# Bhutan
# Rapid eTrade Readiness Assessment

UNITED NATIONS

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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 communication technologies (ICTs) and e-commerce. It is responsible for the preparation of the *Information Economy Report* (IER) as well as thematic studies on ICT for Development. 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. It also monitors the global state of e-commerce legislation (unctad.org/cyberlawtracker). Since 2016, the ICT Analysis Section coordinates a new multistakeholders' initiative entitled *eTrade For All* which aims to improve the ability of developing countries, and particularly Least developed countries, to use and benefit from e-commerce.

This document has been edited externally.

The following symbols have been used in the tables:

**Two dots (..)** indicate that data are not available or are not separately reported. Rows in tables have been omitted in those cases where no data are available for any of the elements in the row;

**A dash (-)** indicates that the item is equal to zero or its value is negligible;

**Reference to "dollars" (USD)** means United States of America dollars, unless otherwise indicated;

**Details and percentages** in tables do not necessarily add up to the totals because of rounding.

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# PREFACE

The eTrade for All initiative, launched at the fourteen Ministerial Conference of UNCTAD in July 2016, is a practical example of how to harness the digital economy in support of the 2030 Agenda for Sustainable Development, notably the Sustainable Development Goals (SDGs) 5, 8, 9 and 17. The initiative seeks to raise awareness, enhance synergies and increase the scale of existing and new efforts by the development community to strengthen the ability of developing countries to engage in and benefit from e-commerce by addressing seven relevant policy areas:

- E-commerce readiness assessment and strategy formulation

- ICT infrastructure and services

- Trade logistics and trade facilitation

- Payment solutions

- Legal and regulatory frameworks

- E-commerce skills development

- Access to financing

As part of the initiative, demand-driven assessments are envisaged to provide a basic analysis of the current e-commerce situation in the countries concerned, and to identify opportunities and barriers. The resulting reports will serve as a valuable input to these countries involvement in various discussions related to e-commerce and digital trade, such as in the WTO Work Programme on E-Commerce and the new UNCTAD Intergovernmental Expert Group on E-Commerce and the Digital Economy. It may furthermore help LDCs to identify areas in which they could benefit from assistance by partners of eTrade for All.

The Bhutan Rapid e-Trade Readiness Assessment is the second one conducted by UNCTAD in an LDC following the launch of the eTrade for All initiative. The Royal Government of Bhutan was instrumental in shaping the eTrade for All initiative, notably through being the voice of LDCs in the initial consultation UNCTAD carried out jointly with the Friedrich Ebert Stiftung (FES) in February 2016 and the public consultation on eTrade for All during the 2016 E-Commerce Week. The rapid eTrade readiness for Bhutan complemented the Royal Government of Bhutan's own efforts to accelerate the implementation of their national ICT and eGovernment master plans. Let me assure of UNCTAD's commitment to continue to support Bhutan in its firm resolve to harness the potential of e-commerce for its development.

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# ACKNOWLEDGEMENTS

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# ABBREVIATIONS

| | |
|---|---|
| **3G** | 3rd Generation of wireless mobile telecommunications technology |
| **ADB** | Asian Development Bank |
| **API** | Application Programme Interface |
| **ATM** | Automatic Teller Machine |
| **B4ETD** | Business for eTrade Development |
| **BCCI** | Bhutanese Chamber of Commerce of Industry |
| **BDBL** | Bhutan Development Bank Limited |
| **BICMA** | Bhutan Infocomm and Media Authority |
| **BICTTA** | Bhutan ICT and Training Association |
| **BIPS** | Bhutan Information and Communication Technologies Policy Strategies |
| **BNB** | Bhutan National Bank |
| **BoB** | Bank of Bhutan |
| **BPCL** | Bhutan Postal Corporation Ltd. |
| **BPO** | Business Processing Outsourcing |
| **CSI** | Cottage and Small Industries |
| **DoT** | Department of Trade |
| **DP** | Development Partner |
| **e-GIF** | eGovernment Interoperability Framework |
| **eGov** | eGovernment |
| **EIF** | Enhanced Integrated Framework |
| **FYP** | Five-Year Plan |
| **G2C** | Government to Citizens initiative |
| **GNHC** | Gross National Happiness Commission |
| **ICT** | Information and Communication Technology |
| **IT** | Information Technology |
| **ITU** | International Telecommunications Union |
| **JICA** | Japanese International Cooperation Agency |
| **MoEA** | Ministry of Economic Affairs |
| **MoF** | Ministry of Finance |
| **MoIC** | Ministry of Information and Communication |
| **MSMEs** | Micro, Small and Medium Enterprises |
| **NIU** | National Implementation Unit |
| **NSC** | National Steering Committee |
| **POS** | Point of Sales |
| **RBI** | Reserve Bank of India |
| **RGoB** | Royal Government of Bhutan |
| **RMA** | Royal Monetary Authority |
| **RSEB** | Royal Stock Exchange of Bhutan |
| **SAARC** | South Asian Association for Regional Cooperation |
| **TCB** | Tourism Council of Bhutan |
| **TIP** | Trade Information Portal |
| **TPP** | Third Party Processor |
| **UNCTAD** | United Nations Conference on Trade and Development |
| **WEF** | World Economic Forum |

# EXECUTIVE SUMMARY

Bhutan is a latecomer to the ICT space, with the earliest efforts at introducing TV or other forms of information and communications technologies (ICTs) dating back to 1999. The country is therefore well positioned to reap the advantages of a late starter in the technology space by not having any legacy systems, but having reliable access to electricity, access to relatively more cost effective technologies and opportunities for adoption of new (and open) standards. In addition, Bhutan is characterized by a unique environment for development of an ICT-based society by way of a stable and vibrant government, a small population, widespread knowledge of English, good telecommunications network in many of the urban areas and the Government's commitment to adopting ICT as a development tool.

In the past decade, the ICT sector in Bhutan has experience rapid development. The international Internet bandwidth has increased from 10 Mbps in 2005 to 5 Gbps in 2015, with a total of over 300,000 Internet users (MoIC Annual Report, 2014). Also, various media are used to access the Internet with rapid adoption of mobile phones, in cities as well as remote districts. With its dispersed population scattered in a country marked by geographic challenges, ICT is seen as a powerful tool in assisting the already existing mechanisms to disseminate information and bring about efficiency, transparency and accountability in delivering services.

The revolution in ICTs has profound implications for economic and social development. It has pervaded every aspect of life and the dissemination, propagation and accessibility of these technologies are integral to a country's development strategy. The country's leaders are keeping a careful eye on the outside world as Bhutan opens up, to avoid the potential unwanted effects of technology on society and the country's unique gross national happiness concept.

With this background, it can be reasonably said that Bhutan has been particularly adept at balancing tradition and technology so far. Although Bhutan is a very traditional society in many ways, its people are open-minded towards technological innovations and can foresee the possibilities that it entails in terms of quality of life improvement and increased employment.

Bhutan was home to about 757,000 people in 2015, dispersed over some 38,000 square kilometers. Because of the country's location, arrangements with India are critical: India is the source of 84% of Bhutan's imports and the destination of 89% of its exports. To tap into other markets, e-commerce represents a solution to overcome logistical and geographical barriers. Since the technology itself is new to the country, the Government can intervene and catalyze the development of an e-commerce platform to promote the technology and encourage adoption by businesses.

Regarding the seven key policy areas of the eTrade for All initiative, Bhutan appears to have a robust set of laws and regulations providing a sound basis for e-commerce to grow, although a comprehensive, up-to-date and business-friendly e-commerce strategy and an e-commerce law are still missing. The infrastructure is in place, despite still moderately high costs and low reliability of access to the Internet. G2B and G2C platforms have created the necessary momentum for ICT business to start developing locally. The introduction of an e-payment gateway triggered the development of several online portals, with a new trend appearing lately to use the portals to promote "Made in Bhutan products".

The development and growth of e-commerce and e-services are generally seen to go hand in hand with the development and improvement of ICT facilities and technology. However, for the adoption of e-services and other technological innovations, the citizens should be educated and technologically savvy. Businesses need to be able to recruit talented and trained graduates as well as obtain easy access to finances, two dimensions still in need of further development in Bhutan. Several other factors complicate e-commerce development in Bhutan: few Bhutanese have had the experience of purchasing products online, acquiring a debit/credit card that works online, finding a bank that allows web transactions, and being able to pinpoint an exact physical address for product delivery. But barriers to entry also mean opportunities for first-movers.

**Figure 1. Main bottlenecks for the effective use of e-commerce in Bhutan (number of responses)**



*Source: UNCTAD*

The analysis of the current ICT capabilities landscape in Bhutan, coupled with feedback from industry and government institutions have shown that key e-commerce barriers could be broken down in four different areas:

1. **Weak domestic demand for ICT services**, and a high reliance on public sector ICT projects. Although internationalization and export of ICT products and services represent an important pillar to create a vibrant ICT industry, they cannot fully supplant domestic demand, especially with Bhutan's underdeveloped ICT industry.

2. **Lack of clarity and complementarity among the numerous government-led initiatives**, especially in the absence of a proper e-commerce strategy and e-commerce law. Master plans, road maps and programmes seem to co-exist with insufficient coherence or complementarity. Several initiatives by individual ministries cannot bear fruit as they become rapidly limited by absence of payment facilities.

3. **Lack of innovation and related financing solutions**. There is a lack of ICT innovation taking place in both the public and private sectors, as well as in academic institutions. If Bhutan hopes to develop more high-value ICT products and services, a greater effort is required in reviewing the existing infrastructure, policies and ensuring that conducive environment is put in place to foster innovation and entrepreneurship.

4. **Skills gap and mismatch in the ICT talent pool**. Although Bhutan has an established ICT education system, misalignment in ICT skills and lack of industry-relevant competencies are prevalent, resulting in excessive foreign outsourcing and the absence of opportunities for the roughly 300 new ICT graduates added to the market every year.

# SUMMARY STATISTICS

**Bhutan** ▼

Share:   f   🐦   in        Print: 🖨   Save: 💾

Population: **776,461**
Population density: **20.33**
GNI per capita: **2,370**
Region: **Asia & Pacific, Developing, LDC**

**IDI 2016 Rank**
**117**

**IDI 2015 Rank**
**122**

**IDI 2016 Value**
**3.74**

**IDI 2015 Value**
**3.12**

**Regional IDI 2015 Rank**    **21**



Bhutan
● 2015
● 2016

## IDI ACCESS SUB-INDEX
### 4.02

**Fixed-telephone subscriptions per 100 inhabitants**
2.81

**Mobile-cellular telephone subscriptions per 100 inhabitants**
87.12

**International internet bandwidth per Internet user (Bit/s)**
11,219.57

**Percentage of households with computer**
24.63

**Percentage of households with internet access**
31.70

## IDI USE SUB-INDEX
### 3.40

**Percentage of individuals using the internet**
39.80

**Fixed (wired)-broadband subscriptions per 100 inhabitants**
3.56

**Active mobile-broadband subscriptions per 100 inhabitants**
56.41

## IDI SKILLS SUB-INDEX
### 3.84

**Mean years of schooling**
3.01

**Secondary gross enrolment ratio**
84.20

**Tertiary gross enrolment ratio**
10.93

*Source: ITU ICT Development Index (IDI),  Report 2016*

# METHODOLOGY

✓ Phase 1 took place from 15 October 2015 to 8 November 2016. It included official communication between UNCTAD and DoT, MoEA in Thimphu as well as a meeting between the consultant and the NIU, DoT, MoEA on the side of the Regional EIF meeting in Bangkok, Thailand. A literature review included access to up-to-date statistics provided by ITU, UPU and the EIF programme.

✓ Phase 2 was carried out on 8-19 November 2016. The customized questionnaire was sent to a total of 25 partners selected in partnership with DoT, MoEA, officials.

✓ Phase 3 took place during the consultant's mission to Thimphu, 20-26 November 2016. A total of

✓ 16 interviews were organized during this period. The consultant was invited to present early findings of the assessment on 24 November 2016 at the occasion of the quarterly meeting of the EIF National Steering Committee, chaired by the Honorable Secretary, MoEA.

✓ Phase 4 took place on 1-30 December 2016.

The information provided in this report is therefore based on data collected from 21 respondents to a questionnaire, 16 of which were complemented by face-to-face interviews on 20-25 November 2016 in Thimphu, Bhutan. The study benefited from primary data collected using responses to questionnaires and secondary data provided by GNHC, MoEA, MoIC, RMA, UNCTAD, the World Bank and ADB.

# SUMMARY OF FINDINGS AND RECOMMENDATIONS

**Table I. Summary of findings and recommendations**

| MAIN FINDINGS | MAIN RECOMMENDATIONS |
|---|---|
| **e-Commerce Readiness Assessment and Strategies Formulation** | |
| Nascent e-commerce ecosystem fueled by private initiatives and strong ICT policies, hampered by the lack of a dedicated e-commerce strategy. | Development of a national e-commerce strategy, aligned with ICT Road map, BICMA Act and contributing to revised EDP and 6th FYP. |
| **ICT Infrastructure and Services** | |
| Despite an adverse geographic landscape, 95 per cent of the population has access to electricity and the Internet, although fixed/broadband Internet is both costly and unreliable. | Carry out a data centre investment attractiveness assessment. |
| **Trade Logistics and Trade Facilitation** | |
| The challenging transport scene combined with a small population makes logistics uncompetitive, prompting the deployment of innovative solutions by local entrepreneurs. | Support Bhutan Post "last mile" address localization projects outside Thimphu. |
| **Payment Solutions** | |
| Financial inclusion is a key Government priority and has enabled the development of mobile payment solutions and an e-payment gateway (planned for 2017). | Implement national e-payment gateway and support roll-out with merchants. |
| **Legal and Regulatory Framework** | |
| The absence of a robust enabling environment has allowed an embryo of private initiatives. The financial/payment regulations are in place to allow for mobile payment solutions. | Review compatibility of ICT-related regulations in different sectors to ensure they are in-line with expected outputs of ICT master plan and other ICT development strategies. |
| **e-Commerce Skills Development** | |
| Universities progressively inserted ICT-related topics in curriculum, and the Bhutan TechPark provides a useful platform for more skills and knowledge into start-ups, yet clearly insufficient regarding needs and potential. | Set up an ICT Academy – Industry Council. |
| **Access to Financing** | |
| Finance remains a key constraint to private investment and MSME growth in Bhutan. There is no special facility to provide much-needed finance to fuel e-commerce sector growth. | Develop training programme for BICTTA members on preparing business plans and accounting books to gain access to finance. |

*Source: UNCTAD*

# FINDINGS UNDER THE SEVEN eTRADE FOR ALL POLICY AREAS

## 1. E-COMMERCE READINESS ASSESSMENTS AND STRATEGY FORMULATION

The potential of ICTs and, subsequently, e-commerce for land-locked Bhutan has been well captured in several key national policy documents produced over the past 10 years. Yet, despite this and the recognition of the role ICT for economic development and integration, no e-commerce readiness assessment had so far been conducted. At the time of the production of this report, the MoEA indicated that assistance from UNCTAD had been sought for the development of an e-commerce strategy, prior to the launch of the eTrade for All initiative.

**The Economic Development Policy (EDP) 2010** has identified ICT as the key catalyst that Bhutan

**National ICT Vision:**

An ICT- Enabled, Knowledge Society as a Foundation for Gross National Happiness

**Desired outcomes and goals:**

ICT for Good Governance;

ICT for a Shared National Consciousness; and

ICT as a Key Enabler for Sustainable Economic Development

can harness for the socio-economic development of the nation. The EDP 2010 outlines strategies to mainstream ICT into development and economic growth, and to drive the usage of ICT across the different

### Table II. ICT Road Map Strategy of the Royal Government of Bhutan

| S/N | Strategies | ICT for Good Governance | | | | ICT for a National Shared Consciousness | | | | | ICT as a Key Enabler for Sustainable Economic Development | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Transparency and Accountability | Effectiveness and Efficiency | Citizen and Business Centric | Citizen Participation and Engagement | ICT Lifestyle | Equal and Ease of Access to Information | Learning and Responsible Society | Preserving, Evolving and Promoting Culture | Environmental Consciousness | Ubiquitous, Affordable and Reliable ICT Infrastructure | Investment Friendly Environment | Vibrant and Sustainable ICT Industry | Business Leveraging ICT for Competitiveness and Innovation |
| 1 | Enhance ICT Leadership | ✓ | ✓ | | | | | | | ✓ | | | | |
| 2 | Promote ICT Adoption in Private Sector | | | | | | | | | | | ✓ | ✓ | ✓ |
| 3 | Develop ICT Industry | | | | | | | | | | | ✓ | ✓ | |
| 4 | Bridge Digital Divide and Develop Human Capacity | | | | | | ✓ | ✓ | | | | | | |
| 5 | Develop National Infrastructure and Services | | | ✓ | | | | | | | ✓ | | | |
| 6 | Enhance ICT Security | | ✓ | | | ✓ | | | | | | | | ✓ |
| 7 | Develop ICT Legislation, Policy and Standards | ✓ | | | | | | | | | ✓ | ✓ | | |
| 8 | Promote ICT Awareness and Adoption | | | ✓ | ✓ | ✓ | | | | | | | | |
| 9 | Enhance Service Access Channels | | | | | ✓ | | | | | ✓ | ✓ | | |
| 10 | Deliver G2C and G2B e-Services | ✓ | ✓ | ✓ | | | | | ✓ | | ✓ | | | ✓ |
| 11 | Deliver G2E and G2G Shared Systems | ✓ | ✓ | | | | | | | | ✓ | ✓ | | |
| 12 | Implement Whole-of-Government Shared Infrastructure | | ✓ | | | | | | | | | ✓ | | |
| 13 | Develop Key Agency Backend System | | ✓ | | | | | | ✓ | | | | | |
| 14 | Enhance ICT Governance | ✓ | ✓ | ✓ | ✓ | | | | | | | | | |
| 15 | Build Capacity in Government | | ✓ | | | | | | | | | | | |

*Source: RGoB ICT Road Map- Strategy (2011, revised 2015)*

sectors of the country. Similarly, the Royal Government of Bhutan (RGoB) has acknowledged the importance of ICT to drive social and economic development.

Accordingly, the aim of the RGoB in the **11th Five-Year Plan (FYP)** is to mainstream ICT in its economic development process through implementing various strategies, initiatives and projects on ICT. It is felt that while ICT can bring significant benefits to society, there is a need to develop the ICT industry to be able to provide the required support and contribute in fulfilling the aims of the country including but not limited to employment generation.
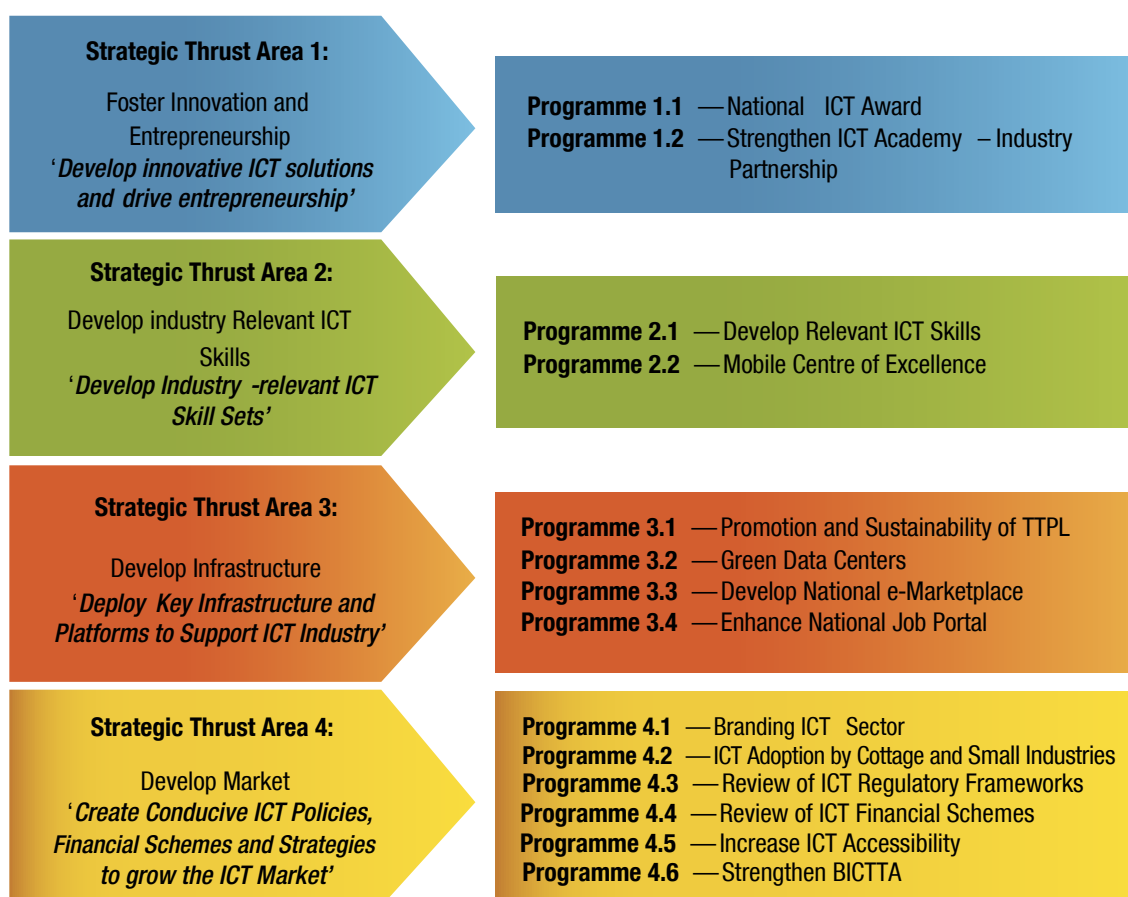
RGoB developed the **Bhutan ICT Roadmap** in October 2011, recognizing the value that ICT can bring to social and economic development guided by the values of Gross National Happiness. The Roadmap was further revised in 2015. Under the strategy, the RGoB proposed the following vision, outcomes and goals.

Following the adoption of the 2011 ICT Master Plan, several sector-specific ICT strategies were produced by relevant government entities (government, education tourism and health). The various ICT Masterplans provide the foundation for developing a national level ICT Masterplan to be formulated. The National ICT Masterplan will encapsulate the various sectors' ICT aspiration to form an overarching, strategic ICT plan. The National ICT Masterplan will define the national direction in terms of ICT vision and goals. Aligning with the timeline of the next FYP, the development of an ICT Roadmap should thereby transition into the development of a National ICT Masterplan by the middle of 2018.

In that context, the RGoB developed the first ICT Industry Development Plan (2016-2020) or "iDzodrak". This was the first attempt in Bhutan to develop plans proposing strategies needed to grow the ICT industry. It is a living plan with specific programmes and projects recommended for implementation in the short and long terms. The "iDzodrak" proposes several quick-win programmes to ensure adoption of e-commerce in Bhutan, but falls short of proposing an e-commerce strategy.



**Figure 3. iDzodrak Programmes and Projects**

**Strategic Thrust Area 1:**
Foster Innovation and Entrepreneurship
'*Develop innovative ICT solutions and drive entrepreneurship*'

**Programme 1.1** — National ICT Award
**Programme 1.2** — Strengthen ICT Academy – Industry Partnership

**Strategic Thrust Area 2:**
Develop industry Relevant ICT Skills
'*Develop Industry -relevant ICT Skill Sets*'

**Programme 2.1** — Develop Relevant ICT Skills
**Programme 2.2** — Mobile Centre of Excellence

**Strategic Thrust Area 3:**
Develop Infrastructure
'*Deploy Key Infrastructure and Platforms to Support ICT Industry*'

**Programme 3.1** — Promotion and Sustainability of TTPL
**Programme 3.2** — Green Data Centers
**Programme 3.3** — Develop National e-Marketplace
**Programme 3.4** — Enhance National Job Portal

**Strategic Thrust Area 4:**
Develop Market
'*Create Conducive ICT Policies, Financial Schemes and Strategies to grow the ICT Market*'

**Programme 4.1** — Branding ICT Sector
**Programme 4.2** — ICT Adoption by Cottage and Small Industries
**Programme 4.3** — Review of ICT Regulatory Frameworks
**Programme 4.4** — Review of ICT Financial Schemes
**Programme 4.5** — Increase ICT Accessibility
**Programme 4.6** — Strengthen BICTTA

The different attempts at promoting ICT did succeed in putting ICT development and adoption as a key catalyst for national development and for new sources of growth, for a country highly dependent on hydropower exports. Yet, the role of ICT as a catalyst for trade development is not well captured. The RGoB has made tremendous efforts at promoting a vision, a framework and to upgrade its own administrative process in order to harness ICT. It is expected that ICT as a trade, and foreign trade enabler, could be reflected better in future strategies. The action matrix of the Enhanced Integrated Framework (EIF)-led DTIS produced in 2012 reinforced pre-existing recommendations but did not go beyond proposing timid initiatives:

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### Box 1. DTIS 2012 Action Matrix – ICT as a development enabler

1. Document and raise awareness of Bhutan as an FDI destination for ICT.

2. Enhance the attractiveness of Bhutan as an FDI destination for ITeS providers and Investors.

3. Develop the national fiber optic network backbone.

4. Continue to develop state of the art broadband (fiber-optic and other) infrastructure that meets existing and near-term needs.

5. Connect all communities to the Internet, to promote greater community participation and to enhance the capacity of all communities to become self-sufficient.

6. Enhance the efficiency and transparency of government procurement and enhance access to government tender opportunities for SMEs.

7. Promote e-commerce in government and beyond. Encourage SMEs to modernize.

8. Nurture Bhutanese entrepreneurs in the ICT sector, develop the Bhutan Innovation and Technology Centre (BITC) and the Thimphu TechPark Private Limited (TTPL). Establish collaboration linkages with the Education City.

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## 2. ICT INFRASTRUCTURE AND SERVICES

| Table III. Snapshot of most important issues, ICT infrastructure and services, top three responses | | |
|---|---|---|
| **Issue (by order of importance) with 1 indicating "least important" and 5 "most important"** | **How important is it to improve this issue?** | **How important would it be to receive technical assistance in this area?** |
| Reduce cost of Internet use | 4.6 | 4.3 |
| Reduce cost of mobile telephony use | 4.3 | 4.0 |
| Promote greater competition among Internet services providers | 4.2 | 4.0 |

Bhutan is home to about 757,000 people (2015 estimate) dispersed over some 38,000 square kilometers. The country is divided into 20 dzongkhags (districts) and subdivided into 205 gewogs, which average 230 square kilometers. According to the latest World Bank data available (2012), 76 per cent of the population has access to electricity, a great achievement for a mountainous LDC like Bhutan (hydropower is Bhutan's main source of export revenue).

The RGoB has established national backbone network (fiber optic network, 3,200 km nationwide) across 20 Dzongkhags and 205 Gewogs to increase Internet accessibility. In an attempt to lower the cost, the Government has also nationalized fiber optic networks of ISPs as part of the national backbone network and has outsourced the operation and management of this network to Bhutan Power Corporation (BPC) under contractual obligation to ensure 99.99 per cent uptime. As a result, 3G is available nationwide, and basic Internet-based administrative procedures have been decentralized through the construction of "connectivity centres" at gewog level, making it possible even for remote villages to get 3G coverage.

Nonetheless, all interviewees confirmed that Internet access is unreliable and expensive, especially for broadband. With almost 100 per cent penetration rate for mobile phones in Bhutan, it is expected that rates will go down in the coming years, allowing for more local development of online and mobile businesses.

### E-services development

The Government has pioneered the use of ICT for day-to-day operations through the development and deployment of "e-government services". With its dispersed population coupled with its geographic challenges, this is seen as a powerful tool by the Government to achieve its aim and objectives of efficiency, transparency and accountability, as well as giving real time access to services to the public. There are more than 100 government organizational websites in operation, including the Government-to-Citizen (G2C) and Government-to-Business (G2B) services. They range from static web pages to full-fledged portals that act as one-stop gateways for government services.

Furthermore, through the Democratic Government Plus (DG+) Access to Public Services Project, efforts are being made to strengthen the service delivery and to bring more services online. The aim of providing most of the government services online is to "increase productivity, improve service delivery and economic development"[1]. However, financial regulations do not allow individual line ministries to receive payments for the e-services they provide as all payments to Government entities must be channeled through Ministry of Finance bank accounts.

In order to provide a one-stop shop on Bhutan trade-related information, the RGoB has also partnered with the World Bank to assess the potential of a Trade Information Portal (TIP) for Bhutan.[2] Many websites described as Trade Portals and TIPs in Bhutan are in fact Trade Promotion sites. Documents would be made available in both Dzongkha and English wherever possible, and the website should also be bilingual. Development of a TIP is consistent with the Government's eGovernment Master Plan and would facilitate investing in the country.

### E-trade development

Besides mobile services provided by BoB and BNB, the number of e-commerce sales points is very limited. However, a small e-commerce ecosystem is developing, including for cross-border e-commerce. Because most subscribers have broadband connections, the popular applications include Facebook, online discussion forums, Twitter, news sites and blogs. With these applications, tech-savvy Bhutanese have started to develop "Facebook shops". The social messaging app WeChat remains the number one free app in the Bhutan iTunes App Store.

As of late 2016, there is no "real e-commerce", except for online sales of airline tickets (Druk Air and Royal Bhutan Airlines use the BoB e-payment gateway, see below under "ePayment"). Bhutan has a nascent number of small-sized online shopping portals, such as shop.bt (the country's first web platform for Bhutanese merchants to showcase their products online and to enable customers to browse a large inventory of products), gnhcorner.bt (owned by Bhutan Post, proposing "Made in Bhutan products" only), hangouts.bt (a local version of tripadvisor. com) and bbay.trade.bt. (for delivery anywhere in Bhutan of products bought online). Last but not least, several foreign-based websites have been able to sell Bhutanese products online, taking advantage of the country's branding strategy and using the positive image that Bhutan has been able to generate for

itself though the "Gross National Happiness" concept and the "High Value, Low Impact Tourism" approach. An example of this is "Ana By Karma" (http://www. anabykarma.com/).

Yet, with the exception of the Hong Kong-based Ana by Karma, online payment solutions on Bhutanese portals are limited. There is no national e-payment gateway system (other local banks have Internet and mobile banking facilities, but don't support web transactions through a payment gateway). A few very popular Facebook groups like B-Bay, Best Buy and Sell in Bhutan with claimed memberships close to 50,000 are used to advertise items. Several interviewees confirmed that, even if online transactions were feasible, customers would prefer to order online and pay cash-on-delivery.

Bhutan has been able to attract a few ICT foreign companies, which triggered domestic and public investment, especially in the Thimphu Tech Park. ScanCafe is one of the biggest tenants of the Tech Park and employs more than 200 Bhutanese. ScanCafe is a US--based company that offers photo scanning, restoration, video editing, and other related services. The company plans to scale operations and grow to more than 500 people. There is also a group of development companies, including NGN Technologies, iTechnologies, Yangkhor IT Solutions, eDruk and Athang, all of which have the RGoB as their main clients. As of now, Tours and Travel companies are probably the largest set of businesses that have an online presence, and have the ability to pay for ICT products.

### Spotlight on the tourism industry:

Bhutan has adopted a cautious approach to tourism development, premised on yield rather than visitor numbers. This is epitomized by the guiding principle of 'High Value, Low Impact'. Tourism has grown over the years to become one of the major economic sectors. It has contributed greatly to overall socio-economic development by generating much needed hard currency for the royal exchequer, creating employment across various sectors, forging backward linkages for rural communities to earn additional income and boosting the general business environment. The sector has elevated people-to-people contact and increased recognition of Bhutan as an independent, high-end and exclusive tourism destination.

ICT has seen soft adoption rates in Bhutan's tourism sector, with the government playing the primary role of 'first mover' in the market. Some of the ICT-enabled initiatives in place include:

Tourism Website – TCB has re-launched its website to include new functions and interactive features. The site is linked to social media platforms to attract more traffic.

Tashel Online System – the tourist costing and accounting system is used to process booking, payment and invoicing online. It is linked to the national bank in Bhutan.

1. Visa Online System – This is used by tour operators to process tourist visas online. The system is used by TCB to endorse visas, which are subsequently sent electronically to the Department of Immigration for approval.

2. Tax-Exemption System – this is used by hoteliers and tour operators to process tax exemption for the import of approved goods. TCB's role is to endorse such applications prior to its submission to DRC for approval.

3. The BNB and BOB have started processing/clearing credit and debit card payments, a move which has prompted businesses to accept such cards as a mode of payment.

The "High Value, Low Impact" approach has also limited the possibility for foreign visitors to book or purchase tourism services online, as most "international tourists"–as opposed to regional tourists from India, Bangladesh and the Maldives–must go through a travel agent to buy any services they wish to use. For this reason, sites like hotels.bt or hangouts.bt can only provide information to customers and are able to generate revenue through advertisements exclusively.

## 3. TRADE LOGISTICS AND TRADE FACILITATION

| Table IV. Snapshot of most important issues, trade logistics and trade facilitation, top three responses | | |
|---|---|---|
| Issue (by order of importance) with 1 indicating "least important" and 5 "most important" | How important is it to improve this issue? | How important would it be to receive technical assistance in this area? |
| Full electronic tracking of all shipments | 4.8 | 4.6 |
| Dedicated logistics solutions for e-commerce delivery | 4.8 | 4.4 |
| Single Window to enable cross-border traders to submit regulatory documents at a single location and/or single entity. | 4.6 | 4.2 |

The geographical location and topography of Bhutan make delivery of commodities and finished products challenging and costly. Of its roughly 750,000 inhabitants, more than 60 per cent live in rural areas. The two logistics service providers (Tamu shipping, DHL) interviewed for this assessment as well as Bhutan Post confirmed that the above factors were making the online shopping delivery business quite challenging, with small volumes, coming almost exclusively through Phuentsoling, on the border with India.

In order to develop goods-based e-commerce, reliable, affordable and efficient courier and logistics services will prove instrumental to the success of this system. At present, there are international as well as domestic courier services under the Bhutan Postal Corporation Ltd. (BPCL) that offer logistics services, such as regular mail services, courier services (EMS, FedEx) and Financial Services (Western Union). In addition, Bhutan Post is making progress towards a standardized national addressing system.

In addition to the services provided by BPCL, there are other domestic and international courier services, such as Tamu Courier (Blue Dart), White Pigeon Courier Services, Bhutan Courier Services, TNT and DHL. This presence of courier and logistic services can further strengthen by making these services more reliable, affordable and efficient so that the overall costs of the products sold do not become inflated.

Delivery services are usually provided by firms specializing in moving small shipments from border towns in India to delivery locations in Bhutan. The most popular such service is B-Bay express (Bhutan Bay, http://bbay.trade/), which is a delivery service for goods. Products ordered from within Bhutan on online stores in India (such as Myntra Flipkart, etc.) get picked up in India by B-Bay at a specific location common to all buyers (a single code and delivery address in India is provided to all buyers who need to register for the service through B-Bay website) and delivered at reasonable prices in Bhutan within one to two days (costs between US$3 to US$5 per package).

Bhutan and India have a free trade agreement allowing goods to flow freely between the two countries. Almost 85 per cent of Bhutan foreign trade is with India[3]. As such, customs issues are usually negligible for goods exchanged between the two countries.

## 4. PAYMENT SOLUTIONS

| Table V. Snapshot of most important issues, payment solutions, top three responses | | |
|---|---|---|
| **Issue (by order of importance) with 1 indicating "least important" and 5 "most important"** | **How important is it to improve this issue?** | **How important would it be to receive technical assistance in this area?** |
| Greater interoperability of different online and mobile payment modes | 4.8 | 4.8 |
| Dedicated payment solutions for e-commerce | 4.6 | 4.6 |
| Awareness of international good practices governing electronic and mobile payments | 4.6 | 4.4 |

The Bhutanese banking scene has improved greatly since 2010, in line with government priorities under the 11th FYP (2013–2018). Despite key socio-economic factors like literacy among rural population and a large informal sector, the deployment and use of ATMs, electronic payments and cashless solutions have developed steadily, although starting from a low base.

| Table VI. Financial Service Penetration Summary (31 December 2015) | | | |
|---|---|---|---|
| Total Population: 775,062 | | Particulars | Percentage of Population |
| Total deposit accounts | Individual | 811,021 | 104.64 |
| | Corporate (Banks & Companies) | 18,590 | 2.40 |
| | Total | 829,611 | 107.04 |
| Automatic Teller Machines (ATM) | 152 | | |

Cashless payments have steadily increased over the past five years:

As of June 2016, five banks in Bhutan had issued a total of approximately 323,250 ATM (Debit) Cards.

As of June 2016, the total number of Credit Cards was only 1,880, issued by the Bank of Bhutan (BoB) and the Bhutan National Bank (BnB).

The Government is currently proactively seeking to improve financial inclusion and move businesses into the formal sector. To accompany these objectives, a number of legal instruments and tools have been developed and promoted by the Royal Monetary Authority, as indicated below:

| Table VII. Key milestones in ePayment (31 December 2015) | | |
|---|---|---|
| **Title** | **Time frame** | **Level of implementation** |
| Immediate Payment System and Payment Gateway | Dec 2016 | 80 per cent completed |
| Rules and Regulations for E-Money Issuers (applicable to all E-Money Issuers licensed by the RMA) | June 2017 | 40 per cent completed |
| Bhutan Financial Switch | Dec 2011 | Completed |
| Electronic Fund Transfer and Clearing System | June 2010 | 100 per cent completed |

The 11th FYP also identified the possibility of high, nationwide impacts from promoting mobile and branchless banking to extend the reach of financial services to remote areas. As a result, in 2016, the RGoB and Bhutan Development Bank Limited (BDBL) initiated the rollout of mobile and branchless banking in all 205 gewogs (groups of villages) and conducted a financial literacy campaign to create awareness of access to formal financial services and to promote a culture of savings and responsible personal financial management. BDBL operationalized the branchless banking and trained agents and users of the technology in the community information centers. It also raised public awareness of mobile and branchless banking services under the planned campaign.

Cashless payments started to increase in 2015 following the introduction of an e-Payment gateway by the Bank of Bhutan Limited. While debit and credit cards were introduced at the end of the 2009, the absence of an e-Payment Gateway provider meant that Bhutanese merchants, in particular airlines, tour agents and hotels, were unable to sell their products and services online. BoB introduced the e-Payment Gateway in 2015. The service automates the payment transaction between the shopper and merchant. A payment gateway allows a connection directly between a website and a bank, meaning that payments can be made directly on a website and deposited straight into a bank account of merchant.

The Royal Monetary Authority (RMA) of Bhutan developed in 2015 the RemitBhutan 'platform to help non-resident Bhutanese to apply conveniently for non-face-to-face foreign currency account with an authorized bank in Bhutan.' The service pioneered by the RMA was developed with the objectives of promoting safe transfer of remittances from overseas Bhutanese back to Bhutan, and eventually promote national savings and enhance country's foreign exchange reserves.

Finally, the national e-payment gateway is in the implementation phase and is expected to be completed by 2016-2017. Meanwhile, there is a need to explore alternative methods of payment to support the development of e-commerce in the country. Until these infrastructures are developed, the e-commerce sites rely on the existing BoB e-payment gateway or on third party payment gateways like PayPal, e-Way and others.

## 5. LEGAL AND REGULATORY FRAMEWORKS

| Table VIII. Snapshot of most important issues, legal and regulatory frameworks, top three responses | | |
|---|---|---|
| **Issue (by order of importance)** **with 1 indicating "least important" and 5 "most important"** | **How important is it to improve this issue?** | **How important would it be to receive technical assistance in this area?** |
| Protection of data and privacy | 4.5 | 4.2 |
| Cybercrime legislation | 4.3 | 4.0 |
| Consumer protection online | 4.2 | 4.0 |

There is no legal framework on e-commerce currently, even though the eGov Masterplan revised in 2015 identifies it as a priority. In several interviews, respondents believed that, while the legal framework for e-commerce was not yet complete, authorities should adopt a conducive and supportive approach for regulating e-commerce development, to avoid

choking a nascent industry. This was also echoed by several high level officials in MoEA. It appears that existing laws and regulations do already contain provisions that could be applied to e-commerce and other e-services. Drafting of an e-commerce centred law would start in 2017 with the hope to have it enacted by 2019, according to DoT.

The following ICT-related policies and laws have been passed, recently updated or are being reviewed:

In more detail[4]:

### Consumer Protection

BICM Act has various clauses to ensure the protection of consumers for e-commerce such as "providing consumers with information to make an informed choice". The provisions within the Act, along with the Consumer Protection Act 2012, which applies to all goods and services, will "provide the protection of the economic interest and safety of consumers". Consumer protection needs to be enforced to build trust in the new service and if this is cannot be done, it will hinder the growth of e-commerce and other e-services.

### Privacy and Data Protection

The BIPS 2009 points out that "future opportunities abound" and e-commerce is one of the mediums through which Bhutan will be able to see its products sold abroad. The development of online payment

| Area | Examples of actions taken |
|---|---|
| Telecommunication regulations | BICM Act in review |
| | Bhutan Telecommunication and Broadband policy |
| e-commerce law | Bhutan Information Communication and Media Act has the necessary clause on the following subject, however a detailed regulation/ guideline is yet to be developed: http://www.dit.gov.bt/sites/default/files/bicm_act_76718.pdf |
| Electronic signatures, intellectual property laws, e-payments, etc.) | Implementation of guidelines and regulation e-payment systems being developed in collaboration with RMA |
| | IP Law in progress |
| | Amendment to existing IP law drafted and submitted to Cabinet |
| Online consumer protection | Consumer Protection Act passed |
| Cybersecurity | Monitored by Bhutan Telecom/MoIC. Bt CERT (Bhutan CERT) established in DIT |
| Secured transactions | BICM Act in review |
| Trade policies with IT component (e.g. import duties on IT products, free trade agreements etc.) | MoEA initiatives: |
| | Tax exemptions on IT products |
| | In 2015, BICMA developed a study on "Policy and Regulatory interventions for smooth development of e-services in the country". |
| | Non-fiscal and fiscal incentives by Ministry of Finance, taxes on imports of IT equipment exempted |
| | Note: Bhutan is an observer at the WTO |
| Other | IMPS, National Switch, POS regulations |

system and the storing of personal data open up new challenges for regulation, such as ensuring that customer and consumer privacy and data protection are implemented. The clauses in the Act relating to "Online Privacy" state that ICT service providers will *"have to make their privacy policy easily accessible and that the service provider shall respect and protect the privacy of personal information they receive from their user or consumers".* The Regulatory Authority has the mandate to ensure that all e-services protect personal and other sensitive information.

### Content Regulation

The BICM Act states that *"the authority will take steps to regulate or curtail the harmful and illegal content on the Internet and other ICT services and media services"*. Such provisions ensure that the legitimate concerns to protect the public from objectionable content (e.g., pornography) and to combat unlawful and/or harmful content (e.g., gambling, material promoting hate). As such, the Rules on Content were framed in 2010, which protects a consumer from violence, crime, harmful and offence content. The scope of the application for the Rules of Content states that the "rules shall apply to all contents made available by the ICT and media industry". As such, the Rules of Content can be applied to e-services as well.

### Security and Cyber law

Due to the anonymous nature of the Internet, it provides the opportunity for people to engage in a variety of activities, some of which "are possibly" criminal in nature. These issues are addressed in the BIPS 2009, which states that the government will try and create a "local and affordable digital signature platform and an appropriate authority". Such security needs to be in place to enable the growth of e-commerce and other e-services.

### Licensing of e-services

The opening of a retail store or running a restaurant require licensing, which is granted by MoEA. Licenses can be applied for online, but payment for the service still requires physical payment at BoB or BNB. With regard to the licensing of "e-services" as stipulated in the "Rules on the Provision of ICT Facilities and ICT Services"[5], an e-service is considered as an "Internet Service" and defined as follows: *all services provided over Internet system regardless of the scope or type of services.* As such, e-services should be licensed as an Internet Service, but they are not in the list of ICT Services that need to be licensed.

## 6. E-COMMERCE SKILLS DEVELOPMENT

| Table IX. Snapshot of most important issues, e-commerce skills development, top three responses | | |
|---|---|---|
| **Issue (by order of importance )with 1 indicating "least important" and 5 "most important"** | **How important is it to improve this issue?** | **How important would it be to receive technical assistance in this area?** |
| Developing information platforms and support services to help micro and small enterprises engage in domestic or international e-commerce | 4.8 | 4.8 |
| Promote University-Industry linkages to develop e-commerce curriculum / research / innovation. | 4.8 | 4.8 |
| Capacity-building on e-commerce for medium and large businesses | 4.7 | 4.8 |

At present, the ICT industry in Bhutan is characterized by skills shortages, a disconnect between the skills produced by academic institutions and the needs of industry, poor perception of ICT as a source of study and career with a declining percentage of student enrollment.

On the demand side, although Bhutan has an established ICT education system (College of Science and Technology, Sherubtse College, Royal University of Bhutan), interviewees confirmed a misalignment in ICT skills and lack of industry-relevant skills resulting in excessive foreign outsourcing. There is very little industry-certification of ICT courses at most colleges and institutions. Students are taught more through theoretical learning methods. There is also a lack of ICT jobs in the market, the majority of employment opportunities being within public sector. As a result, a majority of the roughly 300 ICT job seekers entering the job market every year fail to find quality employment.

There is a persistent lack of data on ICT manpower and enterprises. Data on the number of current ICT professionals, demand and type of skills required by the ICT industry (CSI, SMEs) and types of ICT-focused enterprises are not available. This makes it challenging to ensure a proper match between supply and demand for ICT manpower and enterprises. The relationship between RGoB, academia and the industry will be vital in improving the quality of ICT education by being able to provide the right kind of course curriculum on ICT and embedding industry-relevant skills.

On the supply side, Cottage and Small Industries are not encouraged proactively to adopt ICTs, let alone move into e-commerce. Lack of ICT and business skills are impediments to effective uptake. To encourage ICT adoption by CSIs, ICT skills training and upgrading for those entrepreneurs with at least basic ICT skills should be provided. For this purpose, the DoT has plans to prepare a basic ICT curriculum on skills enhancement programme. It should consider the skills requirement of small business managers and employees in using ICT applications. It should foster managerial understanding and skills for e-business, such as how to effectively integrate e-business processes into existing business models and strategies to change organizational structures.

## 7. ACCESS TO FINANCING

| Table X. Snapshot of most important issues, access to financing, top three responses | | |
| --- | --- | --- |
| Issue (by order of importance) with 1 indicating "least important" and 5 "most important" | How important is it to improve this issue? | How important would it be to receive technical assistance in this area? |
| Promoting peer-learning and experience sharing on issues related to access to financing for e-commerce | 5.0 | 4.8 |
| Identifying potential sources of financing and investment across the full value-chain of investors – from seed to venture capital to more mature market investors | 4.8 | 4.8 |
| Identifying barriers and bottlenecks to financing e-commerce ventures. | 4.8 | 4.8 |

Despite noticeable improvements since 2010, prompted by government reforms and the introduction of additional competition in the sector, access to, and the cost of, finance remain key constraints to private investment and MSME growth in Bhutan. In spite of the dynamic nature and potential positive impact of e-commerce in Bhutan, there is no special facility to provide much-needed finance to fuel ICT sector growth.

Bhutan is no exception. Most LDCs consider access to finance as the single most significant hindrance to private sector development. By creating employment and fostering economic growth, Micro, Small and Medium Enterprises (MSMEs) can play a great role in the economy.

On the demand side, interviewees mentioned that banks tend to be risk-averse and would only provide loans to a few, larger customers, rarely to entrepreneurs and new businesses, while Bhutan economy is made of 98 per cent MSMEs. Banks extend credit only on the basis of collateral of land and buildings, without recognizing the value of receivables, inventory, export management capability, or experience. Moreover, interest rates charged by banks are high, averaging 12 per cent for industrial and commercial loans.

On the supply-side, RMA indicated that potential borrowers do not have their financial statements in order and/or that the quality of their business plans is poor. It also seems that the capacity of the banking industry to assess SMEs' business plans, in particular in the ICT sector, should be strengthened and that the relative weight of variables used to assess the viability of loans should be revised. The BICTTA[6] and BCCI were often mentioned as potential providers of training for SMEs to help them prepare business plans.

# CONCLUSION

ICT and e-commerce represent formidable potential "game-changers" for Bhutan economic and social development. The country has embraced ICT very fast, thanks to reliable access to energy, mobile Internet and a conducive business environment. This pragmatic approach can help the country overcome key challenges, such as its narrow economic infrastructure, geographical landscape and limited export opportunities.

The Royal Government of Bhutan has led most of the recent improvements and development in ICT, starting with the e-Government Master Plan, the Bhutan ICT Road Map, as well as a few dedicated projects to increase financial inclusion, with support from development partners. The existing regulatory framework for trade and business development has enabled the creation of a nascent e-commerce ecosystem, still limited by the absence of a national e-payment and mobile-payment gateway. Yet, with major regional online portals being able to deliver to Bhutan and the widespread use of social networks, the Royal Government of Bhutan is gearing up to

ensure that customers and merchants can adopt e-commerce solutions in total safety. The private sector has been slow to take advantage of the enabling environment, but has caught up recently, in particular through the development of online portals and innovative logistics solutions. Skills gaps are still hampering further development; as new graduates do not possess the skills expected by the market.

Obstacles to the adoption of e-commerce in Bhutan are listed in the report. This assessment identifies many barriers and provides a number of short-to-medium term actions (see action matrix in "The Way Forward") to support and accelerate e-commerce adoption in Bhutan. The actions listed call for dedicated support from the eTrade for All partners and other organizations, in particular for actions in the e-commerce strategy, legal and regulatory framework, infrastructure, access to finance, as well as potentially from *Business for e-Trade Development* members in areas such as e-payment, logistics, skills and knowledge development.

# THE WAY FORWARD: ACTION MATRIX

Opportunities for eTrade for All partners to support e-commerce development along the seven eTrade for All policy areas (based on suggestions received in 21 interviews and questionnaires, including with Government counterparts)

| | **E-COMMERCE READINESS ASSESSMENT AND STRATEGY FORMULATION** | | **Priority Level** | **Support potentially by** |
|---|---|---|---|---|
| | **Indicative action** | **Expected outputs** | **Priority Level** | **Support potentially by** |
| S1 | Development of a national e-commerce strategy, aligned with ICT Roadmap, BICMA Act and contributing to revised EDP and 6th FYP. | Provide a roadmap for e-commerce development ensuring coherence and alignment of actions among public, private sectors and DP. | H | UNCTAD, ADB |
| S2 | Ensure e-commerce features prominently in future EDP and DTIS, MTP updates, to maximize its visibility and role in economic development and diversification. | ICT is mainstreamed in national development plans and resources are budgeted from Government and DPs accordingly. | M | EIF |
| S3 | Transition ICT Roadmap into National ICT Masterplan to feed into 6th FYP. | The various ICT masterplans (education, health, tourism, Government) provide the foundation for developing a national level ICT Masterplan. The National ICT Masterplan will encapsulate the various sectors' ICT aspirations to form an overarching strategic ICT plan. | L | UNCTAD |

| | **ICT INFRASTRUCTURE AND SERVICES** | | **Priority Level** | **Support by** |
|---|---|---|---|---|
| | **Activity** | **Expected outputs** | **Priority Level** | **Support by** |
| I1 | Strengthening Bhutan ICT and Training Association (BICTTA), increase acceptance and recognize value of services. | Create a single voice for the promotion of the sector and dialogue with the Government. | M | ITC |
| I2 | Conduct Market-Based Assessment of ICT Industry. | Identify skills required in the market that have potential for growth in the future. | M | ITC |
| I3 | Brand Bhutan ICT Sector. | Raise the profile of the sector and position the country as a competitive ICT FDI destination. The programme is expected to help promote Bhutan's ICT sector and encourage more FDI flows into the country. | M | ITC |
| I4 | Carry out a data centre investment attractiveness assessment. | The attractiveness assessment study will ascertain the country's readiness to attract FDI to data centers in terms of skills requirements, infrastructure needs, business demand, legal and policy environment, fiscal schemes, linkages with hydro-power plants and building standards. | L | Business for eTrade Development |
| I5 | Broaden and increase focus and outreach of the annual National ICT Champions Award. | Foster innovation and creativity by recognizing and rewarding outstanding ICT solutions which are developed locally. It also encourages development of local ICT talents and enterprises to create innovative ICT solutions. | L | Business for eTrade Development (sponsors) |
| I6 | Conduct International ICT Events. | Increase knowledge and recognition of the quality of Bhutan ICT industry worldwide. | L | ITC, UNCTAD (innovation) |

| | **TRADE LOGISTICS AND TRADE FACILITATION** | | **Priority Level** | **Support by** |
|---|---|---|---|---|
| | **Activity** | **Expected outputs** | **Priority Level** | **Support by** |
| T1 | Support Bhutan Post "last mile" address localization projects outside Thimphu. | Better delivery options will increase the interest for investing in online portals and complete delivery solutions. | H | UPU |
| T2 | Improve Bhutan Customs capacity to clear small parcel shipments from beyond SAARC region. | Bhutanese customs are trained in risk management for better clearing of increased number of small shipments. | M | WCO, UPU |

**H=High, M=Moderate, L=Low**

**PAYMENT SOLUTIONS**

| | Activity | Expected outputs | Priority Level | Support by |
|---|---|---|---|---|
| P1 | Implement national e-payment gateway and support roll-out with merchants. | The National e-Payment Gateway will provide an operational component of the eGovernance infrastructure and full e-commerce facilities that allow secure online payments. Enabling the gateway will increase the adoption of e-commerce in the Tourism industry along with electronic payments, particularly Internet-enabled payments, which are easy and efficient. | H | ADB |
| P2 | Support the development of MoEA's strategic e-commerce framework. | This framework will put in place regulations to govern and facilitate e-commerce in Bhutan. | M | UNCTAD |
| P3 | Develop e-money training programmes for e-Money providers. | Increase use of e-money in Bhutan following passing of e-money regulations. | M | ADB |

**LEGAL AND REGULATORY FRAMEWORK**

| | Activity | Expected outputs | Priority Level | Support by |
|---|---|---|---|---|
| L1 | Support MoEA's pro-business stance by developing e-payment modules on the one-stop window platform. | Service users nationwide do not need to move to district or Gewog to physically pay for services provided by MoEA. | H | ITC, ADB |
| L2 | Review compatibility of ICT-related regulations in different sectors to ensure they are in line with expected outputs of ICT Masterplan and other ICT development strategies. | Increase coherence among lead agencies on ICT-related regulations. | M | UNCTAD |
| L3 | Strengthen collaboration among Government institutions (GNHC, MoF, MoIC, MoEA) for e-governance to allow effective governance of ICT projects across the government. | Projects approved by RGoB have been screened and will not duplicate each other or on-going projects and programmes. | M | n/a |
| L4 | Revise e-commerce services classification in MoEA business registration platform to better reflect the specific characteristics of e-commerce businesses | Specific licenses cater issued by MoEA for the special needs of the ICT industry. | M | ITC |
| L5 | Support for e-commerce law drafting. | Increased confidence for e-commerce players to invest in Bhutan, framework law to bring coherence to provisions in other existing laws. | M | UNCTAD |
| L6 | Initiate drafting of the ICT sector regulation where the legislation, executive orders and administrative rules are issued by the government (to be inspired by best regulatory practices in the world). | The sector is government- regulated for a transition period, ensuring fair play and harmonious development, before being co-regulated with the private sector. | L | UNCTAD, ITU |
| L7 | Review of ICT taxation laws and subsidy policies. | Taxation laws and policies play an important role in determining the usage of ICT and attracting FDI to the country. The review will help measure the effectiveness of taxation measures introduced by RGoB for ICT-related products and services. | L | ADB |

| **E-COMMERCE SKILLS DEVELOPMENT** | | | | |
|---|---|---|---|---|
| | **Activity** | **Expected outputs** | **Priority Level** | **Support by** |
| K1 | Enhance existing Job Portal with mobile application. The job portal is a central repository of employers and jobseekers that provides timely information on skills requirement and numbers. | The existing Job Portal is enhanced to address its current issues, improve its adoption by making it available as mobile applications for at least two major mobile platforms and drive greater adoption by promotion and awareness. | H | n/a |
| K2 | Increase sustainability and appeal of Thimphu TechPark Ltd. | Facilitate the growth of ICT start-ups by providing access to its facilities, collaborating with technology leaders and experts (both from within and outside) to guide start-ups and eventually helping to graduate the start-ups into bigger business. | M | B4ETD, ITC |
| K3 | Setup ICT Academy – Industry Council | The ICT skill gap is reduced by improving the quality and usefulness of ICT education delivered in universities and colleges, making ICT graduates immediately employable. | M | B4ETD |
| K4 | Structured Internship Programme | Promising graduates acquire state of the art knowledge and skills from leading national and international firms, increasing their employability. | M | B4ETD |
| K5 | e-commerce awareness programme | e-commerce adoption is facilitated by increasing knowledge and skills for e-commerce and changing attitudes towards online portals. | M | B4ETD, ITC, UNCTAD |
| K6 | Establish Center of Excellence (CoE) for Mobile Apps and Services. | Standards, governance and security policies relevant to mobility should be ? better defined, technology expertise is provided by authoring best practices. | L | B4ETD |

| **ACCESS TO FINANCING** | | | | |
|---|---|---|---|---|
| | **Activity** | **Expected outputs** | **Priority Level** | **Support by** |
| F1 | Introduction of ICT Innovation Grants and Schemes (existing schemes are focused mainly on the development of skills either for business start-up or employment generation, leaving out the room for innovation to grow). | Stimulate innovation in individuals or organizations, which will have social impact or commercially viability. | M | B4ETD, WB, ADB |
| F2 | Develop training programme for BICTTA members on preparing business plans and accounting books to gain access to finance. | Increased approval of loan applications of ICT companies by commercial banks and other financial institutions. | M | ITC |
| F3 | Explore alternate funding models such as PPP (Public-private partnership) funding model or subscription model for applicable ICT projects. | Diversify source of funding for ICT projects leading to an increasing number of bankable projects. | M | WB, ADB |

## NOTES

1. eGovernment Master Plan, 2014.

2. The accepted international definition of a TIP is: "A [Web based] resource provided by governments to traders in order to obtain, from one single source, all the information that importers or exporters in a given country may require in order to comply with their regulatory obligations in relation to all the government agencies that control export, import or transit business." Developing a Trade Information Portal" Luc Pugliatti, International Trade Department, World Bank

3. UNCTAD, 2016

4. Information in this paragraph was provided by BICMA and is available partially on its website

5. DoI, MoEA, 2015

6. The role of the BICTTA is to represent the ICT & Training Industry of Bhutan at national, regional and international level for the development and promotion and to act as a forum for Bhutanese ICT & Training Industry to address operational and policy issues. Or ICT and training industry of Bhutan, more generically.