS PROCESSES

LEARNING OBJECTIVES

After studying this chapter, you will be able to:

1. Discuss on supply chain management and e-business
2. Define customer relationship management (CRM)
3. Learn about the enterprise resource planning (ERP)
4. Examine the cloud computing and its role in e-business

"Customers want to save money and time and have the broadest assortment of items, and we think that by bringing e-commerce and digital capabilities together with the stores, we can do things that a pure e-commerce player can't."

—Doug McMillon

INTRODUCTION

Integrating technology into business processes is the strategic incorporation of digital tools, systems, and applications to streamline operations, enhance productivity, and drive efficiency within an organization. This imperative practice involves adopting and adapting technological solutions to meet specific business objectives and operational needs. It encompasses a wide range of technologies, including software applications, cloud computing, data analytics, automation tools, and communication platforms.

At its core, the integration of technology into business processes aims to revolutionize how tasks are executed, information is managed, and decisions are made. It often begins with a thorough analysis of existing workflows and identifying areas where technology can augment or replace manual processes. This may involve automating repetitive tasks, optimizing data management, and improving communication channels both within the organization and with external stakeholders.

One crucial aspect of this integration is the adoption of enterprise resource planning (ERP) systems, which serve as a centralized hub for managing various aspects of a business such as finance, human resources, procurement, and supply chain. ERP systems provide real-time data visibility, enabling organizations to make informed, data-driven decisions. Additionally, they facilitate seamless coordination between different departments, fostering collaboration and ensuring a unified approach towards achieving organizational goals.

Moreover, cloud computing plays a pivotal role in this integration process. It enables businesses to store and access data and applications over the internet, reducing the need for physical infrastructure and allowing for scalability as demands evolve. This not only enhances data security but also facilitates remote work capabilities, a particularly critical aspect in today's globalized and digitally-driven business landscape.

Data analytics and business intelligence tools are another vital component in leveraging technology for business process optimization. These solutions allow organizations to extract valuable insights from large volumes of data, aiding in trend analysis, forecasting, and informed decision-making. By harnessing the power of data, businesses can gain a competitive edge, adapt to market changes, and identify new opportunities for growth.

Furthermore, the integration of communication technologies like unified communications platforms and collaboration software fosters effective team collaboration, regardless of geographical barriers. These tools enable real-time messaging, video conferencing, document sharing, and project management, enhancing efficiency and productivity.

While the benefits of integrating technology into business processes are substantial, it's essential to approach this transformation with careful planning and consideration. This includes evaluating the specific needs of the organization, assessing the capabilities of available technologies, and providing adequate training and support for employees to adapt to the changes. Additionally, regular monitoring and continuous improvement are crucial to ensure that the technology remains aligned with the evolving needs and objectives of the business.

7.1 SUPPLY CHAIN MANAGEMENT AND E-BUSINESS

Supply Chain Management (SCM) in the context of E-business refers to the strategic coordination and integration of various business processes involved in the production, distribution, and delivery of goods and services through electronic channels. It leverages digital technologies and platforms to optimize the flow of information, materials, and finances across a network of suppliers, manufacturers, distributors, retailers, and customers. This integration of SCM with E-business encompasses a wide range of functions, including procurement, production planning, inventory management, logistics, and customer relationship management.

At its core, SCM in E-business seeks to enhance efficiency, reduce costs, and improve customer satisfaction by utilizing electronic systems and platforms. E-business platforms facilitate seamless communication and collaboration among different stakeholders in the supply chain, allowing for real-time sharing of information on demand, inventory levels, production schedules, and shipment statuses. This increased visibility enables businesses to respond quickly to changes in customer demand, market trends, and unforeseen disruptions, leading to more agile and adaptable supply chain operations.

E-business also enables the implementation of advanced technologies like Radio Frequency Identification (RFID), Internet of Things (IoT), and Artificial Intelligence (AI) in SCM. These technologies provide real-time tracking and monitoring capabilities, allowing businesses to have precise visibility into the movement and condition of goods throughout the entire supply chain. This not only helps in minimizing losses due to theft or damage but also enables proactive decision-making in areas such as rerouting shipments to avoid delays or optimizing inventory levels based on actual demand patterns.

Additionally, E-business platforms facilitate the automation of various SCM processes, such as order processing, inventory replenishment, and invoice management. Automation reduces manual intervention, thereby minimizing the risk of human error and speeding up transaction cycles. For example, Electronic Data Interchange (EDI) enables the seamless exchange of standardized business documents between different trading partners, streamlining processes and improving overall operational efficiency.

Customer-centricity is a significant focus in the integration of SCM with E-business. E-commerce platforms provide a direct link between businesses and end customers, allowing for a personalized and interactive shopping experience. This includes features like online product customization, order tracking, and customer feedback mechanisms. Moreover, advanced analytics and AI-driven algorithms can be employed to analyze

customer behavior, preferences, and feedback, providing valuable insights for demand forecasting, product assortment planning, and marketing strategies.

However, it's crucial to note that the successful integration of SCM with E-business requires careful planning, robust technology infrastructure, and effective change management. Businesses need to ensure the security and integrity of digital transactions, protect sensitive customer data, and implement robust cybersecurity measures. Additionally, a strong focus on training and development is necessary to equip employees with the necessary skills to navigate and leverage the digital platforms effectively.

Keyword

Information and Communications Technology (ICT) is the use of computing and telecommunication technologies, systems and tools to facilitate the way information is created, collected, processed, transmitted and stored.

7.1.1 Role of E-business in a Supply Chain

E-Business is one of the easiest ways to reach out to the people involved in the supply chain. All you have to do is to have a website or register with a known search engine to hold its website in order for the site to be known. A business can put all information regarding their products, services, contact number on the site. Once done, the website is available for the customers and other participants of the supply chain to be viewed. The customers or suppliers can then view all the types of products and services available and accordingly make an offer.

E-commerce vs E-business

Many a times we use the term e-commerce and e-business interchangeably, but clearly they are distinct concepts. In e-commerce, **information and communications technology (ICT)** is used in inter-business or inter-organizational transactions (transactions between and among HRMS/organizations) and in business-to-consumer transactions (transactions between firms/organizations and individuals).

Primary processes in E-business

- Production processes – Production processes includes procurement, ordering and replenishment of stocks,

processing of payments, electronic links with suppliers and production control processes amongst others.

- Customer-focused processes: Customer-focused processes includes promotional and marketing efforts, selling over the internet, processing of customers' purchase orders and payments and customer support amongst others.
- Internal management processes – Internal management processes include employee services, training, internal information-sharing, video-conferencing, and recruiting. Electronic applications enhance information flow between production and sales forces to improve sales force productivity. Workgroup communication and electronic publishing of internal business information are likewise made more efficient.

We shall now discuss how e- business can provide a virtual supply chain over the internet. It performs the following functions –

- Provides information on the products to all the participants of the supply chain.
- Allows placing orders with suppliers.
- Allows customers to place orders.
- Filling and delivering the orders to customers.
- Receiving payments from customers

We know that all these transactions are traditional, but with the use of e-business, these transactions are now performed more efficiently and quickly, thereby providing high levels of customer response. E- Business allows transactions round the clock which no other mode of payment can provide.

Business to Consumer e-business (B2C)

- E-Business of this type takes place between a company and a consumer.
- But in case, the consumer comes directly in contact with the company and can view the company brochure or prospectus online along with their product and services and thus, make an order. This type of business reduces the trouble of the consumers going to the retail outlets and buying their goods.

Business to Business (B2B)

- E-Business of this type takes place between a company and a company.
- Many a time, one company is dependent on another company for raw material, spare parts or other products which they require to manufacture their goods.

The supply chain managers must note that the value provided by e-business is huge. However, its correct implementation is very necessary or else it may even

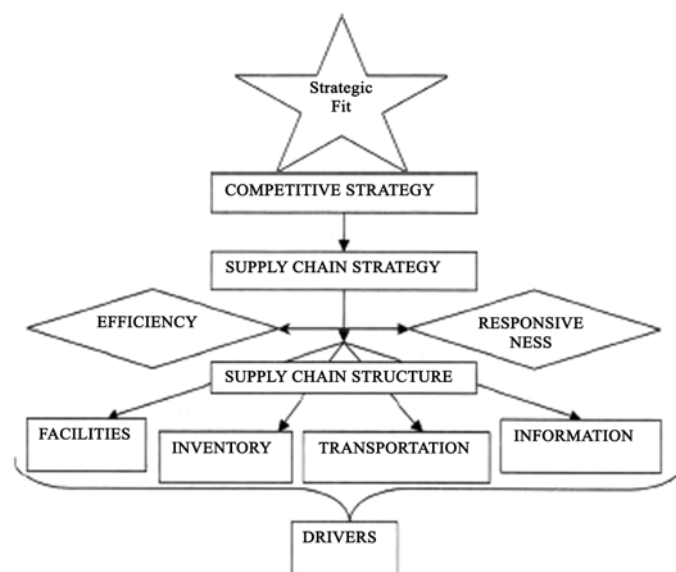
turn the other way round for the company, e-business implementation is not an easy process and the failure to exercise proper implementation has even resulted in large companies closing down.

7.1.2 E-Business Framework

E-business framework consists of the role it plays in all the functions of a supply chain like marketing, sales, research and development, logistics etc. The values that e-business provides to a supply chain by providing clear visibility of every stage in a supply chain –

General values:

- Exchange and share data across the world
- Send messages faster and cheaper
- Approve and proof work quickly



The supply chain decision making framework

Figure 1. E-Supply Chain Management Decision Framework.

- Introduce collaborative working
- Update employees instantly new policies or procedures
- Hold Web meetings or data conferencing
- Take advantage of time difference

- Send out e-mail automatically
- Use the internet to improve business administration
- Getting trained on the Web

Research & Development Value:

- Expedite market and product research – Almost all the information is available on the web and most of it is free. Finding information to assist in product development is usually much quicker using e-commerce methods, thereby significantly reducing product development time.
- Trade intellectual assets on the web – Also patents and other intellectual assets can be bought, sold, and licensed in e- markets, making the whole process of acquiring licensing rights, and marketing them much easier.

Marketing Value:

- Look bigger
- Use the internet to deliver products and services
- Provide an extensive business profile and online information centre
- Track response on the internet
- Send e-newsletters to customers and save time, postage and packaging
- Clearly position your business

Sales value:

- Introduce another channel to market
- Automate interactive business processes
- Lower the cost of order processing
- No physical space limitations
- Buy and sell quicker
- Boost sales with exports
- Close sales faster
- Use a website for direct and indirect selling

Procurement value:

- Reduce procurement costs and improve efficiency

E-Procurement systems helps to achieve the following business benefits –

- 73 % reduction in transaction costs
- 70% to 80% reduction in purchase order processing cycles
- 5 % to 10% reduction in prices paid

Logistics value:

- Optimize inventory levels
- Provide information by self-service

E-commerce together with internet methods enable real-time communications, and dynamic interchange of data, up and down the supply chain. All the information can be shared through emails, extranets, or by using middleware such as Microsoft Biz Talk, to enable legacy systems to transform an EDI document into an XML-readable format, so that every e-commerce system can understand and interact with it, and vice versa.

7.1.3 Digital Transformation in Supply Chain Management

Digital transformation in Supply Chain Management (SCM) involves the strategic adoption and integration of digital technologies, including E-business solutions, to revolutionize the way businesses plan, execute, and optimize their supply chain processes. It represents a paradigm shift in how organizations manage the flow of goods, information, and finances across the entire supply chain ecosystem. This transformation leverages E-business platforms to enhance efficiency, visibility, and agility in areas such as procurement, production, logistics, and customer engagement.

At its core, digital transformation in SCM aims to unlock new levels of operational efficiency and responsiveness through the application of advanced digital tools and technologies. E-business plays a pivotal role in this process by providing the necessary infrastructure for seamless electronic communication and collaboration between various stakeholders, including suppliers, manufacturers, distributors, and customers. This facilitates real-time information exchange, enabling quicker decision-making and improved coordination across the entire supply chain network.

E-business platforms enable businesses to leverage a variety of technologies that enhance SCM processes. For instance, the Internet of Things (IoT) allows for the integration of sensors and devices that provide real-time monitoring and tracking of goods in transit. This not only ensures better visibility into the location and condition of products but also enables proactive management of potential disruptions. Likewise, Artificial Intelligence (AI) and machine learning algorithms can analyze vast amounts of data to optimize inventory levels, predict demand patterns, and identify opportunities for cost savings and process improvements.

Furthermore, E-business facilitates the implementation of automated workflows and processes within the supply chain. This includes features like **Electronic Data Interchange (EDI)** for standardized document exchange, automated order processing, and digital invoicing. Automation reduces manual intervention, minimizes errors, and

accelerates transaction cycles, leading to improved efficiency and cost savings.

Customer-centricity is a key focus in digital transformation efforts within SCM. E-business platforms, particularly in the realm of E-commerce, provide a direct link between businesses and end customers. This enables personalized shopping experiences, real-time order tracking, and opportunities for direct customer feedback. Advanced analytics and AI-driven insights gleaned from customer interactions can inform product development, marketing strategies, and demand forecasting, driving increased customer satisfaction and loyalty.

However, it's important to acknowledge that successful digital transformation in SCM requires a holistic approach. This encompasses not only technological investments but also organizational change management, talent development, and a robust cybersecurity framework to protect sensitive data. Additionally, businesses must continuously evaluate and adapt their digital strategies to keep pace with evolving technologies and market dynamics.

Keyword

Electronic data interchange is the concept of businesses electronically communicating information that was traditionally communicated on paper, such as purchase orders, advance ship notices, and invoices.

7.1.4 E-business Platforms and Marketplaces in Supply Chain Integration

E-business platforms and marketplaces play a pivotal role in the integration of supply chains, revolutionizing how businesses interact, transact, and collaborate within the broader ecosystem. These digital platforms serve as virtual hubs where various stakeholders, including suppliers, manufacturers, distributors, and customers, converge to conduct business activities electronically. They encompass a wide array of technologies and applications that facilitate seamless communication, transaction processing, and information sharing, thereby enhancing the efficiency and effectiveness of supply chain operations.

E-business platforms act as the technological infrastructure that underpins supply chain integration efforts. They provide the necessary tools and frameworks to enable electronic communication and collaboration among different players in the supply chain. These platforms encompass a range of functionalities, including order management, inventory tracking,

demand forecasting, and payment processing. By offering a centralized digital environment, businesses can transcend geographical and organizational boundaries, fostering a more interconnected and agile supply chain network.

Marketplaces, a specific subset of e-business platforms, serve as dynamic digital ecosystems where multiple buyers and sellers converge to conduct transactions. These platforms facilitate the exchange of goods, services, and information in a structured and standardized manner. In the context of supply chain integration, marketplaces can act as intermediaries that connect suppliers with a diverse array of buyers, enabling businesses to access a wider pool of potential partners and customers. This can lead to increased market reach, improved demand visibility, and greater opportunities for collaboration and innovation.

Furthermore, e-business platforms and marketplaces leverage advanced technologies to enhance supply chain integration. For instance, the integration of Internet of Things (IoT) devices and sensors provides real-time visibility into the location, condition, and status of goods in transit. This not only enables better tracking and monitoring capabilities but also empowers businesses to proactively respond to potential disruptions. Additionally, data analytics and artificial intelligence algorithms can be employed to extract valuable insights from the vast amount of information generated within these platforms, supporting better decision-making and optimization of supply chain processes.

Security and trust are paramount considerations in the adoption of e-business platforms and marketplaces for supply chain integration. Robust cybersecurity measures are essential to protect sensitive information and transactions from unauthorized access or malicious activities. This includes encryption protocols, secure authentication mechanisms, and continuous monitoring for potential threats. Establishing clear policies and standards for data privacy and compliance is crucial to build trust among stakeholders.

7.1.5 Blockchain Technology in Supply Chain Transparency and Traceability

Blockchain technology has emerged as a powerful tool for enhancing supply chain transparency and traceability. It offers a decentralized and tamper-resistant ledger system that records and verifies transactions across a network of participants. In the context of supply chains, blockchain can provide a secure and immutable record of every step in the production, shipment, and delivery of goods. Here are some key ways in which blockchain technology contributes to transparency and traceability in the supply chain:

- **Immutable Record-Keeping:** Blockchain creates a permanent and unchangeable record of transactions and events. Once data is added to the blockchain, it cannot be altered or deleted without consensus from the network. This ensures the integrity of the information, reducing the risk of fraud and data manipulation.
- **End-to-End Visibility:** Blockchain enables stakeholders to track products from the source to the end consumer. Each product can be assigned a unique identifier, and its journey through the supply chain is recorded on the blockchain. This visibility allows for real-time monitoring of the product's location, condition, and status.
- **Provenance Tracking:** With blockchain, it becomes possible to trace the origin of products and raw materials. This is particularly important for industries like food and pharmaceuticals, where knowing the source of ingredients can help identify and contain issues such as contamination or counterfeiting.
- **Smart Contracts:** Blockchain can incorporate smart contracts, self-executing agreements with predefined rules. These contracts can automate various supply chain processes, such as payments, quality inspections, and shipment notifications, based on predefined conditions being met.
- **Enhanced Trust:** Blockchain's transparency and security features foster trust among supply chain participants. Since all participants have access to the same, verifiable data, disputes are minimized, and trust is built on a foundation of transparency.
- **Data Security:** Blockchain employs robust encryption and authentication methods, making it difficult for unauthorized parties to access or manipulate data. This is crucial for protecting sensitive supply chain information.
- **Reduced Fraud:** Counterfeiting and fraud are major concerns in supply chains. Blockchain's ability to verify the authenticity of products and transactions helps in reducing these risks, especially in industries like luxury goods and pharmaceuticals.
- **Recall Management:** In case of product recalls or quality issues, blockchain enables swift and accurate identification of affected products. This targeted approach minimizes the financial and reputational damage associated with recalls.
- **Compliance and Reporting:** Blockchain can automate compliance checks and reporting requirements, ensuring that supply chain operations adhere to regulatory standards. This reduces the administrative burden and the risk of non-compliance.
- **Supplier Management:** Blockchain can provide a transparent and auditable record of supplier performance and adherence to contractual obligations. This helps in supplier selection and relationship management.

While blockchain offers significant benefits for supply chain transparency and traceability, it's important to acknowledge that its implementation requires careful planning and collaboration among supply chain participants. The technology is not a one-size-fits-all solution, and its effectiveness depends on factors like network participation, data accuracy, and integration with existing systems. Nevertheless, as blockchain technology continues to evolve, it has the potential to revolutionize supply chain management by providing a secure, transparent, and efficient way to track and trace goods across complex global supply networks.

7.1.6 E-business Strategies for Demand Forecasting and Inventory Optimization

E-business strategies for demand forecasting and inventory optimization encompass a set of digital techniques and methodologies employed by businesses to enhance their ability to accurately predict customer demand and efficiently manage their inventory levels. These strategies leverage electronic platforms, data analytics, and advanced technologies to streamline the process of forecasting future demand patterns and aligning inventory levels accordingly. This integration of e-business with demand forecasting and inventory management aims to improve customer service, reduce carrying costs, and ultimately enhance the overall operational efficiency of a business.

One fundamental e-business strategy for demand forecasting involves the utilization of sophisticated data analytics tools and algorithms. By analyzing historical sales data, market trends, customer behavior, and other relevant factors, businesses can derive valuable insights into future demand patterns. Advanced analytics techniques, such as machine learning and predictive modeling, allow for more accurate and granular forecasts. These technologies can factor in seasonality, promotional events, and external influences, providing a more nuanced understanding of customer preferences and anticipated purchasing behaviors.

Additionally, e-business platforms facilitate the collection of real-time data from various touchpoints, including online sales channels, social media interactions, and customer reviews. This data can be integrated with traditional sales data to create a comprehensive and dynamic view of customer demand. By monitoring and analyzing this information in real time, businesses can quickly respond to shifts in customer preferences or market conditions, allowing for more agile and responsive inventory management.

Collaborative planning with suppliers and partners is another critical component of e-business strategies for demand forecasting and inventory optimization. E-business platforms enable seamless communication and information sharing between different stakeholders in the supply chain. This collaborative approach allows for the exchange

of sales forecasts, production schedules, and inventory levels in real time. By aligning production and delivery schedules with anticipated demand, businesses can reduce lead times and minimize excess inventory.

Moreover, e-business platforms can integrate with advanced demand forecasting software and Enterprise Resource Planning (ERP) systems. This integration streamlines the flow of information between different functional areas within an organization, ensuring that demand forecasts are seamlessly integrated into inventory planning and procurement processes. Automation features within these systems enable businesses to execute replenishment orders and adjust inventory levels based on real-time demand data.

Furthermore, the use of customer relationship management (CRM) systems within e-business platforms can enhance demand forecasting accuracy. By tracking customer interactions, purchase history, and preferences, businesses can gain valuable insights into individual customer behavior and preferences. This data can be used to segment customers and tailor marketing efforts, promotions, and inventory allocation strategies to specific customer segments.

However, it is important to note that successful implementation of e-business strategies for demand forecasting and inventory optimization requires ongoing monitoring, evaluation, and adjustment. Businesses must continuously assess the accuracy of their forecasts and the effectiveness of their inventory management practices. Additionally, they should stay abreast of technological advancements and evolving customer behaviors to adapt their strategies accordingly.

7.2 CUSTOMER RELATIONSHIP MANAGEMENT (CRM)

Customer relationship management has to do with any methods, policies, and procedures that are utilized by a company to provide a high level of customer care to existing clientele, orient new customers to the products and services offered by the business, and encourage general customer retention. Sometimes referred to as CRM, customer relationship management is a subject that is covered in a number of training manuals, inn house training, and continuing education seminars that are aimed at helping companies develop healthy relationships with the client base.

Generally, competent customer relationship management involves providing customer assistance on a variety of levels. These levels are usually classified into three main categories, usually referred to as operational, collaborative, and analytical.

Companies of just about every size will incorporate elements of each classification into the business strategy, helping to ensure an ongoing rapport with the customer base.

The operational aspects of customer relationship management involve processes that provide for direct interaction between the client and a customer care specialist. Many of these processes are time honored methods, such as on site visits with the customer, contacts by telephone, and letters and other printed matter that is exchanged between the client and the customer support staff. Today, such vital means of communication as email, audio and video conferencing, and instant messaging also provide this direct link between customer and support specialist.

Collaborative methods of customer relationship management allow for direct contact between the client and the company, but do not include the presence of customer support staff. These methods may include automated online access of the customer to his or her account information, the ability to order new products or services online, and to submit changes to account information using automated tools provided by the vendor. Generally, these tools are available for use around the clock, making it possible for a customer to manage the relationship in his or her own time.

Remember

CRM includes all aspects in which a company interacts with customers, but more commonly refers to the technology used to manage these relationships.

The analytical aspect of customer relationship management has to do with the systematic analysis of customer data. This is an internal process, and does not initially involve interaction with the customer. Instead, historical data on the purchasing patterns of the customer, including which goods or services are purchased and at what intervals, is used to determine if there is some sort of new product or service that the vendor can develop and offer to the customer. Analyzing past usage of the client base in general can also help the company develop new strategies to educate existing customers about other products that may be of interest, which can translate into additional ties of loyalty between supplier and customer.

7.2.1 Strategies

Customer relationship management (CRM) refers to a strategy to better understand customers and their needs so that a company

can have the best interactions possible with them. A CRM system involves using a computerized database to track information about a customer, such as his past purchases, his preferences and his contact details. If properly implemented, a CRM system can serve as a powerful tool in maintaining and strengthening client relationships.

Employee Buy-in. For a CRM system to work effectively, the entire staff of a company must support it. This means that everyone from the CEO to the secretary must understand how the system works and its importance to the firm. If no one knows how the CRM software works, they will not want to use it and they will not collect valuable information about customers, which can boost sales and client satisfaction.

No Quick Fixes. Companies using a CRM system need to bear in mind that it will take time to see the results of the investment. Customer service staff must input data during every single customer interaction, not just when they feel like it. Having more data entered into the CRM means the users will gain a deeper understanding of customer habits and preferences. Achieving this insight will not happen overnight, and it certainly will not take place if the business's management expects to see immediate results.

Data Analysis. Once enough data has been entered into the CRM system, users can analyze the information to sell more products to the right people. The records in a CRM program tell sales staff what the customer has purchased in the past and whether he submitted complaints or praise about the product. From this data, the sales staff can match the client with other products or services which will best suit him. The end result: Both the company and the customer walk away from the deal happy.

7.2.2 CRM and Marketing

Take a hard look at your top sales professional the next time he swings by your office for a meeting. You'll find clues to his success in the briefcase and folders he carries, the laptop or notebook he writes in, and how he uses his smartphone. Just remember that you have no idea how many details are swirling around his head for safekeeping.

Chances are, you're looking at a self-contained data machine – a human repository of hundreds of pieces of information that could help your small business win and manage new clients or lose them to a better-organized competitor. Increasingly, a line is being drawn among American small businesses between those that embrace customer relationship management (CRM) technology and those content to do things their own way – and some might say “the old-fashioned way.”

Only You Can Decide if CRM Suits You. If you find yourself at a similar crossroads, you have plenty of company among owners of businesses of all sizes but especially the small ones, where the pressure to accomplish more with less is palpable. It helps

explain why the demand for CRM systems is expected to grow by more than 13 percent from 2022 to 2030 to a whopping \$157.6 billion in that final year, Grand View Research says.

This is not to suggest that you should make the leap to a small business CRM system, only that you should look carefully before you leap. CRM platitudes can prove true – “Improve your business relationships and grow your business!” – but like other forms of technology, the results largely depend on the people working the controls. In other words, if your employees aren’t sold on a CRM organization system, forget it. It’s pointless to purchase software and train employees to use a system that has failed to make them true believers.

Customize CRM Components. Essentially, every CRM tool serves as a centralized clearinghouse for every relevant piece of client data – in other words, all the information you can shake loose from those briefcases, folders, laptops, notebooks and smartphones. This information can include, but certainly isn’t limited, to:

- Client contact information, including telephone numbers, email addresses and crucial URLs
- Notes on client phone calls, meetings and service issues
- Updates on next steps with a built-in reminder to follow up when you’ve been asked to
- Client purchases and wish lists
- Client responses to your emails, direct mail and other marketing initiatives

All of this information appears on a clear and customizable dashboard, where you can see everything you need and want to know about each client. In this way, you could say that a CRM system serves as an insurance policy – a way to ensure that no opportunity slips through the cracks.

The idea is, a company that stays connected to its current and potential customers is the one most likely to become more profitable. However, the outcome always comes down to people. You can see where these CRM components can be invaluable to your marketing team as they strategize over future communication efforts and look for insights to guide them: Which marketing channel does this group of clients prefer? How did they respond last time? Should we repeat a successful campaign or take a chance on one with a new theme?

You can also see why CRM systems appeal to marketing types, whose success depends on enticing new clients, winning their business and keeping them happy. On the last point especially, marketers don’t corner the field. Many small-business owners are embedding a CRM system in the core of their business so that other departments – like customer service, finance and shipping – are also privy to inside information.

Consider Both Sides of the CRM Coin. By now, feelings of whether a CRM tool would suit your small business are probably stirring within you. So consider some of the advantages and disadvantages. They may help crystallize your decision, at least in terms of moving forward with a demonstration. The marketing specialists at Pepperland say that a robust CRM tool:

- Consolidates information in one place
- Can be accessed remotely since it's stored in the cloud
- Allows you to extract only the information you need, like email addresses for an email campaign
- Is scalable, allowing it and its capabilities to grow right along with your small business

Like the benefits, the drawbacks depend on the particulars of your small business. Only you can tell whether a CRM system will:

- Be too costly, especially if you choose to make it available to a large number of people. Many CRM tools are sold on a subscription basis that charge by the number of users.
- Prove to be too laborious for people to keep current since most systems depend on manual entries
- Pose security issues that you may not be prepared to address. For example, protecting the integrity of the data may require encryption safeguards and backup and supervision systems, Brandon Gaille explains.
- Quickly become obsolete

This last complaint may be a bit unfair to target at CRM tools since it applies equally to any note, scribble or scrawl tucked away for safekeeping. The best salespeople reconcile themselves to reality early on. Whether they talk with a client once a month or once a year, they ask straight away for any news and changes and update their records accordingly. With or without the wind of technology at their backs, they know that information is power. They'll take – and make use of – all the data they can get.

7.2.3 Type of Information in a Customer Relationship Management System

A customer relationship management, or CRM, system uses a database to accumulate information about business prospects and customers, including product needs and purchasing history. Various businesses integrate CRM data into their marketing and advertising efforts as well as sales strategies. Businesses can customize the information they collect and store, so configurations are virtually limitless.

Customer Information. Anything relative to a customer is valuable in a CRM system, including personal customer information and demographic data. Notes and attachments can capture the details of a service call, customer support needs or warranty information. In this way, the CRM data replaces a paper file as a means of tracking each interaction with a customer. When features such as attachments are included in a CRM system, valuable documents become easily available for review. For example, if a customer is in proposal or contract negotiations, each revision can accompany the customer record for quick review, markup and electronic sharing.

Employee Information. The CRM system can store vital data, such as employee and commission information, for your internal sales force. Thus CRM also becomes a useful tool for assigning tasks, checking progress and monitoring sales goals and records internally. This feature gives the sales management team a way to monitor activity and allows individual sales representatives to compare their productivity against peers in real time.

Contract Information. When used to manage prospects, the customer relationship management system is invaluable for scheduling follow-up visits to potential customers who are currently under contract with another vendor. Through cold calling efforts, a sales representative may collect and record contract expiration dates and schedule future calls or visits accordingly within the CRM. In this way, she can avoid overlooking possible sales opportunities.

Purchasing Information. Because of the elaborate records the CRM system keeps on customers and their purchasing habits, many businesses incorporate them into their marketing plans. Reports generated to reveal buying trends focus marketing efforts by pairing customers with the most beneficial products. This information can save time for marketing and advertising departments, especially during blitz or holiday seasons.

7.2.4 Advantages and Disadvantages of CRM

From small local businesses to international conglomerates, the importance of managing customer relationships is something every business owner and manager knows. While small businesses might not be able to fund a dedicated customer relationship management director or department, it's not too difficult or expensive to add this function to your company.

Customer relationship management is the use of research to help interact with customers to ensure satisfaction and continued purchases. It includes the techniques to keep strong ties to customers and clients.

Businesses can use CRM to find out what new products and services customers want, how happy they are with existing products and service and what they want in

post-purchase support. Businesses use this information to create easier buying processes and better warranties, repair plans and return policies. CRM includes post-purchase **consumer education** to make sure buyers know all of the features and benefits of what they bought and how to get the most out of it.

Customer service phone lines, technical support channels, online FAQ pages and responding to negative online reviews are all part of the CRM process.

CRM Software Programs. CRM software has become so widely used today that many tech and management gurus refer to CRM as the software that's used for one part of this process. The base of a CRM program is a database that contains information about a customer. This can include:

- Company name
- Address
- Key contact
- Title
- Phone
- Email address
- Industry
- Purchase history
- Returns
- Sales rep notes

The more fields your business can create for each client, the more you can analyze your current and potential customers. For example, if you are a content broker, you'll want to know which of your customers has a blog, newsletter and specific social media channels.

Be careful not to focus on building a CRM database that's primarily intended to help your sales reps sell. Your database should be focused on how to identify customer needs. This will not only help your sales reps sell better, but it will also help your marketing, finance, production, distribution and IT departments.

For example, your database should contain information on how your customers purchased. Did they call in? Did they

Keyword

Consumer education is the preparation of an individual to be capable of making informed decisions when it comes to purchasing products in a consumer culture.

make a purchase online? Did they respond to a TV or radio ad? Do they wait for sales reps to call and take orders? Which ones always pay for overnight shipping? This information is critical to helping you manage your customer relationships in the most effective ways possible.

Retention of Customers. Companies make more profits if they don't have to spend money on advertising to get each sale. For example, a business might obtain a customer through a website banner or TV commercial. If the customer begins to re-order the product based on her satisfaction with the original purchase, the company doesn't have to spend any more advertising money to get that purchase, making it more profitable.

One of the main purposes of CRM is to promote these types of more-profitable future purchases. The process begins before consumers even make a purchase, and it continues after they have already spent their money.

Improved Brand Management. Online reviews are a key factor in consumer decision making today. Helping reduce instances of negative reviews is a key goal of CRM. This is part of brand management, or protecting the image and reputation of a company, product or service.

Companies not only respond to customer complaints to try and resolve these situations, but they also try to provide continuing support and benefits to consumers who are happy with their purchases. When consumers are satisfied with what they've purchased, they're not only more likely to buy again, but they're also likely to recommend the product to others.

Self-Fulfilling Prophecies. One of the problems with CRM can be an over-reliance on survey results. CRM tools include online and in-person surveys, focus groups, feedback from call center employees regarding customer interactions and other research.

If a business relies on this data as proof that the information applies to all or most of its customers, it can end up catering to a small portion of its potential customers.

For example, people who are happy with products and services might not be likely to go online, register an account at a review site and tell others they liked a product or service. Someone who is ticked off about a product or service is more likely to do this.

Even happy customers who take the time to review something might not represent the larger satisfied group. When companies start changing prices, features and distribution methods based on "squeaky wheels," they can alienate the majority of their customers if those customers don't feel the same way.

Usefulness of Results. Another disadvantage of CRM is that in order to get optimal results, companies need to avoid GIGO (Garbage In/Garbage Out). This means

that businesses need to be careful how they gather data, conduct research, collect information, sort and analyze data, and present their findings.

This is one of the benefits of CRM software, which can take data and present it running different scenarios. However, the data needs to be accurate and representative of the larger group.

Small-business owners can be successful with CRM by keeping in touch with customers, conducting simple surveys, talking to cashiers, waiters and other customer-facing staff, and asking sales reps what customers are saying. The more sophisticated companies can get with data collection and analysis, the better their CRM can be. However, before you implement a plan of collecting data, make sure you will know how to use it.

Increased Operating Expenses. The benefits of following a good CRM program in your business should far outweigh the costs. However, you'll need to carefully consider when it's the right time to invest in a CRM software program.

In addition to the cost of the licenses, you'll need staff training time. This might include paying for a consultant to visit your office or for your staff to attend an in-person workshop or online seminar.

7.2.5 Business Challenges of CRM

The use of customer relationship management is commonplace in both business-to-consumer and business-to-business companies. BuyerZone, an online B2B lead generation company, reports that 56 percent of B2B companies used CRM software solutions as of 2012. Despite the ability to collect and track customer data and deliver more targeted and efficient market, businesses do face some key challenges with CRM.

Cultural Shift. Upon initial introduction, CRM was viewed as a technology for marketing. However, the failure of a number of companies to optimize their CRM solutions helped bring to light the reality that CRM works best as a company-wide system. This means businesses that choose to adopt a CRM program often must change from a product or production orientation to a marketing or customer-centric orientation. Getting all functional departments and employees to buy into the fact that their jobs should have a primary focus is sometimes difficult when this hasn't always been the case. Employees often are resistant to change.

Complexity. The caveat with conducting a company overhaul to develop a CRM program is that it requires significant time and investment in training. This not only relates to role changes for departments and employees, but it also connects to the integration of CRM software across the organization. Often, sales, service, accounting,

shipping and management employees, as well as information technology departments, participate in the collecting of data and sharing of information through a CRM program. Thus, training also must take place in new workflows and in seamless communication through sales and service updates and notes on customer interactions.

Infrastructure Development. CRM is built on a technology infrastructure, and hundreds of software options, many of them scalable to a company's needs, exist. The challenge lies in selecting the right solution and building it into the company's technology system. Along with the investment costs, companies must decide whether to purchase a solution and hold it in-house. This means increased technical support and data server requirements. The alternative is to use a third-party solution hosted externally. The risk with this approach is that your data is held elsewhere, which is problematic if the provider's server goes down.

Service Performance. No matter how effective your technology, workflow and behind-the-scenes planning, CRM only improves long-term customer retention, revenue and profit when customers are satisfied with their total experience. This includes the products they buy and the service and interaction they have with company employees. Thus, companies need to invest significant upfront training time to ensure consistent and effective customer service delivery. It also must monitor and revisit hiring practices, training and performance indefinitely. Any lapse can lead to failed front-end delivery, which can ruin any efforts to take advantage of CRM opportunities.

7.2.6 Impact of E business on Customer Relationship Management

E-business impact the strategic integration of digital technologies and online channels to enhance the management and interaction with customers. It involves using digital platforms and tools to collect, analyze, and utilize customer data for personalized communication, improved service delivery, and building lasting customer relationships. Here are key aspects of how e-business is employed in CRM:

- **Digital Touch points:** E-business expands the avenues through which businesses can interact with their customers. This includes websites, mobile apps, social media platforms, email marketing, live chat, and other digital channels. These touch points serve as mediums for initiating and maintaining communication, allowing businesses to be accessible to their customers 24/7.
- **Customer Data Management:** E-business platforms and CRM systems work hand-in-hand to centralize and manage customer data. This data includes contact information, purchase history, preferences, and interactions. By leveraging advanced analytics, businesses can gain deep insights into customer behavior and preferences, enabling them to tailor their offerings and communications to individual customer needs.

- **Personalization and Customization:** E-business facilitates the delivery of personalized experiences. Through CRM systems integrated with e-business platforms, businesses can use customer data to offer tailored product recommendations, send targeted marketing messages, and create customized offers. This personal touch enhances customer satisfaction and loyalty.
- **Automated Marketing Campaigns:** E-business allows for the automation of marketing campaigns based on predefined triggers and customer segments. Automated email marketing, for instance, can deliver timely messages, such as welcome emails, transactional notifications, and follow-up communications. This automation ensures consistent and timely customer engagement.
- **Feedback and Surveys:** E-business platforms provide tools for gathering customer feedback and conducting surveys. This data is crucial for understanding customer satisfaction levels, identifying areas for improvement, and gauging customer sentiment. It enables businesses to make informed decisions to enhance their products and services.
- **Social Media Integration:** Social media plays a significant role in customer interaction. E-business platforms enable seamless integration with social media channels, allowing businesses to monitor and engage with customers on platforms like Facebook, Twitter, Instagram, and LinkedIn. This real-time interaction helps in addressing customer inquiries and concerns promptly.
- **E-commerce and Online Transactions:** E-business platforms often serve as the backbone of online sales and transactions. Integrated with CRM systems, they allow businesses to track customer purchasing behavior, recommend related products, and manage post-purchase interactions like order tracking, returns, and customer support.
- **Customer Support and Service:** E-business facilitates efficient customer support through features like live chat, chatbots, and self-service portals. These tools offer immediate assistance, enabling customers to get answers to their questions or resolve issues quickly. Moreover, e-business platforms can track customer support history, ensuring a seamless experience across multiple interactions.
- **Analytics and Reporting:** E-business platforms and CRM systems generate valuable data on customer behavior, campaign effectiveness, and sales trends. Through advanced analytics, businesses can gain insights into which strategies are most effective, enabling them to refine their CRM approach for better results.

E-business is instrumental in enhancing Customer Relationship Management by providing the digital infrastructure and tools needed to engage, understand, and serve customers effectively. Through personalized interactions, streamlined processes, and data-driven insights, businesses can foster stronger, more profitable relationships with their customers in the dynamic landscape of the **digital age**.

7.2.7 Evaluating the Impact of CRM Systems on E-business Performance Metrics

Keyword

Digital age refers to the current period in history characterized by the widespread use and integration of digital technologies in various aspects of society, including communication, commerce, education, entertainment, and more.

Evaluating the impact of Customer Relationship Management (CRM) systems on E-business performance metrics involves assessing how the integration of CRM technology influences key indicators of online business success. This evaluation centers on understanding how CRM systems enhance customer interactions, streamline processes, and ultimately contribute to achieving organizational goals within the digital landscape.

One of the primary metrics influenced by CRM systems in E-business is customer retention and loyalty. CRM platforms enable businesses to capture and analyze customer data, allowing for personalized communication, targeted marketing campaigns, and tailored offers. By tracking customer behavior, preferences, and transaction histories, businesses can implement strategies to strengthen customer relationships and increase loyalty. This is reflected in metrics like customer retention rates, repeat purchase frequency, and Net Promoter Scores (NPS).

Moreover, CRM systems have a significant impact on customer acquisition and conversion rates. Through the segmentation of leads, automated follow-ups, and personalized nurturing campaigns, businesses can optimize their lead management processes. This leads to higher conversion rates as well as a more efficient and effective customer acquisition strategy. Metrics such as lead-to-customer conversion rate and cost per acquisition can demonstrate the impact of CRM on driving new business.

In addition, CRM systems contribute to improved customer service and satisfaction metrics. The integration of CRM with customer support channels allows for streamlined ticketing, issue tracking, and resolution workflows. This leads to faster response times and higher resolution rates. Consequently, customer satisfaction metrics, including CSAT scores and customer feedback ratings, tend to see positive impacts. Furthermore, the ability to provide personalized and timely support through CRM systems enhances overall customer experience.

Another critical area impacted by CRM systems is sales performance. By tracking sales interactions, managing leads, and automating follow-ups, CRM platforms empower sales teams to

be more productive and efficient. Additionally, CRM analytics provide insights into sales pipelines, allowing for more accurate sales forecasting and resource allocation. This can lead to improvements in metrics such as sales conversion rates, average deal size, and sales cycle duration.

Furthermore, CRM systems facilitate data-driven decision-making in E-business. Through reporting and analytics tools, businesses can gain valuable insights into customer behavior, campaign effectiveness, and overall business performance. This data-driven approach allows for more informed marketing strategies, product offerings, and resource allocation. Key performance indicators (KPIs) related to ROI, customer lifetime value, and marketing campaign effectiveness can be influenced positively by leveraging CRM data.

Additionally, CRM systems impact inventory and supply chain management metrics in E-business. By tracking customer preferences and demand patterns, businesses can optimize inventory levels, reduce carrying costs, and minimize stockouts. This leads to improved metrics related to inventory turnover rates, order fulfillment accuracy, and supply chain efficiency.

7.2.8 Integration of E-business Platforms and CRM Systems

The integration of E-business platforms and Customer Relationship Management (CRM) systems represents a strategic approach that leverages digital technologies to optimize customer engagement and interaction. This synergy between E-business and CRM systems combines the capabilities of online channels, transactional data, and customer information management to create a seamless and personalized experience for customers. Here are key elements of this integration:

Firstly, E-business platforms serve as the digital storefronts and transactional hubs of a business, encompassing websites, mobile apps, and online marketplaces. These platforms facilitate customer interactions, allowing them to browse products, make purchases, and access services online. By integrating these E-business channels with CRM systems, businesses gain the ability to capture and centralize critical customer data. This includes contact information, purchase history, browsing behavior, and preferences. This centralized database forms the foundation for personalized customer engagement strategies.

Secondly, CRM systems excel at organizing and analyzing customer information. By integrating with E-business platforms, CRM systems gain access to a wealth of real-time transactional data. This information provides valuable insights into customer behavior, such as purchase patterns, product interests, and shopping habits. This data can then be used to segment customers into distinct groups based on their preferences

and behaviors. These customer segments become invaluable for targeted marketing campaigns, personalized product recommendations, and tailored communication strategies.

Moreover, the integration of E-business and CRM systems enables the automation of various customer engagement processes. Automated workflows can be set up to trigger responses based on predefined conditions or customer interactions. For example, when a customer makes a purchase online, the CRM system can automatically generate a thank-you email, suggest related products, or offer exclusive discounts for future purchases. This automation ensures consistent and timely communication with customers, enhancing their overall experience.

Additionally, E-business platforms often provide channels for customer inquiries, feedback, and support. By integrating these channels with CRM systems, businesses can efficiently manage customer interactions. Customer inquiries can be tracked, assigned, and resolved through the CRM system, ensuring that no query goes unanswered. Moreover, customer feedback and sentiment analysis tools within CRM systems enable businesses to gauge customer satisfaction levels and identify areas for improvement, ultimately leading to enhanced customer service.

Furthermore, the integration of E-business and CRM systems contributes to a unified customer view across all touchpoints. Whether a customer interacts through the website, mobile app, or in-store, their information and preferences are seamlessly synchronized in the CRM system. This holistic view empowers businesses to deliver a consistent and personalized experience, regardless of the channel through which the interaction occurs.

7.3 ENTERPRISE RESOURCE PLANNING (ERP)

Enterprise resource planning (ERP) is a type of software designed to help a business plan with the use of its assets and resources. An ERP is an integrated system that allows different departments to exchange data and information. Functions performed by an ERP platform include financial data management, business assets management, and personnel and workforce management. Without an ERP, businesses normally have separate software for each function, and the different types of software may not be able to exchange data among them. Companies that manufacture ERP platform software include Infor Global Solutions™, Oracle™, and the Sage Group™.

ERP hosting can be performed on site at a server maintained at the place or business, or it can be hosted off site at a server maintained at a remote location by an ERP platform hosting company. **Online ERP** companies can be a beneficial choice for smaller businesses because they offer a low-cost option for business owners to get

familiar with an ERP. On-site server-based ERPs are usually used by large companies that want a **dedicated server** for ERP in the business. Using a server-based ERP platform may be a prohibitively expensive investment for smaller businesses.

Financial tasks performed by **ERP software** include bookkeeping, managing cash, and handling accounts payable and receivable. Responsible for billing and processing payments, accounts receivable programs handle transactions related to money owed to the company. Accounts payable ledgers keep track of money the company owes and has yet to pay out. In an ERP, a ledger is an electronic **spreadsheet** a company uses to record its financial transactions to determine an overall balance. Most ERP platform software also has a ledger in which a business owner can record all financial transactions.

One of the primary advantages to running on an ERP platform is that data are made available to people who need it more quickly and easily than in systems that do not integrate data into an ERP platform. Since ERP is itself a platform, a platform of this type is often called ERP. By definition, an enterprise is a business that is built to make a profit. This is in contrast with businesses designed simply to support the employees in the business.

An ERP platform is designed to help a business organize its resources to make the most profit the business can make. Using an ERP, a business can schedule its use of resources like property, machinery, and workforce assets in a means that helps the company achieve more productivity and efficiency. A school might use an ERP to organize its class schedule to maximize the available space and schedule personnel for the classes. This may include ensuring that each class has a teacher and getting classes scheduled in the available classrooms with no overlaps.

7.3.1 ERP Process

Enterprise Resource Planning software offers you many modules which are tightly integrated with each other. The modules handle all functions related to engineering, Sales, planning, materials, manufacturing, finance, HR etc. Multiple locations can be seamlessly integrated into a single ERP System.

Process is nothing but a systematic flow of work done. Process management is defined as the collection of activities corresponding to the planning and observing the effectiveness of a certain business process. This is true to ERP process too. ERP implementation sometimes calls for cultural changes in the enterprise. Typically ERP process has the following stages. Strategic planning, Readiness assessment, Vendor assessment and selection, Plan for Implementation, Implementation and post Implementation Assessment.



Remember

Enterprise Resource Planning is no longer just a competitive advantage in this globalized world. It is very important requirement for every enterprise. To truly be effective, it may be necessary to combine the benefits of Enterprise Resource Planning with those of Customer Relationship Management (CRM).

Process is nothing but a systematic flow of work done. Process management is defined as the collection of activities corresponding to the planning and observing the effectiveness of a certain business process. This is true to ERP process too. ERP implementation sometimes calls for cultural changes in the enterprise. Typically ERP process has the following stages. Strategic planning, Readiness assessment, Vendor assessment and selection, Plan for Implementation, Implementation and post Implementation Assessment.

- Strategic Plan is to define the need and to provide the rationale for the implementation of Enterprise Resource Planning systems. This first step of ERP process sometimes is the most difficult and may take few months. Every Enterprise is bound have processes already automated. Lack of co-ordination of the Information Technology sometimes allows individual departments to automate their processes using internal resources. Sometimes, each division would have automated their process in a platform they are comfortable with, resulting in different systems on different platforms that are difficult to be integrated into a single system to leverage companywide automation. In this case, the best way to integrate different processes is to plan for ERP. Once the need is agreed upon, formal meetings with all the stake holders may result in a strong business case for ERP implementation.

- Second step of ERP Process is readiness assessment. While all stake holders agree that there is a need for Enterprise Resource Planning system, it is required to study if the enterprise is ready for the same. Do you have a strong Information technology department that can be the catalyst for your ERP implementation? You need to address technical preparedness like the servers, networking and the required manpower to manage the same from the IT infrastructure front. At the same time, you need to assess your enterprise's functional preparedness like functional specialists in each department, their skill levels, their willingness to change etc. You need to address culture change and its affect, communication and leadership. Once the organization is clear about ERP, its advantages and what is to be expected from ERP side as well as the individuals dealing with ERP, progressing further with ERP implementation will be smooth.
- Vendor Assessment and selection is third step of ERP process. You need to document your business practices and let the ERP vendors offer their solutions. However, you need to understand how your existing processes may be affected by the new ERP solution. Basically you need to chart your processes and map them to the various processes of different ERP packages available. First step is to identify the appropriate ERP software for your application. Many times, some ERP implementing companies offer better service in implementing specific ERP software. Identify the ERP implementing partner. Device a screening process which may include a request for Information, reference checks, demonstrations, Request for Proposal and presentations. Take help from an external consultant, if required, to identify the ERP package and implementing partner.
- The fourth step of ERP Process, planning the implementation, is to create a comprehensive plan to implement the Enterprise Resource Planning system. Create a scope document that spells out the purpose, scope, budgets, timelines and the responsibilities. Establish the process for communication and facilitate problem tracking and facility for escalating unresolved issues to higher authorities.
- The most stressful and the most time consuming part of the ERP process is the Implementing the ERP phase. You are required to work with a plan, schedule, track and control tasks and issues and as well as maintain logs. Many a times you may like a process to be configured the way you want and the implementing partner says it can be done differently. You need to take a critical look at the options available at that time and decide accordingly. If you have some other computerized systems that feed ERP and takes data from ERP, you need to be extra careful. It is reported that even the best ERP software can satisfy up to 75-80% of your requirement. Balance 20-25% is to be addressed very carefully by you, where you need to customize the ERP software or work around the system. Testing each process and training end

users to use each process as configured in the software are also integral part of this phase.

- The final step of ERP process is Post implementation Assessment. Here, you look back at your objective and how much you have achieved. Actually this is not the final step. This is the first step to fine tune your ERP process. You take the feedback and study the GAP analysis, so that the 'missing' features/processes are addressed to bring in more productivity.

One can implement Enterprise Resource Planning systems in two different ways, phased manner or 'big-bang' approach. In a phased manner approach, you roll out ERP in one department and keep running your current system in parallel. Once the ERP process is smooth, migrate from the existing process to ERP and then address another department. In big-bang approach, a separate team works on ERP process, without disturbing the current process. ERP is configured and implemented in one go. Both the approaches have their advantages and disadvantages. You are the user and no one knows better than you, what is required for your organization. Hence you need to involve more and see that your ERP implementation is a success.

7.3.2 Characteristics of ERP

Enterprise Resource Planning (ERP) is defined as an Integrated Computer based planning technique used in Organizations and Enterprises for management and resource planning. Resources here mean both internal and external resources of an organization. Various resources of an organization can include financial resource, tangible resource, human resource and also various material requirements. ERP can also be defined as an application and software architecture that facilitates Information flows between various business functions inside and outside of an organization. It consolidates business environment into a uniform system environment. Basically what ERP systems do is that it integrates and automates processes within an entire organization regardless of the organization's behavior.

A traditional definition of Enterprise Resource Planning (ERP) as given by APICS – The Educational Society for Resource Management is given as, ERP is a method for effective planning and control of all resources needed to take, make, ship and account for customer orders in a manufacturing, distribution or service company.

ERP are used in various Industries and organizations like manufacturing, distribution, transportation, education, healthcare, banking and others. ERP delivers a single database that contains all data for the various software modules. It typically addresses areas such as:

- **Manufacturing resource planning:** Engineering, bills of materials, scheduling, capacity, workflow management, quality control, cost management, manufacturing process, manufacturing projects and manufacturing flow.
- **Supply chain management:** Order to cash, inventory, order entry, purchasing, product configuration, supply chain planning, supplier scheduling, inspection of goods, claim processing and commission calculation.
- **Financial management:** General ledger, cash management, accounts payable, accounts receivable, fixed assets.
- **Project management:** Billing, time and expense, performance units, activity management.
- **Human resource management:** Human resources, payroll, training, time and attendance, roistering, benefits.



So, ERP can be describes to integrate all departments and functions across a company onto a single computer system that can serve all those different departments' particular needs. Hence, it is extremely important to know how to use effectively Enterprise Resource Planning for a success implementation. In order for Enterprise Resource Planning system to succeed, it must be capable of successfully integrating manufacturing with the other processes of a company. Besides that, Enterprise Resource Planning is not the cure to all the problems a business will face. A number of advantages and disadvantages exists to this technology, and those who know this will be the most likely to succeed.

By the implementation of Enterprise Resource Planning, it comes up with a number of advantages that helps to solve a number of problems that have plagued large organizations in the past and used to integrate the many processes of a company or

organization. Scalability is also an advantage, like Enterprise Resource Planning also helps to improve the production levels and to control costs more efficiently, and this enabled us to control the whole enterprise more efficiently.

7.3.3 ERP Implementation

Enterprise Resource Planning (ERP) is the process of integrating all the business functions and processes in an organization to achieve numerous benefits. First, a single point of data entry helps to reduce data redundancy while saving employee's time in entering data, thereby reducing labor and overhead costs. Second, the centralization of information, decision-making, and control leads to increases in efficiencies of operations and productivity, as well as coordination between departments, divisions, regions, and even countries. This is especially true for multinational corporations (MNC), in which global integration could result in better communications and coordination around the world. The global sourcing and distribution of parts and services could also provide appropriate benchmarks for operations around the world. Third, the sharing of a centralized database provides business managers with accurate and up-to-date information to make well informed business decisions. Further, it reduces data redundancy while improving data integrity at the same time. Fourth, functional integration will consolidate all sorts of data, such as financial, manufacturing, and sales, to take advantage of bulk discounts. ERP is especially important for companies who are "intimately connected" to their vendors and customers, and who used electronic data interchange (EDI) to process sales transactions electronically. Therefore, the implementation of ERP is exceptionally beneficial to businesses such as manufacturing plants that mass-produce products with little changes. Nevertheless, the revolutionary and innovative ERP software system quickly expands into other business areas such as finance and retailing. ERP also provides companies with a competitive advantage over their competitors.

But despite these several benefits, there are also certain challenges faced by Enterprise Resource Planning (ERP), especially during the implementation phase. Some of the challenges faced during the implementation of an ERP system are explained in the following sections.

Typically Enterprise Resource Planning (ERP) systems are very costly, take a lot of time to implement and have a risk associated with implementation, and also affect the job profiles of many employees. Thus the three major dimensions involved are money, time and people involvement. In addition, there is also a requirement to re-engineer existing business practices to match the needs of the new ERP system.



The following steps depicts several activities that must be performed before implementing an Enterprise Resource Planning (ERP) system.

Step 1: Managers must conduct a feasibility study of the current situation to assess the organization's needs by analyzing the availability of hardware, software, databases, and in-house computer expertise, and make the decision to implement ERP where integration is essential. They must also set goals for improvement and establish objectives for the implementation, and calculate the break-even points and benefits to be received from this expensive IT investment.

Step 2: The second major activity involves educating and recruiting end users to be involved throughout the implementation process.

Step 3: Managers form a project team or steering committee that consists of experts from all functional areas to lead the project.

Step 4: After a decision is made to implement ERP, a team of system consultants will be hired to evaluate the appropriateness of implementing an ERP system, and to help select the best enterprise software provider and the best approach to implementing ERP. In most situations, the consultant team also recommends the modules that are best suited to the company's operations (manufacturing, financial, human resources, logistics, forecasting, etc.), system configurations, and Business-to-Business applications such as supply-chain management, customer relationship management, e-procurement, and e-marketplace.

Step 5: Adequate employee and manager training must be provided to all business, stakeholders, including managers, end users, customers, and vendors, before the system is implemented. Such training is usually customized and can be provided by either internal or outside trainers.

Step 6: The system installation process will address issues such as software configuration, hardware acquisition, and software testing.

Step 7: Data and information in the databases must be converted to the format used in the new ERP system and servers and networks need to be upgraded. A post implementation review is recommended to ensure that all business objectives established during the planning phase are achieved. Needed modifications are tackled during this phase too.

Did You Know?

The Gartner Group first used the acronym ERP in the 1990s to include the capabilities of material requirements planning (MRP), and the later manufacturing resource planning (MRP II), as well as computer-integrated manufacturing.

Issues Faced while Implementing an ERP

Although issues faced while implementing an Enterprise Resource Planning (ERP) are numerous, but this report classifies them majorly into selection related issues, technical issues, psychological issues, organizational change related issues and time and cost related problems.

Selecting an Appropriate ERP. The first and foremost challenge faced by many organizations is deciding what sort of an ERP system they should select to implement. The managers must decide on the size, type and scope of the ERP system they actually require and how to choose the best solution amongst the existing hundreds of systems in the market. This selection problem arises for all businesses without exception and should be considered as seriously as possible for the reason that ERP system choice defines a company's strategy for at least the following 6 to 10 years and, no doubt, has a major impact on the future success of the entire business.

To decide on the implementation of a successful ERP program, the managers should have an in-depth understanding of the organization's current business processes, organizational structure, culture, work environment and financial and economic strength.

Due to enormous impact on the competitive advantage of the company, top management must consider the strategic implications of implementing an ERP solution keeping in mind the size of the company and the modules installed. Management must ponder about several topics like:-

- Does the ERP system strengthen the company's competitive position?
- How does ERP affect the organizational structure and the culture?
- What is the scope of the ERP implementation — only a few functional units or the entire organization?
- Are there any alternatives that meet the company's needs better than an ERP system?
- If it is a multinational corporation, the management should be concerned about whether it would be better to roll the system out globally or restrict it to certain regional units?

Only when all these points have been taken care of, can an ERP system be selected for further implementation.

Technical Issues. Once the appropriate ERP is selected, the arduous task of implementation has only begun. The next part of implementation issues are related to the technical aspects of the project – both hardware and software. These issues include the existing servers and workstations to be updated and new and modern ones to be ordered, purchased, and replaced. The internal network also has to be analyzed and modernized if required; the speed and bandwidth of the existing Internet access should be taken into consideration, along with possible technical concerns about the mobile devices being used.

If these questions are underestimated, they can dramatically impact the overall result of the project and easily result in slow performance in the first few weeks, or in some cases months of ERP implementation hence resulting in a slackening of the existing pace of business.

However the situation has been changed during the last few years, and plenty of software-as-a-service (SaaS) applications that have shown up on the market now allow the cost and headache of hardware problems to be minimized.

More specifically, ERP systems need a Graphical User Interface at the front end, and are based on a client-server technology. They require the ability to access and share data across all applications across different platforms. Some servers and equipment might have a need to be custom built, and that can also cause a time lag in ERP implementation.

In short, it can be said that the unique hardware and software needs of an ERP system, along with the continued use of pre existing applications in an organization can prove to be tricky and are a major consideration while implementing an ERP.

Data Quality and Consistency Issues. This issue is common in companies that are implementing ERP for the first time and transferring their legacy data into the

new system from Excel spreadsheets, manual records, or old disparate applications. Basically, the question is that old data that have been used and stored for years can for many reasons appear approximate or even incorrect in the new ERP system.

Integration of data from other older systems with the new ERP system is a major concern while implementing the system. A particular company might have accounting and finance systems operating on different mainframes (say IBM 370 architecture), MRP systems on a high end VAX, and a logistics system on an AS 400. The legacy systems of this company might be coded in COBOL. Thus, the implementation of a new ERP system for such a company needs to be done very carefully and requires technical judgement for the implementation of this new system.

People Related Psychological Issues

This is the most difficult type of issue to resolve. These are the questions and issues that originate from the aspect of human nature that never accepts any change without seeing the visible advantages of it.

People-related issues such as corporate philosophy and leadership style can play an important role in the ERP implementation process. Active top management support and commitment are essential to the success of any system implementation. Frequently, executive councils and steering committees consisting of top managers are developed to plan and manage the IT initiatives.

Employees can be quite wary of any kind of change in the business processes, particularly during periods of economic downturn. Ill-trained employees who fight the changes in the business process tend to be poor performers. Therefore, to increase the chance of a successful ERP implementation and to reduce users' resistance to change, employees, especially those who are very knowledgeable with the operations, must be involved in all stages of the implementation process. Employees must also be educated about the ERP installation. Such educational endeavors should include a concise introduction to the basic concepts and architecture of ERP systems, including actual screen shots of the function modules. During these training sessions, it is important to discuss the managerial issues involved and to build a basic understanding of the integration concepts prior to the actual installation of the ERP system. Further, any Business-to-Business initiatives, reengineering projects, alliances, and the introduction of new technologies should also be addressed.

Project managers must take charge of the implementation process at all times. They must oversee the reengineering of the key business processes, reassign job responsibilities, restructure the organization's chart, and redefine work relationships. Further, they must also learn how to manage the software vendors and any outside consultants.

Employees working on an ERP implementation project put in long hours (as much as 20 hours per day) including seven-day weeks and even holidays. Even though the experience is valuable for their career growth, the stress of implementation coupled with regular job duties could decrease their morale rapidly. Leadership from upper management and support and caring acts of project leaders would certainly boost the morale of the team members. Other strategies, such as taking the employees on field trips, could help reduce the stress and improve the morale.

Organizational Changes

ERP implementation brings significant changes into a company's conventional business model and the day-to day practices it has been using for years or even decades.

ERP implementation requires organizations to reengineer their key business processes in fundamental ways, revamping old ways of conducting business, redefining job responsibilities, and restructuring the organization. For major multinational corporations (MNC), the ERP systems must be customized to address global issues where different countries have different ways of doing business, and to incorporate country-specific business practices pertaining to accounting, tax requirements, environmental regulations, human resources, manufacturing, and currency conversion into the integrated systems.

While integrating the information systems across various countries, three types of misfits (relating to data, process, and output) can occur due to incompatibilities between software functionality and organizational requirements as well as differences in cultural and regulatory environments. The unique context of each country in which an organization operates must be carefully included into the traditionally Western-biased business practices inherent in the ERP systems.

Implementation Cost and Time

Implementation Cost: Even though the price of prewritten software is cheap compared with in-house development, the total cost of implementation could be three to five times the purchase price of the software. The implementation costs would increase as the degree of customization increases. After training the selected employees, strategies such as bonus programs, company perks, salary increases, continual training and education, and appeals to company loyalty work to retain them. Other intangible strategies such as flexible work hours, telecommuting options, and opportunities to work with leading-edge technologies are also being used.

Implementation Time: ERP systems come in modular fashion and do not have to be implemented entirely at once. ERP packages are very general and need to be configured to a specific type of business and may follow a phase-in approach with one

module implemented at a time. Some of the most commonly installed modules are sales and distribution (SD), **materials management (MM)**, production and planning, (PP), and finance and controlling (FI) modules. The length of implementation is affected by the number of modules being implemented, the scope of the implementation, the extent of customization, and the number of interfaces with other applications. The more the number of units, the longer the implementation time. Further as the scope of implementation grows from a single business unit to multiple units spread out globally, the duration of implementation increases.

7.3.4 Benefits of Enterprise Resource Planning

Businesses employ enterprise resource planning (ERP) for various reasons, such as expanding, reducing costs, and improving operations. The benefits sought and realized between companies may differ; however, some are worth noting.

Keyword

Materials management is a core supply chain function and includes supply chain planning and supply chain execution capabilities.

Improves Accuracy and Productivity. Integrating and automating business processes eliminates redundancies and improves accuracy and productivity. In addition, departments with interconnected processes can synchronize work to achieve faster and better outcomes.

Improves Reporting. Some businesses benefit from enhanced real-time data reporting from a single source system. Accurate and complete reporting help companies adequately plan, budget, forecast, and communicate the state of operations to the organization and interested parties, such as shareholders.

Increases Efficiency. ERPs allow businesses to quickly access needed information for clients, vendors, and business partners. This contributes to improved customer and employee satisfaction, quicker response rates, and increased accuracy rates. In addition, associated costs often decrease as the company operates more efficiently.

Increases Collaboration. Departments are better able to collaborate and share knowledge; a newly synergized workforce can improve productivity and employee satisfaction as employees are better able to see how each functional group contributes to

the mission and vision of the company. Also, menial and manual tasks are eliminated, allowing employees to allocate their time to more meaningful work.

7.4 CLOUD COMPUTING AND ITS ROLE IN E-BUSINESS

Cloud computing plays a fundamental role in the evolution and expansion of E-business operations. It represents a paradigm shift in how businesses manage, store, and access data and applications. At its core, cloud computing involves the delivery of computing services, including servers, storage, databases, networking, analytics, and software, over the internet. This allows businesses to leverage scalable and flexible resources without the need for physical infrastructure on-site.

One of the key advantages of cloud computing in E-business is scalability. Cloud services offer the ability to quickly scale up or down based on demand. This is particularly crucial for E-businesses, as traffic and resource requirements can fluctuate significantly, especially during promotional events or peak shopping seasons. The cloud allows businesses to add or reduce computing resources in real-time, ensuring optimal performance and cost-effectiveness.

Moreover, cloud computing enhances accessibility and flexibility in E-business operations. It enables employees to access critical business applications and data from anywhere with an internet connection. This is especially valuable for businesses that employ remote or distributed teams. Cloud-based applications and storage solutions allow for seamless collaboration, enabling teams to work on projects and access information in real-time, regardless of their physical location.

Security and data protection are paramount concerns for E-businesses, and cloud computing offers robust solutions in this regard. Reputable cloud service providers invest heavily in security measures, including data encryption, firewalls, access controls, and regular security audits. This ensures that sensitive customer information and business data are protected from unauthorized access or breaches. Additionally, cloud providers often have redundancy and backup measures in place to safeguard against data loss.

Cost-effectiveness is another significant benefit of cloud computing for E-businesses. Traditional on-premises IT infrastructure requires substantial capital investments in hardware, maintenance, and physical space. With cloud computing, businesses can shift from a capital expenditure (CapEx) model to an operational expenditure (OpEx) model. They pay for the resources they use on a subscription or pay-as-you-go basis, eliminating the need for large upfront investments.

Furthermore, cloud computing empowers E-businesses to implement advanced technologies and capabilities that might otherwise be cost-prohibitive or complex to manage in-house. This includes leveraging big data analytics, machine learning, artificial intelligence, and Internet of Things (IoT) applications. Cloud providers offer these technologies as services, enabling businesses to tap into cutting-edge solutions without the need for specialized expertise or infrastructure.

Disaster recovery and business continuity planning are critical considerations for E-businesses. Cloud computing provides a robust solution in this area by offering offsite data storage and backup solutions. In the event of a hardware failure, natural disaster, or other unforeseen events, businesses can quickly recover their data and applications from the cloud, minimizing downtime and ensuring continuity of operations.

Lastly, cloud computing fosters innovation and agility in E-business operations. It allows businesses to rapidly test and deploy new applications, services, and features. This agility is essential in the fast-paced and ever-evolving digital landscape, enabling businesses to respond quickly to market changes and customer demands.

7.4.1 Cloud-Based E-Commerce Platforms

Cloud-based E-commerce platforms have become instrumental in revolutionizing online retail operations. These platforms leverage cloud computing technology to offer online retailers a flexible and scalable infrastructure for managing their digital storefronts. Here are key aspects of how cloud-based E-commerce platforms enable online retail success:

- **Scalability:** One of the most significant advantages of cloud-based E-commerce platforms is their scalability. These platforms allow retailers to easily scale their operations up or down based on demand. During peak shopping seasons or promotional events, retailers can quickly allocate additional resources to handle increased website traffic and transactions. Conversely, during slower periods, they can reduce resources to optimize costs. This agility ensures that retailers can provide a seamless shopping experience regardless of fluctuations in customer traffic.
- **Reduced IT Infrastructure Costs:** Cloud-based E-commerce platforms eliminate the need for retailers to invest in and maintain their own physical IT infrastructure. Traditional on-premises solutions require significant capital expenditure on servers, storage, and network equipment. In contrast, cloud-based platforms operate on a pay-as-you-go model, allowing retailers to pay only for the resources they use. This shift from a capital expenditure (CapEx) to an operational expenditure (OpEx) model can result in substantial cost savings.

- **Global Reach and Accessibility:** Cloud-based platforms enable online retailers to reach a global customer base. The cloud's distributed nature allows for content delivery networks (CDNs) to efficiently serve content to users around the world, reducing latency and ensuring fast page load times. Additionally, cloud-based solutions facilitate seamless access to E-commerce sites from various devices, including desktops, laptops, tablets, and mobile phones, enhancing the accessibility of online stores.
- **High Availability and Reliability:** Cloud providers typically offer robust service level agreements (SLAs) that guarantee high availability and reliability. These platforms are designed with redundancy and failover mechanisms, ensuring that E-commerce sites remain accessible even in the event of hardware failures or other unforeseen incidents. This high level of availability is crucial for online retailers, as downtime can result in lost sales and damage to the customer experience.
- **Security and Compliance:** Reputable cloud providers invest heavily in security measures to protect E-commerce platforms and customer data. This includes data encryption, firewalls, access controls, and regular security audits. Additionally, cloud providers often comply with industry-specific regulatory requirements, providing retailers with a secure and compliant hosting environment. This allows online retailers to focus on their core business activities without the burden of managing complex security measures.
- **Rapid Deployment and Updates:** Cloud-based E-commerce platforms offer rapid deployment capabilities, allowing retailers to launch their online stores quickly. Additionally, updates and enhancements to the platform are typically managed by the cloud provider, ensuring that retailers have access to the latest features and security patches without the need for manual intervention.
- **Advanced Analytics and Insights:** Cloud-based E-commerce platforms often include built-in analytics and reporting tools. These provide retailers with valuable

Remember

Cloud-based E-commerce platforms are integral to the success of online retailers. They offer scalability, cost-effectiveness, global reach, high availability, security, and advanced analytics, providing retailers with a powerful infrastructure to effectively manage their digital storefronts.

insights into customer behavior, sales performance, and website traffic. By leveraging these analytics, retailers can make data-driven decisions to optimize their E-commerce operations, improve the customer experience, and drive business growth.

By leveraging the benefits of cloud-based E-commerce platforms, retailers can stay competitive in the dynamic and rapidly evolving world of online commerce.

7.4.2 Data Security and Compliance in Cloud-Based E-Business

Data security and compliance in cloud-based E-business are critical components of maintaining trust and integrity in online transactions. As E-businesses increasingly rely on cloud computing to store, process, and transmit sensitive information, ensuring the protection of data and adherence to regulatory standards is paramount.

Data security encompasses a range of measures designed to safeguard sensitive information from unauthorized access, disclosure, or alteration. In the context of cloud-based E-business, this involves implementing robust encryption protocols to protect data both in transit and at rest. Secure Socket Layer (SSL) or Transport Layer Security (TLS) protocols are commonly used to encrypt data transmitted between a user's browser and the E-business server. Additionally, data stored in the cloud is typically encrypted using advanced encryption algorithms, ensuring that even if unauthorized access occurs, the data remains unintelligible.

Access controls play a crucial role in data security within cloud-based E-business environments. This involves employing strict authentication mechanisms to verify the identities of users and restrict access to authorized personnel only. Multi-factor authentication, strong passwords, and biometric authentication methods are examples of tools used to enhance access security. Role-based access control (RBAC) is another effective strategy, allowing administrators to assign specific privileges based on job roles, ensuring that employees only have access to the data and systems necessary for their tasks.

Compliance with regulatory standards is equally vital, especially in industries that handle sensitive customer information, such as healthcare (HIPAA), finance (GLBA), and personal data (GDPR). Cloud-based E-businesses must ensure that their data handling practices align with the specific requirements outlined in these regulations. This includes obtaining necessary certifications and regularly auditing and reporting on compliance measures.

One key aspect of data security and compliance in cloud-based E-business is the implementation of robust identity and access management (IAM) solutions. IAM systems facilitate the management of user identities, access privileges, and authentication

mechanisms. This ensures that only authorized individuals within the organization have access to sensitive data, reducing the risk of insider threats or accidental data exposure.

Furthermore, data encryption and tokenization techniques are employed to protect sensitive information within the cloud. Encryption converts data into a code that can only be decrypted by authorized parties possessing the corresponding encryption keys. Tokenization, on the other hand, replaces sensitive data with a non-sensitive placeholder (token), which retains no inherent value. These techniques provide an additional layer of security, making it extremely challenging for unauthorized parties to decipher or misuse sensitive information.

Regular security audits and vulnerability assessments are crucial for identifying and addressing potential security weaknesses in cloud-based E-business systems. Penetration testing, security scanning, and code reviews are common methods used to proactively detect vulnerabilities. Additionally, continuous monitoring of network traffic and access logs enables early detection of any suspicious or unauthorized activities.

Lastly, it's important for cloud-based E-businesses to establish a robust incident response and data breach notification plan. This outlines the steps to take in the event of a security incident, including how to investigate, contain, and mitigate the impact. Prompt notification of affected parties and relevant authorities is also a critical aspect of compliance with data protection regulations.

7.4.3 Cloud-Based Business Intelligence and Analytics for E-Business

Cloud-based Business Intelligence (BI) and analytics represent a transformative approach to extracting valuable insights from data for E-business operations. This technology leverages cloud computing infrastructure to store, process, and analyze large volumes of data, providing businesses with a powerful toolset for informed decision-making.

One of the primary advantages of cloud-based BI and analytics for E-business is its scalability. Cloud platforms offer virtually unlimited computing resources, allowing businesses to process and analyze massive datasets without the limitations of on-premises infrastructure. This scalability is particularly crucial in E-business, where data volumes can grow rapidly as online transactions, customer interactions, and website traffic increase. As E-businesses expand, cloud-based BI ensures that they can effectively handle the growing complexity of data analysis.

Moreover, cloud-based BI and analytics platforms offer enhanced accessibility and flexibility. By leveraging the cloud, businesses can provide authorized users with secure access to analytics tools and dashboards from anywhere with an internet connection. This promotes collaborative decision-making among remote or distributed teams,

enabling stakeholders to access critical insights in real-time. Additionally, cloud-based BI solutions often offer intuitive, web-based interfaces that require minimal training, making it easier for a broad range of users to leverage the power of analytics.

The cloud's ability to seamlessly integrate with various data sources is another key advantage. Cloud-based BI platforms can connect to a wide array of data repositories, including databases, data warehouses, streaming data sources, and even external APIs. This allows businesses to aggregate data from multiple channels, providing a comprehensive view of their E-business operations. The integration capabilities of cloud-based BI empower businesses to correlate and analyze diverse datasets, leading to more comprehensive and accurate insights.

Data processing and analytics in the cloud benefit from advanced technologies such as parallel processing, distributed computing, and in-memory analytics. These capabilities allow for faster data processing and querying, enabling businesses to perform complex analyses in near real-time. This agility is crucial for E-businesses seeking to respond quickly to market changes, customer behavior, and emerging trends. With cloud-based BI, businesses can make timely decisions that impact their online operations.

Furthermore, cloud-based BI platforms often include advanced analytics capabilities, such as machine learning, predictive modeling, and natural language processing. These features enable businesses to uncover patterns, make predictions, and gain deeper insights from their data. For E-businesses, this means the ability to anticipate customer behavior, optimize marketing strategies, and enhance user experiences.

In terms of cost-effectiveness, cloud-based BI and analytics offer a distinct advantage. Traditional on-premises BI solutions require significant investments in hardware, software licenses, and IT resources. With cloud-based BI, businesses can adopt a pay-as-you-go model, paying only for the resources and services they use. This eliminates the need for large upfront capital expenditures and allows for more efficient allocation of budget towards analytics initiatives.

7.4.4 Cost-Benefit Analysis of Cloud Adoption in E-Business

The cost-benefit analysis of cloud adoption in E-business is a critical evaluation process that assesses the Return on Investment (ROI) and Total Cost of Ownership (TCO) associated with migrating to and operating cloud-based solutions. This analysis helps E-businesses make informed decisions about whether to embrace cloud technology by weighing the potential advantages against the financial investments and operational implications.

Starting with the benefits, cloud adoption in E-business offers several advantages. One of the primary benefits is cost savings. Cloud solutions typically operate on a

subscription-based model, eliminating the need for significant upfront capital expenditures on hardware and infrastructure. Businesses pay for cloud services as they use them, allowing for more predictable budgeting and resource allocation. Additionally, the cloud's scalability ensures that E-businesses can adjust their resources according to fluctuating demands, optimizing cost-efficiency.

Scalability and flexibility are key drivers of ROI in cloud adoption for E-business. Cloud platforms offer the ability to quickly scale up or down based on traffic, transaction volume, or seasonal variations. This agility ensures that E-businesses can efficiently meet customer demands without overprovisioning resources, ultimately leading to improved ROI. The rapid deployment of cloud-based services also accelerates time-to-market for new products or features, contributing further to ROI.

Moreover, the cloud's accessibility and availability enhance ROI by ensuring uninterrupted E-business operations. Cloud providers typically guarantee high uptime rates through **Service Level Agreements (SLAs)** and maintain redundant infrastructure to minimize downtime. This ensures that E-business websites and applications remain accessible to customers, reducing potential revenue loss due to service interruptions.

Advanced capabilities and innovation offered by cloud-based solutions can significantly impact ROI for E-businesses. Cloud platforms provide access to cutting-edge technologies such as artificial intelligence, machine learning, and big data analytics. These tools empower E-businesses to analyze customer data, predict trends, personalize experiences, and optimize marketing strategies. By leveraging these capabilities, E-businesses can gain a competitive edge and increase ROI through improved customer satisfaction and higher sales conversion rates.

On the other side of the analysis, the Total Cost of Ownership (TCO) in cloud adoption encompasses various components. While cloud services often eliminate the upfront capital expenditure associated with on-premises infrastructure, businesses must consider ongoing operational costs. These include subscription fees, data transfer costs, and any additional charges for specialized services.

Keyword

Service-level agreement (SLA) is a contract between a service provider and its customers that documents what services the provider will furnish and defines the service standards the provider is obligated to meet.

Furthermore, E-businesses should assess the cost of migrating existing systems and data to the cloud. Migration expenses can vary depending on the complexity of the migration, the volume of data, and the need for custom development. However, it's important to note that these costs are typically incurred only once during the migration process.

Security and compliance-related expenses are another aspect of TCO. Cloud providers invest in robust security measures, but businesses may need to invest in additional security tools, training, and compliance efforts to meet industry-specific or regulatory requirements.

Additionally, E-businesses should account for ongoing management and monitoring costs. While cloud providers handle infrastructure maintenance, businesses are responsible for managing their cloud environments, ensuring proper resource utilization, and optimizing costs. Cloud cost management tools and practices are essential for controlling TCO.

7.4.5 Disaster Recovery and Business Continuity in Cloud-Based E-Business

Disaster recovery and business continuity in cloud-based E-business represent critical strategies for safeguarding online operations against unforeseen events or disruptions. These practices aim to mitigate downtime, protect data integrity, and ensure the continued availability of E-business services in the event of disasters, whether they be natural disasters, cyberattacks, hardware failures, or other unexpected incidents.

Disaster recovery involves the processes and technologies employed to quickly recover and restore E-business operations following a disruptive event. In cloud-based E-business, this is facilitated through the implementation of backup and recovery solutions. Cloud providers typically offer robust backup services that automatically replicate data to geographically redundant locations. This ensures that in the event of a disaster or data loss incident, businesses can swiftly recover their critical systems and data.

Furthermore, cloud-based disaster recovery solutions offer high levels of redundancy and failover capabilities. This means that if a primary data center or server experiences an outage, E-business operations can seamlessly failover to a secondary, geographically dispersed data center. This redundancy ensures that there is minimal to no disruption in service availability, providing customers with uninterrupted access to E-business platforms and services.

Business continuity, on the other hand, encompasses a broader set of measures that enable E-businesses to maintain essential functions and services during and after

a disruptive event. This involves not only the restoration of technical systems but also the planning and coordination of people, processes, and resources. In cloud-based E-business, business continuity planning includes developing detailed recovery procedures, establishing communication protocols, and defining roles and responsibilities for key personnel.

One significant advantage of cloud-based E-business in disaster recovery and business continuity is the offsite storage and redundancy offered by cloud providers. By utilizing cloud infrastructure, businesses can replicate their critical data and applications to multiple data centers across different geographical regions. This redundancy ensures that even in the event of a regional disaster, such as a natural calamity, data and operations can be quickly restored from unaffected locations.

Moreover, cloud-based disaster recovery and business continuity solutions often employ automation and orchestration capabilities. This means that recovery processes can be pre-defined and automated, enabling rapid response and recovery times. Automated failover and failback procedures ensure that E-business services are restored in a streamlined and efficient manner, reducing downtime and minimizing the impact on customers.

In terms of data protection, cloud-based disaster recovery solutions offer robust encryption and security measures. Data in transit and at rest is typically encrypted to safeguard it from unauthorized access. Additionally, cloud providers implement strict access controls and authentication mechanisms to ensure that only authorized personnel can initiate and manage recovery processes.

Regular testing and drills are crucial components of effective disaster recovery and business continuity planning. Cloud-based E-businesses should conduct simulated disaster scenarios to validate the effectiveness of their recovery procedures. This testing ensures that personnel are familiar with their roles and responsibilities during a crisis and that recovery processes function as intended.

CASE STUDY

ENTERPRISE RESOURCE PLANNING (ERP) IMPLEMENTATION AT NESTLE

By October 1997, a group of 50 top business executives and 10 senior IT professionals had been congregated to device the SAP project to come up with a set of best practices that would become common work procedures for every Nestle division which are manufacturing, purchasing, accounting and sales by adopted new pan-Nestle' way.

Firstly, in order to implement the technical side, a common structure across the company, the vanilla would be code 1234 in every division. The SAP system customize around the uniform affair procedure. The group decided that they are not to use SAP in supply chain because the ERP supply chain module adopted was brand-new and therefore risky. Furthermore, Manugistics supply chain module followed all the SAP standards and could easily be integrated.

Nestle implement five SAP modules which are purchasing, financials, sales and distribution, accounts payable and accounts receivable and the Manugistics supply chain module which deployed across every Nestle division, by March 1998. Besides that, the purchasing company for confections pursues the identical best practices and information as the purchasing company for beverages.



To beat the Y2K deadline, the best project group had overlooked the integration points between the modules. All purchasing departments now used general names and systems, and followed a general process, but their system was not integrated with the financial, planning or sales groups. A salesperson may have given a valuable

customer a discount rate and entered it into the new system, however the accounts receivable department wouldn't know about it. Hence, it would appear to the accounts receivable operative as though the invoice were only partially paid as customer paid the discounted rate. The project team had essentially replaced divisional silos with process silos to unify the company's separate brands.

The time constraints necessitated by Y2K had put too much pressure on the people in charge of executing the changes. The project team had lost the big picture of how the various components would work together. Hence, the existing modules had to be integrated and the team still needed to roll out another two more SAP modules which are sales and distribution on the domestic side, and accounts receivable as well as a new module for the supply chain. Since Jeri Dunn, vice president and CIO of Nestle USA, had rejected the SAP supply chain module two years before, therefore, it leads to decision to replace all but a couple of parts of the Manugistics system with APO.



The last state of design was completed on April 2001 and giving the project teams a highly detailed road map to follow. One month later, Tom James came on board as director of process change for the Best project with the responsibility as a connection between the divisions and the project team. He was so surprised by the poor relationship between divisions and project team. They conducted surveys that were involved of how the workers affected by the new systems were dealing with the changes and the feedback was the users were not prepared to make process alter.

ERP projects are famous and need a long period and a lot of money to done it. Dunn maintains the slow and steady wins the race. Nestle United State accomplishes

the significant ROI with the greatest bulk of savings from better demand forecasting.

The old process included a sales man giving a number to the those men and demand planner do not know what the hell they are talking about then the factory changes the number again.

With SAP in place, general databases and business processes lead to more trustworthy demand forecasts for the various Nestle products. Furthermore, because all of Nestle United State also using the same data then Nestle can forecast down to the distribution center level to diminish the inventory and the redistribution expenses that occur when too much of a product is sent to one place and not enough to another. The supply chain improvements accounted for a major chunk of the \$325 million has saved from SAP.

SUMMARY

- Integrating technology into business processes is the strategic incorporation of digital tools, systems, and applications to streamline operations, enhance productivity, and drive efficiency within an organization.
- Supply Chain Management (SCM) in the context of E-business refers to the strategic coordination and integration of various business processes involved in the production, distribution, and delivery of goods and services through electronic channels.
- E-business framework consists of the role it plays in all the functions of a supply chain like marketing, sales, research and development, logistics etc.
- Digital transformation in Supply Chain Management (SCM) involves the strategic adoption and integration of digital technologies, including E-business solutions, to revolutionize the way businesses plan, execute, and optimize their supply chain processes.
- E-business strategies for demand forecasting and inventory optimization encompass a set of digital techniques and methodologies employed by businesses to enhance their ability to accurately predict customer demand and efficiently manage their inventory levels.
- Customer relationship management has to do with any methods, policies, and procedures that are utilized by a company to provide a high level of customer care to existing clientele, orient new customers to the products and services offered by the business, and encourage general customer retention.
- E-business impact the strategic integration of digital technologies and online channels to enhance the management and interaction with customers.
- Evaluating the impact of Customer Relationship Management (CRM) systems on E-business performance metrics involves assessing how the integration of CRM technology influences key indicators of online business success.
- Enterprise resource planning (ERP) is a type of software designed to help a business plan with the use of its assets and resources. An ERP is an integrated system that allows different departments to exchange data and information.
- Enterprise Resource Planning software offers you many modules which are tightly integrated with each other. The modules handle all functions related to engineering, Sales, planning, materials, manufacturing, finance, HR etc.
- Enterprise Resource Planning (ERP) is the process of integrating all the business functions and processes in an organization to achieve numerous benefits. First, a single point of data entry helps to reduce data redundancy while saving employee's time in entering data, thereby reducing labor and overhead costs.

MULTIPLE CHOICE QUESTIONS

1. **What is the primary goal of integrating technology into business processes?**
 - a. To improve efficiency and effectiveness
 - b. To reduce the need for skilled employees
 - c. To eliminate the need for business processes
 - d. To increase paperwork
2. **How does cloud computing contribute to integrating technology into business processes?**
 - a. By slowing down data processing
 - b. By providing scalable and flexible resources
 - c. By reducing accessibility to critical data
 - d. By increasing hardware costs
3. **What is a key advantage of using Business Intelligence (BI) in the integration of technology?**
 - a. Decreasing data security
 - b. Slowing down data analysis
 - c. Limiting accessibility to data
 - d. Enhancing decision-making with insights from data
4. **What is a crucial aspect of data security in cloud-based E-business?**
 - a. Ignoring security audits and vulnerability assessments
 - b. Allowing unauthorized access to sensitive information
 - c. Implementing robust encryption and access controls
 - d. Storing data in an unencrypted format
5. **How does disaster recovery differ from business continuity in cloud-based E-business?**
 - a. They are the same and can be used interchangeably
 - b. Disaster recovery focuses on restoring operations after a disruptive event, while business continuity involves maintaining essential functions during and after such an event
 - c. Disaster recovery only involves data backup, while business continuity deals with overall operations
 - d. Disaster recovery is not relevant in cloud-based E-business

REVIEW QUESTIONS

1. What is digital transformation in supply chain management?
2. How does blockchain technology contribute to supply chain transparency and traceability?
3. What types of information are typically managed in a customer relationship management System?
4. How can we evaluate the impact of CRM systems on E-business performance metrics?
5. Which types of issues faced while implementing an ERP system?
6. What are the key considerations for Data Security and Compliance in Cloud-Based E-Business?

Answer to Multiple Choice Questions

1. (a) 2. (b) 3. (d) 4. (c) 5. (b)

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Strategic e-Business Management

With the increasing use of technology and the internet, e-business has become an integral part of modern business operations. It involves conducting business activities online, such as selling products or services, managing customer relationships, and performing financial transactions. Effective e-business management requires a strategic approach to ensure that the organization is able to capitalize on the advantages offered by the digital world. It involves developing and implementing strategies to attract and retain online customers, optimizing website design and functionality, and utilizing various online marketing channels to enhance brand visibility. One of the key aspects of e-business management is understanding and utilizing data analytics. With the vast amount of data available from online activities, businesses can gain valuable insights into customer behavior, preferences, and trends. This data can be used to personalize marketing efforts, improve customer service, and make informed business decisions. Another important aspect of e-business management is ensuring the security of online transactions and customer information. Cybersecurity is a critical concern for e-businesses, as any breach of data can have severe consequences for both the organization and its customers. Therefore, implementing robust security measures and regularly updating them is essential for successful e-business management.

Martyna Szpakowska with expertise in the Department of Business Administration, Martyna Szpakowska holds the position of Professor. Within this role, his focus lies on software engineering methodologies and procedure models, highlighting a dedication to project management methods as well. Additionally, he engages in numerous seminars, workshops, and conferences where he presents papers or delivers keynote addresses while adeptly assuming the responsibility of chairs for technical sessions. Martyna Szpakowska has also authored several books showcasing his knowledge and insights.