

Central Issues in the Political Development of the Virtual State

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Introduction

The term, virtual state, is a metaphor meant to draw attention to the structures and processes of the state that are becoming more and more deeply designed with digital information and communication systems. Digitalization of information and communication allows the institutions of the state to rethink the location of data, decisionmaking, services and processes to include not only government organizations but also nonprofits and private firms. I have called states that make extensive use of information technologies *virtual states* to highlight what may be fundamental changes in the nature and structure of the state in the information age.

This paper discusses the technology enactment framework, an analytical framework to guide exploration and examination of information-based change in governments.¹ The original technology enactment framework is extended in this paper to delineate the distinctive roles played by key actors in technology enactment. I then examine institutional change in government by drawing from current initiatives in the U.S. federal government to build cross-agency relationships and systems. The U.S. government is one of the first central states to undertake not only back office integration within the government but also integration of systems and processes across agencies. For this reason its experience during the past ten years may be of interest to e-government researchers and decision makers in other countries, particularly those in countries whose governments are likely to pursue similar experiments in networked governance. The summary of cross-agency projects presented here introduces an extensive empirical study, currently in progress, of these projects and their implications for governance.

A structural and institutional approach that begins with processes of organizational and cultural change, as decisionmakers experience them, offers a fruitful avenue to understanding and influencing the beneficial use of technology for governance. Focusing on technological capacity and information systems alone neglects the interdependencies between organizations and technological systems. Information and communication technologies are embedded and work within and across organizations. For this reason, it is imperative to understand organizational structures, processes, cultures and organizational change in order to understand, and possibly influence, the path of technology use in governance. Accounts of bureaucratic resistance, user resistance and the reluctance of civil servants to engage in innovation oversimplify the complexities of institutional change.

One of the most important observers of the rise of the modern state, Max Weber developed the concept of bureaucracy that guided the growth of enterprise and governance during the past approximately one hundred years. The Weberian democracy is characterized by hierarchy, clear jurisdiction, meritocracy and administrative neutrality, and decisionmaking guided by rules which are documented and elaborated through legal and administrative precedent. His concept of bureaucracy remains the foundation for the bureaucratic state, the form that every major state -- democratic or authoritarian -- has adopted and used throughout the Twentieth Century. New forms of organization that will be used in the state require a similar working out of the principals of governance that should inhere in structure, design and process. This challenge is fundamental to understanding e-government in depth.

Throughout the past century, well-known principles of public administration have stated that administrative behavior in the state must satisfy the dual requirements of capacity and control. Capacity indicates the ability of an administrative unit to achieve its objectives efficiently. Control refers to the accountability that civil servants and the bureaucracy more generally owe to higher authorities in the legislature, notably to elected representatives of the people. Democratic accountability, at least since the Progressives, has relied upon hierarchical control -- control by superiors of subordinates along a chain of command that stretches from the apex of the organization, the politically appointed agency head (and beyond to the members of Congress) down to operational level employees.

The significance and depth of effects of the Internet in governance stem from the fact that information and communication technologies have the potential to affect *production* (or *capacity*) as well as *coordination*, *communication*, and *control*. Their effects interact fundamentally with the circulatory, nervous, and skeletal system of institutions. Information technologies affect not simply production processes in and across organizations and supply chains. They also deeply affect coordination, communication and control – in short, the fundamental nature of organizations. I have argued that the information revolution is a revolution in terms of the significance of its effects rather than its speed. This is because the effects of IT on governance are playing out slowly, perhaps on the order of a generation (or approximately 25 years). Rather than changes occurring at “Internet speed,” to use a popular phrase of the 1990s, governments change much more slowly. This is not only due to lack of market mechanisms that would weed out less competitive forms. It is significantly attributable to the complexities of

government bureaucracies and their tasks as well as to the importance of related governance questions – such as accountability, jurisdiction, distributions of power, and equity – that must be debated, contested and resolved.

In states that have developed a professional, reasonably able civil service, public servants (working with appointed and elected government officials and experts from private firms and the academy) craft the details and carry out most of the work of organizational and institutional transformation. What is the transformation process by which new information and communication technologies become embedded in complex institutions? Who carries out these processes? What roles do they play? Answers to such questions are of critical importance if we are to understand, and to influence, technology-based transformations in governance. Government decisionmakers acting in various decisionmaking processes produce decisions and actions that result in the building of the virtual state.

Career civil servants redesign structures, processes, practices, norms, communication patterns and the other elements of knowledge management in government. Career civil servants are not impediments to change, as some critics have argued. They are key players in government reform. An extended example may be drawn from the experiences of civil servants in the U.S. federal government beginning in approximately 1993. Working with political appointees and outside experts, career civil servants worked out the details critical to the success of several innovations that otherwise would not have been translated from their private sector beginnings to the organizations of the state.² Over time, as their mentality and culture has begun to change, a cadre of superior civil servants have become the chief innovators in the government combining deep knowledge of policy and administrative processes with deep understanding of public service and the constraints it imposes on potential design choices. Their involvement is critical not simply as the “users” of technology but as the architects of implementation, operationally feasible processes and politically sustainable designs.

Technology Enactment

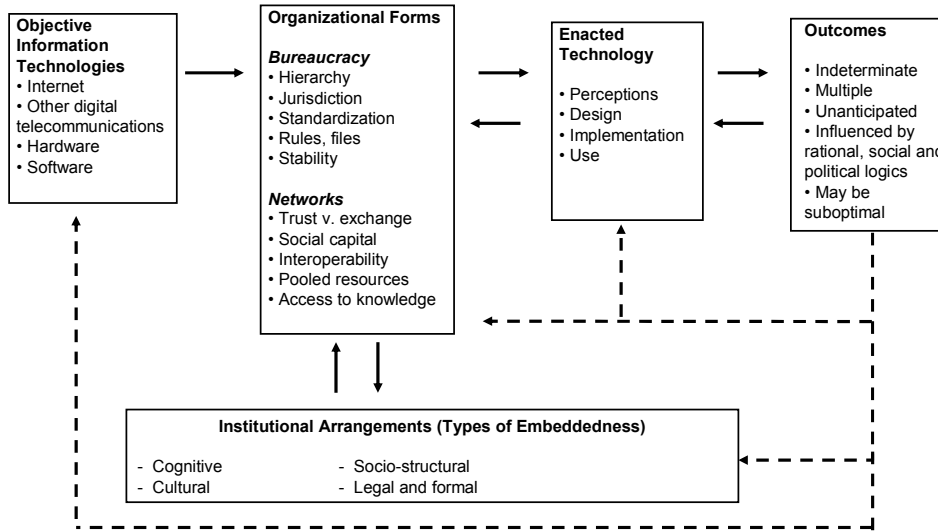
Many social and information scientists have examined the effects of the Internet and related ICTs on organizations and on government. Yet the results of such research often have been mixed, contradictory and inconclusive. Researchers have observed that the same information system in different organizational contexts leads to different results. Indeed, the same system might produce beneficial effects in one setting and negative effects in a different

setting. This stream of research, focused on effects and outcomes, neglects the processes of transformation by which such systems come to be embedded in organizations. Because these processes may develop over several years, they cannot be considered transitional or temporary. Transformation becomes the more or less constant state of administrative and governmental life.

The technology enactment framework emphasizes the influences of organizational structures (including “soft” structures such as behavioral patterns and norms) on the design, development, implementation and use of technology. In many cases, organizations enact technologies to reinforce the political status quo. Technology enactment often (but not always) refers to the tendency of actors to implement new ICTs in ways that reproduce, indeed strengthen, institutionalized socio-structural mechanisms even when such enactments lead to seemingly irrational and sub-optimal use of technology. One example include websites for which navigation is a mystery because the organization of the website mirrors the (dis)organization of the actual agency. Another example are online transactions that are designed to be nearly as complex as their paper-based analogues. A third example is the cacophony of websites that proliferate when every program, every project and every amateur HTML enthusiast in an organization develops a web presence. These early stage design choices tend to pave paths whose effects may influence the development of a central government over long periods of time because of the economic and political costs of redesign.

The underlying assumptions of designers play a key role in the type of systems developed and the way in which systems are enacted in government. The Japanese government, known for planning and coherence of response, is currently engaged in development of a national strategy for e-government. This response is distinctly different from a bottom-up approach in which innovation from the grassroots of the bureaucracy is encouraged. The U.S. Army’s design of the maneuver control system, a relatively early form of automated battlefield management, developed in the 1980s and 1990s, was developed with the assumption on the part of system designers that soldiers are “dumb” operators, button pushers with little understanding of their operations. When much of the detailed information soldiers used by soldiers for decisionmaking was embedded in code and made inaccessible to them, there were substantial negative effects on the operational capacity of the division.³

The Technology Enactment Framework



Source: J. E. Fountain, *Building the Virtual State: Information Technology and Institutional Change* (Washington, D.C.: Brookings Institution Press, 2001), p. 91. Copyright, Brookings Institution Press, 2001.

I developed the technology enactment framework (presented in the figure above) as a result of extensive empirical research on the behavior of career civil servants and political appointees as they made decisions regarding the design and use of ICTs in government. If information technology is better theorized and incorporated into the central social science theories that guide thinking about how government works, researchers will possess more powerful tools for explanation and prediction. In other words, theory should guide understanding of the deep effects of ICTs on organizational, institutional and social rule systems in government which is not ordered by the invisible hand of the market.

The most important conceptual distinction regarding ICTs is the distinction between “objective” and “enacted” technology depicted in the figure using two separate boxes separated by a group of mediating variables.⁴ By objective technology, I mean hardware, software, telecommunication and other material systems as they exist apart from the ways in which people use them. For example, one can discuss the memory of a computer, the number of lines of code in a software program, or the functionality of an application. By “enacted technology,” I refer to

the way that a system is actually used by actors in an organization. For example, in some organizations email systems are designed to break down barriers between functions and hierarchical levels. Other organizations may use the same system of email to reinforce command and control channels. In some cases firms use information systems to substitute expert labor for much cheaper labor by embedding as much knowledge as possible in systems and by routinizing tasks to drive out variance. In other cases firms use information systems to extend their human capital and to add to the creativity and problem solving ability of their employees. Many organizations have taken a plethora of complex and contradictory forms, put them into pdf format and uploaded them to the web, where they can be downloaded, filled out by hand and FAXed or mailed for further processing. Yet other organizations have redesigned their business processes to streamline such forms, to develop greater web-based interactivity, particularly for straightforward, simple transactions and processes. These organizations have use ICTs as a catalyst to transform the organization. Thus, there is a great distinction between the objective properties of ICTs and their embeddedness in ongoing, complex organizations.

Two of the most important influences on technology enactment are organizations and networks. These appear as mediating variables in the framework depicted in the figure above. These two organizational forms are located together in the framework because public servants currently are moving between these two types of organization. On the one hand, they work primarily in bureaucracies (ministries or agencies) in order to carry out policymaking and service delivery activities. On the other hand, public managers are increasingly invited to work across agencies and across public, private and nonprofit sectors – in networks – to carry out the work of government. Thus, these two major organizational forms, and their respective logics, heavily influence the ways in which technologies in the state will be designed, implemented and used.

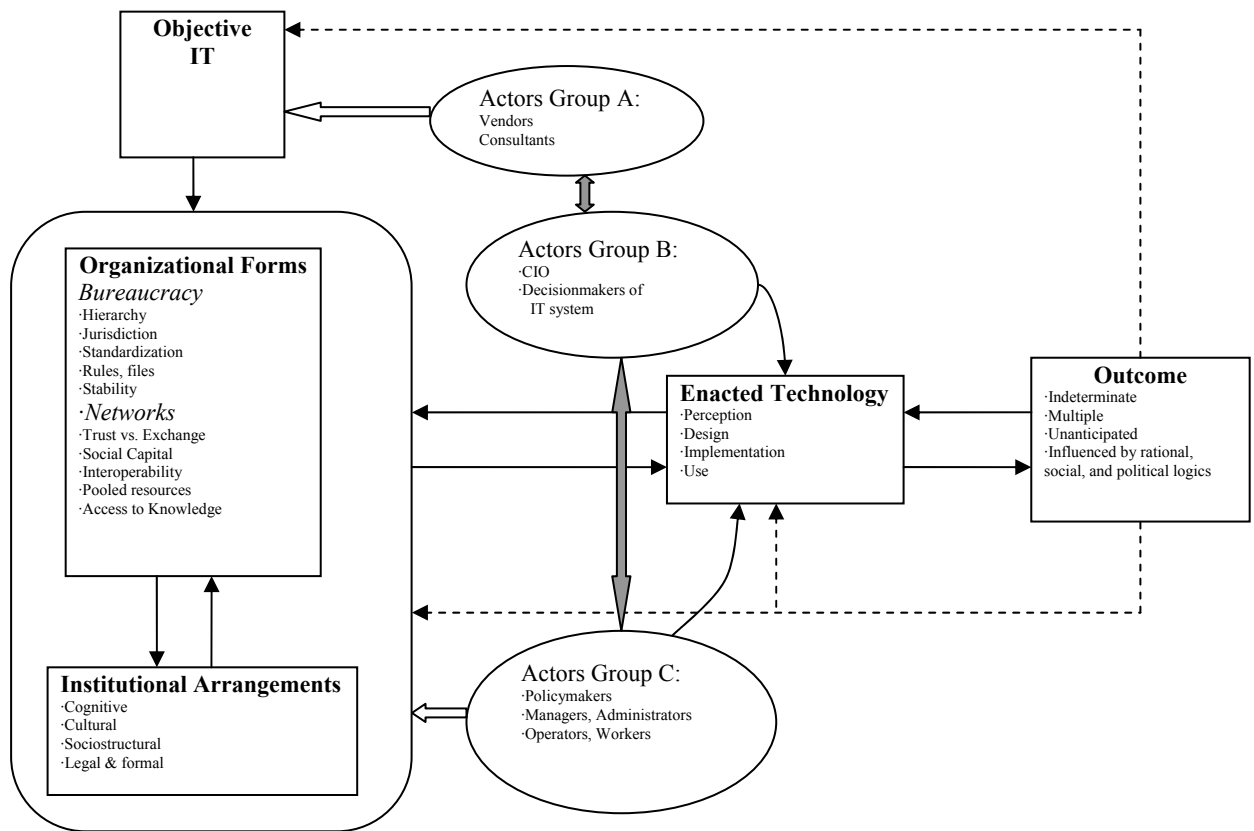
As shown in the figure, four types of institutional influences undergird the process of enactment and strongly influence thinking and action.⁵ *Cognitive institutions* refer to mental habits and cognitive models that influence behavior and decisionmaking. *Cultural institutions* refer to the shared symbols, narratives, meanings and other signs that constitute culture. *Socio-structural institutions* refer to the social and professional networked relationships among professionals that constrain behavior through obligations, history, commitments, and shared tasks. *Governmental institutions*, in this framework, denote laws and governmental rules that constrain problem solving and decisionmaking. These institutions play a significant role in

technology enactment even as they themselves are influenced, over the long run, by technological choices.

Note that causal arrows in the technology enactment framework flow in both directions to indicate that recursive relationships dominate among technology, organizational forms, institutions, and enactment outcomes. The term “recursive” as it is used by organization theorists means that influence or causal connections flow in all directions among the variables. This term is meant to differentiate recursive relationships from uni-directional relationships in which, for example, variable A leads to variable B. For example, smoking leads to cancer. But cancer does not lead to smoking. In a recursive relationship, variable A and variable B influence one another. For example, use of ICTs influences governance. And governance structures, processes, politics and history influence the use of ICTs. Recursive relationships specified in the technology enactment framework do not predict outcomes. Rather, they “predict” uncertainty, unanticipated results and iteration back through design, implementation and use as organizations and networks learn from experience how to use new technologies even as they incur sunk costs and develop paths that may be difficult to change. The analytical framework presents a dynamic process rather than a predictive theory.

An extension of the model, presented in the figure below, highlights the distinctive roles played by three groups: IT specialists in the career civil service, program and policy specialists and other government officials at all levels from executive to operational, and vendors and consultants.

Key Actors in Technology Enactment



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The three groups of actors play distinctive but inter-related roles in technology enactment. Actors in group A, comprised of vendors and consultants, are largely responsible for objective technology. Their expertise often lies in identification of the appropriate functionality and system architecture for a given organizational mission and set of business processes. What is critical for government is that vendors and consultants fully understand the political and governance obligations as well as the mission and tasks of a government agency before making procurement and design decisions. It is essential to understand the context and “industry” of government, just as one would have to learn the intricacies of any complex industry sector. Just as the information technology sector differs from the retail, manufacturing, and the service sectors, so the government sector exists in a unique environment. Within government as well are

varying policy domains and branches whose history, political constraints, and environments are important to understand.

Actors in group B, according to this model, include chief information officers of agencies and key IT decisionmakers. These government actors bear primary responsible for detailed decisions of system design. Actors in group C – policymakers, managers, administrators, operators, and workers – have a strong, often unappreciated and overlooked, influence on adjustments to organizational and network structures and processes. It is imperative that some members of this group develop expertise in the strategic uses of ICTs in order to bridge technological, political and programmatic logics. These depictions simplify the complexities of actual governments and the policymaking process. They are meant to draw attention to the multiple roles involved in enactment and the primary points of influence exerted through each role. In particular, the relationships between groups B and C are often neglected when, in fact, they are crucial for success of projects.

Propositions

Six propositions may be derived logically from the technology enactment framework and the political environment that exists in most industrialized democracies.

Proposition 1: Perverse incentives

Public servants face a set of perverse incentives as they make decisions regarding the possible uses of technology in their programs and agencies. Public executives in most states try to accumulate larger budgets and more staff in order to increase the power and autonomy of their department. They learn to negotiate successfully for appropriations for their program and agency. In the theory of adversarial democracy, such conflicts among programs and agencies are assumed to force public servants to sharpen their arguments and rationales for programs. This competition of ideas and programs is meant to simulate a market from which elected officials can choose thereby producing the best results for citizens. The adversarial model of democracy makes the development of networked approaches to government difficult. The impasse can be broken only by significant restructuring of incentives to dampen unwieldy tendencies toward agency autonomy and growth.

For this reason, public executives face perverse incentives. If they implement new information systems that are more efficient, they will not gain greater resources; they will

probably enact a situation in which their budget is decreased. If they implement information systems that reduce redundancies across agencies and programs, once again, they are likely to lose resources rather than to gain them. If they develop inter-agency and enterprise-wide systems with their colleagues in the bureaucracy, they will lose autonomy rather than gaining it. So the traditional incentives by which public executives have worked are “perverse” incentives for networked governance.

Proposition 2: Vertical Structures

The bureaucratic state, following from the Weberian bureaucracy, is organized vertically. By that I mean that the government is organized in terms of superior-subordinate relations, a chain of command that extends from the chief executive to the lowest level employees of the government. Similarly, oversight bodies for budgeting, accountability and even for legislation exercise oversight through the chain of command structure. These vertical structures are the chief structural elements of government institutions. Incentives for performance are derived from this structure. This verticality, central to accountability and transparency, also makes it difficult and to use technology to build networked government. The more complex difficulties are not technical. In fact, it is rather easy to imagine how a federal enterprise architecture should be designed. What is difficult is reconceptualizing accountability, oversight, and other basic elements of governance in networked relationships.

Proposition 3: Misuse of capital/labor substitution

In the U.S. federal government, agencies were not allocated significant new resources to develop IT. Congress has assumed that the use of ICTs to substitute for labor would generate resources for technological innovation. Although labor costs can be reduced by using IT, there are a few complexities that should be enumerated here. First, organizations must learn to use IT. This requires human labor and experienced human labor is critical. It is difficult to downsize and to learn at the same time regardless of popular management imperatives to force employees to innovate through large-scale cutbacks. Second, although some jobs can be eliminated through the use of ICTs, e-government necessitates many new and expensive jobs. Specifically, IT positions must be created for intelligent operation of systems, for monitoring and protecting data and processes, and for redesigning processes as legislation and programs change. Outsourcing is an option, but is nonetheless expensive and cannot completely replace an internal IT staff. Large

organizations have found that IT staffs are expensive. In particular, website content requires labor-intensive attention; protection of privacy and data security in government exceeds industry standards and practices; and some degree of institutional memory and knowledge for networked governance must reside within the permanent civil service rather than in a plethora of contracts. By placing critical strategic knowledge in the hands of contractors, governments put themselves in the position of having to pay for this knowledge multiple times and lose the possibility to leverage this knowledge internally for innovation. Asset specific technological knowledge should reside within governments and must be viewed as a necessary cost of e-government.

Third, the U.S. government has made a commitment to provide public services through multiple channels: face-to-face, telephone, mail, and Internet. Thus, they are faced with the strategic and operational complexities of designing, developing, implementing and managing across multiple channels. For these reasons, and others, the simple idea of substituting technology for labor is misleading and erroneous. In Portugal, it seems necessary to continue to employ multiple channels for services given the demographic differences in Internet use. Here the social decision to respect the elderly population should dominate over technological possibilities for e-government. Other Iberian states have simply eliminated paper-based channels in order to move the population to e-government.

Proposition 4: Outsourcing may appear to be easier than integration

It may appear to political decisionmakers that it is easier to outsource operations than it is for government managers to negotiate the politics of integration, that is, information sharing and working across agencies. In other words, there is a danger that some services and systems will be outsourced in order to avoid the political difficulties of internal governmental integration of back office functions or cross agency functions. But in some cases, outsourcing would be a mistake because the negotiations within the government necessary for integration to move forward form a necessary process of learning and cultural change, through enacting technology. The arduous process of making new systems fit the political, policy and operational needs of the government is, itself, the transformation of the state toward a new form coherent with the information society. Outsourcing may appear to be the easier course of action. But ultimately states must make difficult decisions regarding asset specificity, that is, the knowledge and skills that should reside within the government.

Proposition 5: Customer service strategies in government

Governments have an obligation to provide services to the public. But this is one element of the relationship between state and society. First, customers are in a different relationship with firms than citizens are with government.⁶ Customers have several options in the market; citizens have but one option for government services and obligations. Customers pay for services; but citizens have a deeper relationship and great responsibility toward their government than a fee for service relationship. They do not pay taxes in exchange for services. Tax systems in most states are a form of redistribution, a material system that reflects a social and political contract. In a democratic system of government “of the people, by the people, and for the people,” citizens have deep obligations to government and governments have deep obligations to the polity. So the customer service metaphor, particularly in its most marketized forms, is a degradation, minimization, and perversion of the state-citizen relationship in democracies.

Second, in the private sector, larger and wealthier customers are typically given better treatment than those customers who have little purchasing power or who have not done business with a firm in the past. Market segmentation is critical to service strategies in firms but is not morally or ethically appropriate for governments. Moreover, customer service strategies in U.S. firms tend to reward those customers who complain with better service in order to “satisfy” the customer. Those customers who do not complain do not receive better service. This, again, is not morally or ethically appropriate for government. Some citizens cannot exercise voice, or articulate their needs, as well as others. Public servants have an obligation to provide services equitably regardless of the education, wealth, or language skills of the citizen.

As the U.S. government tried to adopt some of the customer service ideas that were popular in economic firms, they did increase responsiveness to citizens. Moreover, public servants experienced a deep change in their attitudes and behavior. In many cases, the culture of agencies and programs changed to become oriented toward citizens rather than toward the internal bureaucratic needs of agencies. These were positive benefits from the customer service metaphor.

But some corporate citizens exploited the notion of customer service to extract benefits from the state. Powerful corporate citizens used “customer service” as a way to pressure agencies to provide benefits and to develop policies and rules that were inequitable and that would advantage some firms or industries over others. Ford Motors, Motorola, and Cisco are

indeed large “customers” of the U.S. government. But the regulatory regimes developed for industries cannot serve some “customers” better than others. At the corporate level, the customer service metaphor breaks down as a normative force. For these reasons, the Bush Administration discontinued the use of “customer service” as a government strategy. They use the term “citizen-centric” instead.

Proposition 6: Embeddedness and cultures

One of the chief learnings from the experiences of the U.S. government in the development of e-government has been the strong role of embeddedness and culture. Embeddedness refers to the fact that information systems are situated in the context of complex histories, social and political relationships, regulations and rules, and operational procedures. It is not a simple matter to change an information system, therefore, when it is embedded in a complex organizational and institutional system.

Integration across Agencies: An Example

A marked rise in the use of the Internet, at the beginning of the 1990s, coincided with the beginning of the Clinton administration and the initiation of a major federal government reform effort, the Reinventing Government movement, led by Vice President Al Gore. In addition to the development of regulatory and legal regimes to promote e-commerce, the administration sought to build internal capacity for e-government. A key strategy of the Clinton administration included the development of virtual agencies. The virtual agency, in imitation of web portals used in the private sector, is organized by client—say, senior citizens, students, or small business owners -- and is designed to encompass within one web interface access to all relevant information and services in the government as well as from relevant organizations outside the government. If developed sufficiently, virtual agencies have the potential to influence the relationship between state and citizen as well as relationships within government among agencies and between agencies and overseers.

During the Clinton administration, development of cross-agency websites floundered due to intransigent institutional barriers. Oversight processes for cross-agency initiatives did not exist. Budget processes focus on single agencies and the programs within them. There were no legislative committees or sub-committees nor were there budget processes that were designed to support cross-agency, or networked, initiatives. The government lacked a chief information

officer, or any strong locus of executive authority or expertise, to direct and manage initiatives lying across agencies and across jurisdictions. These institutional barriers, as well as others, posed deeper challenges to networked government than the usual and oft-cited complaints about resistance to change on the part of bureaucrats. Bureaucrats were simply responding to incentives, norms, and the dominant culture.

In August 2001, in a continuation of the path toward building inter-agency capacity (or networked approaches within the state) the Bush administration released the Presidential Management Agenda. The complete agenda includes five strategic, government-wide initiatives; this paper summarizes one of the five initiatives: e-government.⁷ The e-government plan, initially called “Quicksilver” after a set of cross-agency projects developed during the Clinton administration, evolved to focus on the infrastructure and management of 25, cross-agency e-government initiatives. The projects are listed in the table below. (I describe each project briefly in Appendix One.) The overall project objectives are to simplify individuals’ access to government information; to reduce costs to businesses of providing government with redundant information; to better share information with state, local and tribal governments; and to improve internal efficiency in the federal government.⁸

The 25 projects are grouped into four categories: Government to Business, Government to Government, Government to Citizen and Internal Efficiency and Effectiveness and a project which affects all others, E-Authentication. Government-to-business projects include: electronic rulemaking, tax products for businesses, streamlining international trade processes, a business gateway, and consolidated health informatics. Government-to-government projects include: interoperability and standardization of geospatial information, interoperability for disaster management, wireless communication standards between emergency managers, standardized and shared vital records information, and consolidated access to federal grants. Government-to-citizen projects include: standardized access to information concerning government benefits, standardized and shared recreation information, electronic tax filing, standardized access and processes for administration of federal loans, and citizen customer service. Projects focused on internal efficiency and effectiveness within the central government encompass: training, recruitment, human resources integration, security clearance, payroll, travel, acquisitions and records management. Also included is a project on consolidated authentication. (For further information concerning each project see www.e-gov.gov). For a detailed description of the

implementation and management of one of the initiatives, Grants.gov, an effort to standardize the grants management process across several agencies, see Fountain (2004).⁹

Cross-Agency, E-Government Initiatives

<p><i>Government to Citizen</i> Recreation One Stop GovBenefits.gov E-Loans IRS Free File (IRS only) USA Services</p> <p><i>Government to Business</i> E-Rulemaking Expanding Electronic Tax Products for Business Federal Asset Sales International Trade Process Streamlining Business Gateway Consolidated Health Informatics</p>	<p><i>Government to Government</i> Geospatial One Stop Grants.gov Disaster Management SAFECOM E-Vital</p> <p><i>Internal Efficiency and Effectiveness</i> E-Training Recruitment One-Stop Enterprise HR Integration E-Records Management E-Clearance E-Payroll E-Travel Integrated Acquisition Environment</p> <p>E-Authentication</p>
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Source: <http://www.egov.gov>

The 25 projects were selected by the U.S. Office of Management and Budget from more than three hundred initial possibilities. The plethora of possibilities were in nearly all cases developed during the Clinton administration and continue outside the rubric of the Presidential Management Initiative. In all cases, such projects focus attention on the development of horizontal relationships across government agencies. In this sense, the projects move beyond the first stage of e-government which typically entails providing information online to citizens. They also progress further in the use of ICTs than Stage Two E-government, which has tended to focus on putting transactions such as payments to government online.

Their specific objective of a focus on cross-agency consolidation is to reduce redundancies and complexity through standardization of generic business operations in government. A cross-agency approach also limits operational and information processing

autonomy -- the “stovepipes” -- of government agencies and departments (http://www.whitehouse.gov/omb/egov/about_backgrnd.htm).

The projects are overseen and supported by the Office of E-government and Information Technology, a statutory office within the U.S. Office of Management and Budget established by law in 2002. An organization chart detailing the new structures within OMB is presented below. The Administrator for E-government and IT, shown at the apex of the organization chart, is the Chief Information Officer of the federal government and an associate director of OMB reporting to the Director. The position initially was held by Mark Forman, a political appointee, and is currently held by Karen Evans, a career civil servant. The Associate Administrator for E-Government and Information Technology, reporting to the Administrator, is responsible for the 25 cross-agency projects. The five portfolio managers represented in the organization chart – some of whom are career civil servants and others of whom are political appointees -- have specific responsibility to oversee the 25 cross-agency initiatives. A management consulting group (not shown), whose members are not government employees but private contractors detailed to OMB have been responsible for most of the day-to-day communications and reporting with the programs. In effect, they serve as staff and liaisons between OMB and the cross-agency projects which are based in and across government agencies.

The new organization within OMB signals a major institutional development in the U.S. federal government. Before passage of the E-Government Act of 2002 (Public Law 107-347), which established the federal CIO and OMB structure, there was no formal structural capacity within OMB to oversee and guide cross-agency initiatives. The structural gap formed a major impediment to the development of networked governance during the Clinton administration. In terms of political development and fundamental changes in the nature of the bureaucratic state, we see in these organizational changes the emergent institutionalization of a governance structure for the direction and oversight of cross-agency, or networked, governance.

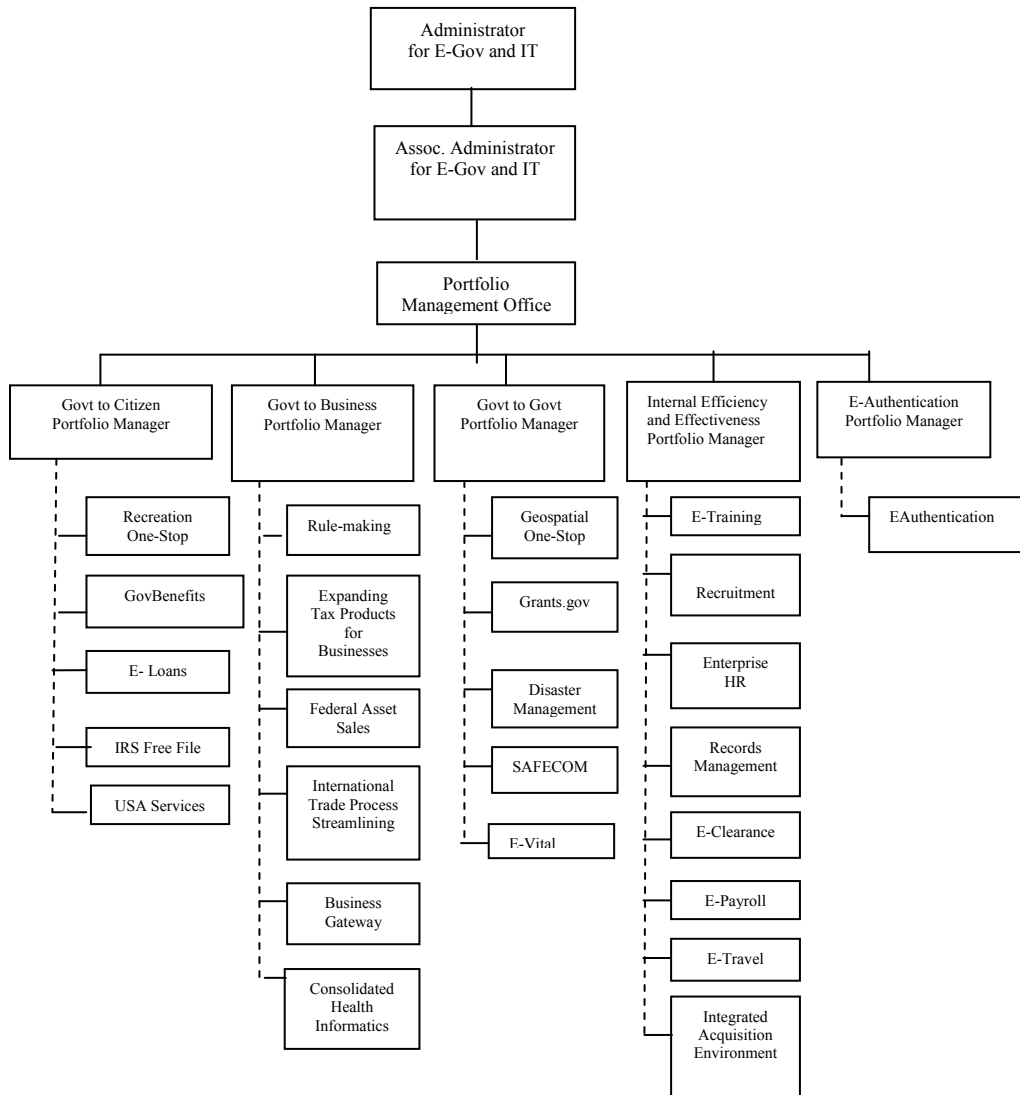
The organization chart depicts the 25 cross-agency initiatives reporting directly to portfolio managers within OMB. This representation is meant only to indicate that oversight and guidance of the projects is exercised by portfolio managers. The managing agency for each project is a federal agency rather than OMB. The projects are not part of the OMB hierarchy. The formal authority for each project belongs to the federal agency designated by OMB as the “managing partner,” or lead agency.

The matrix presented below arrays federal agencies along the top of the grid and projects along the left side. Agency partners for each project are marked with an x. The managing partner is denoted by an X in bold-face type. For example, the column and row colored blue indicate that the U.S. Department of Health and Human Services is a partner agency in eight initiatives and the managing partner of two projects, health informatics and federal grants.

Each managing partner agency appointed a program manager to lead its project. The program managers are typically senior, experienced career federal civil servants. They have been responsible for developing a consultative process among agencies involved in each project and, in consultation with OMB, they are responsible for developing project goals and objectives. In most cases, program managers were also required to devise a funding plan to support the project in addition to a staffing plan. Neither funds nor staff were allocated as part of the president's plan.

The E-Government Act, the legislation that codified the new organizational structure within OMB, provided for federal funding for the projects of approximately \$345 million over four years. But an average of only \$4 to 5 million per annum has actually been appropriated by Congress. Strategies developed by each project for funding, staffing and internal governance vary widely and have been largely contingent on the skills and experience of the program manager. So far, the legislature has not adapted organizationally to networked government. This lag in institutional development makes it difficult to build networked systems because appropriations of funds continue to flow to individual agencies and programs within them.

OMB Office of E-Government and Information Technology Organization Chart



Source: Office of Management and Budget “Implementation of the President’s Management Agenda for E-Government: E-Government Strategy” p 19, 2/27/2002, <http://www.whitehouse.gov/omb/inforeg/egovstrategy.pdf>, and www.egov.gov, accessed 7/1/2004.

Presidential Management Initiative E-Government Projects: Partner Agencies and Managing Partners

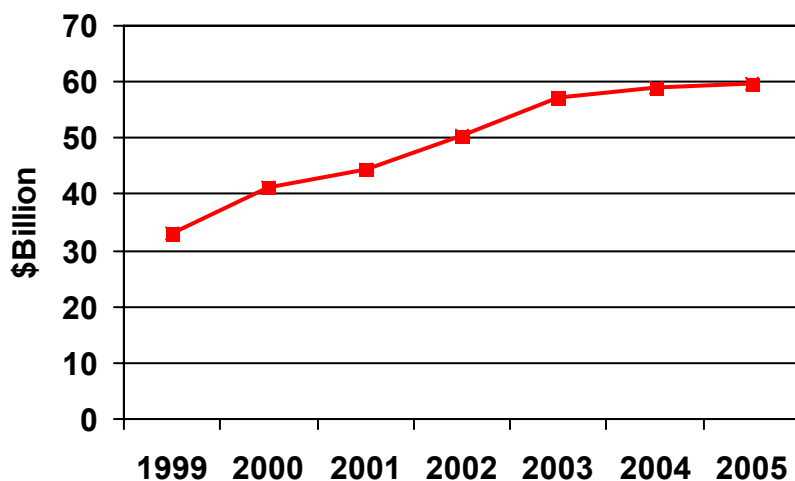
Projects / Departments	DoC	DoD	DoE	DoEd	DoI	DoJ	DoL	DoT	EP	FDIC	FEMA	GSA	HHS	HUD	NARA	NASA	NRC	NSF	OP	SBA	Smithsonian	SSA	Statte	Treasury	USAID	USDA	VA	
Consolidated H'lth Informatics		X											X									X					X	
Disaster Management	X	X			X	X		X			X	X	X	X			X				X						X	
E-Authentication	X	X		X		X		X	X			X	X			X					X			X			X	
Grants.gov	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X					X	X	X
E-Payroll		X	X																	X			X	X				
E-Training		X					X	X				X								X		X						
E-Travel		X						X				X						X						X			X	
E-Vital		X		X		X	X						X							X		X		X		X	X	
E-Records Management		X	X		X			X	X						X									X	X		X	
GovBenefits.gov			X	X			X				X		X	X								X	X			X	X	
Expanding Electr. Tax Products																								X				
IRS Free File																								X				
Federal Asset Sales		X		X						X		X		X						X				X			X	
Geospatial One-Stop	X	X	X		X			X	X		X		X	X		X	X	X	X								X	
Integrated Acquisition Env.	X	X			X			X				X				X				X						X	X	
Enterprise HR Integration		X																		X			X	X		X		
E-Clearance	X	X	X			X											X		X				X	X				
Int'l Trade Proc. Streamlining	X					X														X			X	X	X	X	X	
Business Gateway	X					X	X	X												X				X				
E-Loans				X							X		X	X						X							X	
E-Rulemaking						X	X	X														X	X		X	X	X	
Recreation One-Stop	X	X			X			X													X	X		X	X	X	X	
Recruitment One-Stop	X	X			X		X	X	X						X		X			X							X	
USA Services							X				X	X	X		X					X		X				X	X	
SAFECOM	X	X			X	X		X			X		X											X		X	X	

Source: OMB Project Management Office: E-Gov Partner Agencies Public.xls, unpublished document, no date, Revised, July 1, 2004.

U.S. Federal IT Budget

U.S. federal investments in government IT spending increased steadily from approximately \$36.4 billion dollars in 2001 to 59.3 billion in 2004. According to OMB estimates, eighty percent of this spending is for external consultants indicating a high level of contracting out of ICT services. Technical expertise and human capital in the federal government is being greatly weakened as a result under the “competitive outsourcing” policy and lack of human capital with IT expertise in the federal government. But this increase in investment also suggests a commitment to building a virtual state.

U.S. Federal Government IT Spending



Source: OMB: “Report on Information Technology (IT) Spending for the Federal Government, Fiscal Years 2000, 2001, 2002” , OMB: “Report on Information Technology (IT) Spending for the Federal Government, Fiscal Years 2002, 2003, 2004” Excel spreadsheet: <http://www.whitehouse.gov/omb/budget/fy2004/>, accessed 7/2/04, OMB:“Report on Information Technology (IT) Spending for the Federal Government for Fiscal Years 2003, 2004, and 2005”: <http://www.whitehouse.gov/omb/budget/fy2005/>, accessed 7-2-04

The E-Government Act tied appropriations to strategic, business and IT plans of agencies and created a fund of \$345 million to support cross-agency initiatives and monitoring of their development for fiscal years 2002 to 2004. In contrast to the bottom-up approach of the Clinton administration, the Bush administration approach is top-down, engineering in its approach to systems development, and emphasizes strict and rigorous project management. Yet there have been enormous disparities between the funds actually allocated to the e-government projects and the congressional appropriation. As John Spotila, former director of Information and Regulatory Affairs in OMB, remarked: “... Even without homeland security absorbing most of the IT dollars, cross-agency projects have never been a favorite of Congress, where appropriations are awarded through a ‘stovepipe system’ of committees that makes a multi-agency approach difficult.”¹⁰ Appropriations for the cross-agency initiatives were \$5 million in FY 2002 and 2003 and only \$3 million in FY2004. A congressional source recently noted: “We have never been convinced that the fund [requested to support cross-agency initiatives] doesn’t duplicate what already exists in other agencies or performs unique functions ... It has never been well-justified, and we don’t have a lot of spare cash lying around.”¹¹

Conclusions

The bureaucratic state is not outmoded, but the nature and structure of the state is changing fundamentally as information and communication technologies are being absorbed into governments. It is not vanishing but remains critical to standard setting, rule by fiat softened by consultation, integrity of processes, and accountability. It is the locus of the “national interest” in an increasingly globalized network of nations. The virtual state is intersectoral, interagency, and intergovernmental yet achieves connection through standardization, rationalization, and systems interdependence.

Although communications researchers have used the concept “co-evolution” to refer to reciprocal relationships between technology and organizations and their co-development, the reference to co-evolution connotes that enactment simply happens. By contrast, I have developed the technology enactment framework to examine how the actions of public officials and other government decisionmakers interact to enact technology. So the technology enactment framework builds specificity and explanatory power into models of co-evolution of technology and government organizations

This paper has focused on structural and institutional changes to the state in the elaboration of the technology enactment framework and the illustration of recent efforts by the U.S. government to create inter-agency structures and processes. Technology plays a key role in changing the capacity of public servants to engage in knowledge creation and exchange. These informal exchanges among professionals within and outside government through the Internet comprise a powerful change in the public policymaking process. Information technology has afforded the capacity for different and greater communication, for different and great information and knowledge sharing, and for greater transparency and display of complex information. All of these change the types of conversations and dialogue for government officials. The daily, informal exchanges are among the most important and potentially far-reaching changes in policymaking and governance.

The virtual state is intersectoral, interagency, and intergovernmental. But it achieves this fluidity and cross-boundary character through standardization, rationalization, and the management of interdependence.

Is the virtual state a non-place?

The idea of a “non-place,” drawn from contemporary theory in anthropology, refers to the increasing use of generic systems, applications, interfaces, terminologies, and more to replace unique, particular place-based images, systems, terms and other markers.¹² Generic, corporate systems tend to ignore the particularities of countries, regions, cities, and other local geographic and historic “places.” In fact, the desire of corporations to communicate their “brand,” intensifies the diminishing of place. For example, the external face of the McDonalds Corporation looks the same in every country regardless of “place.” Airports tend to look the same so that a person in an airport may have few markers that provide information about the particular culture of a place.

I have not yet drawn out the implications for government and governance of this increasing homogenization of approaches. But I would say that there might be a loss of attention to the particular problems and political issues that belong to particular places given their unique history and geographic features. This is the general idea of a “non-place.”

I do not think that the virtual state in any country will become a “non-place” for many years. But I want to issue a warning about the increasing use of pre-packaged, generic applications, interfaces, and systems in governments around the world. These homogenized, standardized products are those of major multi-national firms. They provide organizations and inter-organizational networks with the ability to inter-operate, which is a great benefit to governments and societies. But they diminish local particularities that provide a sense of place and serve to maintain distinctive cultures.

The challenges that lie ahead are not simply technical. Indeed, the technical challenges are relatively simple. The more complex and difficult challenges related to the virtual state are intellectual, governmental and practical. As the use of ICTs in government moves forward there is much more at stake than simply increasing efficiency and service levels. Bureaucracies and the bureaucratic model have been the source of government accountability, fairness, and integrity of processes. If the bureaucratic form is changing, what forms, structures, and processes will replace it? Given these governance challenges, business models and business language can be limiting and misleading as a source of wisdom and advice for building the virtual state. Business experience can inform operations and systems development. But public servants and the polity will have to engage in deliberation to bring clarity to governance questions.

The role of the public servant is changing but remains critical in democracies. Civil servants play a vital role in domestic – and increasingly in transnational and global -- policy regimes. Professional, experienced public servants are essential to the virtual state. I suppose that it is obvious to say that professional, experienced public servants are critical. But in the United States, many conservatives would like to eliminate the public service and to use contract workers instead. So, my comment is made in the context of a debate about the privatization of the public service. The argument is that e-government and networked government make professionalism and experience even more important within the entire public service. IT is not a substitute for experience and professionalism. It is not a strategy for deskilling the public service although it may be possible to eliminate some jobs made redundant by IT. It is critical also for IT professionals to have better interaction with other professionals.

All public servants need to be knowledgeable about IT, if not in a technical sense then in terms of understanding its strategic and political importance. Governments must be careful customers of private consultants and vendors. I do not think that most private firms really understand the differences between government and private sector organizations. And most do not care about these differences or view them as their responsibility to understand. Hence, public servants must understand the differences between systems built for the private sector and the requirements necessary for government systems. Vendors generally do not understand the higher standards of accountability that are the obligation of the state, fair and equal treatment of citizens, access, transparency and, in particular, security and privacy necessary for government systems.

These are not obvious statements in the present business environment. In the U.S. some public servants have been intimidated by Congress and private consultants to believe that they are inferior decision makers, that they are out of date in their thinking and that, in nearly all cases, that the private sector "can do it better than government." Public servants, in many cases, insufficiently value their knowledge and experience to negotiate in a strong way with private firms. It is necessary for contractors to build the large systems for government. But it is also necessary for public servants to play a strong role in the design, development and implementation of those systems. They are the decision makers with the experience and depth of knowledge of government operations and politics. Thus public servants are the decision makers

who know when to import a system from the private sector and when a system needs to be modified for public use.

Researchers and practitioners are just beginning to explore the potential for cross-agency capacity and policymaking. Extending the ideas presented in this paper beyond inter-agency relationships within the federal state, one can readily imagine that we may have to redefine and modify ideas about federalism due to networked governance. Moreover, the increasing use of inter-sectoral relationships – that is, relationships among the public, private and nonprofit sectors -- marks the virtual state. There is strong evidence to support the claim that virtual integration, that is, the location of information and services from different agencies and programs on one website, does in some cases lead to pressure or the desire of decision makers for actual organizational level integration.

Appendix One

25 E-Government Initiatives: Brief Descriptions

Program	Description
Government to Citizen	
Recreation One-Stop www.recreation.gov	“Provides a single point of access, user-friendly, web-based resource to citizens, offering information and access to government recreational sites” http://www.whitehouse.gov/omb/egov/gtoc/recreation.htm
GovBenefits.gov www.govbenefits.gov	“Provides a single point of access for citizens to locate and determine potential eligibility for government benefits and services” http://www.whitehouse.gov/omb/egov/gtoc/govbenefits.htm
E-Loans www.govloans.com	“Creates a single point of access for citizens to locate information on federal loan programs, and improves back-office loan functions” http://www.whitehouse.gov/omb/egov/gtoc/online_loan.htm
USA Services	“Develop and deploy government-wide citizen customer service using industry best practices [to] provide citizens with timely, consistent responses about government information and services via e-mail, telephone, Internet, and publications” http://www.whitehouse.gov/omb/egov/gtoc/usa_services.htm
IRS Free File http://www.irs.gov/app/freeFile/welcome.jsp	“Creates a single point of access to free on-line preparation and electronic tax filing services provided by Industry Partners to reduce burden and costs to taxpayers” http://www.whitehouse.gov/omb/egov/gtoc/irs_free.htm
Government to Business	
E-Rulemaking http://www.regulations.gov/	“Allows citizens to easily access and participate in the rulemaking process. Improves the access to, and quality of, the rulemaking process for individuals, businesses, and other government entities while streamlining and increasing the efficiency of internal agency processes” http://www.whitehouse.gov/omb/egov/gtob/rulemaking.htm
Expanding Electronic Tax Products for Business	“Reduces the number of tax-related forms that businesses must file, provides timely and accurate tax information to businesses, increases the availability of electronic tax filing, and models simplified federal and state tax employment laws” http://www.whitehouse.gov/omb/egov/gtob/tax_filing.htm
International Trade Process Streaming http://www.export.gov/	“Makes it easy for Small and Medium Enterprises (SMEs) to obtain the information and documents needed to conduct business abroad” http://www.whitehouse.gov/omb/egov/gtob/trade.htm
Federal Asset Sales http://www.firstgov.gov/shopping/shopping.shtml	“Identify, recommend, and implement improvements for asset recovery and disposition, making it easier for agencies, businesses, and citizens to find and acquire/buy federal assets.” http://www.whitehouse.gov/omb/egov/gtob/asset.htm
Business Gateway	“Reduces the burden on businesses by making it easy to find, understand,

http://www.business.gov/	and comply (including submitting forms) with relevant laws and regulations at all levels of government” http://www.whitehouse.gov/omb/egov/gtob/compliance.htm
Consolidated Health Informatics	“Adopts a portfolio of existing health information interoperability standards (health vocabulary and messaging) enabling all agencies in the federal health enterprise to “speak the same language” based on common enterprise-wide business and information technology architectures” http://www.whitehouse.gov/omb/egov/gtob/health_informatics.htm
Government to Government	
Geospatial One-Stop http://www.geo-one-stop.gov/ ; http://www.geodata.gov/	“Provides federal and state agencies with single point of access to map-related data enabling the sharing of existing data, and to identify potential partners for sharing the cost for future data purchases” http://www.whitehouse.gov/omb/egov/gtog/geospatial.htm
Disaster Management http://www.disasterhelp.gov/	“Provide citizens and members of the emergency management community with a unified point of access to disaster preparedness, mitigation, response, and recovery information from across federal, state, and local government ... Improve preparation, mitigation, response and recovery for all hazards through the development of interoperability standards that enable information sharing across the nation’s emergency management community” http://www.whitehouse.gov/omb/egov/gtog/disaster.htm
SAFECOM www.safecomprogram.gov	“Serves as the umbrella program within the Federal government to help local, tribal, State and Federal public safety agencies improve public safety response through more effective and efficient interoperable wireless communications.” http://www.whitehouse.gov/omb/egov/gtog/safecom.htm
E-Vital	“Establishes common electronic processes for Federal and State agencies to collect, process, analyze, verify and share vital statistics record information. Also promotes automating how deaths are registered with the states (Electronic Death Registration (EDR)).” http://www.whitehouse.gov/omb/egov/gtog/evital.htm
Grants.gov http://www.grants.gov	“Creates a single portal for all federal grant customers to find, apply and ultimately manage grants on-line.” http://www.whitehouse.gov/omb/egov/gtog/egrants.htm
Internal Efficiency and Effectiveness	
E-Training	“Create a premier e-training environment that supports development of the Federal workforce through simplified and one-stop access to high quality e-training products and services ...” http://www.whitehouse.gov/omb/egov/internal/training.htm
Recruitment One-Stop	“Outsources delivery of USAJOBS Federal Employment Information System to provide state-of-the-art on-line recruitment services to job seekers including intuitive job searching, on-line resume submission, applicant data mining, and on-line feedback on status and eligibility.” http://www.whitehouse.gov/omb/egov/internal/recruit.htm
Enterprise HR Integration	“Streamlines and automates the electronic exchange of standardized HR data needed for creation of an official employee record across the Executive Branch. Provides comprehensive knowledge management

	workforce analysis, forecasting, and reporting across the Executive Branch for the strategic management of human capital.” http://www.whitehouse.gov/omb/egov/internal/enterprise.htm
E-Clearance	“Streamlines and improves the quality of the current security clearance process” http://www.whitehouse.gov/omb/egov/internal/eclearance.htm
E-Payroll	“Consolidates 22 federal payroll systems to simplify and standardize federal human resources/payroll policies and procedures to better integrate payroll, human resources, and finance functions.” http://www.whitehouse.gov/omb/egov/internal/epayroll.htm
E-Travel	“Provides a government-wide web-based service that applies world-class travel management practices to consolidate federal travel, minimize cost and produce superior customer satisfaction. The E-Travel Service will be commercially hosted ...” http://www.whitehouse.gov/omb/egov/internal/etravel.htm
Integrated Acquisition Environment www.BPN.gov www.ContractDirectory.gov www.EPLS.gov www.FedBizOpps.gov www.FedTeDS.gov www.FPDS-NG.com www.PPIRS.gov www.WDOL.gov	“Creates a secure business environment that will facilitate and support cost-effective acquisition of goods and services by agencies, while eliminating inefficiencies in the current acquisition environment.” http://www.whitehouse.gov/omb/egov/internal/acquisition.htm
E-Records Management	“Provides policy guidance to help agencies better manage their electronic records ... Four major issue areas: Correspondence management, Enterprise-wide electronic records management, Electronic Information Management Standards, Transferring permanent records to NARA.” http://www.whitehouse.gov/omb/egov/internal/records.htm
E-Authentication	
E-Authentication	“Minimizes the burden on businesses, public and government when obtaining services on-line by providing a secure infrastructure for on-line transactions, eliminating the need for separate processes for the verification of identity and electronic signatures” http://www.whitehouse.gov/omb/egov/ea/eauthentication.htm

ENDNOTES

¹ The technology enactment model and detailed case studies illustrating the challenges of institutional change may be found in J.E. Fountain, *Building the Virtual State: Information Technology and Institutional Change* (Brookings Institution Press, 2001). The present paper draws from the explanation of the technology enactment model in *Building the Virtual State* and presents new empirical research on current, major e-government initiatives in the U.S. central government.

² Many of these innovative developments are presented in the cases included in *Building the Virtual State*. See, for example, the cases concerning the development of the International Trade Data System, the U.S. Business Advisor, and battlefield management systems in the U.S. Army.

³ This case is reported in detail in *Building the Virtual State*, chapter 10.

⁴ In this conceptualization I draw from and extend a long line of theory and research in the sociology of technology, history of science, and social constructivist accounts of technological development. What is new in my approach is the synthesis of organizational and institutional influences, a focus on power and its distribution, and a focus on the dialectical tensions of operating between two dominant forms: bureaucracy and network.

⁵ I am indebted to Professors Paul DiMaggio and Sharon Zukin for this typology of institutional arrangements.

⁶ See J. E. Fountain, "The Paradoxes of Customer Service in the Public Sector," *Governance*, 2001, for an extended analysis of differences between customer service strategies in economic firms and their use in government. In this working paper I simply mention a few of the more important arguments published previously.

⁷ For further details see the initial press release describing the initiative at <http://www.whitehouse.gov/omb/pubpress/2001-30.html> and Executive Office of the President and OMB: "The President's Management Agenda," at <http://www.whitehouse.gov/omb/budget/fy2002/mgmt.pdf>.

⁸ For further details see "The President's Management Agenda," p.24 <http://www.whitehouse.gov/omb/budget/fy2002/mgmt.pdf>.

⁹ Jane E. Fountain, "Prospects for the Virtual State," working paper, COE Program on Invention of Policy Systems in Advanced Countries, Graduate School of Law and Politics, University of Tokyo, September 2004. English language version available at <http://www.ksg.harvard.edu/janefountain/publications.htm>

¹⁰ Quotation from *Federal Computer Week*, February 18, 2002: <http://www.fcw.com/fcw/articles/2002/0218/cov-budget1-02-18-02.asp>

¹¹ John Scofield, spokesman for the House Appropriations Committee, quoted in *Government Computer News*, February 9, 2004. See http://gcn.com/23_3/news/24892-1.html, accessed July 2, 2004.

¹² See Marc Augé, *non-places: introduction to an anthropology of supermodernity* (London: Verso, 1995). Translated by John Howe.