

Information systems

Technology, Information Technology



Introduction

The growth of e-commerce in the world has led to a remarkable shift from the traditional to the modern and internet-based business operations. The internet and web applications are the major drives for this trend. It is reported that the volume of goods and services traded over the internet since 1995 has more than doubled. The efficiency and reliability that is associated with online marketing can be attributed to the massive implementation of cloud computing systems in the world of business. Since 1995, several companies have dominated the electronic marketplace, including the ‘big four’ group that consists of Amazon, Google, eBay and Yahoo (Laudon & Traver, 2004, p. 3). Consumer sales are hugely expanding as a result of advancement in the e-commerce technologies. According to the 2005 Forrester Research, the consumer sales had grown by more than 23% from 2000, to approximately \$172 billion (Laudon & Traver, 2004, p. 7). The growth of wireless internet networks, broadband systems and web applications can perhaps be termed as the powerhouses of the modern e-commerce. This paper explores the various unique characteristics of the e-commerce technologies, citing the use of reliable information storage in Amazon as a good example.

Overview of the e-commerce models

The classification of e-commerce takes mainly two dimensions; the market relationship and the underlying technology. With respect to the market relationships, e-commerce exists in three models, namely Business-to-Consumer (B2C), Business-to-Business (B2B) and the Consumer-to-Consumer (C2C) (Laudon & Traver, 2004, p. 17). However, the B2C is the most common

model of e-commerce, since it encompasses the business activities as performed by both the online retailers and the potential customers. In the year 2005, the B2C e-commerce was estimated to have a value of approximately \$140 billion in the US. However, this volume has since grown to a whopping \$170 billion (Laudon & Traver, 2004, p. 7). The B2C e-commerce comprises of several components, such as web portals, online marketers, content applications, service providers and also online brokers, among others. On the basis of technology, e-commerce is divided into two groups. These include peer-to-peer (P2P) and mobile e-commerce (Laudon & Traver, 2004, p. 18). The P2P entails the transfer of various multimedia contents through wired and wireless networks, while the mobile e-commerce is mainly conducted by using mobile devices and networks.

Unique features of the e-commerce technologies

The commercial success in e-commerce has been experienced due to advancement in the supportive technologies. It is predicted that these technologies will continue propagating; a trend that will definitely take e-commerce to higher levels (Barnes, 2007, p. 118). The rapid growth in the e-commerce technologies can be attributed to the numerous business requirements that have emerged in the Fortune 500 enterprises (Laudon & Traver, 2004, p. 18). The e-commerce technologies are characterised by various unique features. However, most of these features are also associated with the internet, which is the main driving force of e-commerce. These unique features include ubiquitous computing, information richness, universality in technology standards and also reliable interactivity (Barnes, 2007, p. 118). Personalization of the online products, global reach and

information density are characteristics of e-commerce technologies as well (Barnes, 2007, p. 118). These features are beneficial in the promotion of e-commerce, since they support cost-effective business operations. The internet and the associated web-based applications are immensely important in connecting e-retailers to potential online shoppers.

Ubiquity

Ubiquity is perhaps the most unique feature of e-commerce technologies. Ubiquity refers to the aspect of ready availability of e-commerce models, products and services. Therefore, e-commerce is available all the time and anywhere in the globe (Barnes, 2007, p. 118). The internet connection provides a solid medium through which e-marketers can communicate to potential customers and vice versa. The property of ubiquity in e-commerce technologies is important since it eliminates the possible geographical barriers (myweb. ncku. edu, 2010). Business stakeholders can take part in trading from the comfort of their office desktops and mobile devices regardless of their geographical location, without encountering physical restrictions. Ubiquitous computing in e-commerce helps in reducing the transactions costs, since the e-retailers and online shoppers do not have to print catalogues, product specifications or any other trade documents. Such documents can be produced electronically in the cloud computing platform, and the issue of travelling is largely eliminated (myweb. ncku. edu, 2010). The reduction in these transaction costs is beneficial to both the marketers and the consumers. Therefore, the ubiquity of e-commerce technologies eliminates the physical barriers which characterise traditional markets.

Ubiquity in e-commerce technologies also enables the expansion of product markets. This occurs in the sense that it leads to the reduction in the entry and exit barriers (Laudon & Traver, 2004, p. 12). The time barrier is also eliminated in ubiquitous computing, since the business transactions can be carried out at any time of the day. Internet connectivity and the presence of shopping websites are provided every time, a factor that facilitates an appropriate expansion of the marketplace. In addition to reducing transaction costs, ubiquity also entails reducing the cognitive energy that is required in executing e-commerce activities. According to Laudon and Traver (2004, p. 12), the cognitive energy is the mental effort that is applied on a certain task. In the e-commerce technologies, the mental energy required to execute business transactions over the internet is lower than in traditional business practices (Laudon & Traver, 2004, p. 12). Thus, ubiquity of these technologies has helped in generating desirable efficiencies and differentiation models.

Information density

E-commerce technologies have solved the problem of information overload. These technologies are capable of handling voluminous amounts of data and information, which is an essential process in electronic transactions (Laudon & Traver, 2004, p. 13). Cloud-based systems can offer virtual storage techniques, which are unlimited in terms of scalability. The use of e-commerce technologies has enabled the improvement in information quality. The information density challenge is adequately addressed by these technologies, since they are characterised by superior storage and data handling mechanisms (Laudon & Traver, 2004, p. 13). The aspect of

information richness in e-commerce technologies helps virtually all the online business stakeholders, ranging from the e-retailers, online shoppers and also the cloud computing service providers. The integration of the various aspects of business information is heavily dependent on this feature of e-commerce technologies. The incorporation of various multimedia contents into marketable products is enabled by the efficiency in the e-commerce technologies (Laudon & Traver, 2004, p. 13). The large amount of data and information that can be handled by internet databases such as Amazon's S3 helps in leveraging the aspects of online marketing.

Information richness in e-commerce technologies also entails the reliability in collecting and processing of business data (Laudon & Traver, 2004, p. 14). The assessment of marketing trends in e-commerce relies on the superiority of the e-commerce technologies. Some e-commerce technologies such as Podcasting and internet broadband have led to improvement in accuracy and process precision in the execution of online transactions. In addition, many online products such as music and video streams are delivered in timely manner (Laudon & Traver, 2004, p. 14). This is because the customer only needs to subscribe to the relevant e-marketing websites, and then download the respective files. Similarly to ubiquity of e-commerce technologies, the aspect of information richness and density eradicates several forms of transaction costs, such as travelling, printing and communication. Hence, it can be presumed that information density is an immensely important feature of e-marketing technologies in the global electronic marketplace (Laudon & Traver, 2004, p. 13). There are many online transactions that are carried out

every day, and the need for unlimited virtual storage is a necessity in the modern e-commerce.

Open standards

Most of the e-commerce technologies use open standards in order to evade any territorial or regional restrictions that may be imposed by some countries. In the open standards, all the technologies that are involved in e-commerce are allowed to operate under a common platform. These standards include the TCP/IP protocol, XML and HTML (Kraemer, 2006, p. 355). These universal standards in e-commerce technologies are supported by public networks, unlike the case of Electronic Data Interchange (EDI) systems which mainly depend on private networks. Open standards such as the XML support universal connection in terms of enabling adequate indexing of software products (Kraemer, 2006, p. 355). However, the EDI has changed over time, and it is reported that several corporate enterprises have implemented this standard in e-commerce. The Open Buying Internet (OBI) and Open Trading Protocol (OTP) have become reliable standards in the modern e-commerce (SBA. gov, n. d). The OBI standard enables all e-commerce systems to communicate freely, without protocol disparities that may hinder the growth of e-commerce activities. On the other hand, the OTP standard has integrated online payment systems in e-commerce (SBA. gov, n. d). Some of the payment processes that are supported by this universal standard include purchase receipts, trade agreements and also the actual payments.

Netscape's Secure Sockets Layer (SSL) is a universal protocol that was founded with an aim of promoting the aspects of online privacy (SBA. gov, n. <https://assignbuster.com/information-systems-research-paper-samples/>

d). This protocol ensures that e-commerce stakeholders can exchange information and data through secure platforms, by a way of using a public encryption key. The SSL protocol supports the transfer of data from any source point to various destinations in a secure manner. Therefore, the system does not impose any restrictions on the basis of regional presence. The SSL has been implemented in various universal standards, such as the Open Profiling Standard (OPS) (SBA. gov, n. d). The OPS is used by e-commerce organisations such as Microsoft and Firefly, in order to enhance security and privacy of merchants and consumers' data over the internet. The field of electronic payments has received intense attention from various e-commerce players. Thus, there has been a burning need to develop superior open standards that will govern the integration of electronic payment transactions. The Secure Electronic Transactions (SET) is one of these standards, which was recently founded by the world's leading credit payment organizations; Visa and MasterCard (SBA. gov, n. d). The SET standard is globally used in the banking sector, an aspect that has hugely improved efficiency in the payment transactions.

Global Reach

As opposed to traditional business platforms, modern e-commerce technologies allow for global reach. The online population has grown tremendously as a result of advancement in e-commerce technologies (Laudon & Traver, 2004, p. 13). In particular, the global communication technologies such as emailing, video conferencing, instant messaging and chat programs among others have succeeded in connecting a large number of people through the internet. It is reported that in 2005, the online

population was approximately 1 billion people (Laudon & Traver, 2004, p. 13). However, this number has significantly increased in the recent past, to several billions. This has facilitated the expansion of the global e-marketplace, due to the implementation of reliable communication technologies. The technologies, through the properties of ubiquitous computing and global reach, have enabled cross-cultural e-commerce trade to take place in the world (myweb. ncku. edu, 2010). The unique feature of global reach explains the adequate presence of global outlets and sustainable global supply chains. This aspect has improved the sales volumes in e-commerce, with profitability margins equally benefitting. The various business operations can be performed from every place on earth by the use of these global communication technologies which are not restricted by national boundaries.

The business significance of this property lies in the provision of seamless opportunities to both small and large business organisations (Laudon & Traver, 2004, p. 13). Many merchants and potential customers are connected by the use of this unique feature of e-commerce technologies. Apart from the wide geographic coverage that is offered by e-commerce technologies, the demographic aspects are addressed as well (Laudon & Traver, 2004, p. 13). The various web contents such as animations, videos, music files and other digital products can be viewed worldwide by people of different ages, financial stability, gender and also preferences. Thus, this global reach characteristic applies across many aspects of consumers and online merchants. Global reach has enabled the entry of more business enterprises into the platform of e-commerce in the world (myweb. ncku. edu, <https://assignbuster.com/information-systems-research-paper-samples/>

2010). This is because it attracts a large number of customers and e-marketers alike. The e-commerce technologies have helped in the creation of a global corporate culture, which is an important requirement in developing the human resource models in any business enterprise. Therefore, it can be construed that e-commerce technologies have played a key role in improving global trading activities through the global reach feature.

Personalisation

E-commerce technologies can offer personalised services to consumers and online retailers. This unique feature of e-commerce is implemented through geo-marketing, a practice that involves the provision of slightly modified products to a specific region of individual on the basis of their preferences (Laudon & Traver, 2004, p. 16). Other e-commerce technologies such as video conferencing enable the delivery of customised products or services to the interested clients. In the USA, the Wall Street Journal allows the selection of news type by the customer through the use of e-commerce communication technologies (Laudon & Traver, 2004, p. 16). For instance, this American online journal allows the users to subscribe for personalised alerts on certain events. Thus, it can be concluded that e-commerce technologies are efficient in the way of promoting personalisation and customisation of digital products (Laudon & Traver, 2004, p. 16). The customisation of consumer's products in e-commerce is done through constant assessment of the shopping behaviours, which include purchasing patterns.

Information density and richness in Amazon's Simple Storage Service (S3)

Started in 2006, the Amazon's S3 has become a global example of an appropriate e-commerce technology (Velte et al, 2009, p. 142). The S3 was created to offer information and data storage solutions to e-commerce stakeholders. The aspect of information richness in online transactions prompted the development of this technological platform, through which people can store voluminous data. In addition, the S3 offers efficient techniques of data retrieval modification and processing (Velte et al, 2009, p. 142). It has largely addressed the issue of information density to the online shoppers. The Amazon business corporation, one of the largest e-commerce players in the world, uses the S3 system to store all information concerning its online products, consumer data and marketing trends. The S3 offers scalable in the sense that it charges the customers on the basis of their request rates and data usage models. In addition, the S3 reportedly offers approximately 99.99% of information availability (Velte et al, 2009, p. 142). This form of richness eliminates the inconveniences associated with downtime errors. Thus, the feature of information density has worked out to the benefit of Amazon in great measures (Velte et al, 2009, p. 142-143).

Information density in the traditional business transactions is associated with low speeds of information processing, storage and also retrieval. However, the Amazon's S3 system offers a high-performance mechanism of handling information and business data. According to Velte et al (2009, p. 143), the S3 system is highly efficient in terms of processing speeds. This is because it uses many supportive nodes which enable the reduction of server-side

latency. Therefore, online information that is used in e-commerce activities can be made available without any unnecessary delays or failures (Velte et al, 2009, p. 143). The several user applications which are used in the storage and retrieval of information in Amazon's S3 system are equipped with strong interfaces that enable users to retrieve or update data files and information folders in efficient manner. The storage of information in this internet-based database is cost effective. This is because the company charges less for companies which store voluminous corporate data. Online marketers do not have to prepare separate data files and product specifications sheets, since the system allows for electronic processing of these business documents (Velte et al, 2009, p. 142).

The S3 is an Infrastructure-as-a-Service model that also enables the users to build reliable infrastructure on which to store voluminous data (Murty, 2008, p. 135). This system offers a virtualised mode of data storage, which is therefore appropriate in handling data operations. The Amazon Corporation has benefitted from the S3 in the sense that it enables the company to share large data files with other business organisations in the B2B model. This sharing of large files has led to reduction in data transmission costs, since large amounts of data can be transmitted cheaply through S3. The system's Universal Resource Identifier (URI) enables a secure transmission of information, through providing the relevant links to data recipients (Murty, 2008, p. 135). Amazon also benefits from the back up services that are provided by this system. This aspect of information richness and density ensures that data loss and leakage are avoided.

Conclusion

E-commerce has rapidly developed in the recent past. This trend can be attributed to the desirable unique features that exist in the e-commerce technologies. The volume of sales that results from e-commerce every single year is estimated to be approximately \$170 billion in value. Thus, there is a growing need for the development of better e-commerce technologies that will facilitate significant growth in this platform. There are mainly seven unique features of e-commerce technologies. These include ubiquity, global reach, personalisation, open standards, interactivity, information density and richness. Ubiquitous computing ensures that e-commerce systems can be provided anywhere and at any time. Global reach entails the coverage of all geographic and demographic aspects of e-commerce, and it is solely enabled by the internet, which is the main medium of global communication. Amazon has created one of the most reliable information richness systems; the S3. This system offers speedy storage and retrieval techniques to the clients. In addition, this system provides a reliable backup for the company's data and information, thereby minimising the likelihood of data loss and leakage.

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