Issues on the Philippines' Information and Communications Technology (ICT) Competitiveness

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I. INTRODUCTION

The role of Information and Communications Technology (ICT) in organizations has expanded much over the years. From mere recording of business transactions and reports generation, ICT has gone on to becoming the means to securely procuring raw materials, managing production, and facilitating distribution. As a general purpose technology, it is widely applicable in manufacturing and service sectors, and therefore is intimately linked with the rest of the economy.

ICT has the potential to support the entire value chain: Its forward links extend to custom-made product configuration, while its backward links can go all the way to materials science—making it ideal as a tool to support new demand for customized products, services, and solutions (e.g. payment modes); it is expected to be the primary vehicle for a new breed of information products with greater information and development content.

The ability of a country or a region to compete in the new global market for new products and services, hence, depends greatly on how well it can use ICT to support its products. In this sense, it can be argued that it is this use of ICT in large sectors of the economy determines productivity (Kraemer and Dedrick, 2001).

Traditional ICT services include software and applications development, network engineering and maintenance, and, more recently, call centers, medical and legal transcription, animation, and various forms of business process outsourcing (BPO). The demand for these services is expected to continue and the race to provide these services—especially in Asian countries—will have significant impacts on both users and suppliers worldwide.

This paper explores current ICT service niches in the Philippines—a country that, in a 2004 report by AT Kearney, has been identified as among the world's 25 most attractive destinations for ICT and has the potential to be a major global service provider in the previously mentioned areas. The paper's objectives are: (i) to identify the Philippines' ICT-based service niches; (ii) to assess the competitiveness of these niches; (ii) to identify the support mechanisms needed to deepen the country's competitive advantage in ICT-based tradable services.

The paper is arranged in the following order. Section 2 enumerates and describes currently available ICT services in the Philippines. Section 3 is an in-depth discussion of the 2004 AT Kearney Offshore Attractive Index criteria with respect to Philippine ICT. Section 4 concludes with a set of recommendations for dealing with the issues raised in the AT Kearney study.

II. ICT-BASED SERVICES IN THE PHILIPPINES

The Information Technology and Electronic Commerce Council of the Philippines (ITECC) categorizes ICT-based services into "ICT-services"—tasks requiring in-depth knowledge of computer programming and programming languages, networks, and software programs—and "ICT-enabled services," or services delivered over telecommunication networks

or the Internet to a range of business areas. In the latter group, technology is used as a tool or an enabler, and the functions tend to be labor-intensive.

Over the next four years, ICT-services are expected to grow by 8%, while ICT-enabled services are projected to grow by 12%. The former group is seen as maturing, while the latter is widely believed to continue growing as demand for BPO goes up (Gartner Dataquest, 2004). Worldwide demand for ICT-based services has more than doubled in the last five years, with the US (54%) and Europe (32%) as the major markets.

A. Software Development

Having been in existence for more than 20 years now, the Philippine software industry has an abundance of skilled programmers. There are about 300 software development houses in the country offering a wide range of software products and services that fall into any of the following categories: General Applications (word processing, databases), Custom Vertical applications (e.g customized accounting systems), Development Platforms (e.g. Oracle, SAP, SQL), Development Tools (e.g. C++, Visual Basic, Java), Operating Systems (e.g. Windows, Mac OS), and Utilities (e.g. Virus protection, Memory management). Services include analysis and design, prototyping, programming and testing, quality assurance, customization and consultancy, installation and maintenance of software, and training in software use.

These Philippine companies deliver software solutions for North America, Europe, Japan, and the Asia-Pacific. According to the Philippine Software Association, the industry contributed P22.75 billion in income taxes in 2003—about 9.6% of total taxes on net income collected by the national government. Nonetheless, India remains the global leader in software and applications development because it still has the largest number of low-cost, highly-skilled programmers than anywhere in the world.

B. Animation

Animation is the process of giving the illusion of movement or life to cinematographic drawings, models, or inanimate objects through traditional (cellulose), two-dimensional (2D), three-dimensional (3D), or motion capture techniques. The animation industry in the Philippines has been around for over 18 years, and has been known as a producer of high-quality animated films since the establishment of a local Burbank Animations studio in 1983. In recent years however, demand has shifted from 2D to 3D and computer generated image (CGI) animation, and unfortunately, most of the country's 15 animation studios can only do 2D work.

The two major users of animation are the education and entertainment sectors, though the need for it is growing in many other fields. E-commerce through the Internet has generated great demand for expertise in web development, computer graphics and design, mobile applications, and advertising.

As it stands, the Philippines' value rests mostly on intangibles such as artistry, creativity, and the ability to interpret cultural nuances. With global demand for these services about to jump from US$16 billion to US$50 billion by 2004-2005 (growth at 25 percent annually) in the USA, Japan, Australia, Canada, France, and ASEAN, key success factors include building up technical competencies to enable meaningful 3D animation work and the creation of creative alliances, such as co-production arrangements, with large entertainment companies and publishers of educational media. On that end, an animation-related, emerging area that the Philippines has not entered in yet is game development.

C. Call Centers

In general, call center operations can be regarded a form of business process outsourcing (BPO) focused mainly on sales, marketing, and customer care. Worldwide, call or contact center services, now valued at US$73 billion, will see an annual growth rate of 24%, according to the IDC. In the Philippines, there are, to date, 72 call centers employing about 67,000 agents, majority of which are subsidiaries of US-based companies. These are mostly located in Metro Manila, though a few are being put up in key cities around the country.

Call centers started mainly from providing e-mail responses for customer and technical support. It has since developed capabilities for almost any type of customer and interaction, including travel, financials, education, consumer services, online business-to-consumer (B2C), and online business-to-business (B2C) support. These services include outbound and inbound calls, and the services required by specific business functions are listed below (Table 1).

Table 1: Call Center Services

Outbound	Inbound
Telemarketing	Inquiries (all types)
Advisory	Technical Help Desk
Sales verification	Payment Authorization
Credit and Collection	Order Taking and
Reactivation	Fulfillment
/reinstatement	Complaints
Loyalty Programs	Customer Service
Customer Service	Disputes
Order Entry	Transcription
	Requests
	Electronic Eligibility
	Support
	Sales
	Marketing/Lead Generating
	Billing

D. Medical and Legal Transcription

Medical transcription involves the process of encoding and interpreting electronically the oral instructions of physicians and health professionals regarding patient assessment, therapeutic procedures, diagnosis, and translating these into detailed medical records. Currently, only 47 percent of the market is outsourced; the rest is in-house. Legal transcription is a similar activity aimed at assisting legal professionals. As a whole, this industry is estimated to be worth between US$10 to US$16 billion, with a compounded annual growth rate of 20%. A 2000 survey by the Medical Transcription Industry Association (MTIA), however, suggests that a surge in demand is likely in the next few years given that 6,700 US hospitals have yet to comply with new recordkeeping standards mandated by federal authorities.

Value propositions for the Philippines are its use of English as Second Language (ESL) and the Philippines' familiarity with US medical standards and practices. Then again, the same

survey reports that 83% indicated belief that these hospitals will not use offshore transcription for the next two years, and that 12% will not change their current outsourcing levels.

E. Business Process Outsourcing

The Gartner BPO model defines business process outsourcing as the delegation of one or more IT-intensive business processes to an external provider that, in turn, owns, administrates, and manages these based on defined performance metrics. This model identifies four major service offerings: Supply Chain Management, Operations, Business administration, Sales and Marketing. Table 2 shows the various activities in the model.

The Department of Trade and Industry (DTI) defines BPO more generally, identifying it as the delegation of service-type business processes to a third-party service provider. Animation and transcription are current services outsourced to the country.

Table 2: BPO Services

Supply chain	**Warehouse/inventory**
Management	Direct Procurement Transportation / Logistics
Operations	Research and Development Contract Manufacturing Analytics and Quality control
Business Administration	Administration Finance HR Billing Indirect Procurement Payment Service
Sales, Marketing	Customer Acquisition
Customer Care	Customer Selection Customer Retention Customer Extension

III. DETERMINING THE NICHE FOR THE PHILIPPINES

Current growth projections, together with the current status of the Philippines as an offshore location for BPO, make the country a potential leader for BPO and related services. Contact centers and BPO, in general, are Philippine ICT-service niche areas serving primarily the US and Europe—with potential for expansion into Chinese-speaking countries, given that about 35% of the population has Chinese ancestry. In this regard, an appropriate model to assess the Philippines' competitiveness is AT Kearney's 2004 Offshore Attractiveness Index, specifically, for ICT-based services.

The Index lists financial structure, people skills and availability, and business environment as the major categories for evaluating a country's attractiveness as an offshore business destination. With respect to these, the Philippines is ranked sixth among 25 countries, behind India, China, Malaysia, the Czech Republic, and Singapore. (Table 3 is a detailed listing of the measurements used to compare countries.)

Table 3: Offshore Attractiveness Factors

Category	Sub-categories	Metrics
Financial Structure (40%)	Compensation Cost	Average Wages Median compensation for relevant positions (such as call center representatives, IT programmers and local operations managers)
	Infrastructure Cost	Includes occupancy, electricity and telecom systems Travel to major customer destinations
	Tax and Regulatory Cost	Relative tax burden, cost of corruption, and fluctuating exchange rates.
People Skills and Availability (30%)	Cumulative business process experience and skills	Existing IT and BPO market size Contact center and IT-quality rankings Quality rankings of management and IT training
	Labor force availability	Total workforce University-educated workforce
	Education and Language	Scores on standardized education and language tests
	Attrition rates	Relative BPO growth and unemployment rates
Business Environment (30%)	Country environment (including economic and political aspects)	Investor and analyst rating of overall business and political environment Extend of bureaucracy Government support for ICT sector
	Country Infrastructure	Blended metric of infrastructure quality (Telco, IT services)
	Cultural Adaptability	Personal interaction score from AT Kearney's Globalization Index.
	Security of IP	Investor rating of IP and ICT laws Software piracy issues

The Philippines is third in financial structure, 11th in terms of people skills and availability, and 22nd in business environment. It is clear from these results that the country has to find ways to make investors perceive it more favorably. As things stand today, the Philippines, given the quality of its workforce, is well on its way to becoming a major BPO player, but with China and India still in the lead. Thailand and Vietnam only need to upgrade their workforce to catch up to these countries.

A. Financial Structure

Although ICT labor is slightly more expensive in the Philippines than in India (US$2,400) and China (US$2,000) at US$2,900 per annum, the quality of skill is significantly higher. The average salary is US$ 2900 per annum compare to $ 2000 for China and $ 2400 for India (see

table 4.0 for Philippine's average cost of labor on ICT jobs). Costs of occupancy, electricity and telecommunication systems are nearly the same as most Asia countries, except Singapore. Travel to key country cities takes four hours or less.

Comparing these six countries, India just has a very slight edge over the Philippine in terms of financial structure. This implies that the country is competitive in terms of compensation and infrastructure costs, and has good tax and regulatory measures. On this category, China is followed closely by China follows closely followed by Malaysia and the Czech Republic, with Singapore scoring the lowest.

Table 4: 2003 NSO and ITECC Survey on ICT Salary in the Philippines
(PHP)

	All industries	**Transport and Communications**
IT Managers	33,900	67,000
Systems Analysts	21,600	39,000
Programmers	16,500	26,000
Database Administrator	22,900	31,000
Network specialist	21,000	27,000
Computer Technician	10,000	16,000

The Philippines also offers some of the best tax and regulatory incentives. These incentives are in the forms of:

1. 4-8 years Income tax holiday (ITH)
2. Special 5% tax rate on gross income after lapse of ITH (for park locators)
3. Tax and duty exemptions on imported capital equipment (for IT park locators)
4. Unrestricted use of consigned equipment
5. Deduction for labor expense up to 50%
6. Deduction of training expense up to 150%
7. Exemption from wharfage dues
8. Employment of foreign nationals

However, the country's standing is hampered by costs imposed by corruption and exchange rate fluctuations.

B. People Skills and Availability

The Philippines' strengths in relation to BPO are its relatively good employee retention record (10-15% turnover rate), language skills, education system, and industry experience. The DTI and the Board of Investments (BOI) claim that the country is the third largest English-speaking country in the world, with an estimated 72% of its population fluent in American English. According to Gartner Research and Advisory Services (2002), Filipinos' verbal skills, with respect to clarity and understandability, are superior to those in India and Ireland, among other offshore destinations. The Philippines can also boast of 380,000 college and university graduates every year; 100,000 of these are business administration and commerce majors, while 50,000 to 70,000 finish either computer science, IT, or mathematics. (At present, there are 86 tertiary education institutions offering computer science and related degree programs.)

Despite allegedly having the most number of IT schools in the region, the Philippines' primary disadvantage, compared to China and India, is its smaller population.

However, World Development Indicators data (World Bank, 2001) show that the Philippines lags behind other Asian countries in IT use. There are only 21.7 computers for every 1,000 Filipinos (a 1:46 person-computer ratio), while Malaysia has 126, and Hong Kong reports 386.6 for the same number of people. Philippine schools are not faring any better in this aspect: only 77,400 computers are installed for nearly 20 million students—approximately corresponding to just one computer for every 250 students. Moreover, Internet access is more expensive, costing twice that of Hong Kong and quadruple that of Malaysia. Unsurprisingly, labor reports reveal low ICT and functional literacy.

And even with the country's acknowledged advantage in verbal communication, recent reports indicate that only 5% of applicants for call center operations have acceptable levels of proficiency in English. (This is mirrored by the fact that only 14% of Filipino nurses applying for jobs in the US and the UK pass their English tests.) Further analysis shows that those who get hired in call centers are mostly graduates of the country's best schools, and come from a variety of disciplines. The result has been call centers luring fresh graduates, through higher-than-average salaries, to what are considered "dead-end jobs" instead of pursuing other careers. Taken together, these things point to a need to improve the general population's competence in using English—especially in light of China and the rest of Asia's ongoing efforts to better themselves in the language via high schools where English is the medium of instruction.

C. Business Environment

The Philippines was only ahead of Turkey, Vietnam, and Russia in business environment—an indicator inclusive of a country's economic and political environment, extent of bureaucracy, government support for the ICT sector, infrastructure, cultural adaptability, security of intellectual property (IP), and piracy issues, if any.

1. Telecommunications

Three main systems define a country's ICT infrastructure: telecommunications, computer systems, and electricity. These are the main technologies that support ICT–based services. Unfortunately, the quality of ICT infrastructure in the country is significantly lower and far more costly relative to other countries.

Telecommunications comprise telephone lines, digital subscriber lines (DSL), cable networks, cellular sites, and communication devices. In the Philippines, although deregulation has raised landline telephone density from 2.01 telephones per 100 people in 1995 to 9.12 in 1999, the same figure has declined to 9.05 in 2000 and further down to 8.07 in 2003. In fact, by the end of 2003, based on the National Telecommunications Commission, only 3.8 of the total 6.9 million available lines had been subscribed. This can be attributed to two main factors: affordability in a developing country where low-income households are the majority, and the

rising popularity of mobile telephony.[1] Overall, telephone penetration remains highly skewed toward major urban centers.[2]

According to Karen Rondon, Telecommunications Market analyst at IDC Philippines, there are three main telecommunications challenges in the country: the high cost of telecom services, network equipment, and personal computers; the small number of business and commercial districts that account for most of demand and revenue for telecom services; the diversity of interests. In this regard, competition and variety is healthy, but cooperation between government regulators, operators, and IT vendors, in this case, might be more helpful in terms of growing the country's network industry.

The popularity and affordability of short message service (SMS) has been an important factor in the growth of mobile telephony in the Philippines. The number of cellular mobile subscribers has risen from 1,733,700 in 1998 to as much as 15,201,000 in 2003. For every 100 persons, there are 19.13 cellular mobile subscribers. This group makes up 82.1% of all telephone subscribers in the country (International Telecommunications Unit (ITU) Statistics).

In the Philippines, prepaid subscriptions are packaged with free SMS for a limited time or a defined number of messages, which allow users to send about eight text messages for the price of one voice call. This has allowed SMS to emerge as a preferred alternative to long-distance calls. In fact, until very recently, there were no surcharges for long-distance text messaging. SMS Champ has reported that Filipinos are the world leader in per capita SMS usage, accounting for some 10% of all SMS messages sent around the world.

2. Computer Systems

With regard to personal computers, the Technical Education and Skills Development Authority (TESDA) has stated that like many other developing countries, the Philippines still pales in comparison to other nations in terms of personal computer (PCs) penetration index. There are an estimated 2,200,000 PCs in use in the country, but as of 2003, only 2.77 PCs were in use for every 100 Filipinos, according to the ITU. Of the 2.2 million PCs, 69 percent were in private businesses, and just 13 percent in households. Government offices and educational institutions accounted for only 10 and 6 percent, respectively. In retrospect, this is quite ironic, as the Philippines' top export is electronics, particularly PC microprocessors.[3]

The proliferation of ISPs in the Philippines resulted in growth in the number of Internet users in the country, which peaked at 1.5 million in 2000. The boom years forced many local Internet Service Providers (ISPs) to expand their services and upgrade their networks to include more points of presence or value-added resellers. The National Telecommunications Commission (NTC) reported in 2003 that there are 53 ISPs with about 800,000 subscribers, of which 675,000 use dial up access and 125,000 use broadband. Nonetheless, the IDC says that low PC penetration—instead of the number of ISPs—that is limiting Internet access in the country.

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[1] Even in Metro Manila, where 90 percent of the Philippines' private business, cultural, educational, and medical organizations are based, there are only 15.70 landline telephones for every 100 persons.

[2] A direct result of these weaknesses are consumers simply shifting to mobile access, which has been documented as having added over 10 million subscribers in the last two years. Mobile phones, after all, offer greater payment flexibility and instant access, aside from serving as a fashion accessory.

[3] Internet penetration rates in other Asian countries: Singapore (24.9), Malaysia (15.8), Thailand (3.8)

3. Electricity

Installed capacity totals 12,694 megawatts, but the country's average daily power demand is only 7,869 megawatts. Filipino consumers, however, appear to be penalized for this extra supply via purchased power cost adjustment (PPCA). In April 2002, the average Filipino household paid P1,220 in monthly electricity bills; more than half of this payment (P650) went to PPA.

In 2001, the country's most profitable company was power producer Mirant Philippines Corp., a subsidiary of an Atlanta-based energy firm that registered a net income of P8.5 billion. As of May 2002, the country's power rates were said to be the second most expensive in Asia, though a subsequent reduction in PPCA charges improved the country's standing to sixth.

IV. NICHES, NETWORKS, AND RECOMMENDATIONS

Business process outsourcing, whether for ICT or ICT-enabled services, will continue to be a major source of income for the Philippines. Nonetheless, there is an urgent need to improve coordination among the government, industry, and academe in policies and programs if the country is to sustain its advantage in these sectors.

A. Financial Structure.

The Philippines offers competitively priced labor and excellent investor incentives, but corruption and exchange rate uncertainty makes investing in the country unattractive to foreign clients. Electricity and telecommunications, furthermore, continue to be more expensive than most of Asia, and these services, to begin with, are limited to highly populated key cities.

Corruption, in particular, is a primary concern for investors—next only in importance to macroeconomic stability, in fact, in investors' minds, according to the Asian Development Bank (ADB). Very recently, the ADB reported that ranked the Philippines as the second most corrupt country out of 102 countries surveyed. This is one of the reasons behind the country's "anemic growth," according to the ADB.

As early as 2000, the World Bank has recommended a nine-point approach to fighting corruption in the Philippines. 1) Reducing opportunities for corruption by policy reforms and deregulations; 2) reforming campaign finance; 3) increasing public oversight; 4) reforming budget processes; 5) improving meritocracy in the civil service; 6) targeting selected departments and agencies; 7) enhancing sanctions against corruption; 8) developing partnerships with the private sector; and 9) supporting judicial reform. These initiatives must be unified under one concerted program, supported by strong leadership and management, and done in partnership with the private sector and civil society.

Note that ICT can play a major role in ensuring transparency in government. After all, if every government financial transaction were made electronically, it should be possible to monitor and trace financial exchanges entered into by government institutions with each other, with private groups, and individuals. Government-to-citizen (G2C) applications for transactional purposes (i.e. securing permits and licenses, tax payments) should be put in place not only for clients' convenience, but also for facilitating easier dues monitoring. (The National Government Accounting System (NGAS) will soon be used by all government units, so this is even more relevant.)

B. People Skills and Availability

All ICT-based businesses rely on people. Stronger industry-academe linkages are required to make colleges, universities and training institutions more responsive to the needs of industries. Companies and learning institutions should jointly set the standard competencies and skills required by various industries locally and globally.

Some engineering schools teach students computer-aided design and manufacturing (CAD/CAM), but could not require their students to consistently use these tools because of limited facilities. There are numerous software applications in nearly every discipline that students are not aware of: graphics and animation software for artists, simulation software for the natural and applied sciences, enterprise resource planning (ERP) packages for management students, instructional software for educators, among other examples. The use of these technologies must be made part of the licensure examinations to compel schools to acquire them and students to use them. More importantly, the use and integration of ICT in teaching must be included in the pre- and in-service programs of educators, as the current batch of teachers appear to be increasingly less adept with IT compared to students.

To familiarize students with equipment and procedures in the actual workplace, specialized high schools or vocational training centers within industrial zones can be opened. The government can even invite existing schools to set up extension programs in IT parks and industrial zones to bring the schools closer to the places of work, and for park employees to be given opportunities to upgrade their skills.

The government may also need to monitor more closely curriculum in the tertiary level, given the mushrooming of IT and Computer Science courses even in places where there are obviously no trained professionals to handle the course or industries to absorb the would-be graduates.

Also, it is imperative that English-based instruction across all levels of education be strictly enforced. Although the Philippines has not completely lost its “English advantage,” competitor countries’ increasing levels of proficiency in English will soon mean less BPO transactions done by Filipinos. This can possibly be remedied by tapping into the possibility of servicing Chinese industries’ BPO needs. With about 35% of the population having some Chinese roots, Chinese high schools may opt to adapt a Mandarin language proficiency curriculum to realize this potential.

A National Manpower Planning initiative must be undertaken by the government involving various industries, schools, and government agencies. Results must lead to goals, commitments, policies, and regulations to address the current and future needs for ICT-based activities. Genuinely hands-on on-the-job training and apprenticeship programs should be initiated by industry and schools.

C. Business Environment

Among the three criteria specified, this requires the most attention. The Philippines needs to improve its image and overall business environment. On this matter, the passage of laws on Optical Media and E-commerce are welcome developments, but it is the proper implementation of existing regulations that is most needed.

Software piracy has always been a factor of cost of acquisition. Anti-piracy laws aside, the government can do more in assisting institutions in the purchase of applications. This could

be in the form of a national negotiation with leading application providers to lower the cost of software. In addition, the government information systems plan must be revisited, and directed to making sure specific tools and applications are given to all government units for their use. This will lower the cost of procuring applications licenses.

Although the country has designated special economic zones suitable for ICT, call center, and BPO establishments, these are confined mostly to Metro Manila. The establishment of new economic zones for ICT must be conceptualized with conscious regard for local government, the education institutions that will soon be part of these new strategic networks, and local labor markets.

Our potential as an offshore location for BPO must be promoted even more through trade missions and expositions. Various information campaigns on ICT must likewise be made to keep local and international organizations to be aware of the ICT developments in the country.

Finally, the media should be encouraged to take an active part in educating and informing the general public on issues related to ICT.

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