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

**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's 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; Systems Development; Quality; Trends.*

### 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 digitalisation and immediate implementation of previously predicted trends over many

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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 digitised 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.

Customer	Transaction	Object
 Consumer	Business-to-Consumer	
 Business / Organization	B-t-B End-use	Final Products & Services (End-use)
	B-t-B Process	 Intermediate Goods

Figure 1. Segmentation in e-commerce (Elmer, 1999).

Thus, there are three main parts of e-commerce. The customer can be individual consumers (B2C) or business organisations (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 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.

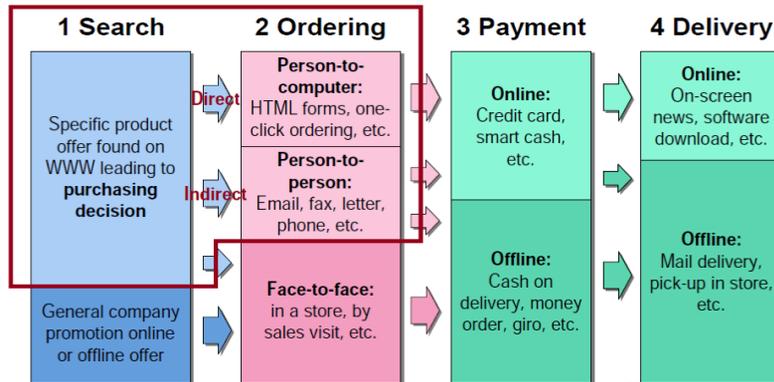


Figure 2. Defining e-commerce according to end-use (Elmer, 1999)

Processes can also define e-commerce as Fig 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.

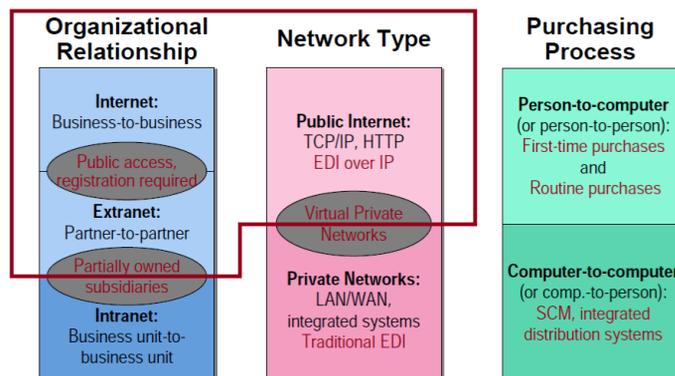


Figure 3. Definition of e-commerce as processes (Elmer, 1999)

## 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 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).

There are other issues from the customer's side. Impact of out of stock products and long waiting queues determine consumer choices with a sense of wellbeing and affect towards the retailer identified as some issues related to online markets during the current Covid-19 outbreak (Pantano, Pizzi, Scarpi, & Dennis, 2020). Some gender effect is possible in online buying behaviour, as was noted by Hashem (2020) in a Jordanian survey. He found that in the past few months, owing to lockdowns in many countries, customers changed their purchase behaviour towards online shopping and e-payment methods due to lockdown and quarantine. This behavioural change was more prominent in the case of females and those with higher academic qualifications. Tendencies to save money by controlling unnecessary spending, crisis management, better planning of spending and reduction of habits like visiting restaurants and entertainment were also noted as a part of online shopping increases. The uses of electronic devices have also been restricted to the bare minimum necessary for daily necessities. Whether these behavioural changes will persist and remain even in the coming years, is a question.

In Indonesia, social distancing has led to the rapid growth of e-commerce this year. The initial online demand was for masks, sanitisers and other protective equipment. Then, working and studying from home increased the demand for stationary. However, online business caused losses to the customer in many instances. Legal protections for online transactions were violated during the Covid-19 period. However, the lack of clarity about the laws has led the online traders to get away with their violations. Proper clarification and strict enforcement of laws to remedy these problems were suggested by Matompo (2020). Similar inadequacy of legal systems was also highlighted by Alkhaldi (2020) in

Kuwait. The already faced challenges of e-commerce have been aggravated by the pandemic and lockdown in Kuwait, significantly as the challenges are growing and require urgent solutions. The circumstances for shifting towards e-commerce are well-known. Many e-commerce issues are due to weak laws related to some technical issues, trust and confidence in electronic transactions, socio-cultural factors, and cybersecurity and consumer protection. There is a need to raise awareness about possible threats associated with Covid-19 and electronic transactions and improve the laws and their effectiveness. In Tunisia, generally, people do not prefer online buying due to lack of trust. Found only 2.1% of surveyed customers using home delivery, especially of food items and online payment methods. Therefore, e-commerce is only a small proportion of retail business in Tunisia compared to other MENA countries. Even the customers using online buying prefer cash on delivery option (Jribi, Ismail, Doggui, & Debbabi, 2020).

Noticing that the economic and social changes in 2020 have disturbed the confidence and trust, confidence and loyalty of customers towards retailers, Sharma (2020) proposed some methods to retain the current customers, which is easier than finding new customers. It was suggested that the retailers should be in touch with their customers through social media and other online platforms offering support and expressing concern about their welfare. These steps may develop a feeling of optimism, attachment and delight among customers. Seeing this, others, like the friends of these customers, may become interested in the retailer and eventually become new customers. It is also important that the retailers follow all the guidelines of the protection and safety of the customers when they deliver online orders.

Whether e-commerce will continue beyond the period of the current pandemic is the subject of many studies. E-commerce is one of the fundamental changes in consumer's

"new normal". So, many businesses, which were not online earlier, are now entering e-commerce to be prepared for this possibility taking advantage of the necessity for online shopping created by the pandemic. One view is that the popularity of contactless transactions among customers during Covid-19 pandemic and expected to continue beyond it has been ascribed to the increased awareness about healthy habits. Social distancing norms promoted such an attitude among customers of online business. Bitcoin is expected to play an important role here. It would be in the interest of the online traders to provide many alternative contactless payment methods. All the current features of online and more new features added will continue as new regular sets even after the pandemic subsides. Although this work is from Turkey, only secondary data from other countries and no data from Turkey was provided by Aksu Altun (2020). The actual feeling of customers, in this respect, was measured by Veeragandham, Patnaik, Tiruvaipati, and Guruprasad (2020) identified cultural, social and personal factors on online buying behaviour in India. Youngsters of less than 35 years were more likely to prefer online shopping. There was an almost equal preference for buying online only or in combination with traditional buying. The buying perception changed online for a majority of buyers. Regular or once a week, purchases dominated. Amazon distantly followed by Flipkart were the most preferred sites. Debit cards and direct cash payment on delivery dominated payment methods, but other payment systems are also increasing. Most consumers wanted to continue online purchases beyond the lockdown period also, as they experienced a high level of satisfaction.

Using Maslow's theory of the hierarchy of needs, Duygun and Erdal (2020) postulated that in the current period, people gave priorities to satisfying physiological needs like food, beverage, shelter and clothing in preference to non-essential needs. Security needs were also met simultaneously by

buying masks, sanitisers and other protective equipment. The next hierarchical level of love and belonging needs was hindered by social restrictions leading to more online behaviour as in the case of buying. Future developments may further clarify on the applicability of next hierarchical levels of Maslow.

Perceived usefulness, risk-taking propensity, perceived behavioural control, perceived lack of alternative and government support exerted a strong influence on the intention of Saudi consumers to adopt e-commerce during the COVID-19 outbreak in the country. On the other hand, perceived ease of use, subjective norms, perceived external pressure, perceived risk and perceived punishable infractions did not have any influence on the e-commerce intentions of these consumers (Salem & Nor, 2020).

The danger of low quality, counterfeit filtering facepiece respirators for protection against Covid-19 through e-commerce route was highlighted by Ippolito, Gregoretti, Cortegiani, and Iozzo (2020). Buyers find this out only after the delivery as this is bought through online ordering based on product description in the supplier website. This is often a common problem, which deters people from online buying.

### 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 behaviour 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.

These general observations of the effect of the changing economic and social situation on online business and purchase behaviour were applied to Islamic business by El Junusi (2020). The Islamic perspective can be termed as Sharia marketing. The definition of Shariah marketing by Alom and Haque (2011) is that "The process and strategy (Hikmah) of fulfilling need through Halal (Tayyibat) products and services with the mutual consent and welfare (Falah) of both parties, i.e. buyers and sellers to achieve material and spiritual wellbeing in the world here and the hereafter." (El Junusi cited both the reference and definition erroneously). Thus, essentially, it becomes strongly ethical marketing and may conflict with some of the traditional commercial concepts of marketing. In Islamic marketing, religious philosophy regulates the process. There is an insistence on a physical meeting between the seller and buyer, leading to concrete transactions.

Therefore, traditional e-commerce does not apply in the case of Islamic marketing. Although several Muslims buy online, they are not aware of the extent to which Islamic laws apply to these activities. Hence, to implement e-commerce in Islamic marketing, it is essential to know the halal, legal and branding issues. Offer halal products as a part of the total product range (including non-Halal ones) is illegal as per Islamic laws. Hence, the online traders of halal products need to be exclusive. This may present commercial difficulties for regular traders. Rules and regulations of Islamic marketing are based on morality and honesty, which is observed more in violation than compliance in the normal commercial world. However, some modern marketing aspects are also applicable to Islamic marketing. In summary, certain Islamic marketing concepts can be integrated into online marketing, although online marketing itself is not in accordance with Islamic laws.

Due to lack of capabilities and resources, SMEs may be at a disadvantage when online sales become a forced need of circumstances like pandemics. SMEs in different sectors reported different experiences with e-commerce in Malaysia. A rapid increase in the adoption of e-commerce has been noted. However, some SMEs earned lesser from online business. Especially, SMEs in Food & Beverages sector could not exploit the situation of higher profit margins from beverage and dessert sales. On the other hand, SMEs in other sectors fared well as they could obtain higher earnings due to the more extensive exposure they were able to establish in the online environment (Yi, 2020).

It was pointed out by Seetharaman (2020) that agile firms adapted to the opportunities offered by Covid-19 to increasingly digitalise towards increasing information intensity of both products/services and process and value chain and essential nature of particular products or services. These developments led to the offer of products and services online to the customers.

In the absence of possibilities of direct access of customers due to lockdowns, the home business owners in Kuwait are using WhatsApp, Snapchat, email and websites to communicate with customers, suppliers and partners. For business-related payments, they are using bank apps like Edfali. Factors like passion for the business, independence, additional source of income, succeeding in a family business, hobby or not finding a right job in other companies motivate them to continue with the business even during the restrictions imposed by the pandemic (Saleh, 2020).

Franchisees of retail and service sectors, consisting of food service, education, retail, and business-to-business sectors adopted e-commerce along with other business strategies to overcome the problems in continuing their business viably in the context of the Covid-19 pandemic, according to the results obtained by Bretas (2020) in Brazil. Increasing e-commerce, especially of grocery and food items, was also reported by Nagasudha, Shruthi, and Raj (2020). The article was based on a content analysis of a few research papers. Although the title conveyed the idea that the paper will discuss how the pandemic influenced digital marketing in India, it contained nothing about India.

Applying institutional theory to understand how business firms dealt with past pandemics and significant natural disasters, Mishra (2020) proposed that in the context of Covid-19 pandemic also similar strategies can be adopted for business resilience and sustenance. This can be achieved primarily by service firms using social connections with customers to gain legitimacy rapidly towards the time when the pandemic ends. Social connections of involvement with local communities create lasting embeddedness, customer loyalty and reputation. These advantages can be leveraged for e-commerce during the pandemic.

The term ‘modern economy’ is practically synonymous with ‘digital economy’. With the rapid expansion and success of e-commerce, the changing economic realities in 2020 have already had an impact on how digital products can influence e-commerce as a manifestation of the modern economy. The importance of timing and speed to achieve positive results in this respect was highlighted by Delaney (2020).

Various business models of e-commerce, which are being practised across the world for consideration by small business, were discussed by Nuru (2020). These include drop shipping, wholesaling and warehousing, private labelling and manufacturing, white labelling and subscription. Based on these discussions and analyses, the author proposed a framework for e-commerce for the small business community.

Attempts made, being made or to be made by retailers to survive and flourish in the current economically stressful time, were explored and discussed in a McKinsey report by Briedis, Kronschnabl, Rodriguez, and Ungerman (2020). Quick response to meet the new challenges is critical. Those retailers operating an omnichannel business need to enhance the distinct online customer experience. Customers have consolidated shopping into fewer frequencies. There is significant switching from the primary store to online also. Online buying and pickup in stores (BOPIS) and home deliveries have also grown considerably. A majority of consumers find the new ways of buying very convenient and hence would continue even after the pandemic is over. In these contexts, setting the North Star towards accelerating on digital, infusing innovation into omnichannel, drastically changing store operations, pacing up on the “SafeX,” reconstructing the physical network and making the operations more agile, are essential strategies.

Use of a variety of online store and sales platforms were reported by businesses in Poland as was reported by Niewiadomski (2020). All these have been categorised into

customer service logistics and consist of practices described in the responses by managers of companies-

- 1) Integrated online sales platforms complete with panels consisting of orders, customer, products, marketing, content management (CMS), customer and relationship management (CRM)
- 2) Online store platforms integrated with other internal systems, including Warehouse Management Systems (WMS) and Enterprise Resource Planning (ERP) system.
- 3) An editable and individually developable online sales platform for ease of administration and operation.
- 4) Online store platform integrated with supplier systems, logistics services, external partners, advertisers, agents, customers and other relevant parties.
- 5) A product architecture management enabled sales platform ("virtualisation "of the offer)
- 6) They are contracting sales while ensuring that the required tools, including ICT, are available.
- 7) Electronic customer service; elements of transaction marketing for which all required tools are ensured to be available.
- 8) Communication with the customer with elements of relationship marketing facilitated by using implementation tools.
- 9) Use of social media for different marketing and sales purposes.
- 10) Dynamic mailing management through email automation.

### 3.3. Global dimensions

The need for all countries to implement the FAO recommendation to provide an opportunity for small scale food producers to sell their products online in the context of uncertain Covid-19 pandemic was highlighted in a letter to the editor by de Paulo Farias and dos Santos Gomes (2020). The Chinese study by Lin, Li, Luo, and Benitez (2020) showed that e-commerce capability of

agribusiness survival through complexities like those presented by the changed social and economic reality of 2020, is positively moderated by market capitalising agility and operational adjustment agility, but not environmental dynamism. EU took some steps in this direction. The subject matter, parties, their rights and obligations in the case of e-commerce and distance selling in the EU were discussed by Zhelyazkova (2020). In the EU, there are well-developed mechanisms for ensuring proper functioning of the e-commerce segment of the entire business routes. The standard legal framework for electronic commerce in the entire European Community is regulated by Directive 2000/31 / EC and is also followed in Bulgaria. The four elements of e-commerce are e-commerce sites, e-commerce entities and e-business and technology. E-commerce can occur as B2B, B2C C2C, C2B or B2G (B-Business, C-Customer, G-Government). Pandemic has led to an increase in sales of both B2B and B2C platforms. The increase in B2C sales is based on online sales of medical supplies, household fundamentals, and basic food products. The COVID-19 pandemic has deeply altered supply and demand and has changed the way transactions occur and services are provided. This new reality has made it clear that e-commerce can be an essential tool for consumers. E-commerce can support small businesses and, by making economies more competitive, be an economic driver for both domestic growth and international trade. Consumers are saying they will keep their new habits after the crisis. This presents new e-commerce opportunities for international trade. Creation of an e-commerce website implies compliance with legal obligations, in particular at the level of the order process, consumer information and customer data protection.

Irrespective of countries, the scope of different e-commerce scenarios in 2020 was discussed by Bakalis, et al. (2020) Apart from the obvious factors promoting e-commerce, online ordering and delivery are the most drastic changes happening. It is possible that

some higher-level sophisticated apps facilitating e-commerce across platforms in real-time may be developed. These new apps may include features to judge a list of ingredients with nutritional information and advice. The platform needs to be attractive and at the same time, regulated to prevent it from becoming a marketing tool for companies. Thus, some new regulations on online food resources are possible. These regulations may insist on compliance with existing food regulations when information and claims are presented in these platforms. To enable serving increasing number of customers who buy their food online, new distribution systems may be created. For example, small distribution centres may be established for home delivery all over cities.

Orders may be brought and deposited in lockers during the night for consumers to pick during the day. The items may include refrigerated and frozen units also. Drive-in supermarkets are another possibility; in which case, items need to be ordered online before. Thus, both home delivery and pick up of pre-ordered products might be the new ways of e-commerce, due to limited shelf space of supermarket. These developments could lead to democratisation of food product choices and may even include new and novel products from smaller manufacturers. The difficulties of small manufacturers to get the shelf space in regular supermarkets may be solved this way as the supermarkets become distributors rather than retailers. The border between retail and distribution may become blurred when this happens.

One problem in the effectiveness of digital platforms like online business in developing countries is the speed level and traffic in the broadband networks. Katz, Callorda, and Jung (2020) suggested public-private partnerships to work together to improve the digital ecosystem. The currently seen rapid increase in internet traffic can be accommodated by increasing the number of base stations for mobile broadband for which permit requirements can be relaxed. Additional spectrum can be temporarily

allocated to operators to solve such traffic problems and video streaming providers to reduce traffic from high definition content. Increase of unlicensed spectrum to resolve Wi-Fi router bottlenecks can also be considered. Some of these suggestions are temporary and could be reviewed when the pandemic subsides.

While increasing online commerce has become a significant development in 2020, equally important is the application of digital technologies in the delivery of online orders. Taxi and other delivery van services quickly developed delivery booking apps for this purpose, led by Australia. However, going online did not mean that the negative impacts of the pandemic were avoided. Convenience and price were the main factors of online business before the pandemic. Now getting and preserving the sales is of great importance. Addition of social elements like allowing to shop with friends became a squatted style of social networking. This social networking may continue even after the pandemic. An aspect associated with online business is the rapid spread of mobile payment systems as a financial information system. The shift from card and cash to cashless society may spread from Sweden and China to other countries where this type of payment method has not become popular. E-commerce has also spread in travel and tourism sectors, although on a low key due to travel restrictions and a reduced number of services in 2020 especially in the context of Covid-19 (Maritz, 2020).

#### 4. 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' hierarchical needs and Ajzen's planned reasoned action and Ajzen's 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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