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Understanding e-Governance for Development

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Table of Contents

Understanding e-Governance for Development

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2001

Executive Summary

New information and communication technologies can make a significant contribution to the achievement of good governance goals. This 'e-governance' can make governance more efficient and more effective, and bring other benefits too. This paper outlines the three main contributions of e-governance: improving government processes (e-administration); connecting citizens (e-citizens and e-services); and building external interactions (e-society). Case studies are used to show that e-governance is a current, not just future, reality for developing countries. However, most e-governance initiatives fail. Countries therefore face two challenges. First, the strategic challenge of e-readiness: preparing six identified pre-conditions for e-governance. Second, the tactical challenge of closing design—reality gaps: adopting best practice in e-governance projects in order to avoid failure and to achieve success. A vision for change is therefore outlined of which more details are given in a related paper.[2]

[1] The UK Department for International Development provided financial support for the writing of this paper, but the opinions expressed are solely those of the author.
[2] Heeks, R.B. (2001) *Building e-Governance for Development,* i-Government paper no.12, IDPM, University of Manchester http://www.man.ac.uk/idpm/idpm_dp.htm

A. e-Governance for Development: What's New?

Developing country (DC) governments have been using IT for more than 40 years. So what's new about e-governance? What's new is that we are moving on from IT to ICTs and from IT to IS.

New Digital Connections: ICTs

The old model was one of information technology (IT) automating the internal workings of government by processing data. The new model is one of information and communication technologies (ICTs) supporting and transforming the external workings of governance by processing and communicating data.

e-Governance should be seen to encompass all ICTs, but the key innovation is computer networks – from intranets to the Internet – creating a wealth of new digital connections:

- Connections within government – permitting 'joined-up thinking'.
- Connections between government and NGOs/citizens – strengthening accountability.
- Connections between government and business/citizens – transforming service delivery.
- Connections within and between NGOs – supporting learning and concerted action.
- Connections within and between communities – building social and economic development.

As a result, the focus grows from just parts of e-administration to also encompass e-citizens, e-services and e-society.

New Systemic Approaches: IS

The old models held information technology isolated from the mainstream of reform, or held IT as the objective of reform. The new model brings information systems (IS) to the heart of reform.

In practice this means two things:

- A central role for ICTs: as governance becomes – and becomes recognised as – ever more information-intensive, ICTs become an essential part of more and more governance initiatives. ICTs are also recognised as a key lever to change. They are no longer isolated on the sidelines.
- An integrated role for ICTs: e-governance means using ICTs as servants to the master of good governance. ICTs are no longer seen as an end in themselves and they are seen to work only as part of a wider systemic 'package'.

Overall, then, e-governance is the ICT-enabled route to achieving good governance. We might prefer to think of it as 'i-governance' – integrated governance – since it integrates both the processing and the communication technologies; and since it integrates people, processes, information, and technology in the service of achieving governance objectives.

B. Why e-Governance for Development?

As is true all over the world, government in the developing nations costs too much, delivers too little, and is not sufficiently responsive or accountable.

Good governance reforms aim to address these shortcomings. Yet progress – after many years of effort in implementing such reforms – has been much more limited than expected. e-Governance offers a new way forward, helping improve government processes, connect citizens, and build interactions with and within civil society.

What exactly has e-governance got to offer? At root, it has the power of ICTs, which provide three basic change potentials for good governance for development:

- ***Automation***: replacing current human-executed processes which involve accepting, storing, processing, outputting or transmitting information. For example, the automation of existing clerical functions.
- ***Informatisation***: supporting current human-executed information processes. For example, supporting current processes of decision making, communication, and decision implementation.
- ***Transformation***: creating new ICT-executed information processes or supporting new human-executed information processes. For example, creating new methods of public service delivery.

These change potentials, in turn, can bring – singly or in combination – five main benefits to governance for development:

Efficiency gains:

- ***Governance that is cheaper***: producing the same outputs at lower total cost.
- ***Governance that does more***: producing more outputs at the same total cost.
- ***Governance that is quicker***: producing the same outputs at the same total cost in less time.

Effectiveness gains:

- ***Governance that works better***: producing the same outputs at the same total cost in the same time, but to a higher quality standard.
- ***Governance that is innovative***: producing new outputs.

These are the direct and objective benefits. ICTs can bring many others. For example, use of ICTs by government can bring benefits both internally and externally:

- Internally, providing benefits such as better staff motivation or greater political control or an improved public image.
- Externally, by delivering cheaper, better services to those who depend on government. Indirectly by demonstrating the benefits of ICTs to the wider population; by catalysing the local IT industry; and by encouraging foreign investment.

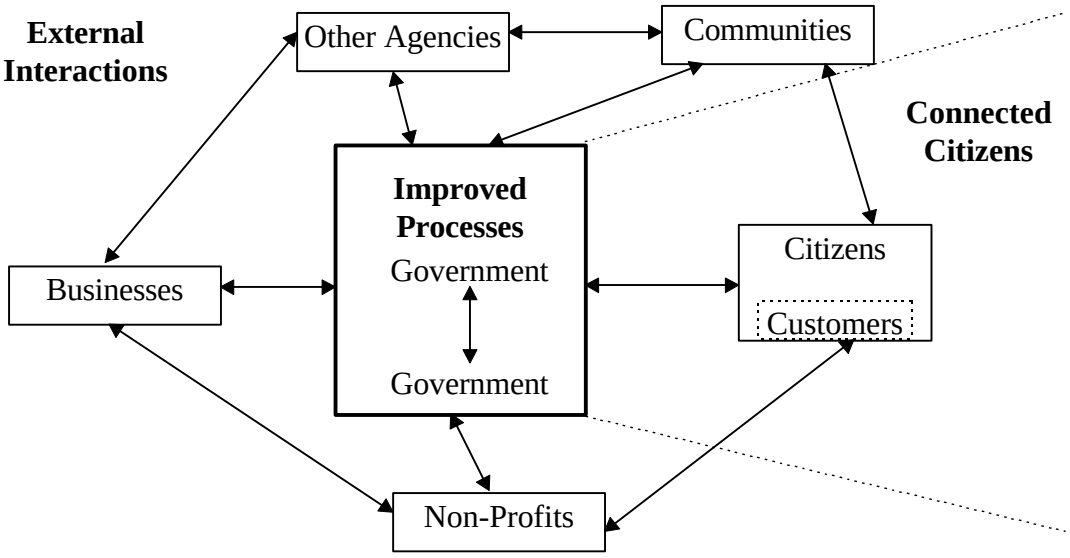
C. What Does e-Governance for Development Cover?

e-Governance does not cover e-commerce and e-business applications that focus solely or mainly on the private sector. As noted above, instead, there are three main domains of e-governance, illustrated in Figure 1[3]:

- ***Improving government processes: e-Administration***
- ***Connecting citizens: e-Citizens and e-Services***
- ***Building interactions with and within civil society: e-Society***

Respectively, these particularly address the problems that government is too costly, too inefficient and too ineffective; too self-serving and too inconvenient; and too insular.

Figure 1: Focal Domains for e-Governance Initiatives



C1. Improving Processes: e-Administration

Such initiatives deal particularly with improving the internal workings of the public sector. They include:

- ***Cutting process costs***: improving the input:output ratio by cutting financial costs and/or time costs. Automation can replace higher human costs with lower ICT costs to support efficiency/productivity improvements. Informatisation can support decisions and implementation in downsizing or rightsizing exercises. The rationale is to address the large size of public sector expenditure and/or the inefficiency of many of its processes. The Egyptian case below is an example.
- ***Managing process performance***: planning, monitoring and controlling the performance of process resources (human, financial and other). Informatisation supports this by providing information about process performance and performance

[3] Adapted from: Ntiro, S. (2000) *eGovernment in Eastern Africa*, KPMG, Dar-es-Salaam

standards. The rationale is to make more efficient or effective use of process resources. The Tanzanian case below is an example.

- ***Making strategic connections in government***: connecting arms, agencies, levels and data stores of government to strengthen capacity to investigate, develop and implement the strategy and policy that guides government processes. Examples of such connections are central-to-local, ministry-to-ministry, executive-to-legislature, and decision maker-to-data store. Automation and informatisation support this by digitising existing information channels. Transformation supports this by creating new digital channels. The rationale is to provide clearer direction for public sector and state processes and to provide for a more evidence-based approach to policy and process. The Chinese case below is an example.
- ***Creating empowerment***: transferring power, authority and resources for processes from their existing locus to new locations. Typically that transfer is to lower, more localised levels of the public sector and may be seen as decentralisation. Transformation supports this by creating new information flows to decision makers and process implementers in new locations. The rationale is to reduce the costs and increase the speed of processes and decision making and/or to create more flexible and responsive processes. The South African case below is an example.

Traditionally, ICTs have been used within government in 'automation' mode, replacing clerical labour processes with their digital equivalent. These are essential building blocks for e-governance. However, their achievement of financial cost-cutting goals is questionable. In the North, replacing costly humans with cheap ICTs may cut costs, though even here evidence of productivity gains is limited. In developing countries, replacing cheap humans with costly ICTs is unlikely to be justified on financial cost grounds. As time replaces money as a more critical global resource, ICTs' ability to increase process speed may provide some justification for automation. More generally, ICTs need to be justified and understood in the context of a broader vision and necessity for e-governance.

From this base of clerical automation, there are three e-administration trends at work in developing countries:

- ICTs are spreading up the organisation, increasingly supporting the work of operational and tactical managers and, most recently, beginning to touch the working lives of politicians and other senior public officials. As the high water mark of ICTs rises higher, their impact on government increases.
- Use is changing from automation to informatisation and transformation. As the change potential of ICTs increases, they deliver ever-greater benefits and enable ever-greater changes in the process of government.
- From a focus on processing (i.e. computers, the I in ICTs), applications are moving to a focus on communications (i.e. networks, the C in ICTs) and, most recently, to a focus on both processing and communications. As the power and reach of ICTs grows, so does the power and reach of change in government.

A final trend is the move of ICTs from inside to outside government. Although lagging some way behind, it is the 'outside' focus that will be discussed in sections C2 and C3.

Developing Country e-Administration Examples

The examples that follow, and those in subsequent sections, are provided as evidence that e-governance is not only the future in developing countries, it is also the present in developing countries.

Why were these initiatives successful? They were successful because they 'kept it simple' and because their design took account of current realities in both their DC host organisation and, where relevant, the external environment.

Cutting Process Costs

Creating a National ID System in Egypt

In Egypt, the Information and Decision Support Center has created a comprehensive national database with 85 million birth records, 34 million death records, 12 million marriage records and 2 million divorce records. This has provided the basis for a national ID number and, hence, a secure and accurate national ID card. Automation of previously-manual processes has saved considerable sums of money. The information base and ID numbers have also been an essential building block in the creation of other public sector planning and service delivery applications.[4]

See also the Tanzania case below.

Managing Process Performance

Delivering Management Control in Tanzania

"The Government of Tanzania has recently launched its integrated HR and Payroll systems covering about 280,000 public servants. While the capital invested was significant at around US$6.5 million, the savings already accrued in improved management – reduced ghost workers, improved control, and accuracy – mean that the project has already paid for itself. The Government of Tanzania has also implemented an Integrated Financial Management System (IFMS) at all ministries in Dar es Salaam and Dodoma via a wide area network. IFMS has improved control over expenditure management, resulting in more timely and detailed reporting. Internet-enabled versions of both systems will soon be rolled out countrywide."[5]

[4] IDSC (2000) *Civil Information Systems: The National ID Number*, IDSC, Cairo
[5] Ntiro, S. (ibid.)

Making Strategic Connections in Government

Improving Sustainable Development Strategy in China

There was a recognition in the Chinese government that formulation and implementation of sustainable development strategies were hampered by lack of adequate information, and that much of the data underlying this information lay scattered in many different organisations. Therefore an ICT-enabled national Agenda 21 network was created, particularly linking a set of key national government, local government and public sector research institutions. The project also helped connect leading decision makers with valuable Web-based data resources on sustainable development. In addition to raising the profile of sustainable development with policy makers, the network has also helped bring faster and more information to the process of strategic environmental decision making.[6]

Creating Empowerment

Breaking the Apartheid Legacy in South Africa

The ANC-led government in South Africa is making extensive use of ICTs in its bid to democratise a public sector run for decades largely by, and for, an Afrikaner minority. Attempting to 'reinvent' itself, Johannesburg Metropolitan Council initiated an intranet project. This was intended to break apartheid-legacy information flows and give all staff access to both formal and informal information sources. Careful design (analysed further in section D2 below) ensured that the project was a success. Council processes have become more inclusive and transparent. The project is now being extended to encompass local community leaders as well.[7]

[6] SDNP (2000) *SDNP China Helps to Implement Agenda 21*, UNDP, New York http://www.sdnp.undp.org/it4dev/stories/china.html

[7] Benjamin, P. (2001) 'Community development and democratisation through information technology: building the new South Africa'; in *Reinventing Government in the Information Age*, R.B. Heeks (ed.), Routledge, London, 194-210

C2. Connecting Citizens: e-Citizens and e-Services

Such initiatives deal particularly with the relationship between government and citizens: either as voters/stakeholders from whom the public sector derives its legitimacy, or as customers who consume public services. These initiatives may well incorporate the process improvements identified in section C1. However, they also include a broader remit:

- ***Talking to citizens***: providing citizens with details of public sector activities. This mainly relates to certain types of accountability: making public servants more accountable for their decisions and actions. Informatisation and transformation support this by providing the new information flows from government to citizens on which accountability depends. The rationale is to increase the pressure on staff to perform well and to improve public understanding of government. The South Korean case below is an example.
- ***Listening to citizens***: increasing the input of citizens into public sector decisions and actions. This could be flagged as either democratisation or participation. The main potential is for informatisation and transformation to support this by providing new information flows from citizens to government. The rationale is to make public decisions more responsive to citizens' view or needs. A South African example is given below, although this relates to the automation of democratic processes, not informatisation/transformation.
- ***Improving public services***: improving the services delivered to members of the public along dimensions such as quality, convenience and cost. This uses all the potentials of ICTs to deliver the informational components of public services to citizens in digital form. The direct rationale is clear from the definition, but there is also an indirect rationale of releasing citizen time and money that would otherwise be captured by inefficient service delivery. The Chilean case below is an example.

Because all these initiatives rely on the new connectivity offered by ICTs, they are all relatively new inclusions within e-governance. They are particularly representative of the significant new possibilities offered by e-governance for development. They also represent something of a further chronology of ICT-enabled governance (in addition to those identified in section C1). The chronology starts with *publishing* (delivering data to citizens), then moves to *interaction* (delivering data to citizens and receiving data from citizens), then moves to *transaction* (undertaking other government processes online).

All of these have so far been rather neglected in developing countries, yet even very basic publishing activities can have significant effects. The information poverty of DC citizens is such that they can often be conned into bribery because they lack the most basic information on the who, where and how of government services. Publishing that information on the Web directly attacks information poverty and its effects. Publishing government forms can also have a strong disintermediating effect – cutting out the public servants and others who may illegally charge citizens for access to such forms.

However, the model for disintermediation in the South will not match that in the North. In the North, the main models for government—citizen interaction have been disintermediated models of direct digital connections to the individual citizen. In other

words, these are models involving the replacement of human intermediaries by ICT intermediaries. For the majority of citizens in the North, the ICT intermediary is personally-owned (typically an Internet-linked PC in the home or workplace). For many others, the ICT intermediary is institutionally-owned (typically in a local community centre, library, school, post office, telecentre, etc.).

In the South, the first model – citizen direct ownership and use of ICTs – will apply to only a small fraction of the population for the foreseeable future. A greater number will gain access through the second model – non-ownership but direct use of ICTs – through similar institutions to those listed above. Many will also fall into the grey area between these models that is particularly found in the South – direct use of ICTs owned by family, friends, neighbours or colleagues.

Nevertheless, for the medium-term, the majority of citizens will remain on the wrong side of the digital divide. They create a substantial need for a third model – of those who are neither direct owners nor direct users of ICTs. To benefit from e-governance, these citizens will have to rely on reintermediation models that insert a human intermediary between the citizen and the growing digital infrastructure of e-governance. Where institutionally based, these can be thought of as 'intelligent intermediaries' that add human skills and knowledge to the presence of ICTs.[8]

Realistic e-governance for development projects will therefore have to identify and nurture such intermediaries. They may be existing professionals (e.g. accountants for online tax systems; notaries for online registration systems); or public servants (e.g. in call centres or in one-stop-shop government offices); or NGOs and community-based organisations (e.g. staffed community telecentres); or private sector organisations (e.g. cybercafes); or other public institutions. The Gyandoot case in section C3 provides an example – the entrepreneur running the online kiosk frequently goes online on behalf of his/her clients, helping cross the cognitive gap between cyberspace and life in an Indian village.

[8] Heeks, R.B. (1999) *ICTs, Poverty and Development*, i-Development paper no.5, IDPM, University of Manchester http://www.man.ac.uk/idpm/idpm_dp.htm

Developing Country e-Citizens/e-Services Examples

Talking to Citizens

Greater Openness of Local Government in South Korea

At the highest level in the Municipal Government of Seoul there were concerns about lack of accountability and existence of corruption in the issuing of local government licences and permits. This led to the development of the OPEN system (Online Procedures ENhancement for civil applications): an anti-corruption Web portal that provides citizens with a range of relevant information. This includes the overall goals of the anti-corruption drive and an explanation of the rules and procedures for permit/licence application and processing. However, OPEN goes beyond this. It displays an anti-corruption index that summarises survey results on process performance. It also provides citizens with specific information by allowing them 'real-time monitoring of the progress of an application for a permit or license'. Some of this information can also be found in paper form but, for the increasing number of Seoul citizens or citizen groups with Internet access, this has reduced the barriers to obtaining government information. They are therefore better informed, the process of government is more open, and the rationale for bribery has been largely removed. Feedback from citizens has been very positive, and there has been a dramatic decrease in reported corruption. In large part, these achievements have been due to the integrated approach taken, ensuring that technological change serves public sector reform goals rather than vice versa.[9]

Listening to Citizens

Supporting Free and Fair Elections in South Africa

Following difficulties in the 1994 elections, South Africa's Independent Electoral Commission "was charged with making sure that the country's second democratic elections in 1999 were 'free and fair'. This election was vitally important for the stability of the South African political climate and for ensuring that democratic processes were solidly in place. Through large scale implementation of unique information technology applications, the IEC was able to ensure that all South African citizens could have their voices heard. The effort included the creation of a nationwide satellite-based wide-area network and infrastructure; a bar-code system used to register 18.4 million voters in just nine days; a geographic information system used to create voting districts; a national common voters' role; a sophisticated election results centre for managing the process; and the training of 300,000 people. The massive programme was completed in less than two years, in time for the vote." For this, the IEC received the 2000 Computerworld Smithsonian Award for most outstanding programme in the government and non-profit organisations category.[10]

[9] World Bank (2000) *OPEN: Seoul's Anticorruption Project*, World Bank, Washington DC http://www1.worldbank.org/publicsector/egov/seoulcs.htm

[10] Microsoft (2000) *IEC of South Africa wins Computerworld Smithsonian Award*, Government News, 28 June, Microsoft Europe, Reading

Improving Public Services

Better Tax Return Filing for Citizens in Chile

Chile's Internal Revenue Service has taken a typical three-step approach to Web-enabled improvements in services to the public. The first step – publishing – involved static presentation of information on taxation rates, procedures and plans. The second step – interaction – allowed citizens to enter a personal ID number, tax return ID number and password. They could then check on the status of their tax return to see if refunds were due or if the return was still being reviewed. Following the introduction of new legislation, the third step – transaction – allows citizens to file tax returns online and to make subsequent online corrections. There have been tens of thousands of online tax returns and hundreds of thousands of online status checks since the system's introduction. The system has reduced costs and increased speed and accuracy of service. It "saves money on printing, distribution and processing time. And online customers find the system easier, faster, and more accurate than traditional paper-based services. Whereas processing a tax return had previously taken 25 working days … the new online package was delivering online assessments in just 12 hours." These gains mean 'online taxpayers have an extra 10 days in which to declare their taxes' and they also get refunds 'at least a month before paper-based claimants'.[11]

C3. Building External Interactions: e-Society

Such initiatives deal particularly with the relationship between public agencies and other institutions – other public agencies, private sector service providers, non-profit and community organisations – and with the relationship between civil society institutions. As with citizen connections, these initiatives may well incorporate the process improvements identified in section C1. However, they also include a broader remit:

- ***Working better with business***: improving the interaction between government and business. This includes digitising procurement from and services to business to improve their quality, convenience and cost. This uses all the potentials of ICTs to deliver the informational components of public services to business in digital form. It also includes digital support for opening up government to business through outsourcing and other public—private partnerships. The direct rationale is to drive costs down and quality up within government, but there is also an indirect rationale of improving the efficiency and responsiveness of local business. The Philippine case below is an example.
- ***Developing communities***: building the social and economic capacities and capital of local communities. This uses all the potentials of ICTs to strengthen current information connections and to build new information connections within communities and between communities and other institutions. The rationale is to

[11] World Bank (2000) *Chilean Tax System Online*, World Bank, Washington DC http://www1.worldbank.org/publicsector/egov/chile_taxcs.htm

improve the wealth-creation potential and quality of life of community members. The Indian case below is an example.

- ***Building partnerships***: strengthening institutional relationships. This has two parts. First, building government partnerships: strengthening relations between government and other institutions such as NGOs or international organisations. Second, building civil society partnerships: strengthening relations between the institutions of civil society, such as between NGOs. This uses all the potentials of ICTs to strengthen current information connections and to build new information connections between institutions. The rationale is to create a strong economic, social and political 'fabric' within society. The Honduran case below is an example.

As with e-citizens and e-services, e-society initiatives rely on the new connectivity offered by ICTs. Thus, they are all relatively new inclusions within e-governance. Again, they are particularly representative of the significant new possibilities offered by e-governance for development.

e-Society – at least relating to communities or to other non-governmental institutions – has been a focus for recent donor-funded 'e-development' initiatives. Why? Partly because such initiatives operate at the institutional rather than individual level, and because they operate somewhat independently of the red tape of government. There has also been a strong e-development interest in government-disintermediating service delivery initiatives. These seek to deliver education and health advisory and other information-intensive services direct without state intervention, often on a North-to-South basis.

Other components of e-society – typically those relating to government links – have been rather more neglected. Thus, as with citizen-focus projects, the opportunity has yet to be fully grasped to use the new connectivity to help refocus the state from an internal, self-serving view to an external, nation-serving view.

Developing Country e-Society Examples

Working Better with Business

Reforming Import Procedures in the Philippines

Both business and government in the Philippines were concerned about the delays and corruption associated with customs and importation. An ICT-based system was introduced to address these concerns. Importers create a single electronic declaration which is processed to calculate payments due and to undertake risk analysis which identifies shipments that may require physical inspection. The online system has allowed a move to cashless procedures in which verification of duty/tax payment is sent electronically from authorised banks to Customs. The verification is automatically reconciled against processed declarations and a release order is then issued. The release order is sent electronically to the Customs warehouses that hold shipments. The result is a much faster service for business. "Cargo is released between four hours to two days, as opposed to eight days in the earlier system." Reconciliation of payments – which used to have a four-month backlog – is now done within the day, and there are fewer errors. Finally, because Customs staff no longer handle cash or physical documentation, the pressures and opportunities for importers to make corrupt payments have been largely removed.[12]

Developing Communities

Developing Rural Communities in India

The Gyandoot project set up 31 Internet-connected kiosks in villages in a district of central India where 60% of the population live below the poverty line (earning less than US$1 per day). Each kiosk was initially funded by the local government committee. It is run by a local young entrepreneur along business lines: fees are charged for the services provided. Government-related services include online application for government certificates; online filing of complaints; printing of land records (which are held online and which all farmers need every season to obtain bank loans); and access to information on government welfare and related schemes. Other community development services include: access to agricultural produce prices; an auction site for sale/purchase of land, equipment and animals; online discussion forums; and e-mail. In the first year of operation, the kiosks were used on tens of thousands of occasions. Proven benefits include better prices for agricultural produce; easier sales of other items; faster reactions to complaints or problems (e.g. an outbreak of cattle disease); and improved knowledge and skills within the communities served.[13]

[12] Bhatnagar, S.C. (2001) *Philippine Customs Reform*, World Bank, Washington DC http://www1.worldbank.org/publicsector/egov/philippinecustomscs.htm

[13] Bhatnagar, S.C. & Vyas, N. (2001) *Gyandoot: Community-Owned Rural Internet Kiosks*, World Bank, Washington DC http://www1.worldbank.org/publicsector/egov/gyandootcs.htm

Building Partnerships

Strengthening Civil Society in Honduras

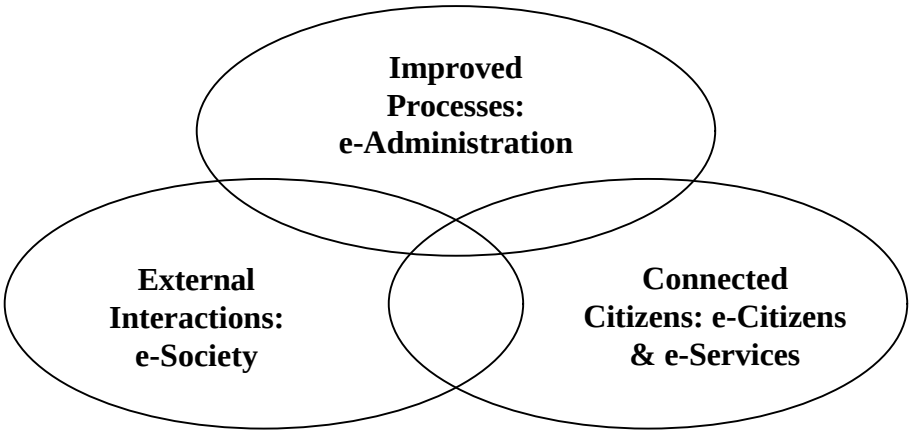
The Sustainable Development Network is an Internet-linked group of more than 400 institutions that play a leading role in Honduran civil society. It has proven its worth in acute situations. For instance, it was able to act as a clearinghouse for requests for food, medicines, blankets and other supplies in the aftermath of Hurricane Mitch. Sources of supply were identified via the Network, and their delivery was also co-ordinated online. The Network also plays an important longer-term role through topic-based virtual discussion forums, through institution-to-institution information exchange, and through development of online data stores. Given state control of most mass media in Honduras, the Network provides one of the few public spaces for discussion and access to information that is outside state control. This has led to a strengthening of civil society and provided greater opportunities to pressurise government to improve its functioning and transparency.[14]

[14] SDNP (2000) *SDNP Honduras: Civil Society's Information System*, UNDP, New York http://www.sdnp.undp.org/it4dev/stories/honduras.html

C4. Overlapping Initiatives

Although described separately above, the three domains of e-governance should be recognised as overlapping, as shown in Figure 2.

Figure 2: Overlapping Domains of e-Governance



Given growth in the new connectivity, e-governance initiatives may increasingly fall into overlaps. An example is given below.

Strengthening Parliamentary Functions in Uganda

The Uganda Parliamentary Technical Assistance Project has placed a heavy emphasis on improving information flows to, from and within Parliament, particularly through use of ICTs. To date, more than half the MPs and many research staff have undergone ICT training; a Web site has been created; and the information capacities of the Parliamentary Library have been expanded. Draft bills can be viewed, budgets and expenditure tracked, and examples of legislation in other countries accessed. Key Parliamentary information can therefore be accessed not just within government but also outside government by citizens, NGOs, and others. "As a result of this modern technology and training, MPs now make requests for research to be carried out and for background information from the Parliamentary Library and Research staff. The effective use of these resources has resulted in new legislative initiatives, better constituent representation, and improved parliamentary oversight of the Executive Branch." The project therefore strengthens connections within government, between government and citizens, and between government and other civil society institutions.[15]

[15] Ugandan Parliament (2000) *The Uganda Parliamentary Technical Assistance Project*, Uganda Parliament, Kampala http://www.parliament.go.ug/UPTAP.htm. See also http://www.crosswinds.net/~usaid/cp2000.html

D. The Challenges to e-Governance for Development

The success stories cited above are the exception rather than the rule for two reasons. First, most developing countries have only undertaken a limited number of e-governance initiatives. This mainly relates to a lack of e-readiness, discussed later.

Second, most e-governance initiatives that are begun currently fail. Surveys of e-governance initiatives in DCs are incredibly rare; a shortcoming that needs to be addressed. Even donors, who should be committed to monitoring and evaluation, rarely seem to produce reports. From the material that is available, two main types of e-governance failure can be identified.

In some cases, there is the *total failure* of an initiative never implemented or in which a new system is implemented but immediately abandoned. For example, India's Indira Gandhi Conservation Monitoring Centre was intended to be a national information provider based on a set of core environmental information systems. Despite more than a year of planning, analysis and design work, these ICT-based systems never became operational, and the whole initiative collapsed shortly afterwards.[16]

Alternatively, there is the *partial failure* of an initiative in which major goals are unattained or in which there are significant undesirable outcomes. For example, the Tax Computerisation Project in Thailand's Revenue Department set out seven areas of taxation that were to be computerised. At the end of the project, only two areas had been partly computerised, and five others were not operational.[17]

One type of partial failure that particularly seems to affect e-governance initiatives is the *sustainability failure* of an initiative that succeeds initially but then fails after a year or so. An example is the creation of a set of touch-screen kiosks for remote rural communities in South Africa's North-West Province. These were initially well received. However, the kiosks' lack of updated or local content and lack of interactivity led to disuse, and the kiosks were removed less than one year later.[18] Sustainability question marks also hang over some of the case studies cited above.

[16] Puri, S.K., Chauhan, K.P.S. & Admedullah, M. (2000) 'Prospects of biological diversity information management'; in *Information Flows, Local Improvisations and Work Practices*, Proceedings of the IFIP WG9.4 Conference 2000, Cape Town

[17] Kitiyadisai, K. (2000) 'The implementation of IT in reengineering the Thai Revenue Department'; in *Information Flows, Local Improvisations and Work Practices*, Proceedings of the IFIP WG9.4 Conference 2000, Cape Town

[18] Benjamin, P. (ibid.)

As noted, we have only glimpses of evidence about the prevalence of such failure. A few surveys have been conducted, with examples summarised below:

- Use of ICTs for health reform in South Africa's public sector: widespread partial failure of high cost systems with little use of data.[19]
- Use of ICTs in the Thai public sector: 'failure cases seem to be the norm in Thailand at all governmental levels'.[20]
- Donor-funded public sector ICT projects in China: all were found to be partial failures.[21]
- World Bank-funded public sector ICT projects in Africa: almost all were partial – often sustainability – failures.[22]

Likewise, independent reports on ICT use in the public sectors of individual developing countries find failure to be the dominant theme.[23]

It is important to acknowledge that developing countries are not alone in suffering high levels of failure with e-governance initiatives. However, they do face a particular set of constraints that arise from two related challenges: lack of e-readiness and large design—reality gaps.

D1. The Strategic Challenge: e-Readiness for e-Governance

Lack of e-readiness contributes to both lack of and failure of e-governance initiatives. Six key questions can be asked of developing country governments in order to assess how strategically prepared they are for e-governance.

i. Is the Data Systems Infrastructure Ready?

Are the management systems, records and work processes in place to provide the quantity and quality of data to support the move to e-governance? In many countries, data quality and data security – for example – are very poor, and there are few mechanisms to address these issues.

ii. Is the Legal Infrastructure Ready?

Are the laws and regulations required to permit and to support the move to e-governance in place? In many countries, for example, digital signatures cannot be accepted.

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[19] Braa, J. & Hedberg, C. (2000) 'Developing district-based health care information systems'; in *Information Flows, Local Improvisations and Work Practices*, Proceedings of the IFIP WG9.4 Conference 2000, Cape Town

[20] Kitiyadisai, K. (ibid.)

[21] Baark, E. & Heeks, R.B. (1999) 'Donor-funded information technology transfer projects', *Information Technology for Development*, 8(4), 185-197

[22] Moussa, A. & Schware, R. (1992) 'Informatics in Africa: lessons from World Bank experience', *World Development*, 20(12), 1737-1752

[23] Oyomno, G.Z. (1996) 'Sustainability of governmental use of microcomputer-based information technology in Kenya'; in *Global Information Technology and Socio-Economic Development*, M. Odedra-Straub (ed.), Ivy League Publishing, Nashua, NH & World Bank (1993) *Turkey: Informatics and Economic Modernization*, World Bank, Washington DC

iii. Is the Institutional Infrastructure Ready?

e-Governance can only be progressed if the institutions exist to act as a focus for awareness and to act as a means for facilitation of e-governance. In many countries, there are no institutions to co-ordinate and lead and drive e-governance.

iv. Is the Human Infrastructure Ready?

Are the attitudes, knowledge and skills in place – especially within the public sector – that are required to initiate, implement and sustain e-governance initiatives? In many countries, key skills gaps relate to business analysis and system design, and to project management, contract management and vendor management. There are also 'mindset' gaps: general resistance to change; lack of customer-orientation; resistance to data-sharing; etc.

v. Is the Technological Infrastructure Ready?

Although there have been great strides forward, the fact remains that most developing countries are a long way short of the computing and telecommunications infrastructure on which many Northern e-governance initiatives have been based.

vi. Is the Leadership and Strategic Thinking Ready?

A critical pre-condition in successful e-governance for development is an e-champion or small group of e-champions: leaders with vision who put e-governance onto the agenda and make it happen. Cases like those described above show that such leadership can smash through many operational barriers. Conversely, all the operational e-readiness in the world is of limited value if there is no vision and leadership to give direction to e-governance.

Of all the e-readiness issues, then, this is probably the most critical, and it will be addressed in some detail under five headings:

- ***No captains on the bridge***: because of lack of awareness, knowledge, skills and confidence there is a generic lack of e-governance leadership and commitment amongst senior public officials. Related to this, there is a dearth of any vision or strategy on e-governance from within many developing countries.

- ***One man's meat is another man's poison***: because of the lack of leadership confidence and capacity within many DCs, e-governance initiatives are frequently driven from outside government by vendors or by donors or by consultants. The locus and focus of strategy is therefore not always right. As a result, inappropriate systems are being forced in; systems from other sectors or countries that do not fit specific DC realities. This is a classic case of square pegs and round holes that will be discussed further in section D2.

- ***Missing the g-spot***: where donors set the e-governance for development agenda, their strategic focus will be critical. But, as noted above, many recent e-

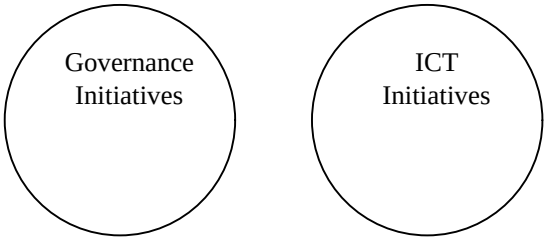
development initiatives from bilateral and multilateral donors appear to be deliberately avoiding government. This is partly because of the human capacity and regulatory constraints within government, and partly because of continuing 'government bad, markets/NGOs good' undercurrents within development. Many such initiatives are therefore bypassing the state and going for community telecentres, ICTs in schools, telemedicine, e-commerce and the like: e-business and non-governmental e-society. e-Administration, e-citizen and e-services initiatives, and the government-related components of e-society – altogether representing the 'Networked Government' model for e-governance – have been too greatly ignored, leaving a growing opportunity gap.

- ***Four-Is***: with or without donors, and because of attitude and knowledge gaps, e-governance for development is not being approached properly.
  - In some cases, ICTs are **i**gnored – as if they didn't exist; at least some good governance initiatives act as if the last 50 years of ICT development never happened.
  - In other cases, ICTs are **i**solated – separated from the main thrust of the governance project, and so making no effective contribution to it. Ignorance or isolation seems to characterise many identifiable initiatives (see 'current situation' in Figure 3 below). For an example of the latter, one only has to look to the programme structures of major development institutions. Frequently, there will be a structure for governance and a separate structure for ICTs, but no effective communication or synergy between the two.
  - In still other cases, ICTs are **i**dolised – put as the centrepiece of governance initiatives, becoming an end rather than a means. This is increasing as public officials find out about ICTs and/or fall for the vendors' hype (see 'emergent situation' in Figure 3 below). It has something to recommend it – ICTs can be a useful lever to change – but governance goals are often mislaid.
  - Only rarely are ICTs properly **i**ntegrated into good governance reforms, with reform objectives in the driving seat, with information requirements well understood, and with ICTs serving those requirements and objectives (see 'required situation' in Figure 3 below).

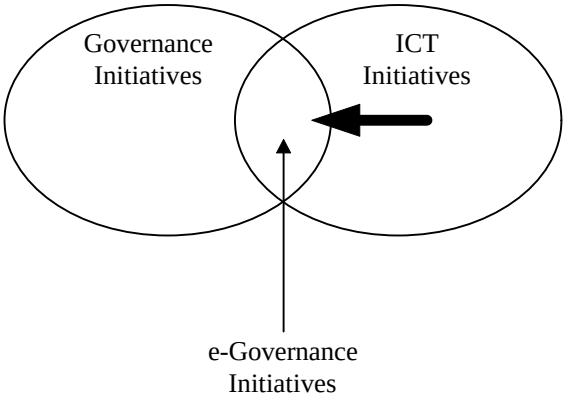
- ***I'm not listening***: because of attitude and knowledge gaps but also because of cultural and political realities in some developing countries, the strategic approach to key stakeholders (users, clerical operators, citizen beneficiaries, community members) is sometimes ineffective. These stakeholders are sometimes completely ignored in the planning of e-governance projects. Quite aside from any ethical questions, this leads to the direct practical consequence of e-governance failure.

Figure 3: Different Approaches to e-Governance

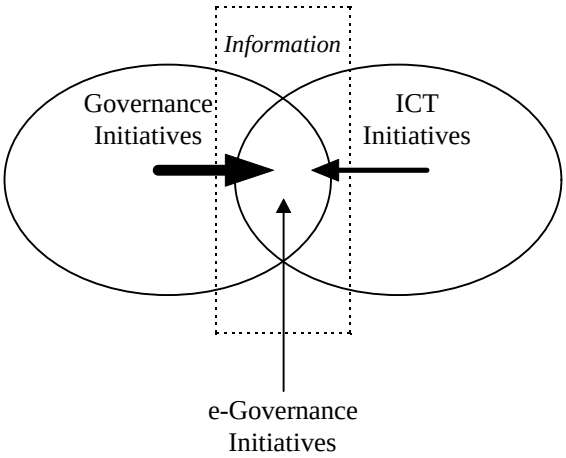
i. Current Situation: Ignored/Isolated



ii. Emergent Situation: Idolised



iii. Required Situation: Integrated

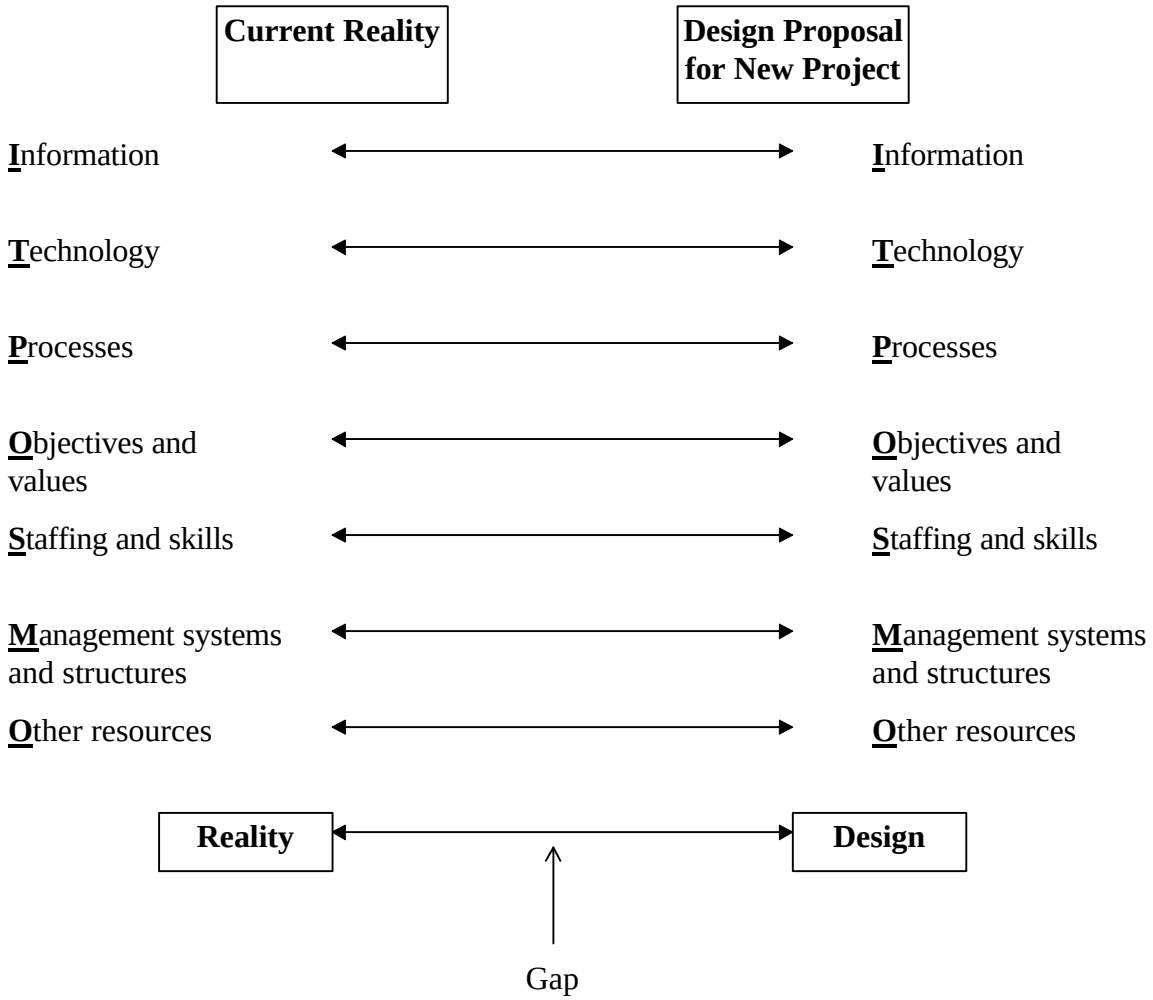


D2. The Tactical Challenge: e-Governance Design—Reality Gaps

The strategic challenge of e-readiness addresses e-governance at the macro-level of the whole nation as a precursor to e-governance. In addition, though, there is a tactical challenge that faces the micro-level of individual e-governance projects during their implementation. This is the challenge of avoiding failure and achieving success.

From a study analysing dozens of e-governance projects, a new model has been developed to explain and predict e-governance success and failure.[24] The model centres around design—reality gaps: the difference between design ideas and organisational realities. The study showed that, the larger this design—reality gap, the greater the risk of e-governance failure. Conversely, the smaller the gap, the greater the chance of success. We measure these gaps along seven 'ITPOSMO' dimensions, summarised in Figure 4.

Figure 4: Design—Reality Gaps in e-Governance Projects



[24] Heeks, R.B. (2001) *Reinventing Government in the Information Age*, Routledge, London

For example, taking the case above of an intranet in Johannesburg Metropolitan Council, design and reality were often well matched, along dimensions including:

- ***The information dimension***: the intranet was designed to provide just the kind of information that Council users wanted, creating little gap between designed and actual information needs.
- ***The technology dimension***: the project plan relied mainly on existing technology within the Council, creating little gap between designed and actual technology.
- ***The objectives and values dimension***: the project met the real (sometimes personal) political aspirations of senior councillors and officials, and gained their support, creating little gap between designed and actual objectives.
- ***The staffing and skills dimension***: intranet developers had the necessary skills to produce the system that had been designed, creating little gap between designed and actual skill requirements.
- ***The other resources dimension***: the project was set up cheaply and incrementally, without particular time pressures, creating little gap between designed and actual resource requirements.

All of this meant only limited gaps between e-governance project design and Council reality. The result was success.[25]

However, as noted, failure has been more common than success, and archetypes of e-governance failure did emerge from the study: situations when a large design—reality gap – and, hence, failure – was more likely to emerge:

- ***Hard—soft gaps***: ICTs are often conceived in terms of machinery and engineering, rationality and objectivity. Many e-governance systems get designed according to these conceptions. The trouble is that many government and civil society organisations do not adhere to these 'hard' ideas. In reality, they are dominated by 'soft' factors: people, politics, emotions and culture. When a hard IT design meets a soft reality, there is a large gap, and a strong likelihood of failure.
- ***Private—public gaps***: despite the best efforts of 'new public management', the public sector remains fundamentally different from the private sector. This seems to be forgotten by too many ICT vendors, donors and consultants – a particular problem when, as mentioned above, they are often in the e-governance driving seat. They may pick up an information system designed for the private sector. Then they try to shoehorn it into a very different public sector reality. The large design—reality gap generates lots of heat and noise, not much light and, ultimately, plenty of e-governance failure.
- ***Country context gaps***: it sometimes seems that only the first half of 'Think Global, Act Local' gets remembered. Designers seeking quick fixes try to pull e-governance solutions off-the-shelf from other countries. But New York is not New Delhi, and Kuala Lumpur is not Kingston. So there is often a large design—reality gap when trying to introduce in country X an e-governance system designed for country Y. The frequent result is failure.

[25] Benjamin, P. (ibid.)

E. Strategy and Tactics for e-Governance

e-Governance lies at the heart of two global shifts: the information revolution and the governance revolution. Both shifts are changing the way society works and the way that society is governed. They bring the opportunity for not just incremental but radical gains in efficiency and effectiveness.

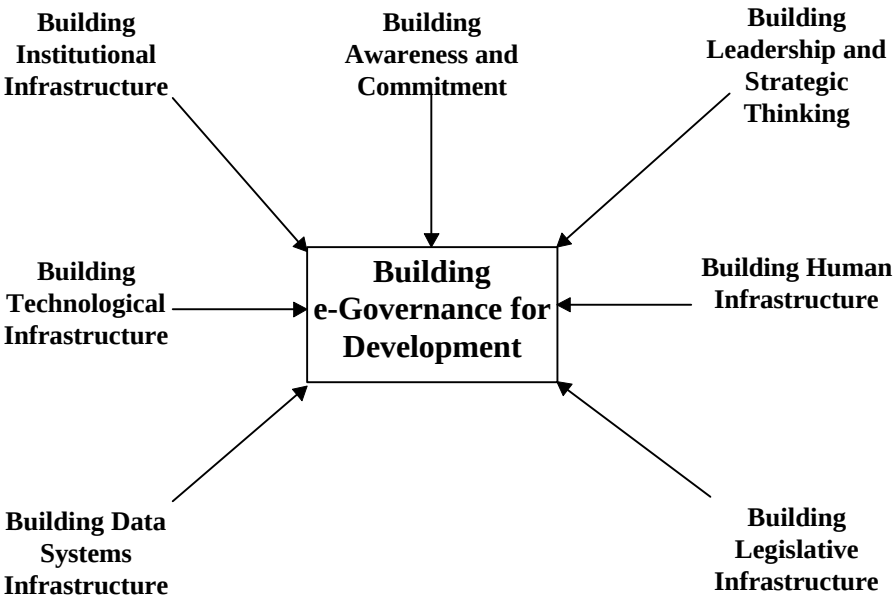
But, at present, any such benefits are accruing to the few, not the many. It is the few who have access to ICTs, to digital information and knowledge, and to the benefits of reform in governance. We can thus talk of an 'e-Governance Divide' that is increasingly separating developed and developing countries, and elites and ordinary citizens within developing countries.

This growing divide must be addressed if the poor in developing countries are not to fall even further behind. We must seize the digital opportunity for governance and seize it now. Delay for the South as the North pushes ahead will only reinforce historical patterns of inequality.

So … what must be done? In short, there must be both a strategic and a tactical response that attacks the current challenges to e-governance for development hard and head-on.

Figure 5 summarises the package of strategic initiatives that is required. These are described in more detail in a related paper.[26]

Figure 5: The Strategic Response to the South's e-Governance Divide



[26] Heeks, R.B. (2001) *Building e-Governance for Development* (ibid.)

At the tactical level of individual e-governance projects, identified best practice on design—reality gap closure must be adopted. Examples of such best practice include:[27]

- ***Legitimising and mapping current reality***: integral to e-governance project success is an understanding of reality. Yet this may be difficult to achieve. e-Governance project leaders can help by 'legitimising reality': by encouraging stakeholders to articulate the difference between rational, prescriptive models of what they should be doing and real depictions of what they are actually doing. Techniques for exposing and mapping organisational realities play a role here. Self- and third party observation helps expose realities. Use of soft systems tools such as 'rich pictures' helps map realities. Prototyping helps both, particularly helping users to understand their real information needs.

- ***Customisation to match realities***: as described above, e-governance solutions designed for one sector or country are being forced directly into a very different reality, creating failure. To combat this, leaders of e-governance projects must be competent enough and confident enough to demand designs that match their situation's unique reality. The keywords for such projects must be 'customised' not 'off-the-shelf'; 'adapt' not just 'adopt'.

- ***Modularity and incrementalism***: with the growth in connectivity and as a natural consequence of dealing with millions of entities, e-governance projects are frequently large. With pressures from donors/vendors and pressures to play catch-up with the private sector, e-governance projects are frequently ambitious. But, the bigger and bolder the project, the greater the risk of failure. Designers must reconfigure such projects to limit the extent of change at any given time. Stretching project time horizons is one technique. There is also a growing consensus behind modularity (supporting one business function at a time) and incrementalism (providing stepped levels of support for business functions) within e-governance projects.

- ***Hybrids and terminology***: design—reality gaps often arise because of a 'two tribes' mentality. IT designers understand technology but not the realities of governance. Officials and politicians understand the realities of governance but not the technology. 'Hybrid managers', who understand both perspectives, are the answer. Yet hybrid training is practically non-existent. Worse, the tribal gap is growing with increasing outsourcing of e-governance work to the private sector. This exacerbates the clash of culture and values between designers and users.

  Terminology, too, is part of the problem. 'e-Governance' (electronic governance) may be unhelpful by suggesting, wrongly, that delivery of ICTs is an end in itself. As stated above, it may be more appropriate to talk of 'i-Governance' (integrated governance or, perhaps, intelligent governance) that places governance objectives in the driving seat, with ICTs seen as one part of the means to deliver those objectives alongside people, processes and information.

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[27] Heeks, R.B. (forthcoming) *e-Government: An International Text on Public Sector Information Systems*, Sage, London

- ***Closing specific gaps***: as well as applying generic best practices such as those just described, it will also be important to address specific design—reality gaps. Early analysis of these gaps in e-governance projects means moving beyond the narrow confines of typical risk assessment models, with their focus on the simple parameters of project resources.

  It means, instead, converting each of the ITPOSMO dimensions into a set of rating scales. Key project stakeholders then discuss and score these scales. The whole process can be undertaken as a facilitated workshop with an iterative approach. The major design—reality gaps are identified, and the workshop then moves to work out how to close those gaps. This process can become even more iterative if it forms part of a cycle of learning and reflection during the project.

In summary, the cases analysed in this paper show that e-governance has a key role to play in current and future development. It can offer critical improvements to the efficiency and effectiveness of governance; and probably offers critical future legitimacy for government. The issue for developing countries, therefore, is not 'if e-governance' but 'how e-governance'.

In addressing the 'how', this paper has shown that improvements and legitimacy will only be delivered if two things are in place. First, the strategic e-readiness infrastructure, especially the leadership and integrated vision on which e-governance depends. Second, the tactical best practices that are needed to close design—reality gaps and to steer e-governance projects from failure to success.