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Philippines

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Total population	86,972,500 (2006)
GDP per capita in USD	1,168 (2005)
Computers per 100 inhabitants	4.46 (2005)
Fixed-line subscribers per 100 inhabitants	4.18 (2006)
Mobile phone subscribers per 100 inhabitants	49.29 (2006)
Internet users per 100 inhabitants	5.32 (2005)
International internet bandwidth	3,214.5 Mbps (2005)

Introduction

According to the National Telecommunications Commission (NTC), the Philippines' telecom regulator, in 2005 Filipinos sent an average of 500 million text messages per day in 2006, double the number of text messages that they sent daily in 2005 (Amojelar 2007). Indeed, the Philippines is the undisputed 'SMS capital of the world'. Ninety-five per cent of the 42.8 million mobile phone subscribers in the Philippines use their phones for text messaging. In a country where computer and Internet penetration remains very low, text messaging is the equivalent of e-mail and instant messaging. It has become an indispensable communication tool for social relations and corporate and government transactions.

Indeed, the number of mobile phone owners in the Philippines has grown by leaps and bounds in the past five years alone. From a teledensity of less than one per 100 people between 1970 and 1990, the Philippines achieved a fixed-line teledensity of 4.18 per 100 people and a mobile phone density of 49.29 in 2006. This came about from rapid technological advances and intense competition following a liberalization drive that transformed a monopoly into one of the most profitable and highly competitive economic sectors.

However, while telecommunications infrastructure is one of the success stories in information and communication technologies (ICTs) in the Philippines, much more needs to be done in terms of ICT access, opportunity and utilization. Today, there is an increasing consensus that ICTs have the potential to bring about social, economic and political change and development when people have access to them. ICTs can be utilized to help reduce poverty and socio-economic disparities by bringing the traditionally marginalized within reach. Development practitioners generally agree that ICTs need to be integrated systematically into poverty reduction strategies. There is a need to go beyond small pilot projects into larger national or regional implementation of ICT programmes. And multi-stakeholder partnerships between government, civil society and the private sector must be created to share specific competencies and resources (Weigel and Waldburger 2004).

This chapter documents the state of ICTs in the Philippines. The first section reviews the state of ICT infrastructure in the country, focusing on the telecoms infrastructure, the success of mobile phone diffusion, the very low diffusion of personal computers and its usage, and the problem of ICT data availability. The next section reviews the policy and regulatory environment as well as the institutions involved in regulating ICTs in the Philippines. The third section examines the various digital content initiatives undertaken by government, the private sector and civil society, focusing mainly on efforts to bridge the digital divide. Finally, the last section reviews the challenges faced by the Philippines in its efforts to ensure that ICTs will have a positive impact on the lives of its citizens.

ICT infrastructure

After over a decade of liberalization, the Philippine telecommunications sector has produced a highly competitive environment with 74 local exchange carriers, 14 inter-carrier carrier services, 11 international gateway facilities and seven cellular telephony providers.

While the erstwhile virtual monopolist, PLDT, continues to dominate the fixed-line sector, and its wireless subsidiary Smart

Communications Inc. is the leading cellular phone company, the presence of two major competitors makes mobile telephony the most competitive and fastest growing sector. In 2005, the Philippines had a total of 42.8 million mobile telephone subscribers, the third highest mobile phone density in ASEAN, next to Singapore and Malaysia. In stark contrast, fixed-line teledensity in the Philippines (4.18 fixed-line telephones per 100 people) is the fourth lowest among ASEAN countries, ranking only higher than Cambodia, Laos and Myanmar.[1] Intense competition among the mobile phone companies has resulted in affordable mobile services and innovative packages, including prepaid services. The latter, introduced by Globe Telecommunications, has made mobile phones affordable to lower income groups.

The first mobile phones introduced in the 1990s used analogue technologies. Their uptake was slow because of the high cost of handset and service, as well as poor billing and cloning problems. Philippine telcos then shifted to 2G technologies. By 1999, GSM had become the dominant technological standard in the country. As of the end of 2005, three 3G licenses had been issued. The top two companies, Smart Communications Inc. and Globe Telecommunications, started offering 3G services in early 2006.

As mobile teledensity increased, it became clear that Filipinos were not using their mobile phones for voice calls. Instead they were using their phones for SMS (short messaging service) or text messages. Analysts estimate that 'texting' (SMS) in the Philippines exceeds voice traffic by a factor of 10 to 1. Mobile phone companies earn about half of their revenues from these non-voice services. For instance, in its 2005 financial report, Smart earned PhP 36.8 billion (USD 707 million) from data services whereas its revenues from voice services totalled PhP 34.3 billion (USD 659 million) (PLDT 2005).

Corporate data are supported by consumer surveys. A June 2003 survey found that 94 per cent of mobile telephone subscribers use their phones for text messaging. Of these, 70 per cent send about 10 messages per day and about 14 per cent send between 10 and 20 messages per day. Given the average of 250 million text messages a day, at two US cents per message, telcos in the Philippines earn a hefty USD 5 million per day on text messaging alone! In 2006, the volume of text messages increased significantly more than the three-million increase in mobile phone subscribers. A key factor here was the entry of a third niche player, Sun Cellular, which began operations in 2004.

The decision to open the market to Sun Cellular despite protests from the major players, Smart and Globe, can be credited to NTC. Often criticized for lack of independence, the regulatory body surprised many when it allowed Sun Cellular to offer discounted prices for its services. The other mobile phone companies had no choice but to offer lower tariffs and unlimited texting packages, which in turn led to subscriber gains.

The liberalization of the telecommunications industry has led to economic and social gains. Both corporate and individual users are benefiting from the increased competition among providers. Market competition and new technologies are driving developments in the telecommunications sector, making it a growth engine for the country's development. In 2005, the sector accounted for 4 per cent of GDP and 6 per cent of total tax receipts. Telecommunications companies are also the most profitable and actively traded companies in the Philippine Stock Exchange. In terms of its contribution to social development, the liberalized telecommunications sector is providing connectivity to millions of overseas Filipino workers, enabling them to keep in constant touch with their families.

While the picture is rosy for telecommunications, the same is not true for personal computers (PC) and Internet penetration and utilization. The International Telecommunications Union (ITU) estimated about 3.5 PCs per 100 inhabitants in 2003 and 4.5 per 100 inhabitants in 2004. Unpublished data from the 2003 Family Income and Expenditures Survey (FIES) of the National Statistics Office (NSO) indicate that only about 4.4 per cent of households own a PC, whereas 52.7 per cent own a television, 75.2 per cent own a radio, and 14.1 per cent own a fixed-line or cellular phone (Astrologo 2006).

With regard to the Internet, while broadband and broadband wireless services have been introduced in the past couple of years, dial-up Internet is still the most widely used type of Internet access. NTC reported a total of 1.44 million Internet subscribers for the 177 registered Internet service providers (ISPs) in 2005. The ITU estimate for 2005 was 4.4 million Internet users or 5.32 users per 100 Filipinos. This number is disappointingly lower than Iran's (10.07 per 100 population) or Zimbabwe's (10.08 per 100 population).

While the available data seem to point to low utilization, it is also true that there is a gap in the official data on Internet use. The most recent official information comes from the NSO's Functional Literacy, Education and Mass Media Survey (FLEMMS) conducted in 2003. The FLEMMS study found that the Internet is a source of knowledge and information for about 13.8 million (20 per cent of the population) Filipinos aged six years and above. Of these, only 7.4 per cent access the Internet for information daily. On the other hand, there has been a marked increase in the number of Internet cafés, telecentres and other public access points.

Indeed, one of the biggest challenges in understanding how ICT has changed, is changing and will change the daily life of Filipinos is collecting accurate data on ICT utilization. The government needs to ensure that its policy decisions are

based on real and up-to-date figures. However, there is a lack of funding for ICT statistical collection (Astrologo 2006). In 2000, the National Statistical Coordination Board (NSCB) created a Task Force on the Measurement of e-Commerce to develop a framework and to identify methodologies and strategies for the generation of data and other indicators of electronic commerce. The Task Force found that official statistics on ICT utilization are sorely lacking. In 2002, the NSO, in collaboration with the Information Technology and E-Commerce Council (ITECC, now the Commission on ICT), conducted the Survey on Information and Communication Technology of Philippine Business and Industry, the first attempt to collect and generate benchmark information on the availability, distribution and utilization of ICTs by business establishments in the country. However, due to funding constraints, the survey has not been repeated. And no study of public ICT utilization has been undertaken.

ICT laws and regulatory bodies

Legal provisions

Republic Act (RA) 7925 (and its implementing rules and regulations) is the primary law governing the telecommunications sector. It consolidates a number of policies and practices contemplated under Executive Order (EO) 59 (compulsory interconnection among authorized telecoms carriers) and EO 109 (provision of local exchange service policy). RA 7925 effectively liberalized telecommunications services. Its salient provisions include: the responsibilities of the regulatory authority (NTC) and the Department of Transportation and Communications (DOTC), the classification of telecommunications entities, the management and allocation of the radio frequency spectrum, the need to obtain a legislative franchise, interconnection rules, NTC's mandate to establish rates and tariffs, access charges and revenue sharing, the rights of telecommunications users, and ownership of telecommunications entities.

On 23 August 2005, the NTC issued Memorandum Circular No. 05-08, also known as the VoIP (Voice over Internet Protocol) Rules, which declared VoIP as a Value-Added Service (VAS). A VAS provider does not have to secure a legislative franchise to be able to provide VoIP.[2] The Rules recognize VoIP 'as an application that digitizes and transmits voice communications in packets via the Internet, enhances or improves upon traditionally telephony that is conducted through circuit switched connections by allowing the convergence of voice with other data applications, and by providing economic benefits in the form of greater efficiencies and lower costs'.[3]

To further promote competition in the Philippine telecommunications market, the NTC published a consultative paper in December 2005 that discusses the merits of introducing four pro-competition policies, notably: (a) imposing obligations on carriers with significant market power (SMP), (b) mandating local loop bundling, (c) requiring carriers to allow for resale of their services, and (d) changing the basis of price regulation from *ex ante* to *ex post*.

On 24 August 2006, the NTC released a consultative document on the proposal to impose obligations on carriers with SMP. The document discusses the rationale behind the imposition of SMP obligations and the critical processes for implementing SMP obligations, namely: (a) defining markets to be used as basis for regulatory intervention, (b) determining whether one or several operators in the defined markets have the degree of market power that merits regulatory intervention, (c) identifying appropriate SMP obligations to achieve policy objectives, and (d) determining conditions that justify withdrawal of regulation.

With regard to e-commerce, Republic Act No. 8972 (E-Commerce Act of 2000) provides for the legal recognition of electronic documents and electronic signatures as functional equivalents of their paper-based forms. The law likewise provides a temporary solution to the blurring of distinctions and foreseen regulatory inconsistencies in the cable industries due to digital convergence. It also attempts to solve the constitutional limitations on ownership of broadcast and mass media enterprises by distinguishing between physical infrastructure and programming and content, as well as the management thereof.[4] Under the law, the physical infrastructure of cable and wireless systems for cable TV and broadcast shall be considered to be within the activity of telecommunications for purposes of e-commerce and convergence. This means that foreign ownership of the network or its physical infrastructure is allowed up to 40 per cent of total capital stock. Programming, content and management, on the other hand, do not fall under the 'physical infrastructure' of cable TV and broadcast.

EO 205 governs the cable TV industry in the Philippines while EO 467 stipulates policy guidelines and regulations on the operation and use of satellite communications facilities and services.

As regards data protection, the Philippines has no existing comprehensive legislation on personal data protection and privacy of information. In general, privacy rights hinge on the due process clause of the 1987 Philippine Constitution. In particular, the right to privacy is connected with the Constitutional guarantees for the privacy of communications and correspondence, and against unreasonable searches and seizures. These Constitutional guarantees protect private citizens from intrusive actions by the State and do not in any way serve as limitations on private transactions and activities of non-State entities in relation to private persons.

Articles 26 and 32 of the Philippine Civil Code provide a cause of action for damages and other equitable relief in favour of an individual whose right to privacy has been violated. The Philippine courts have yet to interpret the Civil Code provisions on privacy with respect to personal data. The Philippine E-Commerce Act (RA 8972), however, imposes an obligation of confidentiality on any person who gains lawful access to information covered by and/or contained in an electronic data message or electronic document. In fact, the law imposes a penalty of PhP 1 million (about USD 20,000) or imprisonment of six years on an individual who violates the obligation of confidentiality. Sections 33(a) and 33(b) of the law likewise penalize hacking or cracking and piracy in electronic commerce. Moreover, EO No. 269 mandates the Commission on Information and Communications Technology (CICT) to define policies that will preserve the rights of individuals to privacy and confidentiality of personal information.

While the use of personal data for direct marketing purposes is not prohibited in the Philippines, NTC has adopted a regulatory position in response to consumer/subscriber complaints concerning marketing advertisements transmitted and received via broadcast messaging services, through the issuance of NTC Memorandum Circular No. 03-03-2005. The Circular regulates all commercial and promotional advertisements and surveys sent via broadcast and push messaging services, and covers all public telecommunications entities and content providers operating within the country. The NTC may impose administrative sanctions for any violation of these guidelines, including the revocation or cancellation of a permit or authority to operate.[5]

At present, there are efforts towards the drafting and enactment of a data protection legislation patterned after the European Union Data Protection Directive. A Cybercrime Prevention Bill, which penalizes the transmission of unsolicited commercial communication or spam mail, among others, is likewise being deliberated on by a Congressional Technical Working Group.

Regulatory bodies

The Department of Transportation and Communication (DOTC) was created in 1987 to oversee communications in the Philippines. It formulates and recommends national policy guidelines, establishes and administers comprehensive and integrated programmes for transportation and communication, provides direction to transportation research and development, and administers all laws and regulations pertaining to transportation and communication.

The NTC is an attached agency of the DOTC. It has the sole authority to issue a Certificate of Public Convenience and Necessity (CPCN) for the installation, operation and maintenance of communications facilities and services, radio communications systems, telephone services and telegraph systems. It also has the authority to determine the areas of operations of applicants for telecommunications services.

The NTC has been given the mandate to be the principal administrator of RA 7925. It is mandated to undertake the necessary measures for the implementation of policies and objectives with respect to: facilitation of the entry of qualified service providers and adoption of an appropriate pricing policy; assurance of quality, safety, reliability, security, compatibility and interoperability of telecoms facilities and services; fair and reasonable interconnection of facilities of authorized public network operators and other providers of telecoms services; the protection of telecoms entities from unfair trade practices of other carriers; and the promotion of consumers' welfare.

Hence, the DOTC is the policymaking body for the promotion, development and regulation of coordinated networks of transportation and communications systems, while the NTC is the regulating authority.

CICT was created under EO No. 269 (2004) to address the urgent need to make the country's approach to ICT development coherent and efficient, and to play an active role in streamlining, managing, coordinating and implementing the various ICT-related plans and policies of government. Its Five strategic directions are:

1. provision of affordable Internet access to all segments of the population;
2. development of an ICT-enabled workforce;
3. creation of an enabling legal and regulatory environment;
4. online provision of government services to stakeholders; and
5. development of the country as a world-class ICT services provider.

CICT took the place of the Information Technology and E-Commerce Council (ITECC). It also assumed the DOTC's functions of providing policy directions in the area of information and communications. Currently attached to the Office of the President, it is a transitory body towards the creation of a proposed Department of Information and Communication Technology (DICT).[6] It has direct supervision and control over the National Computer Center (NCC), the Telecommunications Office (TELOF), and other operating units of the DOTC. The Philippine Postal Corporation is also attached to CICT. The NTC receives policy guidelines from CICT but remains independent with respect to its quasi-judicial functions.[7]

ICT plans and initiatives[8]

At present, CICT is finalizing the Philippine ICT Roadmap, which lays down the government's strategies and programmes in the use and development of ICTs for better governance, corporate performance and overall economic development. The Roadmap was drafted through workshops and multi-stakeholder consultations and was to be released before the end of 2006. It is guided by the following principles:

- Commitment to a people-centred, inclusive and development-centred information society;
- Government providing an enabling policy, legal and regulatory environment;
- A multi-stakeholder approach to ICT for development;
- Using ICTs as tools for sustainable development, with an eye to accessibility, availability, security and accountability, interoperability and sustainability of ICT programmes;
- Promoting the development of digital content that is relevant and meaningful to Filipinos;
- Creating a safe, trustworthy online environment for all Filipinos; and
- Establishing a strong CICT organization to facilitate ICT development and ICT for development.

The Roadmap has five key strategic programmes and initiatives:

1. Ensuring Universal Access and bridging the digital divide through the:
    - Establishment of Community e-Centres, Internet in schools (iSchools), eLGUs (e-Local Government Units), and Regional ICT Centres, in partnership with the private sector, local government and civil society stakeholders;
    - Provision of Low-Cost Computing through the *PC ng Bayan* initiative and the distribution of Free and Open Source Software (FOSS) as an alternative to commercial software;
    - National Broadband Policy which provides for nationwide broadband connectivity and public access points; and
    - Last Mile Initiative.
2. Developing Human Capital for Sustainable Development by:
    - Creating an ICT Competency and Standards Development and an ICT Competency Assurance Body;
    - Establishing ICT for Education (ICT4E) programmes.
3. Using ICT to promote efficiency and transparency in government through:
    - Financing, via the e-government fund, frontline government ICT projects, such as the Bureau of Internal Revenue's computerization project, the Bureau of Custom's Web-based application system, and the NCC's eLGU Real Property Tax System;
    - Developing common applications for national government agencies;
    - Creating a government communication network;
    - Enhancing ICT training for government; and
    - Revising the Government Information Systems Plan (GISP).
4. Strategic Business Development to Enhance Competitiveness in the Global ICT Market through:
    - The Workforce Mobilization Programme with the Commission of Higher Education (CHED) and the Technical Education and Skills Development Authority (TESDA) to improve English competence, industry certifications and career advocacy programmes.
    - Launching the Philippine CyberServices Corridor, an ICT belt stretching over 600 miles from Baguio City in northern Philippines to Zamboanga in the south, to be wired by a USD 10 billion high-bandwidth fibre backbone and designed to provide a variety of cyberservices at par with global standards. The Corridor aims to support government's priorities for job creation, expansion of the middle class and regional development.
    - Strengthening the ICT capacities of small and medium-sized enterprises.
5. Legal and Policy Agenda for the Philippine ICT Sector, through the passage of the following bills:
    - Creating a Department of Information and Communication Technology that will ensure effective coordination and implementation of the national ICT agenda.
    - NTC Reorganization to give the country's telecom regulator fiscal autonomy and political independence.
    - Convergence Bill
    - e-government Bill
    - Privacy and Data Protection Act
    - Cybercrime Bill
    - Freedom of Information Law

While the ICT Roadmap is being finalized, CICT is focusing its energies on the development of the country's Cyber Corridor Plan. In July 2006, CICT Chair Ramon Sales was designated

as the Plan's champion, and the business process outsourcing (BPO) sector was named the driver of economic growth and a solution to unemployment. The Department of Trade and Industry (DTI) is leading efforts to increase the competitiveness of the BPO sector and to promote the Philippines as a hub for IT-enabled services. The government is also allocating funding to improve the English proficiency of graduates and the English, science and mathematics skills of school teachers. Congress is also seriously considering a bill mandating the use of English as the medium of instruction in place of Filipino.

The Philippines: The next BPO hub?

In September 2006, Dell announced that it was opening a second call centre office in the Philippines. The hardware giant is one of a growing number of Fortune 500 companies like IBM, Intel, Motorola, Citigroup, and Barnes & Noble that are setting up offices in the country—proof that the business process outsourcing (BPO) sector in the Philippines is booming. In 2000, the BPO sector employed a mere 2,400 workers and earned USD 24 million. Five years later, it accounted for 112,000 workers and USD 2.2 billion in revenues. By 2010, the government expects the sector to employ over one million workers, generate USD 12.8 billion in revenues, and contribute 10 per cent to the GDP.

For developing countries like the Philippines, investment in the BPO sector is desirable as it provides a means of reducing unemployment, generating foreign exchange and diversifying the economy.

The Pros: What makes the Philippines attractive as a BPO location site? First, it is the third-largest English-speaking country in the world, with a long-standing familiarity with the US market's accents and idioms. Second, the Philippines produces 400,000 college graduates annually. Of this total, 110,000 graduate with commerce and business skills, 80,000 with IT expertise and 30,000 with medical degrees. Third, investors praise Filipino workers for their work ethic, loyalty and ability to adapt. Their cultural emphasis on service and their familiarity with Western business practices reduce training time. Fourth, the cost of labour is hard to beat: a Filipino university graduate is paid only about USD 7 a day. Finally, due to reforms in the telecommunications sector, telecom prices are dropping and infrastructure is improving. The country has one of the cheapest leased line rates in Southeast Asia, costing about USD 2,500–3,000, cheaper than India's USD 6,000–8,000.

The Cons: The Philippines has been dogged by fears of political instability, fuelled by rumours of coups and fairly frequent mass protests. However, the economy continues to grow, buoyed by massive inflows of foreign exchange from overseas workers, fiscal reforms and the growth of sunrise sectors such as agriculture, mining, ICT, tourism, health care and BPOs—prompting talk of a 'firewall' between the country's economic and political systems. Thus, perhaps more challenging than the Philippines' political situation is the variable supply of skilled human resources. Despite its ranks of skilled workers, the country is having problems matching its supply of graduates to emerging needs. For one, the country loses many of its skilled workers to overseas markets. The government predicts a total shortfall of 314,800 workers from 2006 to 2010. Second, despite the Philippines' reputation as an English-speaking country, industry leaders have voiced concern about the English proficiency of recent graduates. At present, only 5–6 people are recruited out of every 100 applicants, prompting employers to recruit outside urban areas and set up intensive training programmes for 'near-hires'.

Government Responses: The government is championing the BPO sector as the new economic growth driver and a solution to its unemployment problem. In her State of the Nation Address in July 2006, President Arroyo announced the plan to develop a CyberServices Corridor of IT-enabled services, call centres and other BPOs to run from north to south of the archipelago. While 425 of the 555 BPO firms are currently in and around Manila, growing numbers are being established around Cebu, a centre for the electronics industry. In addition, in August 2006 President Gloria M. Arroyo directed DTI to lead a public-private sector task force in drafting a BPO Master Plan to increase the country's competitiveness in the sector and to promote the country as a hub of IT-enabled services.

The government has also announced several measures to improve the English language proficiency of Filipino graduates, as follows:

- In June 2006, PhP 600 million (about USD 12 million) was allocated to upgrade the English language skills of English, Science and Mathematics teachers.

- In May 2006, a PhP 500 million (about USD 10 million) 'Training for Work' scholarship fund was announced for 100,000 'near-hires' to bring their language skills to the required standard.
- As early as 2004, a bill was filed in Congress mandating the use of English as the medium of instruction, in place of Filipino.

Indian Recognition: On 3–7 September 2006, a high-level Indian delegation composed of the Secretary of the Ministry of IT and Communications, the President of the National Association of Software and Service Companies (NASSCOM) and representatives of tier-one BPO firms operating in India visited the Philippines. The visit, which was hosted by the Business Process Association of the Philippines (BPAP), led to the signing of an agreement between BPAP and NASSCOM to promote outsourcing in the two countries. The two industry associations agreed to cooperate in strategic communications, geographic risk mitigation, workforce development and infrastructure improvement. They also agreed to share best practices and adhere to international standards in data security and privacy. The agreement suggests recognition of the Philippines as a serious rival by the Indian BPO sector. Indeed, the Philippines is increasingly becoming the second most preferred location for BPO operations and is well poised to take a bigger slice of this market.

On another front, the tight fiscal situation of the government has led to scrutiny of its expenses, including its annual expenditure for communication. In 2005, the national government spent PhP 3.48 billion (about USD 632.7 million) in communication expenses. This huge expenditure has led to calls for the government to start using VoIP (Cruz 2006).

ICT4D projects

In January 2004, the Department of Science and Technology, in partnership with the Canadian International Development Research Centre (IDRC), launched the main initiative for the use of ICTs to foster development and alleviate poverty through community projects (see its website at www.ict4d.ph). As of August 2006, there were 449 documented ICT4D projects under the following categories: e-Agriculture (24 projects), e-Business (41 projects), e-Employment (14 projects), e-Environment (28 projects), e-Government (237 projects), e-Health (16 projects) and e-Learning (89 projects).

As the breakdown shows, the government is leading the way in ICT use, improving services and its accessibility to citizens and investors. As proof of the government's commitment to ICT4D, a four billion peso e-government fund was created in 2003, to which was added PhP 1 billion in 2005, to finance high-impact and mission-critical ICT projects of government agencies, under the management of CICT. As of June 2006, there were 31 ongoing projects financed by the e-government fund, amounting to about PhP 3.46 billion. Examples of these projects are:

- The Bureau of Customs' ASYCUDA World Project (e-Customs), which aims to facilitate trade exchanges and generate government revenues by creating a Web portal that upgrades the Bureau's operational facilities, streamlines processes and encourages transparency in transactions.
- The Bureau of Internal Revenue's PhP 678.51 million Integrated Computerization Project envisioned to promote transparency and efficiency in government transactions, contribute to stronger tax administration, facilitate increased revenue collection, minimize graft and corruption in government, and provide more convenient frontline services to taxpayers. If successfully implemented, the project would contribute significantly to improving tax collection, expected to total 4.1 trillion pesos from 2006 to 2010. The project includes, among others, systems to facilitate e-filing, a tax compliance verification drive using mobile technology, a Computer-Assisted Audit Programme (CAAP), and Automated Excise Data Management System-Phase II (AEDMS).
- The eLGU project of the National Computer Center which assists local government units (LGUs) in their computerization efforts to enable better and faster delivery of government services. The project consists of four major components, namely: development of e-Government applications, LGU capability building, advocacy and promotions, and empowering local communities in ICT through Community e-Centres (CECs).
- The eLibrary project of the Department of Science and Technology (DOST), the University of the Philippines, the Department of Agriculture, the National Library and the Commission on Higher Education creating a Web portal that now contains digitized text of 800,000 bibliographic records consisting of 25 million pages of local and international materials, 29,000 full-text copies of foreign journals and 15,000

theses and dissertations. The eLibrary provides member agencies free access to content, subject to a fair use policy.

There is also the Anti-Money Laundering project and the NCC's online payment portal for government-related services.

In 2005 the priorities of the 2005 e-government fund were the following:

- CICT's Community e-Centres (CeC) project, which involves the establishment of single access points for online delivery of national and local e-government services to smaller communities. The CeCs will provide voice and data services, Internet access, PC rental, business services and community-based services such as agricultural price monitoring, trading and local content development. Also to be provided are special services for overseas Filipino workers (for example, VoIP, e-mail, job search), commercial services (remittance services, real estate tax payments, business permits and licenses), and national government services such as online applications for birth certificates, payment of social security and government insurance contributions, and passport renewal. At present, there are already 54 operational CeCs in the Visayas and in Mindanao.
- DTI's Business Name Registration System
- The local government information portal and the public safety information portal of the Department of Interior and Local Government

Since 2000, private foundations have sought to provide Internet connectivity packages to secondary schools. The most recent programme is a multi-sector initiative called GILAS (Gearing Up Internet Literary and Access for Students). Launched in 2005, GILAS aims to provide Internet access and basic Internet literacy programmes in all of the 5,433 public secondary schools in the Philippines within five years time. The project is led by a consortium of top private corporations and civic organizations in cooperation with the Department of Education.

Establishing a Web presence

As of mid-2006, 348 out of 375 national government agencies (NGAs) had established a presence on the Web. In terms of stages of e-government following the UN-ASPA (American Society for Public Administration) standards (Digital Philippines), 10 NGAs are at Stage 4 (transactional Web presence), 142 are at Stage 3 (interactive Web presence), 131 are at Stage 2 (enhanced Web presence) and 65 are at Stage 1 (static Web presence).

A December 2004 report by the National Computer Center showed that all but 15 of the 1,709 local government units have a Web presence. A hundred of these are at Stage 2 of the UN-ASPA standards and 40 are at Stage 3. Among the 79 provincial governments, 42 have static websites, 26 have enhanced websites and 11 have interactive websites. In addition, out of 115 cities, 68 have static websites, 32 have enhanced websites and 15 have interactive websites.

As for state colleges and universities (SCUs), 60 of the 111 SCUs had websites as of the third quarter of 2006. Of these, 19 websites are static (Stage 1), 21 are enhanced (Stage 2) and 21 are interactive (Stage 3) (National Computer Center Website).

Education and capacity building

The Philippines Open University is a leader in online learning. From only two online courses in 2001, it now delivers online tutorials for all of its more than 200 courses using an open source learning management system. Online learning has also caught on in a number of private and public Philippine universities.

At the secondary school level, the Philippines is part of a regional programme called ASEAN SchoolNet, which is funded by a grant from the World Bank-managed Japan Social Development Fund awarded to World Links, an international NGO with extensive experience in developing local capacity to integrate ICTs in education. The Foundation for IT Education and Development (FIT-ED) is responsible for the programme's implementation in the Philippines. The other target countries in the region are Cambodia, Lao PDR, Vietnam and Indonesia. The programme aims to promote appropriate and sustainable use of computers and Internet technology for teaching and learning in the public secondary school system through a teacher professional development programme, as well as training in technology planning for school administrators. As of 2006, 31 public and private secondary schools and 17 teacher education institutions are participating in the Philippine project.

Another ICT for education project in the Philippines is the Intel® Teach to the Future (ITTF) Program, a global initiative of Intel Corporation promoting inquiry-based and project-based learning and the integration of computers in the school curriculum. The Philippine programme was launched in 2000 by Intel Technology Philippines, Inc. in partnership with the Department of Education (DepEd), the Department of Science and Technology-Science Education Institute (DOST-SEI), the University of the Philippines National Institute for Science and Mathematics Education Development (UP NISMED), EduQuest Inc., and FIT-ED. It serves as a major teacher training component of the government's computerisation initiatives for basic education, such as the PCs for Public Schools project. Since

2000, the ITTF Programme has trained more 50,000 school-teachers in effective technology use in the classroom.

FIT-ED also successfully co-organized with the Department of Education and CICT the First and Second National ICTs in Basic Education Congress in December 2004 and September 2006, respectively. The Congress brought together teachers, school administrators, teacher trainers, educational technologists and other practitioners and stakeholders from the public, private and non-profit sectors.

CICT is spearheading the development of ICT Competency Standards to be applied in education and training, and to help professionalize ICT personnel in government and the private sector through the design, formulation and administration of competency-based certification examinations. To date, three draft standards have been formulated: the National ICT Standards (NICS)–Basic, NICS–Advanced and NICS–Teachers. An ICT Competency Assurance Body is to be established to oversee accreditation, certification and coordination with concerned stakeholders.

Moreover, CICT has drafted an ICT in Education Master Plan for all levels, including a National Roadmap for Faculty Development on ICT in Education. In 2005, CICT assisted the Department of Education and FIT-ED in formulating the draft National Framework Plan for ICTs in Basic Education (2005–10).

With respect to content development, CICT has the Open Content in Education Initiative (OCEI) which aims to convert Department of Education curricula into interactive multimedia content, develop computer applications for schools, and sponsor student and teacher competitions to promote the development of education-related Web content. The iSchool WebBoard aims to develop and share online learning materials, and to facilitate immediate access to useful references and interactive facilities on the Internet. Another project, PhEdNet, is a 'walled garden' hosting teaching and learning materials and applications for use by Filipino students, teachers and parents. All public high schools will be part of this network, which would ensure that only DepEd-approved multimedia applications, materials and mirrored Internet sites will be accessible from school PCs.

eSkwela is a CICT project that aims to establish Community e-Learning Centers for out-of-school youth (OSY), providing them with ICT-enhanced alternative education opportunities. At the tertiary level, CICT has the eQuality Programme in partnership with State colleges and universities.

The Digital Media Arts Programme aims to develop digital media skills for government using open source technologies. The ICT Skills Strategic Plan adopts an inter-agency approach to the identification of strategic, policy and programme/project recommendations to address the ICT skills demand-supply gap.

Open source initiatives

The Philippines has an active community of open source advocates. In October 2006, the University of the Philippines, in cooperation with the International Open Source Initiative, conducted the Linux Training for Trainers series to enhance awareness and knowledge of free and open source software (FOSS). Also in the pipeline is a training programme for service providers and small to medium-scale enterprises looking for alternatives for building their own IT infrastructure. These initiatives aim to develop personnel who are knowledgeable about open source applications development and administration in order to promote its use.

Already, a bill on the use of FOSS is being contemplated in the Philippine Congress, with the goal of mandating the use of FOSS by government agencies and encouraging its use and development in the public and private sectors. CICT supports this move, given that its ongoing projects like eLGU, eGovernance Center of Excellence, iSchools and eSkwela are already using FOSS.

Conclusion

For a developing country, the Philippines is doing a lot in terms of utilizing ICTs as a developmental tool. The main challenge is really to ensure that its ICT4D programmes have a meaningful impact on the daily lives of people. The first step towards this is to understand that ICT adoption is a social process with the potential to exacerbate existing inequalities, as much as it holds the promise of bridging these same inequalities. Careful planning is needed to ensure that ICT4D goals are realized.

The institutionalization of a separate ICT department will result in effective coordination and implementation of the country's ICT agenda. Currently the Philippines is the only country among ASEAN-6 that does not have a dedicated executive department dealing with ICTs. It is hoped that the new department will see the light of day in the near future.

Notes

1. In fact, in 2005 installed fixed-lines grew by 1 per cent while subscribed lines declined by 2 per cent due to disconnections.
2. The VoIP Rules explicitly define VoIP service as the 'provision of voice communication using Internet Protocol (IP) technology, instead of traditional circuit-switched technology'. See VoIP Rules, Section 2(f).

3. See VoIP Rules, 10th WHEREAS Clause.
4. Republic Act No. 8792, Section 28, par. 3.
5. See Section 5.1 of the NTC Memorandum Circular No. 03-03-2005.
6. The proposed DICT Bill consolidated by the Congressional Technical Working Group has not yet been passed into law.
7. EO 263, Section 5.
8. For additional ICT policies, see www.ncc.gov.ph/default.php?a1=2&a2=3&a3=0

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