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E-Government in the Asia-Pacific Region

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E-GOVERNMENT IN THE ASIA-PACIFIC REGION

By Clay G. Wescott¹

ABSTRACT

Asia-Pacific governments are only in the initial phases of adopting information and communications technology (ICT) to improve financial management information and reporting, streamline the delivery of government services, enhance communication with the citizenry, and serve as a catalyst for empowering citizens to interact with the government. This article begins with a brief review of the potential benefits of e-government in supporting public sector reform and poverty reduction. It then gives some examples of adoption of e-government in recent years in the Asia-Pacific region, to see the extent to which these benefits have materialized. It points out some reasons why the pace has been slower in the public sector than in the private sector. It then gives examples of six stages of e-government, and reviews both the benefits and challenges of each stage, highlighting different processes of adoption in different types of jurisdictions. Finally, there is a discussion of three major, cross-cutting challenges effecting all stages, and directions for further research.

INTRODUCTION

E-government is the use of information and communications technology (ICT) to promote more efficient and cost-effective government, facilitate more convenient government services, allow greater public access to information, and make government more accountable to citizens.²

No observation on e-government can apply to all countries in such a diverse region, ranging in terms of population size from the People's Republic of China (PRC) to Nauru, and in terms of per capita GDP from Singapore to Nepal. Yet it seems evident that e-government is still only in its initial phase in the region. This paper begins with a brief review of the potential benefits of e-

government in supporting public sector reform and poverty reduction. It then gives some examples of adoption of e-government in the Asia-Pacific region, to see the extent to which these benefits have materialized. It points out some reasons why the pace has been slower in the public sector than in the private sector. It then gives examples of six stages of e-government, and reviews both the benefits and challenges of each stage, highlighting different processes of adoption in different types of jurisdictions. Next, there is a discussion of three cross-cutting challenges effecting all stages. Since a brief article such as this must be highly selective, the concluding section will sketch out directions for further research.

Analysts point out a number of potential benefits and pitfalls of adopting e-government. Heeks gives many examples of managerial reforms supported by ICT, including improving effectiveness and efficiency of personnel management, parts procurement, accounting, health care, and claiming unemployment benefits.³ There are examples of ICT supporting more effective state and local government,⁴ although Salazar, Ranerup, Benjamin and West point out that expected benefits are often blocked by managerial and technical difficulties, and insufficient attention to the information needs of communities.⁵ Kaboolian and Silcock are among the many arguing that the opportunities presented by ICT for improved administration, among other factors, are leading to a global convergence toward a standard reform model; others such as Bellamy and Taylor argue that ITC is more likely to reinforce than to change embedded information and communication capabilities in governance institutions.⁶ Berman and Tettey argue that in African bureaucratic settings with limited technical capacity, authoritarian decision-making, and strong patron-client relations, ITC may fail to produce the hoped for results.⁷ Wescott points out one type of application that can succeed in such an environment.⁸

Dutton points out that ICT-enabled reforms can yield many benefits, including lower administrative costs, faster and more accurate response to requests and queries, including

outside normal office hours, direct access to transaction or customer accounts held in different parts of government, and ability to harvest more data from operational systems, thus increasing the quality of feedback to managers and policy makers.⁹ However, these systems can only deliver on their promise if different offices and people are willing to share information.¹⁰ Bardach found in a study of innovation awards given to government agencies in the USA, that a common characteristic was that the agencies used technology in innovative ways; for example, allowing citizens to handle common legal matters on-line.¹¹ Gosling gives 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 could prevent fraud or misuse of public services and benefits, resulting in increased public confidence in welfare and taxation services.¹²

PRINCIPLES EMERGING FROM GLOBAL EXPERIENCE

These and other examples point out that ICT *is a tool*, potentially powerful yet essentially no different from a photocopier or a car, in the sense 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, or a telephone, or 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, it is essential to assess realistically and compare the costs of a given ICT change with the actual benefits expected from it.

Second, *the ICT “techie” and the “public manager” should not work in isolation from one another.* Improvements in public-sector effectiveness stem largely from better rules and procedures in the sector concerned. To apply advanced ICT to obsolete or inefficient rules and processes means in effect to computerize inefficiency. Doing the wrong thing faster is not progress. On the other hand, the absence of relevant ICT knowledge risks either costly mistakes or missed opportunities for dramatic service improvements.

Third, *ICT cannot substitute for good public management and internal controls.* When Algeria’s state-owned banks introduced a computerized system, the result wasn’t to improve the banking system, but to make more visible the inadequate accounting system and frequency of manual errors¹³. In this way, ICT can contribute to structural reforms, but is only part of the process.

Fourth, there are major risks of possible alteration or loss of records during migration from manual to electronic systems, and the chance that essential functions won’t be performed as new systems have teething problems. To minimize these risks, organizations can: maintain manual backup until integrity of electronic system is assured; ensure the capture/creation of reliable records to serve as evidence of accountable acts and transactions; safeguard the integrity and authenticity of all records within the regime for as long as they are required; and provide for the accessibility and updating of records¹⁴.

Fifth, the introduction of ICT can reduce corruption by better enforcing rules, reducing discretion of officials, and increasing transparency. Indeed, Heeks points out that officials may resist new ICT systems for fear of losing corrupt incomes. Yet, while ICT eliminates many opportunities for corruption for those who do not understand fully the new technology, 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.¹⁵

Sixth, ICT can do little on its own to alleviate poverty. A well known champion of ICT has stated: "...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."¹⁶

Seventh, even if one finds that ICT has helped managerial reforms to take hold, many of the shortcomings of such reforms are not affected. For example, Jones points out that many of the outputs and outcomes of public services are not possible to measure precisely. Indicators may be vague and subjective, or based on non-uniform 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 the outputs and outcomes produced are not readily comparable with each other.¹⁷ The Laudens point out that 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.¹⁸ Yet, Deleon and Green point out that even when conclusive evidence is provided to decision-makers, it may be ignored due to the crush of everyday events.¹⁹

Finally, ICT can support self-organizing networks, which are said to be increasingly important in governing industrial democracies. In this view, government is only one of many interdependent actors in a policy network, and greater attention to network approaches can restore trust and confidence in policy making.²⁰ Open, bottom-up, participatory, networks have shown their strength in the private sector in several cases of computer software development (Apache server, Linux, Perl, Oxford English dictionary, etc.) and implementation (Napster and Gnutella distributed file sharing systems). These build on notions of swarm intelligence, where a set of (mobile) agents can communicate directly or indirectly (by acting on their local environment) with each other, and which collectively carry out distributed problem solving.²¹

OECD governments are in the early stages of exploring the use of ICT in supporting such interactive networks with citizens and other stakeholders. OECD governments provide information to stakeholders and opportunities for feedback via websites and email. Some OECD governments have policy targets and guidelines for this. The quantity, quality, ranges, and frequency of updating of information provided varies greatly. The majority of OECD governments are still at the pilot phase of e-consultation. Some OECD governments have launched their own Electronic Discussion Groups (EDGs), and others participate in EDGs hosted by others. In a more extensive form of stakeholder involvement, a few OECD governments have tried to use ICT to support partnerships in which citizens actively shape policy options, but where government retains the responsibility for final decisions. Since very few OECD governments have made efforts to evaluate the quality of the information they provide, or the impact of e-consultation or e-participation, it is too early to say whether these new systems are having significant impact on citizen access or not.²² In a related type of application, many OECD countries are using Internet tools such as websites and e-mail lists for political campaigning,²³ and some have set up password-protected websites through which citizens can vote.²⁴ The broader use of ICT by citizens is said to have various effects related to political participation and social capital. Some effects push towards moderate idealism, inclusiveness, and consensus, while others push in opposite directions.²⁵

That said, ICT's wonderful potential has been hardly used in most Asia-Pacific countries to increase government accountability, transparency, and participation; improve the efficiency and effectiveness of public-sector operations; widen access to public services; and disseminate information to the public and get feedback from relevant stakeholders and service users. Some jurisdictions, such as Singapore and Hong Kong, are quite advanced in e-government, but they are the exceptions. The following will now examine the extent to which the benefits discussed

above have started to materialize in the Asia-Pacific region, and speculate whether or not more such benefits will be realized in the medium term, and if so, under what conditions.

ICT IN THE PRIVATE SECTOR

During the 1960s, the public sector in developed countries led many private enterprises in the use of computers in support of business functions, including management information, payroll, and accounting applications. Subsequently, governments tended to fall behind private industry in adopting ICT systems.

The fast-expanding use of the Internet is helping some companies in the region implement fully integrated value chains creating partnerships with suppliers and customers, together with whom they can find ways to cut costs, improve quality, expand markets, and share the benefits. This is changing the old idea of a freestanding business. Internet-enabled companies are bringing suppliers and customers much deeper into their business practices and systems, and need a common understanding with their partners. This in turn is forcing greater openness and transparency among all partners than in the past. Also, customized services, products, and pricing are becoming more the rule than the exception. Increasingly, non-core business processes are contracted out to other providers. Just-in-time inventory systems are becoming common. An unprecedented amount of collaboration is possible, when management skills are up to the task.²⁶

ICT IN THE PUBLIC SECTOR

There are many reasons why Asia-Pacific governments have fallen behind private businesses in adopting ICT systems, including higher costs of ICT introduction due to the scale of public

organizations; the inertia of existing options and habits; paper trail required for approval processing; concerns about security; confidentiality of information; obsolete regulations and laws; lack of understanding and computer skills; difficulties of carrying out organizational change; and the nature of public sector financing and procurement practices. The last two of these will be discussed in more detail.

First, to introduce ICT effectively, the ways organizations do business need to change and the ways people do their jobs need to change too. Such organizational changes may be more difficult in the public sector than in the private sector²⁷.

A typical sequence in an ICT project may start out by purchasing an off-the-shelf software package for, say, a new accounting or document management system. Then the agency discovers that the software does not support the way they currently do business. For example, the package may require inter- and intra-agency record sharing that is not presently happening. Current practice may call for a paper trail for approval processing, or paper form filing done over the counter, that the package won't support. Public agencies may have additional factors that a package doesn't support, such as complex regulations and laws. Public officials may also have a lack of understanding and computer skills, and thus not understand, for example, that a computer firewall can serve much the same purpose as a padlock on a file cabinet.

At that point there are two things they can do: They can change the way they do business to accommodate the software, which may mean taking some risks, and shaking up important peoples' roles and responsibilities. Or they can modify the software to fit the way they do business, which will slow down the project, introduce dangerous bugs into the system and make upgrading the software to the vendor's next release difficult, because the customizations will need to be torn apart and rewritten to fit with the new version. Private companies are more likely

to take the first route, while public organizations more likely to take the second. Choosing the second route leads to delays, higher software costs and risks, and all too often a decision to abandon a project after large expenditures of time and money²⁸.

A second reason for relatively slow ICT adoption by governments concerns the nature of public sector financing and procurement practices. To ensure accountability, government agencies need to go through a lengthy process of securing funds, seeking competitive tenders, and awarding contracts. This lengthy process leads to different problems. To prevent undue influence of any one official, many decisions along the way are made by committees, which can lead to an unclear focus as compromises are made. In addition, a result of the lengthy process is that when acquisitions are made, the technology has often moved far beyond where it was when the project was first conceived. Thus, governments often install outdated systems. They also pay excessive prices, since new products may have come to the market during the long tender review that can deliver the same ICT power for much less money. The difference between the outdated tender price and the market price is also an arbitrage opportunity for corrupt officials.

THE SIX STAGES OF E-GOVERNMENT

As e-government becomes more widespread in the region, one is beginning to see a progression through six stages. Not all governments or agencies will reach all stages, and there will be much variety within a government, with different agencies at different stages. The stages are: (1) setting up an email system and internal network; (2) enabling inter-organizational and public access to information; (3) allowing 2-way communication; (4) allowing exchange of value; (5) digital democracy; and (6) joined-up government.

Stage 1: Setting up an email system and internal network

Most governments in the region begin by setting up systems focusing mainly on internal processes. The first networked application in many agencies typically supports basic administrative functions such as payroll and accounts. Adopting such systems can deliver significant benefits, but also carry significant risks. On the benefit side, ICT can allow a significant reduction of information handling costs, and compliance costs. The savings come from reduced labor costs, and speeded up and more accurate processing of tasks. For example, a personnel information system can routinely prepare separation documents for staff past the normal retirement age, helping to avoid the situation in many Asia-Pacific governments of staff working and being paid for many years past this age. A debt management system can routinely bring up payments due, thus helping to avoid penalty fees and other problems.

Another type of stage-one system is e-mail. Although email can reach outside of organizations via the Internet, most government organizations in the region that adopt email use it mostly for internal messages. Email has many advantages over other systems. Because of its informality, it can lead to an increase in lateral, and bottom-up, communication. Emails don't need to be sent up, and back down through the hierarchy; they can be sent directly to the person concerned. This can improve information sharing, coordination and feedback.

However, the very ease of use carries with it the risk of miscommunication. Sensitive and critical messages are still best given over the phone, or in person.

Different examples of internal systems are the Republic of Korea Supreme Prosecutor's Office and the Seoul District Prosecutor's Office, which in 2000 established computer crime investigation departments. Computer crime investigation teams were established in local

prosecutor's offices nationwide. This is aimed at effectively addressing offenses that become more and more technological and tactical, and also at assisting investigation on corruption with modern computer techniques²⁹.

In Pakistan, the entire tax department is being restructured, and ICT systems being introduced with the purpose of reducing contact between tax collectors and taxpayers³⁰.

A more complex type of stage-one system integrates all departments and functions across an organization with a single computer system that can serve all those different departments' particular needs. Such "enterprise resource planning" systems can help integrate financial data, and standardize HR information. Such systems enable more data (e.g., expense items) to be shared between different departments, thereby reducing the number of times the data have to be collected. For example, the Ministry of Finance and Planning of the Government of Sri Lanka is presently designing an integrated system along the lines envisioned by Parry³¹.

The Ministry has a vision of rebuilding itself into a high performing organization. It starts with the important advantage that recruitment has not been politicized as in some other ministries and public agencies in Sri Lanka. The vision is in part determined by the Permanent Secretary's previous job in the Central Bank, which is about to implement a re-organization, which will include a 50% cutback in staff. A new implementation unit run according to private business practice will work with each department to help them reorganize around the new systems being designed, thus avoiding the risks and expense of customizing software, as described above. In the vision, the unit will grow larger, and the ministry smaller, over the long term. Such a model has been followed successfully in other finance ministries that have moved to integrated financial management systems such as the one being designed for Sri Lanka, as a way to offer competitive compensation and an attractive working environment.

These systems may be integrated with the Internet (e-mail, messaging), electronic commerce, and workflow. These systems present opportunities to the public sector in the areas of financial management—treasury/cash management; human resource management, including payroll, records management, and benefits administration; and facilities/resource management, including procurement, forecasting, and materials management. Although these systems were initially proprietary and client/server-based, the latest versions are increasingly Internet-based, allowing information to be accessed by anyone who needs it, and reducing training and other costs.

Stage 2: Enabling inter-organizational and public access to information

The next stage is to enable better inter-organizational and public access to information. The first step for an organization often involves developing systems that help to manage workflow. Workflow is a general term applied to 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. Business processes that are accomplished by moving paper can now be managed electronically—from the very beginning to final disposition. The delays normally associated with hard-copy documents and manual processing can be minimized with workflow systems.

Promising ICT applications in Asia-Pacific public sector workflow systems 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.

For example, the National Tax Service of the Republic of Korea recently introduced its Tax Integrated System, a computerized system which accumulates all tax-related information. As a result, unfair influence of tax officials in selecting taxpayers to be audited was considerably reduced. In addition, manual assessment of 5 million cases on a yearly basis has been replaced by computer-assisted assessment, making 5 million face-to-face meetings between tax officials and taxpayers unnecessary³².

Finally, governments are enabling inter-organizational and public access to information through the Internet. The most common form for this is a website with information organized based on ministries or departments, rather than based on services needed by citizens³³.

Some governments go a step further. For example, the Philippines Department of Budget and Management (DBM) has started posting on the Internet its major budgetary releases to government agencies in a bid to make transactions more transparent to the public. The Web site includes information on the government's accounts payable and the amount released by the DBM as payment for these accounts. Through this scheme, private contractors can check the veracity of the department officials' pronouncements against the DBM budgetary releases. The details of all accounts payable and releases for each government agency are posted on the Web site each month, along with the names of the contractors and the amount of payment they are supposed to receive monthly. The DBM also posts its budget on the Internet after its passage by Congress and approval by the President³⁴.

In another example, the Ministry of Agriculture in the PRC had to cut its staff by 45% in 1997, forcing it to rethink its business processes and its use of ICT. The Ministry now uses Intranets to prepare, review, approve, and publish documents online, thus reducing the demands on staff, and making the steps more transparent. The Ministry's "Infocenter" pulls together large-scale

databases on farm statistics. Local governments in one province are gathering and making available price data and other information through kiosks. Staff in the kiosks can ensure that farmers get the information they need to get the best price for their crops. The Ministry is hoping to expand the kiosks to other provinces³⁵.

Stage 3: Allowing 2-way communication

The next stage allows 2-way communication between the government and the public using ICT. An initial stage is to post one or more telephone or fax numbers or email addresses on a website, and to encourage the public to send messages. There are many other possibilities. The Beijing city government's website allows visitors to select from categories such as government services, laws and regulations, a news center, links to other government departments, and an email section. The latter asks citizens to "make suggestions about the capital's development, or criticize work you're dissatisfied with"; clicking on a link that generates an email addressed to gets the user started on an email to the appropriate office. Alternatively, users can join an electronic forum to get answers to questions such as how to move ones' official residence to Beijing in order to work there. The response on the website listed specific regulations and procedures³⁶.

ICT can facilitate communication even if the citizens are not directly using ICT. For example, the computer-aided Administration of Registration Department (CARD) is one of the major success stories of e-government in the Indian state of Andhra Pradesh. About 214 registration offices have been completely computerized since April 1998. Deeds are registered in one hour and other services like the issue of encumbrance certificates and valuation certificates are accomplished in 15 minutes. As of February 2000, about 700,000 documents had been registered under CARD. The opaqueness of property valuation in the past forced citizens to hire

middlemen. Time consuming manual copying and indexing of documents, and storage in paper forms have all been replaced. There has also been a modest increase in revenue after factoring out the normal upward trend caused by a growing economy³⁷.

In Dhar District of Madhya Pradesh, India, citizens can get basic information and assistance on, for example, broken handpumps, through an Intranet linked to the District headquarters. Village committees contract management of the kiosks to local businesspersons, who recover costs through fees for services, including obtaining and filing official forms, classified advertisements, and searching through a database for the right match for a prospective bride/groom. In addition, 34 high schools have kiosks linking to local educational contents on the Intranet³⁸.

E-government has also been successful in Pacific Island countries, although a realistic approach must be suited to their small size and limited administrative capacity. For example, A United Nations electronic meeting in January 1998 linked governments and NGOs in 10 Pacific island countries. A productive exchange took place, saving over US\$25,000 in travel costs, and cutting out wasted travel time by busy officials. In another example, health workers with questions get quick, low-cost help over an electronic network.³⁹

These examples point out important differences in the pattern of adoption up to this stage between middle-to-upper-income governments on the one hand, and poor-country governments on the other. The former are replacing existing processes with on-line service delivery to citizens. For example, in Hong Kong an estimated 65% of amenable government services are available on-line, and 90% are planned to be enabled by the end of 2003.⁴⁰ On the other hand, less-developed-country governments are building completely new communication links between citizens and governments where little or nothing existed before. Countries from both groups provide public access computers for citizens.

Stage 4: Allowing exchange of value

In the next stage, ICT supports the development of more flexible, convenient ways for citizens to conduct business with the government. For example, the Singapore Government has developed on-line, round-the-clock facilities for transacting business such as welfare claims, tax assessment, visa applications, and license renewals.

There are also many examples in the region of government-to-business transactions that take place on such systems. For example, the Philippines Customs Bureau has developed systems for customs payments, processing of clearance documents, and releasing of shipments from customs control. The new on-line system has led to fast and secure transmission of payment details. The time for reconciling of payments collected by banks and remittances to the National Treasury has been reduced from four months to a few days. A computer program called "Selectivity" categorizes shipments into high-, medium-, or low-risk transactions so that they can be coursed through appropriate examination procedures. These and other systems minimize the chance of fraud and corruption arising from contact between business people, officials, and messengers ⁴¹.

The Thai Customs Department will eliminate all manual processing of import and export documentation in late 2001, thus increasing transparency and efficiency, and reducing opportunities for corruption⁴². Presently, 26 separate documents are required for processing each export consignment.

Another good example is the Republic of Korea Public Procurement Service: a central government organization responsible for procuring commodities and arranging contracts for

construction projects involving government facilities. Commencing in the year 2000, the purchase of commodities and all accounting transactions conducted among the Public Procurement Service, public organizations, and private supply firms have been via Electronic Data Interchange (EDI). Starting from 2001, all tasks will be executed through the EDI system.

In addition, cyber shopping is in operation for the procurement of office supplies, cultural products, and recycled goods. This service will be greatly expanded. There is also computerization of contract data underway, and the use of automation to simplify procedures, thus reducing the opportunities for officers to contact customers for illegal purposes. Databases are being set up for the pre-qualification and cost accounting processes, and for storing information on supply firms. Documents from contractors, including performance records, will be obtained using computer networks of relevant organizations instead of receiving such documents directly from contractors. This will help prevent prospective contractors from submitting false documents⁴³.

It is expected that Asia-Pacific governments will increasingly follow the example of other regions and set up electronic production networks, where, for example, information requests, license renewals, tax payments, and e-procurement are outsourced to public and private specialist organizations⁴⁴. For example, the Hong Kong government web-portal is entirely financed and maintained by a private company, thereby reducing the cost and risk to the government.⁴⁵ Governments are also expected to follow the lead of the private sector in creating partnerships with suppliers and customers, together with whom they can find ways to cut costs, improve quality, and share the benefits.

Stage 5: Digital Democracy

There are at least two important sets of ICT applications that 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.

Civil Society organizations in the region have greatly increased their influence in recent years by using ICT. For example, an enterprising Bangladeshi, when he approached the Grameen Bank, substituted a cellular phone as the object of business instead of a cow. A woman could borrow, say \$200 from the Bank, purchase a handset and sell telephone services, by going door to door to villagers, thereby making a living and thus paying off her loan. In two years time, he managed to establish a partnership called Grameen Phone Limited - and run a very successful commercial operation providing cellular services in both urban and rural Bangladesh⁴⁶. In another example, a Philippines NGO gathered information on ownership of the alleged mansions of former President Estrada's mistresses from public-access computers in the Securities and Exchange Commission and anonymous tips received by email, text messages, phone calls. The findings were initially publicized on the NGO's website when traditional media outlets refused to run the story.⁴⁷ The former President was forced to leave office in part because of large demonstrations in Manila, organized through the help of text messaging, websites, and email lists.

Interested civil society organizations also use the ICT to combine forces, raise funding, and challenge international corporations and agencies. These challengers are diverse coalitions of NGOs, trade unions, extremists from left and right, and nationalists. These groups are organized in a loose, leaderless, network made possible by ICT, and making it nearly impossible for the agencies being challenged to identify a body to work out a negotiated solution⁴⁸. This makes the work of these organizations more difficult, but also helps prevent the

premature adoption of standards of so-called “best practice” which may rather be practices that protect the interests of particular organizations⁴⁹. At the same time, international bureaucracies can also use ICT to avoid troublesome protests by NGOs at their meetings. For example, the World Bank’s Third Annual Conference on Development Economics (ABCDE) in Europe in 2001 had originally been planned to take place in Barcelona, Spain, but protesters threatened to disrupt it, so the meeting went on line⁵⁰.

A more sinister use of ICT helps terrorist groups in the region gain supporters, raise money, and coordinate with like-minded organizations⁵¹.

Some have argued that the spread of ICT in authoritarian countries could empower civil society by increasing awareness of government corruption, and of the successes of democratic forces in other countries in improving democratic participation, accountability, and protection of human rights. There are examples from the PRC already discussed of ICT to improve government efficiency and effectiveness, and to better inform and seek feedback from citizens. Indeed, Cheung points out that ICT-enabled managerial reforms in Hong Kong in the 1990s were motivated, in part, by a desire by the colonial administration to implant an effective bureaucracy to counter anti-democratic practices in the soon-to-be Special Administrative Region of Hong Kong.⁵² However, there is little evidence in countries like the PRC and Cuba that ICT has yet played an important role in facilitating democratic policy reform⁵³.

In the long term, digital democracy will come to some countries of the region in another form. Citizens will have the opportunity to benefit from ICT-enabled voting sites such as those in the USA⁵⁴ and under consideration in Japan⁵⁵. However, the pattern of adoption will often be very different from in developed countries. In the last Philippine election, for example, the Election Commission placed useful voter information on its website, such as the location and hours of

voting places. Since most voters don't have Internet access, local radios offered as a service to take telephone calls, search the website, and obtain answers for citizens to their questions.

Stage 6: Joined-up government

In the sixth stage of e-government, a web-portal or smart card integrates information and services from various government agencies to help citizens and other stakeholders get seamless service without needing to know which government agencies are responsible. In this last stage, there is both vertical and horizontal integration of service delivery. On a web portal, for example, 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 citizen could submit a change of address on her driving license, and the change would be automatically registered with the health, elections, and tax departments, thus avoiding the need for multiple filings⁵⁶. Citizens can also use portals to make payments and other transactions; obtain a checklist of things to bring when you apply for services in-person; find the answers to frequently asked questions; and engage the services of relevant commercial enterprises. In the region, both Singapore and Hong Kong have state-of-the-art web portals⁵⁷. In a recent study of e-government maturity, Singapore ranks 2nd out of 22 countries surveyed worldwide, and Hong Kong ranks 10th.⁵⁸ The government of Taipei (China) has also implemented "one-window" service, using both Intranet and Internet, for tax administration, public health and safety, and e-commerce.⁵⁹ Several Asian countries have smart cards that help citizens get seamless health care service.⁶⁰

Another example in a less-developed setting is in the Indian State of Andhra Pradesh⁶¹. Several projects connected to the state's portal have been launched for better service delivery to the citizens: Twin Cities Network And Services (Twins); Computer Aided Administration Of

Registration Department (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 the district headquarters, plus two other major towns. This connectivity will be taken to the mandal and village levels next year and is proposed to be optimally used by the government departments and agencies to translate e-governance into reality. A video-conferencing facility between Hyderabad and the 25 cities/towns has been operational since January 1999 and will eventually be extended to all major departments.

SOME CROSS-CUTTING ISSUES CONCERNING ICT IN THE ASIA PACIFIC REGION

E-government is expanding in the Asia Pacific region, but it has far to go to catch up to some industrialized countries and to applications in leading businesses in the Asia Pacific region itself. The following will briefly address three cross-cutting issues having a bearing on the speed and character of developments over the next few years: ICT and corruption, ICT national and regional strategies, and convergence vs. path dependence.

ICT and Corruption in the Asia-Pacific Region

It is frequently assumed that the introduction of more advanced ICT reduces opportunities for corruption. The reality is more complex. While ICT does sometimes facilitate combating corruption, it can also have no effect, or even provide for new corruption opportunities, for many reasons.

First, the introduction of ICT skills often underpins managerial reforms by helping to better measure performance, to facilitate outsourcing and contestability of public functions, to reduce transaction costs, to better enforce rules, to reduce discretion, and to increase transparency. Yet computerization may also lead to an “upskilling” of corruption, providing new sources of corrupt income for ICT professionals, and removing opportunities from those without ICT skills. Secondly, with computer systems being regarded as all-powerful and omniscient, some staff members may lose confidence and cease their corrupt behavior. Yet corrupt, computer professionals will not be put off. Indeed, they may find that the computerized systems act to reduce competition, thereby increasing their corrupt income. The computerization of records often closes down access to some staff members but opens up access to others who operate the ICT systems. Depending on the relative integrity of these staff members, corruption may increase or decrease. In addition, data quality and the myth of computer omnipotence make some managers assume that ICT removes the opportunities for corruption. They may therefore fail to institute controls on computerized systems. And this last is probably the most dangerous tendency, for the lack of controls will be evident to those in a position to take advantage of it⁶². Finally, ICT advances, like other technological changes, can improve the productivity potential of government organizations. However, Olson points out that only the managers and staff of these organizations know the actual productivity improvement obtained. It is in the collective interest of the managers of these organizations that the productive potential of these advances be underestimated by their superiors. In such cases, organizations may receive more resources than they need that can in turn be used to increase the income or leisure of management or staff. This form of corruption was widely practiced in centrally planned economies.⁶³

Corruption is rooted in the cultural, political, and economic circumstances of those involved. ICT does little to affect these root causes, and has a potential role, but one that is limited and forms only a part of a much larger picture. At the national level, one needs political will, ethical

watchdog agencies, proper incentives for honest officials, and effective punishment for the corrupt ones⁶⁴. At the agency level, combating corruption is most effective when ethical values are part of the core business of an organization, supporting other factors like leadership and customer service to maximize stakeholder interests.⁶⁵

ICT National and Regional Strategies in the Asia-Pacific region

To ensure that diverse ICT capabilities are effectively harnessed, there is a need to establish coherent strategies at the national and regional levels. The strategies can seek to develop a user charges policy and provision for subsidized services. In addition, appropriate legislation and regulations are needed in areas such as editorial control over networked information, public access to information, privacy and data protection, and intellectual property rights. An ICT strategy can make a clear distinction between the providers of ICT infrastructure and the suppliers of information and services. It may also specify how ICT coordination is achieved (e.g. through central agency, steering committee), how ICT resources are divided among departments, and responsibility for updating information and responding to citizen requests

An example of a national strategy is: "IT for all Indians by 2008". The Prime Minister of India has called on India to become an ICT superpower and one of the largest generators and exporters of software in the world within 10 years. A high-powered National Task Force on IT and Software Development was set up on May 1998 as a first step toward this goal. The national IT policy entails the creation of a government-wide information infrastructure to simplify service delivery, reduce duplication, and improve the level and speed of service to the public. This will provide the public (business and individuals) with the opportunity to send and receive, over electronic terminals, the information that currently passes between them and the government on paper. The government will encourage the establishment of Internet service

providers to provide access to even the most remote locations in the country. It will collaborate with the private sector to put in place secure electronic fund transfer (EFT) systems, since this is critical to the successful implementation of electronic commerce, as well as direct service delivery to citizens. There are measurable, timebound targets for, *inter alia*, increasing ICT awareness, education, access, and government budget allocations.⁶⁶

To increase ICT accessibility, computers and the Internet will be made available in every school, polytechnic, college, and university and in all public hospitals in the country by the year 2003. Likewise, government processes and procedures will be reengineered to bring about transparency at work, reduce constraints, increase efficiency and productivity, and reduce the cost of service delivery, among other benefits. Projects will be integrated across departments to provide a single point of contact for the electronic delivery of services to citizens. Maximal transparency in governance through citizens' charters for every government department and public body will be available to citizens over the Internet.

In another national example, the PRC launched a "Government Online" project in early 1999 to get most government agencies online. The project is initially encouraging agencies to post information on their functions, duties, organizational structure and administrative procedures, making available government documents and archives, releasing their daily activities, and implementing an electronic filing system for documents. There are also plans for an online taxation system, and online auctions to combat corruption in awarding government contracts⁶⁷.

Another approach is to develop regional ICT strategies. ASEAN's concern about ICT is demonstrated by its recently created e-ASEAN Task Force⁶⁸ to develop a broad and comprehensive action plan for an ASEAN *e-space* and to develop competencies within ASEAN to compete in the global information economy. The Task Force will also establish an ASEAN

Information Infrastructure. In developing this, the Task Force will examine the physical, legal, logistical, social, and economic infrastructure needed to create the basis for ASEAN's competitiveness in the 21st century.

Similarly, APEC⁶⁹ recently launched a wide-ranging Action Agenda for the new economy that outlines programs that will use advances in ICT to boost productivity and stimulate growth and extend services to the community. The Action Agenda includes ways to promote the right policy environment and build capacity to create a framework to strengthen markets, e-commerce, knowledge and skills development, and provide affordable and more efficient access to communications and the Internet. APEC supports the development of distance learning capacity of the region and ICT as a core competency for teaching and learning to prepare young people to meet the global challenges. It also strongly supports the development of ICT to enable networks to extend health and medical services to a wider community and to address basic health issues.

Convergence vs. Path-dependence

What is the evidence that systems of governance in the region are moving towards convergence, and does ICT have a role in this? The record is mixed. On the one hand, some elements, such as rules and procedures on public financial management, do seem to be converging as a result of agreements reached with international organizations, and competitive pressure to attract foreign investors with predictable regulations and taxes. Such agreements may constitute signing on to the global standards of the IMF, WTO, or OECD, or they may come from regional organizations.⁷⁰ ICT that supports accounting, tax administration, and banking regulation would help to support this convergence, but these and other reforms will be principally driven by other factors. For example, many governments in the region are implementing new freedom-of-information legislation, and ICT can help to make this information

accessible to citizens.⁷¹ However, there is no evidence that ICT has been a factor in this apparent convergence of similar laws in the region. Moreover, as Hood has observed, the convergence taking place doesn't extend to bureaucratic culture, or features that link administrations to citizens or politics.⁷² Japanese local government administrations, for example, have much smaller workforces relative to population than in western, developed countries, while having more extensive responsibilities and larger budgets. The reasons have to do with historical factors such as social structure, and traditions of voluntarism and contracting out, and not to managerial factors such as greater workforce efficiency or more extensive use of ICT.⁷³

Perhaps the clearest area of convergence is in the area of NGO activism, where groups are using ICT to gather information, coordinate the work of organizations in the region with global counterparts, and increase the effectiveness of challenges to governments. For example, in the example of the uncovering of the Estrada mansions, ICT helped in improving standards of investigative reporting, although the process was less straightforward than it might have been in Western countries. This pattern doesn't apply to every country; for example, Kalathil's findings on the PRC argue that ICT is unlikely to promote democratic policy reform by itself; although, it could facilitate it once such reforms came into force as a result of other factors.⁷⁴

CONCLUSIONS

No observation on e-government can apply to all countries in such a diverse region. Yet most Asia-Pacific governments are only in the initial phases of adopting ICT to improve financial management information and reporting, streamline the delivery of government services, enhance communication with the citizenry, and serve as a catalyst for empowering citizens to interact with the government. As they 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 will it 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 slower adoption of ICT by the public sector in comparison to the private sector Asia-Pacific developing countries. These include: higher costs of ICT introduction due to the scale of public organizations; the inertia of existing options and habits; paper trail required for approval processing; security and concerns; confidentiality of information; obsolete regulations and laws; lack of understanding and computer skills; difficulties of carrying out organizational change; and the nature of public sector financing and procurement practices.

As e-government becomes more widespread in the region, one can expect a progression through six stages. Not all governments or agencies will reach all stages, and there will be much variety within a government, with different agencies at different stages. The stages are: setting up an email system and internal network; enabling inter-organizational and public access to information; allowing 2-way communication; allowing exchange of value; digital democracy; and joined-up government. Despite various challenges, and different processes of adoption in different types of jurisdictions, countries in the region are achieving some of the same benefits reported by OECD countries that adopt 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 helped support reform processes. This could be only an interim finding, due to the early stage of

adoption. For example, successful, network management applications of ICT by citizens (including expatriates from regional countries) and NGOs have largely left out governments, preferring to confront them in the media or on the streets; perhaps more inclusive networks could achieve greater results. More, in-depth empirical research could help here.

On another point, several reasons were cited for slow adoption of ICT by governments in the region. More work is needed to better understand these and other factors, and how to address them. Particular areas of the Asia-Pacific experience that haven't 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 to push 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 latter could look at the main risks of ICT adoption, and for each one estimate the likelihood of occurring, parties allocated the risk, mitigating measures, and effect on ICT adoption.

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- ¹ Dr. Clay G. Wescott is Senior Public Administration Specialist, Asian Development Bank (ADB), Manila, Philippines. The views expressed in this paper are the author's own, and do not represent those of the ADB. An earlier version was published as Clay Wescott, Marilyn Pizarro, and Salvatore Schiavo-Campo, "The Role Of Information And Communication Technology In Improving Public Administration", in Salvatore Schiavo-Campo and Pachampet Sundaram, P. *To Serve and To Preserve: Improving Public Administration in the Competitive World*. (Manila: ADB, 2001) pp. 673-702 (Online). Available: <http://www.adb.org/documents/manuals/serve_and_preserve/default.asp>. This and other URLs cited were all accessed on 7 September, 2001.
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