

# E-government in the Asia-Pacific region: Progress and Challenges

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## ABSTRACT<sup>1</sup>

This paper will focus on two issues: (i) recent e-government progress and challenges, and (ii) the practices regional organizations follow to cope with the challenges, while maximizing the benefits. Beginning with an overview of efforts to improve governance in the region, it then analyzes recent progress in the use of information and communication technology (ICT) in the Asia-Pacific region to promote more efficient, cost-effective, and participatory government, facilitate more convenient government services, allow greater public access to information, and make government more accountable to citizens. Successful adoption of e-government presents major challenges. The paper concludes by examining the practices regional organizations follow to cope with the challenges, while maximizing the benefits.

**Keywords:** e-government, Asia-Pacific, citizens, reform, corruption, access

## 1. BACKGROUND

Asia-Pacific countries are adopting governance reforms to better compete in the regional and global economy by strengthening markets and individual choice, and in turn economic growth and poverty reduction. Although internationally accepted tools, concepts and notions of good practice broadly influence the goals and strategies of reforms,<sup>2</sup> there are significant differences among Asian countries in how they choose to implement their reforms.

The ADB [5] defines governance as "the manner in which power is exercised in the management of a country's social and economic resources for development." Although the ADB recognizes a diversity of political systems and institutional cultures in the region, the ADB defines four aspects of sound governance relevant for all countries: accountability (officials answerable to the entity from which they derive their authority, that work has been conducted according to agreed rules and standards, and reported fairly and accurately), participation (allowing public employees a role in decision making; empowering citizens, and especially the poor, by promoting their rights to access and secure control over basic

entitlements that allow them to earn a living), predictability (fair and consistent application of laws, regulations and policies), and transparency (low cost, understandable, and relevant information made available to citizens to promote effective accountability, and clarity about laws, regulations and policies).

Within this broad framework, Asia-Pacific countries are making headway in e-government: the use of information and communication 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. The following will examine two issues: (i) recent e-government progress and challenges in Asia-Pacific, and (ii) the practices regional governments follow to cope with the challenges, while maximizing the benefits. Although experience with the sector has improved our understanding of what works and what needs to improve, more in depth research is needed on how to achieve high performance in e-government in Asia-Pacific.

## 2. PROGRESS AND CHALLENGES IN ASIA-PACIFIC

ICT-enabled reforms have yielded many benefits, including lower administrative costs, faster and more accurate response. For example, in Central Asia a national epidemiology service introduced ICT systems for gathering, processing, storing and reporting disease and public health data. System components used software packages for registration and analysis of diseases and public health risks. These created a single common system for information on specific diseases and public health risks, with local, regional and national databases searchable in various ways based on common data.

This system has worked effectively since being introduced in 1997, with many benefits. For example, shortly after being introduced, the system uncovered a rise in diphtheria cases. By increasing coverage of the vaccination program and introducing revaccination coverage levels rose from an average 88% to 99% by 2000, and diphtheria case levels had returned to their historical norm. Although such responses were possible with the manual system, the new system helped cut the decision time, and reduced vaccination cost through better prioritization, planning and targeting [6].

New systems also allow direct access to transaction or customer accounts held in different parts of

<sup>1</sup> This is a personal view, and not necessarily the view of the ADB.

<sup>2</sup> E.g., "Washington Consensus" [1], "new public management" [2], "total quality management" [3] and "performance-based management" [4].

government. For example, Ho Chi Minh City in Viet Nam has taken the lead in that country in working to simplify administrative procedures faced by businesses, as a way of promoting investment. A “one stop shop” for business license applications has been established, whereby businesses can apply once online, and thereby initiate action from all the concerned agencies. These ICT-enabled reforms have inspired simplification of administrative procedures in many other districts and communes throughout the country through “one-stop, one-door” models. Citizens benefit by spending less time waiting and traveling, and having better information provided to them [7].

In a related example, the Hyderabad (India) Metropolitan Water Supply & Sewerage Board uses its Single Window Cell (SWC) to reduce corruption for new connections. Previously, applications were made to one of 120 section offices, and then forwarded to 14 other staff before approval, each requiring “speed payments”. Under the SWC, the application process is centralized in one, public place, with applications recorded on computers that are difficult for corrupt officials to alter. Staff is motivated to provide good service with distinctive uniforms, modern offices and individual computer terminals. The service improvement has been praised extensively in the media, which further improves staff motivation [8].

Other jurisdictions such as Singapore and Hong Kong, China have comprehensive systems where 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 about the responsible government agency. 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 citizen can submit a change of address on her driving license, and the change is automatically registered with the health, elections, and tax departments, thus avoiding the need for multiple filings. Citizens can 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. In a 2004 worldwide ranking of e-government maturity, Singapore was ranked 2<sup>nd</sup> out of 22 countries surveyed.<sup>3</sup> The government of Taipei, China has also implemented a “one-window” service, using both Intranet and Internet for tax administration, public health and safety and e-commerce. Several Asian countries also have smart cards that help citizens get seamless health care service [10].

<sup>3</sup> Other Asia Pacific countries in the top 20 included Australia (4<sup>th</sup>), Japan (13<sup>th</sup>), and Malaysia (17<sup>th</sup>). [9]

E-government systems allow the ability to harvest more data from operational systems, thus increasing the quality of feedback to managers and policy makers. For example, since 2001 in Rajshahi City in Bangladesh, a Birth Registration Information System has been used for registering births on line, linking to a database that can be shared with other public agencies. For example, the Department of Health uses the system to help ensure immunization of all children. The system works in Bengali, although it can also generate certificates and reports in English.

Before the system was set up, a simple query such as the number of girls registered took a long time to answer. The manual process was also subject to errors, duplications and inconsistencies. The new system has removed duplication and redundancy from birth/registration, automated searching, sorting, processing and reporting tasks, and saved time. A combined ID number and bar-coding system has reduced errors. A CD-ROM of the database provides for backup and also allow transfer and reuse of data outside the LAN system. Both registration and immunization rates have increased since the introduction of the system. The direct costs of system development were less than US\$20,000, and operational costs are around US\$200 per month. The ICT based system was funded with help from UNICEF [11].

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 organizations. For instance, the Hong Kong government web-portal is entirely financed and maintained by a private company, thereby reducing the cost and risk to the government [12]. Malaysia’s e-Perolehan government procurement system is a build-operate-transfer scheme led by a private company, Commerce Dot Com Sdn Bhd [13]. Governments are expected to expand their efforts, like the private sector, in creating ICT-enabled partnerships with suppliers and customers, together with whom they can find ways to cut costs, improve quality, and share the benefits.

Despite the progress, successful adoption of e-government also presents major challenges. The absence of relevant ICT knowledge risks either costly mistakes or missed opportunities for dramatic service improvements. For example, an attempt to install a database management and processing system in the Thai revenue department, launched in 1992, failed to deliver due to poorly-specified objectives among other issues. The main software vendor defaulted on the contract, and an estimated \$56 million in public funds produced minimal benefit [12: p. 75].

In another example, the Bangladesh National Data Bank (NDB) project was planned to provide a broad range of data and information support to many levels of stakeholders both inside and outside the country. The NDB was to link twelve ministries and divisions with scope for further network connections to the planning cells of all other ministries/divisions. Planning began in 1992, with key investments beginning in 1999 of US\$440,000 for the first two years alone. However, the LAN was soon non-operational, no database set up, nor any data storage. The project failed due to lack of technically competent staff at all levels in government agencies, coupled with a politicized procurement process [14].

Procurement difficulties also derailed an attempt to use automated counting machine in the May 2004 Philippine election. In 1997, former President Ramos signed a law which authorized the government to use an automated system beginning with the 1998 National and Local Elections and onwards.

After a pilot implementation during the 1998 elections, Mega Pacific eSolutions Inc. -- a consortium of several local and foreign firms -- won in 2003 the \$24 million bid to automate the counting of votes for the May 2004 elections. However, an unsuccessful bidder asked the Supreme Court to look at the legality of the bidding, and the court ruled that the process was flawed, and the contract cancelled. As a result, manual elections and canvassing had to be used. As in the past, the process was reportedly prone to irregularities, and the release of final results will be delayed by up to four weeks.

While corruption is an issue in ICT procurements, ICT can also have an important role to play in combating corruption. For example, In Seoul, Republic of Korea, the OPEN system helps to get transparency in city administration by preventing delays in processing of licenses and other government documents. Prior to the introduction of the system, applicants often had to pay speed money; now processing is a matter of public record, on the web. If officials are unnecessarily delaying documents, citizens can complain and disciplinary action is taken [15].

Another type of example of ICT-enabled corruption fighting is when citizens (including diaspora groups from regional countries) and NGOs go online to try to influence the rules that shape political, social and commercial life. While this can put pressure on governments to make changes, it cannot substitute for good public management and internal controls.

For example, the Philippines Center for Investigative Journalism posted in 2003 on its website a study pointing out extravagant houses and luxury vehicles owned by government officials who can't explain how they paid for them. There were also numerous applications by officials to change their birth records to delay their retirement, indicating how lucrative their

modestly paid positions must be [16]. Partly as a result, the Bureau of Internal Revenue (BIR) began investigating over 100 of its employees for various offenses, and the Office of the Ombudsman filed charges against BIR employees, with assistance from a former senior official of the Hong Kong Independent Commission against Corruption.

Although this effort may succeed, it won't be enough to bring about systemic changes without reforms on other fronts. Philippine leaders periodically boast of their strong stance against corruption, citing the seven laws and 13 anti-corruption agencies instituted to fight graft since the 1950's. Yet because of the overlapping mandates and accountabilities of these agencies, low salaries for public officials, red tape, inconsistent policing, nepotism and lack of political will, these laws, institutions, and related action plans have not been effective [17].

In another example showing the limits of ICT-enabled citizen pressure on government, Indian journalists went on line as Tehelka.com in May, 2000, with an undercover investigative story on match-fixing in Indian cricket. In March 2001, they carried out a sting investigation on corruption in the Indian defense and political establishment, where officials were recorded taking bribes on videotape. This led to the resignations of top army and government officials, among them the defense minister, George Fernandes and the president of the ruling BJP, Bangaru Laxman. During that month, the site clocked over 25,000,000 page views; at other times it averages at 15,000,000 page views a month. Government response has not been to indict any of officials shown to be corrupt in videos, but to target Tehelka with a Commission of Enquiry, tax investigations, and other harassment. However, Tehelka is still in business, and recently relaunched as a weekly print and online newspaper [18].

### **3. COPING WITH CHALLENGES, WHILE MAXIMIZING BENEFITS**

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.

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 procedures.

Although the examples from Viet Nam and Beijing show effective use of ICT to increase government effectiveness and facilitate certain types of citizen participation, these systems have been closely regulated to prohibit use for mobilizing opposition to dominant elites. There is no evidence that such innovations have spurred broader democratic policy reforms up to now [19].

In another type of example, many forms of e-government have emerged in support of the implementation of the 1991 Local Government Code in the Philippines. Under this reform, transfers from the national budget to local authorities were increased from about 3 percent to 18 percent. In addition, over 70,000 personnel were transferred from central to local agencies, including 60% of personnel of the Ministries of Agriculture and Health. Many services were transferred to local authorities, including agricultural extension and research, health, social welfare, and local infrastructure provision[20].

Many ICT innovations have been adopted in support of these reforms. For example, the Multi-purpose telecenter project is presently set up in 4 barangays (villages) in Mindinao, allowing citizens to access a low-cost phone and Internet connection, and helping to ensure coordination among the barangay governments. Another system was built on a series of projects of government, private sector, and civil society. The Sharing Network is an e-government project funded by the government. It responds to Administrative Order 332 calling for all government agencies to connect on the Internet. The City of Naga site has a wider purpose: to inform citizens on budgets, bidding documents, legislation, and procedures. Since many citizens don't have access to the Internet, the city also provides a hard copy of the Naga City Citizen Charter that contains essential information that's also on the website on how to access city services[21].

Although the ICT-enabled reforms in some local jurisdictions in the Philippines have improved governmental effectiveness and citizen connectivity and participation, there has been no comprehensive effort to assess local government performance, so the overall record is unknown. Further, the generous revenue allotments have contributed to an unsustainably high national budget deficit, and possibly allowed many local authorities to avoid collecting local taxes [20].

The Indian state of Andhra Pradesh is a much publicized example of e-government-enabled reform, led by its two-term, visionary Chief Minister Naidu. The state has launched several projects connected to the state's portal: 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 the 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 planned to be taken to the mandal and village levels. A video-conferencing facility between Hyderabad and 25 other cities/towns has been operational since January 1999 [22].

The Chief Minister tried to be careful not to antagonize important groups with the reforms. In addition to innovative systems delivering services to rural areas, he worked out an agreement with public unions that no public servant would be laid off due to ICT. However, the May 2004 election results demonstrated the political risks of reform, as the Chief Minister was soundly defeated in his bid for a third term. Rural voters weren't impressed by the Chief Minister's vision of an IT-enabled state, when during a severe drought large numbers of farmers were committing suicide in the face of inadequate irrigation and erratic electric power.

Another challenge has been the many factors leading to the slow adoption of ICT by governments in the region. Regional experience suggests that reasons include the time needed for 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.

Consider the story of Viet Nam beginning at least as far back as 1993, when a National Information Technology Program was initiated and followed through up to 1999. A government information network was implemented, with considerable application development, training and awareness raising. Next, the Prime Minister approved a Public Administration Reform (PAR) Master Program through 2010 with 7 action programs, one on modernizing state administration with a major role for e-government. Next, the Government made a landmark policy decision in September 2001 for State Administrative Management Computerization (SAMCom), which was a far more comprehensive strategy than the earlier 1993 program. Based on this, the Prime Minister requested ADB support through a \$45 million policy loan for support to action program 4 (training) and program 7 (state modernization) [23].

Progress has continued to the present since the high level leadership commitment was clear, and there was considerable progress at the strategic level to build on, not just some pilot projects. About 120 executive information units have been set up in central and local

agencies, and technical system platforms and training standards have been agreed for SAMCom projects.

Another much-discussed challenge is the “digital divide”: that poor countries, and poor citizens within countries, aren’t benefiting enough from e-government and related reforms. Although this is confirmed by most conventional measures [e.g. 24, table 3] there is also progress being made. In Dhar district of the Indian state of Madhya Pradesh, citizens can get basic information and assistance through an Intranet kiosk linked to the district headquarters on a range of issues such as, for example, broken handpumps, prevailing agriculture produce auction centre rates, and copies of land records. 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 [25].

In another example, the Internet Village Motoman project in Cambodia’s Ratanakiri province links remote villages to the city of Banlung and the Internet via a Wi-Fi access point mounted to motorbikes that store e-mail messages. Traveling daily along five different routes throughout the province, the Motoman exchange messages, powered by the motorcycle’s battery. Back in Banlung, they upload to the satellite dish that relays the messages to the Internet.

When villagers have problems, they ask their local teachers that have computers to send emails to the governor, who promises to respond to these messages. Villagers apply for jobs in companies in town by e-mail. Ratanakiri provincial hospital uses the system for referrals to Massachusetts General Hospital/Harvard Medical School in Boston, with digital cameras used for long-distance diagnosis [26].

Some analysts say that talk of the “digital divide” is based on the wrong measures, and underplays the considerable progress made by poor countries [27]. Yet much more remains to be done. Indian research is on track to reduce the cost of the “last mile” line from an average \$900 to below \$200, thus greatly improving access. The Indian simputer is another promising innovation. A low-cost, Internet-capable pocket PC, able to send handwritten or voice emails, access smartcards, capabilities in two Indian languages, with Linux OS, went on sale last March [28].

The Simputer’s ability to send handwritten messages is crucial because of the lack of available fonts for many Indian and other languages. Although English is the lingua franca of ICT, there are an estimated 2200 languages used in Asia, and only 20% of Asians can use English. Asian writing systems are varied and far more complex than English, and designing digital fonts for any one of them a massive challenge. Yet progress is being made. For example, the Urdu

language with 60 million speakers in 20 countries uses a character based, bidirectional, diagonal, non-monotonic, cursive, context sensitive writing system with a significant number of marks (dots and other diacritics). In 2003, after 18 months of work by a 5 person team funded by donor agencies, a character-based font was released that can allow Urdu speakers to use their language in computer applications [29].

#### 4. CONCLUSIONS

This paper has focused on two issues: (i) recent e-government progress and challenges, and (ii) the practices regional governments follow to cope with the challenges, while maximizing the benefits. The e-government experiences in Asia-Pacific have improved our understanding of what works and what doesn’t, what practices are transferable, and under what conditions. However, rigorous evaluation of reforms is rare. Reasons include the difficulties of proving cause-and-effect relationships because of problems of multiple attribution, lack of baseline data, lack of robust, experimental designs, lack of agreed conceptual frameworks and language for reform, and methodological difficulties of comparing reform outcomes with counterfactuals. These shortcomings go beyond e-government to other types of public administration reforms, and reflects and the tradition of public management research focusing on prescription rather than explanation and analysis (30). Fully cognizant of the methodological challenges, greater investment is needed in more rigorous research on how to achieve high performance by the public sector through e-government in Asia-Pacific. Such research would lead to better prescriptions, and a better return on the considerable investment in reform by governments and international agencies.

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