

Chapter 2

Relevance of e-commerce for development and growth

2.1 Scope of e-commerce

2.1.1 Definitions

A major challenge in defining e-commerce lies in its intangible nature and the rapid changes to the environment in which it exists (Krogman and Khumalo, 2016). A series of definitions have been proposed by different organisations in an attempt to cover the full range of what e-commerce is:

According to the OECD (2000), ‘in loose terms e-commerce means doing business over the Internet, selling goods and services which are delivered offline as well as products which can be “digitised” and delivered online, such as computer software.’

In more technical terms, contextualised by the WTO Work Programme on E-commerce (WPEC), it is defined as ‘the production, distribution, marketing, sale or delivery of goods and services by electronic means’ (WTO, 1998).

UNCTAD expands the scope of definition to cover purchases and sales conducted over computer networks using multiple formats and devices, including the web and electronic data interchange, using personal computers, laptops, tablets and mobile phones of varying levels of sophistication (UNCTAD, 2015a).

Much like the trade in services, e-commerce adds value through a non-physical form. Beyond its intangible nature, it is also challenging to identify exactly where an economic activity has taken place or how value was created. Nevertheless, the identified definitions have a common element: e-commerce transactions always require the exchange of data over a computer network (Krogman and Khumalo, 2016). However, it is worth clarifying that even though goods or services are ordered electronically, the payment and the ultimate delivery of the goods or services do not have to be conducted online (UNCTAD, 2015a).

2.1.2 Types of e-commerce and their economic implications

An e-commerce transaction can be between enterprises, households, individuals, governments, and other public or private organisations. Included in these electronic transactions are orders made over the web, extranet or electronic data interchange. The type of transaction made is defined by the method of placing the order. Normally excluded are orders made by telephone call, fax or manually typed emails (WTO, 2013).

While various permutations and combinations exist, the main types of e-commerce are business-to-business (B2B), business-to-consumer (B2C), consumer-to-consumer (C2C), consumer-to-business (C2B), business-to-administration (B2A), and consumer-to-government (C2G).

There is more trade among B2B and between B2C due to the internet's wide scope and spectrum of potential commercial activities and information exchanges. In B2G transactions, governments have utilised e-commerce as a platform for the management of public procurement systems while in government-to-business (G2B) and government-to-consumers (G2C) e-commerce and the internet technology is being used by governments for the transmission or receipt of information, and the convenience and cost reduction of payment systems and tax compliance (C2G).

E-commerce is characterised by some salient features, namely it (i) is ubiquitous, such that it is available everywhere, at any time; (ii) enjoys a global reach, by crossing cultural and national boundaries; (iii) is built on universal standards; (iv) is interactive, by allowing online merchants to engage a consumer in ways similar to a face-to-face experience, but on a much more massive global scale; (v) enjoys information density, by reducing information collection, storage, communication and processing cost; (vi) permits personalisation and customisation; and (vii) enables new marketing channels through social media platforms (Cudjoe, 2014).

The rapid migration of supply chain management from relatively expensive closed electronic data interchange (EDI) networks towards the internet (OECD, 2000) has led to increased B2B transactions and drives the potential for businesses to link and deal directly with suppliers. The leverage of technology in cross-border transactions offers firms as well as individuals an electronic infrastructure that creates virtual markets for goods and services where previously they did not exist. For example, eBay provides a consumer-to-consumer (C2C) platform and consumer-to-business (C2B) with a variety of functions offered by the traditional marketplace, in addition to other added services.

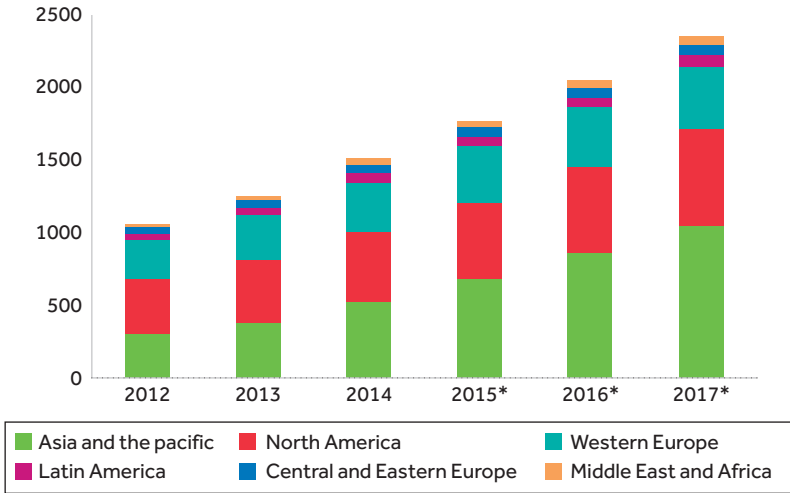
Business-to-consumer e-commerce was estimated to be US\$1.2 trillion in 2013, and is forecast to expand to over US\$2 trillion by 2017. In developing countries, particularly in Asia and Africa, business-to-consumer e-commerce is expanding rapidly.

Table 2.1 Channels for e-commerce

	Government	Business	Consumer
<i>Government</i>	G2G <i>e.g. co-ordination</i>	G2B <i>e.g. information</i>	G2C <i>e.g. information</i>
<i>Business</i>	B2G <i>e.g. procurement</i>	B2B <i>e.g. e-commerce</i>	B2C <i>e.g. e-commerce</i>
<i>Consumer</i>	C2G <i>e.g. tax compliance</i>	C2B <i>e.g. price comparison</i>	C2C <i>e.g. auction markets</i>

Source: OECD (2000)

Figure 2.1 Global B2C e-commerce marketplace, 2012–17 (US\$ billion)



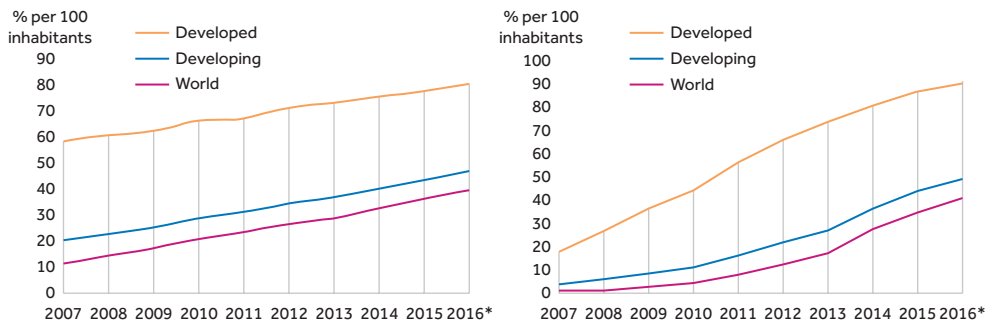
* = forecast

Source: WTO (2015)

The number of internet users has more than tripled in a decade – from 1 billion in 2005 to an estimated 3.2 billion at the end of 2015 (World Bank, 2016). The influence of e-commerce marketplaces on international trade is significant – and still growing. Today some 16 per cent of B2C e-commerce transactions are cross-border, and that share is projected to reach almost 30 per cent by 2020, when international sales could hit US\$1 trillion. Cross-border B2B e-commerce is even bigger. In 2014, it was an estimated US\$1.8 trillion to US\$2 trillion market.

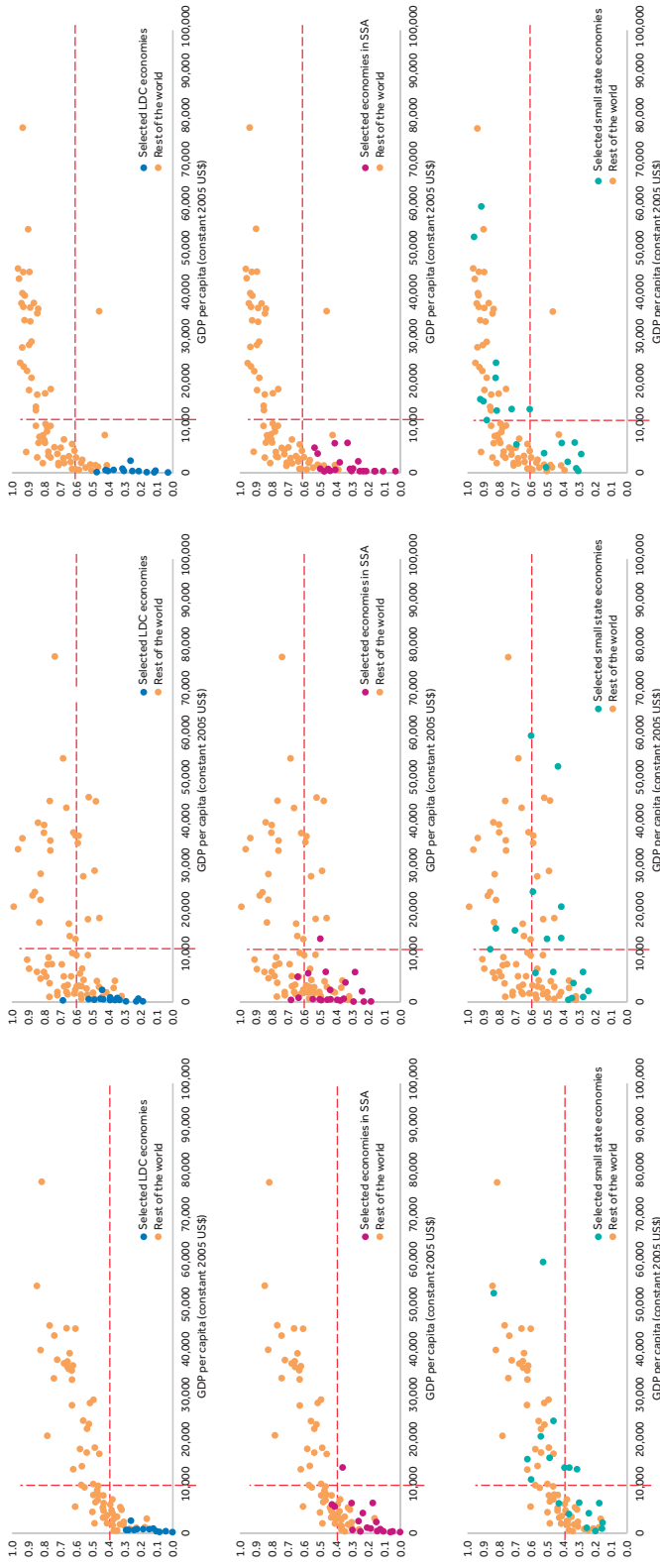
Although, businesses, people and governments are more connected than ever before, the digital adoption index is low for selected economies in LDC, SSA and small state economies (SSE) as compared to the rest of the world. Figure 2.3 highlights the results for selected economies. In particular, the green dots in the first figure (upper left hand

Figure 2.2 Citizens using the internet (left) and active mobile-broadband subscriptions (right)



Source: ITU; Note: estimates

Figure 2.3 Digital adoption in LDCs, sub-Saharan Africa and small states



Note: The Digital Adoption Index (DAI) (Business) is the simple average of four normalised indicators: the percentage of businesses with websites, the number of secure servers, the speed of download, and 3G coverage in the country. The DAI – Governments is the simple average of three normalised sub-indices: core administrative systems, online public services, and digital identification. Data for online public services are provided by the UN's Online Service Index. The DAI – People is the simple average of two normalised indicators from the Gallup World Poll: mobile access at home and internet access at home

Source: World Bank (2016); International Economics Ltd

side) reveal that the businesses based in LDCs, SSA and small states are not adopting the digital opportunities as quickly as other economies of the world. In that sense they need to catch up. The governments of these economies are correspondingly less advanced in their adoption of digital technologies than other countries in the world. There appears a strong correlation between per capita income and digital adoption, even if there are instances of superior performance by some low-income countries.

When specifically looking at the complements required for digital readiness, such as starting a business, years of education adjusted for skills, and quality of institutions, we see a range of positions across the LDC, SSA and small state countries. Based on an average of the three sub-indicators mentioned above, the World Bank have revealed a clear upward relationship between these factors and the technology performance of countries. Broken down by the three groups of states, we reveal the low levels of technology adoption and readiness in sub-Saharan Africa and LDCs. Small states on the other hand perform in a similar manner to the rest of the world, indicating that whilst being small, they have invested to create the critical conditions to realise technology adoption (Figure 2.4).

2.2 Links between e-commerce and economic growth

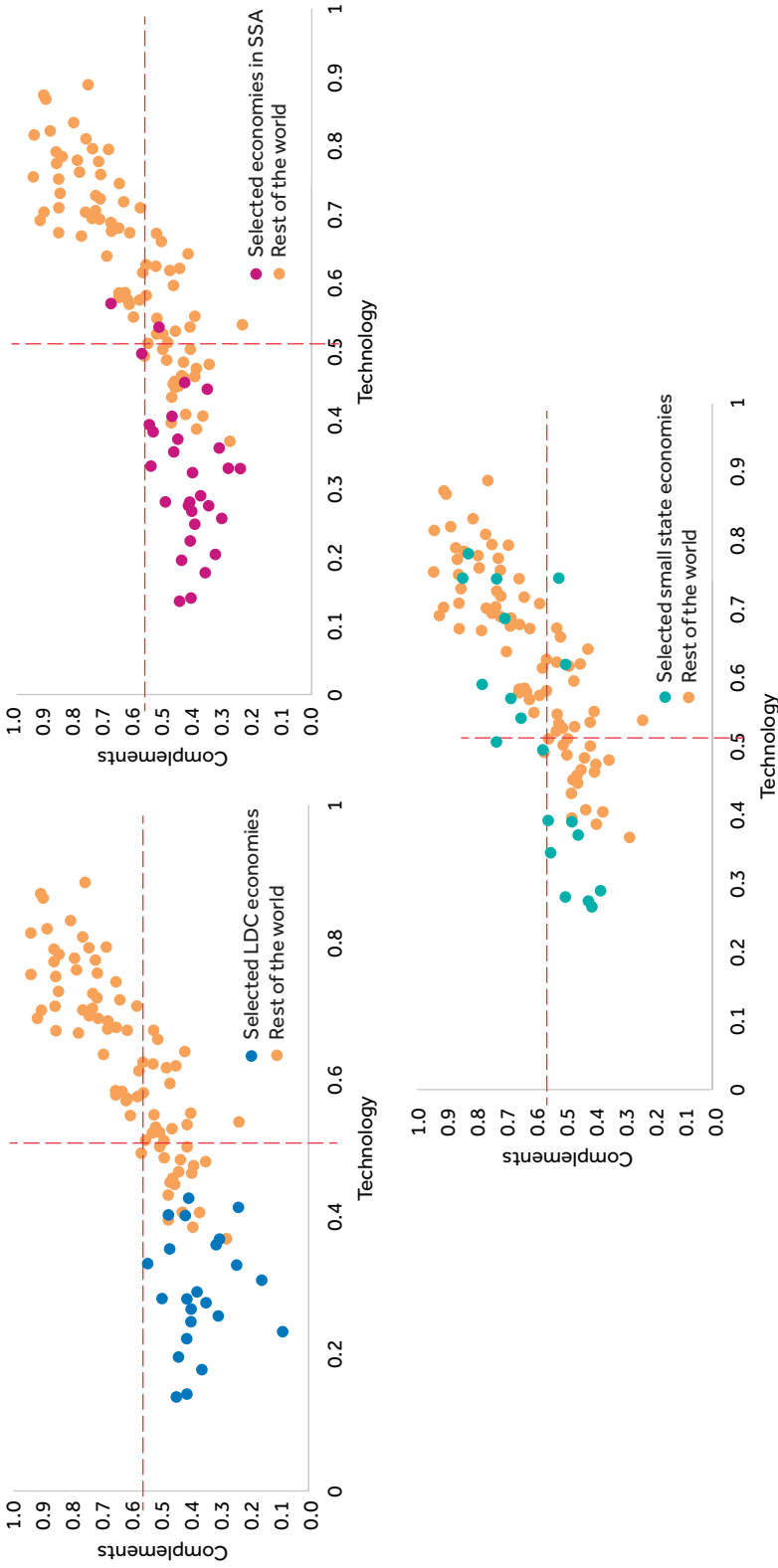
Electronic commerce depends on the combination of synergies available from different service sector infrastructures, namely communications systems, financial payment systems, and distribution and delivery systems designed to integrate within an interoperable framework. Liberalisation of these different channels, including independent regulation, provides for a competitive access that ensures a safe and real-time online payment system, and timely and reliable distribution system from seller to buyer for products purchased online (IIE, 2000).

Both the access to the internet infrastructure, including mobile hubs, and the legislation in place for regulating payments systems and disputes must be developed for the industry to grow and flourish. Barriers to access either of the service sector infrastructures linked to e-commerce would inhibit its growth. While a diminished role of government in the internet marketplace is usual, government policies in general affect the rate at which e-commerce develops, whether through the removal of barriers or the facilitation through incentives.

E-commerce creates job in the ICT sector and in enterprises that become more competitive due to online procurement and sales. A recent study of EU firms also found that engaging in e-commerce increases labour productivity and that e-commerce accounted for 17 per cent of EU labour productivity growth between 2003 and 2010. A 2014 study by the US International Trade Commission (USITC) calculated the productivity gains from the internet by surveying US businesses and found that the productivity gains from the internet have increased US real GDP by around 3.5 per cent (MGI, 2016).

The internet has the potential to be a source of macro-economic growth as well as providing solutions to public policy challenges, as it can be accessed from any location as long as the basic infrastructure has been established. With e-commerce and the

Figure 2.4 E-readiness frameworks and technology adoption



Note: Dotted red lines represent world average; 'Technology' is measured by the Digital Adoption Index (DAI). DAI is based on three sectoral subindexes covering businesses, people, and governments, with each subindex assigned an equal weight: $DAI (Economy) = DAI (Businesses) + DAI (People) + DAI (Governments)$. Each subindex is the simple average of several normalised indicators measuring the adoption rate for the relevant groups. Similarly, 'Complements' is the average of three subindicators: starting a business; years of education adjusted for skills; and quality of institutions

Source: World Bank (2016); International Economics Ltd

new technologies that come with it, suppliers can access markets without physically crossing their country's borders and participate in global cross-border trade. The benefits of joining the e-commerce marketplace are immediate, large and involve relatively low costs since the physical network has already been set up. E-commerce supports economic growth by improving on how governments and businesses perform their core functions and allows for policy customisation and alignment to local preferences and priorities (IIE, 2000).

E-commerce is poised to promote consumption, generate income and employment, not only in less developed economies and sub-Saharan Africa, but for the global economy. For example, in the EU single market cross-border e-commerce has significantly reduced trade costs compared to traditional offline trade. The combined macro-economic effect of these transmission channels is generally positive for EU Member States, ranging between 0.07 and 0.25 per cent of GDP (Francois *et al.*, 2014).

Less developed economies, landlocked economies and small island states are likely to benefit most from e-commerce in comparative terms, since their geography creates higher traditional trade barriers in these countries. Moreover, e-commerce has the potential to promote new industrial organisations, enable countries to leapfrog certain technological barriers, and rebalance the power relations in the supply chain between producers, consumers and business partners. By emphasising comparative advantages built on information, knowledge, education and culture, e-commerce has the potential to integrate these countries into the global economy, and in accessing a large market base for traditional offline goods that will be listed online. Examples of successful sectors include the worlds of finance and travel, which have thrived through e-commerce transactions. E-commerce has the potential to provide information on services (including tourism) opportunities in sub-Saharan Africa and give leisure seekers the ability to compare prices and choose from an array of service providers, in addition to opening up an online auction platform.

According to UNCTAD, while finance has long been a major user of electronic data interchange (EDI) using intranets and extranets and ensuring electronic communications, e-commerce has spurred households to utilise electronic banking and online trading of financial securities. For less developed economies, e-commerce would provide a platform for both access to financial activities and banking (UNCTAD, 1999). A recent example of this is the success of mobile banking through telecom providers, such as M-PESA in Kenya, which within just six years of existence had 25 per cent of Kenya's GDP flowing through its cash transfer network (Economist, 2013).

Nevertheless, e-commerce is not a panacea for technology transfer and ease of business. Whilst it is true that traditional barriers to trade may be removed, new barriers emerge, including access to the technology, research and development, and the repository of cloud computing services. With those services predominantly headquartered in advanced economies, catching up will be a challenge to capture the greatest benefits from the infrastructure linked to e-commerce. Despite the immense opportunities that e-commerce presents, developing countries are not able to utilise or maximise electronic trade due to several challenges, most of which are interconnected. These challenges were identified over a decade ago, yet are still valid.

Box 2.1 Potential challenges for developing countries in e-commerce

Full utilisation of e-commerce in developing countries is hindered by, among other factors: (I) In most developing countries, access to high-speed broadband for businesses and to computer internet is still not possible for a majority of the population due to its high costs and inadequate procedures for electronic payments. Collaborative efforts between government and private sector can liberalise the environment, allow for competition and open up the market; (II) **limited resources** in terms of human knowledge in information-intensive activities. Capacity building and investments in information dissemination and technical skills should be prioritised; (III) **inadequate local content** produced domestically and that can be used in global networks have resulted in developing countries being primarily consumers of e-content and not producers; (IV) **insufficient legal and regulatory safeguards** to regulate and ensure secure online transactions and foster trust in e-commerce; (V) **financing** remains a major issue for developing countries in embracing and participating in e-commerce. In particular, there are few linkages with foreign capital and expertise to include developing countries in the global marketplace via the internet; and (VI) **issues of security, power and governance** of matters relating to e-commerce, as well as the monopoly practices of existing operators.

Source: UNCTAD (1999)

The most critical barrier, however, has been ascribed to the limited information and communication infrastructure available in most developing countries, especially in sub-Saharan Africa. For the telecom agencies, inadequate competition, resources and public policy expertise is prevalent.

References

- Cudjoe, D. (2014). Electronic Commerce: State of the Art. *American Journal of Intelligent Systems*. Vol. 4, No. 4.
- The Economist (2013). Why Does Kenya lead the World in mobile money? May 27. London.
- IIE (2000). *Global Electronic Commerce – a policy primer*. Institute for International Economics.
- Krogman, H. and N. Khumalo (2016). E-commerce in Africa: Definitions, issues and the evolving international regulatory landscape. *Global Economic Governance, Discussion Paper*, November 2016.
- MGI (2016). *Digital Globalization: The Era of Global Flows*. March.
- OECD (2000). E-Commerce: impacts and policy challenges. *Economic Outlook*. No.67, Paris.
- UNCTAD (1999). Can Electronic Commerce be an Engine for Global Growth? *Electronic Commerce and the Integration of Developing Countries and Countries*

- with Economies in Transition in International Trade. UNCTAD – Trade and Development Board, TD/B/COM.3/23, 1 June, Geneva.
- UNCTAD (2015a). Information Economy Report: Unlocking the potential of E-commerce for developing countries. UNCTAD: Geneva.
- World Bank (2016) World Development Report. World Bank: Washington DC.
- WTO (1998). Work Programme on Electronic commerce (WT/L/274). WTO: Geneva.
- WTO (2013). E-commerce in Developing Countries: Opportunities and Challenges for Small and Medium-sized Enterprises.

