Same Bed, Different Dreams?: A Comparative Analysis of Citizen and Bureaucrat Perspectives on E-Government

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Abstract

Recent studies indicate that bureaucrats and citizens are beginning to appreciate the opportunities and constraints for applications of information and communication technologies (ICTs) for governance. Using the data collected from independently administered random surveys of citizens and bureaucrats in late 2001 by Hart-Teeter, this essay is designed to explore whether and how citizen and bureaucrat perspectives on e-government coincide and/or diverge in terms of the effectiveness of e-government and pace of e-government implementation, equity (e.g. access), and safety (e.g. privacy and security).

1. Introduction

Following the surge of e-business and as application of information technology (IT) expands in a society, e-government has become one of the primary themes in public management. Governments are continuously implementing an increasing variety of information and communication technologies (microcomputer, mainframes, GIS, Internet, etc.) to enhance their performance. Recognizing the potential for Internet technology to facilitate conduct of the public's business, agencies have advanced e-government for the last decade to replace or complement traditional public service delivery systems. For example, governments have developed web portals from which they provide various e-government programs including public information dissemination, online public services, financial transactions and online public participation.

While many proponents of e-government believe that IT is a powerful tool for advancing managerial efficiency and effectiveness in the public sector, others share a cautious and less enthusiastic perspective about the potential of e-government by highlighting potential barriers and privacy and security concerns [1]. In particular, it is unclear whether and how citizen and bureaucrat perspectives on e-government coincide and/or diverge in terms of scope and primary objectives of online services as well as in terms of legal issues such as privacy and security, though recent studies indicate that bureaucrats and citizens have begun to appreciate the opportunities and constraints for applications of IT for better governance [2, 3]. Understanding the differences and similarities between citizen and bureaucrat perspectives on e-government is an important area of research because it addresses fundamental questions about how e-government initiatives should be formulated and implemented in places like the United States where citizens and bureaucrats are critical participants in the policy process. The perspectives of citizens and bureaucrats on e-government should be a beginning point for our understanding of e-government policy regarding the scope and speed of implementation of e-government programs. To date, this area of research has generally been ignored because e-government policy has been largely led by hype, rhetoric and normative argument [4]. Moreover, politicians often see e-government initiatives to be a politically useful, innovative approach to better governance [5].

Using data collected from two independently administered random surveys of citizens and bureaucrats in late 2001 by Hart-Teeter, this paper first compares perspectives of these two groups on such issues as effectiveness of e-government for service provision, equity and access, privacy and security, barriers to development, and risk adversity to accelerated implementation of e-government. The paper then models how these perspectives influence overall expectations and perceptions of citizens and bureaucrats about the promise and imperative of e-government. Regression results will indicate areas of convergence / divergence and will link these findings with the broader public administration literature on citizens and government.

2. Literature and Propositions

As Kettl noted, American public administration is a complex system with different philosophical, social, and political roots as traditions, including the Hamiltonian, Jeffersonian, Wilsonian, and Madisonian traditions. Each tradition represents a unique perspective on the role of and the trust in government, citizens' political involvement, hierarchy, and ideal institutional arrangements [6]. The Hamiltonian tradition supports a strong-executive and a top-down approach, while the Jeffersonian tradition favors a weak-executive and a

bottom-up approach. The Madisonian tradition represents the balance-of-power-centered perspective whereas the Wilsonian tradition is bureaucracy-centered. The four traditions of American public administration appear to focus on two major elements: the state (legislative, judiciary, and executive branches) and society (citizens/ civil society) relationship; and the politics-administration (bureaucracy) relationship. The four traditions and their intersections posit preferred institutional arrangements for government (top-down/government-led versus bottom-up/citizen-led) and institutional foci (bureaucracy versus balance of power) and, by extension, offer insights about the structure of e-government (how citizens, executive body, and other branches of government should involve in critical decisions on e-government and cope with any side-effects), as summarized in Table 1.

Table 1. Four Traditions of American Public Administration and E-government [6]

	Wilsonian: Bureaucracy-centered	**Madisonian**: Balance-of-Power-centered
Hamiltonian Strong-executive/ top-down	Centered on executive Principle: strong executive function Top-down authority Government-led e-government initiative (centralized) Extensive scope of e-government	Centered on non-bureaucratic institutions Principle: separation of powers Focus on political power Top-down accountability Congressional scrutiny of potential problems of e-government
Jeffersonian Weak-executive/ bottom-up	Centered on local control Principle: weak executive with devolved power Bottom-up; accountability Responsiveness to citizens On-line public policy delivery On-line participation Digital divide e-democracy, e-politics	Centered on non-bureaucratic institutions Principle: federalism Focus on local control Bottom-up responsiveness Local-level E-Government Concerns about privacy violation & security Citizen input & feedback Online public services

Though the four traditions address broadly the foci and particular institutional arrangements for government (and by association, e-government), Kettl notes that between the four traditions there are six "fuzzy boundaries" that deserve clearer articulation. They include policymaking versus policy execution, public versus private versus nonprofit sectors, layers within the bureaucracy, layers between management and labor, connections between bureaucracies, and connections with citizens [6]. For the purpose of this essay, in particular, we would like to address the last fuzzy boundary concerning citizens and their policy inputs. What should be citizens' role in a society? How should citizens' policy inputs be treated and reconciled with those of bureaucrats if they are in tension? These are important and fundamental questions to the students of public administration because these questions are fundamentally associated with the view on how the bureaucratic virtue of efficiency should/can be reconciled with democratic values?

In a democratic society, citizens hold multiple positions: tax payers, service recipients, service providers (partners), and owners of government [6]. Largely, citizens occupy two extreme positions in the public administration literature: the ultimate governed and the ultimate governor. As occupants of these different positions, citizens often offer views on policy issues, which are in conflict with those of bureaucrats. The political authority in a democratic society starts from citizen, is delegated to elected officials and bureaucracy, who then govern the public through legislature and public policy. In the process of public policy making, citizens share their policy interests and preferences at the input stage, and as the governed, they also provide policy feedback to the government. While citizens play two extreme roles as the ultimate governor and governed, the bureaucracy functions mainly as the policy framer or implementer. In addition to the difference in roles and positions of citizens and bureaucracy in public administration, they are different in nature and quality: citizens include most members of the general public but the bureaucracy comprises a select group with policy and administration expertise.

It is idyllic to believe that citizens' policy interests and preferences are transparently transferred to elected officials and to bureaucrats in such a way that there is great policy congruence between citizens and bureaucrats. In reality, the different positions and roles of citizens and bureaucracy in a society often lead to different perspectives on many policy issues. The perspective on e-government is no exception. In theory, democratic governments should make policy decisions in a way they reflect transparently citizens' policy preferences. In practice, however, public perspectives are not unitary, are often conflicting, confusing, and counter to long-term public interests.

Largely, there are two contrasting perspectives on who should take a leading role in public policy-making process. First, the Jeffersonian tradition might suggest that citizens should offer a set of policy alternatives and dictate government's policy choice. In other words, the bureaucrat's decision premise is determined by the citizens' policy inputs which are channeled through

elected officials and political appointees. This perspective places some emphasis on the government's reactive attitude toward citizens' voices. Though this upholds democratic values to a large extent, it fails to support other values such as strong executive leadership for long-term public interests and creates the potential for public entities to become reactive or even over-reactive to citizens' policy inputs. As Kettl notes, "[Much] of government's problem is not so much insensitivity but hypersensitivity to citizens' demands [6]."

By contrast, the Hamiltonian tradition, which values policy expertise of bureaucrats, supports strong executive leadership of public services and suggests that the government should take a proactive approach to achieving long-term public interests rather than remain passive and reactive to more short-sighted and spontaneous citizens' inputs. This view results in an emphasis on a top-down approach to policy-making and focuses on the value of efficiency, but does not necessary guarantee "the good life" of a society unless the value of democracy is adequately pursued [7]. These two different perspectives – Hamiltonian and Jeffersonian – represent a classic tension between efficiency (public administration) and democracy (i.e., responsiveness to citizens). They also dictate a central public management question that this essay attempts to address: how we should identify, understand, interpret and reconcile different policy perspectives of citizens and bureaucrats.

The next section will review some literature that offers several exploratory propositions regarding the citizen-bureaucrat relationship and the different mental frameworks, timeframes, information and knowledge bases, and policy interests of the two groups.

First, citizens are typically not as well informed and knowledgeable about particular policy issues as bureaucrats, who are better acquainted with a broader range of inputs and often have expertise in selected policy areas. Relatively speaking, citizens have limited access to and knowledge about internal government procedures and of policy agenda details. Citizens' interests are also relatively narrow and generally concern a limited range of topics or policy effects. Due to this limitation in policy information and access, citizen exposure often represents the "multi-media" view of the world which may optimistically exaggerate potentially positive outcomes but over-exaggerate actual negative outcomes. Many citizens tend to turn their back on politics and build negative perceptions on politics and governmental performance partially because the media is likely to chase newsworthy events and focus on negative and sensational news rather than encouraging and positive news, which is often called "mean world effect." Cultivation theorists argue that the mass media eventually brings "the mean world effect" to the public through a subtle but consistent social construction [8]. The purview and responsibility of the public official, who is located at the confluence of multiple different individual citizen interests, is quite broad. Consequently, her exposure to information is richer than that of citizens. Moreover, by its very nature, the public organization's capacity to search for and process information is many times greater than the citizen's. As a result, the biases that bureaucrats and citizens have about a variety of issues will, in part, reflect these differences in the scope and quality of information.

Proposition 1: Public servants are likely to be better informed about and more familiar with the nature of e-government than ordinary citizens.

Second, there is often a wide gap between the public's view of government and bureaucrats' self-image and confidence in their own performance. As Herring and others have noted, the public is generally suspicious about the government and their confidence in government is relatively low in the U.S. [8, 9, 10]. But the public motivation literature suggests that public servants feel that they are strongly committed to public interests and often have strong loyalty to government [11, 12, 13]. The public also often holds almost contradictory views regarding what government should do and how government should function: high expectation toward government's roles and services but strong preference toward low tax rate and low intrusion of government in their lives. This paradoxical citizens' perspective on government often puts government in a dilemmatic situation. Kettl recently summarizes this paradoxical perspective in the following way.

> Americans, … have always called on government at the first sign of trouble. When nineteenth-century riverboat steamers exploded, citizens demanded government toughen safety standards. More recently they complain about government spending, but they plead with elected officials not to cut Medicare. They criticize IRS tax collectors, but they insist on good weather forecasts, safe air-traffic control, and effective treatment of anthrax. … Public administration thus is paradoxical, caught between citizens' antipathy toward government and their insistence on government services and protection. It is external paradox for all public administration, but it is especially deeply rooted in American democracy. [6, p. 27].

The paradoxical view of citizens and public servants generate following propositions.

Proposition 2a: Citizens are likely to be less positive about the potential role of e-government than public servants.

Proposition 2b: Citizens are likely to be less confident about security and privacy issues in conjunction with e-government initiatives than public servants.

Third, there are two contrasting perspectives on the pace of technological innovation and adoption: radical (rapid) versus incremental perspectives. The former refers to the view that supports a dramatic adoption of new technologies to maximize the potential utility of the technologies while the latter supports a gradual and piecemeal approach to the adoption of new technologies. Citizens, who hold limited information about either society's needs or the organizational and institutional context within which policy is implemented and technology is applied, understand little about the complexities of policy implementation and governance. As a result, citizens will tend to underestimate the difficulty with which change can be made, and attribute delay, incrementalism and ineffectual change to incompetence. Moreover, because citizens perceive incrementalism and delay to result from incompetence or even purposive behavior by government, radical change is preferred to incremental change, as it holds out hope for a new system. On the other hand, bureaucrats are members of organizations – representatives of the multiple values of society and collections of interest coalitions. Delay, caution, and incrementalism are inherent in the public sector as Lindblom's "muddling through" process indicates. Similarly, risk-aversive behaviors of government have often been considered to be a long-standing decision pattern of governments due to its unique accountability system, hierarchical and formal structure, and internal/external control [14, 15]. Referring to the concept of "bureaucratic entrepreneurship," Carpenter also asserts that government agencies often takes an incremental approach when they make a strategic choice of introducing new programs and innovations because incrementalism helps them minimize any potential risk of trial and error [16].

Alternatively, it is also possible that the government is proactive and takes a leading role in initiating various policy innovations and then persuades citizens for their political support for the new approaches. Governments often pursue policy innovations when politicians and bureaucrats are politically motivated to obtain political support for their innovativeness and entrepreneurship. They may also pursue strategies simply to ensure long-term public interests in a society. "Bureaucratic entrepreneurship" may also take place when governments initiate mega projects like space programs, defense programs, or large-scale IT projects that require great resources but potentially produce great benefits to the public. Bureaucrats may take a less risk-aversive (more risk-taking) position than ordinary citizens to increase their autonomy and capacity through implementation of new programs (strategic economic choice for more bureaucratic autonomy), to enhance the public's perception about the innovativeness of public agencies (strategic political choice for external support) or pursuing long-term public interests (strategic administrative choice for conserving public interests). It has been widely noted that governments actively support the rhetoric of e-government or actually seek for rapid advance in e-government programs to make better public relations or make public agencies more responsive, more cost-efficient, and more flexible. These two different views generate the following contrasting propositions.

Proposition 3a: Citizens are more likely to support the rapid implementation of e-government than public servants.

Proposition 3b: Public servants are more likely to support the rapid implementation of e-government than citizens.

Fourth, considering that there is a difference in the desirable pace of e-government implementation between citizens and public servants, what factors determine the views of citizens and public servants? How do these factors affect citizens and public servants similarly or differently? It seems that there are some common factors that affect both citizens and public servants' attitudes toward the pace of e-government implementation. For example, those who are technologically savvy and heavy Internet users are more likely to support rapid advancement of e-government because they are more keen on e-government services and better understand the potential benefits. Those individuals (citizens and public servants) who perceive more benefits and effectiveness of e-government are more likely to support faster implementation of e-government than those who see the utility and effectiveness of e-government to lesser degree. Similarly, those who have more concerns about issues such as digital divide, security, and privacy are more likely to support cautious and incremental implementation of e-government. Nevertheless, some of these factors might affect citizens and public servants differently. As discussed above for example, citizens tend to be concerned about the possibility of government's abuse of its power, which leads the public to have a higher level of concern than public servants about privacy and security issues; public servants are more interested in the effect that implementing e-government initiatives will have on broader societal

issues like equity and digital divide. This differences in the level of confidence in current and future e-government performance and concerns about potential problems might affect citizens' and public servants' attitudes toward ideal pace of e-government implementation.

Proposition 4a: Individuals who use the Internet more are more likely to support a rapid implementation of e-government.

Proposition 4b: Individuals who have a higher level of perceived effectiveness of e-government are more likely to support a rapid implementation of e-government.

Proposition 4c: Public servant attitudes toward preferred pace of e-government implementation are negatively affected by their understanding of the organizational, political, and rule-based barriers to rapid implementation of e-government.

Proposition 4d: While the attitude toward preferred pace of e-government implementation of public servants are more affected broad society-wide concerns such as equity (digital divide), the attitude toward preferred pace of e-government implementation of citizens is more affected by potential legal issues such as equity (digital divide), security, and privacy violation.

3. Data, Variables and Model

This paper uses two survey data sets obtained from the Council for Excellence in Government [17, 18]. Although each data set represents two separate surveys, one administered to citizens the other to bureaucrats, many of the questions contained in each instrument are identical, others are highly similar. The citizen survey was conducted between November 12 and 19, 2001 by telephone using the random-digit-dial sampling technique. It randomly sampled 806 adults plus an over sample of 155 Internet users, for a total of 961. The sample was stratified by geographic area to ensure a nationally representative sample. According to the final report [19, 20], the sample was weighted according to the demographic makeup of the U.S. population and the margin of error for results among all adults is ± 3.5%. The survey queried citizens about their e-government experience, involvement and perceptions. It also posed a number of general questions about satisfaction and trust in government. The bureaucrat survey was administered using an identical method to 400 government workers between November 5 and 20, 2001. The bureaucrat survey asked middle and upper level managers about their experiences, attitudes and familiarity with e-government applications, as well as about other aspects of agency activities.

To test the propositions developed above, we first present descriptive statistics (along with difference of means tests) of responses to relevant survey questions common to both the bureaucrat and citizen surveys. Second, using many of the same variables we develop a simple model to identify the different factors that contribute to citizen and bureaucrat attitudes about the acceptable pace of application of e-government. We use ordinary least squares regression to statistically assess the model.

The variables used in the analysis can be placed in six summary categories: experience, perceived effectiveness, attitudes about e-government, priorities for investment and development, barriers to e-government, concerns about negative effects of e-government, and controls. The experience category comprises three variables the measure the self-assessed familiarity of the respondent with e-government as defined in the survey,[1] the level of Internet use (in the citizen survey) and the level of respondents' involvement with e-government (in the bureaucrat survey). The effectiveness and quality category includes six variables: perceived overall effect of e-government thus far and in the future, perceived quality of government websites (in the citizen survey) or their agency's website (bureaucrat survey), and three separate questions on the perceived effectiveness of local, state, and federal governments' uses of Internet technology. The last three variables were also combined for the regression analysis to form one construct, E-Government Effectiveness (chronbach alpha = 0.84 and 0.67 in the citizen and bureaucrat surveys, respectively). Respondent attitudes are also indicated by two variables, one assessing the pace at which citizens and bureaucrats believe future development of e-government should proceed (this is also the dependent variable in the regression model) and one measuring the extent to which citizens and bureaucrats believe Internet security is possible. These variables are called "Accelerate Pace of E-government Implementation" and "Internet Security Possible," respectively. Respondents in both surveys were also asked to prioritize a set of possible future applications, directions and investment choices for electronic government. Table 4 in the Analysis section below provides more detail about the specific choices individuals were asked to prioritize.

[1] E-government is defined for respondents in the survey as "government agencies' use of the Internet and other information technologies. This includes such things as making information available to the public on Web sites, improving communication between government agencies, and allowing people and businesses to conduct government business on-line, such as filing taxes, requesting a form, making a transaction, or receiving service [21]."

A series of five questions on perceived barriers to e-government implementation were asked of bureaucrats and included in the bureaucrat regression model. These include personnel, leadership, financial, and bureaucratic (standard operating procedures) obstructions, as well as competing demands. For the category on negative effects of e-government, there were six identical questions in both surveys. Although descriptive statistics for each of these is reported in Table 3 below, factor analysis also revealed that these six variables loaded onto two primary factors. The first factor, called "Security / Privacy Concern," included questions about fears of hacker break-ins, misuse of personal information by government officials, and reduction in personal privacy. The second factor, called "Access / Equity Concern," included fears about lower service provision for individuals with no access to the Internet, e-government creating an increasingly impersonal government, and greater difficulty for citizens to obtain answers to questions. We combined each set of three variables into two new constructs for use in the regression analysis. Control variables included age of the respondent from both surveys, tenure in job from the bureaucrat survey, and rural and income from the citizen survey. All questions representing the selected measures in this analysis appear in Appendix 1.

Data limitations constrain our ability to construct an optimal model to explain citizen and bureaucrat perspectives on e-government. Nevertheless, as part of the analysis section, we have conducted a regression analysis in which the speed of preferred implementation of e-government is the dependent variable and the other variable categories described above are the regressors. The generic model follows.

Preferred speed of the implementation of e-government = f (familiarity, perceived effect of e-government, concerns, e-government implementation barriers, controls)

4. Analysis

Table 2 summarizes the mean values of various questions given both to citizens and government officials. Most of the proposed propositions are supported by the descriptive statistics. On average, government officials indicate greater familiarity with e-government and are more positive about the overall performance of government as well as the effect of e-government than citizens. Public servants are confident in the government's e-government performance and website quality, and are less concerned about potential security and privacy issues. In contrast, citizens are less familiar with e-government than public officials but more concerned about privacy and security issues than public servants. Moreover, citizens want government to decelerate development of e-government while government officials support a more rapid approach to technology implementation.[2] Apparently, citizens are not being affected by the hype of e-government, rather they represent a tempering force on the enthusiasm of public officials. Moreover, public officials attitudes are more aggressive than incremental. These findings tend to support Proposition 3b. The rationales behind these findings are explored in more detail in the regression analysis below.

Table 2. Difference in Means

	Citizen			Bureaucrat			
	N	Mean	SD	N	Mean	SD	
Satisfaction with Overall Cost Effectiveness of Government	917	2.38	0.98	381	3.37	0.69	*
Familiarity with E-Government	949	2.04	0.97	398	2.96	0.97	*
Overall Effect of E-Government	715	3.52	0.95	374	4.26	0.74	*
Future Effect of E-Government	833	3.84	1.03	376	4.61	0.57	*
Federal Internet Effectiveness	783	2.55	0.73	344	2.96	0.73	*
Local Internet Effectiveness	737	2.30	0.84	263	2.67	0.88	*
State Internet Effectiveness	767	2.43	0.75	284	2.92	0.76	*
Internet as Tax Investment Priority	928	3.26	1.04	394	4.06	0.78	*
Website Quality	514	2.81	0.70	360	3.18	0.63	*
Future E-Government Concerns							
Hacker Breakins	952	8.13	2.81	398	6.94	2.75	*
Government Misuse of Data	949	7.61	2.91	391	4.80	2.83	*
Reduction of Personal Privacy	954	7.35	3.02	393	5.98	2.91	*
Less Service for Low Access	946	6.17	3.25	392	5.88	2.60	*
Government Becomes More Impersonal	948	5.68	3.19	391	4.39	2.69	*
More Difficult to Get Answers	934	5.66	3.10	382	3.79	2.71	*
Accelerate Pace of E-government Implementation	926	2.13	1.07	368	2.95	1.03	*
Internet Security Possible	446	2.39	1.11	331	2.61	1.03	*

A review of the findings on priorities of citizens and bureaucrats in Table 3 shows some level of agreement with both groups recognizing ease of use and intergovernmental linkages to be ranked first and fourth, respectively. However, commensurate with results in

[2] The desired pace of implementation falls to 2.68 when we restrict the sample to only those citizens who have accessed government websites. Citizens with experience on government websites are less risk averse than citizens without the experience, however they are still more risk averse than government officials.

Table 2, citizens rank security and desire for greater accountability higher than convenience or service and information expansion, whereas bureaucrats rank the two in reverse. Interestingly, results from the second question of Table 3 show that bureaucrats rank greater public access most highly, a finding that seems to fit well with our previous propositions about the broader sense of responsibility of government officials (Proposition 4d).

Table 3. Three questions on E-Government Priorities

1. Indicate the Top Priority for Government Websites

Citizen Response	Bureaucrat Response	
1	1	Make them easier to understand
3	2	Expand them for more information and services
2	3	Make them more secure
4	4	Provide links to other government agencies' Internet services

2. Indicate the most important result from e-government

1	4	Greater accountability of government to citizens
2	5	Ability to provide of national and homeland security
3	1	Greater public access to information
4	2	More convenient government services
5	3	More efficient and cost effective government

3. Current focus of major information technology projects in respondent's agency (~50% of all agencies reported existing or planned projects)

22%	Information provision and dissemination
7%	Coordination with other agencies
7%	More user friendly website
5%	Better online services
4%	Enhance communications

Finally, data on current e-government projects by government (Table 3, Question 3) reinforces the bureaucrat emphasis on information provision, as most projects concern information provision and dissemination and few concern communication enhancement with citizens. Because ongoing dialogue is considered to be one potential mechanism for enhancing accountability of civil servants, public agencies may not be addressing fully one of citizens' strongest priorities [21]. Most conspicuous in the results on current projects is the lack of specified security and privacy efforts. It may be that security and privacy are not considered to be worthy of dedicated projects *per se*, but are instead integrated elements of all projects. Bureaucrats may consider security and privacy issues to be embedded considerations of all projects; a part of the e-government management process, rather than an end in itself. Citizens, due to their lack of knowledge of the e-government management process and their limited confidence in government, and by extension, government's ability to systematically consider security and privacy issues, may seek greater specific demonstration or communication by agencies about the attention they give to these issues.

Regression analysis results provide further evidence for the line of reasoning that citizen and bureaucratic perspectives are, to some degree, divergent. Table 4 presents findings for both the citizen and bureaucrat models in which the dependent variable is the respondent's level of risk aversity to rapid development of Internet technology in government; that is the desire to decrease (high value) or increase (low value) the speed of e-government implementation. Both models are significant and diagnostic tests (collinearity and normality of residuals) showed no violations of our assumptions of independence of the measures and normal linear relationships between independent and dependent variables.

Table 4. Preferred pace of e-government implementation (Desire to Increase Speed of Implementation)

	Bureaucrat	Citizen
E-Government Effectiveness	0.29 (0.08) ***	0.21 (0.05) ***
Security / Privacy Concern	-0.01 (0.01)	-0.02 (0.01) **
Access / Equity Concern	-0.02 (0.01) **	-0.01 (0.01)
Level of Involvement	0.12 (0.06) **	na
Level of Internet Use	na	0.12 (0.03) ***
Priorities		
Easy to Comprehend	0.10 (0.14)	0.13 (0.11)
More Information	0.22 (0.14)	0.27 (0.12) **
Better Services	0.23 (0.24)	0.23 (0.12) *
Barriers		
Financial	0.05 (0.12)	na
Personnel	-0.04 (0.14)	na
Bureaucratic	-0.30 (0.15) **	na
Competing Issues	0.10 (0.15)	na
Leadership	-0.01 (0.23)	na
Controls		
Tenure	-0.01 (0.01)	na
Age	0.002 (0.03)	-0.03 (0.01) **
Income	na	0.03 (0.02)
Rural	na	-0.25 (0.11) **
Intercept	-3.21 (0.47) ***	-3.30 (0.29) ***
N	305	578
Model Significance	***	***
Adjusted R-Squared	0.10	0.16

In the bureaucrat model, findings show that government officials who are more involved with the Internet and believe that the Internet is having a positive

effect on the way government operates want to speed up implementation. Public officials also find that bureaucratic issues such as standard operating procedures will delay implementation of e-government. This finding essentially reflects the political and organizational setting within which bureaucrats operate: forces for change, technological or otherwise, generally traverse a lengthy process during which rules and bureaucratic politics slow the speed of implementation. Finally, for government respondents, issues such as unequal Internet access, increased impersonality and greater difficulty in obtaining questions from government (Access and Equity) provide cause for restraining the pace of e-government implementation. We interpret this finding as evidence for the broadly representative character of public servant attitudes and the indirect influence of the diversity of citizen input and feedback.

Interestingly, security and privacy issues are not perceived to affect implementation speed, nor are priorities for more information, easier comprehension of websites, or better services. In general, the findings of this model show some support for the propositions that predict public servants' to be more confident about the application of e-government (2a), to consider macro social and equity perspectives (4d) and to have confidence about security and privacy issues (2b). We interpret results showing no effect of greater priority of more information and better services to indicate a certain level of comfort with the current progress that government is making in these areas – information and service provision are not perceived to require greater emphasis, nor are they considered to be yesterday's concerns.

In the citizen case, as in the bureaucrat case before it, perceived effectiveness of e-government and level of involvement (Internet use) are negatively associated with moving slower, meaning that those citizens who have greater experience and a more positive outlook about e-government generally wish government to implement technology more swiftly. These findings tend to provide some support for earlier propositions about use and perceptions (4a and 4b).

However, the similarity between the two models ends with these findings. Contrary to the bureaucrat model, citizen concern about equity and access does not affect the assessment of the pace of technology implementation. Rather, citizens are much more concerned with security and privacy; higher levels of concern are associated with desire to decrease the speed of e-government implementation. Moreover, citizens' desires for more information and better services are negatively associated with slower implementation and expansion, indicating that service and information needs are behind citizen enthusiasm for faster e-government implementation. These findings provide support for earlier propositions about the dual nature of citizen perspectives: on the one hand demanding of services and information, on the other concerned about security and privacy (3a and 3b). Finally, of the control variables, people who classified themselves as rural and older respondents want to move more slowly. These findings fit well with general conceptions that these groups of citizens tend to be more risk averse.

Overall, these findings tend to show that citizens and bureaucrats, while they share some of the same basic determinants of risk aversity (experience and outlook), differ substantively in their perspectives. Citizens are less eager overall, driven by potential benefits of e-government for convenience and information, but fundamentally concerned about security and privacy. Bureaucrats are more enthusiastic, pushed by the promise of the technology and confidence in their ability to develop effective technologies, but cognizant of operational constraints in government and their responsibility for equitable provision of services, information, and access.

5. Conclusion and Implications

In general, we find some support for most of the propositions developed in the paper. Public servants appear to be more familiar, better informed and more confident about the prospect of e-government than citizens. Public servants also take a lead in supporting and advancing e-government and they support a faster implementation of e-government than citizens. However, public servants are also cognizant of the structural constraints, standard operating procedures and demands for equity that operate to reduce implementation speed. Citizens are less enthusiastic about potentials of e-government, and their desire for services and information is clearly tempered by security and privacy concerns. The two groups have fundamentally different mental frameworks. Citizen pessimism about privacy, security, and probably broader distrust in government overwhelms their desire for technology applications that improve service and information dissemination. The bureaucrat's enthusiasm for swifter implementation of e-government appears to be fueled by strong confidence in the capacity of government to securely provide services and respond to citizen needs, but is tempered by recognition of the organizational and political context within which technology is adopted and implemented.[3]

Understanding the differences and their causes are critical public management issues. Government decisions about the pace of technology implementation and their

[3] This finding is similar to Fountain's argument on "enacted technology" in her recent book [22].

communications with citizens must take into account these different mental models. Unless government pays attention to security and privacy concerns of citizens, it risks fulfilling their lower expectations and general mistrust. Similarly, adopting a rapid pace of implementation that fails to take deliberate, procedural precautions could lead to security oversights and inequities. On the other hand, lack of progress or implementation perceived to be overly slow, could lead to accusations of incrementalism and delay. In this regard, government decisions about the pace of e-government implementation must simultaneously recognize both the citizen as ultimate governed and governor: ultimate governed because of the potential effects of the technology on service delivery, participation, and information dissemination; ultimate governor because of the potentially damaging repercussions from citizens that result from negative outcomes and unfulfilled expectations.

Taking the mental models one step further, the government decisions about the pace and priority of technology implementation incorporate considerations that are embedded within the four traditions of American pubic administration and e-government (Table 1). As the Hamiltonian tradition suggests, it seems that the government often takes a top-down approach by taking a proactive leadership in promoting a large-scale and innovative projects like e-government. But this approach often results in disappointing citizen's expectation and failing to take advantage of the knowledge and skill of public servants unless the government shapes a great policy consensus and support. This Hamiltonian approach must not disappoint other traditions in American democracy, namely the bottom-up Jeffersonian approach in which citizen concerns, feedback, and input are faithfully and convincingly included in the decision calculus, which is necessary condition for a sustainable policy success [23]. Moreover, bureaucrats are not able, by themselves, to fully communicate to citizens the constraints that often lead to disappointment. Politicians in the Madisonian tradition must communicate more broadly the system-wide constraints that often create delay in favor of equity and fairness. The Madisonian application of political balance not only seeks to inform the public more broadly, it also supports the bureaucrat by reducing the pressure to react inappropriately to unrealistic hype.

Setting the pace for implementation of elements of technological change generally referred to as e-government in a democracy requires the understanding of the different mental models according to which citizens, bureaucrats and politicians operate. However, it also requires the application of the different traditions of public administration. As with all other types of significant managerial activities by public organizations, success will be determined by the ability of public servants to understand and address the desires and concerns of the governing citizens and to communicate informed decisions to the same individuals as governed citizens.

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Appendix 1. Survey Questions Used in the Analysis

Bureaucrat Survey Only

Level of Involvement How personally involved are you in e-government (4 point scale from not involved to very involved)?

Satisfaction Overall Cost Effectiveness Please rate how good a job you think your agency or division is doing with respect to being cost effective (4 point scale from not a good job at all to a very good job)?

Website Quality How well does your public Web site serve your constituents (4 point scale from poor to excellent)?

Barriers Please indicate which one or two of the following do you think is the biggest obstacle to e-government (1=yes, 0=no)?A lack of resources; Security issues; Inability to recruit qualified personnel; other pressing issues compete; entrenched operating procedures; lack of leadership support

Tenure How long have you been in your current position (4 point scale from one year or less, two to five years, six to ten years and 11 years or more).

Citizen Survey Only

Level of Internet Use How often do you use the Internet (5 point scale from never to very often).

Satisfaction with Overall Cost Effectiveness Would you say that you are frustrated or satisfied with government's ability to use resources efficiently (4 point scale from very frustrated to very satisfied)?

Rural What is the best way to describe the area in which you live (Rural coded 1, all others coded)?

Income If you added together the yearly income of all the members of your family who were living at home last year, would that total be… (8 point scale beginning with less than $10,000 and ending with over $100,000)?

Both Citizen and Bureaucrat Surveys

E-Government Familiarity How familiar are you with "e-government"? (four point scale from not familiar at all to very familiar).

Overall Effect of E-Government Overall, would you say that e-government is having a very positive, somewhat positive, neutral, somewhat negative or very negative effect on the way that government operates (5 point scale, reverse for analysis)?

Future Effect of E-Government Looking ahead five to ten years, do you think that e-government will have a very positive, somewhat positive, neutral, somewhat negative, or very negative effect on the way that government operates (scale reversed for analysis)?

Federal, State and Local Internet Effectiveness How good a job do you think that (insert the federal government, state government, or local government) is doing in using the Internet to improve the efficiency and the quality of government services (4 point scale from poor to excellent)?

Internet as Tax Investment Priority In your view, how high a priority should it be for government to invest tax dollars in making information and services available over the Internet (5 point scale from very low priority to very high priority)?

Preferred Pace of E-Government Implementation I'm going to read to you two statements about government use of the Internet, and please tell me which one you agree with more? A second question asked if the respondent agreed "much more" or "somewhat more" with the chosen statement [4-point scale: much more for Statement A (1), somewhat more for Statement A (2), much more Statement B (3), and somewhat more Statement B (4)].

Statement A: We should proceed slowly in relying on the Internet for communication between citizens and their government, because many people do not have access to the Internet and there are important issues of security and privacy that remain unresolved.

Statement B: We should proceed quickly in expanding use of the Internet for communication between citizens and their government, because e-government offers opportunities for improved services, communication and efficiency in government.

Preferred Pace of E-Government Implementation Now I'm going to read to you two statements about privacy and security on the Internet. Please tell me which one you agree with more. A second question asked if the respondent agreed "much more" or "somewhat more" with the chosen statement. [4-point scale: much more for Statement A (1), somewhat more for Statement A (2), much more Statement B (3), and somewhat more Statement B (4)].

Statement A: The Internet cannot be secured against illegal activities without Internet users losing some of their privacy.
Statement B: The Internet can be secured against illegal activities without Internet users losing any of their privacy.

Future E-Government Concerns Now I'm going to read to you a list of negative things that may result from e-government. Please tell me how big a concern each one is to you, on a scale from one to ten on which a "10" means that you are extremely concerned and a "1" means that you are not concerned at all.

- Hackers breaking into government computers
- Less personal privacy
- Government employees misusing personal information
- People without Internet access would get less government service
- Government being more impersonal
- It will become harder to get an answer to a problem

Age Just for statistical purposes, how old are you (12 categories beginning with 18-24 and ending with over 75)?