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E-Government in Asia and the Pacific

E-government is the use of information and communication technology (ICT) to promote more efficient and cost-effective government, more convenient government services, greater public access to information, and more government accountability to citizens.[1] E-government applications vary widely in the diverse Asia-Pacific region, where the countries range in population size from the People's Republic of China (PRC) to Nauru, and in per capita GDP from Singapore to Nepal.

ICT-enabled reforms can yield many benefits, including lower administrative costs, faster and more accurate response to requests and queries (all day everyday), direct access to transaction or customer accounts held in different parts of government, and the ability to harvest more data from operational systems, thus increasing the quality of feedback to managers and policymakers. A study of innovation awards given to government agencies in the US revealed that all the agencies applied technology in innovative ways such as allowing citizens to handle common legal matters on-line. However, e-government systems can deliver on their promise only if different offices and people are willing to share information and to do things differently.

ICT in the Asia-Pacific Region: The Six Stages of E-Government

Stage 1: Internal network

Most governments in the region begin by setting up systems mainly for internal use such as e-mail. A personnel information system can routinely prepare separation documents for staff past the normal retirement age instead of letting them stay on as they do in many Asia-Pacific governments. A debt management system can also routinely notify staff when payments are due, thus helping them avoid penalty fees and other problems.

The Republic of Korea Supreme Prosecutor's Office and the Seoul District Prosecutor's Office established computer crime investigation departments in local prosecutors' offices nationwide in 2000 to deal with more technological and tactical offenses and to investigate cases of corruption with the help of modern computer techniques. In Pakistan, the entire tax department is being restructured, and electronic tax filing and payment systems are being introduced to reduce contact between tax collectors and taxpayers.

Stage 2: Inter-organizational and public access to information

The next stage is to enable better access to information by other organizations and the general public. To start with, this often involves developing systems for managing workflow. Workflow is a general term for the ability to move images, files, documents, etc., from workstation to workstation, using specific business rules for review, authorization, data entry, data editing, and task assignment. Entire business processes that require the movement of paper can now be managed electronically to minimize the delays normally associated with hard-copy documents and manual processing.

Promising ICT applications in the Asia-Pacific public sector include, among others, claims processing and management; bid and proposal routing and tracking; handling of customer service and complaints; grant and scholarship award, approval, and processing; and human resource recruitment and hiring. The Tax Integrated System introduced recently by the National Tax Service of the Republic of Korea accumulates all tax-related information, and creates a profile of candidates for audits. The system considerably reduces the influence of tax officials in selecting taxpayers to be audited and makes the audit process more transparent. Computer-assisted assessment has also replaced the manual assessment of five million cases yearly, making face-to-face meetings between tax officials and taxpayers unnecessary.

The Internet offers another means of access to government information, most commonly through a web site with information organized by ministries or departments rather than by services. Some governments go a step further. In a bid to make transactions more transparent to the public, the Philippine Department of Budget and Management (DBM) has started posting on the Internet monthly details of all accounts payable and major budgetary releases for each government agency, along with the names of contractors and the amounts they are supposed to be paid. Private contractors can thus verify the pronouncements of department officials against the DBM budgetary releases. The DBM also posts its budget on the Internet after it is passed by Congress and approved by the President.

The Ministry of Agriculture in the PRC had to cut its staff by 45% in 1997, due to civil service reform, forcing it to rethink its business processes and its use of ICT. The Ministry now uses an Intranet, or private information network, to prepare, review, approve, and publish documents on-line, thus reducing the demands on staff and making the process more transparent. The Ministry's "Infocenter" also pulls together large-scale databases on farm statistics. In a trial run in one province, information kiosks are gathering and making price data and other information available to farmers so they can get the best price for their crops. The Ministry hopes to expand the kiosks to other provinces.

Stage 3: Two-way communication

The next stage allows two-way communication between the government and the public using ICT. The first step for

this is to post one or more telephone or fax numbers or e-mail addresses on a web site, and to encourage the public to send in messages. This communication can be initiated in many ways. Visitors to the web site of the Beijing city government can select from categories such as government services, laws and regulations, a news center, and links to other government departments. An e-mail section on the site asks citizens to "make suggestions about the capital's development, or criticize work you are dissatisfied with," and clicking on the appropriate link generates an e-mail addressed to the relevant office. Alternatively, users can join an electronic question-and-answer forum on issues such as the procedures to follow when moving to Beijing in order to work there.

ICT can facilitate the delivery of services even when citizens are not using computers themselves. The Computer-Aided Administration of Registration Department (CARD) is a major success story of e-government in the Indian state of Andhra Pradesh. With the full computerization of about 214 registration offices since April 1998, deeds can now be registered in one hour and other services like the issuing of encumbrance or valuation certificates accomplished in 15 minutes. Citizens no longer have to hire middlemen to maneuver through the opaque bureaucracy and handle time-consuming procedures like the manual copying and indexing of documents and their storage in paper form. In the Dhar district of Madhya Pradesh, another Indian state, citizens can get basic information and assistance on a range of issues such as broken hand pumps, lost pension checks, or sick teachers through an Intranet kiosk linked to the district headquarters. Village committees contract the management of the kiosks to local businesspersons, who recover costs through fees for services including obtaining and filing official forms, placing classified advertisements, and searching through a database for the right match for a prospective bride or groom. In addition, 34 high schools have kiosks linked to local educational content on the Intranet.

These examples point out important differences in the pattern of adoption so far between middle- to upper-income governments, on the one hand, and low-income governments, on the other. The former are replacing existing processes with on-line service delivery to citizens. About 65% of government services in Hong Kong, China, for example, are available on-line, and by the end of 2003, 90% should be enabled. On the other hand, low-income governments are building completely new communication links between citizens and governments where little or nothing existed before. Countries from both groups are also providing public-access computers for citizens.

Stage 4: Exchange of value

In the next stage, ICT supports the development of more flexible and convenient ways for citizens to do business with the government. The Singapore Government has developed on-line, round-the-clock facilities for welfare claims, tax assessments, visa applications, license renewals, and other ways of doing business. There are also many instances in the region of government-to-business transactions using such systems. The Philippine Customs Bureau has developed an on-line system to speed up payment, clearance, and release of shipments from customs control. A computer program called "Selectivity" categorizes shipments into high-, medium-, and low-risk transactions for appropriate examination. Fast and secure transmission of payment details has reduced the time for reconciling payments to banks and remittances to the National Treasury from four months to a few days. Systems like this also minimize the chance of fraud and corruption arising from contacts between business people, officials, and messengers.

Another good example is the Republic of Korea where, since 2000, purchase of commodities and all accounting transactions among the Public Procurement Service (the central Government organization that procures commodities and arranges contracts for the construction of government facilities), public organizations, and private supply firms have purchased commodities and conducted all accounting transactions has been via electronic data interchange (EDI). Since 2001, cyber shopping is being used for the procurement of office supplies, cultural products, and recycled goods, and its expansion is being planned.

Asia-Pacific governments are expected to increasingly follow the example of other regions and set up electronic production networks, outsourcing information requests, license renewals, tax payments, and e-procurement, for example, to public and private specialist organizations. A private company entirely finances and maintains the Web portal of the Government of Hong Kong, China, thereby reducing the cost and risk to the Government. Governments are also expected to follow the lead of the private sector in creating partnerships with suppliers and customers to cut costs, improve quality, and share the benefits.

Stage 5: Digital democracy

At least two important sets of ICT applications can potentially support participatory and democratic processes in the region: applications that empower civil society organizations, and those that allow citizens to vote and otherwise express opinions over the Internet.

As an example of the first type, a Philippine NGO gathered information on the mansions allegedly owned by former President Estrada's mistresses from public-access computers at the Securities and Exchange Commission and anonymous tips received by e-mail, text messages, and phone. When traditional media outlets at first refused to run the story, the NGO publicized the findings on its web site. Eventually, large demonstrations in Manila, organized with the help of text messaging, web sites, and e-mail lists, forced the former President from office.

Civil society organizations also use ICT to join forces, raise funds, and challenge international corporations and agencies. These challengers are diverse coalitions of NGOs, trade unions, extremists from the left and the right, and nationalists, organized with the help of ICT in a loose, leaderless network from which it is nearly impossible to identify a body to work out a negotiated solution. This makes the work of international corporations and agencies more difficult, but also helps prevent the premature adoption of so-called "best practices," which might rather be practices that protect the interests of particular organizations and elites.

Some have also argued that the spread of ICT could empower civil society in countries where it is weak, by increasing awareness of government corruption and of the success of democratic forces in other countries in improving participation, accountability, and protection of human rights. There are examples from the PRC, one of which was discussed under stage 2, of how ICT is being used to improve government efficiency and effectiveness, and to better inform citizens and seek feedback from them. In addition, ICT-enabled manage-

rial reforms in Hong Kong, China, in the 1990s, were motivated by a desire of the colonial administration to ensure continuation of effective governance in the soon-to-be Special Administrative Region. However, international comparative experience suggests that civil society and democratic forces are fostered for many reasons. ICT can be an enabling factor, but only when a host of other favorable conditions are met.

In the long run, digital democracy will come to some countries in the region in another form. Building on experiences in the US and Brazil, among others, electronic aids to voting will benefit the citizens of those countries. However, the pattern of adoption will be very different depending on the country. In the last Philippine election, for example, the Commission on Elections placed useful voter information, such as voting booth location and voting hours, on its web site, but since most voters had no access to the Internet, local radio stations offered to take questions called in by citizens and search the web site on their behalf.

Stage 6: Joined-up government

In the sixth, and last, stage of e-government, service delivery is both vertically and horizontally integrated. A Web portal or smart card, with built-in microprocessor used for identification and/or financial transactions, integrates information and services from various government agencies to help citizens and other stakeholders get seamless service without needing to know which government agency is responsible. Thus, users can obtain services across different geographic levels of government within the same functional area, and across different functions. As an example of the latter, a change of address on a driving license would be automatically registered with the health, elections, and tax departments, thus making multiple filings unnecessary. Citizens could also use these portals to make payments and other transactions, obtain a checklist of things to bring when applying for services in person, find answers to frequently asked questions, and engage the services of relevant commercial enterprises. Both Singapore and Hong Kong, China have state-of-the-art Web portals. In a recent worldwide study of e-government maturity, Singapore was ranked second and Hong Kong, China, tenth out of 22 countries surveyed.[2] The Government of Taipei,China has also implemented a "one-window" service, using both the Intranet and the Internet for tax administration, public health and safety, and e-commerce. Several Asian countries also have smart cards with which citizens can get seamless healthcare service.

An example in a less-developed setting is the Indian state of Andhra Pradesh. Several projects connected to the state's portal have been launched to improve service delivery to the citizens: Twin Cities Network and Services (Twins), CARD, Fully Automated Services of Transport department (FAST), Multi Purpose Household Survey, Andhra Pradesh State Wide Area Network, and Secretariat Knowledge and Information Management Systems. Connectivity has already been established and is operational between Hyderabad and all district headquarters, plus two other major towns. This connectivity is being expanded to the mandal (subdistrict) and village levels; if optimally used by the government departments and agencies as proposed, it could make e governance a reality. A videoconferencing facility between Hyderabad and 25 other cities and towns has been operational since January 1999 and will eventually be extended to all major departments.

Lessons from the Asia-Pacific Experience

Overall, several lessons can be drawn from the experience with e-government so far. First, ICT is a tool, potentially powerful yet essentially no different from a photocopier or a car in that user needs and requirements must come first and dictate whether and how the ICT tool should be used. For certain functions, pencil and paper, a telephone, a face-to-face meeting, or a visit to the library is far more effective than computers or the Internet. This obvious point must be stressed because governments, consultants, or donor agencies often encourage computerizing anything in sight. Indeed, it could be argued that ICT innovation is now largely supply- and marketing-driven rather than dictated by the needs and requirements of the users. Thus, as for any tool, the costs of a given ICT system must be assessed realistically and compared with the expected benefits.

Second, the ICT specialist and the "public manager" should not work in isolation from each other. Public sector effectiveness is improved largely through better rules and procedures in the sector concerned. Applying advanced ICT to obsolete or inefficient rules and processes is, in effect, computerizing inefficiency. Doing the wrong thing faster is not progress. On the other hand, governments without relevant ICT knowledge face the risk of making costly mistakes or missing opportunities for dramatic improvements in service.

Third, ICT cannot substitute for good public management and internal controls. When Algeria's state-owned banks introduced a computerized system, it did not improve the banking system but only made the inadequacies in the accounting system and the manual errors more visible. In this way, ICT can contribute to structural reforms, but it is only part of the process.

Fourth, there are major risks that records will be altered or lost during migration from manual to electronic systems, and that essential functions will not be performed as new systems undergo teething problems. To minimize these risks, organizations can, among other things, maintain manual backup until the integrity of the electronic system is assured; ensure the capture or creation of reliable records to serve as evidence of accountable acts and transactions; safeguard the integrity and authenticity of all records for as long as they are required; and provide for the accessibility and updating of records.

Fifth, the introduction of ICT can reduce corruption by improving the enforcement of rules, lessening the discretion of officials, and increasing transparency. There are many examples of the use of "smart cards" to allow access to an increasing range of government services—a kind of electronic one-stop shop. These can prevent fraud or the misuse of public services and benefits, and thus increase public confidence in welfare and taxation services. Yet, while ICT eliminates many opportunities for corruption for those who do not understand the new technology fully, it opens up new corruption vistas for those who understand the new systems well enough to manipulate them. In a sense, ICT permits an intergenerational shift in corruption and rent seeking.

Sixth, ICT on its own can do little to alleviate poverty. A well-known champion of ICT has said, "…the poor don't have medicines, they're dying, and they don't have electricity. Bringing more computers to developing countries is not going to solve these problems."[3] Finally, even if ICT has indeed helped managerial reforms to take hold, it has hardly affected many

of the shortcomings of such reforms. Many of the outputs and outcomes of public services cannot be measured precisely. Indicators may be vague and subjective, or based on nonuniform units of measurement, or influenced by external factors outside the control of the agency. It may be hard to find conclusive evidence that one department is performing better than another, since their outputs and outcomes are not readily comparable. E-government systems can address such problems in certain situations, for example, by helping to compile and analyze large databases of social security performance data. Yet, even conclusive evidence may be ignored by decision makers in the crush of everyday events.

No observation on e-government can apply to all countries in such a diverse region. Yet most Asia-Pacific governments are only starting to adopt ICT to improve financial management information and reporting, streamline the delivery of government services, enhance communication with the citizenry, and empower citizens to interact with the government. As these governments move forward, they should always fit the new technology to user requirements and the real objectives of the activity; see to it that the new technology goes hand in hand with improved rules and processes; recognize that ICT cannot substitute for good public management and internal controls, nor eliminate corruption in the absence of other measures; protect data and systems integrity; and aim at an integrated strategy and avoid a piecemeal approach that can fit specific needs but makes for a chaotic and even dangerous system.

There are several reasons for the slower adoption of ICT by the public sector in comparison with the private sector in Asia-Pacific's developing countries. These include the higher costs of ICT introduction due to the scale of public organizations; the inertia of existing options and habits; the paper trail required for approval processing; security concerns; confidentiality of information; obsolete regulations and laws; lack of understanding and computer skills; the difficulties of carrying out organizational change; and the nature of public sector financing and procurement. As e-government becomes more widespread in the region, one can expect a progression through the six stages discussed previously. However, not all governments or agencies will reach all the stages, and there will be much variety within a government as agencies progress through the stages at different times. Nevertheless, despite these various challenges and the processes of adoption in different types of jurisdictions, countries in the region are achieving some of the same benefits reported by the OECD countries that have adopted such systems.

E-government practices tend to reflect existing structures and ongoing reform processes in each country in terms of quality of administration, citizen participation, and extent of corruption. As in developed countries, e-government has not been a primary driver for reform, although it has supported reform processes. However, this could be only an interim finding, due to the early stage of adoption. For example, citizens (including expatriates from regional countries) and nongovernment organizations, in their successful network management applications of ICT, have largely left out governments, preferring to confront them in the media or on the streets. Perhaps more inclusive networks, and greater in-depth empirical research, could achieve greater results.

More work is needed to better understand the reasons given for the slow adoption of ICT by governments in the region, as well as other factors, and to find ways to address these. Particular areas of the Asia-Pacific experience that have not received enough attention here or elsewhere include the policy dialogue leading up to the adoption of e-government; the need for standards of data interchange and network security; the role of central units in pushing through e-government initiatives; the need for new laws on e-commerce, intellectual property protection, and privacy; and the low risk appetite of governments. A study of the risks of ICT adoption could look at the likelihood of each one occurring, mitigating measures, and the effect of all this on ICT adoption.

This article was written by Clay G. Wescott, Principal Regional Cooperation Specialist, Asian Development Bank. The views expressed in this paper are his own and do not necessarily represent those of ADB. Earlier versions were published as Wescott, C. 2001. E-Government in the Asia-Pacific Region. *Asian Journal of Political Science* 9 (2); and Wescott, C., M. Pizarro, and S. Schiavo-Campo. 2001. The Role of Information and Communication Technology in Improving Public Administration. In *To Serve and To Preserve: Improving Public Administration in the Competitive World,* edited by S. Schiavo-Campo and P. Sundaram. Manila: ADB. Available: <http://www.adb.org/ documents/manuals/ serve_and_preserve/default.asp>. This and other URLs cited in this article were all accessed on 19 February 2003.

[1] Some define e-government more restrictively, making it the public sector equivalent of e-commerce; see World Bank. *E*Government*. Available: <http://www1.worldbank.org/publicsector/egov/index.htm>. Others take a broader approach, as does an article in the *Economist* (Survey: Government and the Internet, 22 June 2000) on the many possible benefits from other ICT applications in the public sector. Major English dictionaries do not yet list the terms "e-government" or "electronic government."

[2] Other Asia-Pacific countries in the top 20 were Australia (5th), New Zealand (9th), Japan (17th), and Malaysia (19th). Accenture. 2001. Governments Closing Gap Between Political Rhetoric and eGovernment Reality. Available: http://www.accenture.com/xd/xd.asp?it=enWeb&xd=industries/government/gove_study.xml.

[3] From a speech by Ted Turner, CNN founder and former vice chairman of AOL Time Warner, October 2000. Bill Gates, chairman of Microsoft, made a similar statement in his keynote speech at the COMDEX Conference, Las Vegas, November 2000.

Suggestions for Further Reading

Global Knowledge Partnership. 2003. *A Comparative Landscape of ICT for Development Initiatives in Asia Pacific Region*. Available: <http://www.globalknowledge.org/gkps_portal/index.cfm?menuid=45>

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