CHAPTER 9

Assessing e-trade readiness

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Digital technology has, among other things, propelled economic and social transformation in recent decades, making it possible to access information on every possible topic, communicate with people across the globe and conduct economic transactions at the speed of light. One indicator in the economic sphere is the growing popularity of e-commerce—valued at US$27.7 trillion in 2016, of which business-to-consumer (B2C) e-commerce accounts for US$3.8 trillion (WTO, 2018).

The benefits of e-commerce are currently reaped by developed countries and advanced developing countries with China accounting for US$672 billion of the e-commerce market. China's market is higher than the combined total of the remaining top six e-commerce markets (the United States, the United Kingdom, Japan, Germany, France and South Korea).[1] While only three—all East Asian—countries (China, Japan and South Korea) feature among the top ten e-commerce markets, e-commerce is expected to contribute to 53.6 percent of the incremental trade volume between 2014 and 2020 in Asia (ITC, 2018).

Barring India, South Asian countries are yet to fully harness the potential of e-commerce unleashed by digital revolution. South Asian least developed countries (LDCs) are even further down the e-commerce ladder, although starting from a low base they possess tremendous potential to grow and expand.

Digital transformation is the foundation for any serious engagement in e-commerce, although the LDCs are yet to harness

its true potential. World leaders have sought to shore up the LDCs' participation in such a transformation process through the Sustainable Development Goals (SDGs), specifically SDG 9.C, which calls for providing universal and affordable access to the internet in the LDCs by 2020.[2] This follows from commitments under the Istanbul Programme of Action for Least Developed Countries,[3] although there is no such comparable commitment on the e-commerce front.

As far as the LDCs are concerned, affordable access to the internet is a necessary condition for integrating the LDCs into the e-commerce space but certainly not a sufficient condition. There are a host of economic, social, technological, policy, finance and skills-related issues that impede the prospects of the LDCs in general and South Asian LDCs in particular to harness their digital trade potential.

The point of departure for this chapter is the recognition that that e-commerce is a force for good, particularly for South Asian LDCs, who have so far remained at the margin of mainstream global trade. Therefore, it is an imperative that these countries become ready to embrace and take advantage of e-commerce opportunities.

Accordingly, the objective of the chapter—admittedly narrow tailored—is to look at the state of readiness of four South Asian LDCs (Afghanistan, Bangladesh, Bhutan and Nepal) and a recently graduated country (the Maldives), which are being supported by the Enhanced Integrated Framework (EIF) (collectively referred to as "South Asian EIF Countries"), highlighting key challenges and offering some reflections on the way forward.

Ongoing work on e-trade readiness spearheaded by the United Nations Conference on Trade and Development (UNCTAD) together with the EIF in these countries; deliberations at the Tenth South Asia Economic Summit at a session on the same theme (15 November 2017); and extant literature on the subject, including data published by international organizations and recent reporting from countries, form the methodological foundation of this contribution.[4]

The rest of the chapter is structured as follows. The second section presents the state of play in terms of inclusiveness, which is a key driver of the growth of e-commerce in the South Asian EIF Countries, and key challenges. The third section discusses the opportunities and potential for these countries. The final section draws some conclusions and presents a way forward.

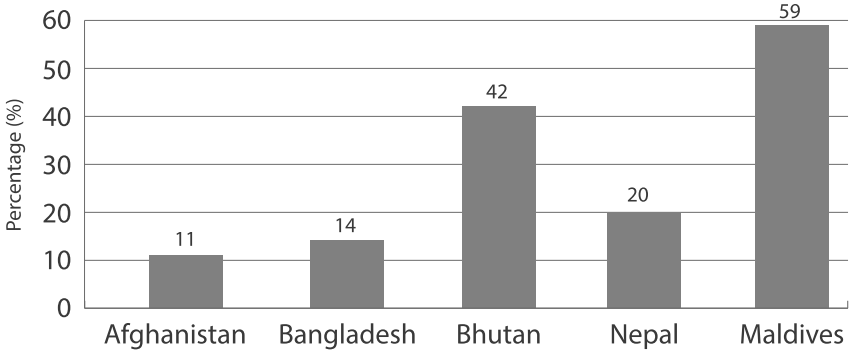
Inclusiveness as a driver for e-commerce growth

Several EIF Countries in South Asia have experienced a positive internet uptake. Key examples are Bhutan and the Maldives, where almost half of the population is online. However, the situation is not homogeneous: only one in five people is online in Nepal, and in Afghanistan and Bangladesh, the proportion drops to one in ten (Figure 9.1).

The main factors influencing internet penetration are: availability and affordability of internet infrastructure; development of digital skills; and quality-related services, including payment solutions and logistics.

Figure 9.1

Individuals using the internet in South Asian EIF Countries, 2016



Source: ITU (2017a).

Availability and affordability: What does it take to browse?

Investments in internet infrastructure

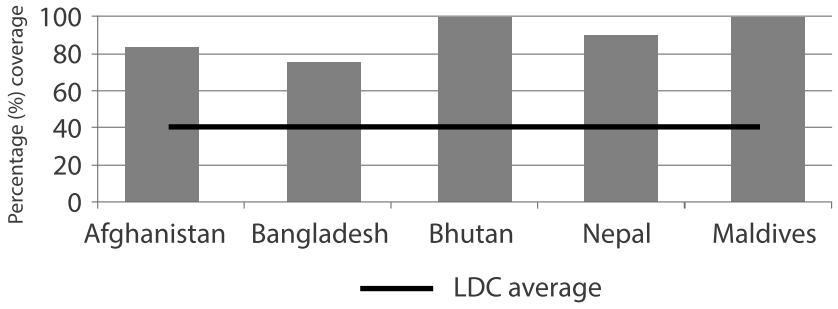
Understanding the state of internet infrastructure is key to discussions around internet availability. Internet infrastructure is closely tied to the status of electricity—not only how accessible and affordable it is, but also the reliability of supply. On average, South Asian LDCs have greater access to cheap electricity as compared to other LDCs. Bhutan, the Maldives and Nepal have the best electricity coverage as a percentage of population, at 100 percent, 100 percent and 90 percent, respectively. In contrast, access in Bangladesh is just above 75 percent (Figure 9.2).

In terms of pricing, the most competitive electricity rates are in Bhutan and the Maldives, while there are moderately competitive rates in Bangladesh and Nepal. Although electricity prices in Afghanistan are the highest in the region, all the South Asian EIF Countries have lower prices as compared to the LDC average, which is 20 US cents per kilowatt hour (Figure 9.3).

Internet uptake is another important indicator to measure the state of internet infrastructure and investment made in this area.

Figure 9.2

Access to electricity in South Asian EIF Countries, 2014



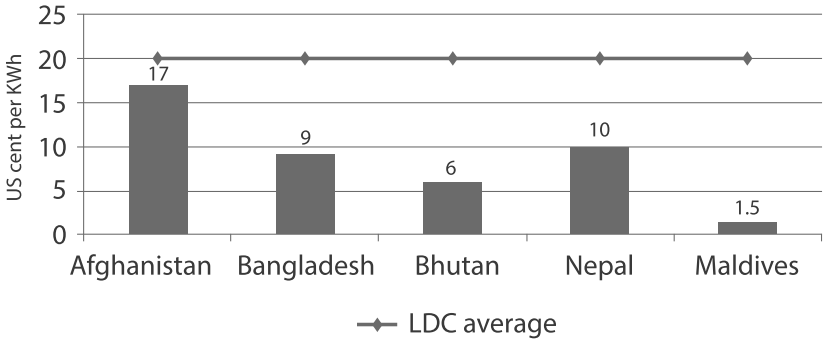
Source: World Bank, https://data.worldbank.org/indicator.

The International Telecommunication Union (ITU) measures internet uptake with fixed and mobile internet subscriptions (Figure 9.4). While mobile coverage of all the South Asian EIF Countries has been satisfactory, the fixed-line internet access is highly desirable for executing e-commerce transactions, as it allows for faster internet speed. However, it also requires greater upfront investment, including a costly installation to connect to submarine fibre optic cables. This poses a significant challenge to the landlocked South Asian LDCs, which would require an additional installation of terrestrial cable networks.

Select EIF Countries in South Asia have made considerable progress in the installation of fixed broadband. In Bangladesh, Bhutan and the Maldives, fixed-broadband subscriptions are 1 percent above the LDC average. In the Maldives, it is close to 5 percent. The reason for the higher coverage of both fixed-line and broadband subscription in the Maldives has to do with its locational advantage; the percentage of people connected to other infrastructures; and proactive efforts to enhance investment in this sector by the private sector. For example, Ooredoo—a Doha-based multinational telecommunications company that has been operating in the Maldives since 2005—has been investing in expanding

Figure 9.3

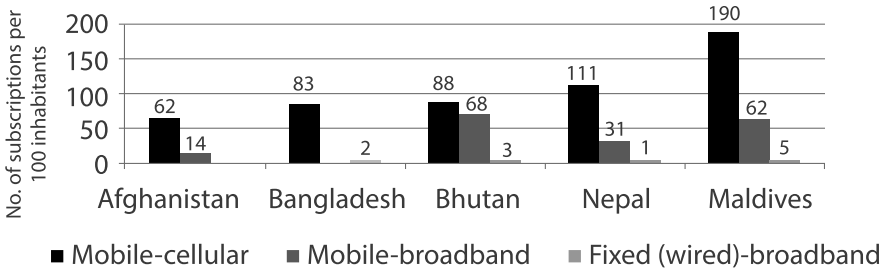
Electricity prices in South Asian EIF Countries, 2014



Source: World Bank, https://data.worldbank.org/indicator.

Figure 9.4

Mobile vs fixed internet subscriptions in South Asian EIF Countries, 2016



Source: ITU (2017a).

its "SuperNet" fibre-optic broadband service to various atolls of the country.[5] This is not the case in Afghanistan and Nepal, two countries that lag behind their regional comparators, in part due to their difficult geographical terrains, their landlockedness and the size of their relatively dispersed population.

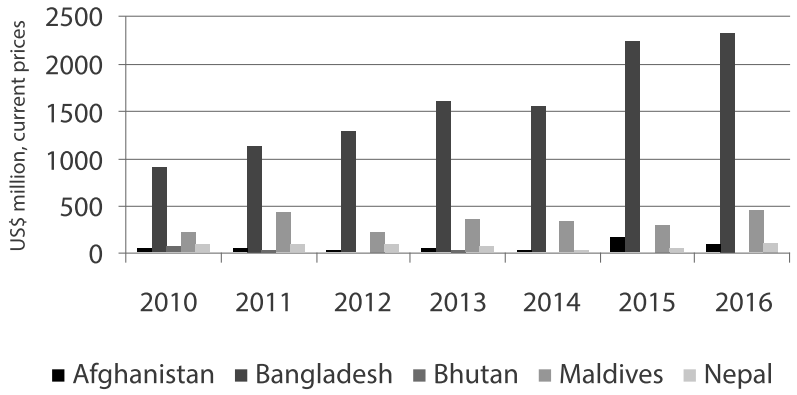
Another reason is limited investment in the fixed-line infrastructure. While sector-disaggregated data are scarce (Mbise et al., 2018), the overall investment trend shows that within the South Asian EIF Countries, foreign direct investment (FDI) flows are still very limited and vary extensively from country to country (Figure 9.5). Despite an 8 percent drop in FDI in 2017 (UNCTAD, 2018), Bangladesh remains among the top recipients in absolute terms, and the Maldives tops the list if presented as a percentage of gross domestic product (GDP) with the FDI flows accounting for 12 percent of the Maldivian GDP in 2016.

Given the limited coverage of fixed broadband, most of the LDCs rely on mobile connections. To access mobile internet, residents need to live within areas covered by at least a 2.5G radius or higher (mobile communications technology that enables mobile service providers to supply wireless data services, including mobile internet).

Bangladesh, Bhutan and Nepal have been making considerable strides in providing mobile connectivity to their people, well

Figure 9.5

FDI flows into South Asian EIF Countries, 2006–2016



Source: UNCTAD (2018).

above the LDC average. Close to 100 percent of their populations live within the 2G radius, and these countries have successfully deployed 3G networks to over 80 percent of their people. Similarly, they have piloted the deployment of the 4G signal (Table 9.1).

While the Maldives has taken a step further, deploying the 4G+ network to all local islands and resorts in 2017[6], the situation in Afghanistan is more challenging. So far, only 40 percent of its population lives within the 3G signal, and very few are covered by 4G.

Continued investments in fixed broadband and incentives for increasing greater mobile network coverage can help ensure that even those living in the most remote areas have access to mobile coverage. While efforts made by several South Asian EIF Countries are laudable, regional cooperation also plays an important role in boosting internet infrastructure development. Development partners, such as the Asian Development Bank, have been working with Bangladesh, Bhutan, India and Nepal to support the availability of affordable broadband internet connections, thereby improving the flow of information, services and ideas.[11]

Table 9.1

Percentage of the population in South Asian LDCs that lives within the mobile network coverage

	2G	3G	4G[7]
LDC average	88	50	32 LDCs have deployed 4G, mostly in urban areas
Afghanistan	89	40	Kanul, Heart and Baghlan[8]
Bangladesh	99	90	65
Bhutan	98	80	40[9]
Nepal	92	90	Kathmandu Valley, Pokhara, Lahan and Dhangadhi[10]

Source: ITU (2017a).
Note: Data for the Maldives are not available.

Internet prices

While internet infrastructure is key to enhancing connectivity, internet pricing is equally important for ensuring the affordability of the service. Wide disparity is reflected in fixed broadband prices among the South Asian EIF Countries. The prices are relatively low in Bangladesh and the Maldives—two countries that have direct access to the submarine cable network.[12]

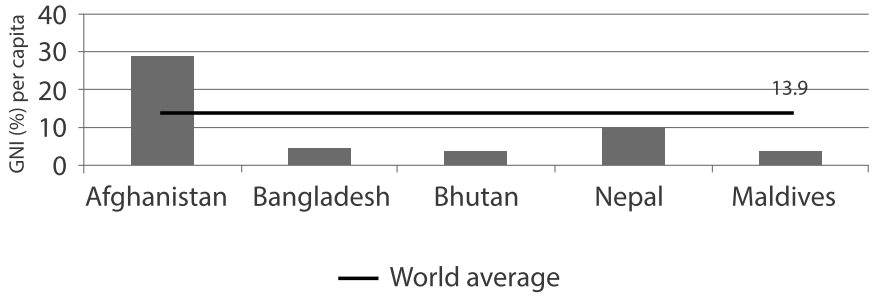
Although prices in landlocked Bhutan are also very low, there are several factors responsible for that, including relatively high gross national income (GNI) per capita to which prices are compared as well as the effective implementation of broadband policies. For example, Bhutan effectively implemented its National Broadband Master Plan, which enabled the laying of a 3,300 kilometre fibre optic network that extends all the way to the Indian border, thereby linking Bhutan to the submarine cables (ITU, 2018). In addition, this network is leased to the telecommunications operators free of charge.

Bhutan and the Maldives are also making significant progress in ensuring mobile affordability. These countries offer internet prices of 1 percent of GNI per capita for 500 MB, thereby meeting the new "1 for 2" target of the Alliance for Affordable Internet—1 GB of mobile broadband for 2 percent or less of monthly GNI per capita (Figure 9.6). Together with Bangladesh, mobile internet prices in Bhutan and the Maldives are well below the world's average of 3.7 percent. However, high mobile broadband prices pose a significant challenge to Afghanistan's and Nepal's efforts to enhance their internet connectivity (Figure 9.7).

Another factor that influences internet pricing as well as speed is the availability of Internet Exchange Points (IXPs)—physical locations where internet traffic is exchanged between internet service provider networks. Their main function is to keep internet traffic local. If there are no IXPs in a country, internet traffic may need to travel as far as Europe, thereby increasing time and cost. So far, only two South Asian LDCs have established such points: Bangladesh Internet Exchange in Dhaka and Nepal Internet Exchange in Kathmandu. Competition among internet providers and the existence of sufficient in-country information technology (IT) skills are two key considerations before establishing IXPs.

Figure 9.6

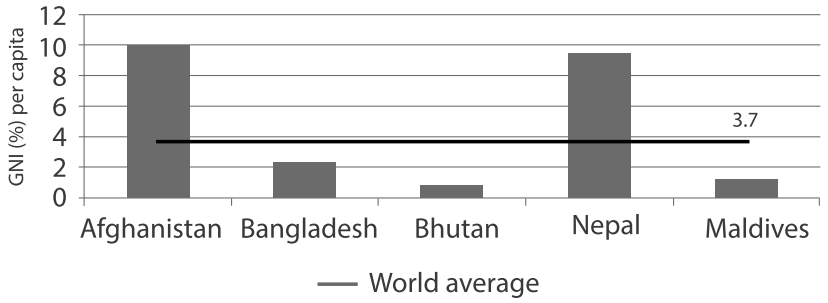
Prices of fixed broadband in South Asian EIF Countries, 2017



Source: ITU (2017a).

Figure 9.7

Prices of mobile broadband (500 MB) in South Asian EIF Countries, 2017



Source: ITU (2017a).

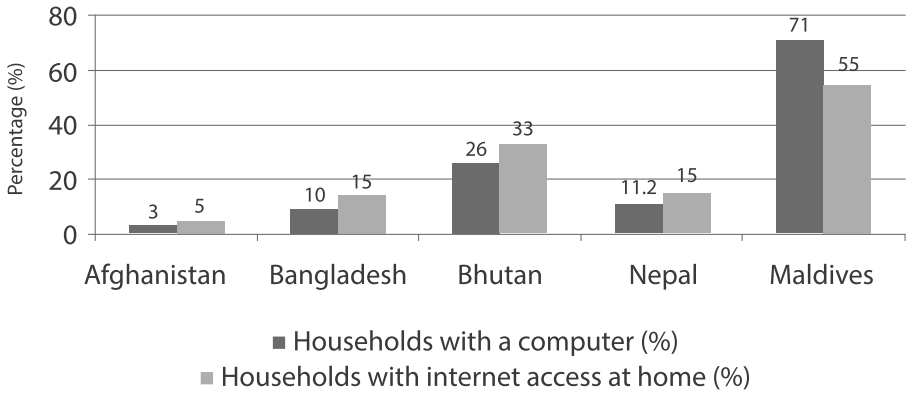
Finally, availability and affordability of internet-ready devices can play a significant role in increasing internet uptake in South Asian LDCs.

A gradual increase in mobile internet subscriptions reflects the increasing adoption of smartphones. In 2017, every second mobile phone was a smartphone in the Asia-Pacific region. By 2025, three fourths of all the mobile phones in the region will be smartphones (GSM Association (GSMA), 2018). Since it is not possible to obtain country-specific data, it is difficult to indicate figures for the South Asian EIF Countries.

Having affordable computers is essential for people and businesses to engage in more complex internet transactions, as well as for the overall organic growth of the digital economy and related services. While over 70 percent of the people in the Maldives have a computer at home—well above the world average of 46.6 percent—this is not the case in other South Asian EIF Countries. In Afghanistan, only 3 percent of households have a computer at home, and the figure barely reaches double-digits in Bangladesh and Nepal (Figure 9.8). Despite the limited availability of computers, consumers still prefer to make online transactions using a desktop or a laptop. For example, in Bangladesh, mobile and tablet transactions account for 26 percent of transactions and 3 percent of sales.[13]

Figure 9.8

Availability of internet and computers in South Asian EIF Country households, 2016



Source: ITU (2017a).

Ensuring greater access to more affordable devices can boost the digital economy, thereby creating new opportunities for digital trade (WTO, 2017). Lowering import tariffs on IT products, among other things, can help ensure the availability of affordable devices for consumers. The expansion of the World Trade Organization (WTO) Information Technology Agreement in 2015 to over 200 new high-tech products offers new opportunities for importers of IT goods. The Agreement covers 97 percent of world trade in IT products. However, the LDCs are yet to sign on to the Agreement to reap its full benefits. Afghanistan is the only LDC committed to joining the Information Technology Agreement of 1996 as part of its WTO accession commitments (OECD/WTO, 2017).

Digital competencies

Age, gender, education and socio-economic status influence people's ability to engage with digital technology. While it is a positive indication that 30 percent of 15–24-year-olds living in the LDCs are online, the challenge is to connect the remaining 70 percent of the population, including the elderly (ITU, 2017a). A growing

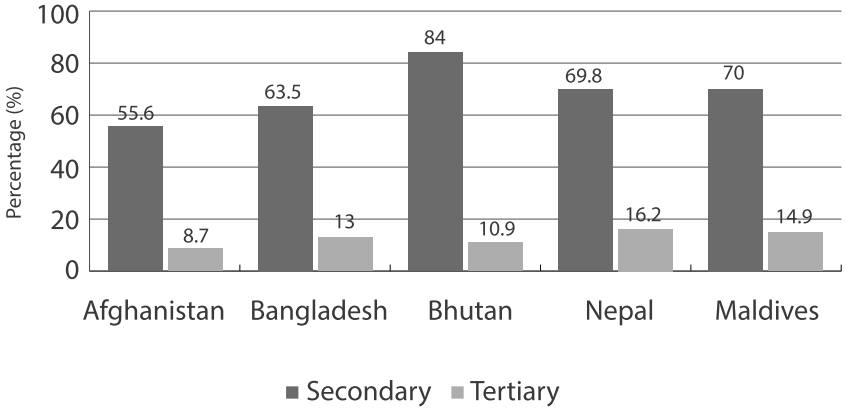
digital divide based on socio-economic status and gender is a cause for concern as much in the LDCs as elsewhere.

Education policies with digital dimensions can help bridge this gap in the LDCs, including providing incentives for the excluded groups to study Science, Technology, Engineering and Mathematics (STEM) disciplines and eventually pursue careers in the IT field. Providing digital literacy to the adult population, which has missed out on education opportunities, could also be helpful in expanding the pool of digitally competent individuals. Government efforts to boost the digital competencies of citizens, along with investments in strong institutions, can bolster innovation by blending traditional and innovative approaches.

The latest data show that, on average, every second student in the South Asian EIF Countries is enrolled in secondary-level education. In Bhutan, the secondary education rate is 84 percent, which is partly due to the country spending one quarter of its budget on education, resulting in 100 percent primary school enrolment (ITU, 2018). However, its tertiary enrolment rates are lower than those of other South Asian EIF Countries. The highest rates

Figure 9.9

Enrolment in schools in South Asian EIF Countries, 2016



Source: ITU (2017a).

of tertiary education enrolment are in Nepal (16 percent) and the Maldives (15 percent) (Figure 9.9).

School enrolment is only implicitly correlated with the uptake of the kind of skills needed to participate in the digital economy. Anticipating needs for new skills is becoming increasing important, as 35 percent of the skills demanded by the job market will change by 2020 (ITC, 2018). While emphasizing the increasing education-job mismatch where formal education does not provide the necessary skills and competencies, Jong-Wha (2018) stresses the importance of primary education, lifelong learning, and non-cognitive "soft" skills, including critical thinking, creativity, collaboration, and communication to be able to compete better in the age of automation and digitization.

Atchoarena et al. (2017), in a UNESCO report, also identified complementarity and interconnectedness of skills, knowledge, work habits and character as digital competencies, which can be split into three broad categories: (i) basic functional—access to digital technologies; (ii) generic—meaningful engagement with digital technologies; and (iii) high level—coding and programming.

Most South Asian LDCs have adopted specific education plans to increase the uptake of information and communication technology (ICT), focusing mostly on the first two categories. For example, Bhutan's Education ICT Master Plan (2014–2018) is based on three pillars: iAble, iBuild, and iConnect (Table 9.2).

Similarly, Nepal's ICT Education Master Plan (2013-2017) focuses on expanding equitable access to education, enhancing the quality of education, reducing the digital divide and improving the service delivery system in education (Government of Nepal, 2013).

The key digital strategy for Bangladesh—Digital Bangladesh 2021—also embodies ICT for education purposes. A special programme, "Access to Information", or "a2i", has enabled nearly 300,000 teachers to receive digital skills training through this first-ever in-country portal.[14]

Engaging different stakeholders, including non-governmental players, development partners and the private sector can help in-

crease the coverage of digital competencies. Bringing the domestic IT industry on board in order to improve employment opportunities for recently graduated programmers can help raise interest in high-level IT skills among young people.

For example, in Bhutan and Nepal, every year, 300 and 5,000 recent graduates, respectively, do not have employment opportunities in the national e-commerce industry due to skills mismatch. Therefore, it is important for the industry and academic institutions to work together in developing curricula based on the needs of the industry and provide internship opportunities for students, so that they can join the job market in their home countries after completing their studies.

Digital skills and internet access and use are essential elements for calculating the ICT Development Index (ITU, 2017a). In 2017, out of 176 countries, the Maldives was the top performer among South Asian EIF Countries, reaching the upper-middle

Table 9.2

Bhutan's key ICT priorities 2014–2018

iAble	iBuild	iConnect
• ICT capacity development for educators • ICT capacity development for students • ICT capacity development for learning support	• Promotion of educational interactive materials and software • Pervasive use of elearning in educational institutions	• Computerization programme • Expansion of management information systems, administration and communications systems • Establishment of distributed learning support infrastructure • Establishment of governance and programme management framework

Source: Bhutan Education ICT Master Plan 2014– 2018 (Government of Bhutan, 2014).

quartile, with a ranking of 85, followed by Bhutan and Nepal in the lower-middle quartile, with rankings of 121 and 140, respectively. Bangladesh and Afghanistan were among the 44 least connected countries, ranked 147 and 159, respectively.

Beyond ICT: logistics and payments

In addition to infrastructure, affordability and skills, swift logistics and electronic payments are two vital vessels for harnessing the potential of e-commerce.

The year 2017 marked a major milestone for streamlining customs procedures and cutting red tape with the entry into force of the WTO Trade Facilitation Agreement (TFA). Once fully implemented, this can cut trade costs by up to 14 percent worldwide (WTO, 2015). The TFA also opened new possibilities on how it will be put into practice. Now, it is possible for developing countries and the LDCs to request technical assistance to fully implement the Agreement.

In South Asia, so far, only two LDCs have made notifications in order to benefit from the targeted technical assistance (Table 9.3). While the implementation rate of TFA commitments in South Asian LDCs in general has been just over 20 percent, it is encouraging to see an over 50 percent implementation rate with capaci-

Table 9.3

TFA ratification in South Asian EIF Countries

WTO member[15]	Ratification	Notification
Afghanistan	Yes	Yes
Bangladesh	Yes	Yes
Nepal	Yes	No
Maldives	No	No

Source: WTO TFAF (2018).

ty-building support (WTO Trade Facilitation Agreement Facility (TFAF), 2018).

In a broader context of trade facilitation reforms, the investments of the EIF have enabled the Maldives to switch to modern customs clearance and full automation through the Automated System for Customs Data (ASYCUDA) World across all of its customs sites, resulting in a 50 percent reduction in customs clearance time.

In addition, the signing of the Memorandum of Understanding between the Post and Customs Offices of the Maldives on information sharing enabled the Post to inform the Customs on upcoming e-commerce consignments. For clearance purposes, the Customs is using the President's Decree on duty exemption for goods imported for personal use and by passengers (WCO, 2017).

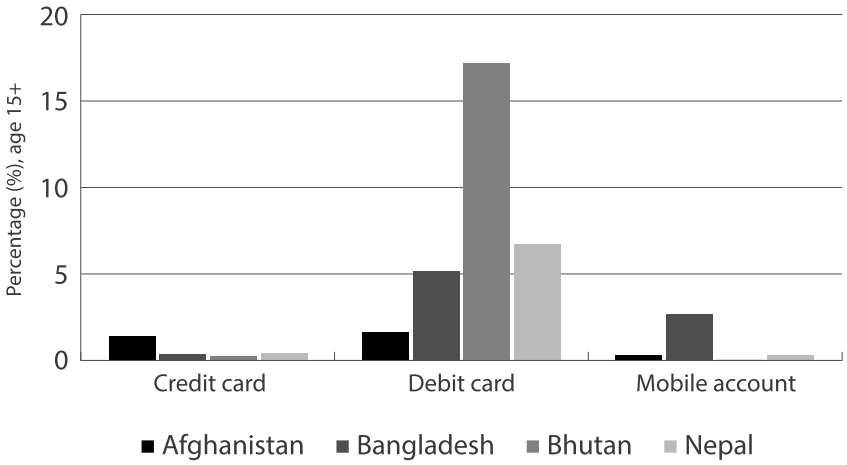
At the same time, the EIF is currently working closely with the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) to support a number of Asian LDCs—including a few from South Asia—to implement the UNESCAP-sponsored agreement on paperless trade.

The lack of availability of payment solutions is a major stumbling block for the South Asian LDCs. Data show that while debit card ownership is greater when compared to credit cards or mobile accounts, the percentage is still very low—17 percent in Bhutan and 7 percent in Nepal. In Bangladesh and Afghanistan, the percentage is below 5 percent (Figure 9.10). Usage rates are even lower, barely reaching 1 percent. One exception is Bhutan, where 10 percent of the population uses debit cards for payments.

Due to the absence of credible payment systems on which e-commerce consumers can rely, cash on delivery is the preferred mode of payment in many South Asian EIF Countries, including more than 85 percent of e-commerce users in Nepal (UNCTAD, 2017b) and 90 percent in Bangladesh.[16] Although this may have roots in the cultural settings of these countries, including a strong preference for cash payment, there are other factors that equally contribute to such a situation: fear of fraud, a lack of incentive for small and medium-sized enterprises to have themselves registered

Figure 9.10

Availability of payment solutions in South Asian LDCs, 2016



Source: World Bank, https://data.worldbank.org/indicator.
Note: Data for Maldives are not available.

with relevant authorities and a lack of facilitating regulatory environment (see, for example, UNCTAD, 2017b).

The e-trade readiness assessment of Bhutan identifies modest progress with the launch of the e-payment gateway by the Bank of Bhutan Limited, whereby an instantaneous connection is now available between users and their bank via website (UNCTAD, 2017a). Similarly, Bangladesh Bank enabled online transactions in 2009 followed by online purchase and sale of goods and services using international credit cards in 2013 (Choudhury, 2018).

However, the situation in Nepal highlights the urgency of payment-related reforms to boost e-commerce development. Kaymu estimates show that online credit card payments represent 2 percent of all transactions, while payment solutions such as eSewa and IMEpay are at 13 percent (UNCTAD, 2017b). Foreign currency controls and difficulties in opening dollar accounts hamper online sales and purchases in foreign currencies, thereby limiting online transactions to the domestic market (*ibid.*).

Digital opportunities for South Asian EIF Countries

The availability and the affordability of internet connection and internet-ready devices in South Asian EIF Countries offer great opportunities to businesses worldwide in view of these countries' geographical situation, market size and growing population. Some companies are already stepping in. For example, Alibaba's recent takeover of Daraz owned by Rocket Internet can have a major boost in promoting e-commerce in South Asia. In addition to its operations in Pakistan and Sri Lanka, the doors are now open for Alibaba in Bangladesh, Myanmar and Nepal.[17]

However, the overall e-commerce situation in South Asian EIF Countries remains challenging. According to the UNCTAD B2C E-commerce Index[18], the top performer among South Asian EIF Countries, Bhutan, scores only 100 out of 144 places, well below the 54th position of the overall Asian average. While Bangladesh and Nepal are only three and eight points away, Afghanistan stands at the 132nd position.[19]

Based on the evidence presented in the previous section of this chapter, it is clear that there are three crucial areas that require political will, coordination and commitment for the ICT sector in South Asian EIF Countries to expand: availability and affordability; digital competencies; and logistics and payments. We now highlight some quick wins in digital reforms.

Regulatory environment: moving towards fifth-generation regulations

There are currently five generations of ICT regulations, ranging from G1 (regulated public monopolies) to G5 (collaborative regulations), measured by the ITC Regulatory Tracker through four key components: regulatory authority, regulatory mandate, regulatory regime and competition framework.

Today, all South Asian EIF Countries have a dedicated telecom/ICT regulatory authority. However, Bangladesh is the only

South Asian LDC with an independent competition authority, which is crucial for promoting internet penetration. Although Nepal enacted its competition legislation way back in 2007, due to the absence of an independent competition authority, among other things, a competitive market environment does not exist in many sectors.

In terms of regulatory mandate, South Asian EIF Countries are well advanced in ensuring an independent authority for service quality monitoring to support consumers with access to information, licensing, pricing, frequency allocation and universal service.

Greater convergence among the authorities responsible for broadcasting internet would lead to higher efficiency, and this would enable countries to further enhance IT systems in line with international best practices, including establishing a regulatory authority. While almost all South Asian EIF Countries have set up a regulatory authority for broadcasting radio/TV, with the exception of Nepal, a regulatory authority for internet content exists in Afghanistan, Bangladesh and Nepal; for broadcasting content in Bangladesh and Nepal; and for IT in the Maldives (Table 9.4).

Table 9.4

State of play of the new regulatory mandate in South Asian EIF Countries

	Broadcasting radio/TV	Broadcasting content	Internet content	IT
Afghanistan	√		√	
Bangladesh	√	√	√	
Bhutan	√	√		
Maldives	√			√
Nepal			√	

Source: ITU (2017b).
Note: √ – Regulatory Authority, blank – Sector Ministry/Other Ministry/Government.

Most of the South Asian EIF Countries score very well in the ICT Regulatory Tracker on consumer relations, including for the availability of comparative tariff information and handling of consumer complaints. This reflects a commitment to greater transparency. However, this is not always the case for cross-border e-commerce transactions.

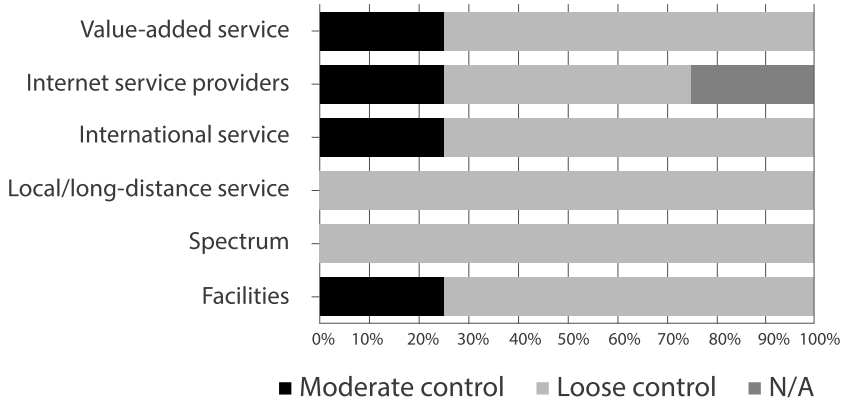
As for regulatory regimes, all South Asian EIF Countries have adopted national plans that include broadband internet, thereby reinforcing coordination between infrastructure deployment and related regulatory services. In the long run, this contributes to greater levels of internet penetration and competition.

Open and licence-free market entry is available only in Bangladesh and Afghanistan, with publicly available interconnection prices. Unified licensing requirements are available in Bhutan and the Maldives.

With respect to restrictions on foreign participation and ownership, all South Asian LDCs have opted for greater liberalization

Figure 9.11

Restrictions on foreign participation/ownership in South Asian EIF Countries, 2017



Source: ITU (2017b).
Note: Loose control: "no restriction" or "controlling interest"; moderate control: "50%" or "minority interest"; full control: "no foreign ownership allowed".

(Figure 9.11), thereby opening the doors for the expansion and development of the telecommunications sector and the transfer of technology and knowledge. In addition, welcoming the private e-commerce operators into the market can facilitate the expansion of e-commerce.

The overview of the competition framework in South Asian LDCs shows that while monopolies have been dismantled in many sectors, the transition to a fully competitive market is still in progress. Either state-owned or partially privatized main fixed-line operators exist in all the South Asian EIF Countries.

As a result, according to the ICT Regulatory Tracker, South Asian EIF Countries fall within the second and third generations of regulations (Table 9.5). This shows that, while there has been some progress, there are a number of areas where additional reforms can help.

In parallel with the development of the ICT regulations, several South Asian LDCs have already established legal and regulatory frameworks that could help boost e-commerce, including consumer protection, data protection, cybercrime prevention and electronic transactions. Bhutan is the only South Asian LDC that has established a legal framework for all four pillars. Bangladesh

Table 9.5

Generations of regulations in South Asian EIF Countries

G2	Opening markets. Partial liberalization and privatization	Bhutan, Nepal, Maldives
G3	Enabling investment, innovation and access. Stimulating competition in service and content delivery and consumer protection	Afghanistan, Bangladesh

Source: ITU (2017b).

and Nepal have established three of the pillars. However, data protection legislation in Bangladesh and consumer protection legislation when purchasing online in Nepal are yet to be enabled. In Afghanistan, only a draft legislation on electronic transactions is currently available.

Evidence-based analysis as a springboard for digital reforms

The increasing number of digital priority reforms in trade-related analytical work reflects the growing importance of digital connectivity. The diagnostic trade integration studies (DTISs)—major blueprints for reforms and trade-related interventions in the LDCs—follow this trend. The recent DTISs in South Asia, including those in Afghanistan (2012), Bangladesh (2016) and Bhutan (2012), incorporate ICT in dedicated chapters.[20] Nepal's DTIS (2016) covers digital connectivity in the context of information technology as one of several priority sectors with export potential.[21] The previous generation of DTISs, including one in the Maldives (2006), covers ICT as a cross-cutting issue.[22] The ICT-specific priorities of DTISs in South Asian LDCs are summarized in Annex A.

In order to provide more targeted and detailed digital analysis, UNCTAD, with the support of the EIF and others, has started publishing analytical studies in this area called Rapid E-Trade Readiness Assessments in the LDCs. These studies look at the challenges and opportunities that the LDCs are facing in reaching online global markets and provide recommendations in order to enable these countries to take advantage of e-commerce opportunities. Such assessments have been undertaken in two South Asian LDCs—Bhutan and Nepal—and a third one for Bangladesh is currently under way.

While it is still too early to make a full comparative analysis of e-trade readiness of all the LDCs in South Asia, there are several common recommendations that emerge from the assessments of Bhutan and Nepal:

- Ensuring internet connectivity in remote areas at affordable cost;
- Formulating forward-looking ICT legislation and ensuring legislative coherence;
- Developing an e-commerce strategy;
- Putting in place better policies and making investments in generating and utilizing IT skills;
- Speeding up the digitalization of customs procedures, including address localization;
- Setting up and upgrading e-payment gateways; and
- Supporting micro, small and medium-sized enterprises with access to finance through training, swifter registration and innovative products.

Annex B provides a comparative summary of the recommendations from the assessments of Bhutan and Nepal.

Role of Aid for Trade (AfT)

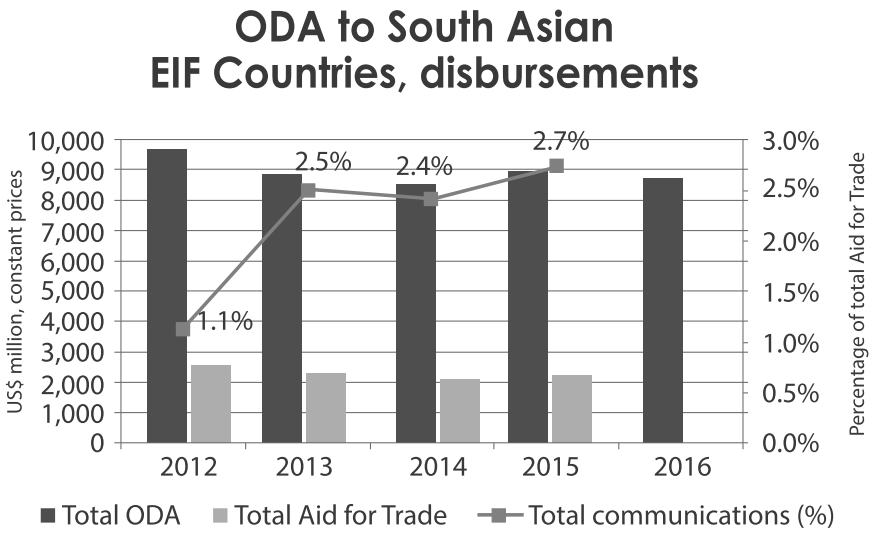
Governments of the LDCs together with the private sector are at the frontline of allocating significant resources for the development of telecommunications and the ICT sector in general and harnessing the potential of e-commerce in particular. However, there is a considerable role for international support, including through official development assistance (ODA) and AfT.

At present, there is a gap in commitment, such as the one made in Goal 8.A of the 2030 Agenda for Sustainable Development[23] and its actual implementation: even more so, this is visible in the ICT sector. Out of the US$342.3 billion disbursed as AfT between 2006 and 2016, only US$6.6 billion went to ICT connectivity, with one quarter going to the LDCs (Mbise et al., 2018).

In South Asian EIF countries the portion of AfT dedicated to ICT connectivity—which includes communications policy, telecommunications, technological research, and ICT—is just above 2 percent (Figure 9.12).

While South-South partners are becoming increasingly important players in development cooperation, they do not report to

Figure 9.12



Source: OECD (2018).

the OECD Creditor Reporting System (CRS) which makes it difficult to estimate the full extent of AfT. Similarly, most private sector support is not reported in the OECD CRS (Mbise et al., 2018).

Considering the importance of the ICT sector and the potential contribution it can make to help the LDCs achieve economic transformation, AfT development partners, including bilateral donors, may have to explore the possibility of prioritizing this sector in their AfT investment plans.

South Asian LDCs account for one fifth of all AfT disbursements going to the LDCs, mostly due to the amount dedicated to the top AfT recipients. For example, in the past five years, Bangladesh (33 percent) and Afghanistan (52 percent) on average accounted for 85 percent of the total AfT to South Asian EIF Countries.

As the only AfT partnership exclusively designed to support the integration of the world's poorest countries into the multilateral trading system, the EIF serves as a catalyst for trade development in the LDCs. The EIF partnership helps the LDCs identify key priority reform agendas; build strong institutional coordina-

tion; and make seed investments, catalyzing development funding to address the countries' most pressing priorities in relation to trade development.

On a global scale, the EIF has invested over US$220 million in the world's 51 poorest countries across Africa, the Americas, the Pacific and Asia, with over US$17 million going to South Asian EIF Countries. The demand-driven nature of EIF investments reflects the differences in the country-specific investment portfolios.

For example, Bhutan, an LDC on the verge of graduating from the LDC category, has made a tremendous progress in the domain of ICT development through the formulation of appropriate policies and strategies through EIF support. Further, cognizant of the potential of ICT for trade development, the Royal Government of Bhutan has identified digital connectivity as a key priority in the DTIS carried out with support from the EIF. Bhutan is a clear example of how pivotal government support is for the development of a buoyant ICT sector, although support from international organizations can be instrumental.

Bhutan is currently focused on ensuring that a reliable ICT system—including both hardware and software—supports the country's integration into the global economy. With the support of the EIF and through its e-Infrastructure for Trade and Services Development Project, Bhutan has already launched an online commodity exchange system and piloted the auctioning of potatoes, one of the top ten Bhutanese exports, and is currently planning to scale this up.

Now, Bhutanese farmers are selling their products faster and more efficiently. Online auctions with new grading machines have helped cut processing and payment time to one day and ensured a better price in comparison to conventional auctions. Focusing on improving efficiency in upstream components of the process has brought greater returns to farmers—an extra 3 Ngultrum for each kilogram, or US$330 per truck load. The Government of Bhutan now intends to scale up this initiative with additional government funding, thereby enabling more farmers to participate and by including new commodities, such as cardamom, in the online exchange system.

The case story of Bhutan, with strong country ownership across the government and its commitment to provide national resources, shows that leadership for change should come from the country itself. If this process is championed by a government agency, chances of success are even higher.

Conclusion

South Asian EIF Countries are yet to realize their full potential in accessing global markets through e-commerce. The challenges are many. They range from ensuring internet infrastructure and affordable devices, to adopting digital policies and regulations, to overall digital awareness and skills.

Based on the evidence presented in this chapter, four key priority actions can bolster the integration of South Asian EIF Countries into the global e-commerce space.

First, strong national ownership is a key to undertaking necessary reforms and making investments in e-commerce development. Reforms may range from liberalizing the telecommunications services sector, to putting in place a robust competition policy, to reducing tariffs on the import of ICT products, such as computers, tablets and smartphones. Examples from countries such as Bhutan and the Maldives provide evidence of how strong national ownership and political will can contribute to enhancing national e-commerce capabilities.

Second, a coordinated response across different government agencies working hand in hand with the private sector and consumer groups is vital for ensuring the organic transformation to a truly digital economy. The experiences of adopting e-payment solutions and undertaking trade facilitation reforms for easing e-commerce transactions are two clear examples.

Third, digital skills are at the heart of digital integration. Since most of the countries studied have limited human capital endowed with digital skills, it is important to create incentives for more students, particularly girls, to join the STEM streams. It is equally important to foster greater collaboration between the ICT indus-

try on the one hand and universities and institutes on the other to enhance employability of graduates in the STEM disciplines in general and the ICT discipline in particular.

Finally, development partners can help provide the first ICT infrastructure investment seeds, which can take root and grow, supported by private investment. While official development assistance to the South Asian EIF Countries for the development of the ICT sector has been extremely limited, coordinating development assistance across different sectors beyond ICT, diversifying the development finance basket and bringing economic infrastructure into the mix will create new synergies between small-scale targeted evidence-based development interventions, thereby helping to achieve the broader objective of developing e-commerce with a view to achieving economic transformation.

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Notes

1 https://www.business.com/articles/10-of-the-largest-ecommerce-markets-in-the-world-b/ (accessed 4 September 2018).

2 SDG 9.C: "Significantly increase access to information and communications technology and strive to provide universal and affordable access to the internet in least developed countries by 2020".

3 "Significantly increase access to telecommunication services and strive to provide 100% access to the internet by 2020."

4 In order to facilitate valid comparison between countries, country-specific data is presented based on the datasets available from different international organizations. Although international data are based on the data collected from national sources, they might differ due to timing and sources of national reporting.

5 For instance, it has recently expanded services to Villingili, one of the inhabited islands of Gaafu Alif Atoll. "Ooredoo expands FTTH network to Villingili," *TeleGeography*, https://www.telegeography.com/products/commsupdate/lists/country/maldives/, accessed 16 May 2018.

6 "Ooredoo completes 4G network expansion to the entire Maldives," *vnews*, http://vnews.mv/76797, accessed 3 May 2018.

[7] The download speed for 1 Gbps with a 4G signal is 12 times faster than with 3G (ITU, 2018).

[8] "AWCC rolls out LTE to Herat and Baghlan," *TeleGeography*, https://www.telegeography.com/products/commsupdate/articles/2017/12/06/awcc-rolls-out-lte-to-herat-and-baghlan/, accessed 16 May 2018.

[9] For the deployment of the 4G network, Bhutan is the only LDC in South Asia that has allocated a 700/800 MHz-band spectrum, thereby moving from analogue to digital broadcasting (ITU, 2018).

[10] "Ncell extends LTE network to reach 21 cities," *TeleGeography*, https://www.telegeography.com/products/commsupdate/articles/2018/01/09/ncell-extends-lte-network-to-reach-21-cities/ , accessed 16 May 2018.

[11] Regional: South Asia Subregional Economic Cooperation (SASEC) Information Highway Project (Bangladesh, Bhutan, India, Nepal), https://www.adb.org/projects/40054-013/main#project-overview, accessed 3 May 2018.

[12] Bangladesh–SeaMeWe-5, Maldives–WARF Submarine Cable and Nationwide Submarine Cable Ooredoo.

[13] "An overview of BD e-commerce," Fakhruddin Mehedi, *The Asian Age*, 15 July 2017, https://dailyasianage.com/news/73661/an-overview-of-bd-e-commerce, accessed 23 May 2018.

[14] http://a2i.pmo.gov.bd/about/.

[15] Bhutan is not a WTO member.

[16] "Bangladesh—e-commerce," www.export.gov/apex/article2?id=Bangladesh-ECommerce, accessed 22 May 2018.

[17] "Alibaba buys Rocket Internet's Pakistan ecommerce platform Daraz," *Reuters*, www.reuters.com/article/us-rocket-internet-divestiture-alibaba/alibaba-buys-rocket-internets-pakistan-ecommerce-platform-daraz-idUSKBN1I90N0, accessed 31 May 2018.

[18] UNCTAD's B2C E-commerce Index sheds light on the overall e-commerce situation worldwide, thereby reflecting the processes involved in an online shopping B2C transaction (UNCTAD, 2017c).

[19] No data available for the Maldives.

[20] See World Bank (2012), Kathuria and Malouche (2016), and Government of Bhutan (2012).

[21] See Government of Nepal (2016).

[22] See Maldives (2016).

[23] SDG 8.a commits to increase AfT support for developing countries, particularly the LDCs, including through the EIF.

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Annexes

Annex A
ICT priorities of the DTIS/DTIS updates in South Asia

Afghanistan, 2012	Reform licensing to enable greater competition. The Afghan Telecom Regulatory Agency (ATRA) should focus on implementing the Ministry's open access policy. ATRA regulations will implement the policy and ensure that access to the internet backbone remains non-discriminatory, transparent and cost-based.
Bangladesh, 2016	Install two additional international submarine cables to ensure minimal redundancy in case of failure of one of the three existing cables.
Bhutan, 2012	Continue to develop a state-of-the-art broadband infrastructure (fibre optic and others): - To complete the fibre optic network in Bhutan and connect the network to all communities and their community centres. - To continue to secure several redundant fibre optic connections to the main internet backbone with Indian telecommunications service providers. - To continue to seek Quality of Service (QoS) guarantees for backbone data services from Bhutan as well as from Indian service providers. - To continue to track market developments in ICT infrastructure and related innovations. - Immediate priority: to ensure connectivity and QoS, essential for IT-enabled Services operations that require real-time Voice-over-Internet-Protocol connections. Connect all communities to the internet to promote greater community participation and to enhance the capacity of all communities to become self-sufficient: - Complete building and connecting of community centres in each group of villages (called Gewogs). - Focus specifically on the 45 Gewogs for which funding is not available. Undertake a study of the demand for telecommunications services (or use results of universal access market studies if available). Develop a community access business plan based on a demand study and resulting marketing plan. Seek to integrate this with activities that promote using the internet for marketing local skills and resources, especially for local businesses, such as crafts and community-based tourism. Create a legal and policy environment that enables e-commerce and ICT-enabled business: - Modernize and strengthen the ICT and media law and regulatory framework by redrafting the Media Act of 2006. Nurture Bhutanese entrepreneurs in the ICT sector: - Develop the Bhutan Innovation and Technology Centre and the Thimphu TechPark Private Limited. - Establish collaboration linkages with the Education City.
Nepal, 2016	Lower the cost of bandwidth. Provide incentives to attract investment in the IT sector. Improve the labour market for the IT sector and increase the supply of trained staff.
Maldives, 2006	Increase the use of ICT systems to support ongoing business development activities.

Annex B
Comparative summary of recommendations from the e-trade readiness assessments of Bhutan and Nepal

	Bhutan	Nepal
e-Commerce strategy	Develop a national e-commerce strategy	Develop a national e-commerce strategy
ICT infrastructure and services	Conduct a data centre investment attractiveness assessment	Invest in fibre optic backbone networks in the more remote areas, while keeping charges for use at bay
Trade logistics and trade facilitation	Support the Bhutan Post in addressing localization projects outside of Thimphu	– Ensure increased digitalization of customs procedures – Improve the address system
Payment solutions	Implement an e-payment gateway	– Upgrade the financial system to ensure access to cashless payments for international e-commerce – Priorities: mobile banking, internet banking and credit and debit cards
Legal and regulatory framework	Review ICT-related regulations in different sectors	Formulate forward-looking laws to improve users' confidence in online transactions and to update existing ICT-related laws
Skills	Set up an ICT academy	Increase employment opportunities for ICT graduates through greater cooperation between tertiary education institutions and the ICT industry
Access to financing	Develop a training programme on preparing business plans and accounting books to gain access to finance	Facilitate the registration of micro-, small- and medium-sized enterprises and develop innovative products