E-governance in India: its impacts on relations among citizens, politicians and public servants

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Introduction

In all societies, the formation of public governance is largely dependent on its contextual parameters, including social structure, economic condition, political atmosphere, cultural pattern and technological trend. The nature of governance often changes depending on the intensity and speed of transition in some of these surrounding factors. In the current age, one of the most significant contextual phenomena affecting public governance is the revolution in information and communication technology (ICT).[1] Internationally, this revolution in ICT has facilitated the globalization of the economy, business, finance and culture (Berleur, 1997; Heeks, 1999). Today ICT constitutes the fastest growing component of the global economy and the revenue generated by the interactive information industry may have reached $3.5 trillion (Hariharan, 1999). Internally, within each society, the conventional forms of communication (print media, motion pictures, radio, telephones, records) are increasingly being replaced with digital and wireless technologies such as cellular telephones, satellites, electronic mail and, above all, the internet (Gudaitis, 2001). However, the most influential dimension of this revolution is the worldwide proliferation of access to the internet. It is observed that the number of internet hosts increased from 100,000 in 1988 to over 36 million in 1998; and the number of internet users rose from 26 million in 1995 to 143 million in mid-1998, and it might reach 700 million by the end of 2001 (UNDP, 1999; Norris, 2000). This contextual phenomenon, which has changed the nature of the workforce, human relations and public expectations, represents a considerable challenge to the state to adjust its public governance (Centre on Governance, 1999a, b).

In response to this transition in the context of governance, in almost every country, the state has taken the necessary initiatives to restructure political and administrative institutions by adopting ICT in order to enhance electronic interaction and service delivery (Menzel, 1998; Galbi, 2001). Today public servants are encouraged and trained to be familiar with the tools and languages of ICT

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(Menzel, 1998). In fact, there have emerged many buzzwords — including digital governance, smart governance, net-governance, cyber-management and digital democracy — which overlap with the notion of electronic governance or e-governance (MIT, 2001b). Although the advocates of e-governance tend to define it as something that is always beneficial,[2] a value-neutral perspective may interpret it as a new mode of governance that extensively uses advanced forms of ICT in pursuing public policies, maintaining organizational relations, interacting with customers and delivering services (Ghere and Young, 1998). However, one of the most significant dimensions of e-governance is the creation and maintenance of websites by legislatures, ministries, agencies, political parties, local institutions, and so on.[3] The main rationales behind this opting for e-governance are that e-governance will reduce costs and delays in delivering services, expand citizens' access to public sector information, reinforce innovation in public agencies, increase transparency and public accountability, weaken authoritarian tendencies and strengthen civil society and democracy (Pardo, 2000; Heeks, 2001a; Norris, 2001).

In line with this global trend, India has undertaken massive initiatives to introduce e-governance at the national, state and local levels. In terms of the total number of government websites, although the advanced industrial countries top the list, India is ranked seventh in the global list (Norris, 2001). Similar to the previously mentioned common rationales, the top policy-makers in India tend to justify the adoption and expansion of e-governance on the grounds that it costs less, reduces waste, promotes transparency, eliminates corruption, generates possibilities to resolve rural poverty and inequality, and guarantees a better future for citizens (Dev, 1999; Schware, 2000; Wadia, 2000; *Siliconindia*, 2001). In short, the government tends to portray e-governance as the panacea for all ranges of problems confronting India. But there are critics who, in general, suggest that the whole enterprise of ICT may have created a new class of 'untouchables' living in 'information poverty', compromised equal access to government services and eroded accountability and individual privacy (Ghere and Young, 1998; Hariharan, 1999; Upadhyaya, 2000).

One of the central research questions emerging from these favorable and critical views on e-governance is how such a new mode of governance has affected the nature of the relationship between citizens, politicians and public servants. This dimension is crucial, because what matters most is whether the adoption of e-governance has been able to create relationships between these stakeholders — between citizens and politicians, between politicians and public servants and between citizens and public servants — based on accountability, equality and fairness. This article explores these issues in the case of India, which represents one of the leading advocates of e-governance in the developing world. Unlike developed nations, India is one of the poorest countries in the world with severe problems of poverty, inequality, illiteracy and external dependence, which represent major impediments to the effectiveness of e-governance in ensuring equal public access to state institutions, empowering ordinary citizens to exercise their

basic rights and obliging political and administrative officials to be responsive and accountable. However, before examining the impacts of e-governance on the nature and structure of citizen–politics–bureaucracy relations in India, the next section is devoted to an analysis of the major policies, initiatives and institutions related to e-governance in this country.

E-governance in India: current policies, initiatives and institutions

As previously mentioned, India is one of the leading countries venturing into e-governance. Recently, the Indian Government has set the target of delivering at least 25 percent of its dealings and services electronically (MIT, 2001a). In this regard, the Indian Government's major policy measures have been defined in terms of computer density, connectivity, content, cost and cyber laws (Vittal, 2000). More specifically, the Indian Government has decided to boost 'computer density' by making computers easily affordable; to increase 'connectivity' by improving the telecommunication system based on optic fibre networks; to upgrade 'content' by making government sources on computers readable by ordinary citizens; to cover the 'cost' of ICT by ensuring adequate allocation in the national budget; and to introduce 'cyber laws' by adopting the Information Technology Act. Under this overall policy framework, the government has introduced various measures for e-governance, which can be categorized into national- and state-level initiatives and institutions.

Initiatives and institutions at the national level

One of the most important initiatives undertaken by the central government is the Information Technology Act (2000), which is to regulate cyberspace and define offences and penalties related to information technology (IT) such as tampering with computer source documents, breach of confidentiality and privacy, publication of false digital signatures and so on (Vittal, 2000; Wadia, 2000). The Indian Government has also drafted the so-called Freedom of Information Bill that requires all public authorities to maintain information and records, and appoint Public Information Officers to assist citizens in gaining access to such information (Global Campaign for Free Expression, 2000; Government of India, 2000). The Government has also planned to produce a series of documentaries to generate awareness of the advantages of IT and electronic service delivery (Agnihotri and Ramani, 2001). Furthermore, it has introduced citizens' charters under which the ministries and departments at both national and state levels are required to adopt charters specifying their respective service provisions, time frames, service standards and channels for redressing grievances.[4]

In order to implement this vision, policy initiatives and legal measures related to e-governance, there has emerged a series of institutions and official positions in India. For instance, the Government has introduced a National Task Force on IT and Software Development, a Committee on Improving Efficiency in Government Through IT, a Ministry of Information Technology (MIT) and a Centre for Electronic Governance in order to promote IT and e-governance in the

country (Wadia, 2000; Budhiraja, 2001; MIT, 2001a). In particular, the MIT plays a crucial role in facilitating e-governance by reinforcing knowledge-based enterprises, encouraging coordination among users, adopting procedures based on international standards, promoting the internet and introducing IT education (Upadhyaya, 2000). However, the main functions of the Centre for Electronic Governance are to identify the appropriate forms of ICT necessary for better service delivery, to conduct training for generating IT awareness among government officials and to help state governments in implementing policies and reforms based on best e-governance practices (Centre for Electronic Governance, 1999a, b; Wadia, 2000). The Government has also decided to establish a National Institute of Smart Government in order to enhance capacity-building in e-governance at all administrative levels (Government of India, 2001a). In addition, various ministries and departments have created Information and Facilitation Counters as one-stop shops to make varieties of information available to citizens through electronic links (MIT, 2001a).

An essential institutional aspect of e-governance in India is also the government decision to appoint IT managers (all are ranked as Joint Secretary officers) in the ministries or departments — they are responsible for adopting and implementing IT in their respective organizations (Agnihotri and Ramani, 2001). In line with the institutional requirements of e-governance, the ministries and departments have undertaken initiatives to introduce and expand the structures and processes of e-governance. For example, the Ministry of Finance, Ministry of Labour, Department of Agriculture and Cooperation, Ministry of Environment and Forests and the Ministry of Chemicals and Fertilizers now provide computers, email facilities, advanced software, local network connections and internet access to all their officers holding positions from the Secretary to Section Officers. These organizations also maintain their own websites, and often have Facilitation Centres to disseminate information to the public (MIT, 2001c). Similar information infrastructure and communication facilities can be found in most other ministries and departments under the central government.[5]

Initiatives and institutions at the state level
Although the central government has adopted certain measures to assist various states in pursuing e-governance,[6] the state governments themselves have undertaken massive initiatives to transform their governance systems based on IT. At a recent conference on e-governance in Bangalore, IT Secretaries from 32 states and union territories expressed their strong commitment to e-governance (Centre for the Development of Advanced Computing, 2000). In September 2000, Bill Gates, the chairman of Microsoft, advised 10 Chief Ministers on the role of IT in improving governance (Wadia, 2000). Of the total 25 states and seven union territories in India, some of the leading examples of e-governance include Andhra Pradesh, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, New Delhi and Tamil Nadu (*Siliconindia*, 2001).

More specifically, the Andhra Pradesh Government took the initiative of e-

governance known as the Andhra Pradesh State Wide Area Network, which is a network for data, voice and video communication (MIT, 2001c). Through this network, it launched the Twin Cities Network Services to provide various services to citizens in two main cities (Hyderabad and Secunderabad) through one-stop Integrated Citizen Services Centres (ICSCs). Through ICSCs, the citizens can access information about state and central governments; pay utility bills and property taxes; purchase certificates and licenses; and receive information regarding building permits, property registration and transport procedures (Schware, 2000; MIT, 2001c). Madhya Pradesh followed Andhra Pradesh's example by introducing its own e-governance with some modifications. In particular, the government in this state has introduced extensive computerization in dealing with payrolls, the budget, accounts, personnel, official communications, land records, public programmes and relief operations. It trains public servants in e-governance at the Academy of Administration. Initiatives have also been taken to use Hindi as a popular medium to communicate among governments, provide information to the public, use email services and maintain government web pages (*PC World*, 2000).

Karnataka is another state that has undertaken an ambitious e-governance programme. This state government has begun to computerize most departments, especially the education department. Its major city, Bangalore, is known as an IT hub attracting over 1500 IT companies from advanced industrial nations; and its Indian Institute of Information Technology has a very advanced infrastructure and IT facilities (*Siliconindia*, 2001). Furthermore, under its Department of Information Technology, the government plans to create a centre for e-governance (*PC World*, 2000). It has recently signed a Memorandum of Understanding with the Microsoft company with a view to computerizing all departments. Similarly, the Government of Tamil Nadu is strongly committed to transforming the state into an advanced system of e-governance by computerizing its major departments and building technical capacity, with the ultimate objective of restoring public confidence and creating an effective relationship between government and citizens (*PC World*, 2000; MIT, 2001c). To reinforce its mission of restoring citizens' confidence, the Government has adopted projects to ensure computerization of land records, registration, the education system, transportation, and so on. It has also established a Tamil Internet Research Centre to promote the use of Tamil on the internet in order to increase access for citizens (MIT, 2001c).

In Kerala, however, the state government uses selected nodal officers in each department to accelerate the application of IT. In this regard, one unique feature of Kerala is its comprehensive programme aimed at decentralizing e-governance to the district level — many district cooperative banks and credit societies have been networked. Activities and documents which have been put on the internet may cover tax collection, accounting, welfare schemes, court rulings and government orders and directives (*PC World*, 2000). Moreover, the government is using a transliteration technology that allows its web pages to be available in the local language (Malayalam). It launched a project called 'A PC for Every Home'

through the Kerala Electronics Development Corporation, which aimed to reach the target of 10 personal computers (PCs) per 1000 people by the end of 2001 (*PC World*, 2000).

There are other states that are also pursuing e-governance. For example, the Rajasthan Government has taken measures to strengthen e-governance, proposing the creation of a statewide network to provide information and video communication to both public and private organizations (*PC World*, 2000). The Department of Information Technology in Rajasthan has developed such programs as RajSWIFT to facilitate the use of online data and email communication among officials; and RajNIDHI to provide services to citizens in a transparent and responsive manner (MIT, 2001c). The Government of Gujarat has introduced a state-wide network (Wide Area Network) connecting all office complexes and corporations in the state. However, beyond the overall state-wide agenda for e-governance related to land revenue, transport and rural development, the Uttar Pradesh government has taken a special interest in transforming its Allahabad district into a Smart District (MIT, 2001c). Similarly, the Government of Maharashtra is trying to develop Mumbai and Pune into major IT hubs while pursuing the state-wide expansion of e-governance. It has taken on the responsibility for developing IT skills and awareness among employees through training, and to link all district-level offices through the Wide Area Network (*PC World*, 2000; MIT, 2001c).

Although the status of e-governance in other states has not been discussed, they also have their independent agendas for e-governance, which include, in particular, Haryana, West Bengal, Orissa, Tripura, Meghalaya and Himachal Pradesh. Beyond these state-level initiatives, e-governance has been pursued at the local community level. The national information infrastructure not only covers the state and district information systems discussed earlier, it also encompasses local information facilities, and thus, offers an expansive multilateral network connecting all information users and information providers (MIT, 2001a). A good example of local-level initiatives in e-governance is a rural intranet project known as Gyandoot, which was adopted by the district panchayat of Dhar district in Madhya Pradesh to extend IT services, including both e-governance and e-commerce, to rural areas in a people-centred manner (Misra, et al., 2001).

In Kerala, the so-called Information Kerala Project was adopted to computerize and network about 1214 local bodies (Centre for the Development of Advanced Computing, 2000). In this state, a district panchayat known as Ernakulam has adopted a model of e-governance that provides guidance to three village panchayats in the district to build an information network covering information related to land holdings, age structure, health, tax payments, and so on (Government of India, 2001a). In Maharashtra, the Warana Wired Village Project, executed by the National Informatics Centre, covers 70 villages: it allows internet access to cooperative societies and aims to deliver information relating to agriculture, health and education to the people by creating networked 'facilitation booths' in these villages (Dev, 1999). The Indian central government also plans

to set up about 500 Community Information Centres in a hilly northeast part of India to let the local people have access to the internet (Singh, 2000).

Without extending this discussion on the scope of e-governance, it can be safely concluded that despite the relatively rural-agricultural nature of its economy and the high levels of poverty and illiteracy, India has undergone a fundamental change in terms of the application of ICT to its public governance. There are diverse implications of this recent transition in governance in various domains, sections and relations in society. The main focus in this article, however, is on the implications of this newly emerging e-governance for the relationship between citizens, politicians and public servants in India.

Major impacts of e-governance on the relations among citizens, politicians and public servants

It has been pointed out by Norris (2001) that the key issue in evaluating e-governance is the way in which it affects the nature of the relationship between political institutions, bureaucracies and citizens; and whether it facilitates a relationship based on public accountability and participation. The cyber-optimists believe that e-governance does contribute to better relations among these three actors by making information available on government operations and public services, facilitating public feedback or reaction and allowing more direct participation by the ordinary citizen in decision-making (Heeks, 2001b; Norris, 2001). In the case of India, for the current generation of policy-makers, e-governance facilitates the dissemination of information to citizens, ensures greater access to government administration, enhances public participation in the formulation and implementation of state policies and thus strengthens the government–public interface (*PC World*, 2000). In line with this favourable view, the Indian Government maintains a massive list of government websites.[7] But the cyber-pessimists believe that the use of IT in governance may worsen inequality in access to government services due to the lack of an adequate infrastructure, unequal ownership of computers, language constraints, and so on (UNDP, 1999; Singh, 2000; Levine, 2001). There is also a concern that e-governance may disempower citizens by individualizing them, eroding their common bonds and endangering their privacy (Ghere and Young, 1998; Wachbroit, 2001). This section of the article examines this crucial issue of how e-governance has affected the relationship among politicians, public servants and citizens in India.

Relationship between politicians and citizens

This particular dimension of the relationship implies the interaction and interdependence between elected political leaders and political parties, on the one hand, and various sections of the population, on the other. Wadia (2000) mentions that in India, e-governance creates an avenue for its citizens to communicate with top political leaders and local ministers through such tools as video-conferencing, online grievance channels and complaint cells. A major means through which such interaction between citizens and politicians occurs is the parliamentary

website, which is supposed to facilitate the top-down flow of information from the legislature to citizens, allow a bottom-up channel for feedback from citizens to the elected members, increase transparency by providing detailed information about legislative procedures and activities, expand the number of avenues for greater public scrutiny of the nature and processes of public policies and thus enhance the accountability of these elected politicians to their constituencies (Norris, 2001).

In her comparative studies based on the Inter-Parliamentary Union list, Norris (2001) observes that there are 98 countries in which the national parliaments have their own websites; of these the most comprehensive ones are from Scandinavia, western Europe and North America. Among the developing countries, the website of the Indian Parliament (alfa.nic.in) is quite comprehensive. It encompasses a list of basic information regarding the House of People (Lok Sabha) and the Council of States (Rajya Sabha). The menu includes such items as parliamentary activities, parliamentary committees, budget matters, national constitution, legislative acts, prime minister's office, web addresses of all ministries and states, bulletins and publications, economic surveys, citizen services, and profiles and speeches of parliamentary members. It also provides an option for citizens to send feedback and suggestions through email. The Prime Minister's Office also has a website, which provides information regarding his policy initiatives, maintains an option for surveying opinion regarding current political issues and offers opportunities for the public to send queries and comments. These online sources of information and avenues for public expression are supposed to be more conducive to a stronger relationship between citizens and politicians.

Another dimension of e-governance that has implications for the citizen–politician relationship are the websites maintained by various political parties. The traditional mode of interaction between party leaders and the public has changed in this age of IT, because in most countries, political parties are putting online information about their ideological positions, policy choices, political messages and campaign issues. However, there are significant regional and cross-national variations. Although the number of parties online has reached 1250 worldwide, on average, there are 41 party websites per country in North America, 24 per country in Western Europe and less than five per country in the Middle East and Sub-Saharan Africa (Norris, 2001). There seems to be a positive correlation between the levels of democracy and income, on the one hand, and the number of political parties online, on the other. Although India is a relatively low-income country, it has as many as 20 party websites, perhaps due to its strong democratic tradition (Norris, 2001). However, taking into account its population size, this number may appear less sufficient.

In terms of content, there are differences among political parties in the information put on the website. Among the major parties, the Bharatiya Janata Party (the current ruling party) covers quite a number of items (www.bjp.org/home.html), including its history, philosophy, leadership, members in parliament, interviews, press releases and write-ups on certain issues. It also provides an

option for citizens to send feedback. The Communist Party of India, Marxist (cpim.org/cpim1.htm) has a website that includes the party programmes, constitution, party structure, statements, elections and documents. The Samajwadi Party (www.samajwadi-party.org) presents its history, constitution and achievements, and an option for citizens to send feedback. The Akali Dal Party (www.shiromaniakalidalmann.org) covers such items as party resolutions, interviews, historical documents and news archives. However, the Communist Party of India (www.cpofindia.org) has a website that not only presents its background, programme, constitution, press releases and journals, but also maintains a guestbook and an email option for citizens to send feedback. These are a few examples of the menus offered by various political parties on their websites in India. These provide some useful information regarding these political parties, so that citizens can make informed choices when they support or oppose any of these parties, especially during elections.

   Despite all these websites maintained by Parliament, the Prime Minister's Office and political parties in India, their effectiveness has yet to be evaluated. In the case of the Indian Parliament, there is no way of knowing how much information is put online and how much is concealed; and whether these elected politicians have the time and motivation to respond to all the public queries and comments, especially when these are too critical. With regard to the political-party websites in India, apart from those launched by the Bharatiya Janata Party and the Communist Party of India (Marxist), they are not as comprehensive as those found in North America or western Europe. There has been hardly any studies on whether the electronic mode of governance in the political sphere of India, especially the use of the internet and email, has been effective in deepening the relationship between politicians and citizens.[8] The critics may point to the fact that electronic means such as websites, in fact, can be used by political parties and leaders to publicize their achievements, construct positive images and direct public opinion in their favour. After all, this is a great opportunity for them to mitigate or reverse traditional public scepticism towards political parties, institutions and leaders.

Relationship between citizens and public servants
The emergence of e-governance has significantly changed the nature of the relationship between citizens and public servants. The e-governance movement not only promises higher quality and better delivery of services and a greater realization of entitlements, it also claims to offer stronger bonds between public servants and citizens based on transparency and accountability (Schware, 2000; Heeks, 2001a). With regard to this new mode of relationship, Schware (2000) emphasizes that IT in governance provides equal access to government and speedy and transparent responses from public servants. For Ghere and Young (1998), public agencies now have to justify their decisions based on feedback from the people and conduct their business in public. However, for the critics, instead of a citizen–administration relationship based on equality and account-

ability, e-governance may strengthen a top-down bureaucratic process by posting information about the structures and functions of public agencies and reinforcing the existing mode of interaction through documents and reports (Norris, 2001).

In the case of India, it is mostly the favourable view of e-governance that is echoed in various print and electronic media, especially government websites. In line with the common optimist picture of e-governance, it is pointed out that in India, compared to the previous citizen–administration relations characterized by bureaucratic rigidity, long delays, unnecessary complexity and public suffering, this relationship under e-governance is now characterized by higher speed, greater access, less cost and less public harassment (see Dev, 1999; Pardo, 2000; Budhiraja, 2001). At the Conference of Chief Ministers on 'Transparent and Accountable Administration', the potential of e-governance to realize transparency and accountability was strongly emphasized (Government of India, 1997). One way to decipher how e-governance has transformed the nature of the relationship between citizens and the administration is to explore some of the major policy initiatives recently undertaken by the Government, and examine the official websites maintained by various ministries, departments and state governments.

First, the Indian Government has undertaken major policy initiatives at the national, state and local level. In this regard, the previously mentioned Information Technology Act provides privacy for personal information while the Freedom of Information Bill offers them rights to information when interacting with public agencies and officials. However, the adoption of citizens' charters and the creation of Information and Facilitation Counters by various government departments or agencies (Government of India, 2001a, b) are initiatives that may provide citizens with specific guidelines regarding what to expect and whom to approach in their interaction or relationship with public agencies and employees. Another major administrative initiative mentioned earlier is the appointment of senior civil servants as IT managers in various ministries and departments — these IT managers can not only facilitate the realization of e-governance in their respective organizations, they can also enhance the relationship between these public organizations and citizens.[9] Similarly, most state governments have put senior public servants in charge of IT,[10] who now have an avenue through which to interact directly with citizens via electronic means. In order to strengthen the citizen–administration relationship, many state governments have taken other measures such as the introduction of local languages onto their websites (e.g. Hindi in Madhya Pradesh, Tamil in Tamil Nadu and Malayalam in Kerala); and the decentralization of information networks to various district and village panchayats (e.g. those in Kerala and Madhya Pradesh).

Second, the websites maintained by different ministries, departments and state governments have considerable implications for the interaction of ordinary citizens with public servants, especially with public servants involved in the direct delivery of services related to agriculture, health and food supply.[11] A comprehensive website is maintained by the Department of Agriculture and Cooperation

(www.nic.in/agricoop), which includes information relating to its various programmes and schemes, prices of agricultural products, weather watch, basic statistics, announcements and documents. More importantly, it has clickable feedback and email options and a helpdesk, which provide citizens with an opportunity to express their opinions, needs and problems. Although the Ministry of Health and Family Welfare website (mohfw.nic.in) covers only its schemes and programmes, a database of parliamentary questions and staff profiles without an option for sending feedback, it includes gateways to its major departments that have their own websites. A similar website structure can be found in the case of the Ministry of Consumer Affairs, Food and Public Distribution (fcamin.nic.in). However, in addition to the gateways to its departments, the Ministry of Finance (finmin.nic.in) has an option for feedback on its website.

Beyond these ministries and departments, there are other major national-level government institutions, including the supreme court, public service commission, election commission, planning commission, and so on, which maintain their respective websites. For example, the Supreme Court of India (supremecourtofindia.nic.in) has a website that covers such menu items as the constitution, rules, profiles of judges and, more importantly, an option for citizens to send feedback. But the web menu of an essential public service institution, the Union Public Service Commission (www.upsc.gov.in), only includes items such as examination schedules, interview details, final results and notifications; it does not have an option for citizen feedback. However, the Directorate of Public Grievances (dpg.bharatsarkar.nic.in) has a website that maintains a clickable option for citizens to send their grievances against any government department or agency. At the state level, the web menus of state governments cover some major items in various combinations — including profiles of governors and ministers, ministerial statements, facts and figures, structures and activities, gateways to various departments and district offices, email addresses, press releases, tourism and investment information and, above all, contact addresses and feedback options.

It is clear from this discussion that in India, the websites of public sector organizations (ministries, departments, courts, commissions) at the national and state level not only provide information about their activities, programmes, reports, statistics and publications, many of them also offer feedback options on their websites. These are apparently favourable changes toward a more interactive relationship between public servants and citizens. However, beyond how many hits each of these government website recieves, it is difficult to assess the actual quantity of feedback and suggestions and the frequency at which public officials genuinely respond to them. An important consideration in this regard is how relevant the online discussion items and information sources are to the needs and interests of various segments of the population in India. Not all citizens are interested in receiving information or providing feedback about ministerial speeches, leadership profiles and reports and documents on current issues. Even the practical information and application forms for services such as public utility

bills, agricultural inputs, registration of driving licenses, pension schemes and housing and property taxes, may not interest certain occupational or income groups. Thus, under the electronic mode of governance, the interaction between the public and public servants becomes need-based and service-specific.

Relationship between politicians and public servants
A common feature of the relation between politicians and the administration highlighted in most advanced democracies is the political neutrality of public servants and their accountability to elected political representatives. Following the liberal democratic model of governance, India inherited the tradition of political neutrality of public servants, although in reality, its bureaucracy was often found to be too powerful to be neutral and accountable to political representatives. However, compared to many developing countries, India did not experience excessive bureaucratic politics in the form of interventionist civilian and military bureaucracies, and it preserved a certain degree of separation between the political and administrative spheres. How has this relationship between politicians and public servants, based on neutrality, been affected by the emergence of e-governance?

In general, unlike the conventional democratic system of governance emphasizing a balance of power based on neutrality and separation among the various branches and levels of government, the current system of e-governance gives more importance to the 'connectivity' between the public and private sectors, between government and non-government organizations, between departments or agencies and between elected political executives and appointed senior civil servants (Pardo, 2000; Heeks, 2001a; Mair, 2001). These increasingly blurred boundaries between the domains and levels of governance are endorsed by the advocates of e-governance on the ground that such a trend would increase efficiency and coordination in information-sharing, and reduce intragovernmental duplications and conflicts. This global trend toward increasing networks and connections among various layers and realms of governance can also be found in the case of India.

As far as the linkages between politicians and public servants are concerned, there is a growing tendency in India toward a blurred or fused relationship between them, especially due to their common mission of e-governance that stresses connection rather than separation. In fact, there has emerged in India a new breed of politicians possessing skills in IT and behaving like bureaucratic experts. This is often the case at state-level governance. The recent speeches of Chief Ministers invariably include technical languages related to IT understood and shared by technical bureaucratic experts rather than ordinary citizens. In fact, the elected Chief Ministers of such states as Andhra Pradesh, Arunachal Pradesh, Gujarat, Maharashtra, Meghalaya and Punjab, are themselves in charge of adopting IT in governance. In the case of other states — including Bihar, Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal — other elected ministers are assigned with this task (MIT,

2001d). There is no serious problem with the elected politicians managing the whole range of activities related to the use of IT in governance, but it implies an increasing tendency of these politicians to play the role of technical experts and thus means a certain degree of bureaucratization of the political sphere.

Conversely, there is a new generation of public servants in India who are well trained in ICT to generate, maintain and disseminate information. Despite the greater level of technical skills possessed by current political leaders, they are often dependent on these bureaucratic information experts. In the past, it was widely known that the power of a bureaucracy based on information and technical expertise always posed a challenge to its accountability to the non-expert political leaders in developing countries like India. The current addition of a more sophisticated form of information power to the bureaucracy under e-governance brings back the question regarding the accountability of such an information-expert public bureaucracy to elected politicians who are much less skilled in this new game of IT. In addition, e-governance provides a wider opportunity for public servants to interact directly with the public in the process of receiving feedback from citizens and responding to their queries and complaints through electronic means. By entering into this domain of shaping public opinion, ICT-skilled public servants may have assumed a certain political role. Thus, e-governance may not only increase the power of bureaucratic experts in relation to elected political leaders, it may also lead to the politicization of the overall bureaucracy.

Even if these politico-administrative consequences of e-governance — i.e. the bureaucratization of IT-driven political leaders and the politicization of information-smart bureaucrats — imply a greater connectivity or interaction between them, it is likely that the latter (bureaucrats) will have a more favourable position in sharing power. After all, the new governance tends to privilege those with greater expertise and experience in IT. This is an interesting situation in which greater connectivity does not necessarily mean stronger cooperation between the stakeholders: it may, in fact, imply more competition between them. In any case, if there is a stronger alliance between politicians and public servants based on their common interest in IT-intensive governance, it may compromise neutrality as a principle of their relationship and alienate the information-poor public in India. However, if the information-expert bureaucrats become too influential in relation to elected political representatives, it may undermine their accountability to these elected politicians. In other words, under e-governance, the nature of the relationship between politicians and public servants may have changed from one based on neutrality and accountability to one of a fused power structure with the dominance of bureaucrats empowered by information expertise. In this regard, Daly (2000) makes a general observation that the use of the internet in governance has enhanced the dominance of *nomenklatura* over the state.

Concluding remarks: limits and hazards of e-governance in India

It is widely known that there are certain administrative and informational advantages of e-governance in terms of the collection and management of information, increase in public knowledge about government programmes and activities, interaction and coordination among state agencies, speed and openness in service delivery, reduction in certain service costs, maintenance of demographic and economic records, and so on (Upadhyaya, 2000; Heeks, 2001a). However, beyond these technical merits of e-governance, it has to be assessed in terms of its sociopolitical implications such as the power relations between politicians, public servants and citizens examined in this article. As mentioned at the beginning, the justification of e-governance has to be based on whether it has been successful in constructing these stakeholder relations and delivering services in an equitable, accountable, transparent and participative manner. In this regard, a recent OECD study on e-governance — which involved interviews with public officials, top policy-makers and information specialists — suggests that the use of ICT, specially the internet, has largely failed to enhance people's access, increase transparency, encourage bottom-up participation or allow public criticism (Norris, 2001).

In the case of India, beyond the issue of public access and participation, e-governance has not shown any promising results even in terms of service delivery. In fact, the critics identify quite a number of failures of e-governance in India. Examples of total or partial failure include such cases as the creation of district-level information centres by the National Informatics Centre; the computerization of the Income Tax Department's tax system; the use of the executive information system in the management of adult literacy programmes; the adoption of a computerized decision support system in the Narmada Irrigation Project Authority; and the implementation of the Rural Information Systems Project (Madon, 1997; Heeks, 1998a). Similarly, the e-governance scheme undertaken by the state government of Rajasthan has failed due to its centralized planning, its insensitivity toward local infrastructure and lack of motivation among villagers (Yadav, 2001). It has been concluded that apart from some improvement made in the railway services (e.g. a faster reservation service and less corruption) by computerizing the Passenger Reservation System, there seems to be no other significant cases in India to demonstrate any noticeable positive outcomes made from the use of IT in governance (Heeks, 1998a; Government of India, 2001a).

One of the most critical reasons for e-governance being less effective is the problem of citizens' access to the available information sources such as the internet. Globally, it is observed that the richest 20 percent of the world population represents 93.3 percent of internet users and the poorest 20 percent accounts for 0.2 percent (Singh, 2000). In the case of India, according to *The Economist*, only 0.1 percent of the population has internet access at home (Kashyap, 2000). According to the UNDP (2000: 200), India has one of the lowest per capita internet hosts (0.01 per thousand people) in the world. It is mentioned by Subbaih (1999) that even many universities in India do not have adequate email or internet

facilities. There are various factors constraining access to electronic communication, although such access is an essential precondition for the effectiveness of e-governance.

First, internet access is too expensive for the poor in developing countries like India. According to UNDP (1999), while it might cost more than eight years' income for an average Bangladeshi to buy a computer, it would cost just one month's salary for an average American to do so. Installing the necessary telephone lines needed for internet or email access is equally unaffordable in most poor countries. In India, each telephone connection may cost as much as Rs30,000 in urban areas and Rs70,000–80,000 in villages, which is unaffordable by most low-income families (Yadav, 2001). It is also very expensive to gain internet access in India: it may cost about Rs25 per hour in cities and Rs150–1200 per hour in rural areas (Yadav, 2001).

Second, there is a very low rate of literacy in countries like India, although the correlation between education level and use of the internet is quite significant. For instance, internationally, about 30 percent of internet users have at least one university degree, which is 50 percent in the UK, 60 percent in China, 67 percent in Mexico and 70 percent in Ireland (UNDP, 1999). In the case of Andhra Pradesh, one of the Indian states most aggressively pursuing e-governance, even the basic literacy rate is only 44 percent (*PC World*, 2000). Therefore, one may become sceptical about the effectiveness of e-governance in such a context where the majority cannot even read and write.

Third, there are infrastructural limits such as the availability of computers, electricity and telephone connections. In India, on average, there are only three PCs per 1000 people (one of the lowest in the world) whereas it is 459 PCs per 1000 people in the USA (UNDP, 2000: 200). Although electricity and telecommunications are critical for IT and the internet, globally, over 33 percent of the world population is without electricity and 80 percent without reliable telecommunications (Panos, 1998; Heeks, 1999). In the case of India, the power supply in villages is so irregular and poor that it is hardly possible to run computers (Yadav, 2001). Similarly, the lack of telephone connections is a serious obstacle to internet access — India has one of the lowest per capita telephone lines (22 per 1000 people) in the world (UNDP, 2000: 200). Although the optimists often predict the eventual trickle-down of internet access to the poorest people and remotest villages, similar promises related to earlier modes of communication (e.g. telephones and television) did not materialize even in affluent countries like the USA (Norris, 2001: 9). Thus, any future change towards an equitable access to the internet is unlikely, especially in poorer countries like India.

Fourth, the dominance of English on the internet constrains the access of non-English-speaking population. It is found that of all the web pages in the world, about 84 percent are in English followed by 4.5 percent in German, 3.1 percent in Japanese, 1.8 percent in French, 1.2 percent in Spanish, 1.1 percent in Swedish, 1 percent in Italian and less than 1 percent in all other languages (Norris, 2001). In the case of India, 95 percent of the population does not speak English (Hariharan,

1999). Due to such overwhelming dominance of English over these communication channels, according to Yadav (2001), computers and the internet are quite useless in Indian villages, and the use of local languages does little to alleviate the problem due to the poor literacy level mentioned earlier.

Finally, there are some adverse implications of e-governance, including inequality in gaining access to public sector services between various sections of citizens, especially between urban and rural communities, between the educated and illiterate, and between the rich and poor. In this regard, Bangalore, often known as the pride of Karnataka and the 'silicon valley' of South Asia, is a classic case where serious divisions among citizens have emerged. For example, while high-tech foreign companies have occupied hundreds of acres of land for research laboratories in Bangalore, the local middle-class and poor families are being driven out of this city due to the rise in real estate prices; while the presence of such foreign companies has led to huge wage increases for a small number of local technical experts, nearly 95 percent of the rural poor in Karnataka earns less than $102 per year; while this small group of the technocratic élite has gained from Bangalore's expansive IT projects, the whole Karnataka remains primarily an agricultural state with 76 percent of its people living in rural areas (mostly in poverty); and while the affluence of the élite is becoming more conspicuous, there is a worsening situation of slums and squatters in Bangalore itself (Madon, 1997).

This indeed represents a disturbing scenario of how the digital divide may have reinforced the socioeconomic divide in India. In fact, the worsening economic inequality associated with IT is quite serious. Although India as a nation takes pride in its achievements in IT, the fact remains that within the country, the production of software exports is an extremely unequal game. It was found in 1998 that out of 400–500 software export firms in India, the top 20 firms were responsible for 70 percent of all exports (Heeks, 1998b). Geographically, most of the 558 Indian software company headquarters are located only in few large cities: 152 in Bangalore, 122 in Mumbai, 93 in Chennai, 86 in Delhi, 34 in Hyderabad, 27 in Calcutta, 22 in Pune, and remaining 22 in all other cities (Heeks, 1998b). These unequal structures of IT resulting from policies pursued under e-governance, thus, imply greater economic and geographical divides in India.

Furthermore, this overemphasis on IT in India may have displaced the whole idea of 'appropriate technology' and marginalized the significance of traditional technological devices still used by the majority poor for their livelihood in this country (Yadav, 2001). One adverse outcome of inappropriate technology — such as the adoption of ICT and the development of required human skills in poor countries — is often the loss of human resources associated with such technology to foreign countries. It is mainly because these human skills in IT are more appropriate in advanced industrial nations than in predominantly agricultural economies like India. In fact, heavy investment in IT in India has worsened the problem of the brain drain: each year, India loses almost 15 percent of its soft-

ware workers, mostly to the USA (Heeks, 1999). It raises the question regarding the very rationale for investing so much public money in creating a huge pool of IT experts who are more likely to migrate to other countries.

In conclusion, one needs to understand that after two decades of e-commerce, e-governance and e-citizen, India remains one of the poorest countries in the world with 44.3 percent adult literacy rate, 25 percent people without health services, 71 percent without access to sanitation, 35 percent living below the poverty line, $100 billion external debt and 128th rank in the recent Human Development Index (UNDP, 2000: 170, 216, 221). E-governance must show more than this dismal scenario of human conditions in India. After all, the poor citizens need the basic material preconditions of living — including food, health, education and employment — before they become interested in non-material concerns like information and knowledge provided by e-governance. There is no doubt that e-governance has been useful for certain services enjoyed by citizens, especially the affluent high-income families and foreign investors. But it is yet to be seen whether e-governance can eradicate poverty, reduce inequality and satisfy basic human needs in a poor country like India.

Notes

1. In general, ICT is defined as an electronic means to collect, process, store, and communicate information, especially through computer hardware, software, and networks (see Heeks, 1999).

2. In the current literature, most definitions of e-governance are loaded with its advantageous or virtuous connotation. For example, e-governance is considered a system of governance that represents 'good governance', that 'works better and costs less', that enhances accountability and responsiveness, that promotes civil society, and that is moral and transparent (Dev, 1999; Heeks, 2001a; MIT, 2001a).

3. It is observed that over 220 countries and territories have 20,000 websites linked to more than 15,000 government institutions (Kaplan, 2001).

4. According recent figures, about 61 Citizens' Charters have been adopted at the national level (including 27 for public sector banks and four for public hospitals); and 132 charters have been introduced for certain services by the state-level governments in Andhra Pradesh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Rajasthan and Tamil Nadu (Government of India, 2001a, b).

5. For example, see the websites of the Ministry of Information Technology (http://www.mit.gov.in); Ministry of Commerce and Industry (http://commin.nic.in); Ministry of Health and Family Welfare (http://mohfw.nic.in); Ministry of Home Affairs (http://mha.nic.in/); Department of Education (http://www.education.nic.in); Ministry of Parliamentary Affairs (http://mpa.nic.in); Ministry of Personnel, Public Grievances and Pension (http://persmin.nic.in/); Ministry of Railways (http://www.indianrail.gov.in); Ministry of Rural Development (http://rural.nic.in/); Ministry of Social Justice and Empowerment (http://socialjustice.nic.in/); and Ministry of Urban Development and Poverty Alleviation (http://urbanindia.nic.in/).

6. For example, the 'model offices' are being set up in various States and Union Territories with the assistance of the central government, especially through the provision of hardware, software and training from the National Informatics Centre (Government of India, 2001b).

7. There is a central directory (goidirectory.nic.in) that provides entry to all major official websites of Indian Government, including those of the national Parliament,

ministries and departments, taskforces and councils, banking and financial institutions, educational institutions and state governments.

    8. Even in the case of the USA, many of the Congress members do not use e-mail to respond to their constituencies (Norris, 2001).

    9. For the list of names and designations of ɪᴛ managers in various ministries and departments, see MIT (2001d).

    10. For example, the state government has placed Secretaries in charge of ɪᴛ in Assam, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Uttar Pradesh, Uttaranchal and West Bengal; and both Secretaries and Directors in Andhra Pradesh, Arunachal Pradesh, Bihar, Gujarat, Punjab, Rajasthan and Tripura, (MIT, 2001d).

    11. Examples of websites maintained by important ministries and departments with greater public interaction may include Ministry of Health and Family Welfare (mohfw.nic.in); Department of Agriculture and Cooperation (www.nic.in/agricoop); Department of Education (www.education.nic.in); Ministry of Rural Development (rural.nic.in); Ministry of Water Resources (wrmin.nic.in); Ministry of Railways (www.indianrail.gov.in); Ministry of Labour (labour.nic.in); Ministry of Urban Development and Poverty Alleviation (urbanindia.nic.in); and Ministry of Social Justice and Empowerment (socialjustice.nic.in).

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