The role of information technology in electronic commerce: case study AMAZON

دور تكنولوجيا المعلومات في التجارة الالكترونية دراسة حالة :امازون

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Abstract.

 - information technology has the power to develop the industry and transform how business is run and with the development of technology, e-commerce is attracting more attention from governments, business and individuals, which is one of the major reasons for amazon quick, The study involves assessment of the best Management Information Systems practices in place for Amazon throughout its value chain activities. Uniqueness of MIS is being highlighted in the report through assessment of technology, process and the systems that Amazon use right from the initiation of the end user with the website till the payment and delivery mode is being selected

Key words:

 information technology, electronic commerce, Amazon, businesses leading, decision making,

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الملخص:

تتمتع تكنولوجيا المعلومات بالقدرة على تطوير الصناعة وتحويل طريقة إدارة الأعمال ومع تطور التكنولوجيا اصبحت التجارة الإلكترونية تجذب مزيدًا من الاهتمام من الحكومات والشركات والأفراد ، وهو أحد الأسباب الرئيسية لسرعة الأمازون ، وتتضمن الدراسة تقييم أفضل ممارسات نظم المعلومات الإدارية المعمول بها لأمازون طوال أنشطة سلسلة القيمة الخاصة بها. يتم تسليط الضوء على تفرد نظم المعلومات الإدارية في التقرير من خلال تقييم التكنولوجيا والعملية والأنظمة التي تستخدمها أمازون منذ بدء المستخدم النهائي مع موقع الويب حتى يتم اختيار وضع الدفع والتسليم.

الكلمات الدالة: تكنولوجيا المعلومات, التجارة الالكترونية, امازون, ريادة الاعمال, اتخاذ القرار.

1. Introduction

The expansion of globalization has led to the emergence of the digital economy. New concepts have emerged, such as electronic business (e-Business) or electronic commerce (e-Commerce), as the electronic alternative to the traditional way of doing business or trade. Operating in a highly competitive economy based on information technologies and telecommunication, required firms to adopt new business models. Under these conditions, e-commerce became a reality in today's business world and the prerogative of obtaining success in the market for any company. E-commerce has known during the last decades a significant growth, becoming more and more important for the companies worldwide. Nowadays due to globalization, technology is evolving at a very fast speed, forcing all the companies to adopt new technologies. E-commerce plays and it will play a key role in the economy in the future, and

more and more companies will have to change their business strategies. The e-commerce industry contains important retailers, e.g. Amazon.com and eBay, information service companies, e.g. Google and Yahoo, online versions of traditional brick-and-mortar stores. In 2004 Amazon was on top in what online service meant with: 6 website servers, 32 million customers in 150 different countries, 900,000 associate programs linked with Amazon or having contents of Amazon. Because of his tremendous importance in the e-commerce industry, Amazon has the power to influence the entire industry, but it can also be influenced

Research Problem and Research Question:

This paper focuses on the retail business the introduction of E-commerce and the role of information technology as a critical success factor. IN this context, Amazon is analyzed as a representative company. The main research question therefore is formulated as "what's the role of information technology in order to reap the benefits of e-commerce and how Amazon is able to differentiate itself from its competitors?"

Hypothesis:

-Information technology is a medium or a tool for facilitating online transactions and the delivery of online goods and services within the twinkle of an eye

-Companies need to enhance the integration between e-commerce capability and information technology infrastructure in order to reap the benefits to E-commerce.

-More customers moved from traditional purchase to e-commerce because it is often faster and cheaper.

-Amazon for their e-commerce activities uses number of information systems in order to gain competitive advantage over its competitors.

The aim of the study:

The aim of the study is to determine the impact of information technology on e-commerce. The other objective of the study was to determine how traditional retail differs from e-commerce.

2. - E-commerce: As the term suggests, e-commerce refers to various online commercial activities focusing on commodity exchanges by electronic means, Internet in particular, by companies, factories, enterprises, industrial undertakings and consumers. A large number of well-known organizations and corporations also have their own definitions on e-commerce. For example, ISO defines e-commerce as: it is the general term for exchange of information among enterprise and between enterprise and customers; the Global Information Infrastructure Committee defines it as the economical activities using electrical communications, with which people can purchase products, advertise goods and settle. The following are definitions given by transnational corporations Intel, IBM and HP respectively. Intel: E-commerce electronic market electronic trade electronic service IBM: E-commerce information technology web business HP: E-commerce is to accomplish commercial business by electronic means. Since e-commerce is a brand new science, it is not at all surprising that there are various definitions about it. In addition, a premature uniform definition of e-commerce may slow the development of e-commerce. E-commerce shall be social, economic activities between social principal parts by taking advantages of computers and network.

2.1. - benefits of e- commerce:

The main benefit from the customers' point of view is significant increase and saves of time and eases access from anywhere in the globe   Customer can place a purchase order at any time. The main benefits of ecommerce for customers are as follows:
• Reduced transaction costs for participating exchange in a market
• Increased comfort - transactions can be made 24 hours a day, without requiring the physical interaction with the business organization.
• Time saving- Customer can buy or sell any product at any time with the help of internet

•Quick and continuous access to information Customer will have easier to access information check on different websites at the click of a button.

• Convenience-All the purchases and sales can be performed from the comfort sitting at home or working place or from the place a customer wants to.

• Switch to others companies-Customer can easily change the company at any time if the service of a company is not satisfactory.

• Customer can buy a product which is not available in the local or national market, which gives customer a wider range of access to product than before.

• A customer can put review comments about a product and can see what others are buying or see the review comments of other customers before making a final buy.

The main benefits of e-commerce from sellers' point of view is increasing revenue and reducing operation and maintenance costs through internet. These include as follows:

• Increases revenue.

• Reduces operation and maintenance costs.

• Raises customer loyalty and retention.

• Reduces transportation costs.

• Develops customer and supplier relationships.

• Improves speed of the process of selling.

• Improves internal and external communication and Develops the company image and brand.

2.2.- types of e-commerce:

Today companies are using different forms of e-commerce to offer their products and services online. E-commerce can be subdivided into many categories. Broadly, it is divided into four main categories. B2B, B2C, C2B, and C2C

-B2B (Business-to-Business): here companies will be doing business with each other. For example manufacturers are selling to distributors and wholesalers selling to retailers. Pricing is based on quantity of order and is often negotiable**.**

-B2C (Business-to-Consumer): In this case selling of goods or services to the general public typically through catalogs utilizing shopping cart software.

-C2B (Consumer-to-Business): In this case consumer posts his project with a set of budget online and concerned companies review that consumer's requirements and bid on the project. The consumer reviews the bids and selects the company that will complete the project. Elance- a company connects talented developers, designers, writers, marketers, support reps; administrators etc and provide platform and meeting ground to empower consumers around the world**.**

C2C(Consumer-to-Consumer) : There are number of online sites offering free classifieds, auctions, and forums for individuals to buy and sell. For example eBay's auction service is a great example of where person-to-person transactions take place every day since 1995. PayPal popular online payment systems through which people can send and receive money online with ease.

E-commerce- now days operate in all four of the major market segments- Business to Business, Business to Consumer, Consumer to Consumer and Consumer to Business. Recently, critical challenges remain to be overcome before e-commerce would become an asset for common people**.**

3. - Information technology:

Before we go any further and in order to understand the revolution that information technology has brought to our lives, it is very important to clarify and understand what the term information technology means. In 1995, information technology was defined as computer software and hardware solutions that provide support of

management, operations, and strategists in organizations Thong and Yap (1995) state that the goal of having information technology (with all computer applications like MRP/EDI, CAM/CAD) is increasing productively of cooperation. Two years later, Boar (1997) defines information technology as "those technologies engaged in the operation, collection, transport, retrieving, storage, access presentation, and transformation of information in all its forms…" Daft (1997) has written a simple definition of information technology. He stated that: "Information technology can be defined as the hardware, software, telecommunications, database management, and other information-processing technologies used to store, process, and deliver information.

Carter (1991) presented another definition. He wrote that information technology is: "...The use of modern technology to aid the capture processing, storage, and retrieval, and communication of information, whether in the form of numerical data, text, sound, or image."

Based on many definitions presented in the current literature and for the purpose of this research, the term information technology refers to the developed and the advanced technology which uses microprocessor-based machines: microcomputers, automated machines, telecommunication equipment to collect, process, store, generate, disseminate, rearrange and exploit of information.

3.1. - **information technology and competitive advantage**

Although the objective of any Information IT business unit is the enhancement of modern firm's performance - through the improvement of the quality of managerial decisions - in the absence of an adequate alignment between IT and Business objectives, the attainment of the firm's agility status is jeopardized, and consequently, the chances of achieving the IT-Business competitive advantage are reduced.

The strategic role of information systems involves using information technology to develop products, services, and capabilities that give a

company strategic advantages over the competitive forces it faces in the global marketplace

This creates strategic information systems, information systems that support or shape the competitive position and strategies of an enterprise. So a strategic information system can be any kind sentence of information system that helps an organization:

1) Gain a competitive advantage

2) Reduce a competitive disadvantage

3) Meet other strategic enterprise objectives

Information technology emerges as an essential asset of modern firms' competitive advantage, because it connects all business functions and supports managerial decision processes - both essential conditions for the attainment of the organization agility level. In any company, IT has a dominant effect on competitive advantages in either cost or differentiation. The technology also affects value activity themselves or allows companies to gain competitive advantage by utilizing changes in competitive scope. Porter (1996) stated; the IT is affecting competition in three fundamental ways:

-It changes industry structure and, in so doing, alters the rules of competition

-It creates competitive advantage by giving companies new way to outperform their rival

-It spawns whole new business, often from within a company's existing operations

In the last decade many scholars were trying to develop the idea of IT as a source of competitive advantage have been focusing on IT capabilities as a source of competitive advantage. Overview indicates on four different relationships:

1) IT has a direct and positive effect on firm performance/competitive advantage

2) IT has a direct and negative effect on firm performance/competitive advantage

3) There is no connection and no effect between IT and firm performance/competitive advantage

4) IT has a contingent effect on firm performance/competitive advantage

IT as a resource can contribute to improved growth and productivity. However, the question of whether IT can be a source of competitive advantage remains unresolved since they discovered that IT spending was not correlated with competitive advantage

IT capabilities have greater overall profitability (firm performance)

3.2. - Effects of Information Technology on Electronic Commerce

Information technology is vital for a modern firm's optimal performance today, as it aug-ments the firm's capability to coordinate business transactions within the firm, but also among firms such as between buyers and suppliers. In this context, Malone et al. (1987) identified three effects of information technology, to which Wigand (1996) added a fourth one. All four effects may lead to reduced transaction and coordination costs:

1) The communication effect- Advances in information technology allow for more information to be communicated in the same unit of time, thus reducing transaction costs

2) The electronic integration effect-A tighter electronic linkage between buyer and seller is enable

3) The electronic brokerage effect- An electronic marketplace where buyers and sellers come together to compare offerings

4)The electronic strategic networking effect- Information technology (including networks) enables the design and deliberate strategic deployment of linkages and networks among cooperating firms intended to achieve joint, strategic goals to gain competitive

Thus the $4 billion to $5 billion home shopping market that McKinsey and other consulting firms have predicted in the United States in 2003

will involve not new retail spending, but a switch of customers from shops and catalogues to computers and interactive television. An additional built-in dilemma here is that these new services not only need to cover their basic costs in terms of actual service provision, but they also need to be priced such that they can recover the cost of building the network that delivers them in the first place. In essence then, the entertainment that many expect to be beamed into people' s homes some day must not only replace the trip to the local video store, but it also must persuade customers to spend more on those pleasures than they are now. However, in the Florida video-on-demand market trials by Time ± Warner, customers were unwilling to allocate additional funds to their entertainment budget. It appears that this behavioural change will come in time, especially when completely new services are being offered and applications are possible that we still have not dreamed of and when users realize the added value achieved via these services and new applications. The same was true with other technologies in history such as the steam engine

4-Amazon:

Amazon became a public company in May of 1997 with an initial public offering of three million shares of common stock. The IPO provided growth funding to develop their distribution capabilities and website features. The company's investment activities were heavily scrutinized. Analysts were doubtful regarding the company's ability to produce a return on investment. Bezos explained the company's goals in his first letter to shareholders in 1997: Our goal remains to continue to solidify and extend our brand and customer base. This requires sustained investment in systems and infrastructure to support outstanding customer convenience, selection, and service while we grow

By 1998, Amazon was fast becoming one of the world's leading Internet start-ups. They conducted business with over one and half million customers, reaching both the United States and 160 countries

This outreach made them the third largest bookseller in the U.S. without the brick and mortar presence its competitors had outstanding success as an e-commerce bookseller influenced the development of new services, products and additional markets to enter. Amazon acquired the "Internet Movie Database" (IMDB) in April of 1998, purchasing their way into the online media market Bezos realized IMDB's capability to vertically integrate as an information asset. IMDB aligned with his vision of distributing media and entertainment products, made evident when he promoted movie sales acquisition   through it shortly after the two other acquisitions in 1998 eliminated potential competitors in the book e-commerce industry. "Book pages" and "Tele book" based in the United Kingdom and Germany were acquired for a total of $55 million. This decision was Amazons first transnational horizontal growth, adapting their business model to cultures that valued different books than their domestic consumers Information Systems utilized for internet activity

1.4.-information systems:

In 1995 Amazon used website system and order fulfillment system separately in order to improve security. By 1995 amazon has huge database running on Digital Alpha Servers. Amazon renovated the entire system in the year of 2000. Company spent $200 million on the New systems, these systems include analysis software from "Epiphany", logistics from "manugistics" and new DBMS from oracle For communication with supplies amazon seal deal with Exelon for business-to-business integration system. Amazon Web Service (AWS) and Simple Storage Service (SS) are the main system developed by amazon. Through this system amazon can maintain its vast number of products and millions of active customers
Amazon web service has become a global platform for individual to retailers to sell their products. Through reliable, Scalable, and robust web service amazon creates a global domination. The challenges of amazon.com web services are very prominent every second thousands

of customers are searching. For products and ordering products, the systems have to be fast, reliable and secured. Every second CRM (Customer Relation Management) system is taking customer information though their searching, data mining, wish list and so on. Whatever customer buys or not they are providing information about them. Systems are smart enough to analysis the information and provide service accordingly for tracking fraudsters amazon.com built a system known as SAS (Smart Analysis Search).This system decrease and detect fraud in the web site by analyzing behavioural pattern. SAS allows amazon.com to measure and personalize customer and help to serve customer effectively

Amazon.com is information system based on Service Oriented Architecture (SOA). SOA is fully distributed and decentralized service platform enables amazon's information system to be robust and scalable. SOA concentrates in multiple application rather than bigger process

1.4.1-Shopping and Track the order: Amazon has got a personalized content to customers who are helpful for tracking the current actions of the customers. Since it is an online shopping, the customer are entitled to add any number of products as per they want. Although, the customer can save the product in their website; which they had created in Amazon web site They can save the products and do trading in future as per they want. All this information is get stored in an Infomediary model of the Management Information System Along with that Amazon has created a platform of the social network within their own website which offers more interactivity. The customer can go through the history what they have been searched and also track the order which they had purchased. Along with that, when the new user is coming for the online shopping in website, the Amazon tries to collect the new user information, which will directly link to the same Infomediary Model. So, that when the next time the user enters into the website, they will recommend the products as per his taste and as per

his/her last searched products. And Amazon also provide a discount and bumper sale offers at the time of festivals and certain occasion, and also do a bumper offer period at very low price of the products for consumer. This is a part of the marketing to attract the customers much more as they can

1.4.2- **Shipping Address of the Products**: Website solicitations with offer those shipping deliver of the purchaser for the item will be should make sent. The customer can send the products to another person while adding their shipping address. But by default, the website at first shows the authorized person address for the time saving. If a person wants to purchase products for himself only, then the address is already being saved in the website at the time of registration. If he   wants to send goods to another person, then he can modify   or   add   a   different   address   of   the   person.

1.4.3-Payment process offer to the Customer: The Amazon offer the payment process in a convenient way to their customer. The customer can do the online payment which is using by the Debit Card and the Credit Card or can do offline which is called as Cash on Delivery. This is being made when the customer receives their goods in their hand. The customer can purchase the goods in an EMI form also, where they can pay the amount in an installation bases under some certain banks. While having the payment process, the customers fills their information, by which the Information System stores their data for the further usage. While having the payment process the website also provides a tracking number, by which customer can track their order status that where it has reaches and when they will get. The Amazon also provides a specific estimated date of receiving the goods to the customer while purchasing the product

At the time of payment of products the Amazon Information System is being considered in this manner that the website will show the advertisement of the related goods which a customer is being purchasing. Amazon uses the Virtual storefronts to attract the huge number of customers to the website. Through this, Amazon is being able to hold their exciting customer as well as also able to attract the

new customers also because of their wide approach, while increasing the marketing strategy and the by gaining the customer loyalty With the payment process, the website also contains the various offers and gift vouchers for their regular customers. It is all being done in the Management Information System of the Amazon. The system stores the information that how many times a person purchases the products from the Amazon site and on those bases the system only evaluates the regular customer and irregular customer. It is already being set up in the software that what the system is supposed to do for the regular customer and irregular customer. The site will offer new products to the irregular customer while various offers. And for the regular customer sometimes they offer the gift voucher and special offer etc …

1.4.4-Customer Relationship: Amazon is focusing mush more on maintain the valuable relation among the customers. Because for the E commerce industry, the customers plays a vital role for the success of the business. To maintain a better relationship with their customers Amazon updates their customer's information system, and tries to do a connection with the customers by some sort of offers with the help of the customer's data. Amazon keeps on updating the customer's data, because customer is rational and their taste and behaviour gets changes as per the wants and needs. So, Amazon keeps on updating that what consumer is buying and suggest them to give ratings and feedback. So, that they can work on those queries and make the customers feels important to them. In this also, the Amazon uses the Information System, because they have to keep on updating the information of the customer data in the system and have to record in that

1.4.5-Innovation of the Information System: Now Amazon is working more on innovating their software's and their Information System. The Amazon has opened a new Physical Store Shop in New York, where they tries to provide all the sufficient products to their customers. But the main point is little bit different. The customer doesn't needs to pay while purchasing

Yes, it is true. the Amazon have created a software in which the customer have to register and install the Amazon app, and have to link it with the bank account of the customers. So while entering into the shop, the customer should access the app and keep it open, then the app will provide a bar code which will access the customer to get inside. Whatever products the customer pickup, it will automatically added to the cart of their list through the sensor of the app. If the person put back those things, then it will automatically get remove from the cart. The person doesn't have to worry about anything. He doesn't have to do anything, just pick the product and can move out, it will automatically added to the cart. When the person comes out from the shop, his bar code will automatically shows that he comes out, and the price of the product will deduct from the bank account automatically. The customer can check their account at any point of time, they can check immediately or later on. So, this kind of innovation is doing by the Amazon in their system and software to make the customers comfortable and to attract the consumers

5-Recommendation for amazon:

Amazon.com is the ultimate online retailer around the world. Its nearest but not even close competitors are e-bay and best buy. But the competition is growing day by day

Competing in the market:

Like past, amazon in future will have to come up with special something. The global market changing day by day. Business competitors are investing large to take amazon down. There is no room for relaxation. It is very challenging and has to be consistent in the market to be number one retailer shop

Innovation of new Product:

It is essential for amazon to think out of the box and bring new products to satisfy and retain customer to be loyal to amazon.com. Amazon always offered its customer better quality and better service.

But in future it may not be the same. People in today''s world ask for Amazon has to be smart enough to understand the customer .more need before even customers know about it Integration of New Technology Technology is making progress like the spread of light. Company like ,,amazon'' needs to be adaptive and technology friendly to retain its domination in the market. Amazon's new technology of Drone delivery system indicates it is planning and investing significant amount of money in technology for near future.

Customer Loyalty

For a upward revenue stream customer loyalty is essential. Amazon's most of the buyers are its repeat customers who are loyal to amazon. But growing competition can be a risk to amazon's loyal customer

Global Expansion

Amazon is expanding its business around the world. But this may cause significant strain in number of sectors like management, inventory, supply system and more over to amazon's market place We may not be successful in our efforts to expand into international market segment" (annual report 2013).International market is very challenging because of political and economic conditions Upgrading e-CRM and investing more towards customer information for better understanding the customer needs and behaviour is essential

5.- Conclusion

The report thus examines the current infrastructure and process behind the management information systems of Amazon. It is evident from the report that there is plenty of scope for Amazon to enhance the customer relationship management through its Enterprise resource planning.

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