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INFORMATION ECONOMY REPORT 2015

Unlocking the Potential of E-commerce for Developing Countries





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NOTE

Within the UNCTAD Division on Technology and Logistics, the ICT Analysis Section carries out policy-oriented analytical work on the development implications of information and communications technologies (ICTs). It is responsible for the preparation of the *Information Economy Report*. The ICT Analysis Section promotes international dialogue on issues related to ICTs for development, and contributes to building developing countries' capacities to measure the information economy and to design and implement relevant policies and legal frameworks.

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Countries with economies in transition: South-East Europe and the Commonwealth of Independent States;

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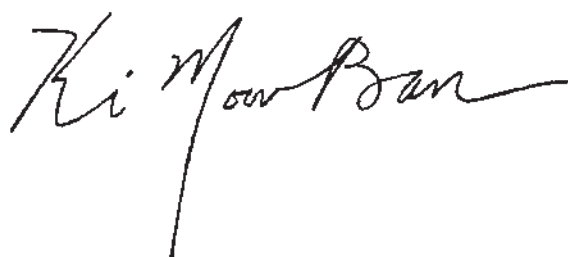
PREFACE

The 2015 edition of UNCTAD's *Information Economy Report* examines electronic commerce, and shows in detail how information and communications technologies can be harnessed to support economic growth and sustainable development.

Electronic commerce continues to grow both in volume and geographic reach, and is increasingly featured in the international development agenda, including in the World Summit on the Information Society outcome documents and in the outcome of the ninth Ministerial Conference of the World Trade Organization.

The *Information Economy Report 2015* highlights how some of the greatest dynamism in electronic commerce can be found in developing countries, but that potential is far from fully realized. The report examines opportunities and challenges faced by enterprises in developing countries that wish to access and use e-commerce. It highlights the latest market trends, benchmarks country performances with the UNCTAD E-commerce Index, reviews examples of e-commerce in rural areas and low-income countries, addresses relevant legal issues and provides policy recommendations.

As the world looks ahead to implementing a new agenda for the next generation of our development work, I commend this report to all those seeking to help unlock the potential of e-commerce for developing countries.



BAN Ki-moon
Secretary-General
United Nations

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CONTENTS

Note	ii
Preface	iii
Acknowledgements.....	iv
List of Abbreviations	ix
Overview.....	xi
CHAPTER I REVISITING THE DEVELOPMENT POTENTIAL OF E-COMMERCE	1
A. E-commerce and development.....	2
B. Definitions of e-commerce.....	3
C. Implications of e-commerce	4
1. The e-commerce value chain.....	4
2. Economic impacts of e-commerce.....	6
3. New evidence on the productivity impact of e-commerce in Europe.....	7
D. Roadmap to the report	7
CHAPTER II GLOBAL AND REGIONAL TRENDS	11
A. The global e-commerce market is evolving	12
1. Market size estimates.....	12
2. Cross-border e-commerce.....	15
3. E-commerce use by households and enterprises	17
4. What do consumers buy online?	20
5. Largest B2C e-commerce companies	21
B. Regional trends	23
1. Africa: Dynamic growth from a low level	23
2. Asia and Oceania: Major market with great diversity	25
3. Latin America: Diverse ecosystem still to reach full potential	28
C. Conclusions	30
CHAPTER III MEASURING THE E-COMMERCE READINESS OF COUNTRIES.....	33
A. Factors influencing the scope for e-commerce.....	34
1. Internet access.....	34
2. Payment systems for online purchases.....	35
3. Delivery systems.....	37
B. The UNCTAD B2C E-commerce Index	39
C. Concluding remarks.....	43

CHAPTER IV	E-COMMERCE BY SMALL AND RURAL ENTERPRISES IN DEVELOPING COUNTRIES	45
A.	Options for micro and small enterprises to engage in e-commerce	46
1.	Using existing online marketplaces	46
2.	Access barriers to international e-commerce platforms	48
3.	Setting up a stand-alone e-commerce site	49
4.	Processing of payments	50
5.	Order fulfilment	51
6.	The importance of local solutions	52
B.	Opportunities for rural enterprises to sell online	53
1.	Grassroots-led rural e-commerce in China	54
2.	Rural e-commerce in the Republic of Korea: The case of the Information Network Village platform.....	55
3.	Rural e-commerce in Thailand	56
4.	Lessons from the three cases.....	58
CHAPTER V	MAPPING THE LEGAL LANDSCAPE FOR E-COMMERCE.....	63
A.	Legal issues and challenges for e-commerce	64
B.	Compatibility of e-transaction laws needed for cross-border e-commerce.....	66
C.	Coverage of consumer protection online is patchy.....	68
D.	Data protection laws are spreading rapidly.....	70
E.	Cybercrime – a global priority	73
F.	Conclusions and recommendations.....	74
1.	Align e-transaction laws.....	75
2.	Streamline consumer protection policies	76
3.	Streamlining data protection and cybercrime policies	76
4.	Strengthening the capacity of lawmakers and judiciary	77
5.	Enhancing the awareness of consumers and companies.....	78
CHAPTER VI	STRATEGY AND POLICY IMPLICATIONS.....	81
A.	National policies and strategies to enable e-commerce.....	82
1.	Strategic approaches to the development of e-commerce.....	82
2.	Key policy areas to address in a national strategy.....	82
B.	E-commerce policies at the international level.....	88
1.	E-commerce and international trade rules	88
2.	Taxation concerns related to e-commerce.....	89
3.	Support by development partners	90
C.	Concluding remarks.....	91
References.....		93
STATISTICAL ANNEX		99
Selected Unctad Publications In The Area Of Science, Technology And Ict For Development		115
Readership Survey		119

Boxes		
I.1.	E-commerce, the World Summit on the Information Society and the World Trade Organization	2
I.2.	Types of e-commerce	3
II.1.	Barriers to international e-commerce – a survey.....	15
II.2.	The Alibaba Group.....	24
II.3.	E-commerce companies in sub-Saharan Africa – selected examples.....	26
II.4.	Data on e-commerce in Brazil.....	29
II.5.	MercadoLibre	29
III.1.	Methodology of the UNCTAD B2C E-commerce Index	40
IV.1.	Platform competition in the Philippines.....	46
IV.2.	B2B online marketplaces – opportunities for micro and small enterprises to participate in international supply chains.....	47
IV.3.	Freelance opportunities for women entrepreneurs.....	47
IV.4.	Shopify.in – a localized SaaS example.....	50
IV.5.	Support with compliance: The PACIR project in Côte d’Ivoire	52
IV.6.	Helping small business overcome barriers to e-commerce: The case of Kapruka	53
V.1.	MCC Industrial Sales Corporation versus Ssangyong Corporation	69
V.2.	Company responses to data protection and privacy in East Africa	73
V.3.	Online fraud in India	74
V.4.	Integrating developing countries in the regional and global cyber economy.....	76
V.5.	UNCTAD assistance with partners	77
V.6.	Awareness campaigns on e-commerce laws in Uganda	78
VI.1.	Indicators to monitor e-commerce developments	83
VI.2.	Facilitating cross-border e-commerce using postal services.....	85
VI.3.	Using the postal sector to support exports by micro and small enterprises	86
VI.4.	India’s FDI policy related to e-commerce.....	86
VI.5.	UNCTAD support to e-commerce development in developing countries	90

Tables

II.1.	United States: Total and e-commerce revenues, by sector, 2002–2012 (\$ billions)	12
II.2.	B2C revenues in the top 10 countries, ranked by number of online buyers, 2012–2013.....	14
II.3.	International deliveries (tonnage) of small packets, parcels and packages, 2011 and 2014, distribution of regional flows as a share of global flows (per cent)	16
II.4.	Average shipping time for parcels (normal service), Q2 2013 to Q1 2014 (Number of days from origin to destination).....	16
II.5.	Estimated number of online buyers worldwide, by region, 2013 and 2018	18
II.6.	Online buying intentions in the next six months, 2014, by region (Per cent of respondents)	22
II.7.	Largest Internet retailer companies in the United States, Europe, Asia and Latin America, 2012–2013.....	23
II.8.	Top online sites by gross merchandise value, 2012 (\$ billions).....	25
II.9.	B2C e-commerce sales in six countries in Africa, 2009–2012 (\$ billions)	25
III.1.	E-transactions value, by payment methods, 2012, by region (per cent).....	36
III.2.	Type of accounts and payment methods, by region, 2011, share of population aged 15 or more (per cent)	37
III.3.	Speeds needed for video streaming, 2013.....	38
III.5.	Top 10 countries in the UNCTAD B2C E-commerce Index, 2014	40
III.4.	Indicators included in the UNCTAD B2C E-commerce Index.....	40
III.6.	Top 10 developing economies in the UNCTAD B2C E-commerce Index, 2014	41
III.7.	Global values for the UNCTAD B2C E-commerce Index.....	41
III.8.	Regional average values in the UNCTAD B2C E-commerce Index	42
III.9.	Top and bottom 10 countries by difference between predicted and actual share of population buying online, 2014	43
IV.1.	Access to different Amazon services, 2014.....	48
IV.2.	Accessibility to different eBay services among United Nations Member States, 2014	49
IV.3.	Geographical coverage of different PayPal services, 2014	51
V.1.	Share of economies with relevant e-commerce legislation, by region, 2014 (per cent).....	65
V.2.	Types of e-signatures recognized by law in ASEAN member States, 2012	68
V.3.	Top 10 locations of consumers and companies involved in online complaints, 2013	71
V.4.	Incidents reported per country, 2013	71

Annex

1.	UNCTAD B2C E-commerce Index, 2014	100
2.	Amazon, eBay and PayPal services availability in United Nations Member States, 2014.....	104
3.	Availability of legislation or draft legislation in key areas of cyberlaws.....	109

LIST OF ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
B2B	business to business
B2C	business to consumer
B2G	business to government
C2C	consumer to consumer
e-commerce	electronic commerce
e-signature	electronic signature
EAC	East African Community
ECC	United Nations Convention on the Use of Electronic Communications in International Contracts
ECC-Net	European Consumer Centres Network
ECOWAS	Economic Community of West African States
EDI	electronic data interchange
FDI	foreign direct investment
GDP	gross domestic product
HD	high definition
ICPEN	International Consumer Protection and Enforcement Network
ICT	information and communications technology
INVIL	Information Network Village
IT	information technology
ITC	International Trade Centre
ITU	International Telecommunication Union
LDC	least developed country
Mbit/s	megabit(s) per second
MICT	Ministry of Information and Communication Technology (Thailand)
OECD	Organization for Economic Cooperation and Development
PKI	public key infrastructure
SaaS	software as a service
SMS	short message service
TFA	Trade Facilitation Agreement
UNCITRAL	United Nations Commission on International Trade Law
UNGCP	United Nations Guidelines on Consumer Protection
UPU	Universal Postal Union
URL	uniform resource locator
VAT	value added tax
WCO	World Customs Organization
WOUGNET	Women of Uganda Network
WSIS	World Summit on the Information Society
WTO	World Trade Organization

OVERVIEW

Global e-commerce is expanding fast with developing economies gaining prominence

The *Information Economy Report 2015* examines opportunities and challenges faced by enterprises in developing countries that want to engage in electronic commerce (e-commerce). As online transactions are increasingly embraced by enterprises and consumers, the global landscape is rapidly changing, with developing countries as a group assuming a more prominent role as both buyers and sellers of goods and services online.

It is estimated by UNCTAD that the value of global business-to-business (B2B) e-commerce in 2013 exceeded \$15 trillion, with more than three quarters of the total accounted for by, in order of magnitude, the United States, the United Kingdom of Great Britain and Northern Ireland, Japan and China. The importance of e-commerce increased substantially in the past decade. In the United States, for example, its share in total manufacturing revenue surged from 19 per cent in 2002 to more than half in 2012.

Global business-to-consumer (B2C) e-commerce accounted for an estimated \$1.2 trillion in 2013. While still considerably smaller than B2B, this segment appears to be growing faster. In developing countries, B2C e-commerce is rapidly expanding, particularly in Asia and Africa. China has already emerged as the largest global market for B2C e-commerce – measured both by online buyers and by revenue. The share of the Asia and Oceania region in global B2C e-commerce is expected to surge from 28 to 37 per cent between 2013 and 2018, and that of the Middle East and Africa to increase slightly from 2.2 to 2.5 per cent. Conversely, the combined share of Western Europe and North America is expected to fall from 61 to 53 per cent.

International postal deliveries of small packets and parcels have seen rapid growth in the past few years, mainly as a result of cross-border e-commerce. The volume of such trade rose by 48 per cent between 2011 and 2014. During this period, the share of developed countries as senders dropped from more than 70 per cent to less than 60 per cent. Developed countries and the Asia and Oceania region show significant trade surpluses in related deliveries, while the opposite is true for other regions.

The report outlines key opportunities and challenges of e-commerce ...

A number of proven and potential benefits are presented by B2B and B2C e-commerce, such as enhanced participation in international value chains, greater market access and reach, and improved internal and market efficiency, as well as lower transaction costs. It may spur job creation in the information and communications technology (ICT) sector and in enterprises that become more competitive thanks to online procurement and sales. New evidence from Europe presented in the report points to significant productivity gains from selling over the Internet and indicates that such effects are larger for smaller enterprises and in services industries.

But benefits from e-commerce do not accrue automatically and this form of trading also raises challenges for some existing players. With the entrance of competitors offering new product features and customer services, e-commerce redefines the marketplace. For example, traditional “bricks-and-mortar” stores increasingly need to adapt to enhanced price transparency and competition by providing new online sales channels, investing in new equipment and services, building complementary skills and revising their business strategies. The transition to online sales is not an easy task and even leading retailers of the world have wrestled with this challenge. There may also be a risk that technology-savvy foreign competitors outdo local firms, gaining greater market shares from e-commerce compared to local ones. Trade online has expanded the number of incidents and geographic reach of certain crimes and fraudulent activities. Governments may, furthermore, be concerned with tax erosion and transfer pricing.

... as well as major barriers and drivers, especially for micro and small businesses

A number of factors act as potential constraints on e-commerce. Economic barriers include inadequate ICT infrastructure and use, unreliable and costly power supply, limited use of credit cards, lack of purchasing power and underdeveloped financial systems. Sociopolitical barriers include weak legal and regulatory frameworks (which influence whether people and enterprises trust online transactions),

cultural preferences for face-to-face interaction, and reliance on cash in society. And cognitive obstacles, finally, include low levels of ICT literacy, awareness and knowledge related to e-commerce among both consumers and enterprises. Thanks to changes in the “e-commerce ecosystem” – the network of actors, institutions and infrastructure that forms the environment required for effective e-commerce – some of these barriers are today easier to overcome.

Although most micro and small enterprises in developing countries have yet to start buying or selling products online, recent developments are expanding their chances of seizing benefits from e-commerce. First, connectivity has greatly improved, notably as a result of the widespread uptake of mobile telephony and social media, and rising levels of Internet use enabled by deployment of international and national fibre-optic networks. Second, new applications, platforms and services are lowering the barriers to entry. Third, new payment solutions provide wider choice for both enterprises and consumers to conduct transactions online. Fourth, local e-commerce companies – sometimes backed by foreign investors – are rapidly appearing in developing countries, tailored to the needs and demands of local users. Fifth, there is growing readiness among enterprises and consumers to conduct business online as well as more awareness among Governments and lawmakers of the importance of relevant legislation and regulation to enhance trust online.

The UNCTAD B2C E-commerce Index: A new tool for measuring e-commerce readiness

To assess the readiness of countries for e-commerce, the report presents the new UNCTAD B2C E-commerce Index, covering data for 130 economies on four indicators: Internet use, secure servers, credit card penetration and postal delivery services. The UNCTAD B2C E-commerce Index value is strongly positively correlated to the variation in the share of individuals shopping online. It suggests that the highest e-commerce readiness is found in Luxembourg, Norway and Finland. Among developing and emerging economies, all front-runners are in East Asia: the Republic of Korea, Hong Kong (China) and Singapore.

The Index allows countries to compare their readiness with others and also indicates their relative strengths and weaknesses in different elements of the e-commerce process, such as the quality of Internet infrastructure and the availability of payment and delivery solutions.

There is considerable variation at the regional level. For example, transition economies have a relatively high degree of home postal delivery, whereas credit card penetration is low compared with most developing regions. On the other hand, in Latin America and the Caribbean, and in Asia and Oceania, there is scope for improving the coverage of postal home delivery, and in Africa, performance is hampered by low overall Internet penetration levels compared with other regions.

Globally, credit card penetration has the lowest average value among the four indicators in the Index. Most retail e-commerce payments are still made via credit card, but the role of other methods is forecast to expand in the future. As a result, credit card use may become a less important determinant when alternative payment solutions gain traction. Mobile payments, for example, are expected to account for only 3 per cent of the value of e-commerce payments by 2017. However, they are already important in countries characterized by limited Internet use but well-functioning mobile money systems. In several African countries, mobile solutions represent the most viable infrastructure for e-services due to high degrees of financial exclusion, limited availability of fixed lines, cost of fixed lines and cost of the card infrastructure. In Kenya, online purchase payments from mobile phones accounted for 19 per cent of total e-commerce transaction value in 2012, a smaller share than for cash-on-delivery but larger than for credit card payments.

Most of the top e-commerce companies are from the United States and China

The emerging e-commerce landscape is featuring a growing number of enterprises offering global solutions as well as services that are carefully tailored to the local environment. Among the global players, a number of specialized e-commerce companies with web sales only play a prominent role in the market. Some of the largest such companies by online revenue are Amazon.com (United States), JD.com (China), Dell (United States) and Jia.com (China). In addition to these, several global platforms allow individuals and small businesses to offer their goods and services online, such as the Alibaba Group (China), eBay (United States) and Rakuten (Japan). In terms of gross merchandise value, the top e-commerce sites in the world in 2013 were the Alibaba Group, followed by Amazon and eBay.

E-commerce platforms with strong presence around the world, such as Amazon, eBay, Alibaba and OLX, provide solutions to many small enterprises. They

can facilitate access to international markets, carry out trading, and organize shipping and financial transactions within and beyond national borders. However, merchants in developing countries do not always enjoy equal access to these services. For example, only in one developing country (India) are merchants able to register as sellers on Amazon. In the case of eBay, users can register to sell on its platform in 24 United Nations Member States, including nine developing countries. Other eBay sites allow for buying but not selling. Such asymmetric access to marketplaces may accentuate existing imbalances in e-commerce trade as it is easier to export from one country to another.

But new entrants offer locally tailored solutions in developing countries

The absence of global platform providers creates scope for local players to fill the void. In sub-Saharan Africa, for example, various e-commerce solutions have been adapted to develop commerce over feature phones. There are thousands of e-commerce start-ups throughout the continent, but only a handful have reached significant scale. Many new e-commerce payment gateways have also appeared. Meanwhile, in Asian least developed countries, such as Bangladesh and Cambodia, new e-commerce sites are targeting the domestic market, enabling consumers to browse and order products online.

Global mapping of e-commerce legislation highlights progress and gaps

Buying and selling online raise legal challenges that have to be addressed by both Governments and the industry itself. This applies to domestic e-commerce and even more to international transactions. Even in developed regions, different legal requirements set in national laws hamper cross-border e-commerce. Despite significant progress in the adoption of laws, and to some extent legal harmonization in many regions, there is a need to align laws with international legal instruments. Furthermore, several Governments, especially in developing countries, need to adopt baseline laws in legal areas where they do not exist and ensure enforcement.

The *Information Economy Report 2015* maps the availability of national legislation in four key areas of cyber legislation: e-transactions, consumer protection online, data protection and privacy, and cybercrime. Relevant laws in these areas are mostly in place in developed countries, but in many other

parts of the world the availability is inadequate. The share of countries that have adopted a law is generally highest for e-transactions and lowest for the protection of consumers online. Patterns vary by region. For example, in Central America, seven out of eight countries have consumer protection legislation in place, but more than half of the countries lack laws related to data protection and cybercrime. The subregion with the weakest coverage of e-commerce legislation is Middle Africa, where only two out of nine countries have e-transactions, consumer protection online and data protection laws, and only one country has adopted cyber legislation.

National strategies and international policies can help secure sustainable gains from e-commerce

As the digital economy expands and more business activities are affected, it is important to consider policies that can help to harness e-commerce for sustainable development. In this context, a national e-commerce strategy developed in collaboration with relevant stakeholders can play a useful role. Special attention may be devoted to measures to facilitate the effective involvement of micro and small enterprises.

Assessing e-commerce readiness is a natural first step towards formulating an effective national e-commerce strategy and to set priorities. This involves developing an understanding of national needs, characteristics, strengths and weaknesses, using tools such as the UNCTAD B2C E-commerce Index. Any assessment should include a comprehensive review of the evolution of e-commerce, including e-commerce-related initiatives, and a stocktaking of the resources and capabilities that could contribute to the development of e-commerce. This may require the collection of information through desk research and direct consultations with relevant stakeholders.

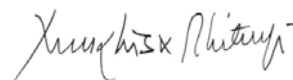
Properly identifying the main challenges and barriers and uncovering the dynamics underpinning them will help to ensure that policy measures adopted are effective. Key policy areas include the development of ICT infrastructure, logistics and trade facilitation, the legal and regulatory environment, e-payments, platforms and skills development in combination with an enabling international environment.

In the legal area, policy- and lawmakers need to take various actions. First, laws for e-signatures and e-contracting should be aligned to become internationally compatible. Second, consumer protection online should take into account ongoing

efforts by the OECD and the United Nations to update the international guidelines on consumer protection. Third, the establishment of minimum standards in regard to data protection and cybercrime could help ensure cross-border coordination on the design and implementation of relevant legislation and stronger enforcement institutions. Fourth, as cyber legislation is still a relatively new field of law in large parts of the developing world, further efforts are needed to strengthen the capacity of lawmakers and the judiciary. Finally, there is a need for raising the awareness about existing cyber legislation among all stakeholders.

At the international level, special attention is warranted in the areas of international trade rules, taxation and support to capacity-building in developing countries. E-commerce features in the international development agenda in outcome documents on the “vision beyond 2015” for the World Summit on the Information Society, as well as in the outcome of the Bali Ministerial Conference of the World Trade Organization. International declarations accord in that there remains ample scope for making e-commerce more inclusive and beneficial.

Further shifts from offline to online commerce are expected in the coming years. This will continue to change the ways in which consumers and enterprises interact. Some are better equipped to adapt to such transformations. From a policy perspective, it is important to create an environment that provides more equal opportunities for stakeholders in different locations and areas of society to take part in the process. In this context, international cooperation and effective dialogue between policymakers and other stakeholders will remain instrumental.



Mukhisa Kituyi

Secretary-General of UNCTAD

REVISITING THE DEVELOPMENT POTENTIAL OF E-COMMERCE



E-commerce is rapidly transforming the way in which enterprises are interacting among each other as well as with consumers and Governments. As a result of changes in the landscape of ICTs, e-commerce is now growing rapidly in several emerging markets and developing economies. There is growing evidence that the use of e-commerce has a significant impact on firm performance, especially on micro and small enterprises and in the services sector. Against this background, the Information Economy Report revisits the potential opportunities and risks of e-commerce and examines how countries can benefit more from it. This introductory chapter sets the stage.



A. E-COMMERCE AND DEVELOPMENT

The promise of ICTs to allow entrepreneurs and enterprises to buy and sell their products over digital networks has been among the development priorities for the international community since the end of the 1990s. In 1999, UNCTAD emphasized that “electronic commerce has the potential to be a major engine for trade and development on a global scale” (UNCTAD, 1999: 1). The topic was highlighted in the outcome documents from the World Summit on the Information Society (WSIS), which was held in 2003 and 2005. And 10 years after the Tunis Agenda for the Information Society (ITU, 2005) was adopted, the e-commerce promise remains on the international agenda (box I.1). Productive use of ICTs is also emphasized in the draft sustainable development goals, notably in connection with women’s empowerment, infrastructure and as enabling technologies.¹

E-commerce offers potential benefits in the form of enhanced participation in international value chains, increased market access and reach, and improved internal and market efficiency, as well as lower transaction costs. However, the uptake of e-commerce was for a long time confined mainly to large enterprises in developed countries (UNCTAD, 2010). Barriers to e-commerce have been categorized as economic, sociopolitical and cognitive (Kshetri, 2007). Economic barriers refer, for example, to inadequate ICT infrastructure and use, unreliable and costly power supply, limited use of credit cards, lack of purchasing power and underdeveloped financial systems. Sociopolitical barriers may involve weak legal and regulatory frameworks that limit the extent

to which people trust online transactions, cultural preferences for face-to-face interaction and reliance on cash in society. Cognitive obstacles, finally, relate to poor ICT literacy, awareness and knowledge related to e-commerce among both consumers and enterprises. Such barriers impair a country’s ability to participate on equal terms in international e-commerce.

Changes in the ICT landscape have enlarged the scope for businesses in developing countries to engage in e-commerce. In September 2014, the initial public offering on the New York Stock Exchange of Alibaba Group – a Chinese e-commerce enterprise – was the world’s largest ever, raising \$25 billion.² Earlier in the same year, the African online retailer Jumia, which is part of African Internet Group, announced that it was expanding into Cameroon, Ghana and Uganda, complementing its existing operations in Côte d’Ivoire, Egypt, Kenya, Morocco and Nigeria.³ These actions of Alibaba and Jumia are illustrative of the growing importance of developing countries in the transforming world of e-commerce. Indeed, the fastest growth of e-commerce is now witnessed in Asia and Africa (chapter II).

Although most micro and small enterprises in developing countries have yet to start buying or selling products online, recent developments have expanded their chances of seizing benefits from e-commerce:

- The connectivity situation has greatly improved, notably as a result of the widespread uptake of mobile telephony and social media, which has enabled more people and enterprises to have a web presence. Rising levels of Internet use enabled by deployment of international and national fibre-optic networks have similarly been

Box I.1. E-commerce, the World Summit on the Information Society and the World Trade Organization

E-commerce remains on the agenda of WSIS stakeholders, as stressed in the section on e-business in the WSIS+10 Vision for WSIS Beyond 2015, concluded in June 2014 (ITU, 2014a: 40):

“Make it possible for businesses to use relevant ICTs and to benefit fully from the information economy, including by creating an enabling environment for selling and buying goods or services via ICT networks.”

The Bali Ministerial Conference of the World Trade Organization (WTO), held in December 2013, also noted the importance of e-commerce in its future work programme. The ministerial decision WT/MIN(13)/W/3 stated that it:

“shall take forward the issues emerging in the discussions and the evolving application of e-commerce to enhance economic/development opportunities, with special consideration of the situation in developing countries, particularly in least developed country (LDC) members and least connected countries. It shall continue to examine opportunities and challenges for access to electronic commerce by micro, small and medium-sized enterprises, including small producers and suppliers”.

Source: UNCTAD.

important. Meanwhile, new payment solutions provide a wider choice for both enterprises and consumers to conduct transactions online (chapter III);

- New applications, platforms and services are making e-commerce more accessible and easier to navigate, thereby lowering the barriers to entry. New digital products (such as mobile applications and games) and remotely delivered services (such as “microwork”) have also opened new growth areas for developing countries (chapter IV);
- Local companies – sometimes backed by foreign investors – providing e-commerce solutions are rapidly appearing in developing countries, with offers that are tailored to the needs and demands of local users (chapters II and IV);
- There is growing readiness among enterprises and consumers to conduct business online as well as more awareness among Governments and lawmakers of the need for relevant legislation and regulation to enhance trust in e-commerce (chapter V).

B. DEFINITIONS OF E-COMMERCE

There are various definitions of e-commerce. This report draws on the one adopted by OECD (OECD, 2011):⁴

the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. The goods or services are ordered by those methods, but the payment and the ultimate delivery of the goods or services do not have to be conducted online. An e-commerce transaction can be between enterprises, households, individuals, governments, and other public or private organisations. To be included are orders made over the web, extranet or electronic data interchange. The type is defined by the method of placing the order. To be excluded are orders made by telephone calls, facsimile or manually typed e-mail.

For the purpose of this report, the concept of e-commerce will 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. E-commerce may involve physical goods as well as intangible (digital) products and services that can be delivered digitally.

There are various electronic relationships between Governments, enterprises, individuals/consumers and other public and private organizations. The prime focus here is on B2B and B2C transactions. Where appropriate, reference is also made to consumer-to-consumer (C2C) e-commerce and, to a lesser extent, business-to-government (B2G) transactions (box I.2).

Box I.2. Types of e-commerce

- **B2B:** Accounts for the bulk of e-commerce (chapter II). It involves transactions between businesses, such as between a manufacturer and a wholesaler, or between a wholesaler and a retailer. Some studies suggest that B2B offers greater potential benefits for smaller businesses than other forms of e-commerce (Kshetri and Dholakia, 2005; Rehbein, 2013). From the perspective of a small enterprise, engaging in B2B e-commerce may be a requirement for participating in national or global value chains. There are various specialized B2B platforms, typically catering to certain industries or value chains.
- **B2C:** Involves sales by “pure-play” e-commerce enterprises to consumers and by traditional bricks-and-mortar retail or manufacturing firms that add an online sales channel. Selling directly to consumers via ICT networks can help micro and small businesses to reach new markets, both domestically and internationally. There is a wide range of channels to reach consumers, including social networks, crowdsourcing platforms, dedicated e-commerce websites, mobile applications and more.
- **C2C:** This can be seen as the modern version of using the classified advertising section in a local newspaper or going to an auction. It covers online auction platforms (such as eBay or Taobao) and sales within online communities. C2C platforms offer possibilities for informal enterprises to engage in e-commerce.
- **B2G:** These transactions are similar to B2B, except that the buyer in this case is a government entity, such as in the case of public e-procurement.

Source: UNCTAD.

C. IMPLICATIONS OF E-COMMERCE

1. The e-commerce value chain

The shift towards e-commerce is already transforming the behaviour of businesses and consumers. The role of ICT applications and services is expanding across the entire value chain of e-commerce. The e-commerce process can be divided into four stages (figure I.1): information gathering, agreement, transaction and delivery. These stages apply equally to B2C and B2B e-commerce. At each stage, there are potential implications for consumers, enterprises and other organizations as well as Governments.

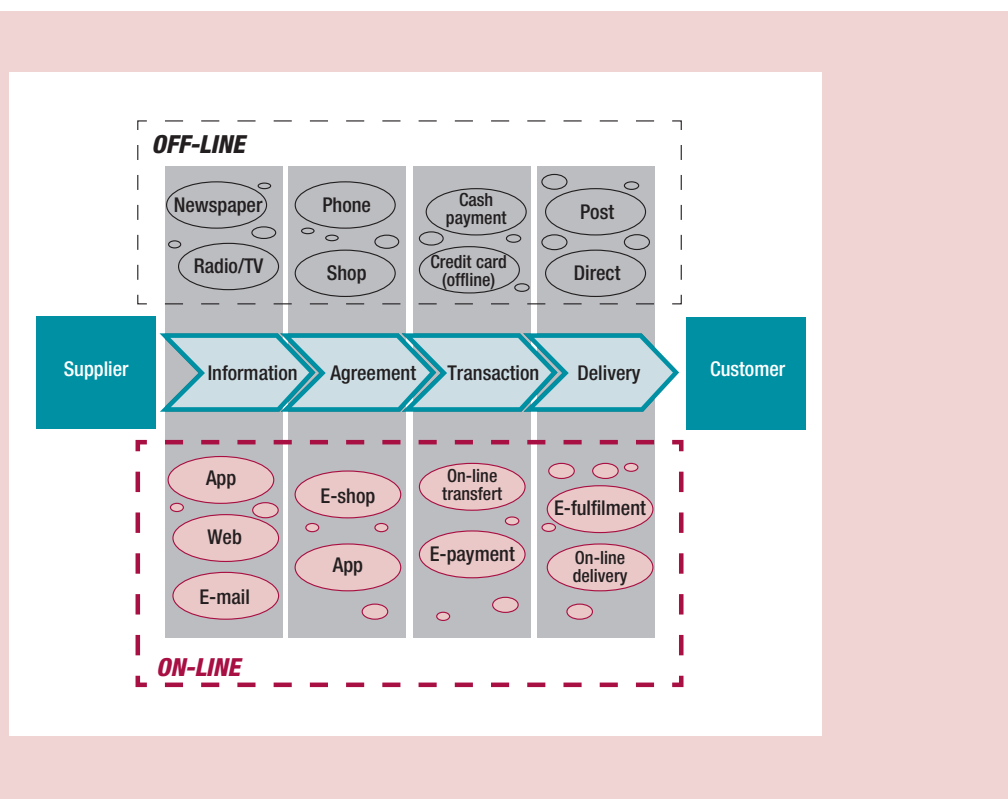
At the first stage, Internet browsing, e-mail inquiries and various social networking platforms help consumers to compare prices and features of products rather than relying on traditional information sources, including visits to specific physical sales outlets. Buyers visit websites with reviews conducted by other consumers and make their purchases at times that are convenient

to them and not only during official opening hours of traditional bricks-and-mortar stores. Moreover, consumer choice is expanded as products from far afield can more easily be discovered, ordered and delivered over long distances. The consumer surplus from the Internet in the G-20 countries was estimated in 2012 to average about \$1,430 per person, or about 4.4 per cent of gross domestic product (GDP).⁵ A study of e-commerce in the European Union found that enhanced choice from buying online rather than offline was a more important contributor to increased welfare gains for consumers than lower prices (Civic Consulting, 2011).

At the second and third stages, online applications and payment solutions represent alternative solutions to having to visit a shop or making a phone call, using cash or paying by credit card at the shop in question. Finally, some products can be delivered digitally (for example, downloading an e-book) as opposed to physically (shipping a book).

Many consumers and enterprises remain reluctant to change their behaviour and start making purchases online despite the advantages. This may

Figure I.1. The role of ICTs in the e-commerce transaction value chain



Source: OECD (2013: 10).

be linked to concerns that payments will be lost, that data provided online will be compromised or shared without their consent, that goods or services acquired will not meet the quality expected, and that it will be difficult to return them if so desired. Other barriers to online purchases may include inadequate or expensive ICT infrastructure and services, poor logistics and transportation services, or a preference among consumers to touch and feel the products before making a decision to buy (Agwu, 2012; Ocha, 2011; Copenhagen Economics, 2013) (see also an example from South Africa, figure I.2).

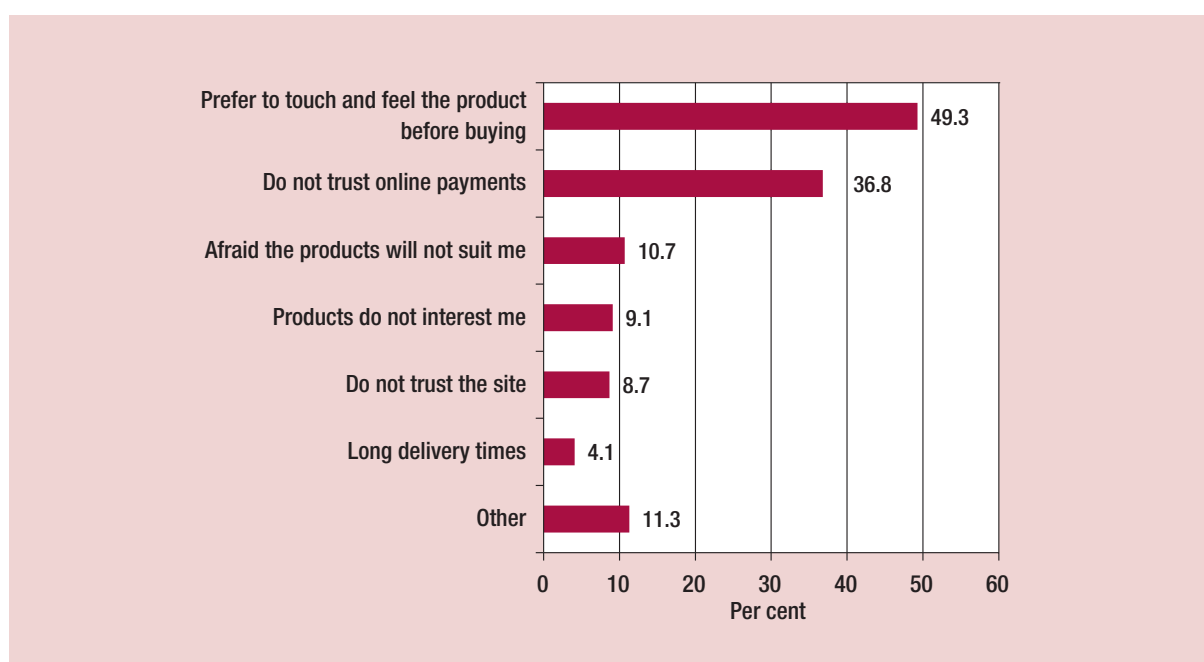
For enterprises, e-commerce offers both opportunities and risks. New ICT applications and services are helping to reduce various costs for suppliers. Leveraging different online and mobile channels may enable a seller to reach more potential customers (both consumers and businesses) in domestic and foreign markets in a more targeted way and sometimes at lower cost than through traditional channels. Meanwhile, suppliers that rely more (or entirely) on e-commerce may be able to reduce investments in physical infrastructure (such as buildings) in expensive locations. And, finally, there may be ways to reduce the delivery cost (especially for digital products), and to use innovative ways

of delivering physical products through dedicated e-fulfilment services (OECD, 2013).

In the e-commerce sector itself, entrepreneurs and enterprises in developing countries are discovering new business opportunities. Recent examples include the introduction of payment solutions (for example, Alipay in China or JamboPay in Kenya), e-commerce platforms (for example, MercadoLibre in Latin America and Zoom Tanzania), and innovative logistics, such as the motorbike delivery services of Giao Hang Nhanh in Viet Nam (see chapter II).

At the same time, most micro and small enterprises in developing countries are still unaware of the possibilities presented by e-commerce (Stockdale and Standing, 2006; Zaided et al., 2007; Thulani et al., 2010). They often lack the capabilities to benefit from them (Lawrence and Tar, 2010; Hourali et al., 2008; Ramsey et al., 2003). Apart from ICT skills, there is a need for in-house organizational capacity to handle orders, control quality and receive payment. Factors such as poor quality of the underlying ICT infrastructure, high adjustment costs, uncertainty surrounding e-commerce and limited perceived strategic value for the firm have been found to dampen the interest among firms to engage in e-commerce (Ben Aoun-Peltier and Vicente, 2012; Hollenstein and Woerter, 2007; Grandon and Pearson, 2004).

Figure I.2. Reasons for Internet users in South Africa not to make digital purchases, 2013 (Per cent of respondents)



Source: Interactive Advertising Bureau South Africa.

Meanwhile, the shift to e-commerce represents a potential threat to some enterprises. With the entrance of competitors offering new product features and customer services, e-commerce is redefining the marketplace. For example, traditional bricks-and-mortar stores need to adapt to enhanced price transparency and competition by providing new online sales channels, investing in new equipment and services, building complementary skills and revising their business strategies. This transition is not easy and even leading retailers have wrestled with it.⁶

From the point of view of Governments, e-commerce can bring benefits as well as challenges. It may spur new job creation in the ICT sector, related to software development, information technology (IT) consultancy services, web hosting and, of course, in enterprises that become more successful thanks to expanded online sales. It may help to boost exports, when domestic enterprises are able to break into foreign markets to connect with international supply chains, and add competitive pressure in the economy.

On the flip side, there is the risk that technology-savvy foreign competitors outdo local firms, gaining greater market shares from e-commerce compared to local firms. Governments may also be concerned with tax erosion and transfer pricing (Cockfield et al., 2013)(see also chapter VI). Greater reliance on online sales has also been associated with a proliferation of fraudulent activities and various cybercrimes (chapter V). Moreover, illegal and illicit goods increase the burden on customs and posts, which has led to the implementation of new practices to increase detection and confiscation. Beyond the economic field, e-commerce has given rise to concerns related to the health, safety and cultural dimensions. For example, while “Internet pharmacies” can help improve access to medicines there are doubts related to transparency, fraud, product quality, and even its viability as an ethical business model (World Health Organization, 2011).

2. Economic impacts of e-commerce

The literature on ICTs as an enabler of economic growth is vast, ranging from the aggregates (Stiroh and Jorgenson, 1999) and investments in hardware to more disaggregated studies on selected groups of firms (Brynjolfsson and Hitt, 2003; Van Reenen et al., 2010; Bartelsman, 2010; Black and Lynch,

2001). A review of the empirical literature on ICTs and productivity in firms suggests a clear positive impact, possibly increasing over time, but with the caveat that ICTs need to be well embedded to give effect (Cardona et al., 2013). For instance, this could mean complementary investments in skills and changes in organizational structure. Studies in Europe indicate that there could be a threshold as well as a ceiling regarding the prospect of benefiting from ICT usage in firms. For example, the relationship between broadband-Internet-enabled employees and firm performance tends to weaken when the intensity of usage comes close to saturation, but remains strong for firms at less intense ICT usage (Eurostat, 2008, 2013).

A field of the literature that is closely related to e-commerce emphasizes ICTs as a facilitator of international trade (Martens, 2013; Morgan-Thomas, 2009; Fraumeni, 2001). By using websites for marketing and e-sales channels, firms may be able to sell to markets otherwise not reachable due to, for example, distance or political systems. By reducing the barriers to trade, the Internet facilitates international e-commerce, with most of the short-term gains expected to arise in developed countries but with a shift to developing countries in the long run (Terzi, 2011). Comparisons between trade online and offline have found that the effect of distance is considerably smaller in the case of e-commerce thanks to lower information costs and greater trust (Lendle et al., 2012).

A survey of establishments in the Republic of Korea with 10 or more employees and with experience of selling goods or services online found the most important effects of e-commerce to be reduced transaction time and faster business processes, lower transaction costs and ability to reach new customers (Republic of Korea, Ministry of Security and Public Administration, 2013). Engaging in e-business and online sales has also been found to add value to retail firms (Zhu and Kraemer, 2005; Xia and Zhang, 2010). Having an online channel provided significant improvements in sales, cost, inventory and return on investments. Meanwhile, e-purchases (but not e-sales) had a positive significant effect on firm efficiency among manufacturing firms in Spain (Quirós Romero and Rodríguez Rodríguez, 2010). Positive effects of e-commerce to productivity were also observed for manufacturing companies in Taiwan Province of China, (Liu et al., 2013).⁷

3. New evidence on the productivity impact of e-commerce in Europe

Until recently, data did not allow for econometrical analysis of the specific link between e-commerce activities and enterprise productivity. This is still the case for developing countries. However, a unique data set collected through the European Union harmonized survey on ICT usage in firms in 14 European countries for the period 2002–2010 allows for in-depth analysis.⁸ The use of a dynamic panel data model on microaggregated firm-level data made it possible to distinguish between short- and long-term effects and to control for endogeneity of e-sales activities.⁹ E-sales were measured in two ways: as the share of firms selling over electronic data interchange (EDI) or websites, and as the share of sales conducted online.¹⁰ Thus, e-sales cover both B2B and B2C transactions.

Despite considerable growth in the past decade, the proportion of e-sales to total sales remains small in Europe. On average, close to one seventh of sales is conducted over digital systems. In 2010, approximately one out of four firms was active with e-sales and somewhat more than half of the firms engaged in either buying or selling online. E-commerce in Europe is more common among large firms, high productivity firms, exporting firms and in firms with international experience. Moreover, firms with wider usage of ICTs, measured by the proportion of broadband-Internet-enabled employees, tend to have a higher level of labour productivity (Falk and Hagsten, 2014).

Econometric analysis – using different model specifications and controlling for industry, country and time effects – shows a positive and significant relationship between changes in labour productivity and changes in the percentage of firms engaged in e-sales. Industries with an increase in the proportion of firms selling online experienced higher labour productivity growth.¹¹ The magnitude of the relationship differs between industries. For the period 2002–2010, a one-percentage-point increase in the share of firms with e-sales activities raised the rate of labour productivity growth by 0.12 percentage points over a two-year period.¹² Given the low rate of productivity growth in most European countries, this effect is not negligible. The relationship appears to be stronger for services than for manufacturing, and the effect is higher over the long term.

Estimates suggest that increased use of e-sales led to a rise in labour productivity growth by 2.1 percentage

points over the period 2003–2010 (or 0.3 percentage points per year).¹³ Expressed differently, e-sales activities accounted for 17 per cent of the total growth of labour productivity for the period 2003–2010, a sizable increase in labour productivity of the business sector in the countries included. Investigation of the effects on firms of different sizes reveals that the impact is stronger on small than on medium-sized firms. For large enterprises, the impact of e-sales activities was not significant, possibly because the benefits of e-commerce for them occurred earlier. All results are robust across different specifications of the model and estimation methods.

This unique analysis of European data provides new insights into the link between e-sales and firm performance. In summary, a considerable share of the total labour productivity growth during the period 2003–2010 can be attributed to increased use of e-sales. The results furthermore indicate that the productivity effects are stronger for services firms and for small enterprises.¹⁴ The analysis refers to a region of relatively high maturity of ICT use. More data and research are therefore needed to establish to what extent these results can be extended to countries at lower levels of ICT readiness. However, in combination with previous studies this analysis offers empirical evidence that a higher degree of e-sales helps enterprises become more productive.

Meanwhile, there is a need for additional research on the broader impacts of e-commerce, concerning effects on, for example, employment, income distribution, competition, structural transformation, taxation and the balance of trade.

D. ROADMAP TO THE REPORT

In view of the potential benefits and challenges from greater uptake of e-commerce, the following chapters of the report examine trends and developments in the evolving e-commerce ecosystem and discuss possible implications for developing countries. The report is structured as follows.

Chapter II reviews global and regional e-commerce trends. Based on an extensive review of official statistics and private-sector data, it investigates the magnitude of e-commerce, identifies the main markets and considers the extent of uptake in different parts of the world. It highlights the leading e-commerce companies and identifies what goods and services

are most frequently traded online. The second part of the chapter provides brief insights into regional developments in Africa, Asia and Latin America.

Chapter III sets out to measure the e-commerce readiness of countries. It discusses the main factors facilitating and constraining e-commerce – with an emphasis on B2C transactions – such as Internet connectivity, payment systems and delivery systems. The chapter also introduces the UNCTAD B2C E-commerce Index, covering 130 countries. It is particularly useful given the dearth of data about e-commerce usage in many low-income economies. The Index represents a new tool for countries to benchmark their e-commerce readiness against other locations and to identify areas of strengths and weaknesses.

Chapter IV turns the attention to different options that micro and small enterprises can explore to engage effectively in e-commerce. It examines various platforms and tools to determine their relevance for marketing and selling different products online. It discusses the respective advantages and disadvantages, taking into account issues related to payment processing and

order fulfilment. In this context, it considers the extent to which small firms in developing countries are able to make use of certain global e-commerce platforms and payment solutions. The second part of the chapter is devoted to rural e-commerce and analyses the diverse experiences of three Asian economies in this area.

Chapter V maps the availability of legislation in key areas of e-commerce around the world. Special attention is given to e-transaction laws, consumer protection, data protection and privacy, and cybercrime. It identifies remaining challenges for compatibility of laws and their enforcement in view of the development of electronic transactions. The chapter furthermore highlights selected legal issues currently facing e-commerce development globally and proposes a set of recommendations.

The final chapter concludes and provides overall recommendations for the development of national strategies and policies for the promotion of e-commerce in developing countries. It also emphasizes the role of the international community in creating an environment for maximizing potential benefits from e-commerce and for minimizing costs and risks.

NOTES

- 1 See goals 5, 9 and 17; available at http://sustainabledevelopment.un.org/content/documents/4518SDGs_FINAL_Proposal%20of%20OWG_19%20July%20at%201320hrsver3.pdf (accessed 21 January 2015).
 - 2 See “Alibaba issues additional shares to raise IPO total to \$25 billion: report”, *Reuters*, 22 September 2014; available at <http://www.reuters.com/article/2014/09/22/us-alibaba-ipo-idUSKBN0HH04H20140922> (accessed 21 January 2015).
 - 3 See “Africa e-commerce firm expands to new markets”, *Reuters*, 28 July 2014; available at <http://www.reuters.com/article/2014/07/28/africa-retail-internet-idUSL6N0PX2CU20140728> (accessed 21 January 2015).
 - 4 This definition deviates from that used in the WTO work programme on e-commerce. It understands e-commerce to mean the “production, distribution, marketing, sale or delivery of goods and services by electronic means”; see http://www.wto.org/english/tratop_e/ecom_e/wkprog_e.htm (accessed 22 January 2015).
 - 5 See “The Internet economy in the G-20”, *bcg.perspectives*, 19 March 2012; available at https://www.bcgperspectives.com/content/articles/media_entertainment_strategic_planning_4_2_trillion_opportunity_internet_economy_g20/ (accessed 22 January 2015).
 - 6 See, for example, “H&M delays launch of US online shop”, *Financial Times*, 27 September 2012; available at <http://www.ft.com/cms/s/0/0e38889a-0873-11e2-b57f-00144feabdc0.html#axzz3PXaOR6KG> (accessed 22 January 2015).
 - 7 For other studies showing positive associations between e-commerce and firm performance; see Colombo et al. (2013); Liu et al. (2013); and Konings and Roodhofs (2002).
 - 8 Statistical and analytical work by the OECD, Eurostat and the so-called European Union KLEMS project has broadened the field of ICT statistics and facilitated impact analyses. The ESSLait project has taken this a step further through the linking of firm-level data, allowing statistics on ICT usage of firms to appear in several dimensions not previously available (Micro Moments Database).
 - 9 “Microaggregated” in this case means that information has been sourced at the level of the firm, but due to disclosure issues firms have then been grouped by industry or other firm characteristics, such as size and age class.
 - 10 The full analysis and more information on the methodology and statistical analysis are provided in Falk and Hagsten (2014).
 - 11 These results are in line with those of Xia and Zhang (2010), who found that online sales channels increased sales volumes for retailing firms.
 - 12 This result is based on a regression method in which all variables are measured as change over a two-year period.
 - 13 Based on a dynamic panel data model controlling for endogeneity.
 - 14 It should be noted that higher labour productivity growth as a result of e-commerce activities does not necessarily translate into new jobs. In developed countries, there is empirical evidence that industries with faster growth of ICT capital had greater increases in relative demand for highly educated workers and larger decline in relative demand for middle-educated workers (Michaels et al., 2010). This may also hold true for the effects of e-commerce on the skill structure of the workforce.
-

GLOBAL AND REGIONAL TRENDS

2

The global landscape for e-commerce is rapidly evolving, with developing countries assuming an increasingly important role. This chapter reviews recent trends at global and regional levels. It presents new estimates of the size of e-commerce, distinguishing between B2B and B2C. The chapter furthermore examines how the pattern of e-commerce by enterprises varies depending on enterprise size and industry. It notes the rapid growth of e-commerce in Asia as well as the dynamic evolution of online commercial activities in parts of sub-Saharan Africa and in Latin America.



A. THE GLOBAL E-COMMERCE MARKET IS EVOLVING

1. Market size estimates

Measuring e-commerce is challenging. There are no comprehensive official statistics on the value of domestic and international e-commerce. Only a few countries – mainly developed ones – compile data on e-commerce revenue. Available information suggests that the market for e-commerce has expanded significantly in the past decade and that it continues to grow. Such observations are supported by the estimates made by private consultancy firms. While global e-commerce is still dominated by developed countries, fast growth is observed in developing regions, especially in Asia.

Business-to-business transactions account for the overwhelming share of e-commerce revenue. In the United States, total revenue from e-commerce sales of the sectors covered amounted to \$5.4 trillion in 2012, corresponding to more than 18 per cent of their total revenue (table II.1). The importance of e-commerce has increased substantially in the past decade. Its share in total revenue (excluding the selected services category) doubled from 15 per cent in 2002 to 30 per cent in 2012. In manufacturing, the share of e-commerce in total revenue shot up from 19 per cent to as much as 51 per cent during the same period (table II.1). Manufacturing and wholesale trade (the bulk of which concerns B2B) together accounted for 89 per cent of total e-commerce revenue, whereas retail (which corresponds to B2C) amounted to just 4 per cent.

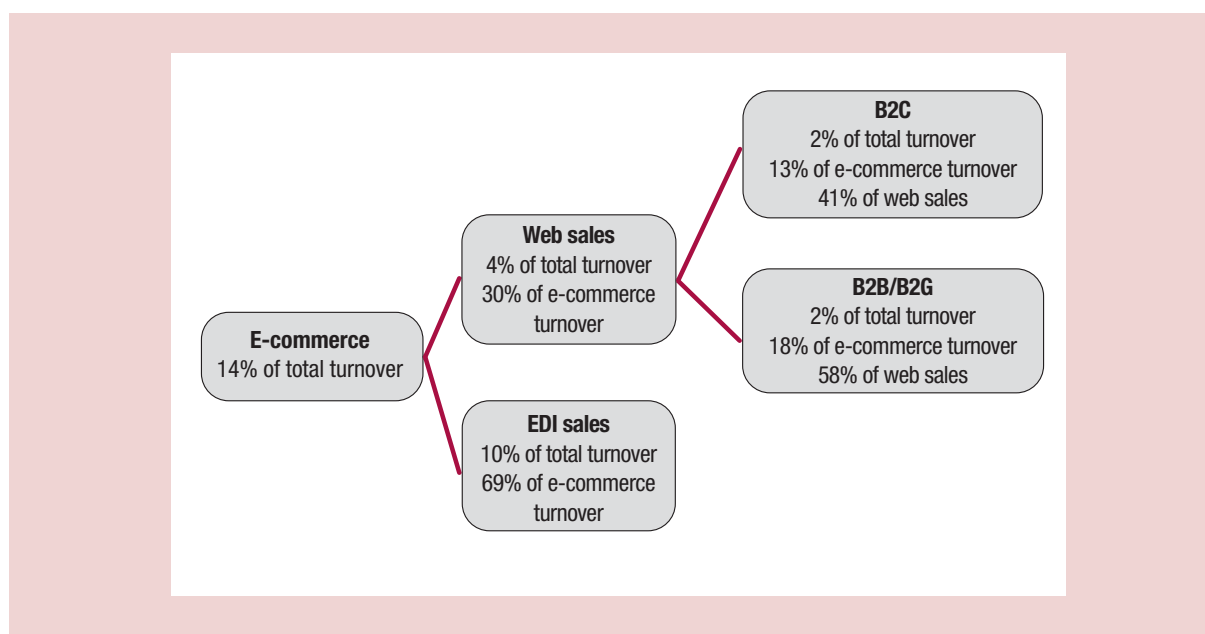
The predominance of B2B is confirmed in other countries. In Canada, almost two thirds (64 per

Table II.1. United States: Total and e-commerce revenues, by sector, 2002–2012 (\$ billions)

Year	Value of shipment	Manufacturing	Merchant wholesale trade	Selected service industries	Retail trade	Total	Share of e-commerce (including services)	Share of e-commerce (excluding services)
2002	Total	3 921	4 162	NA	3 129	11 211	NA	
	E-commerce	752	880	NA	45	1 677	NA	15%
2003	Total	4 015	4 367	NA	3 263	11 646	NA	
	E-commerce	843	968	NA	57	1 868	NA	16%
2004	Total	4 309	4 840	NA	3 474	12 622	NA	
	E-commerce	996	1 060	NA	72	2 129	NA	17%
2005	Total	4 742	5 243	NA	3 690	13 675	NA	
	E-commerce	1 344	1 228	NA	91	2 663	NA	19%
2006	Total	5 016	5 584	NA	3 874	14 473	NA	
	E-commerce	1 567	1 305	NA	113	2 985	NA	21%
2007	Total	5 338	5 888	NA	3 999	15 226	NA	
	E-commerce	1 879	1 395	NA	136	3 410	NA	22%
2008	Total	5 468	6 136	NA	3 946	15 550	NA	
	E-commerce	2 171	1 422	NA	141	3 734	NA	24%
2009	Total	4 420	5 144	NA	3 630	13 193	NA	
	E-commerce	1 892	1 355	NA	145	3 391	NA	26%
2010	Total	4 905	5 757	11 164	3 841	25 668		
	E-commerce	2 350	1 547	302	169	4 368	17%	28%
2011	Total	5 481	6 451	11 544	4 133	27 610		
	E-commerce	2 704	1 696	338	198	4 936	18%	29%
2012	Total	5 756	6 771	12 004	4 344	28 876		
	E-commerce	2 989	1 789	366	227	5 371	19%	30%

Source: United States Census Bureau; available at <http://www.census.gov/econ/estats/2012/all2012tables.html> (accessed 22 January 2015).

Figure II.1. E-commerce revenues in the European Union, 2013



Source: UNCTAD, adapted from EUROSTAT.

Note: Numbers may not add to 100 per cent due to rounding.

cent) of the value of online sales by enterprises were attributable to B2B in 2013.¹ In the Republic of Korea, B2B accounted for 91 per cent of all e-commerce revenue in 2013,² and in the Russian Federation, that share was estimated at 57 per cent in 2013, followed by B2G (34 per cent) and B2C (9 per cent).³ In Europe, some 14 per cent of the revenue of European Union enterprises with 10 or more employees (excluding the financial sector) was generated from e-commerce in 2013 (figure II.1), up from 9 per cent in 2004;⁴ B2B and B2G together accounted for about 87 per cent of the total value of e-commerce and B2C for the remaining 13 per cent.⁵

While B2B represents the largest share of e-commerce, B2C appears to be expanding faster. For example, in the United States, its share of e-commerce rose from 2.6 per cent to 4.5 per cent between 2002 and 2012 (see retail trade column in table II.1).⁶ And in the Russian Federation, B2C grew almost three times faster than B2B in 2013.⁷

In the case of B2C, official statistics and data from e-commerce associations are available for the top 10 countries ranked by the number of online buyers. Based on such statistics, B2C revenues in these countries amounted to just over \$1 trillion in 2013 (table II.2). China had the largest market in terms of both the number of online buyers and revenue,

whereas the United Kingdom of Great Britain and Northern Ireland had the highest average expenditure per online buyer, at almost \$5,000 in 2013. The top 10 countries accounted for some 82 per cent of estimated total B2C revenues as reported by the consultancy eMarketer. The same countries generated a total of \$12.5 trillion in B2B sales in 2012–2013. Assuming a similar average share of B2B revenue (that is, 82 per cent), global B2B sales amounted to \$15.2 trillion in 2012–2013. Further analysis suggests that some 36 per cent of global B2B e-commerce was accounted for by the United States, followed by the United Kingdom (18 per cent), Japan (14 per cent) and China (10 per cent).

Estimates by private consultancies vary considerably depending on the methodology used for the data collection (Fraumeni, 2001). According to e-Marketer, B2C e-commerce is forecast to double from \$1.2 trillion in 2013 to \$2.4 trillion in 2018 (figure II.2). The fastest growth is expected in the Asia and Oceania region, the market share of which is set to grow from 28 to 37 per cent. The only other region that is forecast to increase its share of the global market is the Middle East and Africa, from 2.2 to 2.5 per cent. Conversely, the combined share of Western Europe and North America is expected to fall from 61 to 53 per cent.

Table II.2. B2C revenues in the top 10 countries, ranked by number of online buyers, 2012–2013

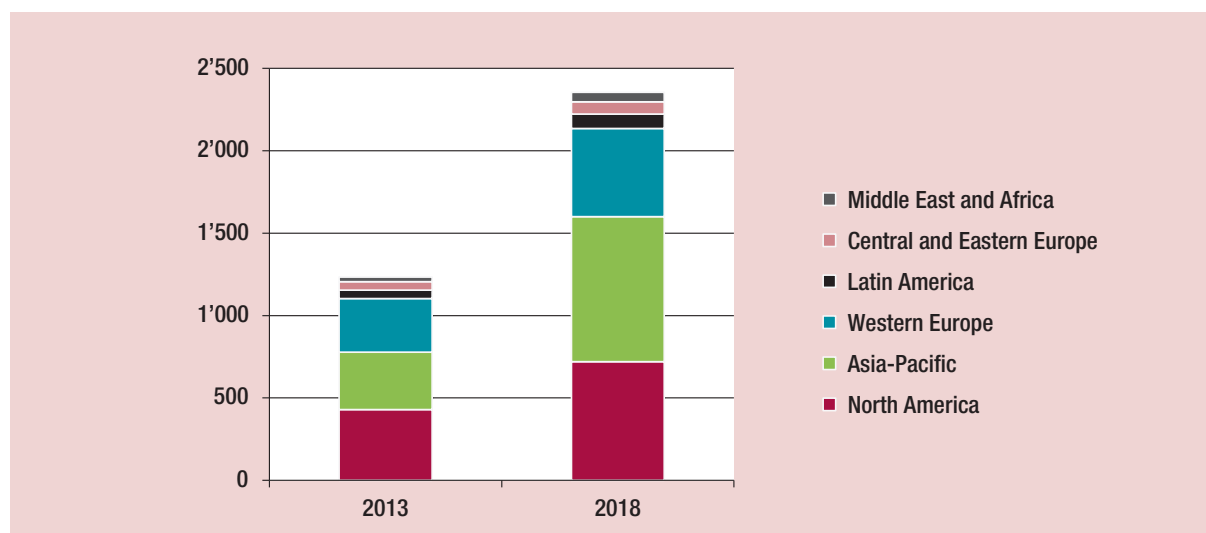
Country	B2C market		Online buyers		Source***
	2013 (\$ billion)	As a share of B2B (%)	Number in millions**	Annual spend per buyer (\$)	
China	301	18.5	271	1 111	Ministry of Commerce
United States	263	4.7*	133	1 975	Bureau of Census
Japan	119*	5.3*	55	2 171	Ministry of Economy, Trade and Industry
Germany	52	4.5*	33	1 593	Federal Ministry for Economic Affairs and Industry
United Kingdom	144	5.2*	30	4 874	Interactive Media in Retail Group
Russian Federation	13	14	20	662	Ecommerce Europe
Republic of Korea	22	2.2	19	1 195	KORSTAT
France	68	12	18	3 688	Fédération du E-commerce et de la Vente à Distance (Fevad)
Brazil	14	...	14	1 045	Associação Brasileira de Comércio Eletrônico
Canada	19*	11.9	13	1 446	Statistics Canada
Top ten total	1 016	8.1	605	1 679	
Estimates of global B2C sales in 2013	1 233	N/A			eMarketer

Source: UNCTAD, based on sources cited in the table.

* 2012.

** Derived from Internet user surveys compiled by government agencies (except for the United States (Pew Research Center) and for the Russian Federation (Ecommerce Europe)).

*** Refers to the source of B2C economic value (converted to United States dollars using the annual average exchange rate). India might qualify among the top 10, but does not report official statistics on the number of people buying online.

Figure II.2. B2C e-commerce sales worldwide, by region, 2013 and 2018 (\$ billions)

Source: eMarketer.com, July 2014.

Note: Estimates are based on the analysis of data from other research firms and government agencies, historical trends, reported and estimated revenues from major online retailers, consumer online buying trends, and macro-level economic conditions. Data include products and services ordered and leisure and unmanaged business travel sales booked using the Internet via any device, regardless of the method of payment or fulfilment.

2. Cross-border e-commerce

Although the Internet should reduce barriers to international trade (Terzi, 2011), various factors constrain cross-border e-commerce. Examples include unreliable and lengthy transit times, complex and ambiguous return processes, customs delays, lack of transparency on delivery and pricing, and limited ability to alter delivery times and locations (see also box II.1).⁸

In terms of cross-border trade in goods, UPU data on the volume of international postal traffic of small packets, parcels and packages offer important insights into recent trends in e-commerce. Between 2011 and 2014, global deliveries of such items expanded by about 48 per cent. The data indicate an increasingly important role for developing countries, especially in Asia and Oceania (table II.3). That region's share of related exports rose from 25.5 to 32.9 per cent during the same period, while its share of imports surged from 15 to 23.9 per cent. The data further show that developed countries and Asia and Oceania run significant trade surpluses in this area, whereas Latin America and the Caribbean as well as transition economies import considerably more than they export.⁹ As further shown in table II.4, the average time needed to ship parcels is also the shortest in the cases of developed countries and developing countries in Asia and Oceania.

In developed countries, the international dimension of e-commerce is still relatively modest. European e-commerce sales are predominantly domestic in nature. Whereas 16 per cent of enterprises in the European Union 28 in 2012 sold online to their own domestic markets, only 7 per cent reported e-sales to other European Union countries.¹⁰ In Denmark, which ranks first among European Union countries, 30 per cent of enterprises made e-sales, but only one in ten reported selling to customers in another European Union country. In Canada, 80 per cent of the value of online sales was attributable to customers in Canada, 15 per cent to customers in the United States and the remaining 5 per cent to other countries.¹¹ In Japan, cross-border transactions accounted for about 18 per cent of all B2C e-commerce transactions (Payvision, 2014).

There are few official statistics on the extent to which developing countries are engaging in cross-border e-commerce, but there is some data from private sources (Payvision, 2014). Compared with the situation in developed countries, cross-border B2C or C2C transactions account for a larger share in a number of developing countries. In Asia, more than half of all such e-commerce transactions in both India and Singapore were cross-border in 2013. Turning to Latin America, cross-border trade accounts for the bulk of online buying by consumers in Colombia, Paraguay and the Bolivarian Republic of Venezuela, partly as a result of underdeveloped domestic e-commerce (Payvision, 2014).

Box II.1. Barriers to international e-commerce – a survey

In a survey of Swedish enterprises engaged in cross-border e-commerce, several barriers to such transactions were identified. Some of them have their origin in national regulations, while others are of a technical or logistical nature. The most commonly cited barriers were lack of information on laws and regulations, differences in consumer laws, specific requirements on website content and customs-related matters. Barriers identified were grouped into eight categories:

- Lack of information about relevant laws, regulations and methods;
- Burdensome customs procedures, high customs duties on returns, and corruption at the border;
- Differences in national consumer and sales laws;
- Requirements for specific payments solutions and differences in tax regulations;
- Weak protection of intellectual property rights;
- Limitations in the right to store and transfer information and data;
- Requirements to have a local presence in order to register top-level domains, Internet censorship and the need to use specific encryption technologies;
- Other barriers, including high roaming charges, problems in obtaining insurance and state subsidies.

Source: Sweden, National Board of Trade (2012).

Table II.3. International deliveries (tonnage) of small packets, parcels and packages, 2011 and 2014, distribution of regional flows as a share of global flows (per cent)

2011	Developed countries	Africa	Asia and Oceania	Latin America and the Caribbean	Transition economies	World
Developed countries	46.3	2.4	12.1	7	2.8	70.6
Africa	0.7	0.2	0.1	0	0	1
Asia and Oceania	21.6	0.3	2.7	0.5	0.4	25.5
Latin America and the Caribbean	1.7	0	0.1	0.3	0	2.1
Transition economies	0.5	0	0	0	0.3	0.8
World	70.8	2.9	15	7.8	3.5	100
2014	Developed countries	Africa	Asia and Oceania	Latin America and the Caribbean	Transition economies	World
Developed countries	33.3	1.7	20.4	4.6	3	63
Africa	0.7	0.3	0.1	0	0	1.1
Asia and Oceania	23.6	0.4	3.1	2	3.8	32.9
Latin America and the Caribbean	1.2	0	0.2	0.3	0	1.7
Transition economies	0.6	0	0.1	0	0.6	1.3
World	59.4	2.4	23.9	6.9	7.4	100

Source: UPU.

Table II.4. Average shipping time for parcels (normal service), Q2 2013 to Q1 2014 (Number of days from origin to destination)

	Developed countries	Africa	Asia and Oceania	Latin America and the Caribbean	Transition economies	World
Developed countries	9.7	23.2	20.1	27.2	16.8	19.4
Africa	14.7	20.2	18.1	36.0	27.7	23.3
Asia and Oceania	17.9	23.9	17.8	28.3	23.5	22.3
Latin America and the Caribbean	16.5	25.9	21.9	23.3	25.5	22.6
Transition economies	12.1	19.1	17.5	26.6	12.6	17.6
World	14.2	22.5	19.1	28.3	21.2	21.0

Source: UPU.

3. E-commerce use by households and enterprises

Official statistics on online purchases and sales reflect the actual state of the market and are important indicators of e-commerce performance. Though a comprehensive official international data set is lacking, available statistics from household and business ICT surveys cover most markets where e-commerce is significant.

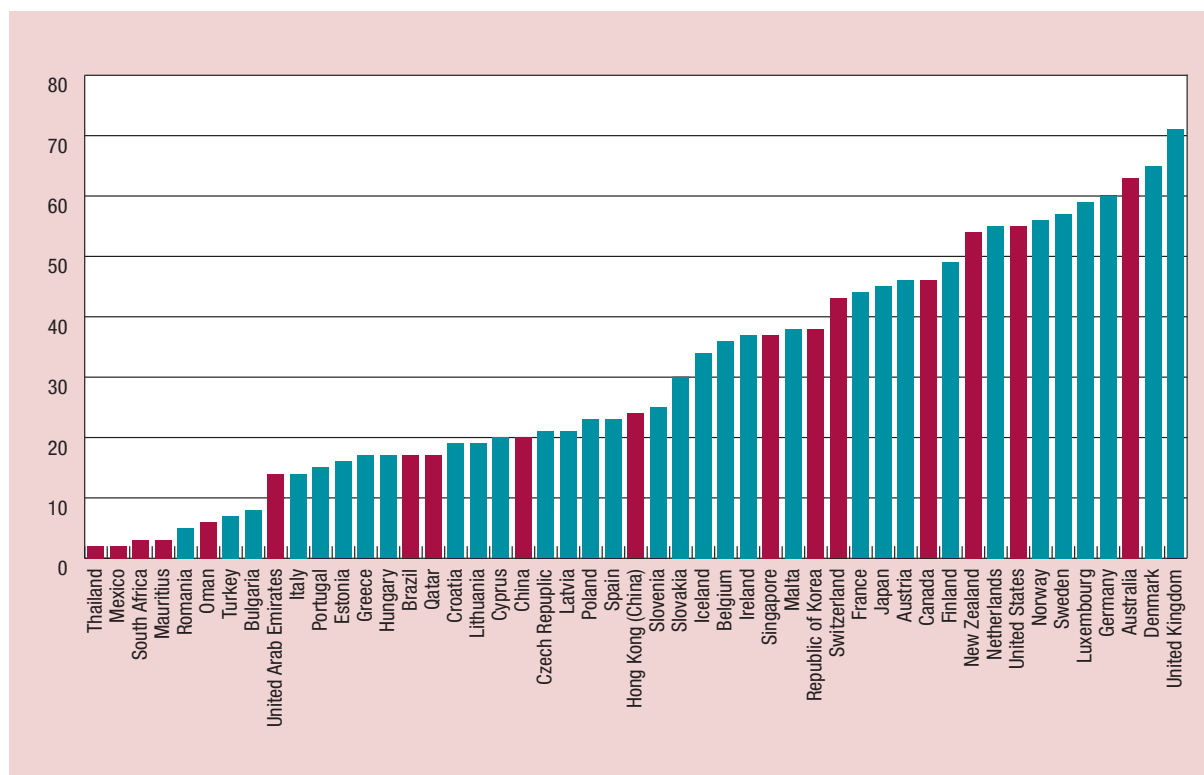
(a) Household survey data and online shoppers

Most countries that conduct household ICT surveys inquire about the activities carried out over the Internet, such as making online purchases. Some go further into consumer e-commerce behaviour, capturing data about the types of products purchased, the amounts spent, whether purchases were domestic or international, payment and delivery methods and reasons for not making online purchases.

The Partnership on Measuring ICT for Development proposes an indicator to be collected through household surveys on the proportion of individuals using the Internet by type of activity,¹² which includes making online payments and purchasing from government organizations; purchasing or ordering goods or services; and selling goods or services.¹³ The main interest here is to obtain information on B2C e-commerce from the purchasing side (ITU, 2014b). The percentage of individuals who have made an online purchase ranges from less than 5 per cent, for example, in Mexico and Thailand, to more than 60 per cent in the United Kingdom, Denmark and Australia (figure II.3).

In most developing and transition economies, people buying online form a small proportion of all Internet users. Unlike social networking, where activity rates are relatively high among developing countries, the share of Internet users who use online shopping is generally lower in these countries than in developed countries (figure II.4). This may reflect limited purchasing power but also other mitigating factors, such as a lack of trust, limited shopping options (including content in local languages) and poor delivery services.

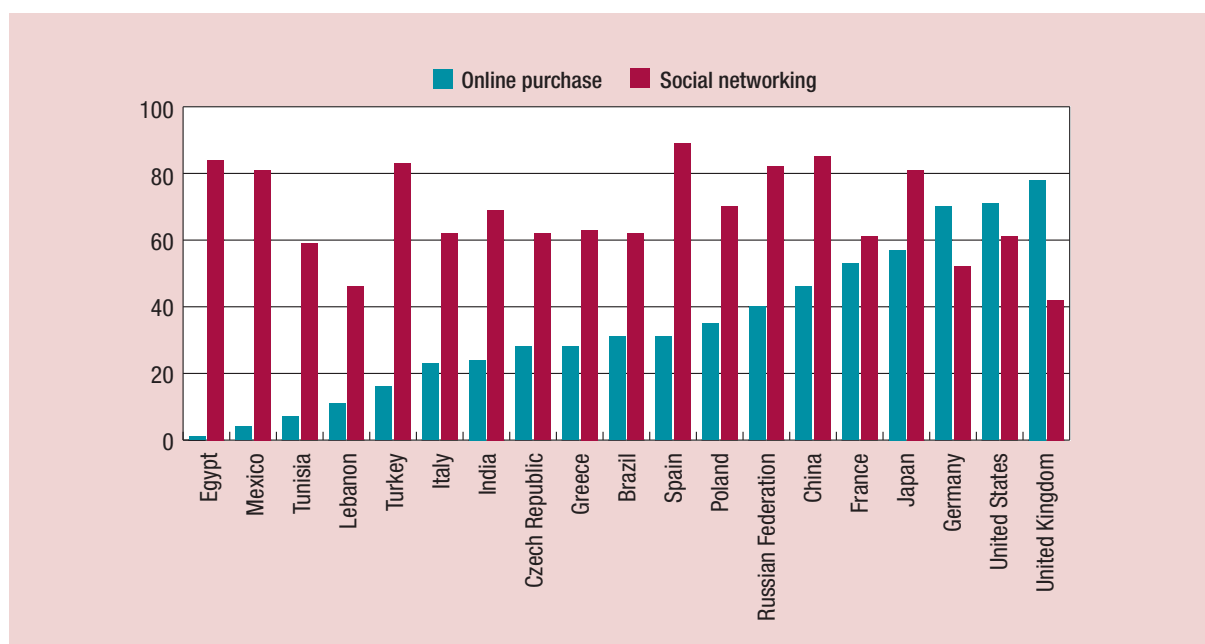
Figure II.3. Share of individuals purchasing products online, selected economies, 2013 (per cent)



Source: Eurostat, ITU and national data (in red).

Note: As age ranges and period in which a purchase is made varies across surveys, data are not strictly comparable.

Figure II.4. Share of Internet users involved in online purchase and social networking, selected countries, 2012–2013 (per cent)



Source: UNCTAD, adapted from national surveys, Eurostat and Pew.

An estimated 1.1 billion people around the world made at least one online purchase in 2013, accounting for 41 per cent of all Internet users (table II.5). With some 460 million online shoppers, Asia and Oceania accounted for the largest share (43 per cent), which is expected to grow further until 2018. Western Europe and North America follow, accounting for 17 per cent and 16 per cent respectively of global digital buyers.

The highest growth between 2013 and 2018 is anticipated for the Middle East and Africa.

(b) Enterprise survey data

The proportion of businesses engaging in e-commerce is indicative of the in-country capability of firms in this area. Core indicators of the Partnership on Measuring ICT for

Table II.5. Estimated number of online buyers worldwide, by region, 2013 and 2018

				Online buyers as a share of		
				World total of online buyers	Population	Internet users
	Total (millions)	Growth (%) 2013–2018	(%) 2013	(%) 2013	(%) 2013	
	2013	2018				
Asia and Oceania	460.3	782.4	70	42.6	14.9	42.1
Western Europe	182.3	210.2	15	16.9	49	64
North America	172.3	203.8	18	16	59.7	72
Middle East and Africa	93.6	170.6	82	8.7	7.1	31.3
Latin America	84.7	139.3	64	7.8	18.6	28.2
Central and Eastern Europe	86.4	117.4	36	8	24.1	41.6
World	1 079.6	1 623.7	50	100	15.2	41.3

Source: eMarketer, July 2014.

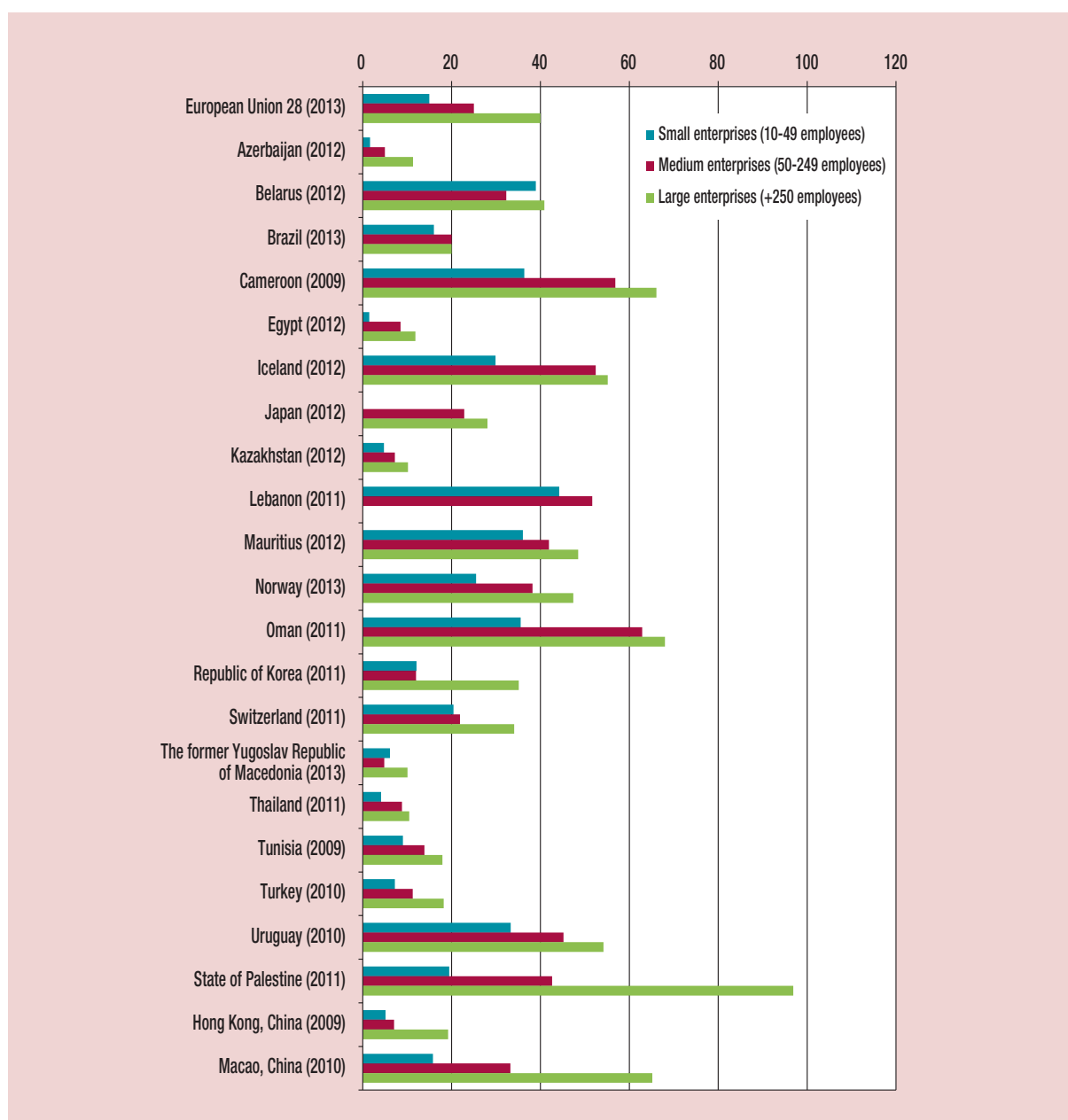
Note: Ages 14+; Internet users who have made at least one purchase via any digital channel during the calendar year, including online, mobile and tablet purchases; numbers may not add up to total due to rounding.

Development are limited to the number of enterprises placing orders (buying) and receiving orders (selling) online. Data for these indicators are collected through enterprise surveys by most developed countries and by selected developing and transition economies. However, related statistics remain scarce for developing countries and are virtually non-existent for LDCs. Moreover, available official data for developing countries mostly

do not measure the value of e-commerce, distinguish between B2B, B2C or B2G transactions, or indicate whether they are domestic or cross border. However, in most countries with data, it is more common for enterprises to purchase inputs online than to sell online.

Enterprise size is generally a strong determinant of e-commerce, regardless of the level of development (figure II.5). In Oman, for example, 36 per cent of small

Figure II.5. Share of enterprises receiving orders over the Internet, by enterprise size, selected economies, latest available year (per cent)



Source: UNCTAD.

Note: Japan does not report data on enterprises below 50 employees.

enterprises had received orders over the Internet in 2011, compared to 68 per cent of large enterprises. In Azerbaijan, only 2 per cent of small enterprises received orders over the Internet in 2012, compared with 11 per cent of large enterprises. Even in the European Union, a similar pattern prevails. In 2012, 40 per cent of large enterprises, 25 per cent of medium-sized enterprises and 15 per cent of small enterprises had sold online.¹⁴ Where data for microenterprises are available, the gap in e-commerce adoption is even wider.

While some industries are more likely to place orders online, patterns vary across countries. In most cases, the placing of orders online is most common among enterprises in computer and related activities. But beyond that, the trend is less clear. In a handful of developing and transition economies, the manufacturing sector leads. For example, more than half of all manufacturing enterprises in Belarus, Brazil and Colombia place orders online. Among the developed countries, only Australia, Ireland and New Zealand report higher percentages in this regard. Meanwhile, wholesale and retail trade has the highest percentage in Turkey and hotels and restaurants lead in Mauritius. Usage patterns may reflect more the particular economic characteristics of countries rather than the nature of the industry.

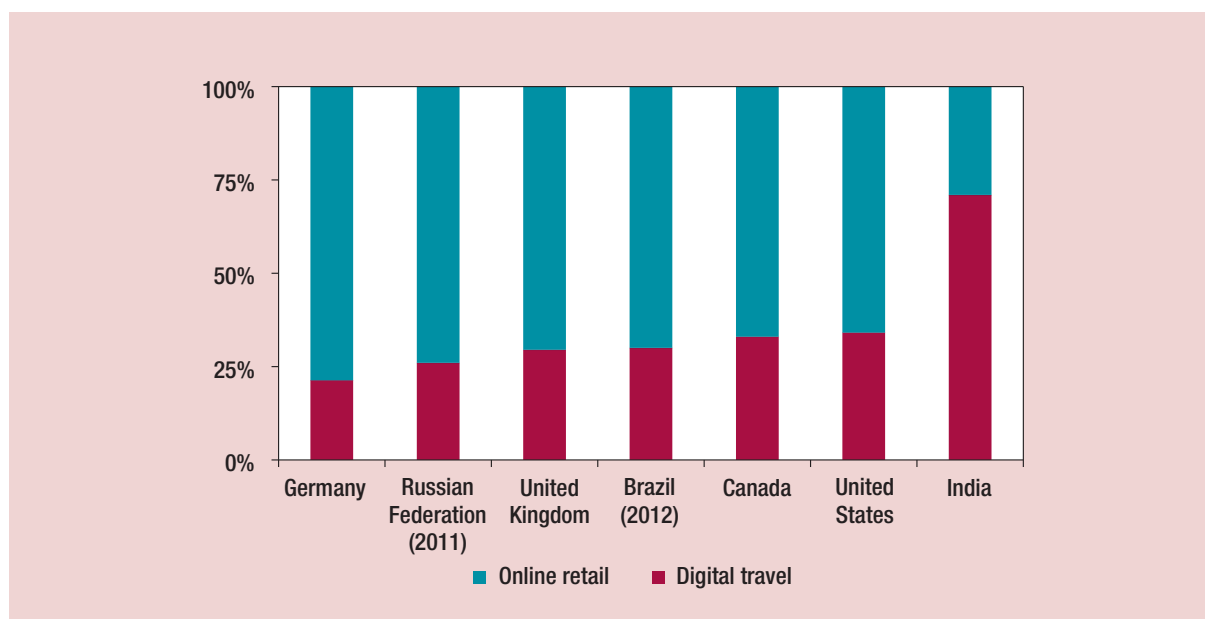
In terms of enterprises receiving orders online, hotels and restaurants generally have the highest incidence. E-commerce is increasingly important in this sector, not least due to the availability of online platforms where customers can search and book hospitality services, as well as read reviews from other customers. But the share of hotels and restaurants receiving bookings online still varies widely, from 3 per cent in Egypt to 73 per cent in Norway. The developing country with the highest such share is Mauritius (67 per cent). In other areas, the sectoral pattern is again less clear.

4. What do consumers buy online?

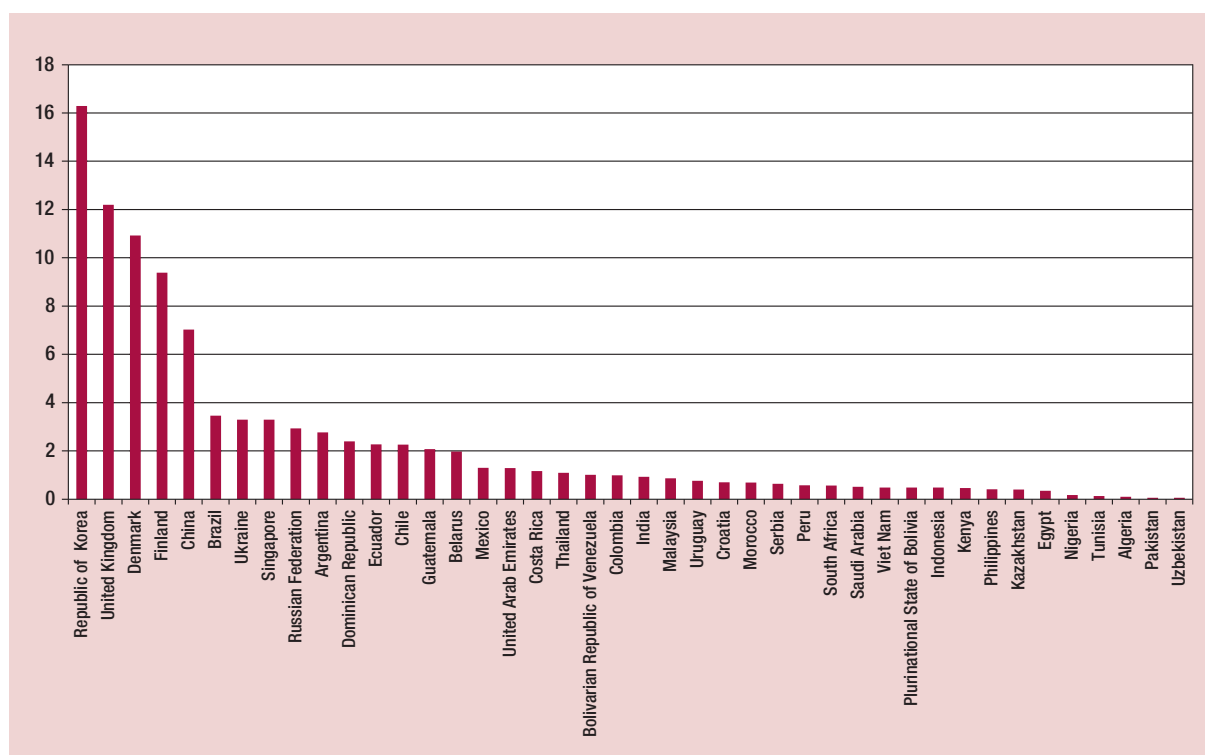
Within B2C e-commerce, a distinction is sometimes made between “digital travel” (leisure and unmanaged business travel sales booked using the Internet via any device) and online retail activities. The split varies between countries (figure II.6). In most developed countries for which data are available, the retail segment is considerably larger. The same applies to Brazil and the Russian Federation. By contrast, in India, B2C e-commerce sales are predominantly accounted for by digital travel expenditures.

Among the selected countries included in figure II.7, online retail sales as a share of store-based retail sales

Figure II.6. B2C e-commerce sales, by segment, selected countries, 2013 or latest year



Source: UNCTAD, based on data from eMarketer, Payvision and other sources.

Figure II.7. Internet retail sales as a share of store-based retail sales in selected countries, 2013 (per cent)

Source: Euromonitor.

were the highest in the Republic of Korea, where it stood at about 16 per cent in 2013, followed by the United Kingdom and Denmark. The highest share in Latin America was in Brazil (3.5 per cent), and in Africa it was highest in Morocco (0.7 per cent), while the highest share among transition economies was in Ukraine (3.3 per cent).

Online consumption patterns differ across regions, but the top categories are fairly consistent. In table II.6, the top five items that consumers intended to purchase online in 2014 have been shaded. Travel-related items (such as tours, hotel reservations and airline tickets) and event tickets feature among the top five in all regions. Clothing and shoes are included for four regions, hard-copy books and e-books for two, and electronic equipment for one region. In the survey, almost half of the respondents intended to purchase clothing or make airline or hotel reservations using an online device in the next six months. Whereas computers are the preferred device for making online purchases in all regions, recent data suggest that mobile devices are a very close second in the Middle East and Africa (figure II.8).

5. Largest B2C e-commerce companies

More and more enterprises are exploiting the opportunities created by improved connectivity and greater willingness among consumers to shop online. According to some estimates, more than 1 million companies are already engaging in e-commerce around the world.¹⁵ This includes both specialized e-commerce enterprises, for which the business relies entirely on the Internet, and enterprises that have adopted e-commerce strategies to complement existing activities. Many traditional large retail bricks-and-mortar companies are adopting e-commerce to defend their shares of the market. Among the major retailers that have embraced the online sales channel as a complement to their other activities are Apple, Dell and Wal-Mart (all United States), Otto (Germany), Tesco (United Kingdom) and Casino Guichard-Perrachon (France) (Deloitte, 2014).

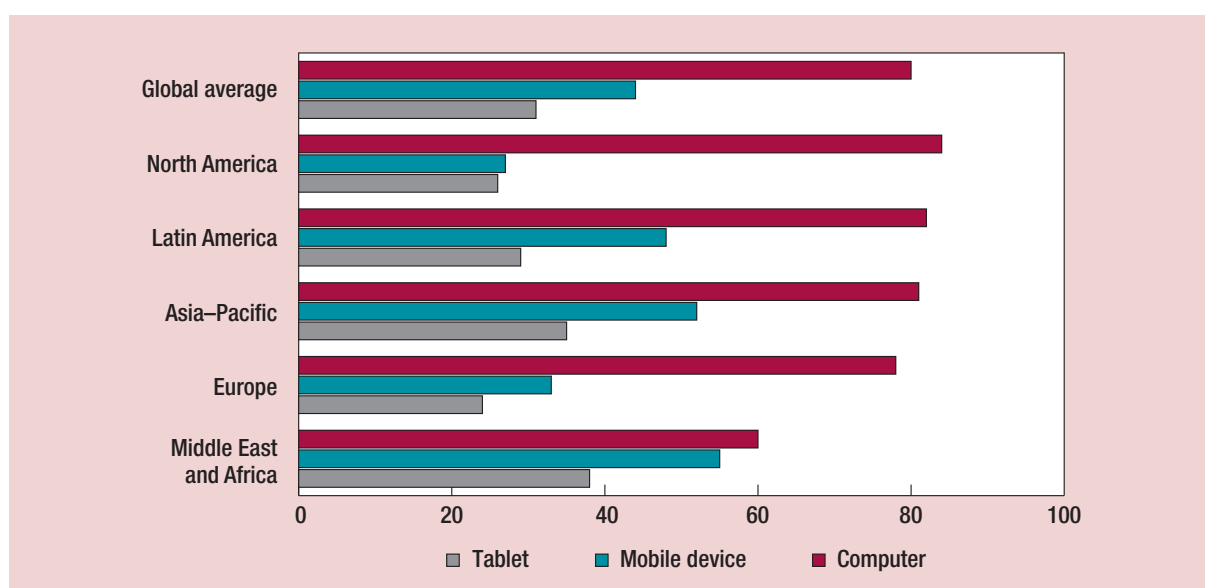
A relatively small number of companies control a substantial share of the e-commerce market, with the level of concentration varying by region and depending on how the market is defined (table II.7). In the United

Table II.6. Online buying intentions in the next six months, 2014, by region (Per cent of respondents)

Item	Asia and Oceania	Europe	Middle-East and Africa	Latin America	North America
Clothing, accessories and shoes	57	34	26	28	42
Electronic equipment	41	25	26	29	30
Tours and hotel reservations	53	33	35	32	43
Airline tickets and reservations	59	34	39	36	43
Mobile phone	44	22	28	27	22
Event tickets	50	33	28	31	35
Computer hardware	36	23	25	20	29
Hardcopy books	50	30	22	24	31
Computer software	33	19	27	18	27
E-books	43	22	29	23	35
Sporting goods	42	19	20	19	21
Music (not downloaded)	33	19	21	19	30
Videos, DVDs and games	32	21	23	21	33
Cosmetics	43	21	19	20	21
Personal care	43	17	18	14	16
Groceries	41	14	15	11	14
Toys and dolls	40	16	18	17	24
Car, motorcycle and accessories	20	13	16	11	15
Pet-related products	26	15	14	11	19
Baby supplies	29	12	16	11	12
Flowers	21	11	16	10	21
Alcoholic drinks	25	9	11	8	10

Source: Nielsen (2014).

Note: The survey was conducted between 17 February and 7 March 2014 and polled more than 30,000 consumers with online access in 60 countries. Asia and Oceania covers 14 economies, Europe 32 economies, Latin America 7 economies, the Middle East and Africa 5 economies, and North America 2 economies.

Figure II.8. Devices used for online shopping, by region, 2014 (Per cent of respondents indicating that they will shop or make a purchase online in the next 6 months)

Source: Nielsen, 2014.

Note: See note to table II.6.

States, the top 10 leading web retailers accounted for about half (52 per cent) of the total sales by the top 500 web merchants.¹⁶ In the more diverse and fragmented European market, the top 10 accounted for 37 per cent of the sales by the top 500 web retailers in 2012, and the top 100 for 80 per cent. The level of concentration is higher in Asia, where the combined sales of the top 10 accounted for as much as 86 per cent of the web sales of the region's top 500 web retailers.¹⁷ By comparison, the share was about 51 per cent in Latin America.¹⁸

A number of specialized, pure-play e-commerce companies, with web sales only, play a prominent role in the market. In the United States, such companies in 2013 accounted for about 41 per cent of the B2C e-commerce market. The largest e-commerce company by online revenue is Amazon.com, which appears among the top 10 web merchants in all the regions included in table II.7. China has seen the emergence of several major players, such as the Alibaba Group (box II.2) and JD.com (formerly 360Buy.com), appearing among the world's top e-commerce companies. As of 15 September 2014, Alibaba and Amazon ranked third and fourth, respectively, in market capitalization among the world's largest Internet companies.¹⁹

In terms of gross merchandise value, the top e-commerce sites in the world in 2013 were Alibaba, Amazon and eBay (table II.8). However, in terms of online revenue, Amazon and eBay were considerably larger than Alibaba, reflecting the fact that a large share of Alibaba's transactions are C2C, with only a fraction of the gross value of the sales generating revenue for the market platform. With the exceptions of Alibaba and Rakuten, all the other top e-commerce sites originate in the United States.

B. REGIONAL TRENDS

1. Africa: Dynamic growth from a low level

Africa remains the region with the lowest penetration of e-commerce. As noted above, Africa and the Middle East in 2013 accounted for about 2.2 per cent of global B2C e-commerce. There are few data at the country level, but estimates for the six countries included in table II.9 show positive growth between 2009 and 2012. The table also indicates that Egypt had by far the largest e-commerce sales among the six.

Table II.7. Largest Internet retailer companies in the United States, Europe, Asia and Latin America, 2012–2013

	United States 2013	Europe 2013	Asia 2012	Latin America 2013
1	Amazon.com (United States)	Amazon.com (United States)	Alibaba Group (China)	B2W Digital (Brazil)
2	Apple (United States)	Otto (Germany)	Rakuten (Japan)	Nova Pontocom (Brazil)
3	Staples (United States)	Staples (United States)	360Buy.com (China)	SACI Falabella (Chile)
4	Wal-Mart (United States)	Home Retail Group (United Kingdom)	Amazon.com (United States)	Wal-Mart Latin America (United States)
5	Sears Holdings (United States)	Tesco (United Kingdom)	Suning Commerce (China)	Netshoes (Brazil)
6	Liberty Interactive (United States)	Apple (United States)	Jia.com (China)	Máquina de Vendas (Brazil)
7	Netflix (United States)	CDiscount.com (France)	eBay (United States)	Dell (United States)
8	Macy's (United States)	Tengelmann (Germany)	51Buy.com (China)	Amazon.com (United States)
9	Office Depot (United States)	Shop Direct Group (United Kingdom)	HappiGo (China)	Magazine Luiza (Brazil)
10	Dell (United States)	Sainsburys (United Kingdom)	Vamcl (China)	Saraiva e Siciliano (Brazil)
Share (%) of top 500 sales	52%	37%	86%	51%

Source: UNCTAD analysis of data from internetretailer.com.

Box II.2. The Alibaba Group

When the Alibaba Group was listed on the New York Stock Exchange in 2014, it was initially valued at more than \$200 billion, making it one of the 20 largest companies by market capitalization in the United States.^a In 2013, it had 231 million active users, making on average 49 purchases a year, totaling more than \$11 billion orders annually.^b

Since the Alibaba Group was founded in 1999, it has quickly grown to become the largest online and mobile commerce company in the world in terms of gross merchandise volume. Its B2B trading platform for small businesses has helped to connect buyers in North America and Europe with suppliers and manufacturers in China. The company has launched a number of other related businesses, such as B2B online web portals, online retail and payment services, a shopping search engine and data-centric cloud computing services – which collectively are reported to power 80 per cent of all online commerce in China.

The Alibaba Group includes companies that provide a diverse range of e-commerce solutions:

- Taobao Marketplace (www.taobao.com): China's largest C2C online marketplace;
- Tmall.com (www.tmall.com): A B2C online marketplace with a focus on imports. It is the largest retail platform in China, in terms of gross merchandise value (Payvision, 2014);
- Juhuasuan (www.juhuasuan.com): An online group buying marketplace;
- AliExpress (www.aliexpress.com): A global online B2C marketplace for consumers to buy directly from China;
- Alibaba.com (www.alibaba.com): A B2B online marketplace that facilitates global sourcing;
- 1688.com (www.1688.com): A China-only B2B online wholesale marketplace;
- Alibaba Cloud Computing (www.aliyun.com): A provider of cloud computing services to businesses and entrepreneurs;
- AliCloud: Provides e-retailers with analytical data about website activities and predictions for indicators such as future sales and products that are likely to be in high demand;
- Alipay.com: An online payment solution provider that has become the world leader, with a transaction volume of \$150 billion in 2013. Some 60 per cent of Chinese online customers prefer to pay with Alipay (Payvision, 2014);
- China Smart Logistics: Operates a central logistics information system that connects a network of express delivery companies in China;
- 11main.com: A United States-based online marketplace for specialty items.

The Alibaba Group has recently engaged in various international investments. For example, in May 2014, it announced an agreement under which Alibaba Investment Ltd. will take a 10.35 per cent stake in SingPost upon completion.^c Alibaba has furthermore entered an agreement with Australia Post to help more Australian merchants sell to Chinese consumers through Tmall. A deal was also announced with online shopping mall, Lotte.com, and the Japanese e-commerce company, Rakuten, opening the company to retailers in the Republic of Korea and Japan, respectively.^d

Source: UNCTAD, based on various sources.

^a See “Alibaba debut makes a splash”, *The Wall Street Journal*, 19 September 2014.

^b See “Alibaba, by the numbers”, *The New York Times*, 6 May 2014.

^c See press release “SingPost and Alibaba Group to form strategic collaboration to grow international e-commerce logistics business, 28 May 2014; available at <http://www.singpost.com/download/AboutSingPost/Media/NewsReleases/2014/pr20140528.pdf> (accessed 23 January 2015).

^d See “Alibaba’s recent deals are paving the way for its Chinese marketplace to go global”, *thenextweb.com*, 5 June 2014.

Table II.8. Top online sites by gross merchandise value, 2012 (\$ billions)

Company	Country of origin	Gross merchandise value	Online revenues
Alibaba Group	China	170	4.1
Amazon	United States	87.8	61
eBay	United States	67.8	14
Staples	United States	11	11
Rakuten	Japan	15.8	4.7
Wal-Mart	United States	10	10
Netflix	United States	3.6	3.6
BestBuy	United States	1.7	1.7
Kohl's	United States	1.4	1.4
Target	United States	1.4	1.4

Source: See <http://www.brainsins.com/en/blog/state-ecommerce-2014-new-ecommerc-models/2643> (accessed 23 January 2015).

The scope for e-commerce is rapidly improving, although significant barriers remain in areas such as transport and logistics, inadequate legal frameworks and limited purchasing power. Undersea fibre-optic cables have encircled Africa's coastlines and begun the long journey inland. Telecommunications providers are investing in 3G and subsidizing smartphone ownership. Innovative solutions are emerging that allow for the delivery of small pieces of the Internet even to basic handsets. At the same time, digital payment services are becoming more important and various online marketplaces are spreading.

Internet use in Africa is primarily conducted on mobile devices, influencing the scope for and the nature of e-commerce. Service providers in sub-Saharan Africa need to adapt their solutions to make them accessible on a small screen. Cell Bazaar (now Ekhane) of

Table II.9. B2C e-commerce sales in six countries in Africa, 2009–2012 (\$ billions)

Country	2009	2010	2011	2012
Egypt	2.10	2.50	3.20	3.90
Ethiopia	0.02	0.03	0.04	0.06
Ghana	0.03	0.04	0.07	0.09
Kenya	0.03	0.04	0.06	0.08
Nigeria	0.20	0.40	0.60	0.80
South Africa	0.60	0.80	1.10	1.20

Source: WorldPay (2014).

Note: Data include mobile and travel.

Bangladesh pioneered the creation of a marketplace accessible to feature phone users. It enabled users in Bangladesh to buy and sell via a simple unstructured supplementary service data menu, accessible to virtually all feature phones. Today, it is relatively common in sub-Saharan Africa to see such services. Esoko.com, which started as a pilot with FoodNet in Uganda in 2006, has leveraged this approach to enable rural farmers to access marketplace information via simple short message service (SMS).

Services such as Binu, Opera Mini 4.5, Snaptu (which was acquired by Facebook in 2011) and Tuvitu have further improved the browsing experience of a feature phone, making them somewhat mimic the experience of a smartphone. These applications make it easier for first-time Internet users to get online. Internet.org, a consortium of companies that include Facebook, Ericsson and Samsung, is also leveraging this technology for people that are currently not connected to the Internet. In July 2014, it launched an app in Zambia, making a suite of basic websites available at no cost.²⁰ Meanwhile, smartphone adoption is also growing. In Kenya, for example, the mobile network operator Safaricom now sells more smartphones than feature phones.²¹ Box II.3 illustrates the diversity of the evolving e-commerce ecosystem in sub-Saharan Africa.

The future of e-commerce in sub-Saharan Africa is promising. Large e-commerce companies such as those mentioned in box II.3 are building infrastructure and customer awareness that can be leveraged by smaller, more nimble startups. As the e-commerce ecosystem continues to mature, the barriers to entry for new companies will come down further. The first wave of "fast followers" to take advantage of this trend is likely to come from African technology hubs like Accra, Cairo, Cape Town, Harare, Kampala, Lagos and Nairobi. Players that are investing today have the potential to build positions in their respective markets. New entrants will continue to launch competing services, leading to better quality, further reach and lower cost. At the same time, as the market matures, major international players are likely to increase their regional presence.

2. Asia and Oceania: Major market with great diversity

This diverse region already boasts the largest number of online buyers in the world (table II.5), it accounts for an estimated 28 per cent of the total sales of B2C e-commerce (figure II.2), and for one third of the volume of international postal deliveries of small

Box II.3. E-commerce companies in sub-Saharan Africa – selected examples

A range of e-commerce players have emerged in Africa in recent years, offering different solutions and services. While there are now thousands of e-commerce startups throughout the continent, only a handful have reached significant scale, often with foreign backing. The business models vary considerably:

- One Africa Media is backed by Seek (Australia) and Tiger Global (United States) and the holding company for Buy Rent Kenya, Brighter Monday, SafariNow/StayNow, Private Property, Jobberman and Cheki. Cheki is a “vertical classifieds” portal for car listings with a presence in 10 African countries;
- MIH Group/Naspers (South Africa) is behind brands such as OLX, News24 and Property24, and has previously supported DealFish, Kalahari and Mocality. OLX has a presence in more than 100 countries, including a handful in sub-Saharan Africa. It offers a “horizontal classifieds” portal that enables users to upload content, send purchase inquiries and close sales without the involvement of a neutral third party;
- Rocket Internet (Germany) operates in more than 100 countries and is behind e-commerce brands such as Jumia, Lamudi, Carmudi, Hello Food and Jovago in sub-Saharan Africa. Jumia is an e-commerce portal with a base in Nigeria and a presence in another seven African markets. Similar to Amazon.com, it maintains its own inventory and manages logistics and fulfilment end to end;
- Ringier (Switzerland) has ownership stakes in African e-commerce companies, such as Rupu, Pigiame, Zoom Tanzania, Tisu, Pulse, Allsports and Expat-Dakar;
- Bid or Buy in Kenya and South Africa combines B2C and C2C by enabling sellers to independently list items for purchase, while also managing some inventory directly. For example, a buyer in Kenya can either purchase an item from a third-party seller through a bidding process, or buy an item directly from Bid or Buy;
- Various e-commerce payment gateways have emerged. These include, but are not limited to, iPay, PesaPal, JamboPay, Paga, Kopo Kopo, Yo!Payments, Ozinbo, 3G Direct Pay, Interswitch, Simple Pay and Paynow. They enable sellers to accept various payment types to a single account. Paynow, for example, is an e-commerce payment gateway in Zimbabwe. Similar to PayPal, it enables an online merchant to accept various electronic payments from customers. Funds are held in escrow until the sale has been completed to the satisfaction of both parties.

Source: UNCTAD.

packages (table II.3). China represents a very large share of the e-commerce activities in the region. In fact, in that country alone, there are more than 29,000 enterprises focusing on B2C, B2B or C2C e-commerce (Payvision, 2014). Other important markets include Japan, the Republic of Korea and Singapore. At the same time, the region also comprises many economies that are still at a nascent stage of online commerce. Taking into account its huge population, there is considerable scope for further e-commerce expansion in the region. In 2013, digital buyers represented less than 15 per cent of the population in Asia and Oceania, as compared with 60 per cent in North America and 49 per cent in Western Europe (table II.5).

To illustrate the diversity of the Asian region, three brief cases are presented below on the e-commerce developments in Cambodia, Indonesia and the Philippines. All three are members of the Association of Southeast Asian Nations (ASEAN), but their experiences in the field of e-commerce is varied.

(a) Cambodia: Early signs of e-commerce

At first glance, the environment in Cambodia is not conducive to e-commerce. Internet adoption is low, with only five Internet users per 100 people in 2012, and an average fixed-broadband price of as much as 34 per cent of gross national income per capita (ITU, 2013). The lack of electronic payments and an unreliable postal system are additional challenges. For instance, only 0.5 per cent of adults used electronic means to make a payment in 2011. Added to this are remaining gaps in the area of e-commerce legislation (chapter V). Nevertheless, there are signs of e-commerce involving innovative enterprises that circumvent such practical hurdles. Most of them are clustered in Phnom Penh, the largest city, and operate a wide spectrum of services, from gaming to online shopping and programming.

One of the main technology companies in Cambodia, Sabay.com, was the first to introduce online gaming in the country.²² In order to solve the issue of electronic payments, it created Sabay Coins, a virtual currency.

Customers now use cash to purchase Sabay Coins at over 1,000 Internet cafes and gaming centres around the country. The currency is also available to clients of certain top-up services and of ABA Bank, Cambodia's tenth largest bank.²³ The coins are stored in the user's account and can be used to buy in-game items and other products online. The games are developed in China and Viet Nam, and then adapted to the Cambodian market. As of August 2013, the company had about 150,000 users.²⁴

While large international players, such as eBay and Alibaba, have not yet introduced services that target the Cambodian market, some local retailers have. Little Fashion and Shop168.me, for example, enable their customers to browse and order products online. They use private delivery services in Phnom Penh and receive cash on delivery. Bank wire transfers are also possible, though costly. In 2013, PayGo SEA (Cambodia) Co. Ltd. launched a service called Pay&Go in cooperation with ABA Bank.²⁵ It allows users to deposit money into an account that can be used for mobile or online payments to participating retailers.

There is a small community of developers looking to seize on the nascent e-commerce market. Some are local offices of outsourcing companies that develop applications for foreign markets. Yoolk, for example, is specialized in producing yellow pages for cities and countries around the world. Other programmers develop products for the local market. VA Kora, a Cambodian who studied and worked in Japan, created a crowdsourced traffic app where users make live updates of the situation in the city's streets. After a six-month development period, his five-person team launched the free app in June 2014 for mobile operating systems iOS and Android. More than 10,000 people have since downloaded the application. There are plans to allow businesses to target app users in their immediate vicinities with special offers.²⁶

Although such initiatives indicate a measure of recent progress, much work remains. Government efforts to improve the operating environment have focused on capacity-building and regulation. In June 2014, Cambodia unveiled its ICT Master Plan, aimed broadly at building infrastructure and improving human capacity.²⁷ Cambodia is part of the e-ASEAN Framework Agreement, established in 2000 to facilitate information infrastructure and promote e-commerce. Nevertheless, as of mid-2014, a draft e-commerce law was still awaiting comments from the Ministry of Post and Telecommunications and the

National Bank of Cambodia.²⁸ The proposed legal framework may improve the regulatory environment while innovative companies may resolve the payment issue, either through electronic means or via cash on delivery. At the same time, an unreliable postal system and low levels of banking penetration remain longer term challenges to e-commerce.

(b) Indonesia: Leveraging social media

About a quarter of Indonesia's population – the fourth largest in the world – is currently online and the number is rising rapidly. It is expected to go from 63 million in 2012 to 139 million by 2015, covering about half the population.²⁹ The number of online buyers was expected to reach 5.7 million in 2014, providing a potentially large market for e-commerce. The value of e-commerce transactions of \$5 billion in 2013 has been forecast to surge to about \$25 billion by 2016.³⁰ The most visited e-commerce site in Indonesia is Amazon.com, followed by two domestically based sites (Lazada.co.id and Bhinneka.co.id) (Payvision, 2014).

A growing number of individuals and small businesses in Indonesia are using social media platforms to sell goods and services. Almost nine out of ten Indonesians who go online also have a social media account, and 87 per cent of Indonesia's Facebook and Twitter traffic comes from mobile devices. Jakarta has been informally dubbed the "Facebook capital of the world" as the platform has some 17 million users in the capital city.³¹

The use of social media is translating into commercial opportunities. A small but growing number of people are offering their goods and services via this channel. For example, Mamahamil.com has offered maternity clothes on Facebook since 2009 and has, since its establishment, developed a sizable client base. Similarly, Saqina, an online fashion retailer that targets Muslim consumers, in 2014 received more than 120,000 "likes" on Facebook.³² Companies often market themselves over a variety of platforms. In addition to their social media efforts, both Mamahamil and Saqina are operating their own websites, and Saqina also has a presence on Alibaba.com.

There are various challenges to e-commerce in Indonesia, including unreliable logistics and high shipping costs. In addition, payment concerns are rampant. Consumers have shown reluctance to use online payments, mainly for fear of fraud and high rates of cybercrime. In a 2013 survey, fraud was cited by one third of Internet users as a reason for not shopping

online.³³ In 2012, there were about 39 million known cyberattacks in the country. Almost one quarter of all personal computers in Indonesia have experienced a malware attack over a three-month period, the highest percentage in the world (DAKA Advisory, 2013). In regards to e-commerce fraud specifically, Indonesia is number 14 globally.³⁴ Specific examples are hard to cite as financial fraud remains underreported. While officially reported financial loss from fraud totaled \$65,040 in 2011, actual costs were estimated to be in the hundreds of millions (DAKA Advisory, 2013).

To improve perceptions of payment vulnerability or to seize on the opportunity to benefit from it, three telecommunications operators (Indosat, Telkomsel and XL) in December 2013 launched a pilot peer-to-peer electronic transaction service, facilitated by the Central Bank. Although the service has been off to a slow start, it may become popular since only about one fifth of the population has access to a bank account.³⁵

The Government is working to introduce regulatory measures to improve e-commerce generally and cybersecurity specifically (UNCTAD, 2013a). The Electronic System Provider and Electronic Transaction Regulation (82/2012) requires anyone who deals with electronic systems and transactions for “public services”, such as e-commerce, to register with the Ministry of Communication and Information Technology. The aim is to strengthen and empower capacity-building of national electronic system providers through national certification and standardization.³⁶ Providers are also asked to have a data centre within the country and use the dot id (.id) domain.

(c) Viet Nam: How motorbikes power online business

In most emerging markets, payment and fulfilment procedures remain barriers to e-commerce. In Viet Nam, very few people use electronic payments. In a 2013 survey of 781 individual Internet users in Hanoi and Ho Chi Minh City, three quarters of those surveyed had used cash payment but only 8 per cent had used some intermediate payment service on e-commerce websites. Some local e-commerce providers have turned the reliance on cash on delivery into an opportunity by making innovative use of motorbike delivery. In a country of 90 million people, there are a staggering 34 million motorbikes.³⁷

Motorbikes are not only useful to collect payments, they help to overcome the order fulfilment challenge by circumventing inadequate infrastructure and postal

services. Nhommu.com, one of the largest discount sites in the country (it accounted for 14 per cent of all 6,378 vouchers used in Viet Nam in 2013), employed motorbike drivers to collect commissions in cash from vendors, amounting to several million United States dollars per month.³⁸ Its customers receive the photo identity of the delivery person on every order and vouchers are printed in the shape of business cards using anti-fraud features, such as high-quality 3D holographic stickers.

Some specialized companies have been established to address the delivery and payment function of e-commerce. One of the most well known is Giao Hang Nhanh, which means “deliver goods quickly”.³⁹ In 2013, the company served more than 800 online merchants of which at least 20 were large B2C e-commerce websites. The company delivered more than 60,000 orders in its first year and handled about 1.5 billion (over \$70,000) of transactions per week. It also has a cash payment collection system to prevent fraud.

The need for motorbikes to collect cash may decrease in the future as trust in online payments increases. In a survey of 164 e-commerce enterprises, 48 per cent had introduced an online payment function and more than half of those that had not were intending to.⁴⁰ Industry sources expect online payments to rise along with an increase in bank accounts.⁴¹

From a demand perspective, improved connectivity has accelerated e-commerce uptake. For example, Internet users almost doubled from 24 per cent of the population in 2008 to 44 per cent in 2013.⁴² The demand for online services has also been matched by relevant regulation, notably the Law on Electronic Transaction (2005) and the Law on Information Technology (2006).⁴³ But e-commerce in Viet Nam is still held back by an urban-rural divide. Outside of Hanoi and Ho Chi Minh City, e-commerce continues to lag. The main obstacles in the bottom 10 localities are a lack of human resources and inadequate infrastructure.⁴⁴

3. Latin America: Diverse ecosystem still to reach full potential

In Latin America, B2C e-commerce amounted to some \$51 billion in 2013, or about 4 per cent of the global total.⁴⁵ Meanwhile, about 8 per cent of the world's online buyers were found in this region (table II.5). The market is dominated by Brazil (box II.4), which accounts for some 38 per cent of the region's total B2C sales, followed by Mexico (19 per cent) and Argentina (8 per

Box II.4. Data on e-commerce in Brazil

Annual surveys and reports from the Brazilian Internet Committee constitute a rich source of nationally representative statistics on e-commerce. The country boasts a significant e-commerce consumer market. In 2013, 28.7 million Brazilians purchased online (representing one-third of all Internet users). Many Brazilian Internet users connect via mobile devices and are active on social networks. Generally, e-commerce use is higher among young people and people with high incomes, good education and living in urban areas.

Brazilian enterprises use access to the Internet and web presence for interacting with their customers in a variety of ways. In 2013, 96 per cent had access to the Internet, more than half had a website and 39 per cent had online social media profiles. Brazilian enterprises have a greater presence on social networks than European businesses, and small businesses in particular seem to rely more on social network profiles than on websites. However, Brazilian enterprises have not yet embraced the full potential of e-commerce. While half of them bought goods and services online, only 14 per cent had ventured into selling online.

Source: See <http://www.cetic.br/pesquisa/empresas/indicadores> (accessed 23 January 2015).

cent).⁴⁶ According to internetretailer.com, the top two web merchants in Latin America are B2W and Nova Pontocom (table II.7). In several regards, the potential for e-commerce remains far from fully exploited. For example, the region receives considerably more international deliveries of small packages through the postal system than it exports (table II.3).

Brazil is the most mature and the largest e-commerce market in Latin America. Brazilian consumers use not only e-commerce platforms such as MercadoLibre (box II.5), Submarino (a website of B2W), Rakuten, NovoaPontocom and Despegar (online travel agency), but also compare prices with websites such as Buscapé and group buying platforms such as Peixe Urbano and Groupon. A growing number of bricks-and-mortar retailers have also launched online offerings, such as Americanas (a website of B2W), Casas Bahia and Wal-Mart. Brazilian consumers consult frequently online product reviews and exchange views and opinions on goods and services on social media sites. The most commonly purchased items online are clothes and accessories, cosmetics and perfumes and appliances.⁴⁷ An analysis of the

top 500 web merchants in the region found that as many as 299 of them were based in Brazil.⁴⁸ Brazilian consumers prefer to use credit cards when purchasing online (Payvision, 2014).

Mexico's e-commerce sector is less developed than that of Brazil and Argentina, due to low credit card adoption, unreliable shipping and delivery logistics and a large gap between upper and lower classes. Mexican online shoppers also rely more on mobile devices. In 2013, 17 per cent of all Internet users used mobile devices for online shopping. Meanwhile, cash is still preferred over credit cards (Payvision, 2014).

In the region, Argentina, Chile and Uruguay have the highest percentage of online shoppers among Internet users (near 70 per cent).⁴⁹ Prominent local e-commerce platforms are Garbarino (Argentina), Falabella and Cencosud (both in Chile). Nevertheless, consumers from the region have a preference to buy from international platforms. About 50 per cent of the digital buyers in Brazil, Chile, Colombia, Mexico, and Peru prefer international websites.⁵⁰ Argentina is at the other end of the spectrum with three out of four consumers opting for local websites.

Box II.5. MercadoLibre

MercadoLibre hosts the largest online e-commerce platform in the region, with operations in Argentina, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, Mexico, Panama, Peru, Uruguay and the Bolivarian Republic of Venezuela, offering both B2C and C2C solutions. In 2013, it mediated transactions between 5 million unique sellers and 20 million unique buyers, contributing to a gross merchandise volume of \$7.3 billion. It offers several types of services: an online marketplace, the MercadoPago payments solution, advertising, classified advertisements, a solution for online stores and an integrated shipping service. MercadoLibre originates in Argentina, where the company still employs approximately half of its staff.

Source: UNCTAD, based on information from <http://investor.mercadolibre.com/secfiling.cfm?filingID=1193125-14-78151> (accessed 23 January 2015).

C. CONCLUSIONS

E-commerce has expanded significantly in the past decade and is expected to continue to grow rapidly in the coming years. It is estimated by UNCTAD that global B2B e-commerce amounted to about \$15.2 trillion in 2013 and global B2C e-commerce to some \$1.2 trillion. Whereas B2B accounts for the overwhelming share of all e-commerce transaction, B2C appears to be growing faster.

The bulk of the world's 1.1 billion digital buyers now reside in developing countries. E-commerce in developing countries has expanded significantly, with fast growth documented particularly in Asia. China has emerged into the global and regional leader in B2C e-commerce. The Middle East and Africa are expected to see their share of global B2C e-commerce rise slightly until 2018, while that of Western Europe and North America is set to decline considerably.

Official and comparable statistics on e-commerce are lacking in most developing and transition economies, making it difficult to assess trends. Available data suggest that cross-border transactions are relatively more important in developing economies than in developed countries, where most e-commerce transactions cater for domestic customers. A number of factors are constraining e-commerce, such as unreliable and lengthy transit times and logistics, high costs of shipment, reluctance to use online payment, and a lack of transparency on delivery and pricing.

The scope for e-commerce is expanding thanks to changes in technology and markets. Rising social networking activity, greater reliance on mobile Internet access (albeit often at reduced speeds) and innovation in delivery services by the posts and private-sector entrants are key features of the evolving e-commerce

landscape in developing economies. A number of local e-commerce enterprises, sometimes with the support of foreign investors, are leveraging this potential.

A global comparison of enterprise-level e-commerce activity shows that size matters, with micro and small enterprises being persistently less likely to both buy and sell online. Knowledge from the specialized ICT sector could have an influence on the level of e-commerce activity. The highest share of enterprises buying online was recorded in the computer and related services sector in many different countries.

There is a relatively high degree of market concentration among the approximate global population of more than 1 million enterprises engaged in e-commerce. The top 10 web merchants in different regions account for between 37 per cent (in Europe) and 86 per cent (in Asia) of the total sales of the 500 largest web merchants.

Regional developments differ considerably, although e-commerce is expanding in all parts of the world. In Africa, the expansion is linked to the rapid uptake of mobile solutions for making digital transactions. Both domestic and foreign companies are entering the market, offering tailored e-commerce, payment and delivery solutions. In Asia, the patterns are highly diverse, ranging from the world's largest B2C e-commerce market (China) to countries in which e-commerce is only beginning to emerge. The region is witnessing the rise of global champions as well as smaller enterprises that are catering specifically to domestic markets. Latin America's e-commerce market is dominated by Brazil, Mexico and Argentina. Consumers in the region have a preference to buy from international platforms, reflecting in some countries relatively nascent domestic e-commerce markets.

NOTES

- 1 See “Digital technology and Internet use, 2013”, *Statistics Canada*, 11 June 2014; available at <http://www.statcan.gc.ca/daily-quotidien/140611/dq140611a-eng.htm> (accessed 5 February 2015).
 - 2 See <http://www.kostat.go.kr/portal/english/news/1/12/2/index.board?bmode=read&bSeq=&aSeq=313310&pageNo=1&rowNum=10&navCount=10&currPg=&sTarget=title&sTxt=> (accessed 5 February 2015).
 - 3 See “E-commerce в России: поле для роста” (E-commerce in Russia – a potential for growth), *iKS Consulting*, 10 October 2013; available at <http://www.iksconsulting.ru/raitings-185.html> (accessed 5 February 2015).
 - 4 See <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tin00110> (accessed 5 February 2015). The total amount of firm turnover is not reported.
 - 5 Roughly one third of all e-commerce revenue resulted from website sales (which includes B2C, B2B and B2G transactions) and two thirds from EDI. Within website sales, 41 per cent was related to B2C with the remainder from B2B and B2G.
 - 6 Excluding selected services.
 - 7 See “E-commerce в России: поле для роста” (E-commerce in Russia – a potential for growth), *iKS Consulting*, 10 October 2013; available at <http://www.iksconsulting.ru/raitings-185.html> (accessed 22 January 2015).
 - 8 See “Cross-border e-commerce makes the world flatter”, *bcg.perspectives*, 18 September 2014; available at https://www.bcgperspectives.com/content/articles/transportation_travel_tourism_retail_cross_border_ecommerce_makes_world_flatter/ (accessed 22 January 2015).
 - 9 Regrettably, there are no equivalent data showing international trade in services.
 - 10 See http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/E-commerce_statistics (accessed 22 January 2015).
 - 11 See “Digital technology and Internet use, 2013”, *Statistics Canada*, 11 June 2014; available at <http://www.statcan.gc.ca/daily-quotidien/140611/dq140611a-eng.htm> (accessed 22 January 2015).
 - 12 This indicator refers to private or non-work activities (ITU, 2014b).
 - 13 Other possible activities under this indicator that could imply a payment are related to leisure, such as listening to web radio or watching web television, streaming or downloading media, or downloading software or applications.
 - 14 European data come from the European Community survey on “ICT usage and e-commerce in enterprises”; available at http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/E-commerce_statistics (accessed 23 January 2015). Other studies show that size is a more discriminating factor for e-commerce than enterprise age (Falk and Hagsten, 2014).
 - 15 See <http://blog.rjmetrics.com/2014/06/18/how-many-ecommerce-companies-are-there/>.
 - 16 See <http://www.statista.com/statistics/274255/market-share-of-the-leading-retailers-in-us-e-commerce/> (accessed 11 February 2015).
 - 17 See <http://www.internetretailer.com/2013/02/26/west-meets-east> (accessed 11 February 2015).
 - 18 See <http://www.internetretailer.com/2014/07/21/amazon-shows-big-opportunity-latin-america-e-commerce> (accessed 11 February 2015).
 - 19 See <https://twitter.com/WSJ/status/512034975626326016> (accessed 11 February 2015).
 - 20 See <http://internet.org/press/introducing-the-internet-dot-org-app> (accessed 23 January 2015).
 - 21 See “67% of phones sold smartphones – Safaricom”, *humanipo*, 24 April 2014; available at <http://www.humanipo.com/news/42985/kenyas-smartphone-penetration-at-67-safaricom/> (accessed 23 January 2015).
 - 22 See “More than meets the eye: 12 startups coming out of Cambodia”, *TechinAsia*, 31 October 2013; available at <http://www.techinasia.com/12-startups-from-cambodia/> (accessed 23 January 2015).
 - 23 See <http://aboutus.sabay.com/articles/category/about-us> (accessed 23 January 2015); <http://ecoggins.hubpages.com/hub/Cambodia-Banking-Sector-Top-10-Banking-Institutions-in-Cambodia> (accessed 23 January 2015).
 - 24 See <http://geeksincambodia.com/sabay-a-digital-leader-in-cambodia/> (accessed 23 January 2015).
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- 25 See “Pay&Go aims to streamline bill payments with new services”, *Cambodia Daily*, 10 October 2013; available at <http://www.cambodiadaily.com/archives/paygo-aims-to-streamline-bill-payments-with-new-services-44794/> (accessed 23 January 2015).
- 26 See “Techie takes on Cambodia’s traffic headaches with app”, *Phnom Penh Post*, 30 June 2014; available at <http://www.phnompenhpost.com/lifestyle/techie-takes-cambodia%E2%80%99s-traffic-headaches-app> (accessed 23 January 2015).
- 27 See <http://www.koicacambodia.org/koica-and-mptc-release-cambodia-ict-master-plan-2020/> (accessed 23 January 2015).
- 28 See “E-commerce law goes ahead with WB funding”, *Cambodia Daily*, 5 June 2014; available at <http://www.cambodiadaily.com/business/e-commerce-law-goes-ahead-with-wb-funding-60518/> (accessed 23 January 2015).
- 29 See <http://www.apjii.or.id/v2/index.php/read/content/apjii-at-media/139/2013-pengguna-internet-indonesia-bisa-tembus-82-ju.html> (accessed 23 January 2015).
- 30 See “A shopping bonanza at your fingertips”, *The Jakarta Globe*, 16 August 2014; available at <http://www.thejakartaglobe.com/features/shopping-bonanza-fingertips/> (accessed 23 January 2015).
- 31 See “Jakarta named world’s Facebook capital”, *Asian Correspondent*, 18 March 2011; available at <http://asiancorrespondent.com/50592/jakarta-recognised-as-the-worlds-facebook-capital/> (accessed 23 January 2015).
- 32 See <https://www.facebook.com/saqinaonline> (accessed 23 January 2015).
- 33 See <http://www.economistsights.com/analysis/good-grow> (accessed 23 January 2015).
- 34 See <http://blog.siftscience.com/global-e-commerce-fraud/> (accessed 23 January 2015).
- 35 See <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTPROGRAMS/EXTFINRES/EXTGLOBALFIN/0,,contentMDK:23172730~pagePK:64168182~piPK:64168060~theSitePK:8519639,00.html> (accessed 23 January 2015).
- 36 See <http://www.economistsights.com/technology-innovation/analysis/future-broadband-south-east-asia> (accessed 23 January 2015).
- 37 See <http://wordhcmc.com/component/content/article/49-insider/general/1526-bike-to-the-future> (accessed 23 January 2015).
- 38 See <http://www.economistsights.com/analysis/good-grow> (accessed 23 January 2015).
- 39 See “How Giao Hang Nhanh solves logistics in Viet Nam’s growing e-commerce market”, *Tech in Asia*, 27 March 2013; available at <http://www.techinasia.com/giao-hang-nhanh-solves-logistics-vietnams-growing-ecommerce-market/> (accessed 23 January 2015).
- 40 See <http://www.moit.gov.vn/en/News/531/e-commerce-report-2013.aspx> (accessed 23 January 2015).
- 41 See <http://www.vietnam-briefing.com/news/vietnam-online-understanding-vietnams-e-commerce-market.html/> (accessed 23 January 2015).
- 42 See <http://data.worldbank.org/data-catalog/world-development-indicators> (accessed 23 January 2015).
- 43 Several decrees also provide guidance on these laws, including Decree No. 52/2013/ND-CP on e-commerce and Decree No. 72/2013/ND-CP on management, provision and use of Internet services and online information.
- 44 See <http://www.moit.gov.vn/en/News/531/e-commerce-report-2013.aspx> (accessed 23 January 2015).
- 45 Other sources estimate the total value of e-commerce sales at \$70 billion in 2013; see <http://latinlink.usmediaconsulting.com/2014/04/the-strongest-e-commerce-markets-in-latin-america/> (accessed 23 January 2015).
- 46 Data from eMarketer.com, as of July 2014.
- 47 See “The strongest e-commerce markets in Latin America”, *latinlink*, 11 April 2014; available at <http://latinlink.usmediaconsulting.com/2014/04/the-strongest-e-commerce-markets-in-latin-america/> (accessed 23 January 2015).
- 48 See “Brazil leads Latin American e-commerce growth, becoming Amazon’s biggest foreign market”, *Latin Post*, 24 July 2014; available at <http://www.latinpost.com/articles/17861/20140724/brazil-leads-latin-american-ecommerce-growth-becoming-amazons-biggest-foreign-market.htm> (accessed 23 January 2015).
- 49 See <http://etc-digital.org/digital-trends/ecommerce/ecommerce-insights/regional-overview/latin-america/> (accessed 23 January 2015).
- 50 See <http://etc-digital.org/digital-trends/ecommerce/ecommerce-insights/regional-overview/latin-america/> (accessed 23 January 2015).

MEASURING THE E-COMMERCE READINESS OF COUNTRIES

3

With a view to assessing the e-commerce readiness of countries, this chapter starts by identifying a set of key facilitating factors that determine the extent to which enterprises and consumers are able to engage in online commerce. While the focus is on B2C transactions, the prerequisites for participating in B2B e-commerce are similar. Based on the analysis of the factors influencing the scope for e-commerce, the chapter introduces the UNCTAD B2C E-commerce Index covering 130 economies. This new Index allows countries to compare their e-commerce readiness against others and indicates their relative strengths and weaknesses concerning different elements of the e-commerce process.



A. FACTORS INFLUENCING THE SCOPE FOR E-COMMERCE

To assess the e-commerce potential in a country, it is useful to consider a simplified e-commerce transaction process (figure III.1). Several facilitating factors influence the scope for implementing successfully such transactions: affordable Internet access, mechanisms for paying for goods and services ordered online, and effective solutions for their delivery (electronically or physically). The legal and regulatory framework, which also influences the extent to which enterprises and consumers are willing to transact online, is discussed in chapter V. Whereas figure III.1 depicts B2C transactions, by replacing the “consumer” with a “purchasing business”, it can be applied also to B2B.

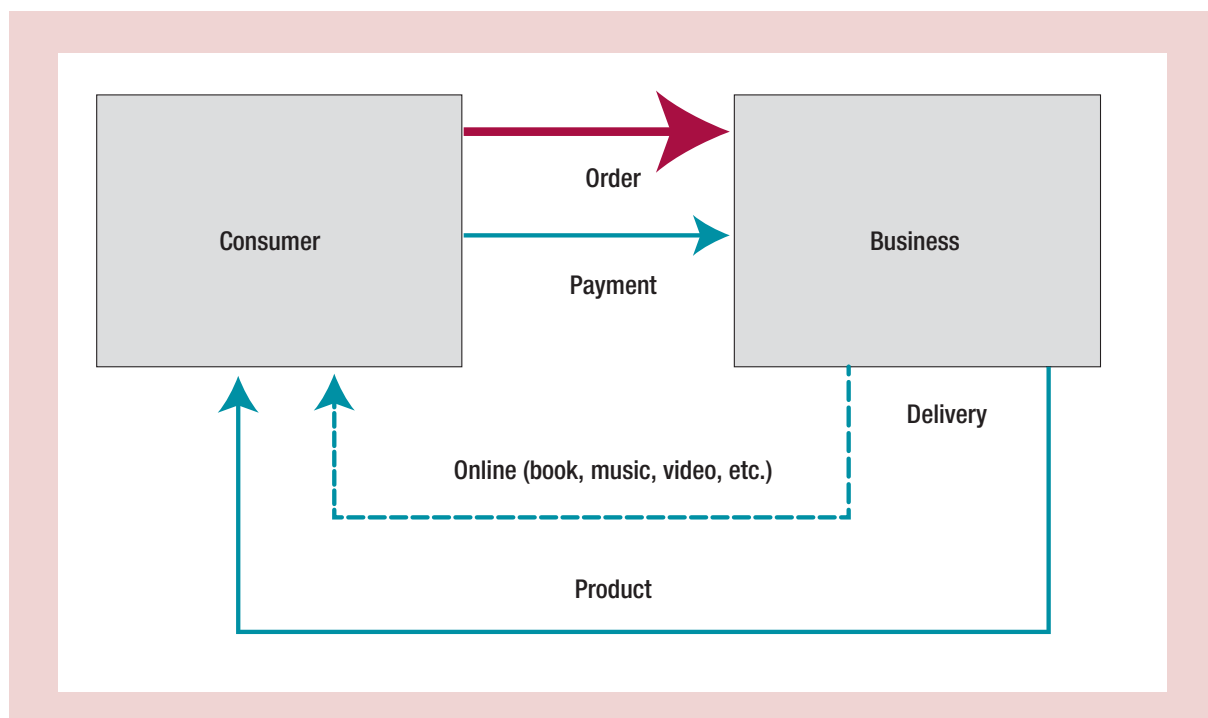
1. Internet access

Internet access for both buyers and sellers is needed to conduct online shopping. According to ITU, there were 2.7 billion Internet users across the world in

2013 (ITU, 2013). This implies that almost four in ten people around the world could theoretically make online purchases from different locations, such as home, telecentres or from mobile devices.

The proportion of enterprises that access the Internet is heavily influenced by their size, with larger firms tending to have much higher levels of use than smaller ones (chapter II). On the part of the seller, a web presence for accepting orders is necessary (even if outsourced to a third party). The number of e-commerce websites is a useful indicator of the capabilities for receiving online orders. According to one source, around 110,000 e-commerce sites in the world generated non-negligible revenue in 2014.¹ However, these data are neither regularly collected nor available by country. Given that e-commerce sites require security software, one widely available proxy for the quality of e-commerce infrastructure is the number of secure servers using encryption technology for Internet transactions. There are considerable differences between countries in this area. In 2013, there were over 800 secure data servers per million inhabitants in high-income economies compared to one server per million inhabitants in LDCs (figure III.2).

Figure III.1. B2C e-commerce transaction processes



Source: UNCTAD.

2. Payment systems for online purchases

For all forms of e-commerce, access to competitive payment solutions is a critical facilitator. Few enterprises or people are willing to sell online without some indication of payment (online or offline) by the buyer. In contrast to bricks-and-mortar retail stores, online retailers often require payment to be made before completing the sale. Payment systems are rapidly evolving, expanding the possibilities for consumers and corporate buyers to pay for products bought online. A distinction can be made between account-based payment systems, electronic currency systems and other systems (OECD, 2006, 2012).

Account-based payments systems: These allow payment through an existing personalized account. Six forms of such systems can be noted:

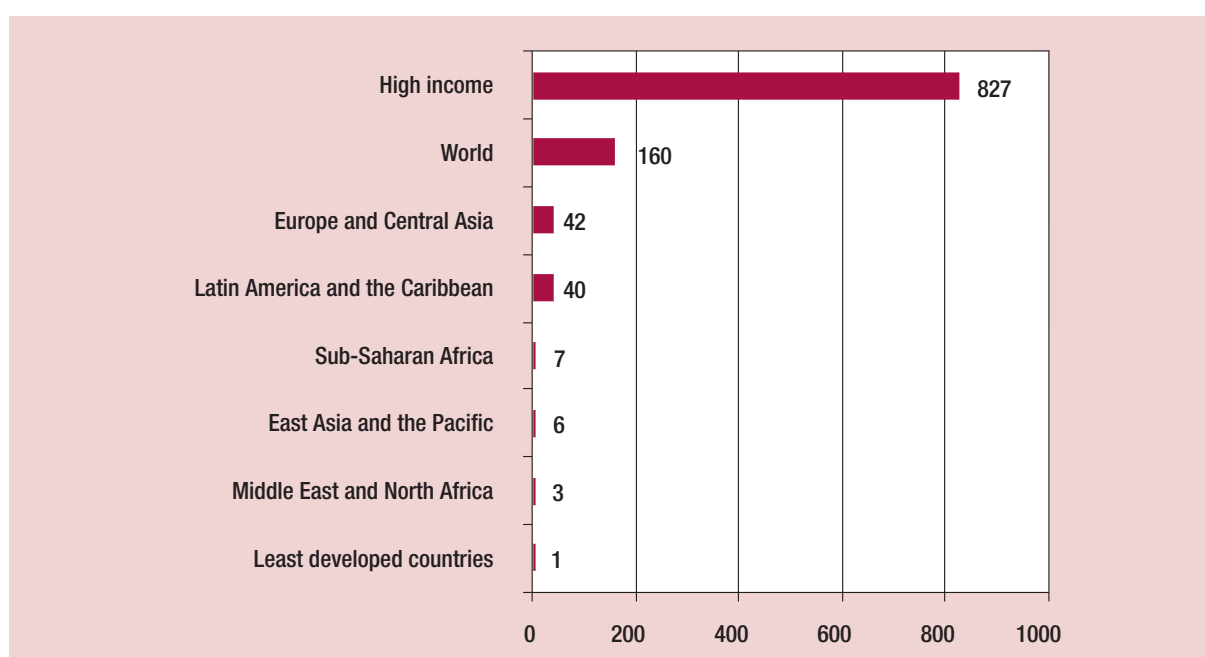
- Credit cards: These are the dominant form of online payment in developed countries;
- Debit card payments: Such payments are directly withdrawn from a bank account. Once funds have been withdrawn, they may be harder to refund;
- Mediating systems: “Electronic money” or “e-wallets”. PayPal is one example of mediating payment services. E-shoppers can register with

a service provider and provide credit or bank account details as the source of payments. In order to pay, they need only to know the seller’s email address, which is verified and linked to the service provider’s account. The payment is debited from the e-shoppers personal account without further financial information transmitted to the seller;

- Mobile payment and telephony account systems: Using a mobile device, buyers can purchase products in two principal ways (European Payments Council, 2010): (a) when buyer and seller are both present, payment can be made using contactless radio technologies, such as near-field communication; (b) mobile remote payments are initiated using mobile devices with the transactions carried out either over telecommunication networks (for example, the Global System for Mobile Communications) or the Internet;
- Online banking: Consumers using this facility are redirected from a merchant’s webpage to the consumer’s own bank’s online banking site.

Electronic currency systems: These allow payment as long as the payer has an adequate amount of electronic currency. This type has two forms: (a) smart card systems, which are mainly used to pay small amounts within organizations (for example, for

Figure III.2. Distribution of secure Internet servers per 1 million people, 2013



Source: World Bank (see <http://data.worldbank.org/indicator/IT.NET.SECR.P6>; accessed 26 January 2015).

Note: Regions refer to developing economies only. “Secure servers” are servers using encryption technology in Internet transactions.

photocopying); (b) online cash systems, which are software-only electronic money instruments based on “signed money”. They usually work via prepaid cards and arrangements differ. Digital currencies or cryptocurrencies such as Bitcoin are gaining traction. They are not backed by Governments or central banks, nor linked to real-world currencies (WorldPay, 2014).

Other payment systems include, for example (OECD, 2012), automated mechanisms for bill payments; online wallets, in which case the user must register with a payment provider and upload money using a debit or credit card; escrow services, where a third-party intermediary is responsible for holding a buyer’s payment until the buyer receives and approves the merchandise; and cash-on-delivery. In the case of B2B transactions, enterprises are increasingly moving to electronic funds transfers.

Credit cards still account for the lion’s share of retail e-commerce settlements (WorldPay, 2014). However, it is expected that by 2017 other payments will make up for the majority of all retail e-commerce payments, with “e-wallets” set to represent more than 40 per cent of the total. Usage patterns vary greatly. Most developed countries rely on accounts-based systems. In North America and Europe, credit cards remain the main method, followed by mediating systems (e-wallets) (table III.1). Among developing countries, there is significant variation, but credit cards account for less than half.

Table III.1. E-transactions value, by payment methods, 2012, by region (per cent)

Region	Credit cards	E-wallets	Direct debit	Cash on delivery	Bank transfer	Other
United States and Canada	71	18	2	1	1	7
Europe	59	13	5	5	8	11
Latin America	47	10	4	8	13	18
Africa and Middle East	34	5	0	48	3	10
Asia and Oceania	37	23	1	11	14	14
World	57	17	2	5	7	12

Source: WorldPay (2014).

Note: Mobile payments included in “other”.

According to WorldPay, cash on delivery is used in almost half the value of e-commerce transactions in Africa and the Middle East (table III.1). Other sources put the share as high as 70–80 per cent in the Middle East.² In India, as well, such payments still account for 50–80 per cent of all online transactions.³ Cash on delivery can be seen as a low risk option for consumers to enter e-commerce. However, it is a higher risk option for producers. Reliance on cash on delivery can act as an inhibitor of e-commerce growth due to people not paying when the product is delivered and to the lag between product dispatch and payment.⁴

Mobile payments accounted for only 1 per cent of the value of e-commerce payments, a figure forecast to rise to 3 per cent by 2017. However, they are more important in countries characterized by limited Internet use but well-functioning mobile money systems. In several African countries, mobile solutions represent the most viable infrastructure for e-services due to high degrees of financial exclusion, limited availability of fixed lines, cost of fixed lines and cost of the card infrastructure (Innopay, 2012). In Kenya, for example, online purchase payments from mobile phones accounted for 19 per cent of total e-commerce transaction value in 2012 (WorldPay, 2014). In October 2013, the value of mobile payment transactions stood at \$68 million as compared with only \$12 million for card payments.⁵ The success of mobile money has led to the development of many new payment services (see chapter IV).

Low levels of credit card usage in developing regions are related to limited ownership of such cards. In 2011, less than 5 per cent of people aged 15 years and older had a credit card in Africa and South Asia, compared with almost half of that age group in high-income economies (table III.2).

In view of the cash-based culture in many countries with a significant number of unbanked people and limited experience with electronic payments, alternative payment systems have emerged. In Brazil, for example, offline payment forms have been created by companies such as the online gaming developer Vostu,⁶ which formed a partnership with 150,000 physical points from newspaper kiosks to cybercafes to sell credits for their games. “Boleto Bancario” (“bank payment slip”) is another widely used payment solution in Brazil. It allows customers to purchase goods online using a slip that customers can print from the website and pay by cash at a bank, hence enabling payment offline.⁷ Micropayment and small payments are also gaining traction in developing

countries. They are designed to suit services or content with low unit values. Solutions like M-Coin (launched by TIWWE), Zond (owned by eBay) and Boku (available in more than 60 countries) charge the payment to a user's mobile phone bills.

3. Delivery systems

The scope for e-commerce is influenced by the quality of product delivery. Many consumers turn to e-commerce because of the desirability of downloading digital products or the convenience of receiving physical products at their homes. Weaknesses in the delivery infrastructure can seriously hamper e-commerce, especially for goods.

Four general delivery modes can be distinguished for B2C:

- Online delivery of digital products such as books, videos, music and computer software: For this type, the quality of the Internet connection is a key factor. An analysis of panel data over 10 years from 43 countries found broadband penetration to be among the most important variables explaining cross-national variability in e-retail spending (Kshetri et al., 2014);
- Delivery of physical product: When a good is ordered it can be delivered to the buyer through

the postal/parcel express network or seller's own delivery network;

- Buyer goes to pick up physical product: This is generally at the store the product was ordered from or a nearby branch if ordered through a central retail website. Some retailers have "lockers" in certain locations where the buyer can go to pick up the merchandise. Sometimes the item is delivered to a post office/parcel office for pick up, either because there is no home delivery available or the package requires a signature;
- Buyer "goes" to the service ordered: This is typically the case for online travel purchases where buyers purchase an airline trip, car rental, hotel accommodation or event tickets.

Digital delivery can happen in several ways: instant and permanent download to the user's computer, limited download (for example, a rental product such as a video that expires after a certain time), streaming or cloud storage. The digital delivery process is affected by the quality of a buyer's Internet connection.⁸ In the case of small digital products (for example, a song or a book), relatively slow download speeds may suffice. Larger digital products, such as downloading or streaming videos, require more bandwidth. The video streaming

Table III.2. Type of accounts and payment methods, by region, 2011, share of population aged 15 or more (per cent)

Regions/groups	Debit card	Account at a formal financial institution	Checks used to make payments	Electronic payments used to make payments	Mobile phone used to pay bills	Mobile phone used to receive money	Mobile phone used to send money	Credit card
High income economies	61.4	89.5	33.4	55.2	49.8
Other economies								
East Asia and Oceania	34.5	54.9	1.7	6.1	1.3	1.2	1	6.6
Europe and Central Asia	36.4	44.9	3.7	7.8	3	2.7	2.5	16.2
Latin America and Caribbean	28.8	39.3	3.9	10.3	1.8	1.9	0.8	18.4
Middle East and North Africa	9.1	17.7	4.1	2.2	1	2.4	1.3	2.4
South Asia	7.2	33	6.6	1.6	2	1.9	0.8	1.6
Sub-Saharan Africa	15.5	24	3.3	4	3	14.6	11.2	2.9
World	30.4	50.5	9.4	14.5	2	3	2.2	14.8

Source: Global Financial Inclusion Database.

Note: Electronic payments refers to the percentage of respondents who used electronic payments (payments that one makes or that are made automatically, including wire transfers or payments made online) in the past 12 months to make payments on bills or to buy things using money from their accounts.

service Netflix quantifies the speeds required to use its service.⁹ They range from 0.5 megabits per second (Mb/s), the minimum required connection, to 5 Mb/s, the recommended speed for high definition (HD) quality. According to average download speeds compiled by Ookla Net Index,¹⁰ all economies could support the minimum required broadband connection speed, while 71 per cent could support HD quality (table III.3). In addition to speed, latency is also critical. It affects countries where streaming services are not hosted locally and must be accessed over slower international links.

The postal system plays a key role in e-commerce logistics. It often remains the most cost-effective way to send parcels. In the past decade, the handling of parcels has become increasingly important for the postal system in terms of volume and revenue. While the number of letters sent domestically and internationally have declined significantly, parcel traffic has surged by more than 30 per cent since 2000, partly due to e-commerce (figure III.3). In Latin America and the Caribbean, and in developed countries, over one third of the total revenues of posts were generated by parcel post in 2011 (UPU, 2014).

Table III.3. Speeds needed for video streaming, 2013

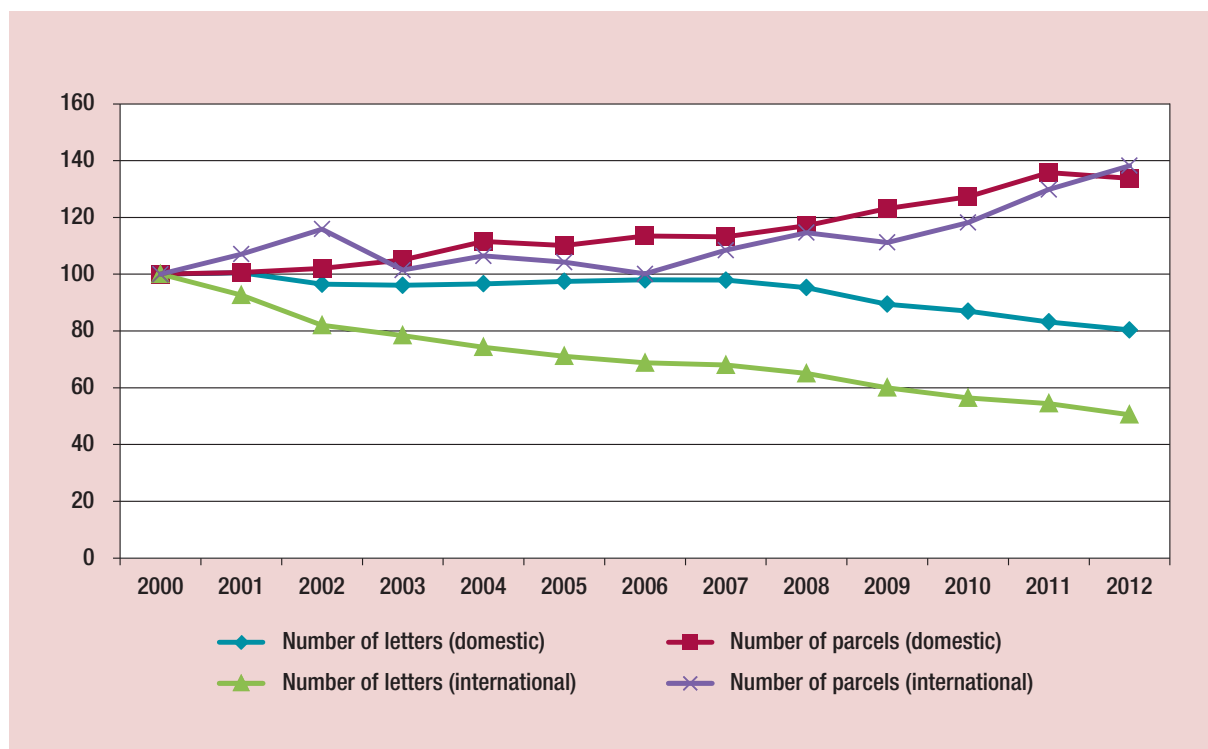
Speed (Mb/s)	Comment	% of economies
0.5	Required broadband connection speed	100
1.5	Recommended broadband connection speed	96
3	Recommended for SD quality	86
5	Recommended for HD quality	71

Source: Adapted from Netflix, NetIndex (<http://www.netindex.com/download/allcountries/>; accessed 26 January 2014).

Note: Based on data for 192 economies with broadband speed data using figures from May 2014.

The greatest flexibility in delivery of goods is the ability to have them shipped to the buyer's home. According to UPU data, over 90 per cent of the population in developed economies, transition economies and Asia can receive parcels with home delivery (figure III.4).¹¹ In Africa and Oceania, the corresponding figure is below 40 per cent. Another option is to have parcels delivered to a post office from where the buyer can then retrieve them. Data from UPU show

Figure III.3. Letter and parcel traffic handled by the postal system, 2000–2012 (index 2000 = 100)



Source: UPU.

that most of the population in Africa and Oceania retrieve their mail from a post office. Over 10 per cent of the population in those regions does not have access to postal delivery or pickup. Across the world, only about 4 per cent of the population lack access to postal services.

Many postal systems need to become more efficient and create products to meet the needs of e-commerce. Nevertheless, the postal network remains the most important national infrastructure for universal access for urban dwellers and, more importantly, for consumers and producers located outside the urban areas. The reach of the national postal network in most countries and its ability to connect to the wider international postal network makes it a cost effective method for connecting all citizens and businesses to the global e-commerce economy.¹²

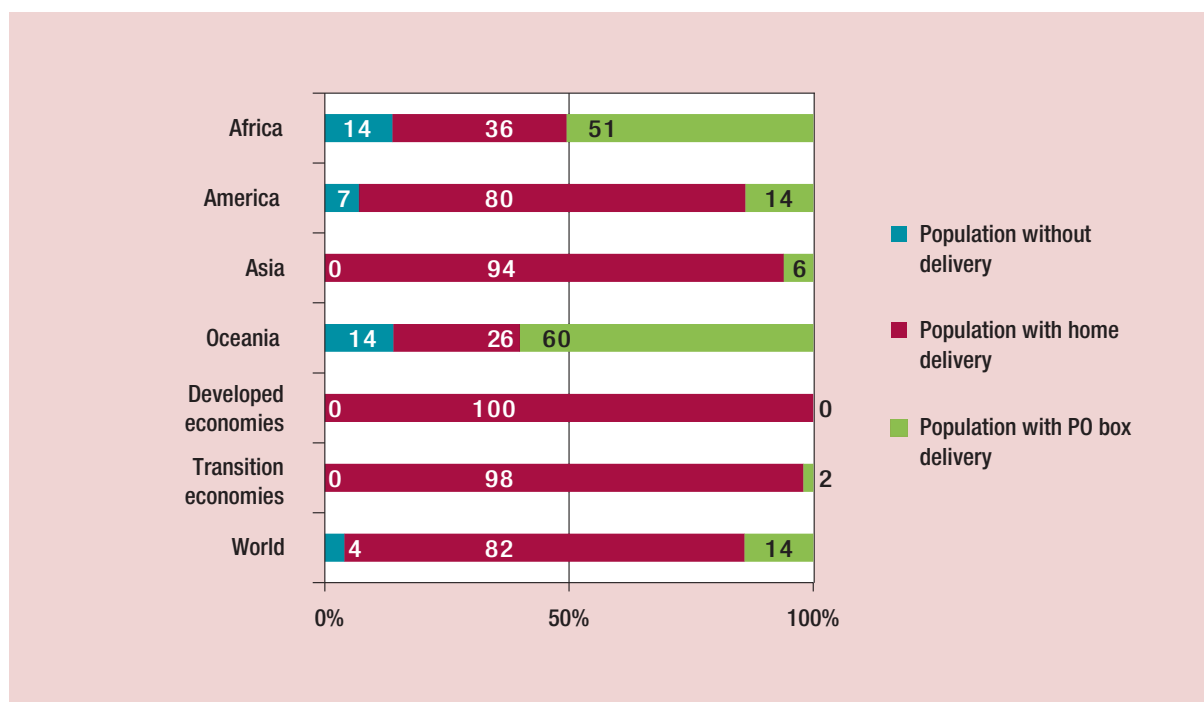
Poor logistical infrastructure remains a problem for enterprises engaging in e-commerce in many economies. While larger businesses, like the online retailer, Ozon.ru,¹³ may choose to build their own distribution networks, this option is out of reach for micro and small businesses that may need to explore other innovative solutions, such as the motorbike

delivery system used in Viet Nam (chapter II). Out-of-home delivery – involving collection points, delivery at work, parcel lockers and in-store pickup – is one option to increase the attractiveness of e-commerce in developing countries.

B. THE UNCTAD B2C E-COMMERCE INDEX

There are few benchmarks of country e-commerce performance. Those that exist suffer from a lack of public availability, scope or consistent methodology, as well as limited geographical coverage.¹⁴ This section presents the UNCTAD B2C E-commerce Index, which is based on indicators related to the factors discussed above (table III.4, box III.1). It reflects the underlying capability of countries to carry out B2C e-commerce. It does not consider exogenous factors such as income, digital literacy and laws. While the legal and regulatory framework influences the degree of trust in online commercial transactions, it is difficult to assign a relevant numerical value to its quality. This dimension is therefore not included in the Index. However, the

Figure III.4. Share of population serviced by different modes of mail delivery, 2012, by region



Source: Adapted from UPU Postal Statistics database.

Note: Geographical regions refer to developing countries only.

Box III.1. Methodology of the UNCTAD B2C E-commerce Index

The selection of indicators for the Index was made in several steps. Firstly, proxy indicators were assigned to the various components needed to carry out an e-commerce transaction, including payment and delivery. This includes access to the Internet by the consumer, a web presence to receive the order, a payment method and a delivery method. Secondly, statistical analysis was performed by regressing these indicators on the percentage of individuals who have made an online purchase for 77 countries where such data were available. Indicators with the highest statistical significance were then selected to create the Index. These indicators are shown in table III.4. The results of the regression show a good fit, with a coefficient of determination of 0.85. All indicators, except secure servers, are in a normative form where 100 is the maximum value. The data on secure servers were normalized to 100 by rescaling the values.¹⁵ The values of the indicators were then averaged to obtain the Index value.¹⁶ The Index comprises 130 economies with all available indicators using data for 2013 (or latest year available). The full list of countries is provided in annex 1.

Source: UNCTAD.

extent to which countries have relevant laws in place is examined in chapter V.

Several observations can be made about the highest-ranked economies (table III.5). Firstly, most are developed countries. Secondly, most are relatively small and/or distant from major market centres. Smaller physical retail markets appear to stimulate online shopping including a significant amount from abroad. The top 10 ranked developing economies in the Index are identified in table III.6. They are all upper-middle and high-income economies, six of which are from Asia and the remaining four from Latin America.

Table III.4. Indicators included in the UNCTAD B2C E-commerce Index

Indicator	Source/note
Percentage of individuals using Internet	ITU, Eurostat and national surveys, 2013, 216 economies
Credit card (% age 15+)	World Bank Findex survey, 2011; 149 economies
Secure Internet servers (per 1 million people)	World Bank, 2013; 209 economies
Percentage of the population having mail delivered at home	UPU, 2012; 168 economies

Source: UNCTAD.

Table III.5. Top 10 countries in the UNCTAD B2C E-commerce Index, 2014

Economy	Share of population having mail delivered at home (2012 or latest, per cent)	Secure servers per 1 million people (normalized, 2013)	Share of individuals with credit card (15+, 2011, per cent)	Share of individuals using Internet (2013 or latest, per cent)	UNCTAD B2C E-commerce Index value	Rank
Luxembourg	100	99	72	95	91.7	1
Norway	100	97	60	96	88.3	2
Finland	100	97	64	92	88.1	3
Canada	100	93	72	83	87.1	4
Sweden	100	96	54	95	86	5
Australia	100	95	64	83	85.5	6
Denmark	100	99	45	95	84.7	7
Republic of Korea	100	99	56	82	84.3	8
United Kingdom	100	94	52	91	84.2	9
Israel	100	82	80	73	83.9	10

Source: UNCTAD; see annex 1.

Table III.6. Top 10 developing economies in the UNCTAD B2C E-commerce Index, 2014

Economy	Share of population having mail delivered at home (2012 or latest, per cent)	Share of individuals with credit card (15+, 2011, per cent)	Share of individuals using Internet (2013 or latest, per cent)	Secure servers per 1 million people (normalized, 2013)	UNCTAD B2C E-commerce Index value	Rank
Republic of Korea	100	56.4	82.1	98.6	84.3	8
Hong Kong (China)	99.99	58.1	74.2	89.2	80.4	18
Singapore	100	37.3	72	89	74.6	26
Bahrain	100	19.3	73	77.2	67.4	34
Turkey	97	45.1	46	68.9	64.2	38
Chile	94	22.8	61.4	73.9	63	39
Uruguay	92.8	27.1	58	72.1	62.5	40
Trinidad and Tobago	93	15.3	59.5	73.8	60.4	43
Malaysia	93	11.9	63.6	71.1	59.9	45
Brazil	80.7	29.2	58	69.9	59.5	47

Source: UNCTAD; see annex 1.

Table III.7 shows the indicator values for the data set. In general, rates of population covered by postal services and secure Internet servers are higher than individual access to the Internet and to credit cards. Furthermore, in the case of Internet use and secure servers, the medians are fairly close to the means. On the other hand, the significant difference between the median and mean for postal delivery highlights that while over half the countries cover more than 90 per cent of their population with home postal services, around a third provide coverage to less than half their population. In the case of credit card use, only 17 countries have a penetration of more than 50 per cent, and in 62 countries, penetration is below 10 per cent. Credit card penetration has the lowest average and maximum scores across the four indicators,

suggesting that globally, payment is the one area meriting the most attention.

The Index allows countries to compare their e-commerce readiness with that of others and also indicates their relative strength and weaknesses with regard to different elements of the e-commerce process (for example, Internet access, e-commerce sites, payment, and delivery). At the regional level, there is considerable variation among the four indicators (table III.8). For example, transition economies display a relatively high degree of home postal delivery, whereas credit card penetration is low compared with the developing regions (except Africa). On the other hand, in Latin America and the Caribbean, and in Asia and Oceania, improving the coverage of postal home delivery appears to be particularly important. In Africa, performance is hampered by low overall Internet penetration levels compared with other regions.

The UNCTAD B2C E-commerce Index value is strongly positively correlated to the variation in the share of individuals shopping online (figure III.5). This share can also be contrasted with that predicted by the Index. This was done by regressing the independent variables (that is, postal delivery coverage, credit card penetration, Internet penetration and secure servers per capita) against the percentage of the population that shop online for the countries for which data are available. The resulting equation coefficients were then applied to the independent variables for all countries. As indicated in table III.9, relatively large countries tend

Table III.7. Global values for the UNCTAD B2C E-commerce Index

	Home postal delivery (% of population covered)	Credit card (% aged 15+)	Internet use (% of population)	Secure servers (normalized value)
Average	69	18	44	63
Minimum	0	0	1	11
Maximum	100	80	96	100
Median	93	10	45	64

Source: UNCTAD.

Table III.8. Regional average values in the UNCTAD B2C E-commerce Index

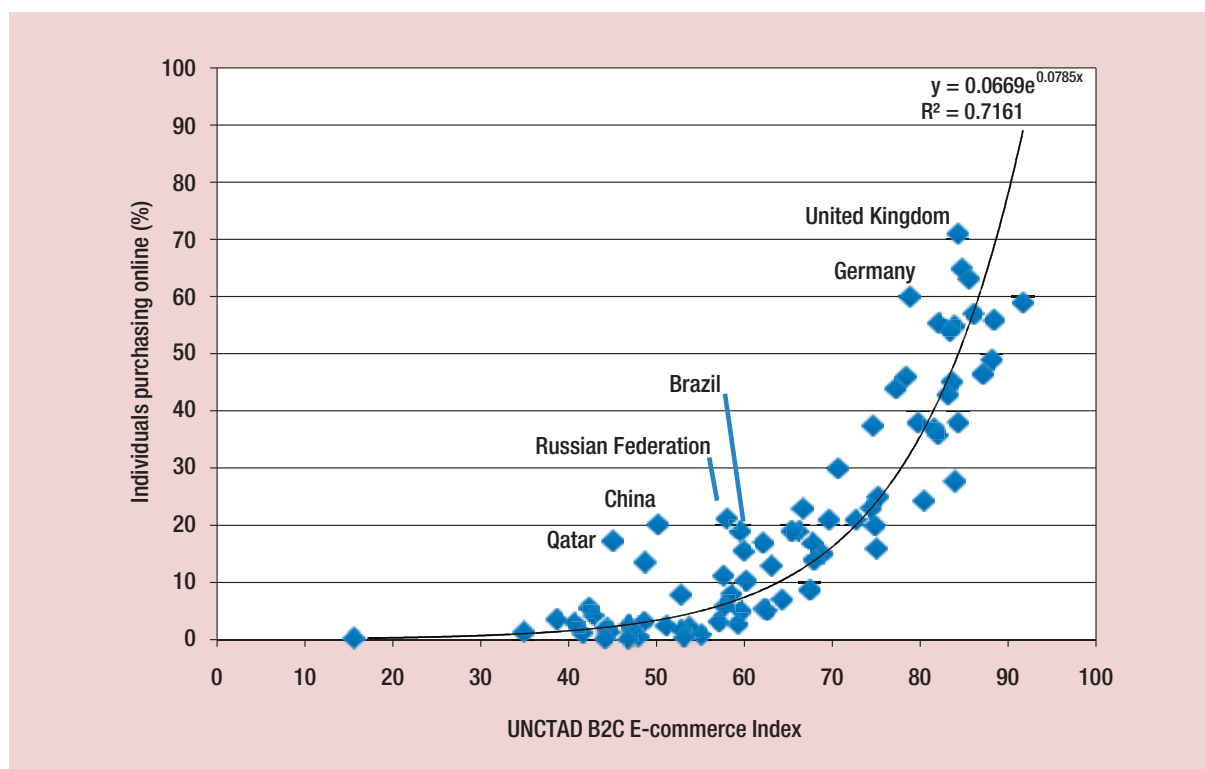
	Share of population having mail delivered at home (2012 or latest, per cent)	Share of individuals with credit card (15+, 2011, per cent)	Share of individuals using Internet (2013 or latest, per cent)	Secure servers per 1 million people (normalized, 2013)	UNCTAD B2C E-commerce Index value
Africa	27	4	13	43	22
Asia and Oceania	60	14	34	57	41
Latin America and the Caribbean	70	12	44	67	48
Transition economies	94	9	45	59	52
Developed economies	98	42	79	90	77

Source: UNCTAD.

Note: Includes all countries for which data for any indicator is available.

to perform above the expected level. This may partly reflect benefits from economies of scale and scope at the domestic level, partly the role of well-developed localized online shopping sites, such as Ulmart in Russia with around \$1 billion in online sales in 2013,¹⁷ and China's Alibaba Group with 279 million active

buyers as of June 2014.¹⁸ On the other hand, those not performing as well as expected tend to be located in Central Europe, North Africa and Latin America. Scoring among the bottom 10 economies in table III.9 indicates considerable potential for increasing the uptake of e-commerce.

Figure III.5. Correlation between the UNCTAD B2C E-commerce Index and the share of individuals shopping online, 2013

Source: UNCTAD.

Table III.9. Top and bottom 10 countries by difference between predicted and actual share of population buying online, 2014

	Top 10					Bottom 10				
	Economy	Online buyers as a share of population (%)				Economy	Online buyers as a share of population (%)			
		Predicted value	Actual value	Absolute difference	% difference		Predicted value	Actual value	Absolute difference	% difference
1	Thailand	0.38	1.8	1.42	380	Armenia	6.9	0.5	-6.4	-92
2	China	6	20	15	262	Ecuador	2	0.2	-1.7	-88
3	Russian Federation	9	21	12	130	Georgia	7.4	1	-6.4	-87
4	Belarus	4.5	7.9	3.4	75	Egypt	4.1	0.6	-3.5	-85
5	United Kingdom	46	71	25	56	Argentina	11.5	2.8	-8.7	-76
6	Germany	39	60	21	54	Mexico	6.2	1.8	-4.4	-71
7	France	30	44	14	46	Morocco	5.8	2.1	-3.7	-64
8	South Africa	2.2	3.1	0.9	42	Uruguay	14.2	5.2	-9	-63
9	Brazil	14	19	5	39	The former Yugoslav Republic of Macedonia	13.5	5.4	-8.1	-60
10	Australia	47	63	16	35	Colombia	6.4	2.6	-3.8	-60

Source: UNCTAD.

Note: The predicted value is calculated using the coefficients generated by regressing postal delivery coverage, credit card penetration, Internet penetration and secure servers per capita against the percentage of the population that shops online.

C. CONCLUDING REMARKS

The UNCTAD B2C E-commerce Index, which will be updated annually, can serve as a useful tool for countries wishing to assess their readiness to engage successfully in online commerce. It allows countries not only to compare their performance against others but also indicates where they are relatively strong and where there may be a need for improvement.

The analysis suggests that the highest-ranked economies are relatively small, rich and often located at some distance from major markets. Meanwhile, in terms of actual levels of online shopping, countries with relatively large populations – such as China, the Russian Federation and Brazil – are among those that are performing better than what would be predicted by the Index. This may suggest that a certain scale is helpful for e-commerce success, as is the presence of localized e-commerce platforms.

Globally, credit card penetration has the lowest average value among the four indicators in the Index. Most retail e-commerce payments are still made via credit card but the role of other methods is forecast to expand in the future. As a result, credit card use may

become a less important determinant when alternative payment solutions gain traction. This will partly hinge on how successful Governments are in fostering an enabling environment for such payments.

For most developing countries, areas for improving e-commerce usage include enhancing parcel delivery and payment mechanisms, particularly when Internet penetration has reached a certain threshold. In the case of sales of physical goods, a lack of postal home delivery can represent a barrier to the uptake of e-commerce, although other methods, such as picking up orders at the post office or shops, are also expanding. This gap is spurring alternatives for home delivery such as courier services either provided by online vendors or generic services competing with the traditional postal services. For the delivery of merchandise bought online, an important issue is cost-effective accessibility for the entire population. The proliferation of private, proprietary, closed-delivery networks, whilst initially providing a catalyst for e-commerce growth, also introduces limitations of scale for universal access, especially for underserved communities. This is where a national infrastructure, such as the postal network, is particularly important.

NOTES

- 1 “How many ecommerce companies are there?”, *The Data Point*. 18 June 2014; available at <http://blog.rjmetrics.com/2014/06/18/how-many-ecommerce-companies-are-there/> (accessed 26 January 2015).
- 2 See “PayPal Insights e-commerce report reveals trends in mobile, travel in the Middle East”, *wamda.com*, 23 September 2013; available at <http://www.wamda.com/2013/09/paypal-e-commerce-report-middle-east> (accessed 26 January 2015); and “Counting on cash on delivery”, *kippreport*, 8 September 2013; available at <http://www.kippreport.com/fcs/counting-on-cash-on-delivery/> (accessed 26 January 2015).
- 3 For the larger “e-retailers” in India, this payment method is available in 600 cities and towns, and has helped merchants acquire first-time customers; see “Cash-on-delivery: Necessary evil”, *businesstoday*, 16 February 2014; available at <http://businesstoday.intoday.in/story/cash-on-delivery-impact-on-e-commerce-companies-customers/1/202680.html> (accessed 26 January 2015).
- 4 See “Cash on delivery the biggest obstacle to e-commerce in UAE and region”, *The National*, 14 May 2014; available at <http://www.thenational.ae/blogs/plugged-in/cash-on-delivery-the-biggest-obstacle-to-e-commerce-in-uae-and-region> (accessed 26 January 2015).
- 5 See “Use of plastic money surges to 11.6 million”, *Standardmedia.co.ke*, 13 December 2013; available at <http://www.standardmedia.co.ke/business/article/2000099980/use-of-plastic-money-surges-to-11-6-million> (accessed 26 January 2015).
- 6 Over 50 million registered users; Vostu, founded in 2007, is the largest gaming company in Latin America; see <http://www.vostu.com/es/#/vostu> (accessed 10 August 2014).
- 7 See <http://thenextweb.com/la/2011/08/29/how-e-commerce-is-growing-in-brazil/#comments> (accessed 2 June 2014).
- 8 For more on quality of broadband networks see UNCTAD (2013b).
- 9 See <https://help.netflix.com/en/node/306> (accessed 26 January 2015). Netflix also compiles a speed index of Internet service providers for the countries it operates in; see <http://ispspeedindex.netflix.com> (accessed 26 January 2015).
- 10 See <http://www.netindex.com/download/allcountries/> (accessed 26 January 2015).
- 11 In Denmark, for example, the main delivery choice among online shoppers is having packages delivered to the home by the national postal agency (reported by almost half of online shoppers), and another 7 per cent picked up their parcels at the postal office (FDIH, 2012).
- 12 See, for example, quote by the Chief Executive Officer of Konga.com at the UPU E-commerce Forum 2014; available at https://www.youtube.com/watch?v=pVl_JP5T77c (accessed 26 January 2015).
- 13 Opened in 1998 and one of the first Russian e-commerce projects in the B2C segment; see <http://www.ozon.ru/context/detail/id/5085342/> (accessed 19 June 2014). Ozon.ru has established 2,100 pickup points in 130 cities and plans to establish another 2,000 by 2015. It has built a second, 16,200-square-metre warehouse in Yekaterinburg to fulfil customer orders outside of Moscow and St. Petersburg; see http://www.atkearney.com/consumer-products-retail/ideas-insights/featured-article/-/asset_publisher/KQNW4F0xInID/content/online-retail-is-front-and-center-in-the-quest-for-growth/10192 (accessed 19 June 2014).
- 14 For example, Kearney’s Global Retail B2C E-commerce Index covers 30 economies (Kearney, 2013) and the Forrester Readiness Index, eCommerce, 2014, covers 55 countries (Forrester, 2014).
- 15 The normalization was done using the following equation: $\log(x) - \log(\min(x)) / \log(\max(x)) - \log(\min(x))$.
- 16 Some extraneous factors, such as digital laws and income, were also analysed for their impact on online shopping behaviour but were found to have little statistical significance.
- 17 See <http://www.telegraph.co.uk/finance/newsbysector/retailandconsumer/10729147/Russias-biggest-internet-company-eyes-London-IPO.html> (accessed 26 January 2015).
- 18 See <http://www.alibabagroup.com/en/ir/financial> (accessed 26 January 2015).

4

E-COMMERCE BY SMALL AND RURAL ENTERPRISES IN DEVELOPING COUNTRIES

Micro and small enterprises in most countries tend to lag behind their larger counterparts in online buying and selling (chapter II). Rural enterprises similarly trail behind their urban competitors, for various reasons. This chapter looks at different options for micro and small businesses to engage in e-commerce, making use of emerging platforms and solutions. It then considers the case of rural e-commerce by comparing the diverse experience of three countries in Asia.



A. OPTIONS FOR MICRO AND SMALL ENTERPRISES TO ENGAGE IN E-COMMERCE

Micro and small enterprises face various barriers to the adoption of e-commerce, such as lack of skills in identifying their e-commerce needs and potential benefits, and how to engage in it (Sandberg and Håkansson, 2014). At the same time, options are expanding for them to gain an online presence that can be used to market their goods and services to potential buyers. Traditional obstacles related to the need for having in-house resources, IT equipment and expertise to establish and maintain a web presence have been lowered with the introduction of new platforms and solutions. In the following sections, different options for creating an online presence and for handling payments and order fulfilment are discussed and evaluated. As will be shown, in many developing countries small businesses still face barriers when wanting to leverage some international e-commerce platforms and solutions.

1. Using existing online marketplaces

A growing number of third-party marketplaces are available for the marketing and sale of products online. Some provide the full range of services – payment processing, customer service, shipping, return processing and delivery – while others act as an online forum for buyers and sellers to meet. In China, JD.com (ir.jd.com), the largest B2C marketplace in that country, offers payment processing, customer service, shipping and return using its own nationwide logistics infrastructure for order fulfilment. By contrast, the most visited e-commerce site in Kenya, OLX (olx.co.ke), allows sellers to post advertisements to reach potential buyers, but does not facilitate transactions between them.¹ In countries with expanding e-commerce markets, domestic and international platform providers are competing head to head (box IV.1).

The primary focus of the marketplace, be it B2B (box IV.2), B2C or C2C, affects the kind of customers that the seller might reach and the set of features that are available. Both B2C and C2C marketplaces may be relevant when targeting the consumer segment. Most B2C platforms require sellers to be a formal,

Box IV.1. Platform competition in the Philippines

The Philippines boasts a rapidly expanding market for e-commerce, with online transactions currently valued at about \$1 billion.^a This has led both local and international platform providers to offer innovative e-commerce solutions to small businesses.

Among domestic C2C websites, suliit.com.ph is one of the most popular with 13.7 million visitors as of March 2013.^b It was founded as a general classified advertisements website in September 2006. After a venture into vertical markets, such as cars.suliit.com.ph and realestate.suliit.com.ph, it merged with the OLX network in 2014. Another domestic platform, Uniqlly (uniqlly.net), offers a complete e-commerce solution against a 5 per cent commission on transactions. It allows customers to create an online store across multiple platforms and helps them manage products, orders and payments via credit card, PayPal or bank deposit. The company also helps with order fulfilment. It has partnered with a delivery company to ship products from the merchant to the customer. Uniqlly also integrates with various social media websites.

Among the foreign providers, eBay has been in the Philippines since 2007 and has expanded by launching the group buying discount site, Kuponan. AliExpress, which is part of the Alibaba Group, is leveraging its global platform to allow Philippine shoppers to purchase products directly from China. On the supply side, it has more than 90,000 sellers in the Philippines itself. Lazada.com.ph, another major online retailer, is owned by Rocket Internet (Germany). A recent entry in the Philippines is Singapore-based startup, TackThis! (tackthis.com.ph).

Competition among the platform providers benefits individuals and small businesses. Because most providers operate on an advertising or commission basis, online merchants can use several simultaneously. Hence, there is an opportunity to establish a presence on a global platform to reach customers overseas while using a domestic provider to target local demand. Many companies also establish their own websites to supplement their social media and platform presence.

Source: UNCTAD.

^a "Is it time to be bullish on e-commerce in the Philippines?", *Huffington Post*, 7 October 2014; available at http://www.huffingtonpost.com/jonha-revesencio/is-it-time-to-be-bullish-_b_5574361.html (accessed 27 January 2015).

^b See "10 popular e-commerce sites in the Philippines", *TechinAsia*, 18 July 2013; available at <http://www.techinasia.com/10-popular-ecommerce-sites-philippines/> (accessed 27 January 2015).

Box IV.2. B2B online marketplaces – opportunities for micro and small enterprises to participate in international supply chains

Online B2B marketplaces can provide opportunities for suppliers in developing countries to access the export market and international supply chains. Examples of dedicated B2B sites include India's largest online B2B marketplace for small and medium-sized businesses, IndiaMart.com;^a EC21.com – a B2B marketplace of the Republic of Korea with 2.5 million members;^b and Kenya.tradekey.com with 39,732 registered members.^c Alibaba.com (China), provides a range of services to facilitate sourcing Chinese products from overseas.

Source: UNCTAD.

^a See <http://www.indiamart.com/corporate/about-us.html> (accessed 19 July 2014).

^b See http://www.ec21.com/html/ec/help/help_01.html (accessed 19 June 2014).

^c See <http://kenya.tradekey.com/> (accessed 19 July 2014).

registered enterprise, while C2C marketplaces do not. For example, only registered enterprises are allowed to sell on the India-based B2C online marketplaces Flipkart.com² and Snapdeal.com.³ By contrast, on eBay.in (a C2C online marketplace), there is no such requirement. For informal microenterprises in developing countries, the C2C option may be more relevant. At the same time, using a C2C platform may involve higher risks, due to the physical separation and uncertainty about sellers' profiles (Xu et al., 2010).

The geographical focus of the marketplace is important. International online marketplaces may be open to international sellers only, to international buyers only, or to both. For example, Aliexpress.com (box II.2) enables sellers only from mainland China⁴ to sell goods to buyers abroad, mostly in Brazil, China, India, the Russian Federation and the United States.⁵ By contrast, Etsy.com,⁶ an international online marketplace for handmade and vintage goods, is open to both international buyers and sellers.⁷ As will be discussed in the next section, however, merchants in developing countries are not always able to sell their products on international e-commerce platforms. Some marketplaces cater to regional buyers. For example, MercadoLibre is the largest online marketplace in Latin America, operating in 12 countries in that region (box II.5). Meanwhile, others cater primarily to the domestic market. As much as 90 per cent of the traffic of Taobao.com comes from China, for example, and 93 per cent of visitors to Lamoda.ru are from the Russian Federation.⁸ For domestic producers, some Governments support national postal operators to offer e-commerce platforms for local producers.⁹

Online marketplaces often specialize in certain types of products, such as physical goods, digital products or ICT-enabled services. For instance, Cheki is a "vertical classifieds" portal for car listings with a presence in

10 African countries (box II.3). The horizontal classified portal, Envato.com (Australia), meanwhile, markets digital products such as website themes, templates, photos, music and videos.

Platforms such as Freelancer.com and Elance.com provide opportunities for professionals in developing countries to provide professional services online to customers around the world. Elance.com has more than 2.3 million "elancers"¹⁰ in over 170 countries.¹¹ As of 2013, the highest number of professional skill providers on this platform came from the United States (715,964), India (359,476), Pakistan (113,219) and the Philippines (89,207).¹² Among LDCs the platform had, for example, 95 freelancers active in Afghanistan and 127 in Rwanda.¹³ Such platforms also create new opportunities for women entrepreneurs to engage in e-commerce (box IV.3).

Box IV.3. Freelance opportunities for women entrepreneurs

After having completed her studies in secretarial skills and language, Mellonie Mukilima worked a few years in a call centre in Kenya. Working hours were long, the work was demanding and provided minimal pay. She learned about freelancing through online platforms and eventually joined oDesk. She posted her résumé and, after some time, she acquired her first client. She has now developed a significant client base. As a freelancer, she has completed more than 40 online jobs, ranging from transcription to cleaning e-mail boxes to Facebook support and management, primarily for clients in developed countries. Through these jobs, she has been able to apply her skills, develop new skills and expand her connections and knowledge. At the same time, she works fewer hours but earns substantially more than when she was working in a local call centre.

Source: UNCTAD (2014a).

There are several advantages associated with the use of online markets. First, it can provide access to a pool of potential buyers, saving the seller the costs and expertise required to build up traffic. Second, well-known online marketplaces (especially B2C) tend to offer consumer trust, marketing and infrastructure. Third, the cost and technical requirements for setting up a store online are low. Finally, assistance with payment processing, order fulfilment, hosting, customer service and marketing may help sellers overcome time and skill constraints.

Potential disadvantages include that the seller is confined to the functionalities, payment options, geographical limitations and design templates available. Second, it may be difficult to secure effective integration with an enterprise's inventory management software and system. Third, the enterprise's products will be showcased next to those of competitors. Finally, the enterprise has to conform to the existing policy of the online marketplace that may not be consistent with the enterprise's own policy.

2. Access barriers to international e-commerce platforms

International e-commerce platforms are used by a growing number of small enterprises to market and sell various products. They can facilitate access to international markets, carry out trading, and organize shipping and financial transactions within and beyond national borders. However, as illustrated below with the cases of Amazon.com and eBay.com, merchants in developing countries may face restrictions when wishing to make use of these services.

(a) The case of Amazon.com

Amazon.com is the world's largest e-commerce company by online revenue (chapter II). Since 2000, it is possible for third-party sellers to post products on this platform in more than 20 categories, from books to garden products.¹⁴ By mid-2014, more than 2 million third-party sellers had participated in it.¹⁵ Amazon provides a spectrum of solutions, including selling and advertising, building websites, accepting online payments, shipping and customer service offerings. However, the complete range of services is only available to customers in the United States. When moving outside that country and especially beyond developed countries, the scope of services gradually narrows.

First, the possibility of registering as a seller is available only in those 23 countries in which bank accounts are supported by Amazon.¹⁶ India is the only developing country included in this category. Second, "seller orders can only be placed if the buyer is in a supported country".¹⁷ Currently, 50 United Nations Member States are supported. In the rest of the world, consumers cannot use Amazon sites to buy items. Third, buyers outside the United States are not able to purchase certain items, including video games, electronics, cameras and photo items (see table IV.1).

(b) The case of eBay.com

eBay.com is the third-largest e-commerce site in the world in terms of gross merchandise value (chapter II) and one of the world's leading online auction sites, on which individuals and enterprises can buy and sell various new and used items. eBay can in principle be used by small enterprises to access international markets. The full service spectrum offered includes bidding, buying, selling and support services of shipping, language translation services and data analytic tools.

Table IV.1. Access to different Amazon services, 2014

Service offered/ limitations	No. of countries	Notes
Seller registration is supported	23	Australia, Canada, India, New Zealand, United Kingdom, United States. Eurozone countries: Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia and Spain.
Supported countries from which to buy	50	..
Items buyers outside of the United States are not allowed to buy via Amazon		Video games, toy and baby items, electronics, cameras and photo items, tools and hardware, kitchenware and houseware, sporting goods and outdoor equipment, software and computers.
Currencies supported (ISO currency code)	8	USD, GBP, EUR, AUD, NZD, INR, HKD, CAD

Source: UNCTAD analysis of information on www.amazon.com; see annex 2.

As in the case of Amazon.com, the full range of services is only available in the United States. There are three types of eBay websites: (a) the United States site; (b) other international sites; (c) buy-only sites (table IV.2). In 172 of the 193 United Nations Member States, eBay sites are maintained as a buy-only version, which means that users can register to carry out bidding and buying but not to sell. Among the countries with international sites are the following developing countries: China, India, Malaysia, the Philippines, Singapore, Thailand and Viet Nam (annex 2).

Table IV.2. Accessibility to different eBay services among United Nations Member States, 2014

	Number of sites	Buying	Selling	Global shipping	Language translation	Data analytic tools
United States site	1	Yes	Yes	Yes	Yes	Yes
International sites*	23	Yes	Yes	No	Yes	Yes
Buy-only sites	172	Yes	No	No	No	No

Source: UNCTAD analysis of information from ebay.com and ebay.co.uk; see annex 2.

* There are also international sites in Hong Kong (China) and Taiwan Province of China.

For example, the company offers the Global Shipping Program that, once sellers have delivered their products to eBay Shipping Centre (in Kentucky), handles customs, import charges and allows complete end-to-end tracking of the items. A seller can aim for more than 40 countries.¹⁸ This service is not available at eBay's site in the United Kingdom. However, a seller in the United Kingdom can list (sell) products directly in 14 global eBay sites in Europe, North America and Australia. As the seller centre of eBay's United Kingdom site explains, buyers that come from "countries without an eBay site see a buy-only version of eBay.com optimized for their location. When these international buyers visit eBay.com, they can only see listings that offer postage to their country".¹⁹

3. Setting up a stand-alone e-commerce site

Stand-alone e-commerce sites can be established in different ways. One is to add an e-commerce function to an enterprise's existing website. Another approach is to use a "software as a service" (SaaS)

e-commerce solution with a package of what is needed to open and operate e-commerce. Finally, an enterprise may choose to build a customized e-commerce site. These options differ in terms of resource requirements, flexibility and the need for in-house skills and capabilities. According to traffic data from Alexa.com, Magento,²⁰ WooCommerce²¹ and PrestaShop²² are the top three platforms for setting up stores online.²³

If an enterprise has a website – which is often not the case among small enterprises in developing countries – it can add an e-commerce function to it. For websites that are built with a content management system (such as Wordpress or Drupal Commerce), this can be done through an open-source, free "plugin" such as WooCommerce, or with a payment button linking to some payment processing service. This low-cost solution requires minimum time to get up and running. However, if not well implemented, the site may look unprofessional. Because the back-end processing of orders is done manually by the enterprise, it may also be time consuming to operate.

Various SaaS platforms offer the full range of e-commerce functions needed to develop and operate an online store. For example, Volusion.com provides an online store and shopping cart, built-in marketing tools, social and mobile commerce, hosting and security, customer support, payment processing, customer relationship management and order processing.²⁴ Advantages include the relative ease of use, rapid set-up, time-saving operations (because many back-end features are automated), and multifeatured professional-looking stores that are, in part, helped by the provision of templates. These can help to enhance the credibility of the enterprise that may not have the capacity or skills to produce a slick, nice-looking store of its own.

The flip side is that setting it up is more costly and demanding. Sellers are also confined to using templates and features available on the platform. The payment method and order fulfilment options supported by a certain platform may not always be applicable to the country of the seller. In a number of developing markets, including India, various end-to-end local e-commerce platforms have been developed specifically for the local market, such as Buildabazaar.com,²⁵ Martjack.com and Shopify.in (box IV.4).²⁶ These integrate better with local payment gateways and local logistics options, which may not be the case with international platforms.²⁷

Box IV.4. Shopify.in – a localized SaaS example

Canada-based Shopify is an SaaS e-commerce platform for selling physical goods such as fashion items, electronics, sporting goods and furniture. For online retailers, it offers, for example, site templates that can be customized with integrated shopping carts, e-mail marketing and inventory management. Localized versions are available in a limited number of developing countries, including India, Indonesia, Malaysia and Singapore. It allows both individuals and merchants to run their own stores without the need for technical know-how to develop or maintain a website. The Indian version of the platform has plans starting at 818 (\$14) per month, for which merchants obtain the capacity to sell a maximum of 25 products. They receive 1 gigabyte of file storage and are charged a 2 per cent transaction fee rising to 9,939 (\$165) per month (the higher price being an option that has no transaction fees and provides additional features). In the last week of August 2013, some 1,000 new stores were created using Shopify.in.a

Source: Technasia.com, “How Shopify plans to be an advocate for Asia’s small online retailers”, available at <http://www.technasia.com/shopify-wants-to-be-an-activist-for-small-e-commerce-stores-in-asia/> (accessed 27 January 2015).

^a See <http://www.techvibes.com/blog/shopify-success-in-india-2013-08-29> (accessed 27 January 2015).

A more sophisticated option is to create a customized e-commerce site by using off-the-shelf software packages, such as Magento, or developing an entirely new site, which would allow for complete customization. Many off-the-shelf packages allow for some customization of functionalities and features available in the package. While the main advantage is the scope for tailoring the online store to the specific needs of the enterprise, it is a costly option that requires considerable in-house IT capabilities.

4. Processing of payments

As highlighted in chapter III, having access to competitive payment solutions is a critical facilitator of e-commerce. While credit cards account for the main share of retail e-commerce settlements in developed countries, this is not the case everywhere (table III.1). While payments can be received in different ways via credit cards, most of them require sellers to have a bank account, which can be a challenge for micro-businesses or self-employed merchants in developing countries. In this section, three options for enabling online payments are discussed: using the payment function embedded in a third-party e-commerce platform; a third-party payment gateway; and a payment gateway linked to a merchant account.²⁸

(a) Direct payment processing by the online marketplace

As discussed in the previous section, there are potential advantages for micro or small enterprises to use existing online marketplaces when marketing and selling their products. Payment processing in such a case can be handled by in-house payment solutions

provided by the online marketplace, such as Direct Checkout by Etsy.com, or Alipay by Alibaba.com. While limited to sellers that are registered on that marketplace, this option is easy to apply. Accepting payment is part of the seller’s online marketplace account, and requires no additional account or set-up.

(b) Payment processing using a third-party payment gateway

There are several third-party payment processors on the market, such as Skrill,²⁹ PayPal,³⁰ 2Checkout,³¹ Google Wallet, Checkout by Amazon, Yo!Payments (which enables businesses to receive payments via mobile money) and more are emerging. By using such services, a seller can receive online payments without opening a merchant account with a bank.³² With a third-party payment processor, the seller only needs to set up an account with the processing company. While the set-up required is relatively straightforward, a fee per transaction has to be paid.

The extent to which a seller can make use of different payment gateways varies depending on its location. In order to receive payments through “Pay with Google”, it is necessary to set up a Google Wallet Merchant Account, for which Google supports 52 United Nations Member States.³³ In the case of Checkout by Amazon, sellers need a local bank account in one of the 23 countries supported by the company.³⁴

PayPal is the most widely used third-party payment gateway. With 152 million active registered accounts in over 200 international markets, it processed some 9 million payments per day in 2014.³⁵ Its online gateway allows for payment via credit and debit cards as well

as PayPal accounts. It provides multiple solutions that can be integrated into a website as a shopping cart, and customizable payment buttons (for example, the “Pay Now” button). PayPal services are available for 204 geographical locations,³⁶ including 173 United Nations Member States (table IV.3).³⁷ A distinction can be made between three types of services:³⁸ (a) sending and receiving money; (b) payment with a PayPal account, bank account, or credit or debit card account; (c) shopping online. These services are packaged into three account types (table IV.3).

The business account, which is the most relevant for online merchants that are registered businesses, is available in 73 United Nations Member States. The premier account, which is available in 90 United Nations Member States, makes it possible to receive money from online transactions (credit and debit card) by selling online, but is designed for individuals who are not in full-time business operations. Finally, the personal account, which can be used by informal enterprises, enables the sending of money and buying online, and is available to 173 United Nations Member States. For example, a small business in Sri Lanka can open a PayPal account and send money outside Sri Lanka but not use it to receive money from abroad.

Currency limitations represent another potential barrier. PayPal is limited to 28 types of currencies,

Google Wallet to 42 and Checkout by Amazon to eight currency types.³⁹ Such limitations add transaction costs and demand more expert knowledge to navigate through national exchange policies.⁴⁰ Furthermore, international payments, especially to developed countries, have to meet various compliance/anti-money-laundering regulations. This involves, among other things, completing, signing and providing various compliance documents. For micro and small enterprises, this can represent a significant challenge, but one which may, at least partially, be alleviated through public interventions (box IV.5).

(c) Use of a payment gateway linked to a merchant account

This option is more complex as it involves obtaining a merchant account with a bank, paying associated fees and selecting a payment gateway.⁴¹ Sellers in developing countries may consider an international payment gateway (for example, AsiaPay.com, which is available in 12 Asian countries including Viet Nam) or a local one (for example, Nganluong.vn in Viet Nam). The former option may offer more advanced technical capabilities such as fraud monitoring, but may lack local availability or may not be supported locally in terms of its fees, currencies accepted, features or language options. The advantage compared with a third-party processor is that the transaction is handled directly between the seller and the buyer, which normally results in the seller receiving the money faster and at lower cost. On the flip side, set-up costs are higher and the process more complex.

Table IV.3. Geographical coverage of different PayPal services, 2014

Type of account	Number of countries in which account is available	Remarks
Personal accounts	173	Send and receive money at individual capacity
Premier accounts	90	Personal account functions as well as accepting credit/debit cards, yet individual capacity
Business accounts	73	Full functions including bank account access, employee access, etc., at the registered business' operations

Source: UNCTAD analysis of information from PayPal; see annex 2.

^a As of 30 September 2014, the “receive” function was not available in the PayPal sites of eight of these countries: the Plurinational State of Bolivia, Costa Rica, Guatemala, Guyana, Nicaragua, Paraguay, Saint Vincent and the Grenadines, and Suriname.

5. Order fulfilment

As emphasized above, order fulfilment is an essential element of e-commerce. If the seller is unable to deliver the item, the buyer has no reason to trust the seller or, more generally, the marketplace. Order fulfilment involves inventory storage and management, packing the order, shipping, providing customer services and taking care of returns and exchanges. Attending to the full range of related activities can quickly become a time-consuming task for a small business, making third-party e-commerce platforms that offer order fulfilment services more attractive.

Poor logistical infrastructure has led some e-commerce companies to establish in-house delivery systems. In Nigeria, for example, the Jumia e-commerce portal runs its own system to deliver

Box IV.5. Support with compliance: The PACIR project in Côte d'Ivoire

Small enterprises in low-income countries need to overcome significant barriers before they can fully benefit from e-commerce. They need knowledge of and technical capabilities for available solutions, access to online payment solutions, cost-effective logistics, an understanding of import requirements and fiscal representation in export markets, awareness and reputation of the sellers and their goods, and improved customer service.

The ITC supports small enterprises in different ways in this context. For example, a prototype platform was built within the PACIR project, enabling fashion and accessory producers from Côte d'Ivoire to market their products online. Since 2013, ITC has coached selected local companies on their marketing and branding strategies, and helped them to overcome key barriers to selling products online. With the launch of the "Ivory Mall", local producers in this sector have found a new channel for exporting their goods to Europe.

One of the challenges concerns the issue of compliance. This was addressed by first having entrepreneurs united behind one single distributor;^a ITC then helped the distributor to comply with the terms and conditions of 2Checkout.com for merchants and to prepare the needed documents. ITC also helped prepare the e-commerce website and make it compliant with the terms of conditions. Finally, approval was obtained for the site, ivorymall.com, to market more than 1,000 products from 26 brands made in Africa and accept online payment with Visa, MasterCard and PayPal.

Source: UNCTAD, based on information provided by ITC.

^a For more information, see <http://www.intracen.org/Cote-dlvoire---Appui-institutionnel-et-operational-pour-lamelioration-du-cadre-des-affaires/> (accessed 28 January 2015).

products to end customers (box II.3). As there was no precedent for e-commerce payments in the market, Jumia had to let buyers pay cash on delivery (there were no widely accessible e-payment options) and offer various delivery locations (such as the nearest police station). Although services such as DHL existed in the market, they were not prepared to handle cash. Today, Jumia controls 70 per cent of Nigeria's online retail market.⁴²

Sometimes e-commerce companies in low-income countries face particular challenges due to either inadequate or non-existent building numbers, street names and layouts. Around 60 countries do not have a postcode system, one of the pillars of efficient delivery. Addresses serve as a basic facilitator of communication between people, public service institutions and businesses (UPU, 2012). Without them, it is difficult to reach individuals and for businesses to operate effectively.

In some cases, such limitations may be overcome by using automated parcel lockers, drop boxes, post office boxes, and other alternative methods of delivery. But such approaches are not always convenient. Naked Pizza in Nairobi saw a need to individually map and label every apartment, office complex and home in its delivery radius in order to locate buyers and to be able to guarantee delivery within a certain time.⁴³ Other companies have found the lack of a precise address system to be a business

opportunity. OkHi (www.okhi.com) in Kenya, for example, seeks to assign a physical address to the people in the world who don't have one. It is enabling the creation and secure sharing of physical addresses via mobile phone. The company aims to enable buyers to turn their physical addresses into a unique uniform resource locator (URL), which can subsequently be shared via e-mail, SMS and WhatsApp. Ultimately, however, it is important to establish a nation-wide, universal addressing system to avoid fragmentation (see also chapter VI).

6. The importance of local solutions

Preceding sections have highlighted multiple options for micro and small enterprises in developing countries to engage in e-commerce. Whereas new solutions are expanding their opportunities to sell online, significant challenges and barriers remain. Compared with their counterparts in more developed parts of the world, small businesses in large parts of Africa and Asia face additional challenges.

Accessibility barriers cause significant frustrations among aspiring young entrepreneurs. The online platform for advocacy campaigners, change.org, is full of petitions from Ghana, Nigeria, Sri Lanka and Ukraine, seeking the attention of PayPal, eBay and Amazon. For instance, one petition that was signed

by 12,500 people requests PayPal to allow people in Ukraine to receive money.⁴⁴ The “PayPal for Sri Lanka” campaign, which started its activities in 2012, has attracted some 6,000 supporters appealing to the Government of Sri Lanka and PayPal to work together to find a solution.⁴⁵

Moreover, even when they are accessible, global e-commerce platforms do not always provide solutions to overcome domestic barriers experienced in the developing countries. For instance, eBay or Amazon do not provide support for border administration when importers face problems of customs clearance or domestic transport. Access to PayPal does not guarantee that payments can be seamlessly transferred through each local bank where banking infrastructure is not efficient. For example, in Kenya, Equity Bank reached an exclusive arrangement with PayPal for cash withdrawals.⁴⁶

The absence of global platform providers creates scope for local players to fill the void. In sub-Saharan Africa, for example, a number of e-commerce payment gateways have been created. These include Interswitch, JamboPay, Ozinbo, Paga, Paynow, PesaPal, Simple Pay, 3G Direct Pay and Yo!Payments, which all facilitate payment via mobile phones.

In Bangladesh, several e-commerce sites are targeting the domestic market. ClickBD⁴⁷ is one of the largest of these. Following broadly the eBay format, it operates with a huge community of buyers and sellers, trading a wide range of items. Built by a local IT engineer-cum-entrepreneur, it offers both bidding and fixed-price options for buyers. Online payments are possible with a prepaid card. Another popular site is Akhoni.com,⁴⁸

which accepts Visa and MasterCard payments in addition to popular mobile payments such as bKash.⁴⁹ The company can also organize local delivery. In Sri Lanka, a homegrown e-commerce company has emerged as an alternative e-commerce platform for small enterprises to buy items from the international market (box IV.6). The examples cited above from Africa and Asia illustrate the importance of local solutions complementing those offered by global e-commerce companies.

B. OPPORTUNITIES FOR RURAL ENTERPRISES TO SELL ONLINE

The lingering rural–urban divide in terms of access to affordable ICT services represents a barrier for rural enterprises wishing to leverage ICTs in their activities. Whereas as much as 90 per cent of rural populations are now covered by a mobile signal, there has been less progress in terms of Internet access, and less still with regard to broadband (Partnership on Measuring ICT for Development, 2014).

In considering the potential of rural e-commerce, it is important to understand the variety of products typically produced by micro and small enterprises. Not every product is necessarily a good candidate for online sales. Rural products can be categorized into five types:

- Fresh food, such as vegetables, meat and fish: These products are difficult to sell due to perishability. Unless there is an efficient delivery network and necessary packaging (for example, ice packs) it may not be possible to get the product to the buyer in time before it spoils. Furthermore, food is generic and requires some kind of distinction to

Box IV.6. Helping small business overcome barriers to e-commerce: The case of Kapruka

With over 10,000 products in 30 categories and an annual turnover of over \$10 million, Kapruka is the largest e-commerce company in Sri Lanka. An important part of its business strategy is to help local entrepreneurs overcome barriers to e-commerce.

Many entrepreneurs in Sri Lanka do not have credit cards and local banks may not entertain international transactions. Thanks to agreements with the Central Bank and the international online card authentication organization, VeriSign, Kapruka can accept local currency transactions. It helps buyers choose items in international markets and optimize the prices and offerings of various international sites before placing an order.

Small businesses often find it challenging to navigate customs procedures, unpredictable delayed clearance, landing charges and taxes. In response, Kapruka has developed an “import simulator” that allows local buyers to cut and paste items from global websites that generate accurate estimates about shipping cost, taxes and also potential landing dates. This solution operates in concert with warehouses in the United States and Sri Lanka, and handles overall shipping including clearance at landing. A local van service carries out deliveries across Sri Lanka. Kapruka has entered into agreements with various global brands to ensure smooth operations.

Source: UNCTAD.

make it more interesting. Therefore, niche goods, such as rare or unusual foods or those that have certification (for example, for being organic or from a certain region) could be compelling enticements for online sales;

- Dried herbs and animal products: These are less perishable and therefore more viable;
- Manufactured products (for example, furniture): These pose less of a challenge though they require a supporting ecosystem for packaging and hardware accessories;
- Handicrafts: These may be more appealing to foreign than domestic buyers. Their quality dictates how attractive they might be to potential online buyers;
- Services, such as homestays, restaurants and tourist attractions: These are not perishable and they may be attractive to local citizens, for example, to urban people interested in rural tourism. Other service categories of relevance include various micro tasks, app development and game development as long as the required infrastructure and skills are in place (UNCTAD, 2012a).

The remainder of this chapter looks at the mixed experience of rural e-commerce in three Asian countries – China, the Republic of Korea and Thailand – and discusses lessons that can be drawn. The countries vary in terms of approaches taken to promote rural e-commerce as well as with regard to the readiness for engaging in such activities.

1. Grassroots-led rural e-commerce in China

China has a rural population of over 650 million inhabitants, of which about 165 million have Internet access (Minges et al., 2014). The central Government has taken various steps to reduce the urban–rural digital divide. For example, the Village to Village project, coordinated by the Ministry of Industry and Information Technology, helped to provide telephone service and subsequently broadband to administrative villages.⁵⁰ By 2012, 88 per cent of them had obtained such access. Another initiative is the dedicated telephone number, “12316”, launched by the Ministry for Agriculture to provide nationwide information about agricultural techniques, disaster warnings and market pricing, covering about one third of farmers across the country. However, the central Government does not have a specific programme for rural e-commerce.

A number of provinces have developed portals with agricultural information including pricing and the ability to advertise products with offline purchase. Some have also implemented B2B initiatives, such as farmers pooling purchases to achieve scale for buying inputs such as fertilizer. Rural e-commerce initiatives have often emanated from the ground up, as illustrated by two cases in the rural Jiangsu and Zhejiang Provinces.

(a) *The case of Dongfeng village in Jiangsu Province*

In the village of Dongfeng, under the administration of Shaji Town in Jiangsu Province, inhabitants have traditionally made a living by farming and migrant labour. Villagers have cooperated to specialize in livestock raising and recycling of waste plastic, but with little success. In 2006, a young man from the village, inspired by the home furnishings of the Swedish company IKEA, set up Dongfeng’s first online shop to sell simple assembled furniture. Today, furniture assembled in this village is sold online all over the country and also exported.

Before the introduction of online retailing, there was no furniture industry in Shaji Town, let alone other advantages such as capital, logistics or accessible geography. However, when some villagers started selling assembled furniture through the Internet, several farmers decided to follow their example. As a result, a furniture assembly and manufacturing industry started to emerge. At the same time, other related industries derived benefits from the development of online retailing, including wood processing, logistics, hardware accessories and packaging. By the end of 2010, the village had three hardware accessories factories, 15 logistics and express delivery companies, and seven computer stores. There are now over 400 online shops with combined annual revenue of over \$50 million (Kan, 2010), and Dongfeng has been named the top “Taobao village”.⁵¹

To conclude, the online shopping phenomenon originated from the grassroots, without preferential government policies or financial support. Its growth has had various effects. Not only has the income of villagers increased, unemployment has been almost eliminated. On average, six workers are estimated to be employed by every online retailer (World Bank, 2014).

(b) *The case of Suichang in Zhejiang Province*

A different example is Suichang, a county of some 50,000 inhabitants in the south-west of Zhejiang

Province. Its mountainous and forested surroundings are home to abundant agricultural resources, such as bamboo, herbs, tea, flowers, vegetables, poultry and mushrooms. In 2005, villagers started selling agricultural products through popular Chinese e-commerce portals. By 2012, almost every household had set up a store with annual sales exceeding ¥120 million (\$19 million). Villagers leveraged growing demand for bamboo products such as charcoal, shoots and furniture, as well as organically grown vegetables and herbs. Surging sales helped to drive the revitalization of upstream crop farming. For example, the size of bamboo forests more than doubled, from 150,000 mu (10,000 hectares) in 2005 to 350,000 mu (23,300 hectares) in 2011. Operating an online store has become a new employment channel for college graduates, and laid-off or migrant workers. Employment related to e-commerce in this county is estimated to exceed 3,000 and the number of online stores in Suichang has grown to about 1,500, not only marketing agricultural products but also tourism to attract visitors.⁵²

In May 2012, a strategic cooperation agreement was concluded between Suichang County and Taobao.com, the C2C online marketplace of the Alibaba Group (box II.2), to establish a dedicated portal (<http://suichang.china.taobao.com>). Many of Suichang's e-commerce merchants have set up online stores on this marketplace.⁵³

The Online Shop Association, which was set up in March 2010 by some pioneer operators in Suichang, has played an important role in three ways: training, transfer of knowledge and logistics. Regular courses on how to operate an online store are available to members free of charge. Members can benefit from services by professional photographers and by using image processing techniques. The Association also encourages experienced members to share their skills in online store design and with regard to fraud prevention. In the area of shipping and delivery, the Association negotiates prices with express delivery companies on behalf of members. Its distribution centre aggregates products to achieve economies of scale for shipping, which helps to reduce the costs of logistics.

The local government has contributed in different ways. It has upgraded transport conditions through the construction of roads to remote areas and a major highway linking the province to China's superhighway network. The infrastructure of ICTs is being improved

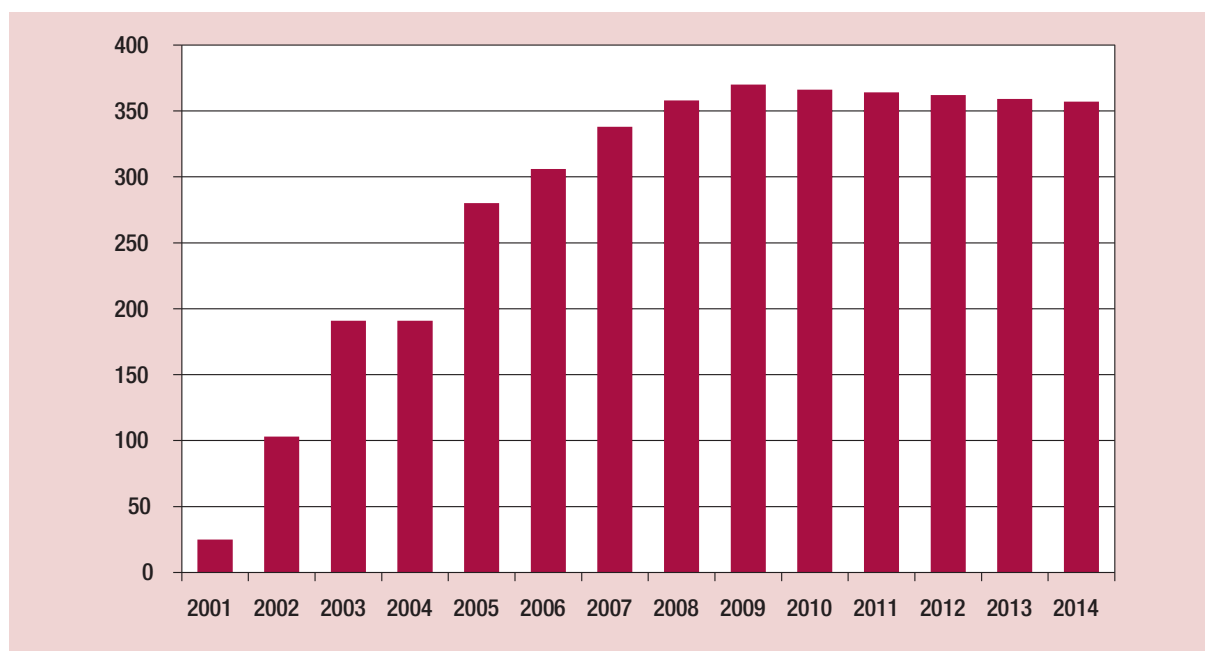
and most households enjoy broadband connectivity. It provided funds for the construction of a 3,000 square metre distribution centre, funding and training for e-commerce start-ups as well as preferential finance, tax and house leasing measures. It furthermore offers online sales guarantees and certifies local online store operators. It has established a food safety mechanism in partnership with farmers, cooperatives, the Online Shop Association and Taobao to monitor the process from product preparation, to online sales and after-sales activities.

2. Rural e-commerce in the Republic of Korea: The case of the Information Network Village platform

The Republic of Korea is one of the world's most advanced ICT nations. It is among the top 10 countries in terms of the number of online buyers (table II.2) and among the top 10 performers in the UNCTAD B2C E-commerce Index (chapter III). The Government has long recognized the potential for e-commerce to support enterprise growth in both urban and rural areas. Online shopping in 2013 amounted to 38,494 billion (\$35 billion) (Statistics Korea, 2014). Some 71 per cent of those living in rural areas used the Internet in 2013. The online market for food and other rural products is significant and growing (Korea Internet and Security Agency, 2013).

The Closing the Digital Divide Act (2001) called for "establishing public access centres that offer Internet access and learning opportunity to residents in need".⁵⁴ This was accomplished through the Information Network Village (INVIL) platform, launched in 2001 by the Ministry of Government Administration and Home Affairs. The INVIL platform was "designed to reduce the digital divide between rural and urban regions... and to increase income level of local residents by boosting regional economy through e-commerce, which eventually leads to the improvement of the quality of life in rural communities".⁵⁵ Villages can submit an application to the municipal authority that decides whether to approve it based on certain selection criteria. At the end of 2014, there were 357 INVILs in the country (figure IV.1).

All INVILs appear on the central portal (<http://www.invil.org>) with descriptions of their agricultural specialties and tourist attractions. Niche products and

Figure IV.1. Republic of Korea, number of Information Network Villages, 2001–2014

Source: Republic of Korea, Ministry of Government Administration and Home Affairs.

services include visiting local lakes, bean sauce and medical mud.

In 2013, the INVIL platform facilitated about \$39 million in online sales, and some 17 million visitors were recorded on the main INVIL website and on those of each information village (figure IV.2). A percentage of the income from the sales (around 1.5 per cent) is allocated to INVIL operations and maintenance.⁵⁶ Quality control is stringent, with all products and services being reviewed before they can be sold on the platform. Villagers are also assisted by INVIL staff to create compelling stories about their products to enhance their sales potential. Logistics are efficient; it takes less than three days to send a product anywhere in the country at low prices (\$2 to \$3 per kilo). An memorandum of understanding has been made with eBay to market specific INVIL products through a dedicated channel on its e-commerce platform in the Republic of Korea.

The postal operator in the Republic of Korea has also supported the growth of rural e-commerce. Its post office service has developed into a distribution channel which directly connects producers nationwide with consumers. It has built up an image of a “safe distribution channel” where consumers can trust and buy good quality typical products from every region of the nation. Among other things, nine small and medium-sized rural enterprises

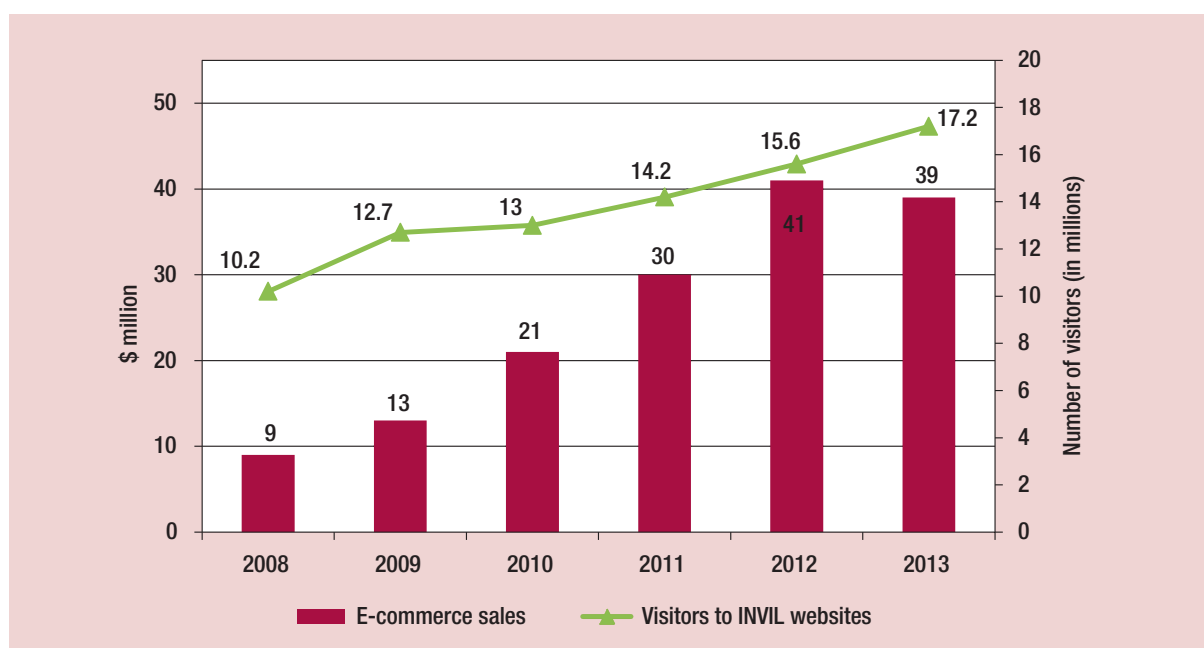
have achieved more than 1 billion (\$0.8 million) in annual sales through the postal distribution channel. This was made possible by the combination of public trust that it enjoyed as a government agency, strict quality control, reasonable prices and quick and accurate delivery (ITU and UPU, 2010).

3. Rural e-commerce in Thailand

In Thailand, B2C e-commerce revenues amounted to B 121,392 million (\$3.9 billion) in 2012 (Thailand, National Statistical Office, 2013a). Just under 1 million people had shopped online in that year (Thailand, National Statistical Office, 2013b). One quarter of the population aged 15 and above used the Internet and in non-municipal areas the equivalent rate was 19 per cent. Thailand features in the middle of the UNCTAD B2C E-commerce Index, in seventieth place, but overperforms in terms of the actual share of online shoppers in the population (chapter III).

In some respects, Thailand has good conditions for e-commerce. The entire population is covered by the postal system, and home delivery is available to 95 per cent of households.⁵⁷ Moreover, some merchants deliver to the country’s 7,000 round-the-clock 7-Eleven stores.⁵⁸ Financial legislation that supports online payment via credit card, bank transfer

Figure IV.2. E-commerce sales of and number of visitors to Information Network Villages



Source: Korea Local Information Research and Development Institute.

Note: The number of visitors includes visitors to the main INVILs website (www.invil.org; accessed 28 January 2015) and to those of each of the information villages.

and digital money is also in place. Not only is there a local e-money service similar to PayPal, but buyers can also make payment at over 35,000 locations such as banks, automatic teller machines and convenience stores.⁵⁹

As much as three quarters of the population live in rural areas. Various efforts by the Government have been made to bridge the urban–rural digital divide, including by expanding the network of telecentres. The Ministry of Information and Communication Technology (MICT) has offered computers and one-year free Internet access to local communities that wish to establish a telecentre and that meet certain criteria. By 2012, the MICT had established 1,881 telecentres and additional ones were to be installed using universal service contributions. In 2013, just over 700,000 Thais (about 4 per cent of all Internet users) accessed the Internet via telecentres (Thailand, National Statistical Office, 2013b).

The MICT has also established websites to market products and services of the telecentres. One such site sells telecentre products (<http://www.thaitelecentrecharms.com>; accessed 28 January 2015) and another arranges tours to telecentres (<http://thaitelecentretour.com>; accessed 28 January

2015). Results have been disappointing. The websites have relatively low visibility, and maintenance and upgrading are done in-house with limited resources. Another challenge is convincing merchants about the importance of quality control and that the products they sell should be relevant for potential buyers. Online ordering and payment are possible, but orders are routed to a central location. Sellers are contacted to dispatch the product with payment eventually wired to the merchant's bank account. As a result, the platform is used more as a marketing tool with buyers contacting sellers offline. This has sometimes caused problems with merchants being slow to dispatch products or imposters posing as buyers tricking the sellers to provide details about their bank accounts.⁶⁰

Apart from the telecentre initiatives, the Government has developed another website for the sale of rural products (<http://thailandmall.net>; accessed 28 January 2015). However, this site also suffers from poor visibility. For every 550 users that visit one of the country's popular commercial online shopping sites, only one visits thailandmall.net.⁶¹ Rural entrepreneurs have instead turned to social media to advertise their products with sales typically taking place offline.⁶²

4. Lessons from the three cases

The three country cases represent different approaches to supporting e-sales by rural enterprises, with diverging results. In the Republic of Korea and Thailand, the Governments have established e-commerce platforms for rural citizens to sell their products. In China, rural e-commerce has been more grassroots driven, but supported indirectly by local governments.

The experience in the Republic of Korea has been positive, with rural e-commerce sales continually rising. Success factors include close collaboration between the Government, telecentre operators and rural citizens to market and sell goods and services. Supportive actions have involved training, helping sellers to create compelling advertisements, having the private sector develop a sophisticated e-commerce portal and links to other online platforms in the country. This has been boosted by a relatively high level of online shopping by consumers and solid payment and delivery infrastructures.

The Thai experience has been less successful. Though the Government has established a number of telecentres in rural areas, these have not been effectively leveraged for e-commerce. Platforms developed to sell goods and services have lacked the sophistication of private-sector online shopping malls. They have hitherto not been widely used, with payment and logistics being less than ideal, and there has not been a strong effort to encourage rural citizens to participate.

In China, several villages have successfully exploited the Internet to sell local products using the country's leading e-commerce sites. In the two cases examined, the initiative to engage in e-commerce came from the grassroots level. A positive side effect was the rise of a supporting ecosystem of logistics, upstream crop revitalization, and processing and packaging industries. Though the Government was not directly involved in this development, it contributed by improving roads, broadband infrastructure and certification. With the biggest e-commerce market in the world, there is large demand online for rural products. Indeed, in 2012, Alipay established a rural business unit to reach non-e-commerce users in third- and fourth-tier cities and in rural areas.⁶³

The three country cases indicate several ways in which Governments can contribute to the development of rural

e-commerce. First, a key role is to create an enabling environment, with roads, broadband access, logistics and appropriate legislation for carrying out e-commerce and facilitating online payments. Rural e-commerce will not be successful unless villagers have access to the Internet and can deliver their products as well as safely receive payments. Additional policy measures used in China include tax breaks, preferential loans and construction of distribution warehouses.

Second, rather than developing government-owned websites, a more effective approach may be to work in partnership with popular existing e-commerce platforms and create a link to rural products. This saves Governments from having to devote resources to developing an e-commerce site from scratch. Moreover, existing portals are typically more visible with a large client base. In Thailand, government-developed platforms have suffered from low visibility and limited maintenance. In China, by contrast, villagers linked up with existing sites with successful results. In the Republic of Korea as well, an agreement was made to market rural products to the wider reach of a privately owned online shopping site.

Third, Governments can endorse rural e-commerce portals to enhance trust among potential buyers and create economies of scale by uniting rural products under a well-marketed government campaign. In the Republic of Korea, the Government created a little green man logo associated with its INVIL e-commerce programme. In addition, Governments can raise the visibility of e-commerce through advertising (billboards, radio and television advertisements, Internet ads, and the like) to encourage consumers to buy online. Certifications for food quality, organic processes and fair trade can also help to make products more attractive. Here merchants may benefit from government assistance.

Finally, Governments may engage in the training of villagers in how to leverage e-commerce tools. This may include alerting them about popular e-commerce sites, teaching them how to create compelling advertisements and stressing the importance of good quality and rapid delivery. Some farmers may be too busy or lack the inclination for Internet tasks. In this case it may be necessary to involve intermediaries to provide assistance.

NOTES

- 1 See <http://www.alexa.com/topsites/countries/KE> (accessed 10 August 2014).
- 2 Flipkart is one of India's largest online marketplaces. It had 22 million registered users in 2014; see <http://www.flipkart.com/s/press> (accessed 19 June 2014).
- 3 Snapdeal.com is also among the top online marketplaces in India with more than 50,000 merchants in 2014; see <http://www.snapdeal.com/info/faq/About%20Snapdeal> (accessed 2 June 2014).
- 4 See http://help.aliexpress.com/topquestions/can_i_sell_on_alieexpress.html (accessed 27 January 2015).
- 5 See <http://www.alexa.com/siteinfo/aliexpress.com> (accessed 6 June 2014).
- 6 One of the leading global marketplaces for handmade products with 30 million members; see <https://blog.etsy.com/news/2013/notes-from-chad-10/> (accessed 4 June 2014).
- 7 See <http://www.entrepreneur.com/article/230441> (accessed 6 June 2014).
- 8 Russian e-commerce site dealing in online sale and delivery of fashion apparel, shoes, accessories, cosmetics, fragrances and home furnishings, with 20 million users; see <http://company.lamoda.ru/about/history/> (accessed 19 July 2014). Traffic data are from Alexa.com as of 9 June 2014.
- 9 Examples include Brazil (<http://www.shopping.correios.com.br>), the Republic of Korea (<http://world.epost.go.kr/>), Saudi Arabia (<http://www.e-mail.com.sa/>) and Tunisia (<http://www.e-fleurs.poste.tn/>) (all accessed 27 January 2015).
- 10 See <https://www.elance.com/q/sites/default/files/docs/AIR/AnnualImpactReport.pdf.html> (accessed 6 June 2014).
- 11 See <https://www.linkedin.com/company/elance> (accessed 4 June 2014).
- 12 In addition, these online marketplaces for services or digital goods offer online skill-training courses on technical topics, which could be a useful resource for developing-country micro, small and medium-sized enterprises.
- 13 See <https://www.elance.com/r/contractors/q-rwanda/cry-rwanda> (accessed 10 August 2014).
- 14 See <http://www.amazon.com/Careers-Homepage/b?ie=UTF8&node=239364011> (accessed 15 September 2014).
- 15 See <http://services.amazon.com/selling/benefits.htm?id=AZFSSOAAAS> (accessed 11 September 2014).
- 16 See <http://www.amazon.com/gp/help/customer/display.html?nodeId=201118550> (accessed 15 September 2014).
- 17 See <http://www.amazon.com/gp/help/customer/display.html?ie=UTF8&nodeId=537734&#outside> (accessed 15 September 2014).
- 18 See <http://pages.ebay.com/sellerinformation/build-your-business-online/grow-your-sales/sell-online-internationally/index.html> (accessed 11 August 2014).
- 19 See "Where to sell internationally", Seller Centre, eBay.co.uk, 11 August 2014; available at <http://sellercentre.ebay.co.uk/where-to-sell-internationally?cat=1015> (accessed 27 January 2015).
- 20 Magento provides scalable e-commerce solutions; see <http://magento.com/company/press-room/press-releases/magento-recognized-top-platform-fast-growing-retailers-internet> (accessed 6 June 2014).
- 21 WooCommerce is a free and open-source e-commerce plugin with over 4 million downloads as of 2014; see <http://www.woothemes.com/woocommerce/> (accessed 19 June 2014).
- 22 PrestaShop is a free, open-source e-commerce software developed in France and claiming almost 4 million downloads as of 2014; see <http://www.prestashop.com/> (accessed 4 June 2014).
- 23 See <http://tomrobertshaw.net/2014/04/april-2014-e-commerce-survey/> (accessed 27 January 2015).
- 24 Founded in 1999, Volusion.com (United States) provides hosted e-commerce solutions with over 40,000 stores and \$15 billion in merchandise sales on its platform as of 2014; see <http://www.volusion.com/history> (accessed 10 August 2014).
- 25 India-based hosted e-commerce solution with over 20,000 live stores as of 2014; see <http://www.buildabazaar.com/> (accessed 19 July 2014).
- 26 India-based e-commerce solution with over 2,000 customers globally; see <http://www.martjack.com/aboutus.html> (accessed 19 July 2014).

- 27 See <http://www.iamwire.com/2013/08/ecommerce-saas-platforms-india-comparison/> (accessed 10 August 2014).
- 28 Various alternative payment solutions can be searched online; see <http://www.searchenginejournal.com/top-12-alternatives-paypal/> (accessed 19 June 2014).
- 29 Electronic payment service with over 36 million account holders that serves over 156,000 businesses as of 2014; see <https://www.skrill.com/en/about-us/> (accessed 6 June 2014).
- 30 Electronic payment service with over 153 million accounts worldwide as of 2014; see <https://www.paypal.com/ke/webapps/mpp/about> (accessed 2 June 2014).
- 31 Payment service with 50,000 merchants that supports transactions in 196 countries through 8 payment methods, 26 currencies and 15 languages; see <https://www.2checkout.com/about> (accessed 4 June 2014).
- 32 Many small businesses do not meet the criteria established by banks, for example, in terms of the length of time that the business has been operating or in terms of creditworthiness; see, for example, <http://www.entrepreneur.com/article/53306> (accessed 2 June 2014).
- 33 See <http://www.google.com/wallet/send-money/> (accessed 15 September 2014).
- 34 See countries and currencies supported by Amazon currency converter for sellers by Amazon; available at <http://www.amazon.com/gp/help/customer/display.html?nodeId=200497820> (accessed 15 September 2014).
- 35 See <https://www.paypal-media.com/about> (accessed 27 January 2015).
- 36 PayPal's list of countries/economies also includes many that are not Member States of the United Nations, such as the Holy See, the British Virgin Islands, Hong Kong (China) and Taiwan Province of China.
- 37 In 20 United Nations Member States, PayPal is not available, including Bangladesh, Ghana and Pakistan, as well as six countries that are under United States trade embargo (Cuba, the Democratic People's Republic of Korea, the Islamic Republic of Iran, Myanmar, the Sudan and the Syrian Arab Republic).
- 38 PayPal account types; see <https://www.paypal.com/us/webapps/helpcenter/helpub/article/?solutionId=FAQ2347> (accessed 27 January 2015).
- 39 A service that as of the end of 2014 was only available in selected developed countries, Stripe (stripe.com), supports payment in well over 100 currencies, depending on the credit card used.
- 40 Information from the respective company websites, accessed on 15 August 2014.
- 41 An e-commerce payment gateway authorizes credit card payments and processes them securely with a user's merchant account. Every payment made with a credit card involves the transfer of funds to a merchant account, which the seller holds directly with a bank. The merchant has full responsibility for the transactions that occur with its account, and each bank has its own terms of service to which account holders must adhere.
- 42 Interview with Tunde Kehinde, former Managing Director of Jumia Nigeria.
- 43 Interview with Ritesh Doshi, Chief Executive Officer, Naked Pizza Kenya.
- 44 "Allow receiving money to Ukraine through PayPal", [change.org](http://www.change.org/en-GB/search?utf8=%E2%9C%93&q=PayPal+Ukraine), 15 October 2014; see <http://www.change.org/en-GB/search?utf8=%E2%9C%93&q=PayPal+Ukraine> (accessed 28 January 2015).
- 45 "Enable receiving money to Sri Lanka through PayPal", [change.org](http://www.change.org/p/enable-receiving-money-to-sri-lanka-through-paypal?lang=en), 15 October 2014; see <https://www.change.org/p/enable-receiving-money-to-sri-lanka-through-paypal?lang=en> (accessed 6 February 2015).
- 46 See "Kenya's Equity Bank partners with PayPal", *Balancing Act*, 12 July 2013; available at <http://www.balancingact-africa.com/news/en/issue-no-663/money-transfer/kenyas-equity-bank-p/en> (accessed 28 January 2015).
- 47 ClickBD.com (Bangladesh), 14 October 2014; see <http://www.clickbd.com/> (accessed 28 January 2015).
- 48 Akhoni.com (Bangladesh), 14 October 2014; see <http://www.akhoni.com/> (accessed 28 January 2015).
- 49 bKash.com (Bangladesh), 14 October, 2014; see <http://www.bkash.com/> (accessed 28 January 2015).
- 50 An administrative village has an organizing committee and is responsible for a group of natural villages.
- 51 "Taobao fosters e-commerce villages across China", *Want China Times*, 23 January 2013.
- 52 "Suichang strives for e-commerce", *GBTIMES*, 2 October 2012; see <http://gbtimes.com/business/suichang-strives-e-commerce-success> (accessed 28 January 2015).

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- ⁵³ Taobao.com has been used by many rural enterprises to start online businesses. In Junpu Village, Guangdong Province, for example, more than 1,400 online shops had already been set up in September 2013 by villagers with a turnover reaching ¥35 million (\$5.8 million); see “Cash cow, Taobao”, *The Economist*, 24 May 2014, available at <http://www.economist.com/news/china/21602755-one-small-hamlet-teaching-people-how-sell-online-cash-cow-taobao> (accessed 28 January 2015), and Guihang et al. (2014).
- ⁵⁴ See http://eng.nia.or.kr/english/bbs/board_view.asp?BoardID=201112221611162611&id=9159&Order=301&search_target=&keyword=&Flag= (accessed on 28 January 2015).
- ⁵⁵ See http://www.invil.org/english/action.do?url=/english/introduction/about_invil (accessed 6 February 2015).
- ⁵⁶ See United Nations Department of Economic and Social Affairs, 2011 United Nations Public Service Awards Winners; available at <http://unpan1.un.org/intradoc/groups/public/documents/un-dpadm/unpan045540.pdf> (accessed 28 January 2015).
- ⁵⁷ Data from UPU; see http://pls.upu.int/pls/ap/spp_report.main?p_language=AN&p_choice=BROWSE (accessed 5 February 2015).
- ⁵⁸ See “Home delivery is so 2013: Zalora now offers convenience store pickups in Thailand”, *TechinAsia*, 16 January 2014; available at <http://www.techinasia.com/home-delivery-2013-zalora-offers-convenience-store-pickups-thailand/> (accessed 28 January 2015).
- ⁵⁹ See <http://www.123.co.th/whatis123.aspx> (accessed 28 January 2015).
- ⁶⁰ Interview in December 2013 with Mr. Kamolrat Intaratat of Sukhothai Thammathirat Open University and consultant to MICT Thai Telecentre project.
- ⁶¹ Derived from Alexa.com website rankings.
- ⁶² See “Thai artisans from the One Tambon One Product project use social media to boost sales!”, Asia Pacific Telecentre Network; available at <http://www.aptn.asia/success-stories/127-thai-artisans-from-the-one-tambon-one-product-otop-project-use-social-media-to-boost-sales> (accessed 28 January 2015).
- ⁶³ See “Alipay aims to bring e-commerce to rural Chinese”, *CHINACSR*, 24 December 2012; available at <http://www.chinacsr.com/en/2012/12/24/8743-alipay-aims-to-bring-e-commerce-to-rural-chinese/> (accessed 28 January 2015).
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MAPPING THE LEGAL LANDSCAPE FOR E-COMMERCE

5

Security and trust are fundamental for creating an environment conducive to e-commerce. Online fraud and data breaches are growing concerns for both consumers and enterprises, requiring adequate legal responses at national and international levels. Against this background, this chapter examines key legal issues that need to be addressed to facilitate e-commerce and to make interaction on the Internet more trustworthy in general. Special attention is given to e-commerce legal frameworks on electronic transactions, consumer protection, privacy and data protection, and cybercrime.

This chapter presents the result of UNCTAD research into the current state of e-commerce laws in these areas, highlighting progress made and the remaining gaps. It discusses possible options for achieving effective implementation and enforcement of the relevant laws and makes recommendations aimed especially at facilitating cross-border transactions. The analysis draws substantially on UNCTAD's interaction with regional groups in developing countries, as well as with other partner organizations and experts.



A. LEGAL ISSUES AND CHALLENGES FOR E-COMMERCE

While the adoption of laws may not be a prerequisite for e-commerce to commence, they are essential for its sustainable growth. A supportive legal environment is crucial to create trust online and to secure electronic interactions between enterprises, citizens and public authorities. The extent to which regions and countries have relevant frameworks in place, as well as whether such frameworks are effectively implemented and enforced, varies considerably. However, there is no ideal legal landscape. In determining how to shape it, consideration should be given to existing laws and the peculiarities of the national environment, as well as international and regional legal frameworks where they exist. Some countries have enacted e-commerce-specific regulation while others have amended existing legislation or developed principles or guidelines as a minimum requirement. It is equally possible to observe overlaps between legal regimes. In mapping the global e-commerce legal landscape, UNCTAD's focus has been on the legislation that is specifically dedicated to e-commerce as well as legislation adapted to the online environment.

Three general comments can be made in terms of the context of this chapter. First, the phrase "legal landscape" is used to encompass a broad range of different means of regulating behaviour, including public law measures (for example, statutes, decrees and regulations), private law agreements (for example, contracts), as well as standards, codes of practice and other non-binding, self-regulatory approaches. Second, when referring to the enforcement of laws, a similarly broad approach is taken, for which determination before a court of law is the ultimate, and rare, outcome. Enforcement can also arise through the use of innovative alternative dispute resolution forums, as well as compliance driven by corporate social responsibility policies or concerns about adverse publicity. Third, legal measures generally target different parts of the e-commerce transaction value chain in pursuit of different objectives. So, for example, consumer protection measures against payment fraud can engender trust in consumers, while establishing legal certainty can encourage foreign investment in domestic service providers.

Research by UNCTAD shows that the availability of relevant laws in four legal areas that are essential for increasing users' confidence in e-commerce – e-transaction, consumer protection, privacy and data protection, and cybercrime – is generally high in developed countries, but inadequate in many other parts of the world (table V.1).

Among the four areas, adoption is generally the highest for e-transaction laws and the lowest for laws protecting consumers online. This may partly reflect the unavailability of data for some countries. As the data reported in table V.1 (and in annex 3) will be regularly updated, member States are encouraged to provide any missing information on their e-commerce legislation to the UNCTAD secretariat.

The patterns vary by region. For example, in Central America, seven out of eight countries have consumer protection legislation in place, but most lack laws related to data protection and cybercrime. The subregion with the weakest coverage of e-commerce legislation is Middle Africa, where only two out of nine countries have laws related to e-transactions, consumer protection online and data protection, and only one has cybercrime legislation in place.

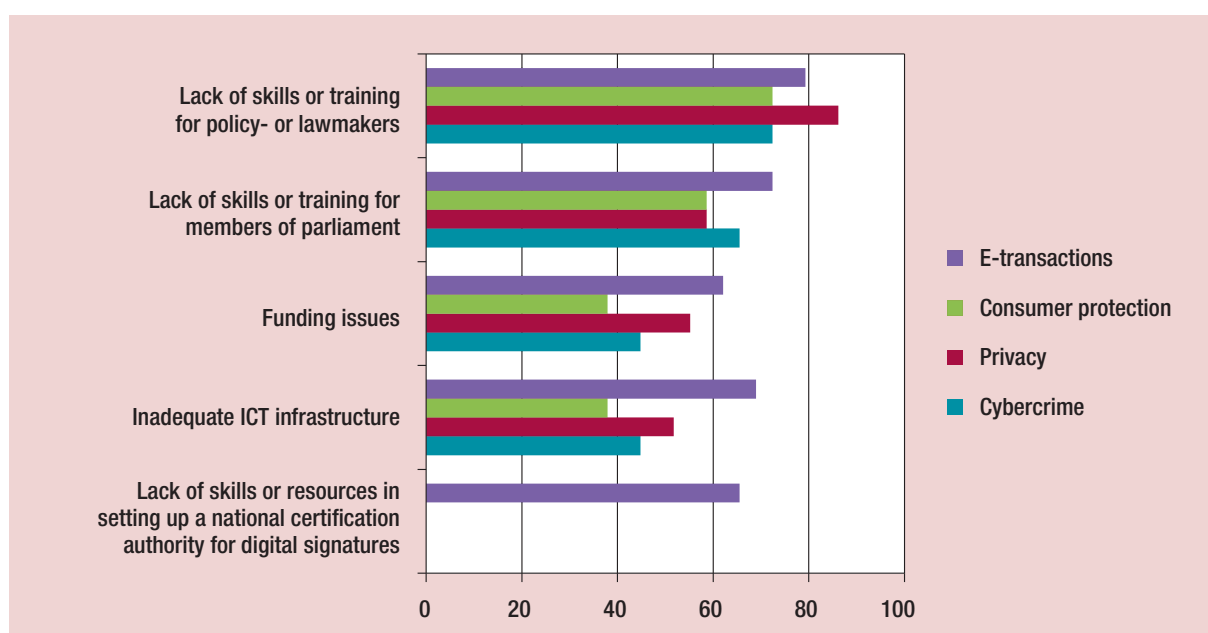
Governments of developing countries face various challenges when seeking to adopt (figure V.1) and enforce (figure V.2.) e-commerce legislation. Laws are often adopted too late by Governments attempting to keep up with dynamic and unpredictable technological advancements. By the time the laws are passed they are often obsolete, and the activities that they seek to regulate may have changed. Regional efforts to create harmonized principles are often even more delayed, resulting in variations of legal frameworks among nation States within particular regions. For instance, the African Union Convention on Cyber Security and Personal Data Protection was adopted only in June 2014. Furthermore, in a bid to mitigate costs, traditional institutions that lack capacity are often given a new e-commerce mandate without the provision of additional resources. This frequently results in the new mandate being relegated to the non-core functions of the institution.

Surveys by UNCTAD of government representatives in 38 countries in Africa, Asia, and Latin America and the Caribbean¹ point to the need to build awareness and knowledge among lawmakers and the judiciary in order to formulate informed policies and laws in the area of e-commerce and to enforce them effectively.

Table V.1. Share of economies with relevant e-commerce legislation, by region, 2014 (per cent)

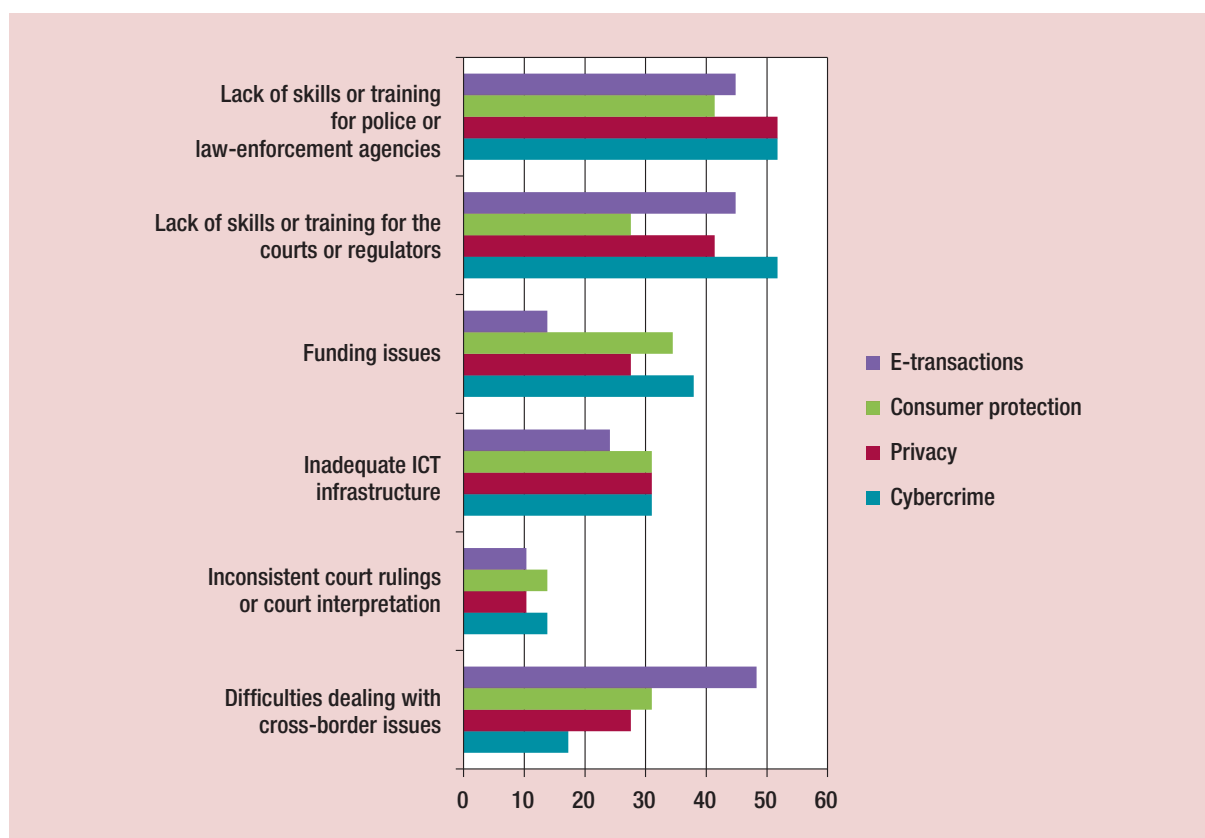
	Countries (number)	E-transaction laws (%)	Consumer protection laws (%)	Privacy and data protection laws (%)	Cybercrime laws (%)
Developed economies	42	97.6	85.7	97.6	83.3
Developing economies					
Africa	54	46.3	33.3	38.9	40.7
Eastern Africa	18	38.9	16.7	27.8	50.0
Middle Africa	9	22.2	22.2	22.2	11.1
Northern Africa	6	83.3	33.3	50.0	66.7
Southern Africa	5	60.0	40.0	20.0	40.0
Western Africa	16	50.0	56.3	62.5	37.5
Asia and Oceania	48	72.9	37.5	29.2	56.3
Eastern Asia	4	75.0	50.0	25.0	50.0
South-Eastern Asia	11	81.8	81.8	54.5	72.7
Southern Asia	9	77.8	22.2	44.4	66.7
Western Asia	12	91.7	33.3	25.0	58.3
Oceania	12	41.7	8.3	0.0	33.3
Latin America and the Caribbean	33	81.8	54.5	48.5	63.6
Central America	8	75.0	87.5	37.5	37.5
South America	12	83.3	75.0	66.7	75.0
Caribbean	13	84.6	15.4	38.5	69.2
Transition economies	17	100.0	11.8	88.2	70.6
All economies	194	74.7	47.4	55.2	60.3

Source: UNCTAD; see annex 3.

Figure V.1. Challenges to the enactment of e-commerce legislation in selected developing countries, 2013–2014 (Percentage of respondents)

Source: UNCTAD.

Figure V.2. Challenges to the enforcement of e-commerce legislation in selected developing countries, 2013–2014 (Percentage of respondents)



Source: UNCTAD.

Three quarters of the representatives reported difficulties in understanding legal issues related to privacy, 68 per cent to cybercrime and over 50 per cent to the two other legal areas. Similarly, between half and two thirds of them noted that a lack of understanding among parliamentarians can delay the adoption of relevant laws. Other challenges included the need for informed regulators and for training law enforcement bodies, as well as finding sufficient resources to create effective legal frameworks and national certification authorities. Finally, several respondents expressed concerns about dealing with cross-border e-commerce, notably in the area of e-transactions and consumer protection.

E-commerce impacts on other areas of law than those highlighted in this chapter, such as taxation, intellectual property, and postal and delivery services. Furthermore, new trends in e-commerce such as mobile payments and other innovative payment systems (see chapter III) may accentuate the need for reviewing existing payments regulations.

B. COMPATIBILITY OF E-TRANSACTION LAWS NEEDED FOR CROSS-BORDER E-COMMERCE

A prerequisite for conducting commercial transactions online is to recognize the legal equivalence between paper-based and electronic forms of exchange, which is the goal of e-transaction laws. E-transaction laws have already been adopted by 145 countries, of which 104 are developing countries (figure V.3). Another 23 have produced draft legislation in this area. That leaves 12 developing countries with no e-transaction laws and 19 for which data are lacking. While four out of five countries in Asia and in Latin America and the Caribbean have adopted such laws, those in Eastern and Middle Africa are lagging behind.

Many national laws in this area have been influenced by the legislative standards prepared by the United

Nations Commission on International Trade Law (UNCITRAL). Its Model Law on Electronic Commerce (1996) (UNCITRAL, 1999) has been enacted in more than 60 jurisdictions.² Meanwhile, 29 jurisdictions have based their legislation on the Commission's Model Law on Electronic Signature (2001) (UNCITRAL, 2002).³ Additionally, the United Nations Convention on the Use of Electronic Communications in International Contracts (ECC) has been signed by 18 States and acceded to or ratified by six (UNCITRAL, 2007).⁴ The ECC applies only at the international level and only to the six States parties.⁵ However, several other States have incorporated some or all of the substantive provisions of the ECC in their national laws.

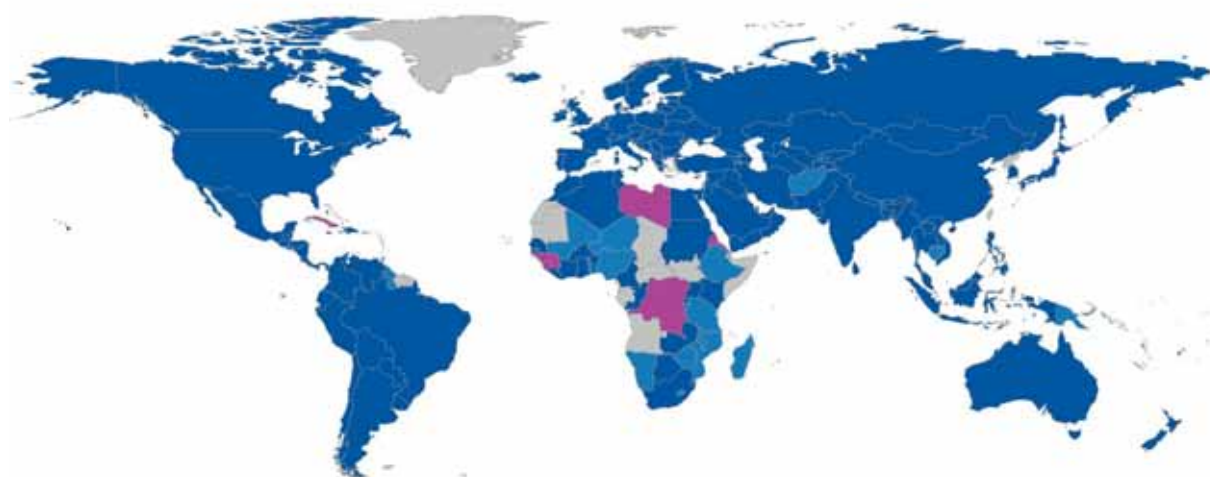
Jurisdictions that have adopted the Model Laws or the ECC share common elements in their electronic contracting laws, helping to facilitate cross-border e-commerce. They embrace the principles of technology neutrality, non-discrimination of electronic communications and functional equivalence. But despite progress in the adoption of e-transaction laws, three major issues remain.

First, several e-transaction laws address only the electronic signature (e-signature) component (authentication) without addressing other important terms of a contract in electronic form. They are silent on issues such as the time and place of dispatch and receipt, acknowledgment of receipt, party location

and the use of automated message systems. Similarly, most e-transaction laws do not deal with international aspects of e-commerce, such as choice of law, which is one of the potential issues of conflict in cross-border e-commerce. Moreover, while several laws have a provision on cross-border recognition of e-signatures, most of them are not implemented as they require a mutual recognition system that can be burdensome to implement (Castellani, 2010).

Second, there is variation in terms of national implementation of fundamental principles, notably technology neutrality in the use of e-signatures. Many countries have enacted technology-specific legislation based on e-signatures, such as public key infrastructure (PKI).¹⁵¹ This applies, for example, to some member States of the Commonwealth of Independent States and of ECOWAS.¹⁵² Commonwealth of Independent States member States are required to set up certifying bodies that create digital signatures based on cryptography. Some laws envisage that only these digital signatures will be recognized as having a mandatory force. However, there may be a trend towards more technology-neutral e-signature laws. For instance, the Russian Federation in 2011 amended its law to recognize all forms of e-signatures, and it also adopted the ECC, which enables cross-border recognition of e-signatures on a technology-neutral basis.

Figure V.3. World map of e-transaction laws, 2014



Legend

Dark blue – countries with legislation
Light blue – countries with draft legislation

Violet – countries with no legislation
Grey – countries with no data

Source: UNCTAD; see annex 3.

Laws often require the establishment of a national certification authority. However, due to the human and financial costs involved, certification authorities, especially in developing countries, have sometimes not been set up, or have been set up only after an extended period of time. In such cases, e-transactions may lack legal recognition when the intervention of the national certification authority is required to give legal validity to the transaction. In addition, a requirement to use cryptographic systems when conducting e-commerce or e-government operations can represent a barrier to online transactions. It could, for example, hinder foreign bidders from participating in public procurement, unless legal recognition of the relevant foreign PKI has been established.

Even in countries that have adopted provisions based on UNCITRAL or other uniform texts, variations exist, posing challenges for both domestic and cross-border e-commerce. Different e-transaction laws provide different standards for what constitutes an e-signature. The case of the European Union is illustrative. Its member States were required to implement the European Union Directive 1999/93/EC on a Community Framework for Electronic Signatures, which established the legal framework for e-signatures and certification services to be legally recognized within and across European Union member States. However, as the national regimes adopted to implement the Directive were not uniform, the European Parliament and the Council of the European Union in July 2014

adopted the Regulation on Electronic Identification and Trust Services for Electronic Transactions,⁸ which applies the principle of technology neutrality by avoiding requirements that could only be met by a specific technology. This regulation also sets conditions for mutual recognition of electronic identification in a legal instrument that is directly applicable in all European Union member States. Another example is the ASEAN, in which member States recognize different types of signatures (table V.2).

The third issue concerns the lack of capacity regarding the enforcement of e-transaction laws. Judges and practitioners often have limited knowledge of and experience with e-transactions (figures V.1 and V.2). As a result, and especially in developing countries, companies may be reluctant to embrace the use of electronic means. A decision illustrating the challenges for both legislators and judges when departing from uniform texts based on international best-practice models is provided in box V.1.

C. COVERAGE OF CONSUMER PROTECTION ONLINE IS PATCHY

Consumer policy seeks to address imbalances between businesses and consumers in all forms of commerce by ensuring that consumers are

Table V.2. Types of e-signatures recognized by law in ASEAN member States, 2012

	All legal signatures	All legal signatures, but advanced/qualified signatures are associated with legal presumptions, while simple signatures are not ("two-tier approach")	Only advanced/qualified signatures	Only signatures associated with a specific technology (e.g., PKI)
Brunei Darussalam		X		
Cambodia				
Indonesia		X		
Lao People's Democratic Republic		X		
Malaysia				X
Myanmar	X			
Philippines				X
Singapore		X		
Thailand	X			
Viet Nam				X

Source: UNCTAD (2013a).

adequately protected against misleading, fraudulent and unfair commercial practices; empowered through awareness and education; and provided with effective redress when problems arise. Given the nature of the Internet, where important information on the seller (such as identity, location and credibility) can easily be concealed, and where complex and lengthy terms and conditions are used that consumers may not be able to access easily or in a timely manner, information asymmetry is accentuated in the case of e-commerce. Consumers are more vulnerable online to deceptive and fraudulent activities. Consumer protection laws can also help businesses engaged in e-commerce to clarify the requirements of doing business online within a particular jurisdiction. Therefore, consumer laws, policies and regulations may at the same time outline consumers' rights and business practices to be expected online, limit fraudulent and misleading commercial conduct and help businesses develop self-regulatory regimes (OECD, 2000a).

Despite the importance of consumer confidence for B2C e-commerce (see chapter I), the global map of consumer protection legislation indicates that many developing and transition economies still lack laws in this area (figure V.4). Out of the 119 countries for which data are available, 93 (of which 58 are developing or transition economies) have adopted consumer protection legislation that relates to e-commerce. In as many as 73 countries, it has not been possible to obtain data, however. This may suggest that consumer protection online has not been fully addressed.⁹

Box V.1. MCC Industrial Sales Corporation versus Ssangyong Corporation

In the case of *MCC Industrial Sales Corporation versus Ssangyong Corporation* (17 October 2007), the Philippines Supreme Court found that the Philippine e-commerce legislation did not include coverage of fax messages as the legislation had used the words "electronic data message" rather than the term "data message" that is used in the UNCITRAL Model Law on Electronic Commerce. The Philippines law had also removed references to example technologies, such as "electronic data interchange, telegram, telex or telecopy" that are included in the Model Law. The Supreme Court therefore interpreted that these changes were a deliberate attempt to restrict the e-commerce legislation to purely electronic messages such as e-mail.

Source: UNCTAD (2013a).

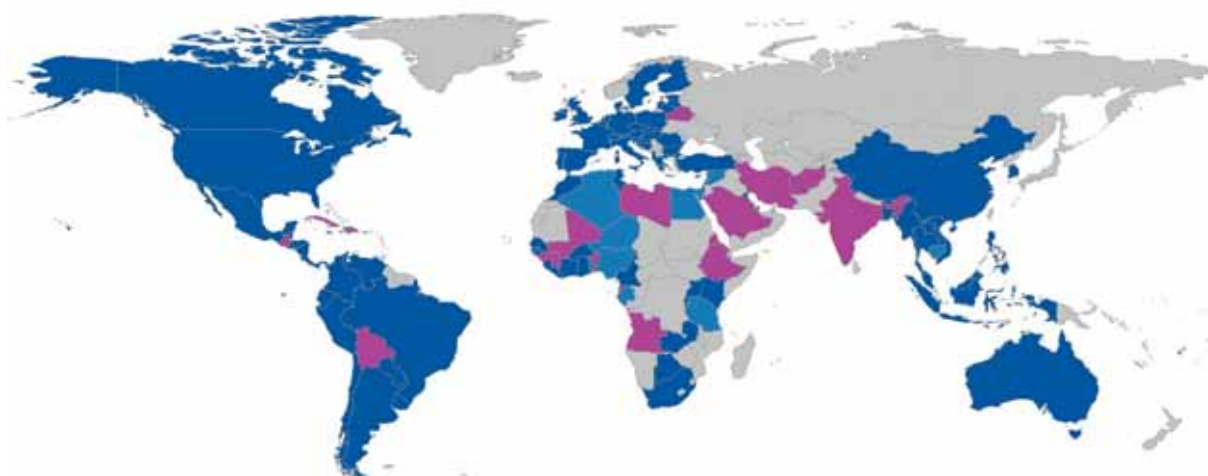
In terms of regional patterns, the incidence of consumer protection legislation in Africa is particularly low. Only 19 of the 54 African countries have adopted such laws. The coverage is higher in Latin America with 16 out of the 20 countries having relevant legislation in place. For Oceania and most transition economies, data on the state of consumer protection legislation could not be obtained.

Cross-border transactions account for a significant share of e-commerce in a number of developing countries (chapter II), underlining the importance of ensuring that online shoppers are protected for both domestic and cross-border purchases. Differences in the way countries adopt relevant provisions can hamper cross-border trade. These may be related to the rights and obligations of consumers and businesses, what are to be considered acceptable terms and conditions, disclosure obligations and effective international redress mechanisms.

In the European Union, for example, enterprises have to operate with 28 different sets of national rules for conducting cross-border trade. They therefore need to identify the provisions of the applicable laws of particular countries, and assume the costs associated with translation, legal advice and adaptation of contracts. This adds costs, complexity and legal uncertainty. In a 2011 survey of cross-border trade, 44 per cent of consumers said that uncertainty about their rights had discouraged them from buying from another European Union country. A third of the consumers surveyed said they would consider buying online from another European Union country if uniform European rules applied, but only 7 per cent actually did (European Commission, 2011). To try to remedy this situation, the European Commission has proposed a Common European Sales Law.¹⁰ This law would give traders the option to sell their products to citizens in another member State on the basis of a single set of contract law rules which would stand as an alternative alongside the national contract laws. Parties to a cross-border sales contract anywhere in the European Union would be able to choose, by express agreement, to apply the Common European Sales Law.

Effective enforcement for consumers is generally a challenge not least since B2C e-commerce normally involves low-value transactions and as such court actions are too costly. Cross-border enforcement has the added challenge of jurisdiction and applicable law issues as well as of requiring cooperation between

Figure V.4. World map of laws addressing consumer protection online, 2014



Legend

Dark blue – countries with legislation
Light blue – countries with draft legislation

Violet – countries with no legislation
Grey – countries with no data

Source: UNCTAD; see annex 3.

national enforcement agencies.¹¹ Some national authorities have set up semi-formal cooperation mechanisms and networks to serve as non-legal, political channels of cooperation.

For example, the International Consumer Protection and Enforcement Network (ICPEN) is a network of public authorities involved in the enforcement of fair trade practice laws and other consumer protection activities, comprised of 56 member countries and organizations including 24 developing countries.¹² Its main objective is to identify ways to prevent and redress deceptive marketing practices in an international context. ICPEN has developed the econsumer.gov initiative to enhance consumer protection and consumer confidence in e-commerce. The website permits individuals to file complaints online at a single location (<http://www.econsumer.gov> (accessed 30 January 2015)). As of 2014, it comprised 30 national authorities, all of which are also ICPEN members. In 2013, the initiative received 23,437 complaints (table V.3).¹³ The importance of cross-border laws and enforcement measures is illustrated by the fact that, whereas almost 4,000 complaints were made against e-commerce companies in China in 2013, none of the top 10 country complaints were filed by residents in that country.

In developed countries, self-regulation is the most common form of enforcement for B2C transactions, with e-commerce companies establishing codes of

conduct for businesses using their platforms. Some platforms employ mechanisms that may affect a seller's reputation, such as trust marks or customer review boards. Enforcement via payment mechanisms is another option in some developed countries. For example, in the United Kingdom credit card companies are jointly and severally liable with sellers to repay certain payments made via credit card.¹⁴

The main international reference frameworks for the protection of consumers online are the Guidelines for Consumer Protection in the Context of Electronic Commerce (OECD Guidelines) (OECD, 2000b) and the United Nations Guidelines on Consumer Protection (UNGCP) (United Nations, 2003), which are both being revised (see below).

D. DATA PROTECTION LAWS ARE SPREADING RAPIDLY

In the digital economy, personal data have become the fuel driving much commercial activity online. Every day, vast amounts of information are transmitted, stored and collected online, enabled by improvements in computing and communication power. In this environment, security of information is of growing concern to Governments, enterprises and consumers alike. Of equal concern is the collection, use and sharing of personal information

Table V.3. Top 10 locations of consumers and companies involved in online complaints, 2013

Top consumer locations	Number of complaints	Top company locations	Number of complaints
United States	13 445	United States	4 731
Australia	1 914	China	3 996
France	1 100	United Kingdom	1 213
United Kingdom	767	India	469
Canada	694	Canada	285
Brazil	555	Australia	264
Israel	448	France	246
Argentina	341	Germany	220
India	311	Mexico	158
Spain	295	Spain	144

Source: econsumer.gov/Federal Trade Commission.

to third parties without notice or consent of consumers. The use of cloud services provided across jurisdictions, and the growing number of data breaches accentuate the need for adequate policy responses (UNCTAD, 2013b). Analyses of “big data” aimed at understanding and influencing consumer behaviour for commercial profit may further exacerbate such concerns. Whereas organizations’ goals are to avoid fines, potential lawsuits, and reputation damage, consumers tend to worry most about what they perceive to be questionable or unethical practices, which may not necessarily be illegal (Kshetri, 2014).

According to one source, more than 2,100 incidents were reported in 2013 through which some 822 million records were exposed (Risk Based Security, 2014). In one major incident, as many as 152 million names, customer identities, encrypted passwords, debit or credit card numbers and other information relating to customer orders were exposed. The business sector was the target for 53 per cent of the incidents, followed by Governments (19 per cent). About 60 per cent of the incidents were the result of hacking.¹⁶⁰ In terms of geographical patterns, the United States was by far the most targeted country, accounting for almost half of the known cases (table V.4). The most common types of data exposed were passwords, names, e-mails and user names (figure V.5).

As shown in figure V.6, 107 countries (of which 51 developing countries) have put in place legislation to secure the protection of data and privacy. In another 33 developing countries draft bills are

pending enactment. In this area, Asia and Africa offer a similar level of adoption, with less than 40 per cent of countries having a law in place.

Companies also need to adopt policies to keep information secure, put in place technical safeguards, and develop response plans for data security incidents to avoid fraudulent, deceptive and unfair practices. In view of the nascent stage of privacy and data protection laws in sub-Saharan Africa, some e-commerce companies have proactively adopted international best practices and security standards (box V.2). Where privacy and consumer protection is difficult to guarantee due to the nature of the content model, service providers may need to take extra measures to educate buyers and sellers on how to recognize and protect themselves from fraud.

The main international reference frameworks used for privacy and data protection are the OECD Guidelines, the European Union Data Protection Directive and the Asia-Pacific Economic Cooperation Privacy Framework. While there is broad agreement on basic principles, there is no consensus on their application. Some data protection regimes (so-called “omnibus regimes”) apply equally to those processing personal data. Other regimes apply different rules to specified sectors (for example, the health sector), types of processing entity (for example, public authorities) or categories of data (for example, data about children). In such jurisdictions, other sectors are not subject to regulatory controls at all.

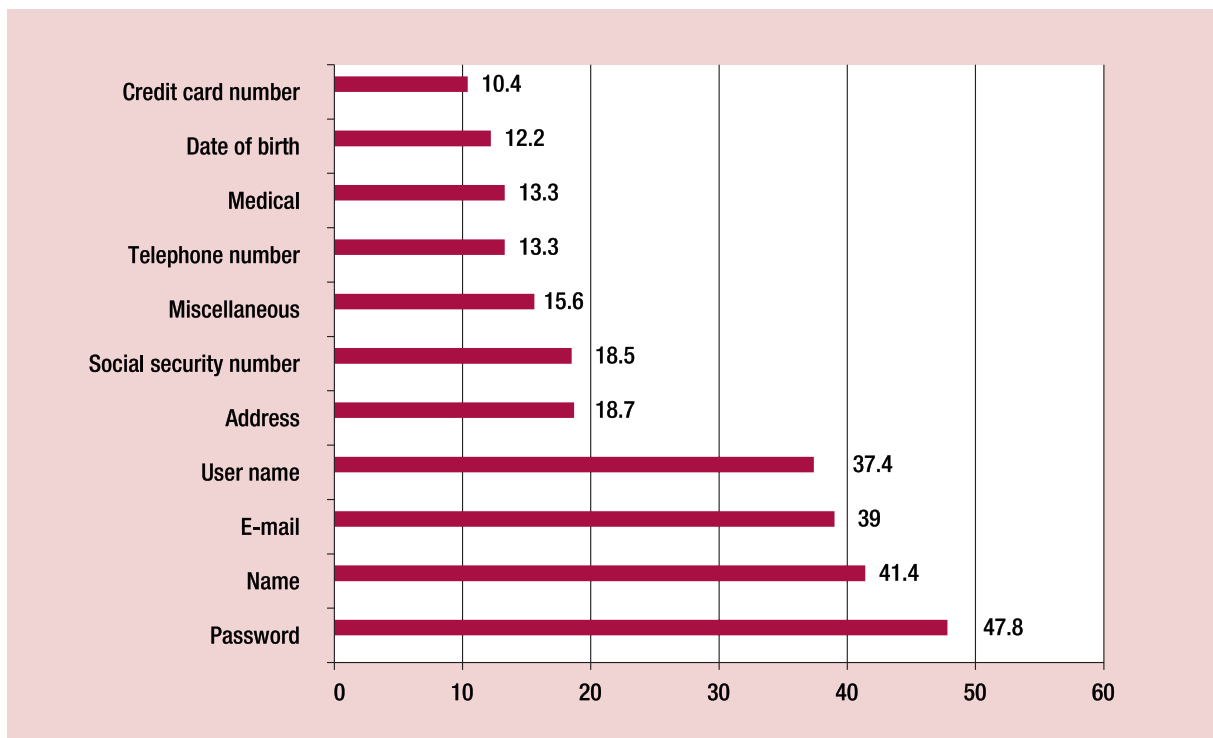
A distinction can be made between regimes that operate primarily through enforcement actions brought by individuals or their representative groups, and those that grant enforcement powers

Table V.4. Incidents reported per country, 2013

Country	Number of incidents	Percentage of incidents (%)
United States	1054	48.7
United Kingdom	120	5.5
Canada	58	2.7
India	50	2.3
Brazil	44	2
Germany	35	1.6
Australia	30	1.4
Italy	29	1.3
France	29	1.3
New Zealand	23	1.1

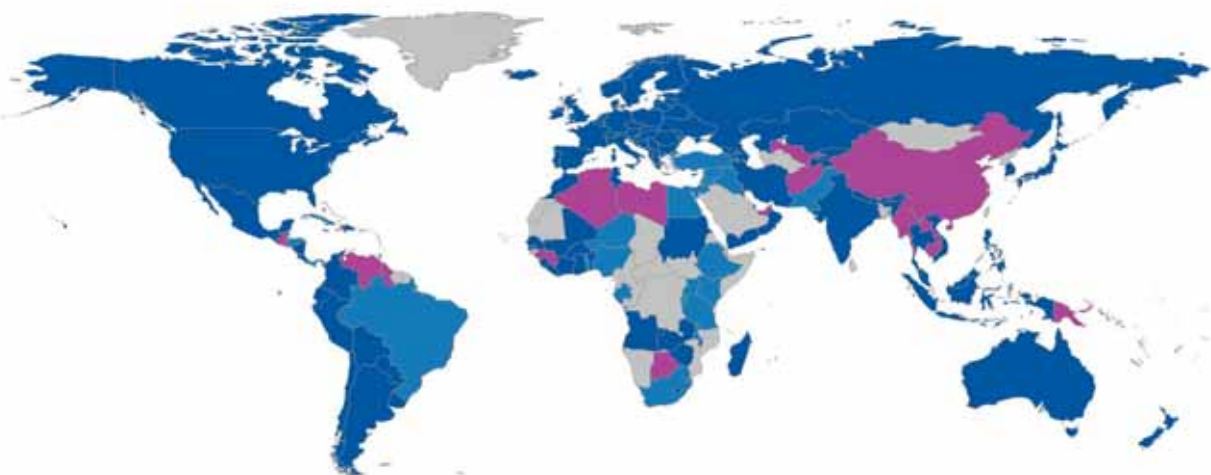
Source: Risk Based Security (2014).

Figure V.5. Incidents by type of data exposed in 2013 (per cent)



Source: Risk Based Security (2014).

Figure V.6. World map of data protection/privacy laws, 2014



Legend

Dark blue – countries with legislation
Light blue – countries with draft legislation

Violet – countries with no legislation
Grey – countries with no data

Source: UNCTAD; see annex 3.

Box V.2. Company responses to data protection and privacy in East Africa

In emerging e-commerce in sub-Saharan Africa, data breaches have thus far been largely offline, linked to automatic-teller-machine and point-of-sale terminal fraud. There have been various incidents of skimming devices that record a payment card's details. Online fraud also occurs, and its prevalence will increase as more and more consumers come online. Several e-commerce marketplaces have put in place mechanisms to handle the risk of fraud.

OLX – an online classifieds site present in Kenya and many other countries – adheres to the “Safe Harbour Privacy Principles of notice, choice, onward transfer, security, data integrity, access, and enforcement”. In its terms of service, it outlines how data are collected, used and shared, as well as what measures are taken to protect an individual's data. If users suspect that their privacy has been violated or otherwise compromised, OLX encourages them to report the issue with the subject line “privacy policy” using OLX's “legal issues report form”.

3G Direct Pay is an e-commerce payment gateway that serves more than 300 travel and tour operators throughout East Africa. It approaches data security in much the same way as a bank. As a card processor, it handles sensitive payment card data that, if stolen, can be used to initiate card payments without the card owner's consent. To mitigate this, 3G Direct Pay has implemented a suite of security features to encrypt and protect data from end to end, complying with level 1 of the Payment Card Industry Data Security Standard (see <https://www.pcisecuritystandards.org> (accessed 30 January 2015)). The company also proactively monitors card usage trends to detect and mitigate fraud attempts.

According to its privacy policy, Zoom Tanzania – a horizontal classifieds service – commits to never sharing personal details “except when required by law, or with the user's express permission”. The company's business model is to encourage user-generated content and then sell advertising space through an internal advertising network, which enables it to advertise to users without compromising or sharing their personal information.

Source: UNCTAD.

to a specialized supervisory authority that exercises ongoing oversight concerning the conduct of those that process personal data. An additional challenge for Governments in developing countries is the need to set up regulatory agencies.

E. CYBERCRIME – A GLOBAL PRIORITY

Cybercrime is of growing concern to countries at all levels of development and affects both buyers and sellers. In 2012, an estimated \$3.5 billion was lost in supplier revenue due to online fraud (CyberSource, 2013). In Europe, the most common frauds reported by the European Consumer Centres Network (ECC-Net) were related to fraudulent websites, used cars online and counterfeit products (figure V.7). A common denominator among them is that consumers are lured by the advertisement of cheap or free products and the preferred method of payment for the fraudsters is money transfer.

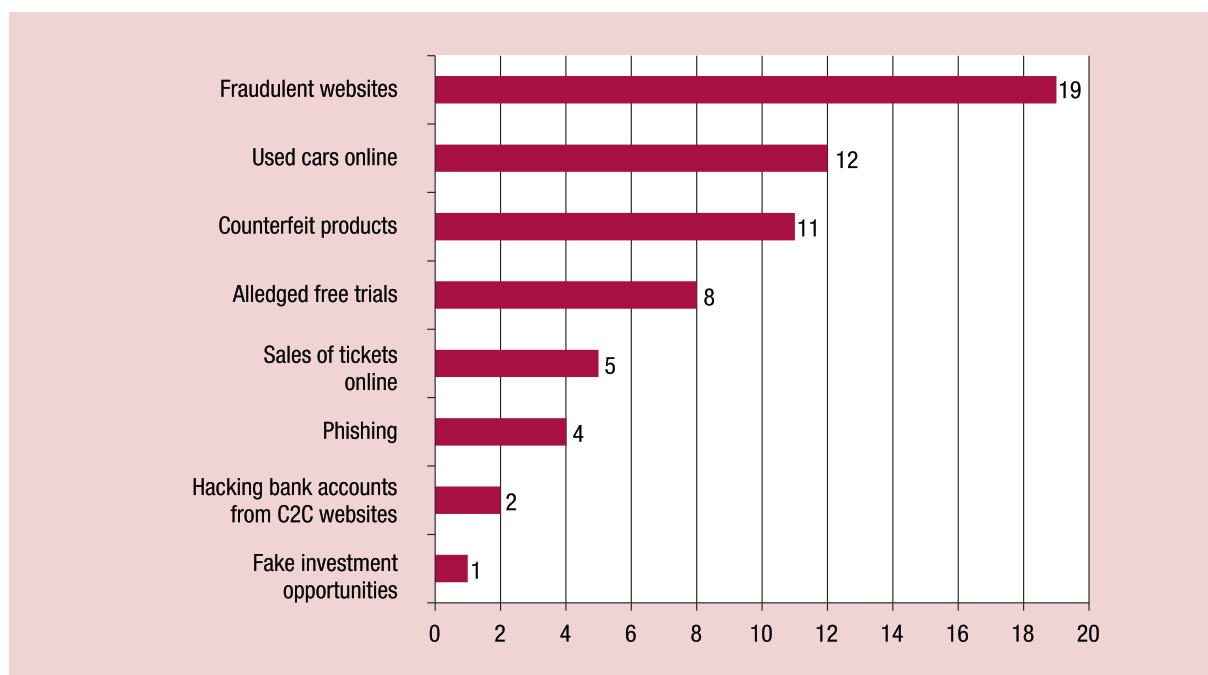
Such incidents highlight the challenges facing consumers online. While some crimes committed on the Internet have been around for many years, their use has rapidly expanded, in terms of the number of incidents and geographic reach. Cybercrimes can be

committed against several persons in many countries without the criminal even having to leave home. Cybercriminals may route their communications through local phone companies, long distance carriers, Internet service providers, and wireless and satellite networks, and may go through different computers located in multiple countries before attacking a particular system. Evidence may be stored on a computer in a different country from where the criminal act was executed.

Cybercrimes are targeting laptops, tablets, mobile phones and entire networks. Mobile merchants are reported to be incurring the greatest fraud losses as a share of revenue among all merchant segments (LexisNexis, 2013). This represents a particular challenge for developing countries in which mobile phones are the key device for e-commerce and related payments. Moreover, developing countries are increasingly being used by cybercriminals due primarily to lax enforcement by authorities. According to one study, the top five hotspots for cybercrime are the Russian Federation, China, Brazil, Nigeria and Viet Nam.¹⁶

Cybercrime laws are rapidly being enacted. As of November 2014, 117 countries (of which 82 developing and transition economies) had enacted such legislation, and another 27 countries had draft legislation underway. More than 30 countries had no cybercrime legislation (figure V.8). Africa and Oceania

Figure V.7. Most common types of frauds reported to ECC-Net centres in Europe, 2012 (Number of ECC-Net centres reporting that the following types of fraud are frequent)



Source: ECC-Net (2013).

are the regions for which the largest number of countries still need to adopt cybercrime laws. Some 70 per cent of the transition economies have adopted cybercrime legislation and in Latin America the share is just over 63 per cent.

The most significant international instrument in the field is the Council of Europe Convention on Cybercrime (2001). This has been followed in many developing regions by similar instruments, including the Commonwealth Model Law on Computer and Computer-related Crime (2002) and the African Union Convention on Cyber Security and Personal Data Protection, adopted in June 2014. There are also initiatives at the European level.¹⁷

Developing countries face several issues, including the lack of international legal frameworks, and a lack of capacity and infrastructure to respond effectively to cyberattacks.¹⁸ Cybercrime presents complicated cross-border enforcement and jurisdictional problems. Particular efforts are needed in the area of law enforcement and to strengthen the capacity of computer emergency response teams. International coordination and cooperation are critical in this context to create a safe business environment promoting faster responses to

cybercrime and sharing of information, thus giving countries the opportunity to react quickly and efficiently in combating cybercrime.

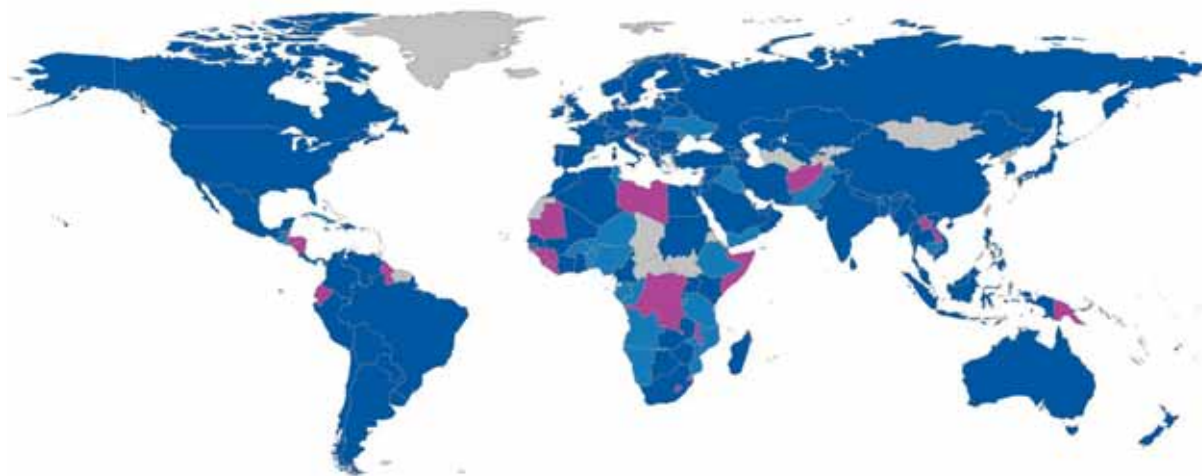
F. CONCLUSIONS AND RECOMMENDATIONS

While legal harmonization has been a much-touted goal of policymakers in the past, it is increasingly recognized that compatibility and interoperability between different legal systems is a more achievable target and one which will facilitate e-commerce. Even in developed regions with a certain degree of legal harmonization, different

Box V.3. Online fraud in India

Like other countries, India is affected by e-commerce fraud such as identity theft and scams. However, only a small proportion of the cases are reported, and there have been few convictions. A 2011 survey of young professionals in India revealed that one out of four were victims of identity fraud. Another study found that while the amount of monetary loss due to identity theft has remained steady, the frequency of such incidents increased by 13 per cent in 2011 (KPMG, 2012).

Source: UNCTAD.

Figure V.8. World map of cybercrime laws, 2014**Legend**

Dark blue – countries with legislation
 Light blue – countries with draft legislation

Violet – countries with no legislation
 Grey – countries with no data

Source: UNCTAD; see annex 3.

legal requirements set in national laws may hamper e-commerce. Despite significant progress in the adoption of laws, and to some extent legal compatibility in many regions, there is still a need to align laws with international legal instruments to favour cross-border e-commerce. While preparing or revising legislation, countries should seek to benefit from discussions that are taking place at the international level, such as the OECD, the United Nations Guidelines on Consumer Protection, UNCITRAL and WTO.

Several Governments, especially in developing countries, need first and foremost to acknowledge the importance of e-commerce and allocate sufficient resources towards its development. Furthermore, they need to adopt baseline laws in legal areas where they do not exist. In doing so, developing countries should coordinate among institutions tasked with different legislation on e-commerce, cloud computing and e-government to adopt common key principles that will facilitate the delivery of all these services. Governments of developing countries should also ensure enforcement of laws, the next great challenge awaiting them, both domestically and cross border.

The five recommendations presented below address selected issues currently affecting e-commerce developments, with special consideration given to developing countries.

1. Align e-transaction laws

Ensuring regional and global compatibility of e-transaction laws is a key challenge due to the increased use of electronic technologies by Governments, companies and citizens. Therefore, when preparing or revising e-commerce legislation, lawmakers should consider that of other countries in the same region or of trading partners to have compatible legal systems and trade policies. Legal recognition of e-signatures, electronic contracts and evidence at a national level should be extended to those originating in other jurisdictions.

Over the past 10 years, advances towards harmonization have been made in several regions. However, as different standards are used, there is still a need to make laws more compatible internationally. The ECC can help in promoting compatibility of laws. It proposes a set of core legal provisions enabling cross-border e-commerce. Countries should consider aligning their legislation on e-transactions with the provisions of this Convention. Becoming a party to it will favour regional and international compatibility, including the cross-border recognition of e-signatures, as the Convention provides principles that could form the basis of a mutual recognition system (article 9(3)) (box V.4).¹⁹

2. Streamline consumer protection policies

Differences in national consumer protection laws are a challenge for cross-border e-commerce. Efforts at harmonizing consumer protection laws in e-commerce are carried out by various regional groupings.

At the end of 2014, the OECD was in the process of reviewing its Guidelines (OECD, 2000b). The objective is to reflect relevant policy principles pertaining to B2C e-commerce in a number of OECD acts since their adoption in 1999.²⁰ At the global level, the United Nations is also conducting consultations on the revision of the UNGCP (United Nations, 2003) in the light of market and regulatory developments, including those related to e-commerce. The consultations aim to capture the needs of developing countries. The revised guidelines may be available by 2016. Salient topics discussed during the consultations include:²¹ effective protection that is no less favourable to that of other forms of commerce; rights and obligations of consumers and businesses; vulnerable consumers; mobile platforms; payment; alternative dispute resolution; consumer education and awareness; data and privacy protection; applicable law and jurisdiction; and bilateral, regional and international cooperation.

The revised UNGCP will only give policy advice and will therefore not create a conflict with either national laws or regional frameworks/instruments. Countries that are preparing or revising their consumer protection laws for e-commerce may consider aligning their legislation with the UNGCP and OECD Guidelines to encourage harmonization of consumer protection legislation and foster consumer confidence in e-commerce.

There is a need to set up consumer protection agencies in several developing countries and to strengthen existing ones in other countries. In addition, information sharing would facilitate cross-border e-commerce. This would require an agreement between consumer protection agencies in a given region, complemented by appropriate investigation and referral tools. Linking up agencies through networks, such as ICPEN, can help national agencies to keep abreast of new legal regional or international developments, as well as to share experiences and bring out solutions for e-commerce users.

The use of alternative dispute resolution and redress schemes that are affordable and easy to use is also to be recommended. Some of the most effective schemes are currently embedded in self-regulatory bodies, law enforcement agencies, ombudsmen and other entities. The use of trustmarks, such as the eConfianza (www.econfianza.org) initiative of the Instituto Latinoamericano de Comercio Electrónico (elinstituto),²² is also worth exploring. This non-profit organization has created a code of good practices to guide companies on how to address consumer needs properly when designing their online businesses, and offers an online dispute resolution tool called Pactanda (www.pactanda.com).

3. Streamlining data protection and cybercrime policies

The development and adoption of legal frameworks for protecting personal data and for combating cybercrime at the national level should not be done in isolation. Achieving the compatibility of laws and

Box V.4. Integrating developing countries in the regional and global cyber economy

The ECC aims to promote the establishment of uniform legislation and to enhance legal certainty and commercial predictability where electronic communications are used in relation to international contracts. The Convention fulfils four main goals:

- It facilitates the use of electronic communications contained in treaties drafted before the widespread use of those communications;
- It reinforces the level of uniformity in the implementation of the UNCITRAL Model Laws;
- It updates certain provisions of the UNCITRAL Model Laws, such as the location of the parties, the time and place of dispatch and receipt, and the functional equivalence for “signature”, which in practice enables cross-border recognition of all types of e-signatures. It also introduces new provisions such as the use of automated message systems, invitation to make offers, and the like;
- It provides core provisions on e-transactions to ensure regional and international harmonization.

Source: UNCTAD, based on United Nations (2007).

policies at the regional and international level is desirable. The establishment of minimum standards helps to ensure cross-border coordination on the design and implementation of relevant legislation and stronger enforcement institutions.

Establishing an efficient data protection regulatory agency can be challenging from both a resource and a political perspective. Lessons may be learned from the telecommunications sector, where such agencies have been widely accepted as a critical component of a successful regulatory regime. Combining regulatory functions between data protection and consumer protection agencies may be a way to reduce the regulatory costs of data protection.

Similarly, comprehensive frameworks for cooperation outreach and enforcement of cybercrime need to be developed. Investigating even a single communication may require cooperation among several national law enforcement agencies (including the private sector). Regional cooperation between cybercrime law enforcement agencies may involve the establishment of common training and resource centres and 24/7 national contact points.

Various security measures – physical, logical or organizational – should be used to protect data against deliberate acts of misuse. Implementing appropriate

data security should consider the quality of data, the needs of individual data subjects, the entity processing the personal data and, indeed, society at large. Policymakers are increasingly recognizing the Internet as “critical national infrastructure”, over which a rising proportion of economic and social activities are carried out, but also as a “source of vulnerability”. Addressing this duality and putting in place adequate data security measures – from the adoption of cybercrime laws to the establishment of computer emergency response teams/ computer security incident response teams – should be a core component of the policy response. Public–private partnerships may be important in this context.

4. Strengthening the capacity of lawmakers and judiciary

The judiciary in many developing countries needs to be trained in the area of cyberlaws. Legal issues around e-commerce are still relatively new. Several international and regional organizations, including the Commonwealth secretariat, ITU, UNCITRAL, UNCTAD, the United Nations Office on Drugs and Crime and the Council of Europe can provide assistance to countries and regions in the different legal areas. Increasingly, these agencies are joining forces to maximize their actions (box V.5).

Box V.5. UNCTAD assistance with partners

In support of developing countries' efforts in this area, UNCTAD assists in the preparation and revision of e-commerce laws aligned with international and regional instruments. The assistance provided in the harmonization of e-commerce legislation across regions in the ASEAN, the East African Community (EAC), ECOWAS, Latin America and Central America has created an impetus for countries to push for the adoption of national laws in this area. The work has involved close collaboration with regional institutions such as the African Union Commission, the ASEAN secretariat, the EAC secretariat, the ECOWAS Commission, the Asociación Latinoamericana de Integración and the Secretariat of the Sistema Económico Latinoamericano y del Caribe.

Over sixty countries have to date been engaged with UNCTAD thanks to the support of the Governments of Finland and Spain. Capacity-building activities have strengthened the knowledge of policy and lawmakers on legal issues of e-commerce and international best practice, allowing them to formulate laws in line with their regional frameworks.

Several agencies are assisting developing countries within the scope of their mandates, and inter-agency collaboration is growing. Two examples of such cooperation are the briefing of Commonwealth parliamentarians serviced by UNCTAD and organized jointly with the Commonwealth Telecommunication Organization and the Commonwealth Parliamentary Association, at the occasion of the Commonwealth Cybersecurity Forum 2013. Another example is the joint workshop on the harmonization of cyber legislation in ECOWAS (Ghana, March 2014) organized by UNCTAD with UNCITRAL, the African Centre for Cyberlaw and Cybercrime Prevention, the Council of Europe, and the Commonwealth Cybercrime Initiative.

UNCTAD has built a network of institutions with which consolidated partnerships are concluded within the different project activities. Many of them contributed to the consolidation of the database used in this chapter. The result of this first ever global mapping is available online and countries are invited and encouraged to contribute to keeping this database up-to-date.

Source: UNCTAD.

5. Enhancing the awareness of consumers and companies

As the legal environment for e-commerce is evolving, and differs from one jurisdiction to another, consumers and enterprises need to be aware of relevant laws and of means of redress. This is particularly important to build trust in cross-border e-commerce. Industry associations and consumer protection agencies should work together to overcome barriers caused by divergent national legal standards. National public campaigns (including through radio and television programmes) aimed at informing about ways to protect consumers online can be a key element of awareness-raising strategies (box V.6).

Box V.6. Awareness campaigns on e-commerce laws in Uganda

In Uganda, the National Information Technology Authority and the Ministry of ICT have developed and enacted subsidiary legislation (that is, the Electronic Transactions Act and the Electronic Signatures Act) to operationalize the EAC Framework on Cyber Laws (UNCTAD, 2012b). Since 2011, the National Information Technology Authority has embarked on raising awareness about these laws as well as aspects of information security to encourage public administration and the private sector to put in place minimum information security controls to ensure safe e-transactions. Several sensitization workshops were organized for entities such as ministries, banker associations, law societies, national chambers of commerce, the Investment Authority and the Securities Exchange. Workshops were facilitated by a multi-institutional team of lawyers and technical resource persons, including experts participating in the EAC Task Force supported by UNCTAD. Future plans include the delivery of similar workshops to create awareness of the Data Protection and Privacy Bill, once enacted.

Source: UNCTAD.

NOTES

- 1 The surveys were conducted in the regions of ASEAN (in 2013) and the Economic Community of West African States (ECOWAS) (in 2014) and in Latin America and the Caribbean (in 2014).
 - 2 In 1998, Singapore became the first country to enact legislation using the Model Law as a basis; see http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/1996Model_status.html (accessed 30 January 2015).
 - 3 See http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/2001Model_status.html (accessed 30 January 2015).
 - 4 The countries are the Congo, the Dominican Republic, Honduras, Montenegro, the Russian Federation and Singapore.
 - 5 See http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/2005Convention_status.html (accessed 30 January 2015).
 - 6 Public key infrastructure is a cryptographic technique that enables users to securely communicate on an insecure public network and reliably verify the identity of a user via digital signatures.
 - 7 With the exception of Burkina Faso.
 - 8 See <http://europa.eu/lux73KG> (accessed 30 January 2015).
 - 9 These findings are supported by a global survey on the status of consumer protection that found that the ICT sector enjoys less consumer protection measures than traditional sectors (Consumers International, 2013).
 - 10 See http://eur-lex.europa.eu/legal-content/en/ALL/;ELX_SESSIONID=9kq3JrXb6922fTI6wCNCyJTymZn3N6p8IYymnk4b9G32fR21QJhQ!715408534?uri=CELEX:52011DC0636 (accessed 30 January 2015).
 - 11 This has been stressed by delegates in the ASEAN and in Latin America in the context of UNCTAD's assistance; see, for example, UNCTAD (2013a).
 - 12 See <https://icpen.org/> (accessed 30 January 2015).
 - 13 See <http://www.econsumer.gov/english/resources/trends.shtm> (accessed 30 January 2015).
 - 14 Consumer Credit Act 1974, section 75.
 - 15 Hacking here refers to the gaining of access (wanted or unwanted) to a computer and viewing, copying, or creating data (leaving a trace) without the intention of destroying data or maliciously harming the computer.
 - 16 See "The world's top 5 cybercrime hotspots", Time.com, 7 August 2014; available at <http://time.com/3087768/the-worlds-5-cybercrime-hotspots/> (accessed 30 January 2015).
 - 17 See OECD (2002) and Directive 2013/40/EU of the European Parliament and the Council of Europe of 12 August 2013 on attacks against information systems; available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013L0040&from=EN> (accessed 30 January 2015).
 - 18 For example, out of Malaysia's 40,000 lawyers, only four were reportedly able to handle cybercrimes in 2008; see "Understanding cybercriminals", Strait Times, 18 February 2008. And in India, the Delhi Police cybercrime cell had only two inspectors as of November 2011; see <http://www.hindustantimes.com/India-news/NewDelhi/Cyber-crime-up-by-700-in-Capital/Article1-766172.aspx> (accessed 3 February 2015); see also Kshetri (2013).
 - 19 Some countries have already modified their domestic legislation in line with the substantive provisions of the ECC (for example, Singapore and Australia – the latter not being yet a State party to the ECC).
 - 20 Recommendation of the Council concerning Guidelines for Protecting Consumers from Fraudulent and Deceptive Commercial Practices Across Borders; Recommendation of the Council on Cross-border Cooperation on the Enforcement of Laws Against Spam; Recommendation of the Council on the Consumer Dispute Resolution and Redress; and Recommendation of the Council on Consumer Policy Decision Making.
 - 21 See http://unctad.org/Sections/ditc_ccpb/docs/UNGCP_DraftReport2015_en.pdf (accessed 3 February 2015).
 - 22 See www.einstituto.org (accessed 3 February 2015).
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STRATEGY AND POLICY IMPLICATIONS

6

As the digital economy expands and more and more business activities are affected, strategies which enable companies across different sectors and sizes to engage in e-commerce are becoming increasingly relevant. In this context, a well-developed national strategy may help enhance the net benefits of e-commerce. Such a strategy needs to facilitate the ability of producers to sell online and of consumers and other buyers to purchase online. Effective national policies in areas such as ICT infrastructure development, logistics and trade facilitation, the legal and regulatory environment, e-procurement, e-payments, platforms, awareness-raising and skills development in combination with an enabling international environment are essential to enable domestic and cross-border e-commerce.

This final chapter looks at how Governments, in collaboration with other stakeholders, can help create an environment that is more conducive to reaping benefits from e-commerce, taking into account both opportunities and risks. Special attention is devoted to measures to facilitate the effective involvement of micro and small enterprises. In the second part of the chapter, the role of international policies in selected areas is briefly discussed.

A. NATIONAL POLICIES AND STRATEGIES TO ENABLE E-COMMERCE

1. Strategic approaches to the development of e-commerce

(a) *Developing a national e-commerce strategy*

Governments have a crucial role to play in creating an economic environment conducive to e-commerce and for making e-commerce an integral part of policies toward a more inclusive information society. In this context, they need to identify how e-commerce may support various objectives in the country's national development agenda and ensure that the e-commerce dimension is integrated into national ICT master plans. Clearly defined objectives and recognition of possible concerns are a first step to formulating relevant policies.

Developing a national e-commerce strategy which is effective and actionable is challenging. Though it is essential for countries to learn from the best practices of other countries, there is no one-size-fits-all formula to apply. Subsequently, it is incumbent upon Governments to adapt any approach to their country's capacities, priorities and needs.

First, Governments may want to give special attention to micro and small enterprises as they tend to lag behind in e-commerce and are also among those likely to benefit the most from it. Second, emphasis may be placed on enterprises in specific industries (for example, retail) or certain parts of the country (for example, rural areas). Third, a strategy may distinguish between efforts to promote domestic and cross-border e-commerce as well as between B2B and B2C transactions. Fourth, there may be a need to reflect on how ICT usage is evolving, including with regard to mobile devices, social media and alternative payment solutions. Fifth, there may be a need to encourage the development of e-commerce platforms, delivery systems and payment solutions that are tailored to local needs, languages and cultures, involving both public and private-sector actors. Finally, the strategy may need to address the broader implications of an increased reliance on e-commerce. Implications may relate to the distribution of benefits and costs between different stakeholders, fiscal implications, and societal impacts.

Informed decision-making in this context needs a realistic assessment of where the country stands in terms of its e-commerce readiness. This involves developing an understanding of national needs, characteristics, strengths and weaknesses. Properly identifying the main challenges and barriers, and uncovering the dynamics underpinning them, help to ensure that policy measures adopted will be effective. Any assessment should include a comprehensive review of the evolution of e-commerce, including existing initiatives to support it, and a stocktaking of the resources and capabilities that could contribute to its development. This may require the collection of information through desk research and direct consultations with various actors concerned. The UNCTAD B2C E-commerce Index (chapter III) can serve as a useful tool in this context.

This process will benefit from close dialogue among all relevant stakeholders. Effective multisectoral and interministerial cooperation is necessary for both strategy development and implementation. Examples of ministries that might be affected include those responsible for justice; finance; science, technology and innovation; ICT; international trade; rural development; employment; post and transportation. Other stakeholders that should be involved include relevant government regulatory and promotional agencies, the trade-facilitation committee (UNCTAD, 2014b), the post, national IT associations, chambers of commerce, academia and consumer organizations where they exist.

(b) *Implementation, monitoring and follow-up*

Due to the changing nature of the ICT and e-commerce landscape, monitoring and follow-up actions are particularly relevant. Relevant performance indicators and realistic targets should therefore be established at the outset. The monitoring exercise may require new efforts to collect data. Few developing countries currently report statistics on basic indicators related to e-commerce. Regular surveys on both the quantitative and qualitative aspects of e-commerce can provide essential information to policymakers, as shown in box VI.1. The use of standard methodologies is recommended to allow for cross-country comparisons.

2. Key policy areas to address in a national strategy

This section proposes eight critical policy areas which are likely to feature in a national e-commerce strategy (figure VI.1). The relative emphasis given to the

respective areas should be informed by the readiness assessment exercise mentioned above.

(a) Affordable ICT infrastructure and services

Improve access to reliable and affordable ICT services: Consistent and affordable ICT services are essential for e-commerce to thrive. At the most basic level, citizens need to be able to communicate via

mobile phones. It is increasingly important also for the Internet to be accessible and that data services can be provided in both urban and rural areas, through fixed or mobile networks. Broadband infrastructure is required to seize the full opportunities from e-commerce, including by leveraging cloud solutions and for the purchasing of digital products that require high quality broadband service. Governments in

Box VI.1. Indicators to monitor e-commerce developments

The Partnership on Measuring ICT for Development has proposed a set of internationally comparable indicators to be collected by all countries, based on agreed definitions and suggested breakdowns.^a They are kept to a minimum to limit the burden on national statistical offices and increase the availability of at least some comparable indicators. Those related to e-commerce are to be included in household and enterprise surveys:

- Proportion of individuals using the Internet, by type of activity, including “Purchasing or ordering goods or services”, and “Selling goods or services”;
- Proportion of businesses receiving orders over the Internet;
- Proportion of businesses placing orders over the Internet.

For countries interested in obtaining more detailed information on the nature and scope of e-commerce, and that have the resources to undertake surveys, it may be useful to consider efforts undertaken by Brazil, the Republic of Korea and the European Union, as illustrated below.

The Brazilian household survey on ICT collects information on the types of products and services acquired through the Internet, on the method of payment, on the problems experienced when purchasing, and on reasons not to shop through the Internet. The business survey on ICT collects data for the following indicators (www.cetic.br):

- Proportion of enterprises that access the Internet, by type of barrier for online sales;
- Proportion of enterprises that did not sell via Internet, by type of barrier – main obstacles.

In the Republic of Korea, the annual Survey on the Information Society includes the following indicators, among others (<http://eng.nia.or.kr/>):

- Value (percentage) of Internet sales by type of customer (B2B, B2C, B2G);
- Share of Internet sales in total turnover;
- Most important factor considered when deciding to sell goods or services via e-commerce;
- Effects perceived by selling goods and services via e-commerce;
- The way orders for goods and services were received (email, fax, direct contact, other).

The statistical office of the European Union, Eurostat, has collected various e-commerce indicators through business surveys (<http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home>):

- Enterprises having placed/received orders via computer networks to suppliers/customers located (a) in their own country; (b) in other European Union countries; (c) in the rest of the world;
- Total electronic purchases, excluding VAT;
- Enterprises that have placed orders via a website;
- Enterprises which sold via a website (B2B, B2C, B2G);
- Obstacles that limit or prevent the selling via a website;
- Enterprises' total turnover from e-commerce;
- Sales via a website and via EDI-type messages (percentage of total sales).

Source: UNCTAD.

^a For detailed methodological recommendations on definitions, subcategories and breakdowns, see ITU (2014b) and UNCTAD (2009).

developing countries are increasingly facilitating the deployment of broadband networks, often through public–private partnerships, and/or with finance derived from government revenues or loans from international financial institutions. International bandwidth has improved in most countries, especially through improved access to submarine cables, and more attention is now being devoted to national broadband networks and to regional interconnection (for example, for landlocked countries). Moreover, given that e-commerce sites require security software, having access to servers using encryption technology for Internet transactions is also important (chapter III).

Implement effective communications regulations: Infrastructure improvements need to be accompanied by competent and effective regulation of the telecommunications markets. This includes liberalization of markets and regulatory intervention to promote competition. Competitive and interoperable ICT markets, facilitated by independent regulators, help to deliver higher-quality, more reliable and affordable services. As broadband usage grows in wireless-dependent developing country markets, policymakers and regulators also need to make radio spectrum available to communications operators to ensure that

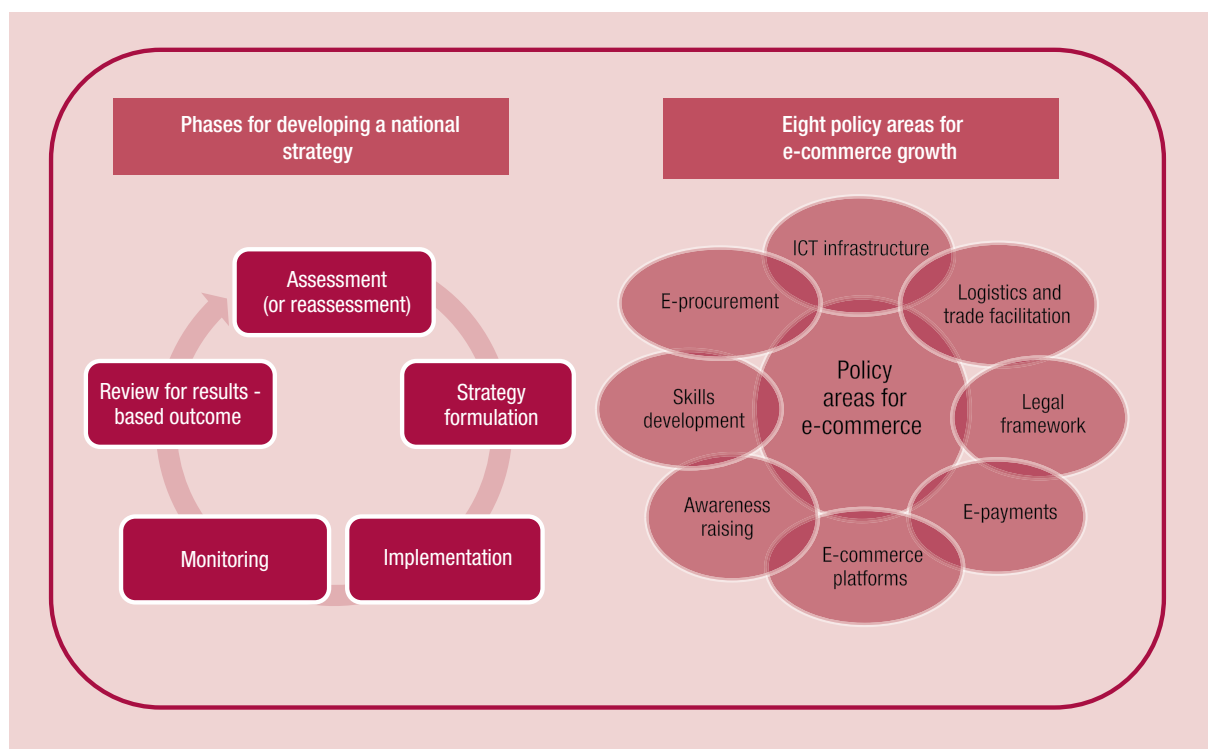
cloud services can be reliably accessed through wireless networks.

Ensuring access to reliable power: Inadequate power infrastructure is a common bottleneck to ICT use and, by extension, to e-commerce adoption. Power outages are frequent in many developing countries, and smaller countries are often dependent on their neighbours for a substantial part of their power supply.

(b) Logistics and trade facilitation

Strengthen the logistical and transport infrastructure: Smooth transport of goods is imperative for both domestic and cross-border e-commerce. Effective order fulfilment is helped by well-functioning road transport, land ports, postal delivery services and customs. Poor logistics remain a barrier to e-commerce in many developing countries and investment in infrastructure is often much needed, especially outside the urban centres. There may be a lack of parcel delivery services – public and/or private – which can provide quick, traceable and reliable parcel deliveries and geographical coverage. In this context, initiatives to strengthen the postal

Figure VI.1. Strategic framework for promoting e-commerce



Source: UNCTAD.

sector's capacity to support e-commerce can be relevant. The postal system often remains the most cost-effective way to send parcels, including across borders (box VI.2). Further issues to consider include the extent to which competition is permitted in the postal/delivery/courier market, and the possibilities for partnerships between the private sector and local post offices.

Universal address and postcode systems: A national addressing system is important to facilitate e-commerce. While there are examples of private initiatives to address the absence of addressing systems in some countries (see chapter IV), a nationwide, universal system is desirable to avoid fragmentation. In Botswana, for example, the lack of a comprehensive system of street names and property numbering was found to hamper commercial activity. Different service providers, such as telecommunications and other utilities providers, had different profiles for the same customer. Under such a system, service providers do not have a way to authenticate the validity of contact information as provided by customer or users.¹ Against this background, a project was initiated to unify the national addressing system. The UPU can provide technical assistance to member States in the areas of physical addresses, national addressing standards, postcodes and postal databases.²

Box VI.2. Facilitating cross-border e-commerce using postal services

By July 2015, posts plan to start offering a new optional parcel service responding to the expanding need among online retailers to move their wares across borders. In November 2014, the Postal Operations Council of UPU approved specifications for a service covering items up to 30 kilograms. It features track-and-trace options and a five-business-day delivery standard from the moment an item arrives in the destination country. Items delivered under the new service will not require a signature on delivery. Starting in 2016, posts will have to provide "pre-advice data" of package contents to customs authorities, a measure expected to improve customs clearance. The new service is part of a global integrated e-commerce solution developed by the UPU to meet the needs of e-commerce stakeholders. The Postal Operations Council has also validated a merchandise-return service, which will make it easier for customers to return unwanted goods to online retailers abroad.

Source: "UPU gives global e-commerce a boost", UPU press release, 4 November 2014.

Adopt efficient trade-facilitation measures:

For cross-border e-commerce related to physical goods, bottlenecks in land ports, customs-related problems, complex export procedures and document requirements can represent critical bottlenecks. Issues of international returns and tax refunds also need to be addressed. Efforts to improve trade facilitation, through standardization, harmonization and simplification of trade procedures and documentation, can help developing countries, especially LDCs, to integrate into global supply chains, including through B2B e-commerce (see, for example, box VI.3). UNCTAD's Automated System for Customs Data (ASYCUDA), which automates border procedures and serves to facilitate trade in more than 90 developing countries, has led to significant reductions in the time needed for clearance. In Uganda, for example, the average time from payment to the release of goods from customs dropped from 8.8 days in January 2014 to 3.2 days in June 2014. Moreover, automating and modernizing customs procedures often improve revenue collection as well as reduce the costs of trade.³

(c) Fostering an environment for e-commerce and online payment solutions

Strengthen the environment for online payments:

Enhanced use of electronic payment systems is important for facilitating e-commerce. In countries where credit card use is low, alternative payment solutions – including mobile payments, cash on delivery and escrow arrangements – are also relevant. Limited access to international payment services can represent a significant barrier to e-commerce, especially for micro and small enterprises interested in cross-border e-commerce. Governments should seek to foster a regulatory environment that is conducive to online payments and the development of adequate payment solutions. This is important for consumers and other buyers to feel confident and secure in making purchases online, and for vendors to be assured of payment for delivery of their products and services.

Promote the availability of e-commerce solutions:

Although many global e-commerce platforms are becoming more accessible around the world, there are opportunities for e-commerce platforms that are tailored to local needs and opportunities. As noted in earlier chapters, the development of e-commerce platforms has involved both the public sector (including the postal system) and the private sector. For example, foreign investors have contributed greatly to the spread of new e-commerce platforms in sub-Saharan

Box VI.3. Using the postal sector to support exports by micro and small enterprises

International trade is out of reach for many micro and small enterprises. The postal sector can help to make international trade more inclusive in this context. The Exporta Fácil programme was first pioneered by Brazil Post. Between 2002 and 2008, Exporta Fácil enabled over 10,000 small businesses in Brazil, which had never previously exported, to access international markets. Inspired by its success, UPU launched the Easy Export programme to replicate the Brazilian model in other countries. As part of the Integration of Regional Infrastructure in South America initiative, the Governments of 12 South American countries selected 31 projects with a high impact on physical integration in the region. One of them, "Exporting through the Post for MSMEs", seeks to implement a service similar to Brazil Post's Exporta Fácil.

In Ecuador, for example, it is implemented by public and private postal operators offering logistics services for exports. Correos del Ecuador's Exporta Fácil suite of solutions is geared to small and medium-sized enterprises wishing to use a simplified system to export their merchandise through the post. As of 2013, 329 micro, small and medium-sized enterprises and artisans had used the Exporta Fácil to a value of more \$2 million.

Source: UPU.

Africa. This shows that foreign direct investment (FDI) may provide funding, expertise and know-how that can help the e-commerce sector to expand. At the same time, in some countries there are concerns that opening up to global investors may crowd out local businesses (box VI.4). Thus, both the pros and the cons of FDI in developing the e-commerce industry should be examined.

(d) Strengthening the legal and regulatory framework

Implement and enforce relevant e-commerce laws and regulations: An adequate legal and regulatory framework for e-commerce is of importance for all e-commerce stakeholders to reduce the risk of transacting online and to encourage transparency. Despite progress in the past decade, considerable gaps remain in the cyberlaw coverage in parts of the world. To facilitate cross-border e-commerce, it is important that national legislation in the areas of e-transactions, consumer protection, data protection and privacy is compatible with that of other countries. Aligning such laws with international legal instruments is highly recommended in this context.

Box VI.4. India's FDI policy related to e-commerce

With some 240 million Internet users in 2014, India offers a potentially attractive market for foreign e-commerce companies to invest in. India allows FDI in B2B e-commerce. In 2014, Wal-Mart India launched a B2B platform on which only registered members of certain wholesale stores are eligible to transact online.^a In July the same year, the Government announced that foreign companies that are manufacturing in India would be allowed to sell their products over e-commerce platforms. By contrast, foreign e-commerce retailers are prohibited from selling to Indian consumers. As a result, players like Amazon and eBay are not allowed to compete with local e-commerce companies such as Flipkart, Snapdeal, Homeshop18 and Indiatimes Shopping. However, foreign companies are allowed to establish e-marketplace platforms that can offer to sell products of third party sellers. For example, Amazon launched a third-party platform in India in June 2014 that already has over 1,400 sellers listed on its website.^b

Source: UNCTAD.

^a See "Wal-Mart India launches B2B e-commerce platform", *The Hindu*, 1 July 2014; available at <http://www.thehindu.com/business/Industry/walmart-india-launches-b2b-ecommerce-platform/article6167125.ece> (accessed 4 February 2015).

^b See "Amazon engaging with government on relaxing FDI in e-commerce", *Indian Express*, 24 November 2013; available at http://articles.economicstimes.indiatimes.com/2013-11-24/news/44412771_1_e-commerce-space-marketplace-model-cent-fdi (accessed 10 February 2015).

Raise the awareness and understanding of e-commerce laws:

Once relevant laws and regulations are in place, they need to be communicated transparently to producers and users of e-commerce services. Finally, adopted laws need to be effectively enforced, and consumers as well as enterprises need to know how to seek redress if appropriate. The organization of national public campaigns (including through radio and television programmes) to inform about ways to protect consumers online can be a key element of awareness-raising efforts (chapter V). Moreover, as the area of cyber legislation is still a relatively new territory for the legislature and judiciary in many developing countries, there is a need for further capacity-building.

(e) Skills development

Enhance e-literacy and consumer awareness: Relevant policy measures and initiatives may be needed to foster e-literacy in the population at

large and among consumers. Government and the private sector should work together to address this challenge, from the revision of curricula at different stages in the education system to in-work training and specialized professional skills development. Special programmes may also provide consumers with the relevant knowledge and skills to acquire and use products purchased online, including raising their awareness of their legal rights and obligations (OECD, 2014a).

Build e-commerce skills among small businesses: In many countries there are skill shortages within the ICT sector and elsewhere that affect the capacity of the private sector to take advantage of e-commerce. More sophisticated e-commerce applications require considerable technical skills to handle data mining and analysis methods and systems. The lack of human resources and expertise represents a major barrier to the implementation of e-commerce projects. Data scientists are both in short supply and expensive to employ in developing economies (World Economic Forum, 2012). Micro and small enterprises need training in how to design e-commerce business strategies, evaluate different e-commerce tools and platforms and create compelling advertisements, while paying attention to quality and rapid delivery.⁴ In this context it may be useful for Governments at national and local levels to involve intermediaries (such as chambers of commerce and business associations) in the provision of training. They are often in a privileged position to transmit relevant information and knowledge about e-commerce to their members. The Online Shop Association in Suichang County in China (chapter IV) is a good illustration.

Explore the scope for women entrepreneurs to engage in e-commerce: Governments may examine how women entrepreneurs may best tap e-commerce opportunities. B2B solutions may allow growth-oriented women's micro and small enterprises to scale up and connect with international value chains in both goods and services. Women's smaller businesses and micro-entrepreneurs may also gain from B2C and C2C transactions by utilizing e-commerce platforms to reach domestic and foreign markets. Women entrepreneurs, who are often restricted in their access to capital, can benefit from e-commerce and its ability to increase efficiencies and profitability with limited investment (UNCTAD, 2014a).

(f) Promoting government e-procurement

Use e-procurement to incentivize enterprises to use the Internet: Governments can set an example for e-commerce through the use of government e-services and e-payments. By making e-procurement a requirement for public tenders, they provide an incentive for small and medium-sized enterprises to increase their use of the Internet as a business tool. An often-cited example of good practice is ChileCompra (Chile), a public, electronic system for purchasing and hiring based on an Internet platform that caters to companies, public organizations and citizens.⁵ Georgia offers another success case. Since the Government created an e-procurement platform in 2011, all tendered government purchases are conducted through a centralized bidding platform operated by the Competition and State Procurement Agency. It has helped to streamline procurement processes, increase competition, enhance transparency and reduce the scope for corruption (Luijken and Martini, 2014).⁶ Similarly, in Albania, the introduction of an e-procurement system in 2010 has had positive results in the form of increased competition and considerable cost savings (Luijken and Martini, 2014).

(g) Raising the awareness of all stakeholders

Raise general awareness about e-commerce: A lack of awareness and inertia may hamper the transition from traditional and habitual ways of doing business, thus placing enterprises at a competitive disadvantage. There are various examples of proactive efforts by Governments to inform and educate consumers and businesses, as well as Governments, on the implications of e-commerce. Some Governments have raised the visibility of e-commerce through advertising on billboards, radio, television and the Internet to encourage consumers to buy online. In Uganda, the non-governmental organization, Women of Uganda Network, has undertaken various advocacy and training initiatives aimed at policy intermediaries such as the Government, chambers of commerce, business and trade associations, and professional education institutions that have helped in raising national awareness on ICTs and women's entrepreneurship, including e-commerce.⁷

B. E-COMMERCE POLICIES AT THE INTERNATIONAL LEVEL

Considering the global nature of the Internet, cross-border e-commerce brings about greater need for policy coordination at the regional and multilateral level. A favourable international environment for e-commerce involves trade rules that are simple, consistent, transparent, non-discriminatory and enforceable. In view of national differences and the diversity among countries, ensuring compatibility among various national regulatory frameworks for e-commerce is essential but also a major challenge (chapter V).

With the expansion of e-commerce, new barriers to international trade are emerging. National legal barriers such as stringent financial licensing agreements and restrictions on the ability of foreign e-commerce companies to enter and engage in local e-commerce markets have been noted (Sweden, National Board of Trade, 2012). Some measures may aim at protecting local businesses from foreign competitors. For example, Chinese financial payment licensing agreements may have prevented eBay from offering Chinese consumers equivalent e-payment features to those provided through Alipay on the Taobao platform. This reportedly contributed to eBay's exit from the market in 2006.⁸ In India, foreign e-commerce companies are prohibited from selling their own products (box VI.4). In addition, some Governments and other cloud service customers have enacted data localization laws reflecting concerns about data being kept on servers in other jurisdictions (Kshetri, 2010; UNCTAD, 2013b).

International dialogue and cooperation is crucial to promote the smooth exchange of e-commerce while at the same time spreading benefits of e-commerce more widely. In the following sections, special attention is given to international trade rules, taxation challenges, and the role of development partners in support of capacity-building. Rather than an exhaustive treatment of the relevant issues, the discussion mainly serves to highlight some important areas in need of more attention.

1. E-commerce and international trade rules

One effect of e-commerce is an expansion of international trade. This is likely to be the most

pronounced in the case of products that can be delivered remotely, such as various professional and business processing services, music, e-books and movie downloads, software and other digital products. But the use of e-commerce platforms has also been found to bring down costs for trade in goods (Lendle et al., 2012), and as noted in chapter II, international shipments of parcels and small packets has expanded in recent years as a result of e-commerce. Cross-border e-commerce simultaneously affects, and is affected by, international trade rules at multilateral and bilateral levels.

The WTO is the principal multilateral institution governing international trade. E-commerce touches upon several WTO agreements. Consequently, pursuant to the ministerial decision that launched the WTO work programme on e-commerce in 1998,⁹ the General Council designated issues to be examined by the WTO councils concerned with trade in goods, services and intellectual property rights, as well as the Committee on Trade and Development.¹⁰

The Bali Ministerial Decision in 2013 on e-commerce renewed the moratorium on customs duties on electronic transmissions, initiated in 1998, and urged that discussions should focus on a range of issues, including the "trade-related aspects of, inter alia, enhancing Internet connectivity and access to information and telecommunications technologies and public Internet sites, the growth of mobile telephony, electronically delivered software, cloud computing, the protection of confidential data, privacy and consumer protection".¹¹ Although no formal conclusions have yet been issued by the bodies conducting the work programme, an emerging consensus was that the provisions of their respective agreements appear to be technology neutral, hence apply to trade in all its forms, including trade via the Internet.

Even beyond the remit of the work programme per se, e-commerce and other forms of ICT-enabled trade have proved relevant to the ongoing WTO work on services classification of the Committee on Specific Commitments, a sub-body of the Council for Trade in Services, as well as to work carried out under the Agreement on Technical Barriers to Trade, the Information Technology Agreement, and discussions on trade facilitation (see below). In addition, online trade has been subject to negotiations under the auspices of the current trade round, the Doha Development Agenda.

However, in light of the slow progress at the multilateral level, some countries have included chapters or other provisions on e-commerce in various bilateral and regional free trade agreements.¹² Such agreements address to varying degrees issues of relevance to e-commerce, including definitions, customs duties, transparency, non-discrimination and regulatory issues, electronic authentication, consumer protection and cooperation. For example, all free trade agreements to which the United States or the European Union are party now include e-commerce chapters. The e-commerce dimension is also under discussion in the ongoing negotiations related to the Trade in Services Agreement, the Trans-Pacific Partnership and the Transatlantic Trade and Investment Partnership.

During the 2013 WTO Bali Ministerial, some nine years of negotiation reached consensus on the so-called Trade Facilitation Agreement (TFA).¹³ The agreement contains provisions for expediting the movement, release and clearance of goods. It also sets out measures for effective cooperation between customs and other authorities as well as cross-border cooperation by border authorities. It contains provisions for technical assistance and capacity-building and special and differential treatment provisions that allow developing countries, including LDCs, to determine when they will implement specific aspects of the agreement. It allows them to identify provisions that they will only be able to implement upon the receipt of technical assistance and support for capacity-building.

Technical assistance for trade facilitation is provided by the WTO, WTO members and other intergovernmental organizations, including the World Bank, the World Customs Organization (WCO) and UNCTAD. UPU and WCO are working together on improving merchandise flows resulting from e-commerce, and this is expected to increase as a result of the WTO TFA.¹⁴ UNCTAD is supporting national policymakers and the international community as a whole in the area of trade facilitation.¹⁵

The implementation of the TFA would encourage countries to cut red tape and make customs procedures more efficient, thereby enabling them to integrate into global value chains, including by leveraging e-commerce. Several of the measures included have a direct bearing on e-commerce, be

it through improved transparency, faster customs clearance, or the facilitation of express shipments.¹⁶

2. Taxation concerns related to e-commerce

Taxation has emerged as a particularly relevant issue due to the large revenues being generated through e-commerce. Increased reliance on e-commerce has numerous potential implications. E-commerce weakens the international tax concept that allocates jurisdictional tax claims over profits of multinational companies based on physical presence. It raises issues such as where to tax non-resident e-commerce businesses, how to assess intragroup transactions, how to classify digital goods, how to identify tax payers, and where and how to collect consumption tax, as well as issues of enforcement.

The treaty concept of permanent establishment is said to impact negatively on developing countries as it precludes countries from taxing profits derived from business activities within their jurisdictions, unless these activities can be connected to a physical establishment (Forgione, 2003). Thus, developing countries in which foreign e-commerce businesses are in the majority may be unable to collect tax revenue where the businesses have no physical presence within their jurisdictions.

Among developed countries, particular concerns have been expressed that e-commerce may exacerbate the risk of tax base erosion in individual economies. In 2013, an OECD Task Force on the Digital Economy noted that (OECD, 2014b: 14):

the ability to centralize infrastructure at a distance from a market jurisdiction and conduct substantial sales of goods and services into that market from a remote location, combined with increasing ability to conduct substantial activity with minimal use of personnel, generates potential opportunities to achieve [base erosion and profit shifting] by fragmenting physical operations to avoid taxation.

In the United Kingdom, for example, Amazon participated in a 2012 hearing organized by the Parliamentary Public Accounts Committee. Whereas Amazon had reported turnover of £207 million (\$335 million) for 2011 for its company in the United Kingdom, it had shown a tax expense of only £1.8 million (\$2.9 million). Moreover, the European-wide turnover of Amazon EU Sarl, which amounted to €9.1 billion (\$11.6 billion), had resulted

in taxes of only €8.2 million (\$10.4 million). Amazon had also explained that for 2011, sales from the United Kingdom accounted for 25 per cent of all international sales outside the United States. Despite having over 15,000 staff and physical inventory in the United Kingdom, the company paid little corporate tax in that country.¹⁷

Remote supplies of digital products to consumers without any direct or indirect physical presence of the supplier in the consumer's jurisdiction furthermore present challenges to value added tax (VAT) systems, as they may often result in no or an inappropriately low amount of VAT being collected. This can create potential competitive pressures on domestic suppliers. The OECD Task Force identified the collection of VAT related to B2C transactions as a pressing issue that needed to be addressed to create a level playing field between foreign and domestic suppliers (OECD, 2014b).

Whereas concerns related to tax implications from e-commerce are likely to be more pronounced in countries where the uptake of e-commerce is relatively high, finding ways to address related concerns are of relevance to all countries.

3. Support by development partners

As noted above, there is a need for capacity-building and technical support if more countries are to benefit from e-commerce. Assistance from the international community can help in several ways. Support may include the provision of training, policy advice, strategy formulation and other forms of assistance. At a country level, specific support from development partners may address areas such as e-commerce readiness assessments, financing of infrastructure investment, support to the development of legal and regulatory frameworks, and the building of capacity among different stakeholders.

A number of existing initiatives have been implemented through various international organizations such as the Commonwealth secretariat, ITC, OECD, UPU, WCO, the World Bank, the European Union, the Council of Europe and others. UNCTAD's assistance and technical advice in the area of e-commerce come in three main forms: support with law reforms related to e-commerce; statistical capacity-building; and national ICT policy reviews and training (box VI.5).

Box VI.5. UNCTAD support to e-commerce development in developing countries

The UNCTAD ICT and law reform programme assists countries in the development of e-commerce legislation. Relevant laws should ensure trust in online transactions, ease the conduct of domestic and international trade online, and offer legal protection for users and providers of e-commerce and e-government services. Since 2000, the programme has supported over 60 developing countries in Africa, Asia and Latin America, at both regional and national levels. Assistance includes reviews of draft or existing legislation; drafting of legislation harmonized with regional and international legal frameworks; organization of national stakeholders' consultations; organization of training workshops and the briefing of parliamentarians.

A second area in which UNCTAD assists countries concerns the production of statistics on the information economy to support evidence-based policymaking. Assistance is offered through regional training courses, national workshops and other advisory services. Core indicators on ICT use by enterprises, including e-commerce, on the value added and workforce of the ICT sector, and on international trade in ICT goods, are collected by UNCTAD annually. Ongoing development of methodological reference materials, and of new or improved indicators, is achieved in collaboration with the Partnership on Measuring ICT for Development to ensure international comparability and effective use of available expertise and resources.

UNCTAD can undertake national ICT policy reviews upon request. Such reviews seek to assist countries in building and maintaining a dynamic and responsive ICT policy environment. They aim to ensure that national ICT programmes become an instrument for supporting national development, helping local industry compete in a knowledge-based, global economy, and promoting economic growth and exports. The focus of the reviews is determined in a dialogue with the requesting country. For example, the Government of Egypt in 2014 requested UNCTAD to assist in its development of a national e-commerce strategy, establishing short-, medium- and long-term targets and policy recommendations for implementation.

UNCTAD also offers a training course entitled E-commerce for Practitioners. This is designed to help identify challenges of e-commerce, maximize its positive impact on businesses and foster dynamic and reliable e-commerce solutions in developing countries. The course equips participants to engage in structural reforms, promoting e-commerce or setting up new businesses.

Source: UNCTAD.

C. CONCLUDING REMARKS

The global landscape for e-commerce is evolving rapidly. With the changing ICT landscape, the past decade has seen e-commerce transform how business is conducted. Enterprises of all sizes and across industries in developing countries are increasingly compelled to learn how to benefit from e-commerce in order to stay competitive. As in other areas of the world economy, developing countries are assuming a greater role. Thanks to new technology, improved connectivity and innovative business models, e-commerce is becoming relevant also in low-income countries. Indeed, some of the most dynamic developments are witnessed in parts of sub-Saharan Africa and Asia.

Nonetheless, there is scope for making the e-commerce phenomenon more inclusive and beneficial. As shown in this report, the extent to which enterprises are using ICTs to buy and sell goods and services varies greatly, indicating that the potential is far from fully exploited. Much remains to be done to bridge the remaining gaps in access to the Internet and to make such access more affordable. Similarly, the availability of e-commerce platforms and payment solutions leveraging technology can be further improved in many developing countries in ways that correspond to their specific needs and capabilities. Efforts in those areas should be complemented with improvements in the legal framework at national and international levels to foster trust in online commerce.

It is well worth pursuing such efforts. There are significant benefits to be achieved for consumers, enterprises and Governments from a higher reliance on e-commerce. New evidence presented in this report points, for example, to significant productivity gains from selling on the Internet and that such effects are particularly important for smaller enterprises and in services industries. Enhancing the ability of micro and small enterprises to explore e-commerce options, to tap the emerging opportunities in online retail and to integrate better in global supply chains would help to unleash their potential and spur economic growth in developing countries.

But everyone will not benefit automatically from e-commerce. A shift from offline to online commerce changes the ways in which consumers and enterprises interact. Some companies are better equipped to adapt to such transformations. Thus, there is a need for more research on the broader implications of e-commerce.

A first area to examine concerns the distributional effects of e-commerce. How are the gains achieved from online transactions shared between large and small enterprises, between global and local businesses, between different segments of the private sector, and the like. As noted in chapter II, there is a relatively high level of market concentration among web retailers, possibly suggesting that economies of scale and scope may favour larger enterprises over smaller ones.

A second area concerns the impact on employment. To what extent is e-commerce leading to a net creation or loss of jobs? How is the quality and remuneration of different jobs affected when more activities are transacted online? There is to date little knowledge about such questions.

A third area that may need to be further examined relates to the retail industry. What is the impact of a transition from high-street retail to online retail on urban centres and rural areas. Whereas there has been a clear trend towards more bricks-and-mortar companies introducing online and mobile sales channels to meet competition from pure-play web retailers, there has recently been cases of e-commerce companies establishing a physical presence. For example, in March 2014, the Alibaba Group announced that it was forming a joint venture with Intime Retail, a company that owns department stores and commercial real estate assets in mainland China.

The e-commerce landscape will continue to evolve in various directions, and Governments will face a continuous challenge in keeping up to speed with these developments. From a policy perspective, it is important to try to create an environment that provides as equal opportunities as possible for stakeholders in different locations and areas of society to take part in the process. In this context, international cooperation and effective dialogue between policymakers and other stakeholders will remain instrumental.

NOTES

- 1 See http://www.botspost.co.bw/doc/botswana_post_newsletter09_edited.pdf (accessed 4 February 2015).
 - 2 See <http://www.upu.int/en/activities/addressing/about-addressing.html> (accessed 4 February 2015).
 - 3 For more information; see <http://www.asycuda.org/> (accessed 4 February 2015).
 - 4 A study of e-commerce use among microenterprises in rural Mexico found that e-commerce could not be a realistic option to support artisans without significant training in basic ICT skills needed to expedite general business tasks (Rehbein, 2013).
 - 5 See <http://www.chilecompra.cl/> (accessed 4 February 2015).
 - 6 See also “OpenGov Voices: How Georgia is handling procurement transparency”, Sunlightfoundation.com, 16 January 2014; available at <http://sunlightfoundation.com/blog/2014/01/16/opengov-voices-how-georgia-is-handling-procurement-transparency/> (accessed 13 February 2015).
 - 7 See <http://kic.wougnet.org/new/> (accessed 6 February 2015).
 - 8 See “EBay is expected to close its auction site in China”, *The New York Times*, 19 December 2006; available at <http://www.nytimes.com/2006/12/19/technology/19ebay.html?fta=y&r=0> (accessed 4 February 2015).
 - 9 WT/MIN(98)/DEC/2.
 - 10 WT/L/274.
 - 11 WT/L/907; available at http://wto.org/english/thewto_e/minist_e/mc9_e/desci32_e.htm (accessed 4 February 2015).
 - 12 Copies of all regional trade agreements in force and notified to the WTO can be consulted in the WTO database at <http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx> (accessed 4 February 2015).
 - 13 For the agreed text; see http://www.wto.org/english/tratop_e/tradfa_e/tradfa_e.htm (accessed 4 February 2015).
 - 14 See, for example, the speech by the Secretary General of WCO; available at <http://news.upu.int/multimedia/audio/world-customs-organization-chief-on-e-commerce-boom/> (accessed 4 February 2015).
 - 15 See http://unctad.org/en/PublicationsLibrary/domtcs2014d1_en.pdf (accessed 4 February 2015).
 - 16 Expressed shipments are specifically covered by article 7.8 on expedited shipments.
 - 17 See minutes from the Committee; available at <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubacc/716/71605.htm> (accessed 4 February 2015).
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STATISTICAL ANNEX



Annex 1. UNCTAD B2C E-commerce Index, 2014

Economy	Share of population having mail delivered at home (2012 or latest, per cent)	Share of individuals with credit card (15+, 2011, per cent)	Share of individuals using Internet (2013 or latest, per cent)	Secure servers per 1 million people (normalized, 2013)	UNCTAD E-commerce Index value	Rank
Luxembourg	100	72.4	95.0	99.3	91.7	1
Norway	100	60.0	96.0	97.4	88.3	2
Finland	100	63.9	92.0	96.5	88.1	3
Canada	100	72.3	83.0	93.3	87.1	4
Sweden	100	53.5	95.0	95.9	86.0	5
Australia	100	64.2	83.0	94.8	85.5	6
Denmark	100	44.9	95.0	99.0	84.7	7
Republic of Korea	100	56.4	82.1	98.6	84.3	8
United Kingdom	100	51.6	91.0	94.4	84.2	9
Israel	100	79.7	73.4	82.4	83.9	10
Netherlands	100	41.4	94.0	100.0	83.8	11
Japan	100	64.4	79.5	90.5	83.6	12
New Zealand	97	59.2	83.0	93.8	83.3	13
Switzerland	99	56.0	78.0	99.4	83.1	14
United States	93	61.9	78.0	95.1	82.0	15
Belgium	100	54.3	83.0	90.5	82.0	16
Ireland	100	55.6	80.0	90.3	81.5	17
Hong Kong (China)	100	58.1	74.2	89.2	80.4	18
Malta	100	52.9	70.0	96.1	79.8	19
Germany	100	35.7	86.0	93.5	78.8	20
Austria	99	38.9	82.0	93.6	78.4	21
France	100	37.5	84.0	87.2	77.2	22
Slovenia	100	38.6	74.0	88.1	75.2	23
Estonia	97	30.2	82.0	90.7	75.0	24
Cyprus	98	45.9	66.0	89.1	74.8	25
Singapore	100	37.3	72.0	89.0	74.6	26
Spain	99	41.9	74.0	82.4	74.3	27
Czech Republic	100	26.5	76.0	88.4	72.7	28
Slovakia	99	20.3	81.0	82.2	70.6	29
Latvia	100	19.9	76.0	82.5	69.6	30
Portugal	100	29.6	65.0	80.7	68.8	31
Italy	100	30.5	61.0	80.1	67.9	32
Hungary	100	15.0	74.0	81.8	67.7	33
Bahrain	100	19.3	73.0	77.2	67.4	34
Poland	100	17.7	65.0	83.5	66.5	35
Lithuania	100	13.4	69.0	82.0	66.1	36

Annex 1. UNCTAD B2C E-commerce Index, 2014 (continued)

Economy	Share of population having mail delivered at home (2012 or latest, per cent)	Share of individuals with credit card (15+, 2011, per cent)	Share of individuals using Internet (2013 or latest, per cent)	Secure servers per 1 million people (normalized, 2013)	UNCTAD E-commerce Index value	Rank
Croatia	79	34.8	68.0	79.7	65.4	37
Turkey	97	45.1	46.0	68.9	64.2	38
Chile	94	22.8	61.4	73.9	63.0	39
Uruguay	93	27.1	58.0	72.1	62.5	40
The former Yugoslav Republic of Macedonia	100	16.5	63.2	69.1	62.2	41
Greece	93	17.5	61.0	76.9	62.1	42
Trinidad and Tobago	93	15.3	59.5	73.8	60.4	43
Serbia	99	22.6	53.5	65.9	60.1	44
Malaysia	93	11.9	63.6	71.1	59.9	45
Romania	100	11.7	55.0	71.4	59.5	46
Brazil	81	29.2	58.0	69.9	59.5	47
Argentina	93	21.9	54.1	67.6	59.1	48
Bulgaria	90	10.4	56.0	77.4	58.5	49
Russian Federation	100	9.7	53.3	69.0	58.0	50
Lebanon	100	11.4	52.0	67.6	57.7	51
Costa Rica	98	12.2	47.5	72.5	57.6	52
Bosnia and Herzegovina	90	11.7	65.4	62.9	57.5	53
Mauritius	100	14.1	37.6	76.3	57.0	54
Albania	100	10.6	54.7	60.7	56.4	55
Georgia	98	8.8	49.0	64.3	55.0	56
Dominican Republic	99	12.2	45.0	61.5	54.5	57
Ukraine	98	19.3	33.7	63.7	53.7	58
Armenia	90	2.3	53.0	67.1	53.1	59
Mexico	91	13.0	43.5	63.7	52.8	60
Belarus	100	7.8	39.6	63.5	52.7	61
Moldova	98	2.4	43.4	63.1	51.7	62
Bolivarian Republic of Venezuela	93	10.4	44.1	56.6	51.0	63
Kazakhstan	86	8.6	53.3	55.3	50.8	64
China	100	8.2	44.1	48.1	50.1	65
United Arab Emirates	0	30.0	85.0	79.8	48.7	66
South Africa	81	7.8	32.0	73.2	48.5	67
Egypt	99	1.4	44.1	47.2	47.9	68
Islamic Republic of Iran	100	23.9	26.0	39.1	47.3	69
Thailand	95	4.5	28.9	60.6	47.2	70

Annex 1. UNCTAD B2C E-commerce Index, 2014 (continued)

Economy	Share of population having mail delivered at home (2012 or latest, per cent)	Share of individuals with credit card (15+, 2011, per cent)	Share of individuals using Internet (2013 or latest, per cent)	Secure servers per 1 million people (normalized, 2013)	UNCTAD E-commerce Index value	Rank
Colombia	60	10.2	51.7	65.6	46.9	71
El Salvador	95	5.3	25.5	60.9	46.7	72
Qatar	0	32.3	69.3	78.3	45.0	73
Tunisia	93	4.3	21.0	60.1	44.6	74
Morocco	72	4.5	53.0	47.6	44.3	75
Ecuador	68	10.2	35.1	63.0	44.1	76
Guatemala	95	6.9	16.0	58.1	44.0	77
Uzbekistan	100	3.4	36.5	35.3	43.8	78
Sri Lanka	98	3.5	18.3	54.9	43.7	79
Jamaica	50	6.9	46.5	67.9	42.8	80
Oman	5	26.6	67.0	70.6	42.3	81
Peru	56	10.0	38.2	61.9	41.5	82
India	100	1.8	12.6	48.2	40.6	83
Panama	25	10.7	45.2	73.5	38.6	84
Honduras	75	5.3	18.1	55.1	38.4	85
Pakistan	95	0.7	10.0	39.2	36.2	86
Syrian Arab Republic	85	2.8	24.3	30.6	35.7	87
Indonesia	75	0.5	15.4	48.6	34.9	88
Sierra Leone	95	2.2	1.3	35.6	33.5	89
Viet Nam	30	1.2	39.5	54.2	31.2	90
Tajikistan	70	1.2	14.5	38.8	31.1	91
Cambodia	75	0.1	4.9	43.0	30.8	92
Zambia	60	3.7	13.5	45.4	30.6	93
Nepal	65	0.6	11.2	44.2	30.2	94
Jordan	10	3.5	41.0	63.8	29.6	95
Madagascar	80	0.0	2.1	33.7	28.9	96
Zimbabwe	45	6.5	17.1	46.5	28.8	97
Nicaragua	44	2.5	13.5	54.4	28.6	98
Plurinational State of Bolivia	19	4.1	34.2	54.9	28.1	99
Mali	70	0.6	2.2	37.6	27.6	100
Nigeria	35	0.8	32.9	41.4	27.5	101
Afghanistan	65	0.8	5.5	37.0	27.1	102
Mongolia	20	1.9	16.4	62.2	25.1	103
Iraq	65	1.7	7.1	26.6	25.1	104
Angola	15	15.5	16.9	48.1	23.9	105

Annex 1. UNCTAD B2C E-commerce Index, 2014 (continued)

Economy	Share of population having mail delivered at home (2012 or latest, per cent)	Share of individuals with credit card (15+, 2011, per cent)	Share of individuals using Internet (2013 or latest, per cent)	Secure servers per 1 million people (normalized, 2013)	UNCTAD E-commerce Index value	Rank
Lao People's Democratic Republic	39	3.1	10.8	37.4	22.6	106
Haiti	40	1.8	9.8	37.7	22.3	107
Swaziland	0	13.3	20.8	54.8	22.2	108
Ghana	20	2.2	17.1	45.0	21.1	109
Mozambique	35	3.5	4.9	40.9	21.1	110
Botswana	0	10.7	11.5	56.1	19.6	111
Senegal	5	0.8	19.2	43.5	17.1	112
Gabon	0	2.7	8.6	55.4	16.7	113
Kenya	0	6.1	6.3	49.8	15.6	114
Rwanda	0	2.8	8.0	44.8	13.9	115
Uganda	0	1.6	14.7	38.5	13.7	116
Comoros	5	1.5	6.0	39.7	13.0	117
Togo	0	1.0	4.0	46.3	12.9	118
Benin	8	0.5	3.8	37.7	12.5	119
Liberia	5	2.7	3.8	36.6	12.0	120
Sudan	15	0.6	21.0	11.2	11.9	121
United Republic of Tanzania	0	3.7	4.0	37.8	11.4	122
Malawi	1	1.4	4.4	36.5	10.8	123
Lesotho	2	2.5	4.6	31.3	10.1	124
Burkina Faso	0	0.8	3.7	35.7	10.1	125
Democratic Republic of the Congo	0	1.6	1.7	28.5	8.0	126
Burundi	2	0.6	1.2	27.5	7.7	127
Niger	5	0.4	1.4	22.9	7.4	128
Central African Republic	0	0.6	3.0	25.0	7.1	129
Guinea	5	1.3	1.5	17.7	6.4	130

Source: UNCTAD, based on data from ITU, UPU and the World Bank.

Annex 2. Amazon, eBay and PayPal services availability in United Nations Member States, 2014

United Nations Member State	Amazon services			eBay services			PayPal services		
	Sellers supported to ship by Amazon	Countries and currencies supported by Amazon	Bank accounts supported by Amazon	United States site	eBay international site	eBay local (buy-only) site	Personal account	Premier account	Business account
Afghanistan						X			
Albania						X	X	X	X
Algeria						X	X	X	X
Andorra						X	X	X	X
Angola						X	X		
Antigua and Barbuda						X	X	X	
Argentina	X					X	X	X	
Armenia						X	X		
Australia		X	X		X		X	X	X
Austria	X	X	X		X		X	X	X
Azerbaijan						X	X		
Bahamas						X	X	X	
Bahrain						X	X	X	X
Bangladesh						X			
Barbados						X	X	X	
Belarus						X	X		
Belgium	X	X	X		X		X	X	X
Belize						X	X	X	
Benin						X	X		
Bhutan						X	X		
Bolivia (Plurinational State of)						X	X*		
Bosnia and Herzegovina						X	X	X	X
Botswana						X	X	X	X
Brazil	X					X	X	X	
Brunei Darussalam						X	X		
Bulgaria	X					X	X	X	X
Burkina Faso						X	X		
Burundi						X	X		
Cambodia						X	X		
Cameroon						X	X		
Canada		X	X		X		X	X	X
Cape Verde						X	X		
Central African Republic						X			
Chad						X	X		
Chile						X	X	X	
China	X				X	X	X	X	X
Colombia						X	X	X	
Comoros						X	X		
Congo						X	X		
Costa Rica	X					X	X*		
Côte d'Ivoire						X	X		

Annex 2. Amazon, eBay and PayPal services availability in United Nations Member States, 2014 (continued)

United Nations Member State	Amazon services			eBay services			PayPal services		
	Sellers supported to ship by Amazon	Countries and currencies supported by Amazon	Bank accounts supported by Amazon	United States site	eBay international site	eBay local (buy-only) site	Personal account	Premier account	Business account
Croatia	X					X	X	X	X
Cuba						X			
Cyprus	X	X	X			X	X	X	X
Czech Republic	X					X	X	X	X
Democratic Peoples Republic of Korea						X			
Democratic Republic of the Congo						X	X		
Denmark	X					X	X	X	X
Djibouti						X	X		
Dominica						X	X		
Dominican Republic						X	X	X	
Ecuador						X	X		
Egypt						X	X		
El Salvador						X	X		
Equatorial Guinea						X			
Eritrea						X	X		
Estonia	X	X	X			X	X	X	X
Ethiopia						X	X		
Fiji						X	X	X	X
Finland	X	X	X			X	X	X	X
France	X	X	X		X		X	X	X
Gabon						X	X		
Gambia						X	X		
Georgia						X	X		
Germany	X	X	X		X		X	X	X
Ghana						X			
Greece	X	X	X			X	X	X	X
Grenada						X	X	X	
Guatemala						X	X*		
Guinea						X	X		
Guinea-Bissau						X	X		
Guyana						X	X*		
Haiti						X			
Honduras						X	X		
Hungary	X					X	X	X	X
Iceland	X					X	X	X	X
India	X	X	X		X		X	X	X
Indonesia						X	X	X	X
Iran (Islamic Republic of)						X			
Iraq						X			

Annex 2. Amazon, eBay and PayPal services availability in United Nations Member States, 2014 (continued)

United Nations Member State	Amazon services			eBay services			PayPal services		
	Sellers supported to ship by Amazon	Countries and currencies supported by Amazon	Bank accounts supported by Amazon	United States site	eBay international site	eBay local (buy-only) site	Personal account	Premier account	Business account
Ireland	X	X	X		X		X	X	X
Israel	X					X	X	X	X
Italy	X	X	X		X		X	X	X
Jamaica						X	X	X	
Japan	X					X	X	X	X
Jordan						X	X	X	X
Kazakhstan						X	X		
Kenya						X	X	X	X
Kiribati						X	X		
Kuwait						X	X	X	X
Kyrgyzstan						X	X		
Lao People's Democratic Republic						X	X		
Latvia	X					X	X	X	X
Lebanon						X			
Lesotho						X	X	X	X
Liberia						X			
Libya						X			
Liechtenstein	X					X	X	X	X
Lithuania	X					X	X	X	X
Luxembourg	X	X	X			X	X	X	X
Madagascar						X	X		
Malawi						X	X	X	X
Malaysia					X		X	X	X
Maldives						X	X		
Mali						X	X		
Malta		X	X			X	X	X	X
Marshall Islands	X					X	X		
Mauritania						X	X		
Mauritius						X	X		
Mexico	X					X	X	X	X
Micronesia (Federated States of)	X					X	X		
Monaco						X	X		
Mongolia						X	X		
Montenegro						X	X		
Morocco						X	X	X	X
Mozambique						X	X	X	X
Myanmar						X			
Namibia						X	X		
Nauru						X	X		

Annex 2. Amazon, eBay and PayPal services availability in United Nations Member States, 2014 (continued)

United Nations Member State	Amazon services			eBay services			PayPal services		
	Sellers supported to ship by Amazon	Countries and currencies supported by Amazon	Bank accounts supported by Amazon	United States site	eBay international site	eBay local (buy-only) site	Personal account	Premier account	Business account
Nepal						X	X		
Netherlands	X	X	X		X		X	X	X
New Zealand	X	X	X			X	X	X	X
Nicaragua						X	X*		
Niger						X	X		
Nigeria	X					X	X		
Norway	X					X	X	X	X
Oman						X	X	X	X
Pakistan						X			
Palau	X					X	X	X	X
Panama						X	X		
Papua New Guinea						X	X		
Paraguay						X	X*		
Peru						X	X	X	
Philippines					X		X	X	X
Poland	X				X		X	X	X
Portugal	X	X	X			X	X	X	X
Qatar						X	X	X	X
Republic of Korea	X				X	X	X	X	X
Republic of Moldova						X	X		
Romania						X	X	X	X
Russian Federation	X					X	X	X	X
Rwanda						X	X		
Saint Kitts and Nevis						X	X	X	
Saint Lucia						X	X	X	
Saint Vincent and the Grenadines						X	X*		
Samoa						X	X		
San Marino	X					X	X	X	X
Sao Tome and Principe							X		
Saudi Arabia						X	X	X	X
Senegal						X	X		
Serbia						X	X		
Seychelles						X	X	X	X
Sierra Leone						X	X		
Singapore	X				X		X	X	X
Slovakia	X	X	X			X	X	X	X
Slovenia	X	X	X			X	X	X	X
Solomon Islands						X	X		
Somalia						X	X		
South Africa	X					X	X	X	X

Annex 2. Amazon, eBay and PayPal services availability in United Nations Member States, 2014 (continued)

United Nations Member State	Amazon services			eBay services			PayPal services		
	Sellers supported to ship by Amazon	Countries and currencies supported by Amazon	Bank accounts supported by Amazon	United States site	eBay international site	eBay local (buy-only) site	Personal account	Premier account	Business account
South Sudan									
Spain	X	X	X		X		X	X	X
Sri Lanka						X	X		
Sudan						X			
Suriname						X	X*		
Swaziland						X	X		
Sweden	X				X	X	X	X	X
Switzerland	X				X		X	X	X
Syrian Arab Republic						X			
Tajikistan						X	X		
Thailand					X	X	X	X	X
The former Yugoslav Republic of Macedonia						X	X		
Timor-Leste									
Togo						X	X		
Tonga						X	X		
Trinidad and Tobago						X	X	X	
Tunisia						X	X		
Turkey	X				X	X	X	X	X
Turkmenistan						X	X		
Tuvalu						X	X		
Uganda						X	X		
Ukraine						X	X		
United Arab Emirates						X	X	X	X
United Kingdom	X	X	X		X		X	X	X
United Republic of Tanzania						X	X		
United States	X	X	X	X			X	X	X
Uruguay						X	X	X	
Uzbekistan						X			
Vanuatu						X	X	X	X
Venezuela (Bolivarian Republic of)						X	X	X	
Viet Nam					X	X	X	X	X
Yemen						X	X		
Zambia						X	X		
Zimbabwe						X	X		

Source: UNCTAD analysis of information from Amazon.com, 15 August 2014, see <http://www.amazon.com/gp/help/customer/display.html?nodeId=201118550>; <http://www.amazon.com/gp/help/customer/display.html?nodeId=200497820>; <http://www.amazon.com/gp/help/customer/display.html?nodeId=201074230>; from ebay.com and ebay.co.uk, 15 August, 2014, see <http://sellercentre.ebay.co.uk/where-to-sell-internationally?cat=1015>; and from PayPal, see <https://www.paypal.com/webapps/mpp/country-worldwide>.

* Personal accounts allow only sending money and buying online, but not receiving money and selling online.

Annex 3. Availability of legislation or draft legislation in key areas of cyberlaws (continued)

UNCTAD member States	Electronic transactions		Consumer protection		Privacy and data protection		Cybercrime	
	Legislation	Draft	Legislation	Draft	Legislation	Draft	Legislation	Draft
Developing economies								
Africa								
Eastern Africa								
Burundi	No	Yes	No	Yes	No	Yes	No	Yes
Comoros	No	No	no data	no data	no data	no data	No	No
Djibouti	no data	no data	no data	no data	no data	no data	Yes	
Eritrea	No	No	No	No	no data	no data	no data	no data
Ethiopia	No	Yes	No	No	No	Yes	No	Yes
Kenya	Yes		Yes		No	Yes	Yes	
Madagascar	No	Yes	no data	no data	Yes		Yes	
Malawi	No	Yes	no data	no data	No	Yes	No	No
Mauritius	Yes*		no data	no data	Yes	No	Yes	
Mozambique	No	Yes	no data	no data	no data	no data	No	Yes
Rwanda	Yes*		Yes		No	Yes	Yes	
Seychelles	Yes*		no data	no data	Yes		Yes	
Somalia	no data	no data	no data	no data	no data	no data	No	No
South Sudan	no data	no data	no data	no data	no data	no data	no data	no data
Uganda	Yes		Yes		No	Yes	Yes	
United Republic of Tanzania	No	Yes	No	Yes	No	Yes	No	Yes
Zambia	Yes*		Yes		Yes		Yes	
Zimbabwe	No	Yes	no data	no data	Yes		Yes	no data
Middle Africa								
Angola	no data	no data	No	No	Yes		No	Yes
Cameroon	Yes		Yes		no data	no data	Yes	
Central African Republic	no data	no data	no data	no data	no data	no data	no data	no data
Chad	no data	no data	no data	no data	no data	no data	no data	no data
Congo	Yes*		no data	no data	no data	no data	No	Yes
Democratic Republic of the Congo	No	No	no data	no data	no data	no data	No	No
Equatorial Guinea	no data	no data	No	No	no data	no data	no data	no data
Gabon	no data	no data	Yes		Yes		No	Yes
Sao Tome and Principe	no data	no data	no data	no data	no data	no data	No	No
Northern Africa								
Algeria	Yes	no data	No	Yes	No	No	Yes	
Egypt	Yes	no data	No	Yes	No	Yes	Yes	
Libya	No	No	No	No	No	No	No	No
Morocco	Yes		Yes		Yes		Yes	
Sudan	Yes		no data	no data	Yes		Yes	
Tunisia	Yes		Yes		Yes		No	Yes

Annex 3. Availability of legislation or draft legislation in key areas of cyberlaws (continued)

UNCTAD member States	Electronic transactions		Consumer protection		Privacy and data protection		Cybercrime	
	Legislation	Draft	Legislation	Draft	Legislation	Draft	Legislation	Draft
Southern Africa								
Botswana	Yes		Yes		No	No	Yes	
Lesotho	No	Yes	no data	no data	Yes		No	No
Namibia	No	Yes	no data	no data	No	Yes	No	Yes
South Africa	Yes*		Yes		No	Yes	Yes	
Swaziland	Yes		no data	no data	No	Yes	No	No
Western Africa								
Benin	Yes		No	No	Yes		No	Yes
Burkina Faso	Yes		Yes		Yes		No	Yes
Cape Verde	Yes*		Yes		Yes		Yes	
Côte d'Ivoire	Yes		Yes		Yes		Yes	
Gambia	Yes*		Yes		Yes		Yes	
Ghana	Yes*		Yes		Yes		Yes	
Guinea	No	No	No	No	No	No	No	No
Guinea-Bissau	No	No	Yes		no data	no data	No	No
Liberia	Yes*		Yes		Yes		No	No
Mali	No	Yes	No	No	Yes		Yes	
Mauritania	no data	no data	no data	no data	no data	no data	No	No
Niger	No	Yes	No	Yes	No	Yes	No	Yes
Nigeria	No	Yes	No	Yes	No	Yes	No	Yes
Senegal	Yes*		Yes		Yes		Yes	
Sierra Leone	No	No	Yes		Yes		No	No
Togo	No	Yes	No	Yes	No	Yes	No	Yes
Asia and Oceania								
Eastern Asia								
China	Yes*		Yes		No	No	Yes	
Democratic People's Republic of Korea	no data	no data	no data	no data	no data	no data	no data	no data
Mongolia	Yes		no data	no data	no data	no data	no data	no data
Republic of Korea	Yes*		Yes		Yes		Yes	
Southern Asia								
Afghanistan	No	Yes	No	No	No	No	No	No
Bangladesh	Yes*		Yes		no data	no data	Yes	
Bhutan	Yes		Yes		Yes		Yes	
India	Yes*		No	No	Yes		Yes	
Iran (Islamic Republic of)	Yes*		No	No	Yes		Yes	
Maldives	No	No	no data	no data	No	No	No	No
Nepal	Yes		no data	no data	Yes		Yes	
Pakistan	Yes*		no data	no data	No	Yes	No	Yes
Sri Lanka	Yes*		no data	no data	no data	no data	Yes	

Annex 3. Availability of legislation or draft legislation in key areas of cyberlaws (continued)

UNCTAD member States	Electronic transactions		Consumer protection		Privacy and data protection		Cybercrime	
	Legislation	Draft	Legislation	Draft	Legislation	Draft	Legislation	Draft
South-Eastern Asia								
Brunei Darussalam	Yes*	Yes	Yes		No	No	Yes	
Cambodia	No		No	Yes	No	No	No	Yes
Indonesia	Yes		Yes		Yes		Yes	
Lao People's Democratic Republic	Yes		Yes		No	No	No	No
Malaysia	Yes*		Yes		Yes		Yes	
Myanmar	Yes		Yes		No	No	Yes	
Philippines	Yes*		Yes		Yes		Yes	
Singapore	Yes*		Yes		Yes		Yes	
Thailand	Yes		Yes		Yes		Yes	
Timor-Leste	no data	no data	no data	no data	no data	no data	no data	no data
Viet Nam	Yes*		Yes		Yes		Yes	
Western Asia								
Bahrain	Yes*	Yes	Yes		No	Yes	Yes	
Iraq	Yes		no data	no data	No	Yes	No	Yes
Jordan	Yes*		no data	no data	No	Yes	Yes	
Kuwait	Yes*		Yes		Yes		No	Yes
Lebanon	No		No	Yes	No	Yes	No	No
Oman	Yes*		no data	no data	Yes		Yes	
Qatar	Yes*		Yes		No	Yes	No	Yes
Saudi Arabia	Yes*		No	No			Yes	
Syrian Arab Republic	Yes*		No	Yes	No	Yes	Yes	
Turkey	Yes		Yes		No	Yes	Yes	
United Arab Emirates	Yes*		no data	no data	No	No	Yes	
Yemen	Yes		no data	no data	Yes		No	Yes
Oceania								
Fiji	Yes*	No	Yes		no data	no data	Yes	
Kiribati	No		no data	no data	No	No	Yes	
Marshall Islands	no data		no data	no data	no data	no data	No	No
Micronesia (Federated States of)	no data		no data	no data	no data	no data	No	No
Nauru	No		no data	no data	No	No	No	No
Palau	no data		no data	no data	no data	no data	no data	no data
Papua New Guinea	No		Yes	no data	no data	No	No	No
Samoa	Yes*		no data	no data	No	No	Yes	
Solomon Islands	Yes		no data	no data	No	No	No	No
Tonga	Yes		no data	no data	No	No	Yes	
Tuvalu	No		No	no data	no data	No	No	No
Vanuatu	Yes*		no data	no data	No	No	No	No

Annex 3. Availability of legislation or draft legislation in key areas of cyberlaws (continued)

UNCTAD member States	Electronic transactions		Consumer protection		Privacy and data protection		Cybercrime		
	Legislation	Draft	Legislation	Draft	Legislation	Draft	Legislation	Draft	
Latin America and the Caribbean									
Central America									
Belize	Yes*	Yes	Yes		No	Yes	No	No	
Costa Rica	Yes*		Yes		Yes		Yes		
El Salvador	No		Yes		No	No	No	Yes	
Guatemala	Yes*		No	No	No	No	No	Yes	
Honduras	Yes*		Yes		No	Yes	No	No	
Mexico	Yes*		Yes		Yes		Yes		
Nicaragua	Yes*		Yes		Yes		No	No	
Panama	Yes*		Yes		No	Yes	Yes		
South America									
Argentina	Yes	Yes	Yes		Yes	Yes	Yes		
Bolivia (Plurinational State of)	Yes		No	No	Yes		Yes		
Brazil	Yes		Yes		No		Yes	Yes	
Chile	Yes		Yes		Yes			Yes	
Colombia	Yes*		Yes		Yes			Yes	
Ecuador	Yes*		Yes		Yes			No	No
Guyana	No		no data	no data	No		No	No	No
Paraguay	Yes*		Yes		Yes			Yes	
Peru	Yes	Yes		Yes		Yes			
Suriname	no data	no data	no data	no data	no data	no data	no data		
Uruguay	Yes	Yes		Yes		Yes			
Venezuela (Bolivarian Republic of)	Yes*	Yes		No	No	Yes			
Caribbean									
Antigua and Barbuda	Yes*	No	no data	no data	No	Yes	Yes		
Bahamas	Yes		no data	no data	Yes		Yes		
Barbados	Yes*		No	No	No	Yes	Yes		
Cuba	No		No	No	No	Yes	No	Yes	
Dominica	Yes*		Yes		No	Yes	No	No	
Dominican Republic	Yes*		No	No	Yes		Yes		
Grenada	Yes*		no data	no data	No	Yes	Yes		
Haiti	No		No	Yes	No	No	No	No	
Jamaica	Yes*	Yes		No	Yes	Yes			
Saint Kitts and Nevis	Yes*	no data	no data	No	Yes	Yes			
Saint Lucia	Yes*	no data	no data	Yes		No	Yes		
Saint Vincent and the Grenadines	Yes*	no data	no data	Yes		Yes			
Trinidad and Tobago	Yes	no data	no data	Yes		Yes			

Annex 3. Availability of legislation or draft legislation in key areas of cyberlaws (continued)

UNCTAD member States	Electronic transactions		Consumer protection		Privacy and data protection		Cybercrime	
	Legislation	Draft	Legislation	Draft	Legislation	Draft	Legislation	Draft
Transition economies								
Albania	Yes		Yes		Yes		Yes	No
Armenia	Yes		no data	no data	Yes		Yes	
Azerbaijan	Yes		no data	no data	Yes		Yes	
Belarus	Yes		No	No	Yes		Yes	
Bosnia and Herzegovina	Yes		Yes		Yes		Yes	
Georgia	Yes		no data	no data	Yes		Yes	
Kazakhstan	Yes		no data	no data	Yes		Yes	
Kyrgyzstan	Yes		no data	no data	Yes		no data	no data
Montenegro	Yes*		no data	no data	Yes		Yes	
Republic of Moldova	Yes		no data	no data	Yes		No	Yes
Russian Federation	Yes*		no data	no data	Yes		Yes	
Serbia	Yes		no data	no data	Yes		Yes	
Tajikistan	Yes		no data	no data	Yes		no data	no data
The former Yugoslav Republic of Macedonia	Yes		no data	no data	Yes		Yes	
Turkmenistan	Yes		no data	no data	no data	no data	no data	no data
Ukraine	Yes		no data	no data	Yes		No	Yes
Uzbekistan	Yes		no data	no data	No	No	Yes	

Source: UNCTAD, based on data from Graham Greenleaf, Stephen Mason, the Commonwealth secretariat, the Council of Europe, DLA Piper, Google, Norton Rose Fulbright, the OECD, The Paypers, UNCITRAL, UNODC, and ESCWA.

* Countries with e-transactions legislation based on UNCITRAL texts.

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