

# Can Information and Communication Technology Help Reduce Corruption? How So and Why Not: Two Case Studies from South Asia

RUMEL MAHMOOD \*

## ABSTRACT

The deployment of electronic governance over the past few years has enabled citizens to access government information and services with more ease and less cost. Unfortunately, the majority of governments embracing these technologies and making the citizen-government interaction easier to navigate are found primarily in the industrialized West. One exception is India, which is the focus of this paper. Beyond viewing electronic governance as a means of facilitating state-citizen interactions, I explore the linkages between electronic governance and corruption deterrence, and by doing so, fill in a crucial void in the current literature. After reviewing successful ICT-led government reform efforts in the West from public administration literature, a simple model is proposed to determine how these technologies may come to be utilized for reform. The model is then applied to the Indian state of Andhra Pradesh and the neighboring government of Bangladesh to test the salience of the variables, and to determine why the former may be more successful than the latter.

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\* Political Science, Washington University, St. Louis, Missouri, USA.

## I. Introduction

The diffusion and widespread use of information and communication technology (ICT) over the past decade has been nothing short of a revolution in the industrialized West (Cairncross 1997; Dertouzos 1997).<sup>1</sup> While at first led by larger corporations, the possibilities these technologies hold have not been lost on governments (see Council for Excellence in Government, henceforth CEG, 2001 for an American perspective; and *The Economist* 2000 for a survey of international experiences). Indeed, as information is vital for the survival of any organization, many governments have embraced the notion of e-governance in the midst of rapid information turnover. Governments are not only streamlining the back-end of public administration processes, by linking databases in different departments, but have also improved the interface through which governments interact with their citizens.

However, with a few notable exceptions, the majority of governments embracing these technologies and making the citizen-government interaction easier to navigate are in the industrialized West. A “notable exception” is India and, therefore, the focus of this paper. India, a relatively poor country and one with a substantial proportion of its population in absolute poverty, has seen some of its state governments embrace e-governance with the same fervor many Western national governments have. The low level of development—per capita income, poverty, literacy, life expectancy, child mortality, and computer and tele-density—of a state like Andhra Pradesh (AP) makes the range of government services and information available online there more remarkable. Perhaps, then, e-governance in developing countries is a more realistic and fruitful application of ICT in development when we consider that the initial hope of how ICTs would increase Business-to-Business (B2B) transactions between firms in developing and developed countries is not being realized (Humphrey et al. 2003).<sup>2</sup>

The most significant implication goes beyond viewing electronic governance as merely a means to facilitate state-citizen transactions and services, but as a new and effective way to deter corruption. Corruption, its consequences and how to tackle them, has received considerable attention in the literature recently (see Bardhan 1997 for a review of economic issues; and Salbu 2000 for a review of legalistic ones). While some commentators have recently extolled the possibilities ICT holds in eliminating corrup-

<sup>1</sup> James (1999) sees globalization as a *function of* increasing trade in information and communication technologies (p. 1).

<sup>2</sup> The authors see that communication has increased between extant business partners, even if new business relationships have not emerged as a result of ICTs in developing countries (Humphrey et al., 2003).

tion (Salbu 2000), this paper identifies theoretical linkages and real-world applications.

The structure of this paper is as follows: In the next section I survey selected literature on corruption and note briefly the level of corruption in South Asia. Section III explores some of the linkages between e-governance and corruption. In section IV I propose a simple model and hypothesis to determine when governments may implement ICTs in their bureaucracies. In sections V and VI the model is applied to Andhra Pradesh and Bangladesh. Section VII presents a conclusion, which summarizes the findings.<sup>3</sup>

## II. Corruption: Consequences and Controls

Corruption is mainly characterized by the offering of bribes to public sector officials and the acceptance of such bribes. This issue has received considerable attention in the literature over the last decade. Beyond viewing corruption as a hindrance to the plight of poor people who must confront and subsidize it,<sup>4</sup> there is overwhelming evidence that corruption has negative long-term macroeconomic consequences. Mauro (1995) measured the effects of corruption on a country's economic performance for 68 countries and found a substantially negative correlation between corruption and economic growth, at a statistically significant level. Corruption lowers investment, and, hence, economic growth.

Along these lines, Levi and Sherman (1997) explore theoretical linkages through which a rationalized bureaucracy and rational compliance with it are necessary to promote economic growth. Further, attempts to alleviate poverty will not succeed unless good governance is in place first (see Bardhan 1997 for a more thorough economic analysis of these and related issues). Sobhan (1998) has identified misgovernance as the main culprit in preventing governmental efforts at poverty alleviation; the other one is a lack of vision.

Robert Klitgaard (1998) tackled some of the core issues confronting corruption. He challenged the notion that corruption was a symptom of an inferior culture and proposed that it be seen for what it is—a problem of asymmetric information and incentives. To explain the causes of corruption, Klitgaard employed a simple *principal-agent-client* model (pp. 69-97). The premise for employing the model is the recognition that

<sup>3</sup> On the comparability of Indian states to other countries, see Sen (1999:99-107). See also Section V below.

<sup>4</sup> This hints at a quality of life impact to measuring and assessing corruption's consequences.

corruption occurs when a public official possesses access to a monopoly, discretion in administering it, and a lack of accountability.

*Definition 1:* CORRUPTION = MONOPOLY + DISCRETION – ACCOUNTABILITY

Using this premise, Klitgaard assumes the *principal* is some public servant in charge of other public servants. The *agent* who works for the principal interacts with some *client*—any citizen or representative of a business—on behalf of some government agency. Due to time and monetary constraints, the principal cannot do all the work himself and must employ other agents to work for him or her.

Klitgaard assumed in this simple model that the principal is honest and has the best wishes of the public agency in mind; that is, the principal would like to see the agent do his job without abusing his monopoly power. Because of asymmetric information, the principal cannot monitor the agent's work. The model thus shows us that a public servant will commit a corrupt act if the payoff from doing so outweighs the probability of being caught times the severity of the punishment. Based on this derivation, Klitgaard recommended how institutions could be designed to reduce corruption. Of interest here is that the most noteworthy was restructuring the principal-agent-client relationship to alter the amount of monopoly, discretion, and accountability the agent was endowed with (see Klitgaard's Exhibit 1 for all of his suggested "Measures to Control Corruption" [1988:94-5]).

#### *Corruption in South Asia*

Corruption in South Asia is considered rampant. India, Pakistan, and Bangladesh all score poorly on Transparency International's Corruption Perception Index (Transparency International 2002), with scores of 2.8, 2.5, and 1.3, respectively, out of a possible 10 points for a perception of no corruption. By this same measure, Bangladesh has ranked as the most corrupt country in the world during the past few years.<sup>5</sup> Nonetheless, in addition to bureaucratic corruption and the consequences that come with it—such as missed opportunities to thwart poverty and attract more investment—India and Bangladesh share another aspect of corruption, namely, the criminalization of politics (Luce 2002; Mahmud 2001; Section VI below), where politicians and criminal gangs are becoming increasingly

<sup>5</sup> I thank ABM Nasir for pointing out that the number of surveys carried out by Transparency International in Bangladesh were traditionally far short of the mean for other countries and, hence, had a higher standard deviation than its actual score. TI seems to have corrected for this in its most recent surveys, yet Bangladesh still scores lowest of all 133 countries on the Corruption Perception Index.

intertwined. See also TI-Bangladesh 1998 and TI-India 2002 for striking similarities in the pervasiveness, prevalence, and perception of corruption in Bangladesh and India.

### III. Can Information and Communication Technology Reduce Corruption?

Information and Communication Technologies (ICTs) *are* altering the principal-agent-client relationship in the public sector-citizen interface, most notably through e-governance. The process of e-governance entails transcribing information held by government agencies into electronic form and then linking disparate databases. The desired goal is streamlined sharing of information between government agencies to conduct government-to-government (G2G) transactions, but also to simplify the navigation of government-to-citizen (G2C) and government-to-business (G2B) transactions. Seiffert and Petersen (2002) define e-governance similarly. In many advanced industrialized economies, citizens are debating how ICTs and e-governance are actually changing the very nature of democracy itself.<sup>6</sup>

The motives for implementing these technologies in the West may have had more to do with improving services than curbing corruption *per se*, due to the fact that corruption in the developed world is less prevalent than in the developing world. Nonetheless, the potential for e-governance to reduce corruption in the developing world is substantial. Yet, despite the potential for ICTs to deter and decrease corruption in the developing world, where much of this potential is already being realized, the literature has paid scant attention to this possibility.

A noteworthy exception was Hanna (1994), who recommended that IT markets be strengthened to realize more efficient governance in India. Developing a local market, it was argued, is necessary to prepare companies to compete in the global market (see also Bajpai and Dokeniya 1999). Hanna argued that the government should set up institutions that provide incentives to spur the private sector to layout an IT infrastructure (1994). Hanna also suggested “public sector modernization” through information technology as a significant way to promote the competitiveness of the software industry. Interestingly, citing OECD data, she noted that

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<sup>6</sup> In Hoff et al. (2000), the contributors pose the question: “Whether the types of ICTs that we now see being used and introduced in politics and in the political-administrative systems in Western Europe are meant to *restore* or *reinvent* the ‘electoral chain of command’ or whether they are part of new political practices pointing towards the development of new models of democracy” (p. 5 emphasis added). On net, the authors see the status quo upheld with the introduction of ICTs in to the political-bureaucratic realm in Western Europe. Kolathil and Boas (2001) find that authoritarian states are employing and controlling the Internet in ways to propagate their regimes (see also CEG 2001).

governments are the largest consumers of IT products, with over 40% of the market.<sup>7</sup> Some of the sectors she suggested that would benefit the most from e-governance implementation were logistics, such as ports information and management, and transaction systems, such as tax administration and land records management.

The greatest advantages to a pure e-governance solution (in any part of the world) is a scenario where all government services and information are available to a citizen, in his or her day-to-day operation or acting on behalf of a business, electronically, via a computer or even mobile telephone (CEG 2001). As such, I put forth two related propositions, the first of which is as follows:

- *Proposition 1a:* A pure e-governance solution reduces corruption by dis-intermediating services and allowing citizens to conduct administrative transactions directly with computer databases, through personal computers or mobile telecommunications, such as cellular (“mobile”) phones. This removes discretion from the equation of corruption.

Prospects for e-governance in the developing world look promising, especially in states where significant work has been done toward this goal (see Section V). Of course, not all situations where information technology is introduced into public administration will lead to a reduction in corruption; in some cases, it may even provide an opportunity for more corruption (Heeks 1998). Further, since developing countries differ from developed countries, most notably in their purchasing power, I put forth a related proposition:

- *Proposition 1b:* Where limited individual resource endowments provide barriers to the purchase of computing or telecommunication equipment to conduct citizen transactions with databases directly, governments can provide access to these services for citizens through community computing centers. In a setting with many individuals and many witnesses, corruption is much more difficult if not impossible to commit. This further reduces the lack of discretion in corruption.

<sup>7</sup> This fact is dismaying compared with the findings of Heeks and Bhatnagar (1999) of the overall level of information system *failure* in the public sector. This is what I dub the “public sector paradox of IT implementation”: governments are the largest consumers of IT, yet yield high rates of implementation failure. This does not imply that the private sector has somehow had much more success with IT implementation; they are just “better than government at keeping these failures quiet” (Heeks and Bhatnagar 1999:58). In Section IV, I suggest sufficient and not necessary conditions for predicting ICT success in the public sector.

Proposition 1*b* addresses what Heeks and Bhatnagar (1999) call the “conception-reality gap” in the implementation without proper design of Western ICT systems in developing country contexts. (I will refer to Propositions 1*a* and 1*b* as “P1a” and “P1b” respectively, for abbreviation.)

Another observer has also speculated on the possibilities of ICTs in reducing corruption, but without defining e-governance properly (P1*a*) or taking the developed-developing country conception-reality gap into consideration (P1*b*). Salbu’s (2000) analysis is the closest in mainstream American academic literature so far to address IT as a possible means of reducing corruption. While Salbu identifies shortcomings of extraterritorial legislation in eliminating corruption—the focus of Salbu’s ire is the US Foreign Corrupt Practices Act (FCPA), which imposes penalties on US corporations for partaking in bribery in other countries (Salbu 2000)—his leap into embracing IT as a means of reducing corruption is a little far-fetched. The only mechanism that Salbu did discuss through which information and communication technology can aid in reducing corruption is through support for whistleblowers. Salbu cites a few studies on the potential for whistleblowers to reveal corruption on the Internet. However, these checks and balance systems are specific mostly to the West and out of context in the developing world. Moreover, as Section II on corruption highlighted, a major component of corruption is discretion without accountability in the hands of public servants. It is for this reason that, when corruption usually occurs, few people are privy to the knowledge that it is occurring. Because of this, whistleblowers as a whole represent a small (if not tiny) fraction of a possible solution to eliminating corruption. Whistleblowers play a much more significant role in countries where there is already less corruption to begin with.

Another subtlety Salbu does not address is either component of the public sector paradox of IT modernization. This is the combined result of governments being the largest consumer of IT services on the one hand (Hanna 1994), while also yielding high rates of IT implementation failure (Heeks and Bhatnagar 1999) on the other hand (see footnote 7). It is the latter fact that bodes most ill for any attempts to reduce corruption through information technology. Failing to recognize the difficulty with which information technology is adopted in the public sector undermines any attempts to promote IT-led reform credibly. Not recognizing the subtleties involved in this process while promoting IT solutions blatantly may amount to putting the proverbial cart before the horse.

In short, can technology by itself lead to reform in developing country governments and thus reduce corruption? While Salbu might be inclined to endorse this possibility, it is my hypothesis that the answer is “No.” Those who have studied public sector administrative reform and modernization



extensively would tend to disagree as well. Kettl (2000) states emphatically: “Experience demonstrates quite clearly that tactics such as outsourcing, customer service, and *information technology* do not—and cannot—manage themselves. Indeed, they require aggressive and thoughtful oversight” (Kettl, p. 33, emphasis added). Heeks (1999b) concurs: “IT is no substitute for poor management or poor governance, and broad/deep [information systems] problems must be addressed without computerization at all, or must be addressed first before computerization can be of any wider value to the reform process” (p. 101). Regarding e-governance specifically, the CEG (2001) recommends “public sector *leaders* must embrace e-government as a tool to transform and improve government and connect it to the people it serves” (p. 7, emphasis added). Additionally, according to CEG, “e-government is not the sole province of technical experts. For maximum impact it must become ingrained in the thinking of government *leaders*, managers, and workers at all levels” (p. 12, emphasis added). It would seem then, that the most critical initial step in implementing reform is a political commitment to reform.

#### **IV. The Model Proposed. Political Ideology and a Commitment to Reform: From Above or Below?**

It should be noted that some of the most successful governmental reform efforts have been ideologically motivated, or at least ideology has played a prominent role in the process of mobilizing reform. Heeks (1999a) has identified this and a few other elements that led to far-reaching reform initiatives: 1) a sense of crisis, 2) a renewed ideology, and 3) the political will or power to carry out reform. Perhaps it can be inferred that without either of these (and a prerequisite to these, discussed below), that reform will not succeed very well. Indeed, I take these three as variables for my model.

Kettl (2000) speaks more formally of “preconditions for reform.” It seems then that a significant component of reform is political. In fact, the OECD finds that “the most important ingredient for successful regulatory reform is the strength and consistency of support at the highest political level” (cited in Kettl 2000:48). More specifically: “Deregulation is about economic efficiency [but] on another level it is quite clearly about politics and political redistribution...” (Kettl 2000:48). This is further backed up by the view that:

Management reform is not fundamentally about management. Elected officials do not pursue management reform for its own sake but because they believe it helps them achieve a broader political purpose. Efficiency has real value to officials because it can help them reduce taxes or increase services. Effectiveness matters because citizens are less likely to complain



about programs that they think work well. *Even for managers*, management reform is not only about management. Overwhelming evidence indicates that management reform requires strong political direction and support; evidence shows that reform led only by internal reformers is inherently and sharply limited. Managers have little incentive to pay careful attention to performance measures if elected officials do not signal that they, too, are paying attention. (Kettl 2000:67, emphasis added)

Here then is a pointer to a fourth possible precondition that should be considered in analyzing reform: regime type.

Despite the overarching themes discussed in the governmental administrative reform literature, an important omission of where reform takes place remains. To the political scientist, how democratic a regime is precedes any serious discussion of reform.<sup>8</sup> Yet neither Kettl nor Heeks would have to make the distinction if all the governments in the world were democratic. However, despite an explosion of democratization in the last few decades of the twentieth century, not all countries are democracies.<sup>9</sup>

Recent trends in the comparative political science literature have identified a continuum of regime-type: liberal democracy, minimal democracy, authoritarianism, and interrupted regime (Doorenspleet 2000:387, and footnote 12 cited therein). Minimal democracies are the “increasing number of countries that are characterized by inclusive suffrage and open competition but at the same time lack a fully developed system of civil liberties” (Doorenspleet 2000:387). Further, this distinction is also predicated on the fact that “the dimension of civil liberties can be quite independent of competition and inclusion” (Doorenspleet 2000:387).

Since my model was derived from developed democracies, yet it is applied to underdeveloped countries, I allow for a variable in my endeavor

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<sup>8</sup> At least it should. Of course, countries with a high level of output and economic efficiency that have achieved reform in the government under authoritarian rule is the exception rather than the norm, and usually only applies to small city-states like Singapore and cannot be extended to real countries with larger populations and more administrative burdens. The Republic of Korea and Taiwan achieved high levels of economic output under authoritarianism, but winds of change inevitably ushered in democratic norms. Considered rife with corruption (Pei 2002; Kyngé 2002a and 2002b), China ranked 59 out of 102 countries (Transparency International 2002). It would seem that to improve governance, China is on the verge of launching democratic reforms (FT 2003; Kyngé 2003) in the same place where it began its market experimentation more than 20 years ago.

<sup>9</sup> From Huntington's (1991) vantage point at the time of his writing, he estimated roughly 60% of the world's governments were democratic. Recent attempts to normalize theoretical and empirical shortcomings of his research have not changed this aspect of Huntington's findings, that is, that the number of countries that are now democratic are still around 60% (see Doorenspleet 2000). See also Gurr et al. (2001): Section 5.

that controls for this. In short, the model consists of four variables: 1) regime type, 2) a sense of crisis, 3) a renewed ideology, and 4) political will. In order to test the salience of these variables in the case studies, the model is embodied in the following hypothesis:

- *Hypothesis 1:* ICT-led bureaucratic reforms can or will occur in a country when a political party claims a sense of crisis, renews its ideology, and garners the political will to combat the crisis and carry out reforms. This can only occur, however, in at least minimally democratic countries.

## V. How and Why Andhra Pradesh Is Reducing Corruption with E-Governance

The array of services now available to Andhra Pradesh citizens via ICT are chosen due to the fact that AP was one of the first states in India to herald the possibilities e-governance holds for better administration, and has garnered the most attention in the international press (see footnote 10). Indeed, the vision of the administration's reform efforts is summarized in its own acronym "SMART:" a Simple, Moral, Accountable, Responsive and Transparent government. In espousing e-governance, the administration declares:

The Government of Andhra Pradesh firmly believes that e-Governance is one of the pillars of the edifice of IT. The Government exists for the people. All the efforts and initiatives of the Government should, therefore, be directed to the goal of providing good governance (AP, E-governance)

Citizens can now obtain vital certificates and documents or register sales of immovable property over the Internet. Citizens can also pay utility bills and taxes on the Internet. Whereas these services would take months or even years to complete without a bribe, now they take minutes over the Internet. Most notably, citizens of AP are free from paying bribes for these services. Those citizens without personal computers of their own are accommodated at the numerous computer centers throughout the state. In addition, the government has connected all district governments and their databases to better target poverty alleviation efforts. Chandrababu Naidu (2000), The Chief Minister (CM) has stated that he wants to see all government services available at any time, for the convenience of the citizen, from anywhere: "The concept is that eventually the point of delivery of a government service or its front end can be anywhere. It could

be electronic kiosks or it could be cable TV or even a hand-held device or cellular phone” (p. 89).<sup>10, 11</sup>

Thus, Propositions *1a* and *1b* on the role of e-governance and its accessibility are satisfied. Though more evaluative studies need to be carried out, preliminary assessments are that the time and money needed to complete government transactions are down substantially and the scope for corruption has waned.<sup>12</sup>

In my model, I proposed that a crucial variable in predicting (or explaining) successful government reform efforts is regime type. My model predicts that the sincerity of governmental reform is positively related to the continuum of regime type. That is, I would expect less successful reform in authoritarian states, more success in minimal democracies, and the most success in a full democracy. By most accounts, India is considered at least minimally democratic (Jenkins 1999; Mitra 1999; Varshney 2000; Ganguly 2002; and Rudolph and Rudolph 2002; but see Heller 2000 for a contrarian perspective; and Roy 2001:ch.s 2 and 3 on exactly why India is not fully democratic). Having established Propositions *1a* and *1b* in AP and India’s qualification as a minimally democratic state, I will next consider whether the other independent variables in Hypothesis 1 are satisfied.

#### *Andhra Pradesh’s Chief Minister: Crisis, Ideology, and Political Will*

Naidu (2000) sums up the traditional view of Indian politics as directly unproductive and rent-seeking by stating India “has paid a heavy social and economic price for too much politicking and too little governance” (p. 17). Is Naidu sincere, or is he just another politician making bold proclamations which translate into little for the everyday citizens of his state? Strictly speaking, for the purposes of this paper, Naidu’s sincerity may not matter for the analysis. What does matter is the content of what he has said and whether or not his statements conform to the independent variables and causal mechanism as outlined in Hypothesis 1.

<sup>10</sup> I will focus on Naidu’s ideology, in his own words, for the thought processes and ideas of the leadership plays a key role in my model. For some independent assessment of his views and accomplishments, see Foreign Desk 1999; Dugger 1999; Bradsher 2002; Basu 2000; and Levander 2000. See also the Telegu Desam Party 1999. However, Naidu is not without his critics; see footnote 11.

<sup>11</sup> Manor (forthcoming) has been an outspoken critic of what he sees as Naidu’s deceptive reform tactics. Indeed, in comparison to Karnataka, Manor argues that Naidu and AP are a model for corruption. This highlights the point of Geddes (1991), and from which the present analysis is not immune, that case selection in qualitative studies can have a strong impact on and even determine the outcomes.

<sup>12</sup> I thank Jonathan Cassly for pointing out that prices for certain services now offered electronically in AP have actually increased. However, this may well be due to the increased costs for provision through new technologies. See also references cited in footnote 10 above.

The application of the model to the first case study has thus identified certain qualities of the independent variables. First, as was noted in the previous section, reform may serve a purpose for political actors beyond reform *per se*. Reform can enable policymakers to achieve other goals. In the lexicon of American politics, policymakers can be office-seeking or policy-seeking (see Strom 1990). In the context of the current model, reform as policy can further one's office-seeking goals. Second, and as a corollary to the first point, a sense of crisis and a renewed ideology are rhetorical in nature, whereas political will may be more difficult to operationalize. Actually, "political will" can perhaps be disaggregated into two distinct components: 1) purely constitutionally defined relationships in intergovernmental relations, for example, between the executive and legislature, or 2) how much public support a governmental actor receives from the public.<sup>13</sup> I am interested mostly in the latter. If we consider this aspect of political will, then operationalization of this variable can take place through polls or electoral results. Further, political will may suggest just how much the rhetoric of crisis and ideology is perceived by the public, or how well it works.

To examine more closely how his sense of crisis, political ideology, and will enabled Chief Minister Naidu to have carried out these reforms, I will make some observations from a primary source—his autobiography. His book, which deals almost exclusively with issues of governance rather than personal development stories, provides a good source of Naidu's views and motivations and can serve as a proxy for an interview with the leader.

Naidu lays out clearly what his motivations are in promoting the policies he advocates. At the heart of his political motivation and ideology are the citizens of his state (and country). Of course, there is a minority of many well-to-do Indians, but it is the juxtaposition of this affluent class alongside the largest concentration of poverty in the world outside China that cries out for desperate attention; to Naidu, such inequalities are of crisis proportions. For instance, in spite of the high level of illiteracy in India, India's "institutes of technology are becoming recruiting grounds for the world's leading corporations" (5).

Another crisis that emerges from the reading of his autobiography is that of governmental competition. This is seen in two ways. First, funding from the central government has dried up; second, with gradual decentralization since the 1991 reforms, states now have to compete with each other for funding. This interstate competition is not only for funding from the central government, but for investment from abroad as well. For instance, in

<sup>13</sup> In reality, the implication of one on the other suggests the interactive nature of the phenomenon of political will.

recounting his ability to convince Microsoft's Chairman Bill Gates to open his new India headquarters for software development in Hyderabad, the capitol of AP, over other potential Indian cities, he notes:

...an Indian chief minister in today's global economy has to be a salesman. If he rests on his pride nothing will be achieved... Once you get someone interested in your state you have to demonstrate the government moves, takes decisions and implements them quickly. Otherwise the opportunity will be lost. Not just in the rest of the world, in the rest of India too there is competition, waiting to capture investment that is getting harder and harder to come by. (Naidu 2000:9)

In particular, the word "crisis" is applied in describing the adversity states face today from the competition for investment and central government financing: now "so many states find themselves in an acute financial crisis and are competing for their limited resources of the Centre" (Naidu 2000:39, emphasis added).

A sense of crisis on many fronts—underdevelopment and intense poverty accompanied by pockets of affluence and a competition for resources that can create jobs and help eliminate poverty—has led to a *renewed ideology* in Andhra Pradesh. This is so much the case that Naidu has titled the chapter in his book dealing with these issues "Reinventing Politics" and in it he states "My party's agenda for the next five years in Andhra Pradesh, therefore, is to *redefine* politics..." in opposition to the traditional overly-centralized policies of the Congress Party (Naidu 2000:18, emphasis added).

Of course, Naidu recognizes that reforming a system rife with corruption and inefficiencies, with the backdrop of endemic poverty, is easier said than done. Nonetheless, he has been able to pass many of his reforms and this speaks to the *political will* he has been able to muster. For instance, after commissioning a government review of all government payrolls, with an eye toward trimming government jobs—government wages accounted for more than 94% of all government expenditures—Naidu found that more than 40% of all government jobs were redundant in Andhra Pradesh. But he acknowledged "Identifying surplus jobs is easier than doing away with them in a democracy. You can abolish posts, but people have to be redeployed, they can not be sacked," especially when there are no social safety nets in place to absorb the would-be unemployed (Naidu 2000:50). This speaks to Naidu's political acumen, recognizing that too much reform can lead to a backlash. He notes, more optimistically, that there has been a hiring freeze for lower-skilled government employees, while the hiring of higher-skilled professionals continues as needed.

Naidu is further able to capitalize on this political will by reminding his audience—the citizens of AP, his loyal party cadres, and the opposition—that the goal of his reforms is always improved services for the citizens of his

state. Naidu has been able to convey this most successfully. In arguing for more accountability in his administration, he states bluntly that his “officers may not like it, but my first obligation is to the people of my state” (Naidu 2000:79). He notes further, that “parties like the Telugu Desam [his party] . . . reflect the grassroots aspirations of people in their states” and that these regional (state) parties were in many ways formed over “resentment local citizens had to the over-centralization of the [national] Congress Party and the fact they were out of touch with reality in the actual villages” (Naidu 2000:31). This is one of the reasons Naidu is motivated to involve his citizens in every aspect of governance that he can. Naidu also reminds us of “the unfortunate truth before the information society: technology by itself is *never* the answer. It needs to be propelled by political and administrative will” (Nadu 2000:101, emphasis added).

In sum, Naidu has sensed a crisis on many fronts, has renewed the ideology of his regional/state party vis-à-vis the centralizing tendency of the once dominant Congress Party, and has mustered the political will to carry out reforms to combat the crises through such measures as established in *PIa* and *Ib*. Since India is also a minimally democratic state, Hypothesis 1 is confirmed. Beyond that, the importance of the direction of causality clearly emerges: a sense of crisis led to a renewed ideology which in turn was utilized to build political will to initiate ICT-led reform. Table 1 summarizes the model applied to the case study thus far.

In the next section, I will apply the theoretical argument to Bangladesh and its attempts to launch e-governance solutions. Bangladesh is chosen for comparison for a few reasons. First, considering a government outside of India is likely to result in some variation on the regime type variable. Also, since many of AP’s crises occur in the context of decentralization, comparing AP to other states in India would provide no variation on this variable since all Indian states are essentially combating the same crises.<sup>14</sup> Also, since the Government of Bangladesh (GoB) is a central government, it should have at its disposal more resources than a cash-strapped state once dependent on a central government for most of its resources. Since Bangladesh and India are large recipients of bilateral and multilateral international donor aid, the GoB should also have more of this aid at its disposal than any state government of India. These factors suggest that, *a priori*, perhaps the GoB should exceed AP in such administrative capacities as e-governance. In other words, the model is biased toward Bangladesh succeeding over AP in accomplishing *PIa* and *Ib* as presented. Both were

<sup>14</sup> It might be pointed out that a useful comparison could be made between different states within India on this variable since the crisis variable is a subjective “sense” of crisis, and hence, interesting results on issues of governance could be yielded.

**Table 1**  
The Model Applied to Andhra Pradesh

Entity	Regime Type	Sense of Crisis	Renewed Ideology	Political Will	Outcome
<b>Andhra Pradesh</b>	– Minimal Democracy – 50-year history of universal suffrage – Few vote-rigging accusations by opposition	<b>Central</b> – Balance of payment crisis leads to economic and political reforms. <b>State</b> – Financial crisis at state level still – Lack of development – Misgovernance	– TDP formed in opposition to strong center/weak state relationship: envisions strong/strong relationship – Vision 2020: holistic approach to governance, development, and reform, involving civic participation	– Yes. Electorate rejected pleas of other party offering free handouts. Electorate will make sacrifices in short-run for long-run.	– Good governance initiative, in earnest. – E-governance is a result of this (P1a and 1b) – Market reforms – Civic participation – Development goals being attained

subnational units in British-administered India up until 1947, when India gained independence as a country. From 1947-1971, Bangladesh, then known as East Pakistan, was a subnational unit of Pakistan until it gained independence in 1971. Lastly, both are situated in South Asia and are thus not too distinctive regarding cultural factors.

## VI. Why Bangladesh Has Not Been as Successful with E-Governance and May Not Get Better, *Cetirus Paribus*

*Services (Not) Offered and Political Will, or Lack thereof*

The current and previous governments of Bangladesh have deployed and are attempting to deploy information and communication technologies to offer services to their citizens through such interfaces as the World Wide Web. The semi-autonomous government agency responsible for serving as a “headquarters”—gathering and disseminating information—on national ICT policy is the Bangladesh Computer Council (BCC). At its website is a web page that serves as a one-stop source for all government forms. Yet even on this site, though it lists 35 ministries from which forms should be available and downloadable, at the time of writing, only one of these links



was active—this, after nearly three years of observation and a transfer of power, implying neither government has been capable of implementing the simplest reforms. Forms from the Ministry of Science and Technology (MOST), the parent organization of the BCC, are available at this site. Forms from this ministry, however, offer little to everyday citizens and are geared toward businesses. Hence, Proposition *1a* is not satisfied in Bangladesh.

To get a glimpse of why this may be, keeping the model in mind, I compare the Prime Minister of GoB to AP's Chief Minister by referring to the Prime Minister's comments in the local press. Here we consider both the public statements of the previous and current Prime Minister. (Since research began on this project there has been an election and a subsequent change in government.) However, by considering two different governments, I expand the cases and strengthen the possibility of falsifying or failing to falsify the main hypothesis of this article.

The former Prime Minister, Sheikh Hasina, had stated publicly that she would like to promote IT in Bangladesh (*The Independent* 2001). She recognized both the need for promoting a local software market and the potential for exporting software to bring in foreign reserves. Her view on e-governance, though not stated formally as such, was that certain government websites should have forms available for easy downloading. More generally, the Prime Minister did not go so far as to suggest a more elaborate e-governance solution as outlined in *PIa*. Similarly, while she stressed the need for the expansion of a local software market, she did not recognize that a significant way of achieving this would be by promoting more IT-lead public sector modernization. To her credit, however, her government was responsible for waiving tariffs on computers, thus bringing computers "within the purchasing power of the people" (*The Independent* 2001), suggesting knowledge of the conception-reality gap as outlined in Proposition *1b*. However, reducing tariffs is not the same as providing government-run computer centers when the annual per capita incomes of the people are still less than the cost of a computer in the developed world, thus suggesting that Proposition *1b* is far from satisfied.

Conducting an interview with a high-ranking, Ministry of Science and Technology (MOST) official with substantial knowledge of BCC activity and funding and significant oversight of the agency revealed a government that is not so committed to promoting IT.<sup>15</sup> The official said that the Hasina government provided lip service, but not a *true* commitment to promoting the local market or modernizing government services with IT. He expressed disappointment with the government, but pointed out that

<sup>15</sup> Interview with MOST official on February 23, 2001.

things were getting done. The official himself was knowledgeable about various aspects of IT as a means of modernizing bureaucratic information systems, and when asked about Indian state-specific accomplishments, was quite cognizant.

For instance, he stated that e-governance *is* good governance and that the people, especially the poor, could be empowered through access to information. He also noted that government officials are being trained in IT skills, which should promote usage of IT in the government sector. To assist in this process, he pointed out that there has been a significant amount of public sector modernization via IT. Yet these modernization programs as a whole have fallen short of enabling a true or even significant e-governance solution (i.e., Proposition 1a). He also commented on the widespread diffusion of mobile telephony in more rural areas and its feminist bent: more women than men were using these phones for everyday necessities, such as looking up the price of onions to avoid being undercompensated when selling to a middleman: “You can not cheat them!” he proclaimed. Very significantly, he recognized the need for the BCC to decentralize to all subnational government levels and that the body would be doing so in the near future. Deploying more IT solutions and making it more pervasive throughout the country would have to require significant private sector involvement as well, he noted. He felt that Bangladesh was just getting started, and will see progress on many fronts over the next few years.

It is my view, however, such envisioning may be wishful thinking in light of the fact that this same government official acknowledged the lack of any commitment from the government to achieve these goals. The lack of commitment was significant because it manifested itself in a lack of funding and accountability for appropriate projects. Alternatively, it could lead to partial funding, precluding information technology and information systems from making a real impact on governance and corruption.

Did a new government with a strong political mandate see more positive results? The current Prime Minister, Khaleda Zia, has issued many statements regarding ICT policy. Some have been substantial, and others quite impressive in their breadth. For instance, soon after coming to power the Prime Minister said that all divisional administrations should receive standardized computer training (*The New Nation* 2001a). Meeting with the outgoing ambassador of the European Union to Bangladesh, Prime Minister Zia said she welcomed “economic and technical” IT investment from the EU (*The New Nation* 2001b). Prime Minister Zia has also backed an “ICT Incubator” to house software development start-up companies in a specialized facility in Dhaka, to harness economies of scale (News from Bangladesh, henceforth NFB, 2002). Most notably, the

government has launched what the press has called an “ambitious plan to give [the] IT sector a boost” (NFB 2003). At a recent press release, the government announced numerous plans to support the domestic ICT market, some of which included but are not limited to reporting on the progress of a new office in Silicon Valley (California) to promote Bangladeshi software exports; plans for another office in Virginia and one in Munich, Germany; announcing scholarships for financially needy students seeking to study ICTs; and, not least significantly, announcing plans to computerize automobile registration, utility bills, birth and death registration, and voter registration. It is the latter that bodes well for e-governance (NFB 2003). Nonetheless, at the time of writing, the one-stop shop had not improved over the course of nearly three years. This included a six-month observation period for the Hasina government and two-and-a-half year observation period for the Zia government.

*Ideology and Political Will: The Crisis of Bangladeshi Democracy?*

Governance during the past few years in Bangladesh has been anything but tranquil and functional. Strikes or “hartals” that stop all roadside traffic and require businesses and shops to close down are a frequent tool used by both government and opposition. Those who try to “break” the hartals are the cause of many lethal violent altercations. Other victims of political violence include political leaders and Members of Parliament, not to mention innocent bystanders killed by bombs at political rallies.

The “criminalization of politics” in Bangladesh also has many observers worried. First, cadres of young men who are well armed and are unofficially organized under the auspices of one of the two major parties are prevalent among most districts throughout the country. These political gangs are known to intimidate citizens, defend criminals, and assist the members of parliament (MP) of their districts in many ways. One observer describes the activities of these gangs as “organiz[ing] street agitation in return for receiving patronization for carrying out various rent-seeking and gang-type activities,” even though the gangs in some instances may be only “remotely” associated with the political parties (Mahmud 2001). Second, many members of parliament are now themselves former convicted felons. Some of these MPs are known to have been involved in criminal incidents—violent ones especially—even after they were elected into office.<sup>16</sup> One observer of political violence in the country commented that it was becoming increasingly difficult to differentiate violence as a

<sup>16</sup> While Luce (2002) points to similar evidence in India, it is unlikely the level of the problem is the same in India and Bangladesh. Rather, I suspect the incidence is more sporadic in India relative to Bangladesh, though specific quantitative measures are lacking.

whole in the country from political violence (*The Daily Star*, henceforth TDS, 2001c).

Such is the fractious nature of political culture in Bangladesh. Sadly, there does not seem to be more tact at the highest levels of political authority. Inevitably, either leader of the two major parties will attempt to discredit the other with accusations of vote rigging if one is not satisfied with the outcome of an electoral mandate (Schaffer 2002; Mahmud 2001). However, since the fact that both parties also maintain armed cadres at the district level, it is not unlikely that they are both correct at the same time. Unless there is a clear mandate giving either party a substantial majority, accusations of electoral fraud will continue to be hurled. Even if there were a clear majority, it is most likely that the party leader who did not receive as many votes will refuse to participate in the parliamentary process. Thus Sheikh Hasina may have begun preempting a perceived impending electoral loss in the last parliamentary elections by claiming that only a “subtle conspiracy” would prevent her from winning a clear mandate (NFB 2001a). Indeed, following the October election of 2001, giving the BNP a clear majority, Hasina claimed electoral fraud. On the flip side, prior to the elections, Begum Zia accused the Awami League of “hatching a conspiracy” to derail free and fair elections and that government bureaucracies were assisting in dismantling the sincere efforts of the BNP to run a legitimate campaign (NFB 2001c).

Indeed, as the preemptive and post-election conspiracy and legitimacy claims of the two major party leaders make clear, their intentions already contradict their pledges. Further, it should be noted that Hasina and Zia have not spoken with each other in years. Attempts to set up a joint appearance, even behind closed doors, to hammer out their differences failed recently as a member of the caretaker government attempted to arrange such a meeting. This was only a few days after Nobel Laureate Jimmy Carter left the country, having failed in his mission to get the political leaders to agree to work with each other. Both leaders flatly rejected the opportunity. In one reporter’s words, “the Awami League was not at all enthusiastic about a meeting with the BNP Chairperson” (NFB 2001b). It should also be noted that during a luncheon with former President Carter, both leaders talked with him, but would not talk to each other (Reuters 2001). In the nomenclature of game theoretic analysis, both are “defecting” in each stage of a repeated Prisoner’s Dilemma.

It would seem then that the sense of crisis is high for *both* political parties in Bangladesh. Hasina and Zia’s refusal to acknowledge each other or each other’s legitimacy and accusations of conspiracy attests to this. The BNP has also accused the Awami League of “terrorism” through its use of armed cadres. But as we saw above, the BNP is culpable of this as well. On the

other hand, the Awami League, fulfilling its role as a left-of-center party, has identified the country's poverty as a serious crisis, but neither party has redefined any of its core ideologies to attract voters. And both parties have exhibited political will at different times. The Awami League won a clear majority in 1996 and the BNP in 2001. Yet neither has governance improved under either party in the majority, nor, more specifically, have Propositions *1a* or *1b*, come close to being fulfilled.

The application of the model to Bangladesh leads to interesting results. First, the quality of democracy in Bangladesh might seem to be under question. The concern is whether or not there are free and fair elections, the *sine qua non* of minimal democracy (see Section IV). Upon face value, it might not seem that Bangladesh fits into this category, given the criminalization of politics. Yet upon closer inspection, it does not seem that free and fair elections are violated, as many international observers have attested to. Politically connected gangs, despite their criminal activities listed above, do not intimidate voters at the polls. Bangladesh *is* minimally democratic.

However, the explanatory variable in the model as applied to Bangladesh is the combined effect of regime type and crisis. The overall analysis predicts e-governance, a la *PIa* and *1b*, will likely only take effect when a political party in Bangladesh truly senses crisis in misgovernance, reestablishes its ideology with this crisis in mind, and garners the political support or political will to carry out reforms. Table 2 summarizes the model applied to Bangladesh.

## VII. Comparisons, Caveat, and Conclusions

What this paper has not attempted to do is explain how ICT markets can emerge and be fostered in developing countries. There are ample studies on this. See, for some examples, Hanna (1994); Wilson (1995); Vonortas and Safioleas (1997); Bajpai and Dokeniya (1999); Hossain (2000); James (1999); Mansell (1999); Chowdhury (1999) and (2000); and Yunus (2000). Rather, this paper has attempted to examine how and why information technology can be utilized to combat corruption in the developing world. Table 3 summarizes the findings, where "0" represents the nonpresence of a variable, a "1" represents its presence, and "2" represents a duplication of the variable's presence (say, among two parties).

In the process of attempting to reform his state and with an eye toward "leapfrogging" development, the Chief Minister (CM) of Andhra Pradesh (AP) decided to promote good governance, perhaps even with a desire to remain in office longer. Why should the people of his state have to put up with bribes and inefficiency in dealing with their government, especially when there are ways to isolate and then circumvent corruption? I examined

**Table 2**  
The Model Applied to Bangladesh

Entity	Regime Type	Sense of Crisis	Renewed Ideology	Political Will	Outcome
<b>Bangladesh</b>	<ul style="list-style-type: none"> <li>- Minimal Democracy</li> <li>- Constant <i>accusations</i> of electoral fraud</li> </ul>	<ul style="list-style-type: none"> <li>- Talk of “war” on both sides</li> <li><b>BNP</b> <ul style="list-style-type: none"> <li>- must free country from terrorists, conspiracy</li> </ul> </li> <li><b>Awami League</b> <ul style="list-style-type: none"> <li>- eliminate poverty</li> <li>- conspiracy</li> <li>- Perhaps excessive, suggesting a curvilinear relationship between crisis and reform initiation</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Politics as usual on both sides.</li> </ul>	<ul style="list-style-type: none"> <li>- Not clear.</li> <li>- It is not known which of the parties exerts more muscle power at the district level.</li> <li>- Stalemate</li> <li>- Fluctuation</li> </ul>	<ul style="list-style-type: none"> <li>- Partial e-governance solutions, <i>PIa</i> and <i>Ib</i> not satisfied</li> <li>- Political and bureaucratic corruption</li> <li>- Loss of legitimacy in development administration to NGOs, MFIs, and foreign embassies</li> </ul>

**Table 3**  
The Cumulative Evidence

Entity	Minimal Democracy	Sense of Crisis?	Renewed Ideology?	Political Will?	Outcome
Andhra Pradesh	1	1	1	1	<i>PIa</i>
Bangladesh	1	2	0	1, 1	<i>PIb</i> 0

the condition in which IT may be diffused in society and mobilized by the government to contain corruption and increase efficiency in government.

What enabled Naidu to reform his state? The answers lie mostly in the political backdrop. India passed monumental and unprecedented economic liberalization bills one after the other, starting in 1991, creating a sense of crisis for the state governments (see Jenkins 1999 on how this was achieved, sustained through successive governments, and why it has received little

attention). As one consequence, funding from the center diminished and competition intensified for limited resources ensued at the state level. This crisis provided Naidu with the opportunity to show political will in addressing the most severe inefficiencies of his state bureaucracy and turn his goals into political will. As a result of his political will, Naidu has proceeded to institutionalize effective e-governance solutions, such as represented in *PIa* and *Ib*, to achieve reform.

On the other hand, Bangladesh has not had as much success with implementing e-governance in its country. This is so even though, as a central government, the government of Bangladesh (GoB) has more resources at its disposal than does Andhra Pradesh. Of course, the government of Bangladesh has far more obligations than the government of Andhra Pradesh. Fortunately for Bangladesh, knowledgeable bureaucrats and some political appointees remain ready to proceed with implementing the appropriate reforms with information and communication technology to streamline the bureaucracy and hopefully, disintermediate front and back-end services. In addition, a talented and highly skilled labor pool is emerging in Bangladesh,<sup>17</sup> which could begin providing services to the government.

Are the benefits of the ICT revolution only to be reaped by citizens of the industrialized West? The Chief Minister of Andhra Pradesh in India would seem to disagree: “The IT revolution is not elitist, it is first and foremost of use to the common man, but to drive this point home, we have to make its access easy” (Naidu 2000:92). Further, a prominent champion of the poor in Bangladesh agrees that many poor countries will lose out in the global economy because of information technology, but that the opposite can happen if there is “wise leadership at the national level and eager and energetic citizens” (Yunus 2000: 1). If politics is indeed the art of the possible, then a few nation-states may be able to leverage some power in a world with already much inequality of wealth, but one that is also becoming an information society. And in doing so, these governments may be able to decrease corruption, improve economic growth, and thus the quality of life of their citizens. But technology by itself will never achieve any of these goals without effective political leadership guiding it. In turn, “effective leadership” will only arise when a leader senses crisis, redefines his or her ideology in response to that crisis, and then musters the will to use technology to combat the crisis.

<sup>17</sup> See TDS 2000a; Hermida 2002a, 2002b, and 2002c on Bangladesh software market and ICT diffusion; The Bangladesh Observer 2001; Luce and Merchant 2002; and Luce 2003 on India’s software market and ICT diffusion; and the references cited in the first paragraph of Section VII.



All research projects have limitations, this one is certainly no exception. Among the limitations are the exploratory and conceptual nature of the investigation. The project has attempted to offer the literature a new conceptualization for more intensive and extensive work, rather than hard conclusions. The model devised in this research project should be regarded as preliminary and in no way definitive. In large part, this project is presented to help instigate thinking about the propositions, the model in general, and the notion of corruption containment in particular, which is potentially one of the greatest—hitherto largely overlooked—outcomes of ICT diffusion in a developing country.

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