

## Chapter 13

### **EXPLORING e-GOVERNANCE**

#### *Salience, Trends, and Challenges*

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### **Introduction**

Around the world, individuals and institutions are introducing new technologies, increasingly relying upon automated systems and other advances to produce better government. In this chapter, we review recent trends in electronic governance at the time of this writing, and we identify several ramifications for sustainability by examining ‘good’ governance in general.<sup>1</sup>

First, we define electronic governance, and distinguish electronic governance from electronic government, the latter itself a subset of the broader e-governance domain. Drawing on empirical data, we further proceed to examine the current state of e-governance across the countries of the world.<sup>2</sup> Not surprisingly, we find that rich countries have better e-government platforms in place, but surprisingly we do find that they are improving at roughly synonymous rates. We then engage in a discussion of the Digital Divide and e-governance. The Digital Divide refers to those who are left behind due to inequalities in technology distribution, and such inequity can have profound effects on the ability and efficacy of e-governance. Finally, we close with a few parting thoughts about what we expect in the future of e-governance.

Because e-governance is often portrayed as an immediate solution to the many forms of government inefficiency, it is not surprising that e-governance policies are frequently identified as “silver bullets.” At the same time, however, is the very real possibility that e-governance may actually be nothing more than a “lead bullet,” or a detrimental force to effective governance. Critics frequently highlight the potential negative uses of technology by government

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<sup>1</sup> This chapter is intended to capture the current state of electronic governance. Undoubtedly, things will change.

<sup>2</sup> Throughout, we are hampered by the fact that all existing data focuses on e-government rather than e-governance, a distinction that we shall make clear in the next section.

instruments, bringing needed skepticism to a domain that is filled with potential, but rife with dangers. Understanding the current conditions and dimensions of the state of e-governance will help us avoid these potential pitfalls and will allow us to fully exploit the advances of technology.

### 13.1 Defining e-Governance

The phenomenon known as electronic governance, or colloquially referenced as e-governance, has captivated bureaucrats (Bonham, Seifert, and Thorson, 2001), politicians (Pacific Council, 2002), voters and citizens (Backus, 2001), as well as academics. From developing to industrialized countries and from local to national governments, e-governance has been identified as a tool to fight corruption (Governments on the WWW, 2004),<sup>3</sup> to combat poverty (IACD, 2002), and to bring democracy and increased decision-making capabilities to the masses (Riley, 2003). As a result, thousands of local and national governments, as well as many international organizations across the world have made significant investments in bringing better governance to the people through the improved information and communication technologies available today (UNDESA, 2001). Even China, a country that ranked 93rd out of 133 countries in terms of its e-government capabilities in 2004 (UNPAN, 2004), had an e-governance-related market value estimated at 40 billion Yuan, or about 4.8 billion U.S. dollars (Bei, 2004: 6).<sup>4</sup> So what is e-governance exactly?

Technology and governance interact in two distinct ways. First, advances in technology and corresponding emergent domains (such as the Internet) may be regulated in various manners by different organizations and governments. Technology is governed. Oppositely, governance can also be affected by technology. *e-Governance* pertains to the latter condition, whereby governance is improved by advances in technology. Formally, e-governance is defined as “*the computerization and automation of common government processes with the goal of lowering costs, improving efficiency and generally*

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<sup>3</sup> “Governments on the WWW” estimates that as of 2001 there were well over 50,000 official government websites, a huge spike compared to the fewer than 50 official sites that the UN recognized in 1996 (UNPEPA, 2001). For more information, “Governments on the WWW” is available online at: <http://www.gksoft.com/govt/>, accessed August, 2004.

<sup>4</sup> Although in fairness, China has spent much of this 40 billion yuan on internal infrastructures while the UNCTAD measurement is tabulated by only measuring the capabilities of the government web portals. While a cynic may argue that presenting such statistics is twisting the numbers to make the phenomenon seem inflated, this discrepancy between measuring electronic governance is at the heart of a major problem. Electronic governance and electronic government have many different definitions, but these terms are oftentimes used interchangeably in the existing literature.

providing better services to citizens” (Ahmed, 2004).<sup>5</sup> This definition comes from the technocratic literature, yet it captures the essence of e-governance without introducing biases and prejudices as to technology’s effects. Furthermore, the three ways in which electronic governance changes government performance – through lowering costs, improving efficiency, and providing better services to citizens – are general principles of ‘good’ governance.

The concept of e-governance can be further differentiated into three elements, further clarifying the features of this definition. These are (1) *e-efficiency*, whereby technology is used to improve efficiency, most typically by staving corruption; (2) *e-government* or *e-democracy*, whereby technology is used to improve government-to-citizen and citizen-to-government linkages; and (3) *e-business*, whereby technology is used by governments to help improve the performance of the economy. These three elements of e-governance are included in Table 13.1, which has been adapted from Okut-Uma (2000).

**Table 13.1 The three elements of e-governance. Table has been adapted from Okut-Uma, 2000.**

| <b>Element</b>                    | <b>Brief Description</b>             | <b>Examples</b>  |
|-----------------------------------|--------------------------------------|--|
| e-Efficiency                      | Internal efficiency, anticorruption. | Vigilance reporting sites, cheaper transaction costs for purchasing public goods, open bidding for government contracts.   |
| e-Government<br>or<br>e-Democracy | Providing better services.           | Government web portals where one can get driver’s licenses and death certificates, and file taxes over the Internet. Voting initiatives and policy-critiquing initiatives as well. |
| e-Business                        | Fostering the economy.               | Field-specific best practice databases, international standards publications, web-based tax forms and anti-corruption tools.   |

Each aspect of e-governance is depicted from the ‘provider’ perspective (government) – from a top-to-bottom viewpoint, so to speak – rather than from an interactive discourse with the recipients (citizens). In other words, the main actor for implementing changes is the government (as opposed to citizens). Of the three elements within e-governance, most analysis to date has focused on the element of e-government. Among the common claims is that e-government offers a path towards new and unprecedented levels of

<sup>5</sup> Ahmed’s paper (2004) is available on the Internet in html form, and there are no page numbers provided.

democracy. In the last ten years, several governments across the world have tried to reach out to their citizens by making large investments in web portals, in better voting technologies, and in improvements to other citizen feedback services – all intended to promote better citizen participation in government. United Nation's *Benchmarking e-Government: A Global Perspective*, defines e-government as, "*utilizing the Internet and the world-wide-web for delivering government information and services to citizens*" (emphasis in italics added by the original authors; UNDESA, 2001). To clearly differentiate e-governance from e-government, e-governance refers to the overall advancement of technology in governance activities, while e-government describes utilizing technology, and particularly the Internet, to better connect with citizens.<sup>6</sup> These are the best definitions at this point in time.

## 13.2 The State of e-Governance Worldwide

### 13.2.1 Modes of Measure

Currently, empirically measuring e-governance has been constrained to measuring e-government, and more specifically, to measuring the web portal capabilities of government. And instead of measuring citizen-feedback to various e-government initiatives, most surveys instead utilize a rubric for analyzing a country's web portal. Notable surveys of e-government capabilities include Holzer and Kim's 2003 study of 80 municipalities' web services (2003) and the American Customer Satisfaction Index's analysis of e-government portals within the United States (IACD, 2002), but the clear standard bearer of measuring e-government comes from UNDESA's *Global e-Governance Readiness Report*, conducted every year from 2003 to 2005. While the UNDESA project also does not survey citizens, the UNDESA's e-Government Readiness Index includes not just a web measurement for a country portal, but also factors the country's telecommunications infrastructure and the country's human capital, as defined in terms of literacy and education (UNDESA, various years). In the future, we fully expect to see the adoption of more sophisticated measures for measuring e-government and for measuring e-governance, but the UN's *Global e-Government Surveys* does provide a baseline for analysis.

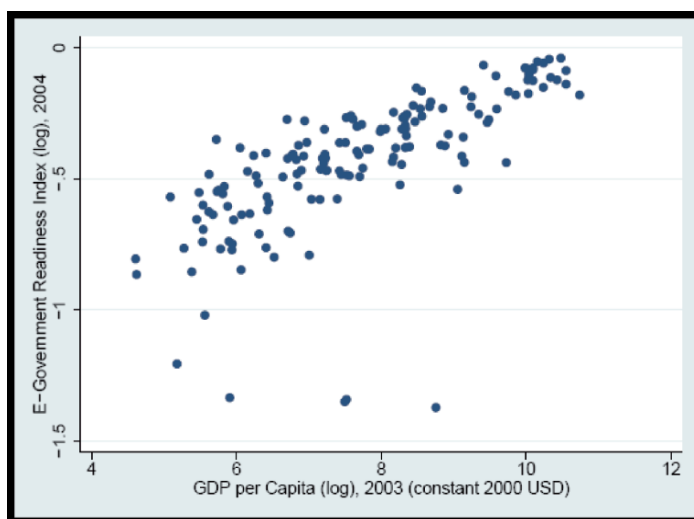
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<sup>6</sup> In the future, we expect the United Nation's definition of e-government to include non-Internet based technologies to better capture the several ways in which technology can aid in the government–citizen relationship. However, any domain centered upon improvements through technology is a domain in constant flux, and in such an emerging domain, there will be few agreed-upon assumptions and definitions. Eventually, we expect better definitions for *electronic governance* and for *electronic government* to emerge.

### 13.2.2 Wealth and e-Government

The UN produces two measures of e-government.<sup>7</sup> The first, the e-Government Readiness Index, is a score meant to capture a country's ability and willingness to incorporate information technologies for e-government-related purposes. The Index is calculated by measuring a country's web presence along an established (but annually adaptive) rubric, combined with a measure of the telecommunications infrastructure for the country and that country's Human Capital Index. The second measure is the e-Participation Index. e-Participation is a measure of the ability for democratic participatory processes to be aided through technology. The researchers measured the various governments' abilities to provide services in e-information, e-consultation and e-decision making.

There are few surprises when one examines the data. Countries with stronger economies tend to have higher e-Government Readiness Index scores. In Figure 13.1, we see the strong trend in 2003.<sup>8</sup> The cluster of countries in the



**Figure 13.1 Wealth vs e-Government Readiness Index. Based on data from UNDESA, 2003–2005, and UNPAN, 2003–2005.<sup>9</sup>**

<sup>7</sup> The data is available through the UN documents, however, for aggregated spreadsheets, please contact the author at [dmistree@alum.mit.edu](mailto:dmistree@alum.mit.edu).

<sup>8</sup> Interestingly, the countries defying this trend (at the bottom of the graph) tend to be small nations: Timor-Leste, Micronesia, the Marshall Islands, and Palau are the obvious trend breakers. Also, e-Government Readiness Scores refer to performance in the previous year, so these are both 2003 variables.

<sup>9</sup> Figures have been produced using Stata 9.

top right are predominantly European; predominantly African countries comprise the bottom-end of the distribution. This trend holds true for 2004 and 2005 as well, with rich countries outperforming other countries.

This finding that richer countries outperform poorer countries is reinforced by the pattern displayed in Figure 13.2. While the graph is inverted, the message is still the same. The horizontal axis once again shows a measure of a country's wealth, again in terms of GDP per capita. The vertical axis shows the e-Participation Rank, which shows the ability for democratic participatory processes in that country to be aided through technology, with a lower number corresponding to a better ranking. Not surprisingly, the three countries with the best e-Participation Ranks in 2004 were also among the leaders in terms of GDP per capita: they were the United Kingdom, the United States, and Canada, respectively. Countries with the best access to technologies tend to also be the richest.<sup>10</sup> But the rich countries also implement technology in government, matching their capabilities with performance.

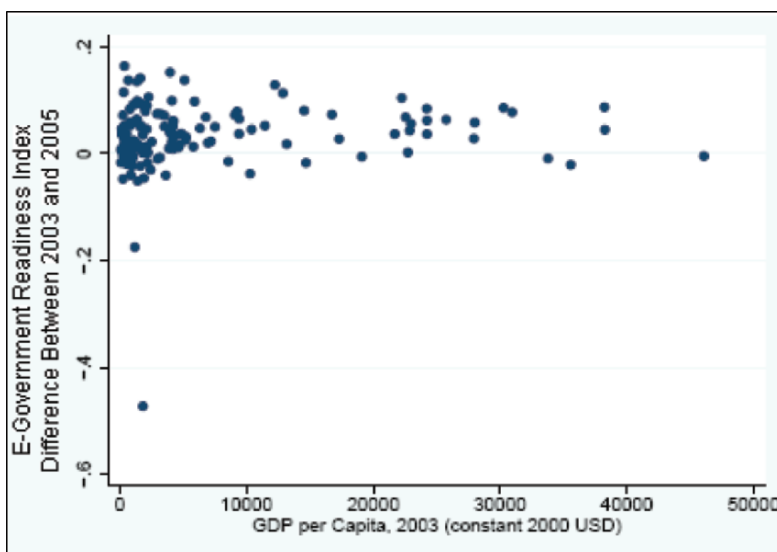


**Figure 13.2** Wealth versus e-Participation Rank. Based on data from UNDESA, 2003–2005, and UNPAN, 2003–2005.

<sup>10</sup> We have only shown a correlation between strong participation in technology-enabled governance and having a thriving economy; however, we speculate that the same conditions which lead to a thriving economy also bring about high e-participation.

### 13.2.3 Current Performance versus Future Trajectories

Based upon the observation that rich countries are performing best in the e-government domain, one would expect that rich countries are also improving faster than the poorer countries. In other words, we would expect the richest countries to both be leading in performance while also showing the most historical improvement. Looking at changes from 2003 to 2005 in e-government readiness and in e-participation, higher GDP per capita values are not strictly associated with improved country performance, as can be observed in Figures 13.3 and 13.4.

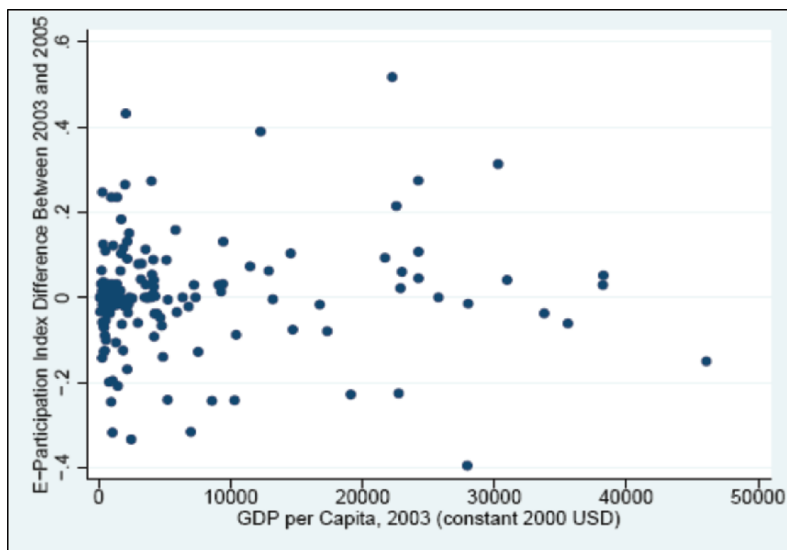


**Figure 13.3** Wealth versus difference in e-Government Readiness Index. Based on data from UNDESA, 2003–2005, and UNPAN, 2003–2005.<sup>11</sup>

It is puzzling that we do not observe a difference between rich countries and less developed countries in their levels of improvement over the past three years. To be clear, in other aspects where technology is a factor, richer countries and less developed countries cannot even be compared with one another on the same scale, but in terms of improving e-government, we find astonishing parity.<sup>12</sup>

<sup>11</sup> The most significant trend breaker in this figure is Micronesia, having severely decreased in e-Government Readiness.

<sup>12</sup> Consider patents or carbon dioxide emissions, where the richer countries overwhelmingly outpace the developing nations.

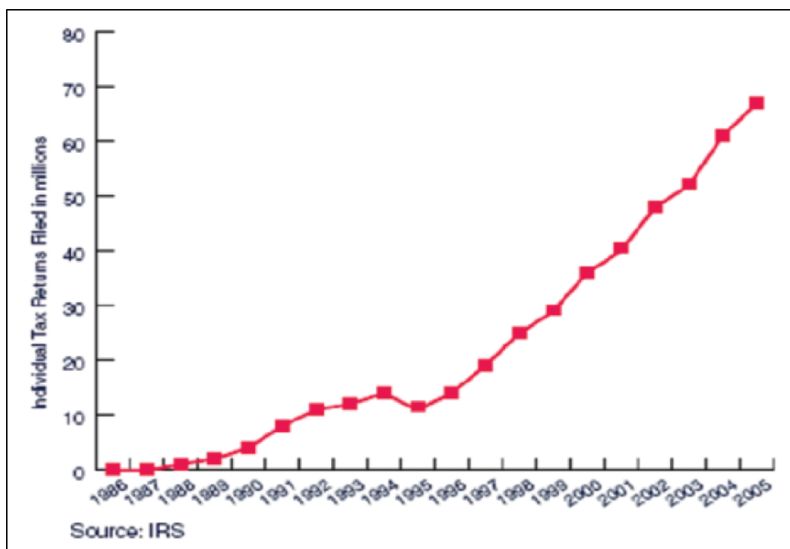


**Figure 13.4 Wealth versus difference in e-Participation Index.** Based on data from UNDESA, 2003–2005, and UNPAN, 2003–2005.

There are two possible explanations as to why we observe such uniformity in e-government improvement. Firstly, rich countries started in a better position and simply do not have as much to improve upon as their poorer counterparts. Once the rich countries achieve a certain level of e-government infrastructure, they only need to maintain a constant level as the rest of the international community catches up. Over this time period, however, e-government has aggressively expanded in the developed countries. In the United States, for instance, if one looks at federal tax filings from 2003 to 2005, there is a huge rise in e-filing. In Figure 13.5, we show the stellar rise in filing taxes online, as reported by the Internal Revenue Service. What is more, the percentage of individuals who electronically filed rose from 40.6% in 2003 to 51.7% in 2005. The United States and its developed counterparts are not remaining stagnant, waiting for the rest of the world to catch up. Instead, they are rapidly advancing in the e-government revolution: they are huge players that are committed to computerizing government. Their poorer counterparts share this same conviction. And while the United States is not waiting for other developing nations to catch up, developing nations are catching up nonetheless.

Similarly, developing countries are not playing the game of trickle-down technology. Consider the case of Malaysia, which in 2004 found the Microsoft Corporation making sweeping overtures to install various e-governance systems at significantly discounted rates. Later in 2004, Malaysia chose to develop its own open source e-governance platforms, largely rebuking Microsoft





**Figure 13.5** Electronically filed individual tax returns by year. Source: IRS Oversight Board, 2006.<sup>13</sup>

(Bajkowski, 2004). The Malaysian government recognized that a Microsoft-based platform would make it dependent upon a singular proprietor, which could unfairly increase prices for future upgrades. Further jeopardizing Malaysian national interests were the facts that Microsoft codes in English (as opposed to Malay), and that Microsoft is an American-based firm.<sup>14</sup>

This brings us to the other possible explanation as to why we observe parity in e-government improvement. Administrations in developing countries may see e-government as a potential tool for leap-frogging. Leap-frogging refers to the notion that previous development trajectories need not be followed due to advances in technology or due to other advances. In other words, a developing country need not try to copy the development pattern of the United States or Europe. Examples of leap-frogging initiatives outside of the realm of e-government include India's technology initiatives, whereby India has largely skipped the industrial revolution as it instead immediately entered into the computer revolution. Another way in which leap-frogging has occurred is in telecommunications. Today, several developing countries

<sup>13</sup> This graph is reproduced from a report published by the IRS Oversight Board, and is available online ([http://www.ustreas.gov/irsob/reports/2005\\_e-Filing\\_report.pdf](http://www.ustreas.gov/irsob/reports/2005_e-Filing_report.pdf)). Equally impressive in the United States' e-government revolution has been the initiative to electronically publish reports like these for individual consumption.

<sup>14</sup> While some may argue that multinational corporations are truly multinational and therefore independent of any singular country, if American and Malaysian interests diverged for instance, it is hard to imagine that Microsoft would take the side of Malaysia given the corporation's holdings in the United States.

do not have the land lines and grounded telephone infrastructure of the developed countries, but their citizens instead rely upon cellular phones. In so developing their wireless telecommunications industries, the developing countries skipped on the traditional alternative.

With regards to e-governance and e-government, one must wonder what exactly developing countries are attempting to leap-frog. Corruption is one such problem that developing countries seek leap-frog solutions. While all governments and nations suffer from corruption, corruption is much more endemic in developing nations. Traditionally, the only successful remedies for corruption were institutions made strong over long amounts of time. In technology, developing nations have found ways to stem corruption without having to wait for their institutions to mature. Computerizing records allows for better monitoring, while direct citizen-government interactions (as opposed to citizen-bureaucrat-government interactions) reduce the number of greedy hands.

Developing countries also recognize e-governance as a modicum for economic growth. In a speech at the World Bank e-Government Workshop in 2005, Azerbaijan Minister Ali M. Abbasov explained how e-government was contributing, and will contribute to, further economic growth. In one of many points about how e-government stimulates economic growth, Abbasov declared that “e-government systems can reduce transaction costs for citizens and businesses, improve connectivity between rural communities, support better local governance, [and] improve dissemination of agricultural knowledge and best practice[s]” (Abbasov, 2005: 3). Sharing knowledge and best practices, particularly in primary industries such as agriculture, is one of the most direct ‘e-government for economic growth’ initiatives. What is more, such linkages are not only fostered in Azerbaijan: a simple web search found dozens of e-government initiatives for improving agriculture, common in both developed countries as well as developing countries.

### 13.3 Tackling the Digital Divide

The Digital Divide refers to *the gap between those who are being left behind in a quickly-changing technology world and those who are benefiting from this revolution* (Keniston, 2004). This divide usually manifests itself along pre-existing inequalities, magnifying the inequalities as those who can afford access get richer while those without access are left behind. Inequalities exist across several different units of analysis, dividing individuals as well as states and countries. Similarly, the Digital Divide may further separate rich and poor individuals, as well as rich and poor states.

In the previous section, we observed the effects of the Digital Divide taking place between nations that sought e-government: countries with larger economies tended to start with better conditions than countries without such resources, but even though they are still behind, poorer countries are keeping pace with their richer counterparts in improving their e-government infrastructures. Beyond differences between nations, the Digital Divide transcends the arena of e-governance into the domestic level, existing in all realms where individual inequalities may be exacerbated by uneven distributions of technology. In the United States, individuals are increasingly able to comment on new regulations online, with bureaucracies frequently requiring responses to any comments made. However, these responses may be filtered, as only those who can afford access to the Internet may make suggestions for new regulations.<sup>15</sup> Even worse, by moving forward, we may leave behind the illiterate, the poor and the disenfranchised, even though these groups typically depend upon government organizations the most (Margetts, 2002). This problem has already attracted a significant amount of attention in the United Kingdom, as older people – who are more reticent to use online services – are missing out on pension opportunities and other government services (BBC, 2006). The government has responded with a strategy to promote “silver surfers” through educational and other initiatives. Put simply, there are not only uneven distributions of information, knowledge, resources, and technology between countries, but also such inequalities within countries, and such inequalities may exacerbate pre-existing inequalities.

To combat the Digital Divide, several developing countries include increasing access as part of their overall e-governance plans. Venezuela, a country which has seen its e-Government Readiness and e-Participation Indices both increase from 2003 to 2005, has constructed hundreds of *Infocentros*, or free Internet centers, across the country, for any citizen to use.<sup>16</sup> Dozens of other developing countries have constructed similar centers.

While the United Kingdom and Venezuela strive to be inclusive, many other countries are less concerned with equality. We suspect that in such divided countries, e-governance will still take place, but with a different thrust. Rather than providing increased access or improved government monitoring, we would expect such countries to engage in e-governance for the purposes of aiding the pre-existing elites. In North Korea, for instance, we see the

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<sup>15</sup> In the United States, only an estimated 68% of the population has access to a personal computer (Pew, 2005). Those who do not have personal computers are at a disadvantage as they must pay a higher cost compared to their better-connected fellow citizens.

<sup>16</sup> For a list of *Infocentro* locations, visit <http://www.infocentro.gov.ve/> and go to “en todo el país” on the right side of the window. Accessed July, 2006.

government investing in electronic libraries for its students, rather than creating public Internet kiosks or providing free access to computers (AP, 2006).

Regretfully, we cannot move beyond allegory in this discussion, as even the best measures of e-governance and e-government fall far short. Despite the fact that one of the United Nation's measures purportedly gauges the participation of citizens in e-government, there is no real cross-country estimate for how much these implementations are actually being used by the people. To be clear, certain e-government initiatives such as electronic voting require complete participation, but other e-government initiatives, such as usage of agricultural web portals or frequency of online tax filings, are elective. With these elective initiatives, how many more people actually take advantage of these increased services? Is access to government actually spreading as services are put online? Beyond complete participation versus elective participation, of the e-governance initiatives designed to increase access, which actually work best? Scrutinizing such trends beyond a singular case-study or beyond one country would be especially beneficial for future assessments of e-governance.

### **13.4 Concluding with Some Future Predictions**

e-Governance and e-government are quickly spreading throughout the world. Such technology-driven, government-improving initiatives are currently best-implemented by rich countries, but rich and poor countries alike are making significant strides in introducing technology to government. In the future, we expect this trend to continue, with developing country governments not simply waiting for e-governance innovation to trickle down, but also engaging in new and varied technology-based policies.

e-Governance, like other technology-motivated policies, can be a unifier or a divider. Governments interested in democracy (or at least increased citizen participation) should be especially concerned with providing access and services to all citizens in addition to engaging in other e-governance initiatives. Furthermore, both rich and poor countries have such Digital Divides within their societies, and all countries must be conscious of furthering inequalities through unequal access to government.

In the future, better metrics also need to be adopted for e-governance. Despite knowing that many governments have spent millions (or even billions) of dollars on e-governance, we do not know the returns for most initiatives. Indeed, the only initiatives for which we do have estimates for these returns are typically contained to *Best Practices* in e-government, offering allegorical stories for what works, but obviously not reporting on failed

initiatives.<sup>17</sup> As a result of only recording successful policies, we are developing potentially skewed perspectives of e-government. Beyond e-government, we also need to scrutinize policies across e-governance, including technological improvements in governance that are not directly citizen-related. Unfortunately, there has been very little research conducted in e-governance beyond e-government and e-business, despite the many ways in which e-efficiency may be improved. In the future, analysis of e-governance must extend beyond e-government and e-business to also include e-efficiency.

On a parting note, the e-governance revolution shows no signs of slowing down. Countries are increasingly placing more resources, corporations are increasing their e-governance services, and international institutions and organizations are increasingly preaching the possibilities of technology. In this chapter, we have discussed how technology has had – and will have – profound effects on the face of governments around the world as individuals and businesses are increasingly able to interact with governments. But technology is also changing the nodes of government, or the inner workings of these institutions, as bureaucratic structures are transforming due to improved technologies (especially Information and Communication Technologies), as government bidding contracts are increasingly offered in larger markets, and even as inter-governmental relationships are increasingly shaped by the digital world. Also, between technology and government, there is feedback as government also affects the development and diffusion of technologies. Understanding the complex relationship between technology and government is a worthwhile pursuit for the 21st century.

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<sup>17</sup> There are many such *Best Practice* sites: The European Union has a “Good Practices in e-Government” website: <http://www.egov-goodpractice.org/>; the United Nations provides a similar list of Best Practices (available through <http://www1.worldbank.org/publicsector/egov/>), as well as a Compendium of Innovative Practices: <http://unpan1.un.org/intrdoc/groups/public/documents/UN/UNPAN022196.pdf> (this document links to Volume 1). These sites are not limited to international organizations, as corporations such as Microsoft (<http://www.microsoft.com/emea/government/newsletters/ssn.msp>), educational institutions such as Rutgers (<http://www.rci.rutgers.edu/~eagleton/e-gov/e-ideas.htm>), and even individual governments such as the United States ([http://www.firstgov.gov/webcontent/improving/marketing/awards/best\\_practice\\_awards.shtml](http://www.firstgov.gov/webcontent/improving/marketing/awards/best_practice_awards.shtml)) are all measuring *Best Practices* in e-Government. All sites accessed July, 2006.

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