

RECENT TRENDS AND LEARNINGS FOR E-COMMERCE SYSTEM DEVELOPMENT FROM A QUALITY PERSPECTIVE

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Abstract-The aim of this paper was to conduct a systematic review of the newly emerging research on e-commerce, and synthesise any learnings for e-commerce system development from a quality perspective. A systematic review was conducted using Google Scholar and 39 shortlisted papers were reviewed. The results of the review found the following: The e-commerce industry's rapid growth in 2020 cannot be ignored. Demand for various types of products rose as situational requirements changed and varied among countries. Some countries could not implement e-commerce effectively due to lack of trust and confidence of customers on online transactions and weak laws and regulations to protect them. Some theories like Maslow' hierarchical needs and Ajzen's planned reasoned action and planned behaviour may apply to customer intentions for online purchase as a few results indicate. On the supplier side, various digital technologies to facilitate the display of products, information regarding safety, e-ordering, and payment methods have been used, and new methods are being tested. International organisations like WHO, World Bank, EU and international consultancy agencies like McKinsey have released reports and guidelines in this respect. One firm belief is that the new normal in all aspects of work and life set by the pandemic will continue even after the threat is over. The implications of this research from the perspective of the quality of e-commerce system development are that the system will need to exhibit the following characteristics: gain the trust and confidence of customers by aligning the system with the best practices in online transactions; use suitable digital technologies to facilitate the display of products, information regarding safety, e-ordering, and payment; and ensure there is sufficient supply of the products offered.

Keywords: E-commerce, Quality Perspective, E-order, Payment.

1. INTRODUCTION

Many aspects of human life and activities have undergone rapid and radical changes in the past months, and these changes have been accelerated due to the Covid-19 pandemic. These changes may continue to exist and undergo further changes in future. These changes have been led by increased digitalization and immediate implementation of previously predicted trends over many years. These possible technological advances have been discussed for many years in information management literature. The "new normal" so established has affected the areas of our work, education, healthcare, entertainment and leisure and online commerce. This paper attempts to review the last said aspect, specifically, identify the trends in e-commerce in 2020 (Barnes, 2020). Furthermore, the review will synthesise any learnings for e-commerce system development from a quality perspective. The term 'online commerce' or 'e-commerce' has been defined in many ways, all giving more or less the same sense. Wilkins, Swatman, and Castleman (2000) cited many definitions from different sources (as cited by the authors) as follows and then discussed the merits and demerits of each definition below it. 'For those companies that fully exploit its potential, electronic commerce offers the possibility of breakpoint changes – changes that so radically alter customer expectations that they redefine the market or create entirely new markets.' (EU) 'In the broadest sense, "electronic commerce" can be used to refer to any information exchange which occurs over the superhighway (i.e. by wire or over-the-air transmission or a combination of the two) and encompasses not only commercial transactions, but also all forms of social intercourse that may take place via the medium of the superhighway; that is, "commerce" in its broadest sense. In a strictly commercial setting, it would encompass all the steps involved in negotiating, confirming and performing commercial transactions electronically and include both the contractual relationships formed in those transactions and the regulatory or administrative steps necessary to the conduct of those transactions.' (Australian government) 'Electronic commerce is usefully defined as the conduct of commerce in goods and

services, with the assistance of telecommunications and telecommunications based tool. I use two basic models of the electronic commerce process, which I call 'deliberative purchasing' and 'spontaneous purchasing'. (Thompson EC Resources) 'Electronic commerce – or e-commerce – is the automation of commercial transactions using a computer and communications technologies.' E-commerce is concerned explicitly with commerce occurring over networks which use non-proprietary protocols that are established through an open standard-setting the Internet'. 'Electronic Commerce involves the undertaking of regular commercial, government or personal activities using computers and telecommunications networks and includes a wide variety of activities involving the exchange of information, data, or value-based exchanges between two or more parties. Electronic commerce refers to how the internet and the world wide web and Internet- converging technologies like Electronic Data Interchange (EDI) and national intranets like the French Minitel and Singapore One, are being used to process and transmit digitized data. This includes text, sound and visual images to complete business-to-business and business-to-consumer transactions'. However, the author does not propose their own definition. In an OECD workshop, Elmer (1999) presented definitions of various types of e-commerce through charts. Segmentation in e-commerce is given in Fig. 1.1.

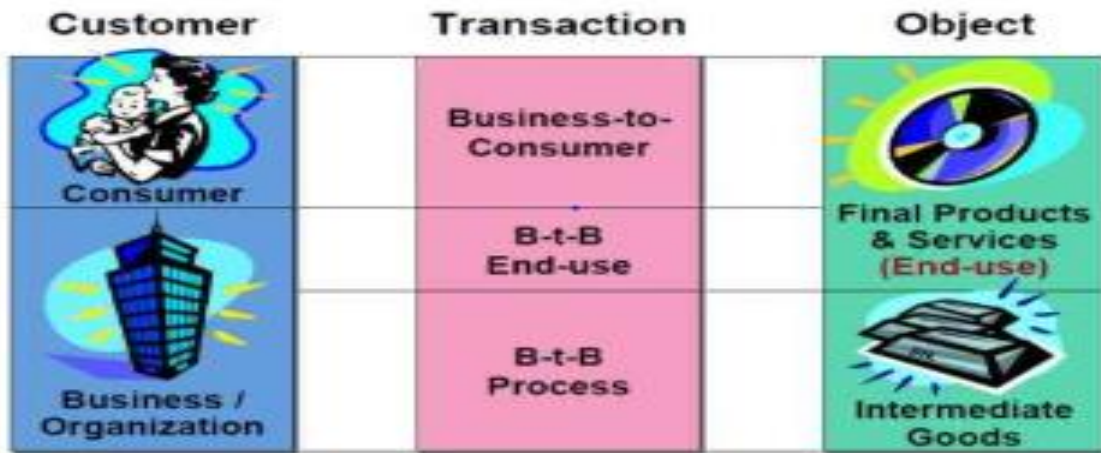


Fig. 1.1 Segmentation in e-commerce

Thus, there are three main parts of e-commerce. The customer can be individual consumers (B2C) or business organizations (B2B). Within B2B, it could be raw materials for some processes or final products and services. The definition of e-commerce, according to end-use, is given in Fig 1.2. This definition describes how the customer uses e-commerce. The consumer searches internet and finds the product and decides to buy it. Ordering and payment take place online through a variety of ways. If it is software, delivery is also online. For physical products, delivery at destination address or through pick up stores happens.

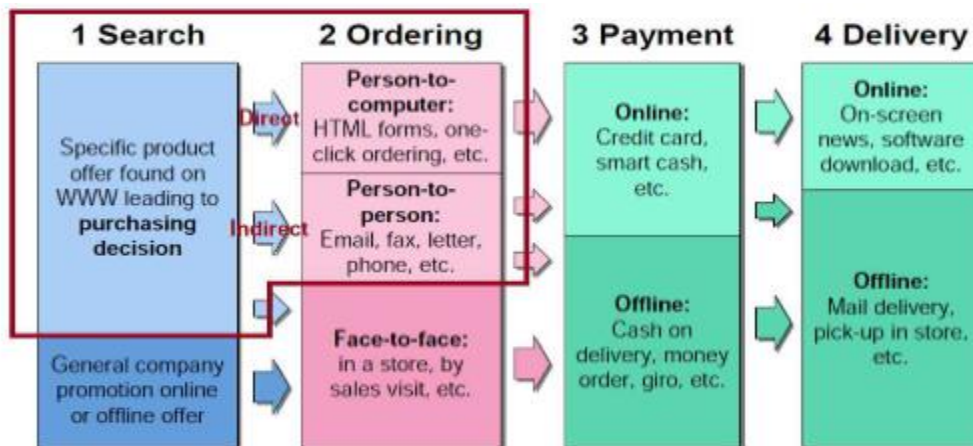


Fig. 1.2 Defining e-commerce according to end-use

Processes can also define e-commerce as Fig. 1.3 shows. The processes consist of organisational relationships between businesses, partners or within the organisation. Public or private networks can be used. Purchasing processes can be the person to person/computer or computer to computer. Some of these components of definitions will be discussed in the review that follows.

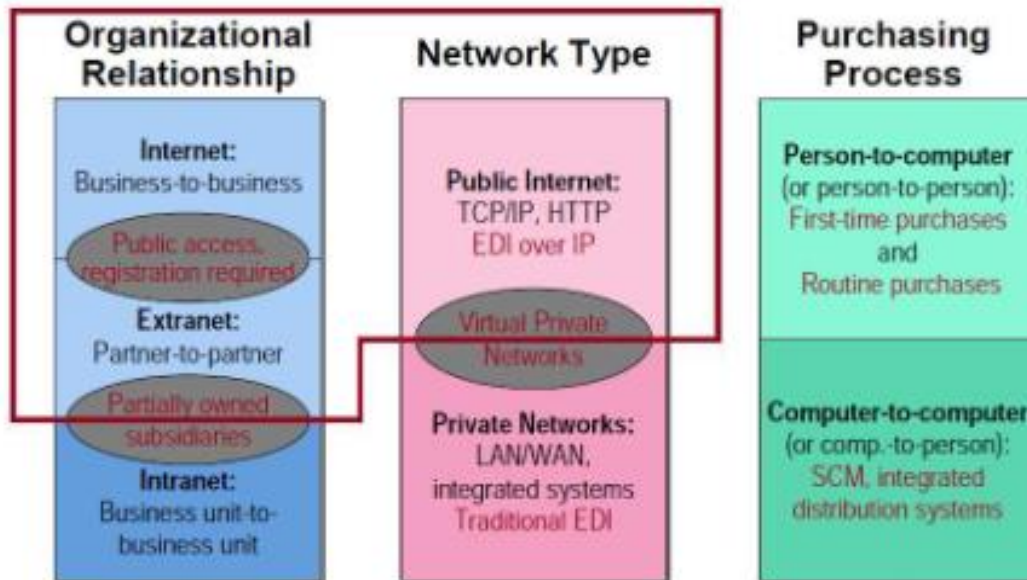


Fig. 1.3 Definition of e-commerce as processes

2. METHODOLOGY

A systematic literature search in the Google Scholar database using the topic itself as the search term yielded 39 usable papers, including those cited above. No selection was done as long as the text contained useful points about e-commerce. Both abstracts and full papers were included. Abstracts were included only if they contained some useful points as a standalone document without the need for the full text. Only the articles published in English or containing English translated matter were considered. In addition to using a wide variety of papers to understand the basic concepts, an attempt was made to incorporate only the most recent papers examining the trends in e-commerce. This was done in order to fully understand how the sector has transformed to meet the changing social and economic realities. The selected papers have been discussed under various sections below.

3. RESULT

One of the most striking findings was that lockdown increased online sales in a highly significant and rapid manner (ACI, 2020). Many businesses have made online commerce as the primary way of transaction. There was also a change in the kinds of products being bought. There was a high demand noted for protective equipment like masks and sanitisation, which in turn pushed up the prices resulting in many big and small firms manufacturing and selling them online.

Once enough supplies became available, their prices dropped equally rapidly. In contexts of extreme social distancing in which customer is always far removed from stores, online is the only possibility. Using an instrumental variable (IV) strategy to minimise potential endogeneity bias, in which the distance from Wuhan was the instrumental variable, Gao, Shi, Guo, and Liu (2020) noted increased online purchase behaviour as confirmed cases increased. Younger people living in large cities with lower perceived risk tended to show this behaviour to a greater extent. Thus, the current crisis has promoted online commerce very significantly. Some trends in China indicates its continuation even after the Covid-19 ceases to be a pandemic (Stewart, 2020). More advanced technological methods of delivery of products and services may be desired by customers using virtual or augmented reality (de Regt, Barnes, & Plangger, 2020). The points highlighted in these works are further elaborated below using more literature.

3.1 Customer Side

The changes required in many aspects of life now and later are not devoid of challenges and problems. Issues related to blockchains, gig economy, internet governance, digital payments, privacy and security in online transactions were highlighted by Pandey and Pal (2020). While observing that restrictions need not be imposed for consumers and businesses to practise social-distancing to avoid the potential for infection and on their own, they can practise them, Ungerer,

Portugal, Molinuevo, and Rovo (2020) highlighted the fact that only essential activities like grocery shopping and visits to health facilities are the remaining sources of possible new infections. The concept and application of e-commerce are relevant in this context.

Some factors leading to online sales of specific product categories were researched in some countries due to their specific relevance to those countries. Thus, in Germany, online retail in other sectors had a significant turnover even before the COVID-19 crisis, but online food retail had remained in a niche. Low volume, accessibility and payment issues were the main problems for its rural spread. However, the compulsion to stay at home and social distancing contributed to the rapid growth of e-grocery sale. Radical changes in institutional setup and a significant upswing in demand were also responsible. However, spatial diffusion was limited as the traders wanted to catch up with increasing demand rather than attempt spatial expansion.

The recent uncertainty caused by lockdown did not prove to be a stable condition to rely on forever. Digitalisation was also not helpful for expansion. The current online leaders just included grocery into their list of business to meet growing demand during the crisis. The limited-time provided for social distancing and stayed at home (gradually removing effect) also made the expansion temporary and demand-based (Dannenberg, Fuchs, Riedler, & Wiedemann, 2020).

3.2 Seller Side

From the sellers' point of view, many factors drove them to online business, whether they were already in or not and whether they liked it or not. More flexible time, ease of running and managing online business, lower cost of online business, the more extensive reach of customers and requirement of only a small investment were given as the reasons for online selling by Indonesian traders. Also, online business is considered as an effective way of building and maintaining customer loyalty. As digital technology was already available, the transition to online business was easy during the current pandemic. Purchase behavior of consumers may change during the pandemic. It may continue beyond the pandemic period. A large majority of consumers may spend less partly owing to job and remuneration cuts by their employers to survive during the pandemic. However, high demand for specific categories like food and grocery essentials will direct the online sales to more of these offers. Less electronic goods or automobiles may be bought. There is unpredictability regarding the extent to which business may return to pre-pandemic levels and consumer behaviour when the pandemic threat subsides. The current online buying is irrespective of generation gaps, as there is something in the online offer for all generations. The significant effect of the pandemic is the switching over to online purchase by those who never did it or never wanted to do it earlier. The flexibility of time, location and product choices have attracted people to online purchase. However, the wait for the delivery, uncertainty of received product quality in the absence of direct experience, the uncertainty of after-sales services, including solutions to service failure problems still exist.

CONCLUSION

The year 2020 has seen unprecedented changes to the economies of nearly every country in the world. These changes have triggered rapid growth of online commerce. This is due to the social distancing norms, movement and trade restrictions imposed in various countries. The initial demand for masks and other protection equipment was slowly replaced by the demand for food and other essential livelihood items. Working and learning from home pushed the demand for computers, mobile phones and software applications. However, these demands varied among countries. Some countries could not implement e-commerce effectively due to lack of trust and confidence of customers on online transactions and weak laws and regulations to protect them. Some theories like Maslow's hierarchical needs and Ajzen's planned reasoned action and planned behaviour may be applicable to customer

intentions for online purchase as a few results indicate. On the supplier side, various digital technologies to facilitate the display of products and details, information regarding safety, e-ordering and payment methods has been used, and new methods are being tested. Impact of the pandemic on global economy necessitates concerted actions among countries to ensure essential supplies, especially to the socio-economically weaker sections of the populations. International organisations like WHO, World Bank, EU and international consultancy agencies like McKinsey have released reports and guidelines in this respect. One firm belief is that the new normal in all aspects of work and life set by the pandemic will continue even after the threat is over. Only time can tell what will really happen. The implications of this research from the perspective of the quality of e-commerce system development are that the system will need to exhibit the following characteristics: gain the trust and confidence of customers by aligning the system with the best practices in online transactions; use suitable digital technologies to facilitate the display of products, information regarding safety, e-ordering, and payment; and ensure there is sufficient supply of the products offered.

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