

E-GOVERNMENT IN LATIN AMERICA AND THE CARIBBEAN. REINVENTING GOVERNANCE IN THE INFORMATION AGE

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1. Introduction

As my work on this paper draws to an end, I found myself in need of some government service. My car's registration expired last month and I didn't get the notice in time to do the renewal online: my local government requires online transactions to be dated fifteen days before the registration's expiration date but they mailed the registration notice too late to comply with that requirement.

Today, I cannot postpone this anymore. I have an important deadline tomorrow, but I will have to interrupt my work to renew the car's registration in person. The office opens at ten in the morning and I am there early, waiting in the drive-thru line, set up exclusively for registrations' renewals. At first, the drive-thru concept appears to be most promising. But fifteen minutes have passed and I have not moved one inch. There are about twelve cars in front of me, and already four behind. I start timing and recording each transaction: eleven minutes average before the car in front of me moves. If MacDonalds had these performance results the country would come to a standstill. A couple of discouraged drivers decide to give up and leave but it does not make much of a difference in the speed with which we move forward.

While I wait I start thinking what information technology could do to avoid this situation -- from the simple possibility of making appointments to being able to print my new registration sticker in my home printer. I look around and it is not just me waiting in a line of cars, but there is also a line of more than 40 people stading outside the door in the heat, waiting for a security officer to let them in, in groups of four. A woman with a newborn baby asks someone behind her to save her spot while she changes her baby's diaper on the hood of what looks like a very hot car. An old men needs help to get up from the floor each time the line moves. My brake pads are starting to smell of burned rubber, I turn the corner. Only four more cars to go.

Two hours and thirteen minutes since the time I arrived, I make it to the window. I hand over my paperwork through the window. The clerk takes one look at the papers and tells me my insurance company had not written the appropriate information about my car in the insurance card, so I have to call them, get them to fax her office the appropriate policy information, then come back, wait in line again, ask for the fax when is my turn, and if the fax arrived (no, I cannot call to see if the fax came in, they don't answer the phone) then I can get my car registration renewed. I tried to explain I am renewing this car registration and my insurance and personal information is in her computer and has not changed since last year. She tells me very rudely to move on or she will call security. In a state of complete disbelief I am about to drive home when I make a sharp turn, park the car and go to the other side of the building, where now about eighty people are waiting in line. I knock at the door and ask the security officer for a manager. Whe she comes to the door, I explain the situation and after looking at the paperwork, goes inside, checks the computer, and gives me my renewed car registration. As I pay and walk away, I cannot help but think what happens to people less assertive than me. They most probably get tangled in this bureaucratic web for days, losing time and income in the process. And, losing trust in government too. Even after I got what I wanted, I am not satisfied. I look around: not one smiling face in the waiting crowd.

I know this is not a remarkably unique story, it probably happens to millions of people every day all over the world. But I am narrating it here for two reasons: first, because all of these inconveniences could have been avoided by using information technology effectively, making this particular procedure more efficient. Second, because I don't live in one of the so-called developing country but in the United States of America, a country with one of the most well developed and

funded information infrastructures around the world. Moreover, my local government is not the one ruling some rural county in the Deep South but the government of the District of Colombia, the nation's capital, whose Mayor has very publicly embraced electronic government. Obviously, the mere existence of information infrastructure is not enough: it is also about content.

This paper is about e-government, or the impact of information and communication technologies have in the improvement of government services allowing for a redefinition of governance, understood as the web of relationships between government and its citizens. Specifically, the following analysis attempts to demonstrate that to invest in the development of a country's information infrastructure is not enough to maximize the benefits of the Information Age, but that much more is required. Creating content is one of the equally important components; another is distributing that content, making it available to all.

But what content? It is not just about putting information on the Internet. The government of the District of Colombia has an elaborate set of webpages with information about the services it provides. For example, it lists all the locations where you can go in person to obtain services such as car registrations renewals. It even has a function that allows you to check online for the waiting time at several locations. In the one I visited today, the wait time was zero before I left my house, and it has remained at zero all day long --an absolute distortion of reality or evidence that while the technology is there to provide wait information, the application is not being used correctly. Virtually, it looks like an exemplary government services office; in practice, it offers nothing to be envied by less fortunate local government offices in the most isolated corners of this country or any other country around the world --in Slope County, North Dakota, population 767, the same transaction would have taken just a fraction of the time, and I could have stayed for a cup of coffee with the government clerk. Granted, sheer quantities of people in big cities prevent government service to be as personalized as it is in smaller places. But the technology can bridge that gap in many different ways, customizing services to the citizen needs and schedule, avoiding cost and inconvenience.

What content, then? Content that is relevant to the citizen's needs, delivered in a timely manner: E-government is about putting the citizen first. And it is not simply about reenacting bureaucratic procedures online but using the technology to reengineer them: To offer the possibility of renewing my car registration in a website while at the same time requiring 15 days to process it is preposterous.

I hope the following pages help convey the message that while e-government is neither a quick, simple or low-cost solution, it is a leap forward in the right direction. And that time is of essence.

2. The Opportunities of the Information Age

In the past decade we have witnessed the onset of a technological revolution affecting all dimensions of humanity, made possible by the advanced development of communication and information technologies in a world increasingly global.

As with all technological revolutions, the one that brings us into the Information Age manifested itself in a series of events that took place mainly in the richest countries in the world. Unlike all other technological revolutions, however, the expansion to less fortunate corners of our world was much quicker, almost immediate, increasingly inexpensive, and the opportunities it provides are innumerable. Countries' access to the new technologies occurs at a very fast pace, mainly due to improved communications and to the globalization forces that have transformed our world. This increases the opportunity for information exchange, and contributes to all kind of interactions, as well as to the bridging of stereotypes and favoritism of past international patterns.

The impact of the new information and communication technologies (ICTs) in development has only begun to be understood and we are still debating how to measure it. In countries with service-oriented economies and strong literacy indicators, the benefits of the information economy have begun to jumpstart the economy, and are becoming solid engines of development with strong export potential. And in those countries where literacy and other development indicators are weak, these technologies provide for the first time accessible vehicles for fast change. Moreover, the new

technologies allow for interaction amongst countries at similar stages of development, at a lower cost and greater degree of customization than more traditional examples of technology transfer from the developed world that occurred in the framework of the Industrial Age. As an example, the continuous development of distance education technologies is one of the keys to bridge this gap, allowing two-way interactions in learning, as well as customization and feedback to local cultural realities.

Most of the analysis and initial excitement has been about the transformation of the economic actors, the rise of e-commerce, and the changes that information and communication technologies could bring, allowing for the creation of an information society and reducing the State to its minimum expression. For the first time, the economic distance between producers and consumers is so short, that the need for mediation begins to disappear. E-commerce, possible only by the explosion of the Internet makes commercial transactions more efficient, and not only between corporations and other similarly powerful international actors, but also among individuals, microentreprises and small producers all over the world.

There has also been an increase in the awareness of what is referred to as the "digital divide" --a new label for an old set of problems that affect more than half of humanity, and that now acquire a new dimension due to the potential of ICTs in increasing both opportunities as well as inequalities in the new economy. And we are beginning to see the need to understand how these new technologies are going to be regulated and also the new set of challenges they present to the traditional ideas of intellectual property, copyright and patent protection, security, privacy and consumer rights.

This results in a renewed vision of the State and its role. In the new information economy, the State is not simply a moderator of market forces, but the only possible enforcer of the new rules and the enabler of social concern guarantees. It is intrinsically a function of the State to guarantee that citizens' rights are protected, including the rights of those more marginalized sectors of society that do not have ready access to the new technologies, much less to new market opportunities. Thus, it is important to talk about bridging the connectivity divide, and of a digitally empowered development, with universal access as one of the necessary resources for maximizing opportunities in the new economy.

The impact of ICTs in a country's opportunities in the Information Age resides on three pillars: the development of an information infrastructure; the development of content that renders this information infrastructure an effective vehicle for change; and the distribution of content, through programs that promote universal access to the new technologies.

The development of the information infrastructure is on its way, but its growth and the capabilities that it offers differ greatly among the different regions of the world. As it happened in the Industrial Age, the countries with the most resources have the best access to the new technologies, thus, they profit with equal advantage of the opportunities provided by the new economy. However, there are very unique characteristics to the vehicles of change brought by the Information Age revolution. The cost of these global information infrastructure components diminishes with new technological developments, making it more accessible to countries that did not have the resources to participate in previous opportunities for development. Moreover, it allows these less fortunate countries to leap forward omitting the initial stages of development and the cost of adapting legacy systems to the new technological framework.

Creating content for these new technologies transforms them into an effective tool to modernize society's organizations and institutions. We have witnessed the enormous impact that this has had in the private sector, through the transformation of the financial and manufacturing world, creating new patterns of trade that challenge traditional ways of thinking. In some countries, we are beginning to see the kind of transformation that these technologies make possible when applied to the public sector, reinventing the state into a more responsive set of institutions, serving not only the new realities of the market but also putting the citizen at the center. In this approach, citizens become customers of government with rights as well as obligations. The new State is not only more responsive and efficient; it is also more democratic, transparent and accountable to its constituency and to the rest of the world.

While the opportunities are promising, the challenges are many: most of the developing countries have other pressing problems that have to do with malnutrition and hunger, poverty, critical health problems, population growth and urban migration, depletion of natural resources, non-existent or aged basic services' infrastructure, high rates of illiteracy and inefficient education systems, and an increasing crime rate. An overwhelming majority of these countries is also burdened by external debt. It takes more than a leap of faith to invest scarce resources in the infrastructure needed for the new ICTs to have the desired impact in development. And while a great deal of countries live in democratic regimes today, many of those are governed by officials accused of corruptive practices and by state institutions inspired by a welfare state model that have become expensive overinflated bureaucracies of underpaid public servants.

This study is about the need to create content for the information infrastructure, specifically government content. While most analysis focus on the role of ICTs in development, with an emphasis in the role of the private sector or non-governmental organizations, this paper attempts to analyze the impact that these ICTs have in the public sector. The analysis includes a brief review of how the countries of the Latin America and Caribbean region are facing the challenges of building an information infrastructure, bridging the digital divide and developing content in the public sector, through the use of these technologies in the reinvention of government, and consequently, in the transformation of the relationship between the State and its citizens.

3. Information Infrastructure in Latin America and the Caribbean

The expansion of the information infrastructure is a key strategy in the new economy due to its role in the dissemination of knowledge, a central component to development and an engine of the process of innovation. By information infrastructure I mean the mix of traditional communications networks --such as broadcasting and postal services--, telecommunications networks, computer hardware and software, and the Internet, as well as all services that are required for the efficient transmission of information. Due to their impact, I also include in this conceptualization all the necessary policy, legal and institutional factors that affect the development and functioning of the information infrastructure.

In the Latin American and Caribbean regions, the development of the information infrastructure has been rapidly enhanced by the wave of privatization of the telecommunications sector that affected practically all countries in the regions. Following a period of inefficient state-run monopolies of basic telephony services, privatization has allowed not only the elimination of waste and corruptive practices, but has also promoted rapid technological upgrading, greater access, lower prices and more choices in services. The International Telecommunications Union (ITU) reports that Latin America is the region of the world that has most enthusiastically embraced the privatization of telecommunications, since as much as 25 % of the total privatization worldwide have taken place here¹. Chile was the first to privatize its state-owned telecommunications company, and nowadays nearly every country has either fully privatized or has a large portion of the sector owned by a private company.

The results of the privatization efforts are mixed. On one side, the waiting list for a phone, in some cases reaching as much as 15 to 20 years, have been drastically slashed. In most cases, the telephone companies are professionally run, with state-of-the-art technology in place, and they have performed quite well in the upgrading of services. But on the other side, there is still much to be done. The perception that when a company was in trouble, the solution was to privatize and all problems would disappear, has quickly come to terms with the actual reality of the sector, and in many cases a public monopoly has been replaced by a private one². The ITU estimates that although

¹ ITU, America's Telecommunications Indicators 2000

² In a recent study by the World Bank's group, the authors state that based on the Bank-group experience, private monopolies are no better than their public counterparts and that the reform of the telecommunications sector ought move deeper than liberalization of basic and value-added services. Information Infrastructure: The World Bank's Group Experience The World Bank, Operations and Evaluations' Department (OED) and IFC Operations Evaluations Group (OEG), 2001

investment in equipment and systems upgrades has resulted in 100 % digital networks³ in the majority of the countries in the region, as of 2000, roughly one third of the households in Latin America still had no fixed phone line⁴.

While in a positive development, the region overall has moved from the privatization of the phone companies and towards the liberalization of new services such as mobile phones and Internet Service Providers (ISPs), there is still lack of competition in basic telephony services. Time will hopefully change this: according to the World Trade Organization (WTO), approximately 81 % of Latin American countries have committed to liberalize the basic services market.

One of the interesting new developments of this liberalization of new services is that it has started a transformation of the telecommunications sector, mainly determined by the increased popularity of mobile devices and the explosion of the Internet. ITU statistics show that since 1990 more than sixty new mobile companies have appeared in the Latin American market, and new mobile cellular licenses have raised more than US\$ 10 billion in the same period. This revenue helps finance regulatory authorities and also represents valuable income to governments in the form of taxes and other fees, making liberalization and the furthering of competition an attractive option for increase revenues. The number of mobile cellular subscribers in the region soared from 100,000 in 1990 to over 39 million in 1999, making Latin America one of the fastest growing mobile markets in the world. Likewise, the ITU reports that in 1999 Latin America had one of the highest growth worldwide in the number of Internet users⁵ and of Internet hosts (136 % increase), explained by reasons such as the lowering of prices for Internet access and the increased number of Spanish language websites available⁶.

Regulation of the telecommunications sector has also experienced some major changes. First and foremost, not only in the Latin American and Caribbean region, but all around the world, there has been a significant increase of regulatory agencies, with 85% of them created during the 1990s. This is very significant and can be attributed to the process of privatization of the telecommunications sector. While the state was the main provider and regulator, there was not much motivation for independent audit. But things have changed. This process not only has contributed to legislative reform within countries but also leads to a process of international harmonization of legal frameworks in the telecommunications sector. A significant development in this direction is the World Trade Organization (WTO)'s Basic Telecommunications Commitment, signed by many countries in January 2000, including most countries in the Latin American and Caribbean region, with the exception of Ecuador and Brazil, expected to sign in the near future, and the partial adoption of the agreement by Bolivia and Venezuela.⁷

³ Put it simply, digitalization is the modernization of analog networks. Analog networks originated in Graham Bell times and dominated communications for most of a century because of their capabilities to transmit voice through phone networks and moving images through broadcasting signals. Analog networks are also "noisy" and this noise is difficult to eliminate affecting the quality of the transmission, and, in addition, they make storage difficult. These two problems combined make routing services difficult to offer, and it limits capabilities for error detection. With the invention of digital computers another discrepancy emerged since analog networks were not effective at transmitting digital data, and despite the advent of the modem to make the digital-analog transformation, results were quickly surpassed by the rapid development of digital technology --used today not just to transmit data but also voice and high quality video. Digital networks also offer other advantages over their analog counterparts, notably the fact that they are easier to manipulate and store. At first, the high cost of the equipment limited a massive adoption throughout the world (the first implementations of digital technologies occurred in the fifties). In addition, with digital commutation the user can access additional services such as call waiting, conference calls, the ability to block phone numbers, all of them impossible with analog networks. Finally, digital technology allows for more flexibility and dynamism in the assignment of numbers and routes; maintenance costs are sensibly lower for digital components.

⁴ Exceptions are Dominican Republic with 59 % and Suriname with 56 % digital networks, Bolivia, Ecuador, Paraguay and Venezuela have over 80% of the network digitalized; Brazil, Colombia and Honduras around 93%, and Nicaragua and Peru closer to 96 and 98 % respectively.

⁵ It is important to note that most of the Internet access is done through phone lines and dial-up services, and that when discussing challenges to connectivity, one needs to take into account the low teledensity around the region, specially in rural and isolated areas.

⁶ See America's Telecommunications Indicators, 2000. ITU, April 2000, Chapter 3.

⁷ In the Latin American region, a new organization named "Regulate!" was created with the goal of exchanging information, and encourage cooperation and the coordination of efforts to promote telecommunications in the region.

Most of these new regulatory bodies are collegial, and in some cases they have boards made of public and private sector representatives. Reversing a predominant trend, today very few of these regulatory bodies are headed by a single individual, most are managed by groups.

Despite this notable increase in the number of regulatory bodies, much needs to be done because in addition to traditional functions such as licencing, tariff approval, numbering, technical requirements, etc., many of the newly created regulatory bodies have jurisdiction over the Internet. Or, in some cases, the Internet falls under the jurisdiction of another body, such as the Ministry of Communications or Transportation, and convergence of regulatory agencies is needed in order to maximize these countries opportunities of access in the Information Age.

The new challenges to regulation posed to ICTs are currently being studied by several organizations. A recent study by the Inter-American Development Bank's Multilateral Investment Fund (IDB-MIF) analyzes the regulatory framework of ICTs in the twenty-six member countries of the organization, identifies current reform projects in this area, and studies current legislation, creating in addition a database of regulatory institutions and persons that have an influential role in the definition of regulatory policy.

The study suggest four different dimensions affecting the new regulatory framework of ICTs:

- a. approval of specific laws by the State governments around the region;
- b. reliance on international organizations for the definition of norms affecting cyberspace;
- c. allow the private-sector to self-regulate;
- d. total liberalization, allowing actors to act according to their free will.

According to the study findings, the agenda for the reformulation of regulatory frameworks at the national and regional levels includes challenging topics such as e-commerce and taxation, digital signatures legislation, issues concerning verification and authentication, systems security and encryption software, new regulations for intellectual property protection, promotion of universal access, forms of electronic payment, and privacy issues. The author highlights the need to disseminate information about current efforts around the region and the world in order to inform the debate and avoid a tendency towards "hyper-regulation"⁸, as well as to promote coordination among international organizations in order to avoid redundancy of efforts.

4. Bridging the Digital Divide

In addition to the problems of lack of competition in basic services and the low teledensity described by the statistics above, as well as the challenges imposed by regulation, the growth of the number of Internet users also presents serious issues to take into account. Although prices have been lowering rapidly, most Internet users are from the upper and middle-class sectors of society, and even there, penetration remains low. Many governments, in some cases with the support of the private sector and/or international organizations, are implementing initiatives that attempt to bridge what is known as the "digital divide" but the task remains daunting. Despite the fact that the number of ISPs has grown enormously in the last few years, most of those serve the American market, and they are also highly concentrated, with the exception perhaps of the Brazilian case.

Cost is indeed a major challenge. Because of the need to route regional traffic through the United States, ISPs may not be able to continue to develop backbones or invest in high-performance. The ITU, citing Chile as the most competitive telecommunications market in the region, illustrates the cost challenges comparing the cost of a 2Mb international circuit from Argentina to the United States (about US\$ 72,000) with the cost of the same connection in Chile (as low as US\$ 28,000). The ITU is optimistic that with the investment in fiber optic lines between the United States and Latin America and the arrival in the market of alternative connection options such as digital cable, TV boxes or PC-packages with internet connections builte-in, the situation may improve.

Regulatel is made of 19 members: Argentina, Bolivia, Brasil, Colombia, Costa Rica, Cuba, Chile, Ecuador, El Salvador, Guatemala, Honduras, México, Nicaragua, Panamá, Paraguay, Perú, República Dominicana, Uruguay y Venezuela.

⁸ Source Andres F. Rodriguez, "Proyectos para un adecuado marco regulatorio de ICT en Latinoamerica". Washington, DC: IDB-FOMIN, March 2001.

Additionally, other technological developments may favor universal access through lowering of costs and increased services: the introduction of third generation cellular phones, combining wireless functionality with high-speed Internet access, may prove an important tool in the quest for universal access, as well as in maximizing the insertion of the Internet. ITU analysts believe that this could be done by adjusting regulation in such a way that prevents companies from focusing on increasing coverage only in densely populated areas and directing them, through the mobile licenses, to invest in rural communities.

But lowering costs alone will not resolve the challenge of access in a region with serious poverty problems, with more than a quarter of the population living on less than a dollar a day and entire regions in rural areas without access to basic telephony services. Private sector operations tend to focus on the larger urban areas to maximize profit. This is where the State has a major role in the protection of the social interest of those isolated communities and in providing them with mechanisms of access.

Some countries have turned to the telecenter model as the solution both for providing basic telephony and Internet access. Examples abound in the region and around the world, with different degrees of success. One of the most commonly cited is the case of the Red Científica in Peru, a private undertaking that has had a very positive impact nationwide⁹. Telecenters can acquire many forms: private or public sector funded, in libraries, postal offices or Internet cafes, and they have offered access at moderate or relatively inexpensive rates to those who otherwise would have been excluded.

Another way to enhance universal access is to request from mobile cellular operators contribution to universal service or access funds. This is being done in several countries around the region, notably among them Chile and Brazil.

Building on the reform of the telecommunications sector, Chile has pioneered in the mobilization of mainly private resources to improve access to communications in the rural areas. Created in 1994, the *Fondo de Desarrollo de las Telecomunicaciones* (FUND) provides pay-phones in rural and low income areas previously neglected. The mechanism used is to offer subsidies to those private companies willing to invest in the development of the necessary infrastructure. The results are astonishing: by the end of the current year it is estimated that about 99 percent of the population living in rural areas will have access to a pay-phone. This major improvement in access to basic communications is leading the process of adoption of more advanced technologies such as electronic mail, and increasing the number of Internet users in rural areas. The Chilean government is studying ways in which it can extend the FUND to support universal access in rural communities by opening telecenters

In Brazil, the improvement of the communications sector has also been accelerated. Current statistics indicate that since the privatization in 1998, there has been a 421 % growth in the number of main phone lines: from 20,244 to 48,999 million of main lines. In January 1999, the government created a multidisciplinary commission to study and make recommendations on the universalization of services --diagnosis, solutions, mechanisms of implementation and measures of performance. In this framework a Fundo de Universalização dos Serviços de Telecomunicações (FUST)¹⁰ was created with financial contributions from the telecommunication companies that operate in the Brazilian markets, to support efforts of universalization of services. Each month, these companies need to contribute 1% of the gross income from the previous month. In what was the first collection of contributions this past February 2002, the Fund acquired US\$ 12.6 million that will be distributed through a program called "Telecomunidade". The program will provide basic service and Internet access to individuals living in poverty, disabled persons, education establishments and libraries, as well as health centers and public safety organizations.

⁹ For more detailed information about these initiatives, especially in their funding of telecenters, see Francisco Proenza's comprehensive analysis "Telecenters for Socioeconomic and Rural Development in Latin America and the Caribbean" with Roberto Bastidas-Buch and Guillermo Montero, Working Paper, FAO, ITU and IDB, Washington DC, May 2001. pp.: 43-50.

¹⁰ See www.anatel.gov.br/index.asp?link=/biblioteca/editais/fust/default.htm

Similar initiatives are also underway in other countries of the region. Peru created the Fondo de Inversión de Telecomunicaciones (FITEL)¹¹ as an equitable mechanism to help finance telecommunications services in rural areas and in other places considered of social interest, to assist the population of these areas in the identification of needs, to promote the participation of the private sector as service providers in those areas, and to promote economic and social development of these areas through Internet access. The administration of FITEL is done by OSIPTEL, the Peruvian regulator for telecommunications, and the projects selected by FITEL are approved by the Ministry of Transportation, Communications, Housing and Construction.

In Colombia, the government launched a major initiative known as COMPARTEL ("Compartir Telecomunicaciones")¹² that has as a main objective to service rural populations and those living in isolated areas. The program has two components: rural residential and community telephony, and social internet. The first phases attempt to provide basic services and slow Internet connection to areas with less than 250 people. The last phase, "social Internet" attempts to provide higher quality service with a minimum effective connection speed of 4 Kbps. The social Internet operation is run as a regular commercial franchise to increase the private sector's interest and participation, but locations have to be approved by COMPARTEL.

In an attempt to summarize the discussion above, the following are highlighted as the most important challenges in the development of the information infrastructure of the region are:

1. teledensity remains a problem in most countries (with some notable exceptions) statistics still remain at below 20 lines per 100 inhabitants in many countries;
2. most Internet access is through dial-up connections, bandwidth capabilities remain low, and access is still overwhelmingly limited;
3. dial-up and broadband connections are expensive;
4. the promotion of competition in the telecommunication sector remains a challenge for most of the region, especially in basic services;
5. there is a need to review regulation policies in light of changes in the telecommunications sector, as described above;
6. the connectivity gaps between urban and rural communities, and between low-income and high-income groups, are increasing;
7. universal access efforts are non-existent or in gestational stages in most countries, with the exceptions noted above.

With the new technologies, especially the Internet, the challenge is not only connecting but relating --it is about networking, the creation of relationships, the exchange of information and the transference of knowledge.

While the development of the information infrastructure and the facilitation of universal access remains one of the most important strategic challenges for countries around the region, the power of the information infrastructure and access channels will only be achieved with the development of content, especially with the creation of government content through the offering of public services online.

It is not just about mounting the information infrastructure and creating the opportunity for access it. Most importantly, it is about realizing access through knowledge dissemination and information. Metaphorically, the information infrastructure is the piles on which to build the bridge to overcome the digital divide, but the bridge itself is made of content applications. These content applications, especially in key sectors such as education and health, will in turn generate more demand for connectivity. It is here that we can really see the strategic importance of the information infrastructure especially in terms of poverty reduction. For basic services, the major challenge is to set up the network and reach the isolated communities in order to establish the link.

5. The Role of the State in the Information Age

¹¹ See www.osiptel.gob.pe/fitel/frames/frintro.html

¹² See www.compartel.gov.co

In the onset of this new era of globalization based on free markets and liberalized trade, the State was portrayed as inefficient, expensive, slow and out of touch with the market forces. For many, with the development of the Internet and global communication, people will be less likely to identify themselves according to nationality¹³. For those sharing this perspective, no longer is there a perceived need for the monopolistic public apparatus to control basic infrastructure industries and services such as telecommunications, water, electricity, and energy providers. No need for the expensive and bureaucratic regulatory bodies to set rules that choke the market or for the already weakened safety net to drain scarce budgetary resources. Privatization initiatives are the popular solution to bureaucratic state-owned companies, with poor service delivery and even worst capability for innovation¹⁴. As discussed above, in many cases a private monopoly has de facto replaced a public one, making the review of regulatory frameworks an urgent priority.

In my view, the opposite is true: there is a greater role for the State. Thomas L. Friedman illustrates this greater role by comparing the State to a "plug" with which each country connects to the world: "[I]f that plug is corroded, corrupted, or the wires aren't connected, the flow between you and that global system ... is going to be very distorted, and you are going to feel the effects of that distortion"¹⁵.

Critics of this position emphasize that individuals can also make connections in the globalized world, without mediation of the State or its agencies, thanks to the Internet. But ultimately it is the State that promotes and protects the individuals' rights that make possible this interaction. Success depends on the degree to which that same State has invested in information infrastructure resources, education and training, as well as in the enforcement of law, the transparency of procedures and the facilitation of universal access to technology.

The Information Era needs not only a solid information infrastructure and vehicles for universal access: it needs a strong State, with solid regulatory capabilities and institutions, able to operate in the international markets promoting trade and attracting foreign investment. Strong leadership, efficiency in services' delivery, transparency in government actions, investment in education and health, protection of the rule of law and a plurality of connected citizen are critical to democratic stability and the key to prosperity in the complexity of the networked world.

6. Reinventing the State

In the last decade, the Latin America and the Caribbean regions have enjoyed the longest period of democratization in history, with practically all countries having a democratically-elected government in place. There were a few exceptions in the last decade that history may one day probably portray as mere "hiccups": Fujimori's self-administered coup-d'état in 1992 and more recent attempt in 1999 to remain in office despite accusations of electoral fraud; Argentina's whirlwind of presidential successions and street protests, following the collapse of the financial system in late November 2001, and the even more recent events in Venezuela in April 2002, where a coup d'état attempt failed to remove President Chavez from office but generated considerable concern about the viability of the democratic regime.

Despite political stability and a relatively steady, albeit modest, economic growth in the last decade, most public opinion polls indicate a profound discontent with government performance in every country in the region. Political parties, traditional mediating mechanisms between society and government have been in crisis for a long time, close to two decades. This is compounded by the fact that in many of these countries the young adult generation of thirty-somethings was socialized during authoritarian regimes, affecting their attitudes towards government, politics and the electoral system. Discontent, high unemployment rates, increased social tensions, weakened economies, the

¹³ Anybody who has seen fans react at a soccer game played by teams wearing national colors of different countries will have to disagree with this statement.

¹⁴ The business approach to basic service delivery was chosen for its efficiency and flexibility, but the jury is still out on whether or not it has been a success every where. Recent arguments in the mainstream press question the wisdom of privatizations in the telecommunications sector and speculates that due to infrastructure development costs, this sector is better left to monopolies.

¹⁵ See Thomas Friedman, *The Lexus and the Olive Tree*, New York: Farrar, Straus and Giroux, 1999.

burden of external debt and the increasing pressure from globalizing forces, reinforce the need for change.

This is not simply about modernizing the state administration apparatus, it is about creating a new public sector through reinvention. It is simply delusional to think that the current State in Latin America and the Caribbean can effectively operate in this new environment: it needs to undergo a dramatic transformation. The nation-State as a set of institutions was born almost three centuries ago to accompany a set of economic and geographical relationships that are undergoing a revolutionary transformation, as briefly discussed in the introduction. The question is not whether the State needs to change but when, what are the reforms needed and how fast can the process occur, in order to better position the countries of the region in the new global economy.

The first step is a vision, inspired in a national ICT strategy. The vision for the State needs to reflect the changes we are experiencing with the creation of the new economy and also what are the nation's best assets that can increase its potential globally.

The second step is a diagnosis of resources, a complete national e-readiness assessment, starting with capital and natural resources, economic strategic areas, diagnosis of the information infrastructure, and especially, human capital needs --both in terms of IT training and the long term commitment to education.

The third step is to develop a plan of action identifying those ICT-based initiatives that can potentiate the reinvention process: in the case of the public sector, how to use ICT as a reinvention tool within organizations? What reengineering initiatives are needed to streamline bureaucracies and also to create environments for inter-agency coordination? What are the resources needed, both in terms of hardware and software, but also in terms of trained IT professionals? This plan of action needs to include programs that renovate the idea of public service, and contribute to the profesionalization of the civil service employees, by creating recognition programs or self-start initiatives that will have an empowering effect¹⁶.

The fourth step is to determine criteria for the identification of best practices, as well as performance measures that allow for comparative analysis and the identification of lessons to learn.

The fifth step is to define the interaction with the civil society: a reinvention process cannot end with the reorganization of the state institutions involved but needs to define mechanisms of interaction and feedback gathering with society as a whole, both as an input to the vision but also via the delivery of strategic services. Decentralization, traditionally thought as an effective tool for democratization, acquires an interesting dimension thanks to technologies that allow for a devolution of tasks and resources allocation while keeping information and oversight at the central level.¹⁷

The tradition of modernization of the state in Latin America and the Caribbean goes back decades, and nobody can deny that it has had some positive accomplishments. But it lacks one fundamental characteristic: while there may be a goal behind the modernization of state strategy, there is no vision, and the implementation of the reform loses the "big picture" approach focusing instead on very small components of the public sector. By the time change has occurred in those particular institutions, it is time to start again. The task is never completed, and numerous obstacles appear along the way. Now, there is a powerful tool: the use of ICTs in the public sector and the development of what is known as electronic government (e-government) applications for services' delivery.

The new State relies on five fundamental pillars, empowered by the use of the new technologies:

¹⁶ There is a critical view of the use of ICTs for reinvention that focuses on the obstacle that organizational culture poses to these kind of reform initiatives. While every organization is different, and has a distinctive culture, hard to change, what reinvention scholars call "the public sector bureaucratic culture": stay out of trouble, follow the rules, never make decisions above your pay grade level, it is good enough for government work, etc. While the task is daunting, it is not impossible: redefine the purpose of the agency or program, make the organization more accountable to the customer, decentralize the power of making decisions, and just move people around: put them in a new organizational context, even within the same agency, impose new roles, provide new training, responsibilities, in summary, empower them.

¹⁷ For an interesting discussion on this point, see Jane Fountain, Building the Virtual State: Information Technology and Institutional Change. Washington D.C: Brookings Institute August 2001

a. Efficiency, a public sector that can accomplish its mission in reasonable time and with a limited set of resources. In Latin America and the Caribbean, but also in most governments around the world, this implies downsizing of overpopulated state institutions. An enormous task, not only because of the size of many of these government organizations, but also due to the regulations in place protecting public employees. But it also requires the examination of programs and reengineering of processes so they reflect the vision of the new State and its mission, and determines what kind of resources are needed to provide the service. Technology plays a key role in facilitating this process;

b. Efficacy, that the service provided effectively satisfies the demand. For this, the new State needs to reformulate its relationship with the citizen, placing citizens at the center of the process and viewing them as customers of government. Traditionally, state institutions have geared their processes to the provision of a service. Now the goal is the satisfaction of a demand, the satisfaction of the customer. In order to reach this goal, state institutions not only need to reengineer processes, they also need to develop a culture of customer service. Civil service needs to become central to the working practices of the public employee, reinforced through training and appropriate salary pay, empowering measures in day to day management, decentralization of functions and the establishment of a recognition system that celebrates individual initiative to change.

c. Transparency, is the availability of information concerning the actions of the State in all sectors. In the financial sector this includes the establishment of priorities, the actual appropriations in the budget and the accounting regarding the actual collection and expenditure of state resources; legislative debate and approval of legislation can be available on line, in real time, including transcripts of the actual legislative chambers sessions; jurisprudence can be available for online consultations, and people can be granted access to the status of a particular file. The state has traditionally published information on its activities and resources allocation, but it has done so with great delay, in limited fashion and in publications of limited circulation. The new technologies become a strategic tool and make possible the dissemination of information in real-time to all citizens, not only in the country but around the world. This fundamentally changes not only the relationship between the citizen and elected officials, but also the working practices of public employees. It is the most effective weapon against corruptive practices. Portals are good applications in the furthering of transparency practices because they allow the state to become a hub for information, providing citizens with useful information that affects their daily lives --be it by offering the opening hours and address of a particular government office, or providing the blank forms that could be filled out and mailed, instead of spending half the day driving back and forth to the government headquarters downtown.

d. Accountability is about state institutions and their officials who are responsible for their actions, and accountable to the citizen as a customer and to their constituencies. The use of ICTs in government, be it in the creation of government content or in the actual delivery of services online, is transforming the relationship not only between citizen and government but also the interaction among citizens as well. The potential of ICTs to contribute to the strengthening of democracy based around citizen-to-citizen interaction and solid bonds between government and governed challenges the traditional basis of governance and elevates the debate to speculation about the construction of a digital democracy. At this initial stage, thinking about digital democracy and more advanced e-government applications that are two-way and with complete transactions may appear to belong more in a science fiction discussion than in the framework of analysis of the Latin American and Caribbean regions. But even if it is later rather than sooner, the incorporation of these applications into the day-to-day operations of government are bound to one day start altering the very basis of the relationship. This is why there is a need to talk about reinvention of the state and not just modernization, because it is no longer about automatization of government procedures but about implementing applications that by the very nature of the technology involved, create new dimensions for interaction.

e. Citizens' Participation. Historically in our societies, citizens' participation was always channeled through mediating mechanisms such as political parties, which have been in crisis for at least the last two decades. A democracy in which citizens participate is perceived as a strong

democracy. In the Latin American region the epitome of citizen participation is the actual electoral act, in most countries a mandatory obligation. Democratically elected officials are invested of a certain legitimacy that originates in the electoral act itself: the one with the highest number of supporters wins, and is invested with the will of the people, but judgement is only periodical, at election time. The new technologies offer opportunities to virtually replicate that kind of interaction in countless opportunities, even in real time. In its extreme form, the Internet is conceived as the embodiment of equality and freedom: all citizens around the world are equal in the Internet and there are no limits in principle to free speech and free association. It becomes potentially the closest catalyst for democracy in its purest form --direct democracy, Athens style. Even if we don't want to go that far, the use of ICTs in e-government are creating virtual interactive environments that become communities and could even transition into virtual institutional arrangements over imposed the traditional distribution of functions among state agencies. This is for example the case of second generation portals that incipiently are generating alternative ways to disseminate information, solicit feedback and provide services¹⁸.

ICTs create virtual communities that are spontaneous, even issue determined, and that provide with the perfect environment for the type of action described here. They facilitate the dissemination of information, access to government and therefore participation in government activities, and allow for the opportunity of feedback in the form of surveys or debates, with almost real time response and, therefore, impact. The process is irreversible, and so is the effect it has in transparency and accountability. There may be more ways to make government officials accountable than elections, and although the road is a long and bumpy one, e-government applications and virtual communities offer an effective vehicle of change.

The impact of ICTs in the public sector goes beyond automatization to become an opportunity for transformation and reengineering, by creating virtual community spaces in which governance is redefined. The resulting version of democracy, whether we call it "digital" or not, will be greatly different to what we have today.

7. E-Government as a tool for State Reinvention

Since its origins in the early 1990s as a concept embraced by the Clinton-Gore administration through their National Performance Review initiatives to reinvent government, e-government has been understood as synonymous with a less bureaucratic government that allows for the immediate satisfaction of citizens' demands through the provision of online services.

In this study, e-government is defined as much more than the simple automatization of bureaucratic procedures; it is the use of information technology to reinvent government procedures, to promote the dissemination and sharing of information and knowledge about government services, and to provide the opportunity for online interaction, eliminating mediating entities and generating a power shift in the relationship between government (state institutions and agencies) and governed (citizens-equal-to-customers, to include private organizations). Understood as such, e-government is a force of development, and a tool for the redefinition of governance.

E-Government applications alter the direction in which the provision of the service traditionally takes place. In the past, the citizen had to identify the right government institution, operate by certain rules (opening hours, waiting lines) and physically move in order to access information and services. Now through the application of information technologies the distance

¹⁸ It would be interesting to explore whether there is a connection between the possibilities the Internet offers in terms of citizen participation and Guillermo O'Donnell's concept of horizontal accountability. O'Donnell, in his exceptional understanding of the nature and evolution of the State in the region, has focused in the last few years on the idea of horizontal accountability as an alternative to vertical accountability. He talks about "non-electoral, yet vertical, mechanism of control of political authorities that rests on the actions of multiple array of citizens' associations and movements and on the media, action that aim at exposing governmental wrongdoing, bringing new issues to the public agenda, or activating the operation of horizontal agencies. It employs both institutional and non-institutional tools." Can the Internet become a space of horizontal accountability? My view is that the Internet, used by private citizens and organizations as a space of interaction with government could become an instance of horizontal accountability, especially in what concerns not only citizens-government interaction but also interagency coordination, as it affects specific delivery of services.

disappears and the direction of the relationship starts changing: government is available twenty-four hours a day, seven days a week in a virtual space, and available technology (push-technology for example) make it possible for government to "come to" the customer through online services with personalized information and reminders.

An effective e-government strategy is inscribed in a national ICT strategy that identifies the opportunities that the Information Age offers to that particular country, based on a clear pronouncement of what are the information infrastructure needs and which the strategic sectors that allow for the maximization of returns. It is a national solution based on the identification of best practices, and the analysis of under which conditions they would work in the particular local context. It requires an understanding of the challenges imposed by the new economy, the opportunities offered by the new technologies and the urgency of taking the necessary steps to create the necessary conditions.

E-government strategies are different from information society strategies¹⁹ in that the focus of attention is on the government in a leading role, defining lines of action and lending political support to initiatives beyond the mere achievement of social consensus, in four crucial dimensions:

1. determining needs and priorities of the information infrastructure and guaranteeing universal access to marginalized or isolated communities;
2. identifying reform needs in the telecommunication sector and the consequent reformulation of regulatory frameworks that ensure competition and generate the appropriate conditions for foreign investment;
3. as a main provider of content;
4. as the actor with the highest convoking power to incorporate other civil society players such as non-governmental organizations, private sector actors, academia, private citizens, political parties, and others in the definition of the national information society strategy.

The development of an e-government strategy has many advantages that have a direct effect in democratic stability and in the improvement of a country's chances in the new economy, as follows:

1. it provides with a tool, information and communication technologies, that make possible the process of reinvention to which we referred above through reengineering efforts and the offering of actual services online, making government more efficient, cheaper, streamlined, and customer-centric;
2. it makes governments more transparent, by making information part of the public domain and thus strengthening accountability in the system, and by allowing online transactions that when in the public domain are by definition more transparent. It also contributes to the identification of those who break the rules and puts more pressure in the system to penalize them --in brief, it promotes transparency and it constitutes an effective anti-corruption mechanism at the same time;
3. it creates virtual communities among interested parties by making information public and transactions not only possible but also traceable and subject to documentation and oversight;
4. by providing information, making administrative forms available, allowing for basic services transactions, it eliminates mediation in transactions with government, for citizens as well as for businesses, and in this sense, it also promotes transparency and fights corruption;
5. it redefines governance²⁰ by creating different mechanisms of interaction between government and governed (see above reference to the concept of horizontal accountability, as defined by Guillermo O'Donnell)
6. it promotes economic development especially in partnerships with local businesses, it is an instrument to fight poverty and to offer equal access to minority groups, it improves citizens'

¹⁹ I have a fundamental disagreement with the information society strategies approach because in my opinion society is no longer an effective identity mechanism within the nation-state. An information society strategy could refer to a particular country, a region, a subregion, the global village, etc.. In my conception, the information society becomes a global not a national entity.

²⁰ I prefer not to use the label "e-governance" as in my conceptualization the idea of electronic governance is not plausible. The new technologies generate changes in governance, but I do not believe they create a parallel government dimension that only occurs online.

quality of life by making the interaction with government easier, less costly and much more agile than before.

Most conceptual analysis of e-government applications do not distinguish between national and local e-government initiatives, and this is in my opinion an enormous oversight. This issue requires further study, but a preliminary analysis seems to indicate that while the definition of e-government utilized here applies equally to both national and local dimensions of government, the results in terms of actual applications and in the change that these technologies generate in terms of governance, greatly differ. The difference is not that much in type of e-government applications but in the depth of the reform and the results obtained.

The literature has not shed much light on this issue. Wonho Jang²¹, a sociologist at the University of Seoul has explored this issue in a study of the twenty-five local governments in Metropolitan Seoul. Dr. Jang focuses on the different approaches to communication that central and local governments have and determines that while central governments favor portals, vertical integration, an emphasis on general information and not particular business purpose, local governments concentrate on communication, horizontal integration, specific local information and cooperation among local government, businesses and citizens. This approach, based on the experience in Korea may not be applicable in the Latin American region, but it provides an interesting perspective on how to look at the differences between central and local e-government.

In analyzing e-government websites for this paper, it was clear that while the actual number of websites offering online services may be smaller at the local level than at the national level, in proportional terms, local governments are more successful at offering actual online services²². This may be due to many factors, of which size of the geographical area and population is not the most important one: many of the cities that are very successful at offering online services are much bigger in size than some countries. Future studies may document and explain this phenomenon better by concentrating in the closer, more daily relationship between local governments and citizens, and in the type of services offered. While the national government forms of interaction with citizens and businesses are more sporadic (electronic vote, electronic taxes filing once a year, identity documents around life-events such as birth and death, etc), local governments provide more routine government services periodically required (driver licenses, business permits, local taxes, utilities payments, car registration and title, public security information, etc.).

Another interesting dimension of e-government is given by how far governments have gone to further the idea of information society as defined above --not a national entity but one that transcends geographical borders. Citizens who are temporarily living in another country or who have permanent residence overseas, are able to take care of business back home by voting online, paying taxes, renewing car registrations, , paying local utilities, obtaining copies of identification documents, and other government services that previously required homeland.

8. Components of an E-Government Strategy

There is not one blue print on how to go about designing an e-government strategy, but a series of choices that need to be informed within the national or local context. There are also different models for implementation of e-government strategies. The enumeration of components that should be part of a national e-government strategy could serve as an environment for the creation of national solutions:

1. Need for a Vision and a Blueprint for Implementation: Identification of key areas for content development that have a high impact on the customers' life, be it at work or home, adult or young, individual or business²³. Identify proper administrative mechanisms to implement these applications and assign resources as needed.

²¹ Dr. Wonho Jang is a sociologist at Department of Urban Sociology, The University of Seoul, Korea. His paper is entitled "Crucial Elements for a Local Government Index: A Communications Oriented Approach" (not published).

²² There are many examples, especially in the Brazilian cities . See the website of the City Government of Bahia www.sacnet.ba.gov.br

²³ See below for a discussion on strategic areas for e-government applications.

2. Customer-centric approach: The strategy needs to be based on an online presence that reflects what the citizen wants not what state organizations have to offer. It should be based around what the citizen wants to do, rather than how the agencies are organized. This approach, known as intentions based design, is more often realized in a services portal that is organized around services rather than ministries or government agencies²⁴. It is not citizen-friendly to have to go to different sites in order to access government services online; in a way, this would replicate the citizen physically having to visit different government offices in order to do government transactions. The e-citizen approach of some leading countries, notably the case of Singapore, takes this notion a step further by organizing citizen-portals around events that affect individuals, businesses and government²⁵;

3. Adopt an interagency approach: Identify processes that need to be reengineered, define programs, identify overlaps, write action plan, train government workers in the use of IT and the different aspects of e-government, especially customer relations management; review IT budget to redirect resources when possible to fund web-based applications. Define reward program for self-motivated individuals at mid-level management interested in participating of the reinvention program: transform them in "early adopters" by providing the hardware/software resources needed to implement the reinvention in their own offices²⁶.

4. Develop proposals of online services that are high impact and when possible, that imply coordination among agencies, to jumpstart the agency coordination process.

5. Set up mechanisms for applications benchmarking and performance measurements, establish permanent evaluation mechanisms within and among government organizations, and in e-government services websites to survey users' preferences and level of satisfaction, as well as to collect performance statistics for service delivery.

9. Key Areas for E-Government Application

Government is a very complex phenomenon affecting many areas of human life, either within or outside geographical borders. There is an on-going debate in academic circles on how to create typologies of e-government applications. The most common attempts categorize these applications according to the destinatary --Government to Government, usually represented with the expression "G2G"; Government to Business, known as "G2B" applications; and Government to Citizen, or "G2C". The resulting typology may be a bit simplistic, given that most government functions involve two or more of those destinataries sometimes in the same procedure. Applying for permits to open a business is not just a G2B application, it is also a G2C application because it involves individuals part of the economic agency, be it as owners or employees; and it could also be a G2G when the issuing of such permits involves more than one government agency, in a dependency relationship --for example getting a Public Health permit as a condition for a license to manufacture food.

For this study, I developed categories for some of the most widely developed e-government applications by substantive dimensions of government impact. This is by no means an exhaustive list but a suggested tool for the analysis.

²⁴ An excellent example of this type of portal is "Tramite Facil" in Chile that allows users to order several documents online, and pay for them, using the "shopping cart" device so common to e-commerce applications. See www.tramitefacil.gov.cl

²⁵ maintenance of this type of portal cannot be centralized but done by the content providers at the desktop level in multiple agencies and organizations, with an instance of coordination;

²⁶ For a very good example of reward programs and their potential impact, see Colombia's initiative to reward its middle and top management civil servants: www.dafp.gov.co/banco%20de%20exitos/banco.html. Also in Brazil, see the initiative from the Escola Nacional de Administracao Publica calling for the 7th competition on innovations for the public sector, Prize Helio Beltrao: www.redegoverno.gov.br/defaultcab.asp?url=http://www.enap.gov.br/set7concursohtml.htm

ADMINISTRATIVE	Electronic filing of taxes Transparency in Government Identification Documents General information about government services Licenses and Permits Payment of utilities	G2C G2B G2G
ECONOMIC	E-Commerce E-Procurement Job Banks Small Business Advisor Intellectual Property	G2C G2B G2G
POLITICAL	Electronic Voting Electronic Campaigns ²⁷ Political Participation Anti-corruption Initiatives	G2C
SOCIAL	Health Care Education Social Security Culture ConsumerProtection Community	G2C

10. The state of E-Government in Latin America and the Caribbean

This paper is informed by a current research project that evaluates and compiles information about government websites in twenty six countries of the region. The available information on e-government initiatives in Latin America and the Caribbean is relatively poor. This is mainly due to the fact that while there has been an increased awareness of the importance that ICTs have in the promotion of development, most of the interest and project funding by international organizations has been in sectors such as education and health²⁸. The number of research initiatives on e-government remains low, and these initiatives are in most cases identified within the government itself and financed with available resources, very limited in all cases.

Another very important reason for the scarce availability of information on e-government initiatives is that the case-study approach is not conducive to comparative analysis, because to date, there has not been any regional study of e-government in the Latin American and Caribbean regions. Some studies may include countries from Latin America, but with the exception of Brazil, the inclusion of these countries is marginal and very little information is collected. In addition, while in the last two or three years more scholarly work about e-government has been published in the United States and Europe, the comparative perspective is mostly absent from the literature. Studies are too case-specific and based on recent "best practices" that have not been properly evaluated, and circulation of these materials remains limited, with most of them available only in the English language.

The purpose of this e-government website inventory was to collect empirical data from three levels of government: central, regional (provinces or *departamentos*), and local (city government). Data was collected between the months of October 2001 and June 2002. Government websites were

²⁷ The recent electoral campaign in Colombia presents an interest case of electoral campaigns online. President elect Alvaro Uribe conducted practically his whole campaign virtually, mainly through teleconferencing and information released using the Internet due to security concerns. His triumph marks the first time in Colombia's history that a President gets elected with more than 50% of the vote. It would be interesting to see an analysis of the role that information technology played in making this possible. Moreover, perhaps a demographic analysis of Mr. Uribe's supporters on election day can shed some light on issues related to bridging the digital divide and the role that content plays in attracting users.

²⁸ An exception to this is the CLAD initiatives on e-government, especially the recent posting of a list of 165 e-government websites on public administration.

identified by using common search engines, domain registration sites in each of the countries, international organizations websites collecting information on e-government sites, and the links provided in the countries' government websites themselves. A total of 884 websites were identified and entered into a database built using Microsoft Access 2000. For each website entry, information was collected according to the following criteria:

Website Number	The entry identification number for each site in the database
Country	The name of the country to which the website belongs
Level of Government	Whether it is a website of the central government, provincial or <i>departamento</i> , or city government.
Branch of government	Whether the website is for the executive, legislative, or judicial branch of government. In the case of portals, entries were marked "all".
Level of Interaction	Whether the website provided descriptive information (1), information and email for feedback or survey (2), printable forms (3), the possibility of submitting forms and requesting service (4), or the possibility of conducting a complete transaction (5).
Type of Online Service	If online services are available, a list and description of services is provided
Description	Discussion of website structure and performance
Frequency of Maintenance	How frequently the website is maintained: no maintenance (1), more than a year (2), less than 6 months (3), less than a month (4), daily (5)
Website Address	What is the website url

The tabulation of the database offers an interesting glimpse to the current situation of e-government in the region²⁹. The following are common trends observed in the analysis of the data:

1. As stated above, the number of e-government websites it is still very low, in most cases with only one website per government institution or agency (for example, one website for the entire Ministry of Economics of the country);

2. Countries that have subscribed to the e-government model, embarked in a program of reform of the state that includes the use of ICTs, and recognized the need to put the citizen at the center of government, are the countries with the highest number of websites and available services online –Brazil, Chile, Colombia³⁰ and Mexico are some of the best examples;

3. An overwhelming majority of the reviewed websites are passive information providers, with a simple description of the government institution or agency's mission, organizational structure and basic information, such as address, phone number, name and biographical information of the main authorities, etc..

4. With exception of those countries that have a portal of for government (Brazil, Chile, Colombia, Mexico and Peru), most countries' e-government websites are not regularly updated, with some cases going back up to four years since the last time information was added to the site;

5. Of the countries that have portals, only the portals of Brazil and Chile offer services online. The portal for Peru offers consultations online of many government databases. The portal of Colombia offers the possibility of submitting claims and complaints but no services or consultations are available online;

6. All available portals are first generation with the exception of Chile's Tramite Facil, a second generation portal that indicates coordination or amalgamation between government

²⁹ The data of this database is input for an interactive map, soon to be completed, that allows to search the data by the described fields and access the websites directly using hyperlinks provided. Part of an ongoing research project, soon to be posted in the WWW. For more information, contact the author.

³⁰ Argentina used to be part of this list but since November 2001 most of the resources and efforts directed towards the implementation of e-government seem to be on-hold. The website for the President's office has been under construction for the past 7 months.

agencies, or reengineering of processes. Brazil is moving in the direction of more citizen-friendly portals, organized around themes instead of government institutions;

7. In the majority of the cases, information for the website is administered centrally, both in the initial posting and successive maintenance of the site, and in all cases, not only the design and technical components but also the maintenance of the substantive content of the website is the responsibility of a webmaster³¹;

8. The majority of services online are limited to the availability of forms on line or database consultations as the highest level of interaction, with exception of services such as filing and paying of taxes that in Brazil, Chile, Mexico and Ecuador offer the possibility to submit the declaration of taxes online, but overall, complete transactions are rare³². At the city level, a wide range of services are offered, from payment of car registrations and utilities in some cases, to real-time information to the user on the movement of his/her accounts using database consultation.

9. The number of services online provided remains low, with pioneer providers falling in two categories: a) those countries that have embraced government online at the highest level of political authority in the executive branch (the office of the President in most cases) and have portals, are the countries offering the highest number of services; b) local governments, at the city level, are also offering services to its citizens, and the number of local government websites offering services is proportionally greater than the number of national governments initiatives.

10. The most popular e-government applications seem to be in the area of administrative services and economic dimension, focusing specifically in the collection of revenue from citizens and businesses.

The usefulness of the database approach taken in this study is that the manipulation of data can be done quantitatively to give a summarized description of the state of e-government in the region. At the same time, this format also allows for a qualitative approach to the analysis, making possible to look at a country within itself and also comparing it within a subregion or region³³.

11. Tentative Conclusions

This study attempted to address the complex choices that countries face in the information age, by briefly reviewing the challenges of developing an information infrastructure, securing universal access and the key role of content, and by focusing on the importance of e-government applications as a tool for government reinvention.

There is a need for governments to understand the potential of ICTs as a tool in the reinvention of the state, and to crystallize a vision of that State in the formulation of an e-government strategy based on a vision, as discussed above, that reflects not only specific choices regarding information infrastructure strategies, but also how these choices fit in the statement of the country's national interest, within the region and as a player in the global economy; a clearly stated policy for ICTs in general and e-government in particular, addressing availability of resources, providing those needed, and counting on the support of different players in the public sector reform, both on the political as well as the management side; the unwavering support of the political authorities at the highest level, who endorse the reform process and provide the necessary resources allocation, while setting levels of expectations and visible deadlines; and a set of specific e-government initiatives, products of the policy that could be implemented and tested for performance.

It is up to the countries of the region, as well as the multilateral donor and lending organizations to seize the opportunity and radically change the agenda of modernization of the state to include ICTs as a tool of state reinvention, increasing the accountability and transparency of the

³¹ Centralized maintenance of websites is the accepted practice in most government organizations and it needs to be reviewed if there is to be any growth in the provision of services online. Website design and technical maintenance, including security devices and oversight can be centralized, but the input of the information and ultimate responsibility for webpages content needs to be at the desktop of the person/s ultimately responsible for the provision of the services.

³² It may be interesting to analyze the impact that limited availability of credit cards especially in the less fortunate sectors of society has in moving forward in the direction of complete online transactions. Security may be an additional concern.

³³ At this time I am working on taking the database a step further, through the availability of the interactive map online, transforming it in a repository of best practices and lessons learned, by attaching case studies to pertinent records in the database.

State, and promoting citizens participation in democratic governance. Additionally, the academia and policy study centers need to continue to include ICTs impact on development and e-government as focal points of their research agendas: there is an enormous need to increase our understanding of these phenomena, and more importantly, to learn how to measure their impact in the development of our societies to maximize the opportunities of these revolutionary times.

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