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# E-government - an approach to state reform in developing countries?

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**Briefing Paper** (1/2003)

# E-Government – an Approach to State Reform in Developing Countries?

*Electronic government, or, in short e-government, can contribute significantly to strengthening the efficiency, productivity, and transparency of government institutions. However, the potentials of the new information and communication technologies (ICT) are not always so easy to translate into practice. Rapid successes can be achieved above all in cases where a solid institutional base is already in place and good expert and infrastructural resources are available – a set of conditions not given in many developing countries.*

*The aim of e-government is to open up new internal and external communications channels, to simplify administrative procedures, to improve the accessibility of public actors and services, and to enhance access to information. This often also means that these new technologies are vehicles of democratic, customer-oriented, and decentralized models of political decision-making and public administration. If these models are to be translated into practice, reforms must be embedded in an overall concept that takes account of both customer and target-group demand and the challenges posed by internal administrative cooperation and networking.*

*In the foreseeable future it will be mainly industrialized and advanced developing countries that are in a position to draft and implement comprehensive strategies of this kind. But potential uses are also opening up for poorer countries. The obstacles to modernization of government institutions must often be sought less in financial or infrastructural bottlenecks than in blockades in the political sphere.*

*Development cooperation (DC) can use e-government as a means of supporting partner countries in devising and implementing political and administrative reforms and in improving market-oriented frameworks. Beyond the immediate benefits of the new technologies, e-government should be taken as an instrument to promote good governance and to strengthen reform-oriented actors in politics and civil society.*

**The goal triangle of e-government**

The term e-government refers to the planned and coordinated use of ICT to strengthen the core functions of public institutions. Not every computer in use in the public sector amounts to e-government. When electronic data-processing emerged on a more widespread basis, its initial focus was on isolated and targeted modernization efforts in a limited number of key sectors. Today, however, the focus is on the networking of workplaces, administrations, and political institutions as well as on ICT-based communication with customers or citizens. This calls for concepts that are geared to integrating the modernization goals and investment planning of various institutions and based on a thorough examination and analysis of service portfolios and the demand for public services.

E-government is bound up with expectations of substantial advances in (1) the *efficiency* of the institutions concerned, (2) *improvement and enlargement* of public service portfolios, and (3) *political participation and transparency*.

**Efficiency**

E-government reforms can boost the *internal* or *production efficiency* of public institutions, saving taxpayers money. This can be achieved mainly in two different ways: First, labor productivity can be increased by automating administrative routines, facilitating access to data and information, and simplifying administrative procedures. Second, e-government can cut the costs of public tendering and procurement by increasing price transparency, broadening competition, and lowering transaction costs. As noted below, however, these savings may be offset by costs that narrow down or indeed wholly obliterate such efficiency gains.

Labor productivity can be raised by means of reforms within individual agencies or administrative units. With an eye to efficiency, complete conversion to ICT-based and automated procedures makes real sense when the task involved is to process mass transactions. But even partial conversion, e.g. for purposes of registry or filing of data, can entail substantial improvements.

As an example, in 2001 the municipal administration of Rajshahi in Bangladesh successfully introduced electronic birth registration. The project, supported by UNICEF, included investments amounting to US$ 20.000, with monthly operating costs of some US$ 200. Today, data management and consultations take only a fraction of the time needed prior to conversion. Errors in transferring manually gathered data can now be avoided. The main winner is the municipality's statistics agency, though the local health department now also has access to the data, which it uses to conduct children's immunization programs. Both registration and immunization rates have been significantly improved in this way. Plans are now under discussion to use the Internet to make the data, currently only locally accessible, available to other authorities, a step that is expected to entail additional efficiency gains.

The example shows: reforms within individual administrations are often only a first step on the road to higher labor productivity through e-government. Complex multilevel systems place increasing demands on ICT-based cooperation between agencies. To cite another example, by setting up integrated public service centers, the Brazilian state of São Paulo managed to achieve efficiency gains by means of improved cooperation. Here, an average of 35 agencies and enterprises offer up to 400 different services in a number of spacious halls. Even though each institution has retained its own ICT systems and procedural routines, all of the work stations involved are networked. In this way the center's administration always has an overview of customer figures, average waiting times, and staff outputs. Whenever more staff is needed in one place, personnel can be shifted to it from another unit. In connection with other measures, this made it

possible to increase labor productivity by up to 30 percent in 2001.

The conditions required for such interadministrative cooperation include networking of work stations and definition of standards that ensure that data can be exchanged and further processed without any hitches (*interoperability*). In the future this will practically rule out any isolated decisions of individual administrations in favor of given ICT systems. Municipalities and agencies will have to see themselves as service providers in integrated systems. Otherwise efficiency gains made within individual institutions could be counteracted by efficiency losses in the cooperation between administrations. This constitutes a major challenge precisely for poorer developing countries, and may need additional advisory support in establishing the necessary standards and regulations.

Another approach to raising efficiency is to lower the costs of *public tendering and procurement*. Here there is a large measure of public interest in transparency, efficiency, and competition. It is not by chance that e-procurement is one of the aspects of e-government that reform-minded governments are quick to take over throughout the world. This goes above all for purchases of standardized goods and services (see box, below). On the other hand, electronically supported transaction of tendering procedures (chiefly for construction services) is making less headway, even though public tendering is a major source of corruption and improper use of public resources.

**E-procurement in Brazil**

With its "Comprasnet" system, the Brazilian government has developed an e-procurement platform that has been in use since 2001. Once it has been fully implemented, Comprasnet is expected to lead to savings of over 20 percent in public procurement. These expectations are supported by initial experiences: In the state of Bahia, where a slightly modified version of the system has been put to use, purchase prices were reduced by an average of 24 percent between August 2001 and June 2002.

Comprasnet is based on a system of reverse auctions, in which the competitor is not the demander but the supplier of a good, and in which the price of a good declines in the course of the auction. The procedure is simple: Procurement agencies formulate their demand and make the necessary funding available. The private operator of the platform organizes this demand according to sectors and publishes it on a website or informs registered companies by e-mail (charging them for the service). The auction is then conducted on a preset date and takes about one hour. It is public, though only registered companies are eligible to bid.

Another form of ICT-supported procurement is the electronic marketplace: Here procurement agencies can order goods and services directly from a company using an online catalogue. This procedure simplifies and speeds up delivery and payment. The procedure normally requires limited-term framework contracts with a number of companies as a means of ensuring both performance and appropriate product quality. Electronic ordering is, so to speak, the first step on the road to e-procurement. Savings may result here both from reduced administrative costs and greater price transparency for standard goods.

E-government is often bound up with substantial initial and follow-up investments, particularly in cases where the infrastructure required is still largely lacking or deficient. In many cases it is necessary to provide traditional and new access channels side by side for longer periods of time. The organizational restructuring of administrations likewise entails costs. Additional expenditures accrue as a result of the need for continuous modernization in the face of often short innovation cycles as well as due to the need for training and capacity-building. In connection with e-government, however, cost-benefit analyses are seldom conducted in practice. On this point, developing countries should seize the opportunity to learn from the failures of the industrialized countries. On the other hand, though, it is important not to overlook the fact that on top of cost savings in the public sector there are also other compelling reasons to introduce e-government.

**Improvement and enlargement of service portfolios**

One such reason is improvement of public services for citizens or customers. The main aim of e-government is often not savings of public resources but *allocative efficiency*, i.e. the overall deployment of resources to meet societal demand for public goods and services. If ICT-based solutions make it possible to issue a personal ID in an hour's time, while prior to reform the same procedure took 30 days and required citizens to queue up for two days at different public agencies, allocative efficiency may well be regarded as considerably higher even if this should mean higher public-sector costs for delivery of the service.

In most countries, however, such successes still tend to be rather patchy or sporadic in nature and do not (yet) constitute an overall trend. Furthermore, innovations rarely function smoothly from the very start. They often call for incisive changes in administrative routines, leading, at least in the short run, to lower quality of service provision. And it is important here not to overlook the fact that the new media may strengthen government competences in fields that affect civic rights and personal liberties – in particular as far as the gathering and processing of personal data are concerned. Government interest in collecting information must contend here with the interest of citizens in safeguarding their private sphere and protecting themselves against any possible abuse of government competences. In many developing countries the public is still insufficiently sensitized to this issue.

E-government can raise the capacity of public institutions at various points of the "government value chain": in terms of (1) *information*, (2) *interaction* with citizens and customers, and (3) *transaction*, i.e. the overall handling of administrative processes.

**Information**: By linking databases and gaining access to external sources of data, government gains a number of new options in the *collection* of information. To cite an example, the southern Indian state of Kerala has launched a pilot project including five rural communities and aimed at electronically managing the provision of social services. It turned out that a number of persons were wrongfully receiving several pensions at once. Previously these abuses had eluded detection because different pension funds were unable to collate their data (or were prevented from doing so by the cost and effort involved). In this case the use of ICT has made it possible to improve the focusing of social services – even in an environment marked by poverty and marginality.

*Provision* of information is often the starting point for e-government. Internet portals are an important innovation in the external relations of public administrations. They are used to provide around-the-clock information on public services, opening hours, contact persons, etc. Today more and more countries also have central access points to the networks of official government Internet

sites. Even highly specific information contents can be transported via the new media: For instance, the municipal administration of the city of Bucharest offers its citizens the possibility to monitor online the status of their applications for restitution of property confiscated between 1945 and 1989. During its first 70 days of operation the website was accessed a total of 200.000 times.

**Interaction**: New ICTs foster and structure communication within the public sector as well as between administrations and their customers. In São Paulo employees of the state government use the new internal network to directly request and transfer files between departments – a process that previously took days to complete. 40.000 e-mails are sent back and forth here every day. The situation of citizens and companies in turn is clearly improved when they can place applications per e-mail or download forms from the Internet, complete them, and send them back by the same means.

To be sure, thus far only a small share of the world's population actually has access to the Internet. According to the *International Telecommunication Union* (ITU), in 2001 actual Internet use figures broke down as follows: 0.48 percent for Africa (without South Africa), 0.68 percent for India, and 2.6 percent for China. For dealings between governmental and nongovernmental actors, what is therefore called for is *multi-channeling*, i.e. provision of multiple access channels (see box, below). More and more public administrations, especially at the municipal level, are beginning to group their products around customer *life events* (e.g. marriages, relocations/changes of address, new business startups), bundling all of these procedures in one place.

**Administrative services in peripheral regions**

In the Brazilian state of Bahia, which is roughly the same size as France, customer orientation poses a particular challenge to public administration in rural regions. In 1996 the state government for this reason equipped two trucks for use as mobile public service centers. Based on a fixed schedule, these vehicles travel to the municipalities and Indio communities located in remote areas of the state.

The services provided include registration of births and the issue of personal IDs, certificates of good conduct, and employment papers. These documents are required to apply for social services, to seek work in the formal sector, etc. In addition, in 2000 the state government set up nine mobile health centers as a means of improving basic health care in remote regions of the state.

The mobile centers use modems and mobile radio to access the appropriate state databases, in this way delivering services on a faster, more comprehensive, and more target-group-oriented basis. Other Brazilian states have copied the model, even using boats in the country's northern regions.

**Transaction**: Finally, e-government makes it possible to improve services by transacting administrative processes in one – the electronic – medium. This enables administrations to reduce their internal processing times by avoiding delays due to the need to transport files as well as by processing some files in parallel operations. This is particularly important for the business sector, which normally has far more to do with public administrations than the average citizen. The use of ICT to speed up and simplify procedures can, in the most favorable case, lead to cost reductions on both sides, the private and the public sector, thus raising both internal and allocative efficiency. At the same time, this is also the most demanding dimension of e-government: the more complex the administrative procedure (i.e. the more actors involved and the greater the number of administrative processes required), the more important it is to develop joint technical and procedural standards.

One area in which the private interest in allocative efficiency and the administrative interest in internal efficiency may prove complementary is the administration of taxes. Customer-friendly procedures lower taxpayer costs and raise the public sector's tax revenues. Against this background the Brazilian state of Bahia has decided to offer, as an option, all of its tax services online. Since not all taxpayers have their own access to the Internet, the state is setting up public access points for the purpose. In the year 2001, 1.1 million collection procedures were transacted online, with a total of 576.000 cases still being handled in the traditional manner. The state also took this opportunity to put the tax-related formalization of businesses on an electronic footing. If, prior to conversion, registration took over 15 days, it now takes no more than a few minutes for an applicant to be given a (provisional) tax reference number.

**Political participation and transparency**

ICT is giving rise to new forms of political articulation and communication. Electronic polling procedures (*e-voting*) can be used, for instance, to foster elements of direct democracy. E-mail lists and discussion forums can contribute to strengthening civil-society organizations. Internet portals can be used to promote a citizen-oriented information policy. This is generally referred to as *e-democracy* or *e-governance*.

It must, however, be noted here that in the great majority of countries the new media are used primarily in metropolitan areas by better-off population groups and the modern business sector. In most developing countries the use of ICTs in the political process should therefore not focus mainly on individual participation. ICTs are, however, very well suited to increasing the effectiveness of collective participation and strengthening organizations of disadvantaged population groups. To cite an example, observers noted that mobile telephones played an important role in the presidential elections in Kenya in December 2002, where they were used to monitor the election process and to publicize the results of vote counts. In a number of countries public Internet access points (*telecenters*, kiosks, Internet cafés) are already being used as nodal points of civic organization and political debate.

**Points of departure for development cooperation**

Like other modernization processes, e-government reforms are unfolding in a process of give and take between what is technically feasible and what is socially desirable. This is above all a political issue, since even limited reforms may have far-reaching impacts on the internal procedures and external relations of public institutions, affecting the distribution of power and material resources. In addition to the continuing, powerful dynamics of technological progress, this clearly indicates that there can be no ready-made solution to the task of introducing e-government in developing countries. The donor community, too, has only begun to address this issue.

However, the *standards* for assessing such reforms are clear: Seen in terms of development, e-government makes sense if it contributes, without undue costs, to reducing

locational disadvantages in the way of economic development, improving the provision of – in particular – disadvantaged population groups with basic public goods, and fostering the public-interest-orientation of government institutions. Today these goals are often discussed under the heading of *good governance*, though they have been a constitutive element of German DC for some time now.

E-government as a vehicle of modern paradigms of politics and administration can thus be integrated meaningfully into existing measures aimed at promoting democracy, public-sector reform, and economic development. This is the case in particular when the new technologies are used to strengthen the hand of reform-oriented forces in partner countries. But it is important here not to overlook the fact that incisive reforms in political and administrative structures are inevitably bound up with risks that must be given adequate consideration before any steps are taken:

— Introduction of new administrative models can lead to political distortions, political interests being, as they are, linked to existing traditional structures. It is for this reason essential not to lose sight of the need to "market" political reforms both domestically and abroad and, in individual cases, to think about compensation for the losers of reform as a means of heading off potential blockades.

— Access to and linking of data sources may give rise to new power centers and increase the capacity of the state to engage in authoritarian action. It is for this reason important to strengthen data protection as well as internal and civil-society control mechanisms.

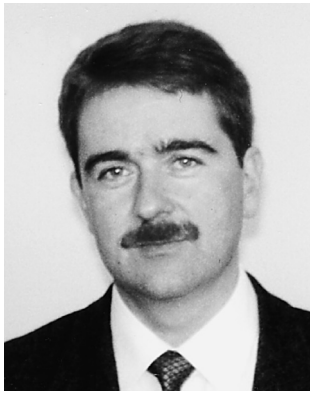
— Especially in cases in which e-government is implemented *ad hoc*, without appropriately conceived models and strategies, the question is often who will benefit in the end. In this case the task of DC is to strengthen the elements in the reform process that subscribe to the goal of promoting the interests of disadvantaged population groups.

As regards *promotion of economic development*, it is important to bear in mind that many e-government applications are already available in existing markets, in particular solutions for use in processing mass transactions (taxes, foreign trade, licensing, etc.) and *e-procurement* platforms. DC should accord adequate attention to the existence of solutions offered by the private sector. Wherever modernization efforts are linked with structural reforms in public administration, however, advisory support (possibly in cooperation with the private sector) may well prove to be a promising and realistic approach. Furthermore, e-government can be used in the framework of business promotion and locational policy as a means of lowering company transaction costs – for instance by providing relevant foreign-trade information online or by providing support for small companies in using the Internet to market their products.

As regards *promotion of administrative reform*, DC should focus on using e-government to eliminate some of the central bottlenecks obstructing the promotion of good governance. These include legal security (an important precondition for the performance of electronic contracts), data protection and security, promotion of *e-literacy* and expert competence, and cooperative approaches to internal administrative modernization, e.g. development of integrated public service centers or databases designed for interministerial use. Agencies with coordinative of interface functions (e.g. fiscal authorities, statistics agencies) are particularly well suited as partners because modernization successes in these institutions are likely to lead to reforms in other institutions as well.

As regards *promotion of democratization*, the central points of departure include, on the one hand, the collection and provision of information using networked databases, municipal or centralized national websites, and local content management tailored to the interests of target groups. On the other hand, it is important to promote access to the new media, placing emphasis on community-oriented structures such as public Internet access points.

Many partner countries have recognized the attractiveness of e-government and are requesting advisory support in this field. If DC sets itself the task of strengthening politics and public administration in the sense of *good governance*, it would therefore be well advised to give systematic consideration to the potentials and the risks of e-government. But looked at the other way around: If e-government is to be more than a "loose accumulation" of technical solutions to given specific problems of government and administration, DC can provide a meaningful contribution to strengthening the capacity of partners in dealing with the new technologies and the models bound up with them. This calls for a sensitization of DC actors and partners alike: the know-how available in the industrialized countries must be activated for DC, a task which also involves building development-specific know-how and integrating it in system-related advisory support.



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**Literature for further reading**

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