Achieving the Potential

The Future of Federal e-Rulemaking

A Report to Congress and the President

Committee on the Status and
Future of Federal e-Rulemaking

2008

When this report went to press, the following organizations had endorsed the interrelated recommendations for redesign and further development of the federal e-rulemaking system:

Section of Administration Law & Regulatory Practice, ABA
American Association of Law Libraries
American Library Association
Association of Research Libraries
Center for Democracy & Technology
Center for Regulatory Effectiveness
Council for Excellence in Government
Information Technology Association of America (ITAA)*
Internet Business Solutions Group, CISCO Systems Inc.
OMB Watch
OpentheGoverment.org
The Performance Institute
Project on Government Oversight (POGO)
Sunlight Foundation
Telecommunications Industry Association

"This report addresses an essential tool for enhancing the transparency of our government and the quality of our governance. It identifies a number of options for improving the use of a web-enabled rule making process, which should be debated in a public forum by leaders focused on improving the relationship between citizens and government agencies."

Collaboration Project Advisory Panel National
Academy of Public Administration

This Report and an updated list of endorsing organizations can be found at http://ceri.law.cornell.edu/erm-comm.php.

* For full statement of endorsement, see http://ceri.law.cornell.edu/erm-comm.php.

This Report was produced under the auspices of the Section of Administrative Law & Regulatory Practice of the American Bar Association.

Second Printing 11.20.08

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Foreword

Rulemaking is one of the most frequently used ways of implementing legislation to advance social, economic, environmental, and public health and safety policies.

With the breakthroughs of technology beginning in the 1980's and the growth of the Internet and electronic government in the 1990's, there was near universal agreement that new information and communication technologies could be applied in federal agency rulemaking to enhance public participation, make the process itself more efficient for both the public and the government, and ultimately produce better decisions.

The government set out to construct a single e-rulemaking portal and a common electronic docket for more than 170 federal entities that engage in rulemaking. Great effort and significant resources have been expended on this federal eRulemaking Initiative, and various groups within the government have reported from time to time on the considerable progress being made. At the same time, there have been critical comments, from both within and outside government, that the choices being made meant that the enormous potential of this project would not be fully realized.

To sort through all of this, a committee was formed under the auspices of the Section of Administrative Law & Regulatory Practice of the American Bar Association. Its mission was to produce a clear-eyed assessment of the state of the present federal e-rulemaking system and to chart a course going forward. The committee included experts in technology and informatics; prominent scholars on regulation, public administration and information science; experienced regulatory practitioners, including distinguished representatives of business and public interest groups; and current and former state and federal government officials. The individuals selected brought very different expertise, experience and perspectives to the committee's discussions. They reflected different parts of the political spectrum, yet all realized that the issues the committee was exploring are nonpartisan, and they approached their work in that spirit.

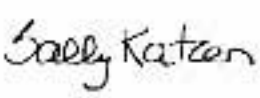
Over 17 months, the committee met five times, and had briefings by representatives from the Office of Management and Budget, the Program Management Office of the eRulemaking Initiative, various rulemaking agencies, and other government officials. This information was supplemented with interviews of additional people involved in the Initiative, conducted by members of the committee and reported back to whole. Our deliberations were informed by background memos written by our prodigious and extraordinarily able reporter, Cynthia R. Farina, Professor of Law at Cornell University.

The report that follows was drafted by Professor Farina after extensive discussions in the plenary sessions and meetings of smaller groups focusing on governance and funding, technology, and public participation. Many of the committee members would have supported more extensive recommendations going beyond those set forth below. But it was our judgment that the report should reflect the views of all members. Every member (listed below) has reviewed this document prior to publication, and we have indeed achieved consensus on its contents.

A draft final version of the report was circulated to a small group of key government officials, including people at OMB, the e-Rulemaking Project Management Office, and EPA. Our report has benefited from their full cooperation and many questions, corrections and comments – even on issues about which, respectfully, we disagree.

I wish to acknowledge the crucial financial support of the Ewing Marion Kauffman Foundation and the William & Flora Hewlett Foundation, which enabled us to convene people from across the country and to publish this report. I also thank the National Academy of Public Administration and its exceptional staff for providing facilities and support for our meetings.

Our greatest debt is to Professor Farina, who has given not only of her time but also her extremely able mind and pen, and without whom this project would never have been launched, let alone landed.



Sally Katzen
Chair

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Professor, Computer Science
Cornell University

Gary D. Bass
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Barbara Brandon
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Thomas R. Bruce
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Affiliated Researcher, Information Science
Cornell University

Robert Carlitz
Exec. Director, Information Renaissance

Daniel Chenok
Senior Vice President &General Manager
Pragmatics, Inc.
OIRA 1990-2003
Branch Chief, IT Policy 1999-2003

Cary Coglianese
Associate Dean for Academic Affairs
Edward B. Shils Professor of Law
Professor of Political Science
Director, Penn Program on Regulation
University of Pennsylvania

Robin S. Conrad
Executive Vice President
National Chamber Litigation Center
U.S. Chamber of Commerce

Sharon Dawes
Senior Fellow, Center for Technology in Government
Assoc. Prof., Pub. Administration & Policy
University of Albany

J. Stephen Fletcher
Chief Information Officer
Exec. Dir., Dep't of Technology Services
State of Utah
Deputy CIO/CTO
Department of Education 2004-05

Jane E. Fountain
Professor of Political Science & Public Policy
Director, Nat'l Center for Digital Government
University of Massachusetts Amherst

John D. Graham
Dean, School of Public & Environ'l Affairs
Indiana University
Administrator, OIRA 2001-06

Cornelius Kerwin
President, American University
Professor of Public Administration
Center for the Study of Rulemaking

Andrew Langer
President, Institute for Liberty
Sr. Manager, Regulatory Affairs, National Federation of Indep. Businesses 2002-08

Jeffrey S. Lubbers
Fellow in Law & Government
Washington College of Law
Co-Director, Ctr. for the Study of Rulemaking
American University
Research Director, ACUS 1982-95

Beth Simone Noveck
Professor of Law
Director, Inst. for Information Law & Policy
Director, Democracy Design Workshop
New York Law School

Richard Parker
Professor of Law
University of Connecticut School of Law

Peter Shane
Jacob E. Davis & Jacob E. Davis Chair in Law
Director, Project on Democratic Development
Ohio State University

Peter L. Strauss
Betts Professor of Law
Columbia Law School

W. Frederick Thompson
President, FredT2007 LLC
Principal & Representative, Council for Excellence in Government
CIO Office, Dep't of Treasury 1988-2002

EX OFFICIO

Lawrence Brandt
Program Director, Information Integration &Informatics
National Science Foundation

Robert Litan
Senior Fellow, Brookings Institution
Assoc. Director, OMB 1995-96
Staff, Council of Econ. Advisors, 1977-79

Rick E. Melberth
Director, Regulatory Policy
OMB Watch

REPORTER

Cynthia R. Farina
Professor of Law
Cornell e-Rulemaking Initiative
Cornell University

CHAIR

Sally Katzen
Public Interest/Public Service Fellow
University of Michigan Law School
Administrator, OIRA 1993-98
Deputy Dir., Management, OMB 2000-01

We also benefitted greatly from the contributions of Lawrence Fineran of the National Association of Manufacturers and Dr. Stuart Shulman of the Carnegie-Mellon/University of Pittsburgh E-rulemaking research group, who had left the Committee before the report was drafted.

Additional biographical information on committee members can be found at http://ceri.law.cornell.edu/erm-comm.php.

Executive Summary

Federal regulations are among the most important and widely used tools for implementing the laws of the land – affecting the food we eat, the air we breathe, the safety of consumer products, the quality of the workplace, the soundness of our financial institutions, the smooth operation of our businesses, and much more. Despite the central role of rulemaking in executing public policy, both regulated entities (especially small businesses) and the general public find it extremely difficult to follow the regulatory process; actively participating in it is even harder.

E-rulemaking is the use of technology (particularly, computers and the World Wide Web) to: (i) help develop proposed rules; (ii) make rulemaking materials broadly available online, along with tools for searching, analyzing, explaining and managing the information they contain; and (iii) enable more effective and diverse public participation. E-rulemaking has transformative potential to increase the comprehensibility, transparency and accountability of the regulatory process. Specifically, e-rulemaking – effectively implemented – can open the rulemaking process to a broader range of participants, offer easier access to rulemaking and implementation materials, facilitate dialogue among interested parties about policy and enforcement, enhance regulatory coordination, and help produce better decisions that lead to more effective, accepted and enforceable rules. If realized, this vision would greatly strengthen civic participation and our democratic form of government.

THE EMERGENCE OF FEDERAL E-RULEMAKING

During the 1990s, several individual rulemaking agencies began creating websites that enabled the public to search for regulations, submit comments electronically, and track a rulemaking's progress online. Some – notably the Department of Transportation (DOT), the Federal Communications Commission and the Nuclear Regulatory Commission – developed entire electronic docket systems for their rulemaking materials. By the turn of the century, the Environmental Protection Agency (EPA) had also begun to build an ambitious e-system for rulemaking. In 2002, the Bush Administration published its E-Government Strategy, which included creation of an "online rulemaking management" system. Ultimately, EPA became the lead agency for this eRulemaking Initiative. Plans quickly focused on creating a single government-wide system and one common public web portal, which would supersede all individual agency rulemaking e-systems and websites. All Executive Branch agencies have been required to join this Federal Document Management System (FDMS). Several of the independent regulatory commissions have also chosen to do so, although many of those with substantial rulemaking activity have so far preferred to have their own systems for reasons of cost or functionality.

The eRulemaking Initiative is funded by the participating agencies without dedicated funding from Congress. The Initiative has a complex, multi-tiered governance structure through which all participating agencies make decisions about design, modifications, upgrades and budget. All are entitled to equal say, regardless of the amount of rulemaking activity or level of monetary contribution. A separate Program Management Office (PMO) staffed predominantly by EPA oversees system operation and maintenance.

The e-rulemaking system can be understood, for present purposes, as comprising three interrelated elements:

1) the FDMS e-docket, an electronic repository for digitized versions of rulemaking documents organized in electronic dockets, with associated document management capabilities;

2) *FDMS.gov*, a password-protected interface through which agencies access the repository; and

3) *Regulations.gov*, the public interface through which those outside the federal government access publicly available materials in FDMS, and can submit comments on proposed rules.

PROGRESS TO DATE

The federal government's eRulemaking Initiative has had significant success. More than 170 different rulemaking entities in 15 Cabinet Departments and some independent regulatory commissions are now using a common database for rulemaking documents, a universal docket management interface, and a single public website for viewing proposed rules and accepting on-line comments. As of July 2007, the FDMS records management module complies with required standards for agencies to use the electronic docket as their official rulemaking record. This gives agencies the option of no longer retaining paper copies of materials in the system. EPA as managing partner, and the personnel of EPA and the participating agencies who have worked on the Initiative, deserve commendation and gratitude. They were given an inherently challenging task, further complicated by political complexities and resource limitations, and they have made a substantial start in building the powerful government-wide federal e-rulemaking system needed by the public and the government itself.

At the same time, much work remains to be done. So far, the Initiative's focus has been largely limited to putting existing notice-and-comment processes online. Even this has not been entirely successful. A number of significant structural and policy issues must be addressed before the full potential of federal e-rulemaking can be realized:

Architecture

The very early decision to build a single, centralized system made it necessary to design a database and a public website capable of serving all agencies. The result has been a very basic design on which all could agree. Development of additional, or different, applications and web presentations is severely constrained by (i) OMB policy that prohibits agencies from individually operating e-systems and building e-tools related to rulemaking (termed "duplicative and ancillary systems"); and (ii) technical choices that prevent outside groups from easily and efficiently accessing rulemaking information to create richer, more supportive public websites.

Another early decision (which ran in the opposite direction from the decision to build a single, exclusive centralized system) was to retain maximum agency autonomy in formatting and entering rulemaking data and in setting practices for public comment via the system. The decision to retain agency autonomy came about because it proved impossible for all agencies to reach agreement on data standards and practices. This meant, however, that the system lacks harmonization on such essential elements as (i) what agencies call key rulemaking documents; (ii) what information about these documents ("metadata") is supplied during data entry; and (iii) what kinds of documents and metadata will be made available for review by the public (and by other agencies, who can access only materials that are available to the general public). Without harmonization of data standards and practices, the purpose and utility of a multi-agency rulemaking database and a single public web portal is fundamentally undermined. Beyond a very superficial level, the public does not get a "common look and feel" to rulemaking across agencies. More significantly, searches will produce results that are unreliable in ways that public users are unlikely to realize and cannot, in any event, control.

Funding

Funding the Initiative through existing agency budgets has had several unintended negative consequences. At a minimum, agency and appropriator resistance to this funding method has caused financial instability and uncertainty over the course of the project. Because it often diverted funds from other agency activities, this funding method tended to incline agencies to be less sympathetic to system expansion and evolution, and to support only those features that seem obviously worthwhile to their own operations. Moreover, the particular algorithm currently used for apportioning the costs among participating agencies actually discourages agencies from embracing e-rulemaking because, for example, the more comments received on a proposed rule via *regulations.gov*, the greater proportion of overall costs the agency must pay.

Governance

Given the fact that all rulemaking agencies were required to contribute to the eRulemaking Initiative, as well as the importance of rulemaking to these agencies, all participating agencies wanted an equal say in the system's design and future direction. The result was a complex multi-level structure of collective decisionmaking – a form of governance that is time consuming and, with its multiple veto points, inclined toward risk-adverse outcomes. At the same time, it provides no clear locus of responsibility and accountability for whether the decisions being made actually further the articulated goals of the Initiative. Moreover, because there has been no sustained and systematic involvement of potential users outside government, design choices and work priorities often undervalue or misapprehend the needs of the public.

Public Access

Lacking sustained and systematic involvement of non-federal users in the design of the public website, *regulations.gov* continues to reflect an "insider" perspective – i.e., the viewpoint of someone familiar with rulemaking and the agencies that conduct it. The website design also shows the effects of constrained resources, and the difficulties of designing a single site that must be each agency's official medium for presenting its rulemaking materials to the public. Without doubt, significant improvements have occurred within the last year, and continue to be made. Still, *regulations.gov* remains neither intuitive nor easy to use, even for those knowledgeable about rulemaking. Recent additions (e.g., email notification, full-text search, RSS feed) are highly desirable improvements, but these important functionalities are not as convenient, effective, or powerful as what is needed and possible.

A deeper problem (and one that limits the government's as well as the public's benefit from the system) is that many agencies are not using FDMS to provide the comprehensive online rulemaking docket contemplated by both the Initiative and the E-Government Act of 2002. No document – even a public comment submitted through *regulations.gov* – can be viewed by the public (or, for that matter, by other agencies) unless and until the responsible agency approves it for "posting" to the public side of the system. For a variety of reasons, some agencies are failing to post many significant rulemaking materials – including submitted comments. As a result, the publicly accessible portion of the database is not complete and the e-dockets for many agencies are not in fact authoritative, even though the system is capable of meeting official records standards.

Diversification and Innovation

It is exceedingly difficult, if not impossible, to map a single e-rulemaking model onto the many rulemaking needs and circumstances of all participating agencies. Similarly, one universal public website, no matter how well-designed, cannot adequately capture and convey the kind of agency-specific and rule-specific information many public users will need to understand rulemaking and to participate effectively. Yet, the current closed, exclusive, one-size-fits-all technical architecture, in conjunction with the broadly interpreted OMB

policy against "duplicative or ancillary systems," prevents the creation of additional components, tools and web presentation formats — either by agencies or by interested individuals and groups outside government. And, in any event, agencies with the greatest rulemaking activity – and thus the greatest incentive to experiment and progress in this area – lack funds to do so because they are now bearing a disproportionate share of the cost of the entire e-rulemaking system. Neither the needs of public users nor the requirements of many agencies are being adequately met, and innovation is being hampered.

RECOMMENDATIONS AND GUIDING PRINCIPLES

If a government-wide electronic docket and rulemaking support system were being designed in today's technological environment, the preferred architecture almost certainly would not be a single and exclusive centralized system. The power of web technology is precisely that it allows data and applications to be drawn from multiple sources and presented in multiple ways tailored to the needs of various users. But starting anew would be a radical step, especially given the money and effort already invested. If the current FDMS can be enhanced, and situated within a new open and more flexible technical architecture, it can function as the primary rulemaking system for agencies with modest rulemaking activities, and as the core from which other agencies can build out more robust and innovative e-rulemaking capabilities.

We recommend a number of interrelated actions:

Architecture

The redesigned system should allow for growth, promote innovation and provide opportunities for information sharing and collaboration through an architecture based on open standards, adaptable to the evolution of the Web, and capable of incorporating non-centralized models of information sharing.

Governance

A single agency should be given responsibility for specifying and implementing the new architecture. To minimize concerns from even the perception that one agency is being empowered to impose its particular rulemaking practices on the entire system, this new lead agency should not be one of the major rulemaking agencies.

An interagency e-rulemaking committee should be created, funded and charged to provide regular, ongoing advice to the new lead agency about agency needs and preferences. A parallel advisory committee of public users and various relevant outside experts should be created, funded and charged to provide regular, ongoing advice to the lead agency about the needs and preferences of the wide range of non-federal government users.

Data Standardization

The new lead agency should oversee a process of facilitated discussions among participating agencies, the object of which is to establish the common data and metadata standards and to define the quality information practices essential to effective cross-government electronic rulemaking. This process must be done independently of any effort that might be undertaken to conform underlying rulemaking practices to a standard model. If agreement still cannot be achieved, the lead agency must be empowered to establish the necessary standards and practices, and OMB must unambiguously support their implementation and use.

Funding

A separate appropriation to the new lead agency for developing and maintaining the core e-rulemaking system should be authorized and funded. The appropriation should include an amount for further modernization and enhancement.

Agency Practice

The online docket should become the authoritative rulemaking record for all agencies, with clear indication and adequate identification of any portions of that record not being made publicly available. Agencies should be expected to create comprehensive, accurate electronic dockets that are well-indexed and effectively searchable. They should be expected to post supporting materials and comments in a prompt and timely manner, and they should receive adequate resources for this and other preparation and entry of data.

Existing communication mechanisms should be used and new ones created to increase communication between agency personnel with technical expertise and those with regulatory program expertise, within as well as across agencies. The goals include identifying both good practices in, and legal or institutional obstacles to, e-rulemaking; creating the basis for collaboration among agencies in developing new e-tools and applications; and sharing of experience with innovative uses of technology in rulemaking.

Public Access

The *regulations.gov* website should be completely redesigned, making creative use of web capabilities and state-of-the-art web design practices (i) to provide information in formats readily accessible to and comprehensible by the full range of potential users, and (ii) to interact efficiently and effectively with rulemaking information on agency sites. Active engagement in this process by the public users and experts of the public e-rulemaking advisory committee is essential.

Agencies that engage in substantial rulemaking activity should provide more detailed rulemaking information on their own public websites and explore web-based methods for increasing the breadth and quality of public participation.

Such e-rulemaking innovation and entrepreneurship by individual agencies should be encouraged, rather than inhibited.

The history of the eRulemaking Initiative demonstrates that governance, management and funding, technical architecture, agency practice, and public response all interact synergistically. The extent to which agencies and the public use the e-rulemaking system depends on how it is designed and implemented. Design and implementation choices flow from governance and management structures. Governance and management structures rest on how it is funded.

For these reasons, the set of recommendations made in this report should not be read as an ala carte menu, but should be recognized instead as an integrally interrelated plan for moving forward. Continuing to develop a powerful and flexible e-rulemaking system is one of the rare federal projects in which every segment of the public, as well as the government, stands to gain. But before e-rulemaking's potential benefits can become a reality, Congress, the President and OMB must recognize that the current system – while a remarkable accomplishment given where the Initiative started – is only a first step, and that achieving the great potential of technology-supported rulemaking now demands a fundamentally new approach.

Introduction

Electronic government initiatives in the federal government have been in place and expanding since the early 1990's. Many of these initiatives demonstrated the potential of information and communications technologies to improve how government operates and, especially, how it interacts with the public. Nowhere is the possible beneficial effect more apparent than in rulemaking, an activity carried out by many federal agencies and involving all aspects of social, economic, environmental, public health and safety, and national security policy. Rulemaking is, moreover, one of the areas of government activity in which citizen and business engagement is not only welcome but often very salutary. Indeed, it is required by law. Transforming rulemaking from a paper-based, manual activity to an easily accessible, manageable, interactive electronic enterprise can enhance public participation and make the process more efficient, so as to foster better regulatory decisions by agencies and greater support for those decisions by more involved regulatory and beneficiary communities.

Six years ago, Congress and the President took several important steps to improve the practice of rulemaking by federal agencies. The E-Government Act of 2002, 44 U.S.C. §§ 3601 et seq., which outlines a broad framework for developing federal electronic government systems, singled out rulemaking for special attention and particular direction. Several months earlier, the Office of Management and Budget (OMB) had issued the report of the E-Government Task Force announcing the "eRulemaking Initiative," a plan to create a government-wide electronic rulemaking system (OMB Feb. 2002).

By the end of 2008, more than 170 administrative entities with rulemaking authority – a number that comprises all agencies and other rulemaking units in the Cabinet departments, freestanding Executive Branch agencies such as EPA and the Social Security Administration, and a small number of the independent regulatory commissions – will complete their migration and integration into that system. The eRulemaking Initiative has clearly taken an important set of first steps, not least of which is creating a cross-agency enterprise in an enormously complicated area. Given these initial and essential accomplishments, it is timely to assess where we are and what realistically can be accomplished next.

This committee believes that effectively designed and implemented e-rulemaking technology could significantly improve the process and outcomes of federal regulation.

For example:

- Agency program officials and rulewriters can access new ideas and information, making the substantive record that supports rulemaking more robust, producing better regulatory decisions and improving implementation and compliance.

- Search and analysis of large volumes of dispersed information can enable more effective evaluation and oversight of regulatory programs within and across agencies.

- An integrated regulatory support system, combined with agency-specific modules that focus on particular regulatory constituencies, can lead to innovation in how rules are developed.

- Collaborative technologies, often referred to as Web 2.0, can facilitate intra-agency and cross-agency development and review of complex rules.

- These same technologies can allow new, variously structured forms of participation by stakeholders and other members of the public.

With sound, supportive action from Congress and the President, the eRulemaking Initiative can grow from its current focus on finding and commenting on rules into a yet more powerful and innovative system that encourages the sustained engagement of individuals, businesses, non-governmental organizations, and state and local governments with rulemaking agencies. The improved regulations that could be created in a more advanced e-rulemaking system should result in greater acceptance of regulatory decisions, thus enhancing benefits and reducing administrative and legal costs.

This report examines the progress made since 2002 on developing the federal e-rulemaking system and makes recommendations to Congress, the President, OMB and the various rulemaking agencies for

- solidifying and strengthening the significant accomplishments of the Initiative to date, and

- moving forward to the next level of applying information and communication technologies to improve the rulemaking process for both agencies and the public.

Where We Are: An Overview

A. The Challenges of Rulemaking

Rulemaking has become one of the most important – and demanding – activities of the federal government. For most agencies, it is the principal mechanism for defining and implementing the regulatory programs they are charged, by statute, to undertake (Kerwin 2003:1-28). Federal rulemaking has a profound impact on individuals, businesses, non-government organizations, and state and local governments. OMB's most recent report on the economic impact of regulation estimated that the rules it reviewed the prior year produced $9.4-$10.7 billion in costs and $28.6-$184.2 billion in benefits annually (OMB Mar. 2008:8).[1]

As regulatory programs have attempted to address increasingly complex environmental, health and safety, economic and social problems, rulemaking has become an increasingly information-intense process (Coglianese, et al. 2004). The difficulty of the underlying issues compels rulemakers to amass and assess a growing volume of qualitative and quantitative information. Congressional and Presidential requirements for various analyses and impact reports further heighten the demands on agencies to obtain, process and produce information. Finally, the recognition that contemporary regulatory problems and solutions often cut across traditional organizational boundaries requires agencies to learn about, and coordinate with, the activities of sister agencies, other federal entities, and state and local governments.

The rulemaking process that attempts to manage and satisfy these various information demands is often criticized for taking too long and costing too much. At the same time, its capacity to produce methodologically sound and substantively effective policy outcomes has been questioned. The concerns most frequently expressed include poor quality or inadequate data; unrecognized or unresolved inconsistencies across regulatory programs; coverage gaps and redundancies; and lack of knowledge about, or insufficient attention to, the practicalities of compliance (Kerwin 2003:87-115; Coglianese 2004:5-11).

The challenges posed by contemporary rulemaking are not experienced by agencies alone.

[1] Only rules having monetizable costs and benefits are included. Moreover, these figures are 2001 dollars; expressed in current dollars, the figures would be more than 20% higher.

Most significant rulemakings include a public notice-and-comment phase. In theory, this is an opportunity for all stakeholders – indeed, for anyone outside the agency – to consider and react both to the rule being proposed, and to the key data and analytical material underlying it. In fact, however, many stakeholders and other potential participants are unaware of the opportunity or unable to use it effectively. Extracting and understanding information embedded in reams of studies, analyses and other relevant documents is inherently time-consuming and often difficult for those without both substantive and legal expertise. These hurdles are heightened when materials in the rulemaking file can usually be reviewed only by physical inspection at the agency's reading room.

More fundamentally, the vast majority of Americans do not know enough about agencies and administrative processes to understand rulemaking and the role of public comments. Even if a potential commenter is generally familiar with the issues involved and has information that could be helpful in formulating a better rule – because, for example, he is a small business owner engaging in the activities being regulated – lack of knowledge about framing an effective comment may prevent him from meaningful participation.

As a result, the notice-and-comment process is typically dominated by a limited range of participants who have the resources and expertise to obtain, comprehend and formulate an effective comment on the information crucial to the agency's proposal (Golden1998; Furlong & Kerwin 1999; Shapiro 2005; Coglianese 2006; Yackee & Yackee 2006; Shafie 2007). Such constricted participation in the rulemaking process not only skews the information agencies receive, but also can undermine the legitimacy of regulation in the eyes of those affected. Moreover, the way the notice-and-comment process is typically conducted, and the fact that judicial review of the final rule often focuses on criticisms raised during that process, create incentives for commenters to emphasize all conceivable flaws in the proposed rule and overstate the negative (or positive) effects it will have on them (Harter 1982; Kerwin 2003:197-98; Balla 2005). Such strategic behavior may make it difficult for the agency to gauge regulatory impacts accurately, and may deprive it of useful knowledge and ideas that would emerge from less adversarial interchange with, and among, stakeholders.

B. The Potential of e-Rulemaking

Electronic government technologies offer new and promising approaches for solving these problems. E-government systems are those that employ information and communications technologies to support government

operations, provide information and services, and facilitate new forms of political deliberation. In the context of electronic rulemaking, such technologies can (i) provide the public with more effective ways to participate in regulatory decisionmaking; (ii) provide agencies with more effective tools to develop rules and to manage, track and coordinate the rulemaking process; and (iii) provide stakeholders and others with better access to information about rules (Eisner 2003: 20). The potential capabilities of an e-rulemaking support system can be usefully conceptualized in four levels:[2]

LEVEL I: INFORMATION

Making facts and knowledge collected or created by government more accessible by converting information to electronic form and placing it on the Internet (for the public) and/or an internal network (for government employees)

An e-rulemaking system that converts rulemaking documents and other relevant materials to searchable electronic form and maintains them in a well-designed, Internet-accessible database aids both agencies and the public. Once digitization releases information from the paper that has traditionally contained it, the information becomes substantially easier to extract, sort, analyze, track over time and across rulemakings, share and combine in new ways. Once the Internet dissolves geographical obstacles to information flow – whether between potential public commenters and rulemaking files in a distant agency reading room, or between centrally located agency program officials and dispersed field offices – opportunities are created for broader and more meaningful public participation and more effective and efficient rule formation.

LEVEL 2: AUTOMATION

Devising electronic methods to perform tasks that had been done manually by government employees or the public

An effective e-rulemaking system will enable agencies to produce and circulate rulemaking documents electronically, and submit electronic versions directly to locations where they must be published (e.g., *Federal Register*), reviewed (e.g., OMB), or stored (e.g., archives). Software that automates and integrates the process from "cradle to grave" – i.e., from the proposed rule's first appearance as a petition for rulemaking or a listing in the *Unified Agenda,*[3] through enforcement, to amendment or repeal – would save time and expense. Perhaps more important, it would provide data about rulemaking practices that can be used to improve them. On the public side, a capable e-rulemaking system will offer stakeholders and others the opportunity to receive electronic notice of rulemaking activity; to review information used in developing the rule and to submit comments electronically; to locate relevant compliance materials online; and to submit required enforcement information electronically. Automation in these areas not only lowers public and private costs, but also facilitates more informed participation in rulemaking and increases compliance with completed rules.

LEVEL 3: RE-ENGINEERING

Using technology to redesign work processes and obtain significantly better results in existing programs and services

An upgraded e-rulemaking support system should achieve many desirable objectives. Such a system can support re-engineering that broadens the range and quality of public participation and helps agencies improve the content and enforceability of rules (Coglianese 2004; Shulman 2004). Existing and emergent technology can help rulewriters draft more understandable rules and discover conflicts with existing regulations. It can make it easier for stakeholders and other members of the public to comprehend the substance of the agency's proposal and the ways to comment effectively. It can also help them extract and organize information from relevant materials, including the comments of others. After the comment period has closed, technology can assist rulewriters in analyzing content and patterns in the public submissions, and in preparing a justification for the final rule that more completely reflects and references materials in the record. Finally, it can support rule implementation through compliance "wizards" that draw together relevant agency and judicial documents, and present important information to the public in a user-friendly format. An upgraded e-rulemaking system can also support development of new forms of collaboration among federal agencies, and between federal, state and local regulators.

LEVEL 4: INNOVATION

Embarking on new programs and services that become possible because of technology

Looking forward, an e-rulemaking system should provide the technological environment that enables new forms of public participation and inspires new ways of making and implementing regulatory policy (Brandon & Carlitz, 2002; Noveck 2004; Noveck 2005). Technology can support more comprehensive regulatory information structures: ones that track policy development from its genesis in Congress, through agency processes of rule development, and into judicial review and enforcement activities, while also mapping relationships with activities of other federal agencies and state and local government (Lubbers 2002:4-5;

[2] Several schemas have been proposed to describe the development of e-government systems. This one draws on the work of Robert Behn (2007).

[3] The *Unified Agenda of Federal Regulatory & Deregulatory Actions* is published twice a year by the Regulatory Information Service Center in the General Services Administration. It summarizes the rules and proposed rules agencies expect to issue in the next year. The Fall version includes the *Regulatory Plan*, which gives status information for the most important rulemakings.

Otis & Miles-McLean 2006). It can offer web-based tools for collaborative policy development and problem-solving. It can support forms of public consultation ranging from interactive interchange with large, diverse groups, to targeted outreach tapping the expertise and experience of specialized sub-communities (Noveck 2008). A system that reaches this level of development will nurture innovative entrepreneurialism. It will have the flexibility to integrate technological advances, and will be sufficiently open that those involved in rulemaking within and outside government can exercise the creativity and ingenuity that produces transformative advances in process and outcome.

C. Goals of an e-Rulemaking System

By considering the challenges of contemporary rulemaking in light of the potential of e-government approaches, it becomes possible to identify the set of objectives that should guide design and development of an e-rulemaking support system. The system will become more capable of achieving these objectives as it evolves from the foundational stage of providing **information** (sometimes called "i-government"), through the levels of **automating** and then **reengineering** rulemaking processes, to the state of enabling true rulemaking **innovation**:

KNOWLEDGE

Increase Comprehensibility of Rulemaking

Widespread unawareness of, and misconceptions about, how regulators make important policy decisions reduce effective monitoring and informed assessment of regulatory government. Opportunities for participation mean little so long as many stakeholders and other members of the public lack basic knowledge of the rulemaking process, and receive little help understanding the substantive and legal issues raised in particular rulemakings.

Make Regulatory Information More Accessible

Obtaining information relevant to a pending or completed rulemaking should not depend on ability to travel to where the agency's files are located, or to pay a lawyer or other agent with access to them. Web-based availability of rulemaking materials – with effective search and other technologies for finding, organizing and extracting the information those materials contain – benefits all stakeholders in this information-intense environment. For small business owners and other individuals affected by regulation, public interest groups, smaller NGOs, and many state and local government entities, such access is an essential precondition for developing an effective voice in the regulatory arena.

Equally important for these individuals and groups is being able to discover all applicable regulations[4]. Often, multiple agencies have authority over a particular regulatory issue or area. An e-rulemaking system should create an information base that transcends jurisdictional boundaries, thereby making government-wide retrieval of applicable materials substantially easier and faster for all of those who are regulated and who are beneficiaries of regulation.

PARTICIPATION

Enable Broader, Better Participation

Public participation is simultaneously the promise and the challenge of the American rulemaking process. Expensive and time-consuming, "notice and comment" is justified by a belief that agencies do not always know what they need to know, and by a conviction that taking part in a governmental process may increase acceptance of its outcome. Both justifications are undermined when meaningful participation is achieved by only a limited range of those whom regulation affects. The goal is not necessarily *more* participation. Quantity without quality compounds cost with little corresponding benefit. Rather, the aim is to provide conditions in which a broader range of voices can speak at a time, and in ways, that effectively convey their knowledge and ideas.

MANAGEABILITY

Enhance Process Efficacy and Policy Coordination

Information in paper-based rulemaking files is difficult to search, resistant to modification and recombination in new forms, cumbersome to share with other users, and expensive to store. An electronic rulemaking support system should allow agencies more easily and effectively to identify and retrieve relevant information from current and past rulemakings, manage and monitor workflow, and engage in collaborative drafting and review. Moreover, it should help agencies more effectively address the problem of multiple regulatory obligations by making it easier for them to become aware of, and share information about, potentially overlapping (or even inconsistent) activities of sister agencies, as well of state and local government entities.

MONITORING

Increase Transparency and Facilitate Evaluation of the Regulatory Process

It is often difficult for those outside government to know which entity is responsible for particular regulatory

[4] "Small business owners often fear that they will inadvertently fail to comply with some obscure rule, and that a government inspector will show up, close down the business, and drive them into bankruptcy" (Small Business Admin. 1995).

decisions or to track the status of regulatory actions.[5] Moreover, systematic assessment of regulatory procedures and outcomes is now almost impossible because the necessary data must be culled manually from massive numbers of paper files. Digitizing information and automating processes makes it possible to provide accurate, current status information to oversight agencies, Congress and the public. The creation of well-structured rulemaking databases allows the agency itself, as well as outside observers, to extract and analyze quantitative and qualitative data across regulatory programs and over time. Indeed, e-government innovation often comes after technology enables analysis of information that had previously been dispersed or otherwise inaccessible to meaningful study (Behn 2007; Fountain 2001:35-36, 40-42).

QUALITY

Improve Rulemaking Outcomes and Compliance

Better rulemaking outputs may result from (i) broader, better timed and structured participation that provides agencies with a fuller range of information; (ii) more efficient and effective information flow within the agency itself and between government entities with related missions and responsibilities; and (iii) enhanced ability to gather and assess data about program performance. Moreover, an e-rulemaking support system should inspire and enable ongoing improvement in rulemaking practices.

Each of these objectives has been identified and endorsed by the Administration in the eRulemaking Initiative (see http://www.whitehouse.gov/omb/egov/c-3-1-er.html) and by Congress in the E-Government Act of 2002 (44 U.S.C. § 3601 note, Findings and Purposes). Indeed, there is only one point on which our view of what an e-rulemaking support system should accomplish diverges from that of some Administration officials and legislators: saving the government money in the near term.

Creating an effective cross-governmental e-rulemaking support system is no different in this regard than the automating and reengineering projects of major companies in the private sector: Significant up-front technology investments are necessary to produce longer-term savings. Initial required investments include not only hardware, software and system development but also the less obvious (but no less real) costs of converting existing records, training personnel in the new system, and adapting current business processes (Dawes 2008:118-20). Even if only ongoing operating costs are considered, agencies are unlikely to experience net savings from e-rulemaking for the foreseeable future. This is principally because virtually all agencies have pre-existing paper-based rulemaking files that must, for practical and legal reasons, be kept as long as 20 years before being archived. To be sure, maintaining documents in electronic form should be substantially cheaper than paper-based systems *once complete conversion is achieved*.[6] However, digitizing the documents in those systems will be time-consuming and expensive. Thus for most agencies, the e-rulemaking system will supplement, not replace, their paper-based rulemaking files for several years. Moreover, rulemaking is not the only form of regulatory activity in which these agencies engage: Enforcement actions, the grant of permits, licenses, exemptions and benefits, and a range of similar proceedings generate substantial adjudication files. Ultimately, appropriate electronic record systems for these materials also should be created, with links to the rulemakings that underlie them. In the meantime, though, adjudication files will also require continued operation and maintenance of agencies' paper-based record systems.[7]

The most important benefits of e-rulemaking, *at least in the short-term*, are likely to be difficult to monetize, widely dispersed and subtle (Callan 2003:4). The danger in expecting immediate, demonstrable cost-savings is that such expectations cannot be met, and then funding will not be supplied at a level sufficient for a robust, versatile system to develop and evolve. Indeed, there is good reason to fear that this is happening in the eRulemaking Initiative (see Part IIG, IIH infra). To be sure, public resources must not be wasted. Yet, if e-rulemaking is indeed to be a significant step on "the road toward citizen-centered government and … transforming the regulatory development process across the Federal government" (http://www.whitehouse.gov/omb/egov/c-3-1-er.html), the focus must be on wisely investing in increased system capabilities, rather than on searching for immediate dollars saved.

[5] This remains true more than a decade after the passage of the Electronic Freedom of Information Act Amendments of 1996 (OMB Watch 2007).

[6] For example, the Department of Transportation, the only Executive-Branch agency with a comprehensive online electronic docket system prior to migrating to FDMS, reportedly saved $1.3 million annually over maintaining an extensive public reading room of paper dockets (Eisner 2003:76; GAO 2000: 9). Savings from converting to electronic recordkeeping have been achieved by other agencies, including EPA, in various contexts.

[7] DOT's experience is consistent with this assessment. When it moved all its component units to electronic recordkeeping, the Department invested in digitizing the most important existing records. For just one of those units (the Office of the Secretary), those costs exceeded $30,000 (in mid-1990s dollars) – a figure that does not include personnel time to select the files that would be converted. The annual savings figures in the previous note do not reflect amortization of those costs.

D. Basics of the Current System

NOTE: This report discusses the system as it existed in late Summer 2008. Changes, of course, continue to be made, and so may not be reflected here.

1. SYSTEM ELEMENTS AND OPERATION

The PMO describes the Federal Docket Management System (FDMS) as "comprised of one information technology solution with two interface points." For present purposes, this can be understood as referring to three interrelated elements:

- FDMS e-docket system: the database set up to contain electronic versions of rulemaking documents (which agencies organize in associated groups, or "dockets"), with capabilities for managing and searching content;[8]
- *Fdms.gov*: the password-protected interface through which agencies access the e-docket system and its various capabilities; and
- *Regulations.gov*: the public interface through which those outside the federal government access publicly-available material in FDMS, and submit comments on proposed rules.

All Executive departments and agencies now use FDMS, with the last agencies "migrating" to the system earlier this year. For these entities, participation in the system is both mandatory and exclusive: OMB required them to shut down any existing electronic docket or online rulemaking applications and has prohibited creation of any new applications considered "duplicative" or "ancillary" (OMB May 2002; Evans 2006). The independent regulatory commissions are not covered by these OMB directives. Some have chosen to use FDMS;[9] the others, including many of those with substantial rulemaking activity, either have their own electronic docket and online commenting system or are creating one.[10]

Significantly, FDMS offers a records management module that complies with current legal standards for making electronic documents the official documents of record. This allows agencies to choose no longer to maintain duplicate paper copies. At the same time, though, with one categorical exception, FDMS is a "day-forward" system – meaning that migration to the system did not include converting existing rulemaking files to electronic form. The exception involved agencies that had a pre-existing electronic record system; all materials held in such systems were moved to FDMS. Hence, agencies with paper-based docket systems – representing the great majority numerically, as well as some of the large rulemaking agencies, such as the Department of Interior – will have to maintain those systems until such time as existing records are converted or archived. One practical consequence of this is that information about rulemakings pending at the time these agencies migrated must be sought from their paper files in addition to FDMS.[11] A related consequence is that the electronic docket cannot be the authoritative rulemaking record, for it is incomplete.

Within the database, rulemaking documents are organized in electronic dockets. The dockets have identifying numbers that indicate the originating agency and the year the docket was created in FDMS (e.g., EPA-2007-xxxx). Documents are numbered sequentially within dockets (e.g., EPA-2007-xxxx-0001). Users can find a particular document or the entire docket by entering its identifying number or, if that is unknown, through a variety of other search techniques. Early this year, the PMO took an important step towards making information in the database accessible to commercial search engines such as Google and Yahoo by implementing a site map protocol.[12] Thus far, the material indexed to this protocol is limited to documents coming directly from the *Federal Register* (e.g., proposed rules). Although reaching all the other documents in FDMS is not impossible for an external search engine, the fact that these are not indexed by the sitemap protocol makes them less readily and reliably accessible.

Notices of proposed and final rules come to FDMS directly from the Federal Register, through a daily electronic feed.[13] Documents in the *Federal Register* "Notices" category come

[8] The system uses an Oracle database with Documentum content management software. Technical details can be seen at Fornay & Perkins 2006:8.

[9] These include the Federal Trade Commission, the Equal Employment Opportunity Commission, the Nuclear Regulatory Commission, and the Pension Benefit Guaranty Corporation.

[10] The largest rulemaker of these is the Federal Communications Commission (FCC), which has long had its own e-system. FCC was a participating agency from the beginning of the Initiative. Ultimately, though, it decided not to migrate, reportedly because FDMS would cost it more than maintaining its current system.

Other commissions with their own systems include the Commodity Futures Trading Commission; Federal Elections Commission; Federal Energy Regulatory Commission; Federal Maritime Commission; Federal Reserve Board; National Labor Relations Board; and Securities & Exchange Commission. The web addresses of their systems can be found in Sources infra.

[11] Rulemaking can span an average 3-5 years from initiation to publication of the final rule, and it is not unusual for major rules to take 10 years or even more (Kerwin 2003:102-04).

[12] A *sitemap protocol* lists the web location (URL) and other information (e.g., date of last update) for material on the site. Such a listing allows search engines more effectively to find all possibly relevant material on the site.

[13] Some agencies add to the docket the signed copy, which is the official version.

as well, unless the agency elects otherwise.[14] The feed includes all proposed and final rules, even those from independent regulatory commissions not using the system.

For agencies using the system, public comments submitted through *regulations.gov* are automatically added to the appropriate FDMS e-docket. Most of these agencies continue to accept comments by fax, mail and email, as well as through *regulations.gov* (Copeland 2007:9). There is no direct interface between an agency's email system and FDMS. Hence, email comments must be added separately to the e-docket, while comments received by fax or mail become part of that docket only if agency personnel digitize them by scanning and then enter them into the database. Similarly, agency word-processing systems are not directly linked to FDMS. Thus, materials such as impact analyses and supporting data and studies become part of the FDMS docket only if formatted and added by agency personnel. Recent statistics published by OMB estimate that 90% of rules in FDMS have "supporting materials in the system" (http://www.whitehouse. gov/omb/egov/ c-7-22 -erule.html). However, at least for agencies that still have paper docket systems, the materials available online to the public are often scanty.

FDMS also contains "non-rulemaking" materials. No guidance appears to exist telling agencies or the public what non-rulemaking materials could or should appear in FDMS. As a result, the "non-rulemaking" group is both diverse and unpredictable. *Regulations.gov* currently lists nearly 300 document subtypes – including guidance, peer review and data quality documents – in the category ("Other") that covers non-rulemaking documents. A large portion of these materials is the adjudication dockets of the Department of Transportation (DOT) and its constituent agencies. These dockets had been part of DOT's electronic Docket Management System (DMS). The cost of maintaining two e-systems (DOT pays one of the largest portions of the costs of FDMS, see notes 67, 68 and accompanying text infra) and concern about staff confusion in moving constantly between two quite differently configured e-dockets led the Department to move its adjudication files to FDMS with its rulemaking materials – even though neither the FDMS database nor the agency or public user interfaces are structured to reflect the nature and complexity of the adjudicative process.[15]

Fdms.gov is the password-protected "government-side" user interface. Through it, the agency adds and manages its own documents, monitors docket workflow, and accesses documents of other agencies.[16] One of the most important management functions for an agency is designating which of its documents in FDMS will be accessible to those outside the agency. No document – even comments submitted through *regulations.gov* – is available for public online viewing unless and until the agency approves its "posting" to the *regulations.gov* interface. Such posting also makes the document available to other agencies via *fdms.gov*. There appears to be a significant amount of material – including comments submitted online – that agencies do not make accessible online to the public and other agencies, even though much of it could be physically viewed in the public paper-based rulemaking files or requested through FOIA. See Part IE2 infra. The reasons given for this disparity generally involve concern about Internet availability of copyrighted material, medical and other sensitive personal information of identifiable individuals, material that is indecent or otherwise considered inappropriate for some Internet users, and confidential business information.[17] At present, there is no way (short of physically inspecting the paper files or using FOIA) for users outside the agency to know the nature or extent of material in the rulemaking record that is missing from the electronic docket entirely, or that is in this docket but not viewable by the public on *regulations.gov* or by other agencies via *fdms.gov*.

Regulations.gov is the "public-side" interface to FDMS. Through it, users can access documents that agencies have authorized for public posting. They can also submit comments on proposed rules by typing them into an unstructured comment "box" form. Comments from frequent rulemaking participants (e.g., industry, trade and professional associations, law firms) are typically prepared in advance and are often lengthy. Such comments can be submitted by attaching a file.[18] The amount of comment activity on *regulations.gov* has been increasing at a very encouraging rate.[19] Still, the number of online submissions,

[14] "[The Notices] category contains documents that do not have regulatory text, do not impose requirements with general applicability and legal effect, and do not affect a rulemaking proceeding." Federal Register Document Handbook, available at http://www.archives.gov/federal-register/write/handbook/chapter-3.pdf. Examples include scheduled public hearings and meetings, environmental impact statements, and information collection and data quality notices.

[15] We have been told that some agencies fear that if FDMS were reconfigured to deal more effectively with DOT's adjudication materials, all agencies would be required to move their adjudication dockets to FDMS.

[16] Screenshots of this interface can be found in Morales 2005: 18-27; Fornay & Perkins 2006:15-18.

[17] The system is not presently capable of securely handling submissions containing confidential business information (CBI). According to the Director of the PMO, preliminary discussions on this issue have assumed that a separate "CBI comment form" would be created, along with a process for CBI submitters to pre-register and then authenticate submissions.

[18] For a list of the wide variety of file formats accepted, see http://www.regulations.gov/fdmspublic/help/en/PublicHelpGuide/PublicHelpGuide.htm#3_Navigation.htm. (User Guide: Commenting on Open Documents). This doubtless seemed a public-regarding design choice, but it will significantly complicate retrieval and other electronic management of material in the docket. See Rec. B2 infra.

[19] Data provided by the PMO show about 295,000 documents submitted by public users via *regulations.gov* in the first eight months of 2008, as compared with about

relative to total comment volume for all agencies, appears to be modest, suggesting that many commenters continue to use their accustomed transmission methods of email, fax and express delivery.[20] Commenters who submit through *regulations.gov* receive a tracking number that makes it easier to determine when (and if) their comments have been posted for viewing. *Regulations.gov* will display, and accept comments on, any proposed rule, including those of independent regulatory commissions not using the system; comments on such rules are forwarded to the originating commission, but they do not become part of the FDMS database and cannot be viewed on *regulations.gov*.

Users interested in a particular rulemaking can follow developments by arranging to receive email notification whenever something is added to the publicly available part of the docket. They can also receive an RSS feed[21] that allows them to follow all daily *Federal Register* additions to FDMS, although the information cannot be tailored by agency or subject area. Finally, *regulations.gov* now provides access to the *Unified Agenda*. In an important development, recent modifications have linked *Agenda* items with the relevant e-rulemaking docket. So far, the link exists in only one direction: from the Agenda entry to the docket, not vice-versa. Users can search within the agenda of each agency, although not across the entire Unified Agenda, as they can at the Federal Register site.

114,000 in the last eight months of 2007. This is an impressive increase – although it does not mean that users submitted 295,000 *comments*. As the system is currently configured, a comment submitted as an attachment can generate two "documents:" one that is the actual (attached) comment and a second that is the online comment form containing information about the submitter. If the commenter submits more than one attachment, multiple "documents" result. Thus it is difficult to estimate how many comments 295,000 "documents" actually represents.

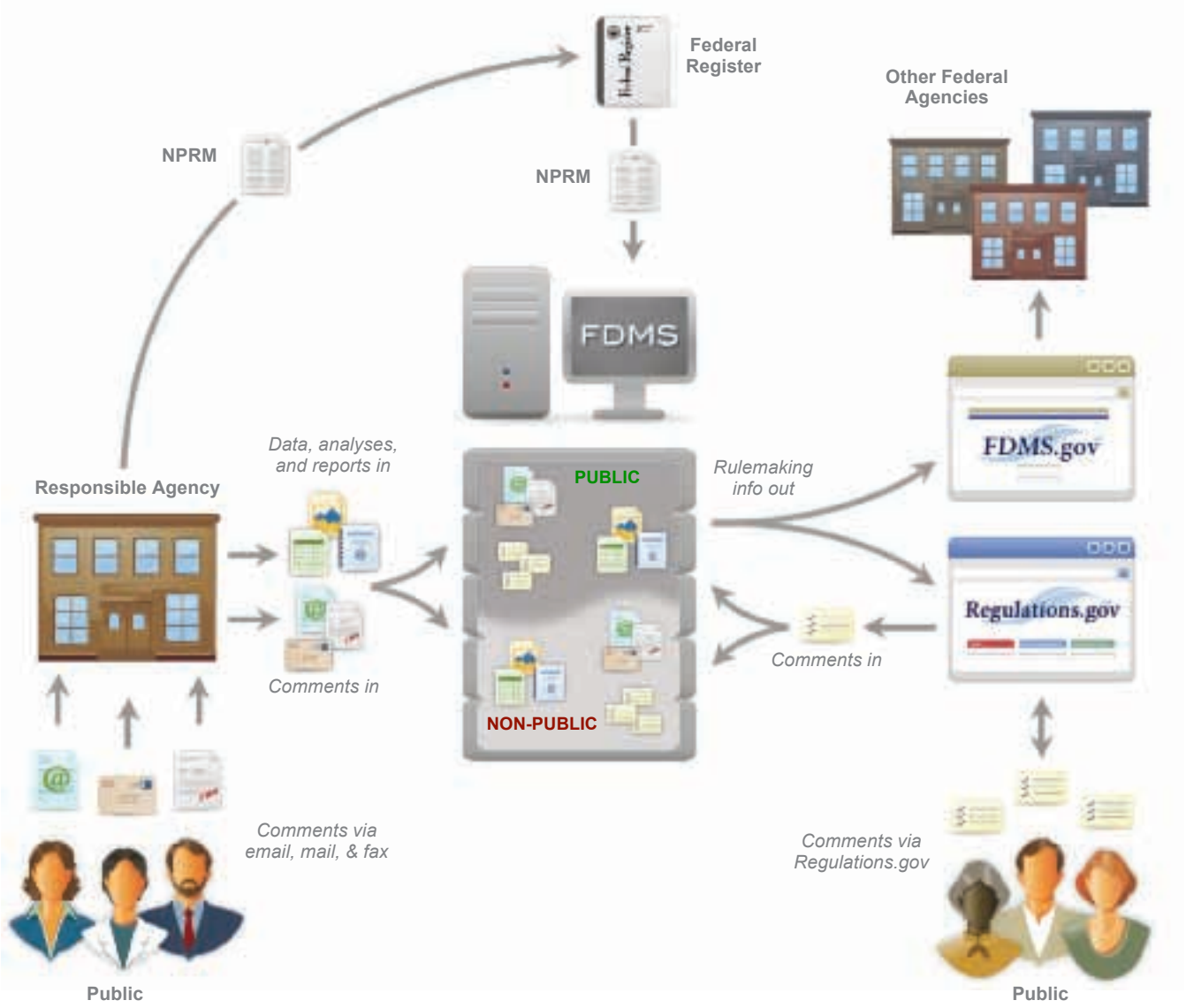
The PMO also reports a marked increase in the number of "hits" *regulations.gov* has received starting in March 2008. "Hits" are a more problematic measure of increased site use by the public because, among other reasons, many hits typically result from search engine robots "crawling" the site (i.e., indexing its contents). Moreover, even a human visit to the site may generate several hits when multiple bits of graphics on the page each register separately.

[20] It is difficult to determine what proportion of total comment activity is represented by submissions through *regulations.gov*. For reasons stated in the previous note, the numerator of such a calculation is uncertain because the data on public submission *documents* must be reduced by some undetermined factor to get the number of public *comments* received through the website. At the same time, the denominator is unknown because the current shortage of data about federal rulemaking is so severe that no one knows the total number of comments submitted annually to all the participating rulemaking agencies. Estimates based on the number of comments shown for completed comment periods in dockets now on *regulations.gov* would be inaccurate (even after dividing by a multiple-document-per-comment factor) because agencies are not reliably posting all comments received. See Part IE2 infra.

Still, the 295,000 "documents" submitted in the first eight months of 2008 can be roughly scaled by comparing this figure with data from DOT's old e-docket system. In the first three quarters of 2007 (the last period from which data are available from that system), the constituent agencies of DOT alone received more than 58,000 comments. DOT is in the group of large rulemaking agencies, but it is not the most prolific.

[21] An *RSS feed* (Really Simple Syndication or Rich Site Summary) is a way of formatting Web content using Extensible Markup Language (XML) so that it can be read and used by many different programs. An RSS reader or aggregator, now available in most email programs, can automatically acquire content formulated in this way from many websites, and display it so that the user can view it without going to the originating site.

Information Flows in the Current System



2. GOVERNANCE AND FUNDING

EPA has been the managing partner for the eRulemaking Initiative since 2002. It contracted with Lockheed Martin Corporation to build the system and to maintain and operate the servers and other system hardware, located at EPA's Research Triangle Park, North Carolina, facility.[22] The PMO, which oversees system development and maintenance, is staffed predominantly by employees detailed to the project from EPA's Office of Environmental Information.[23]

The Initiative has a complex, multi-tiered governance structure for making decisions about design, operations, modifications and budget. All agencies using the system are entitled to participate equally, regardless of their volume of rulemaking activity or funding contribution. The top tier of this structure is the Executive Committee, on which about 25 departments and agencies are represented by their CIO and/or Deputy Secretary. The Executive Committee is co-chaired by EPA's Chief Information Officer (CIO) and the Deputy Administrator of OMB's Office of Information and Regulatory Affairs (OIRA). The co-chairs do not vote (EPA has a separate voting member on the committee; the Associate Administrator of the Office of Policy, Economics and Innovation has been filling this role.). The Administrator of OMB's Office of E-Government and Information

[22] Booz Allen Hamilton, Inc. has recently taken over the contract from Lockheed Martin.

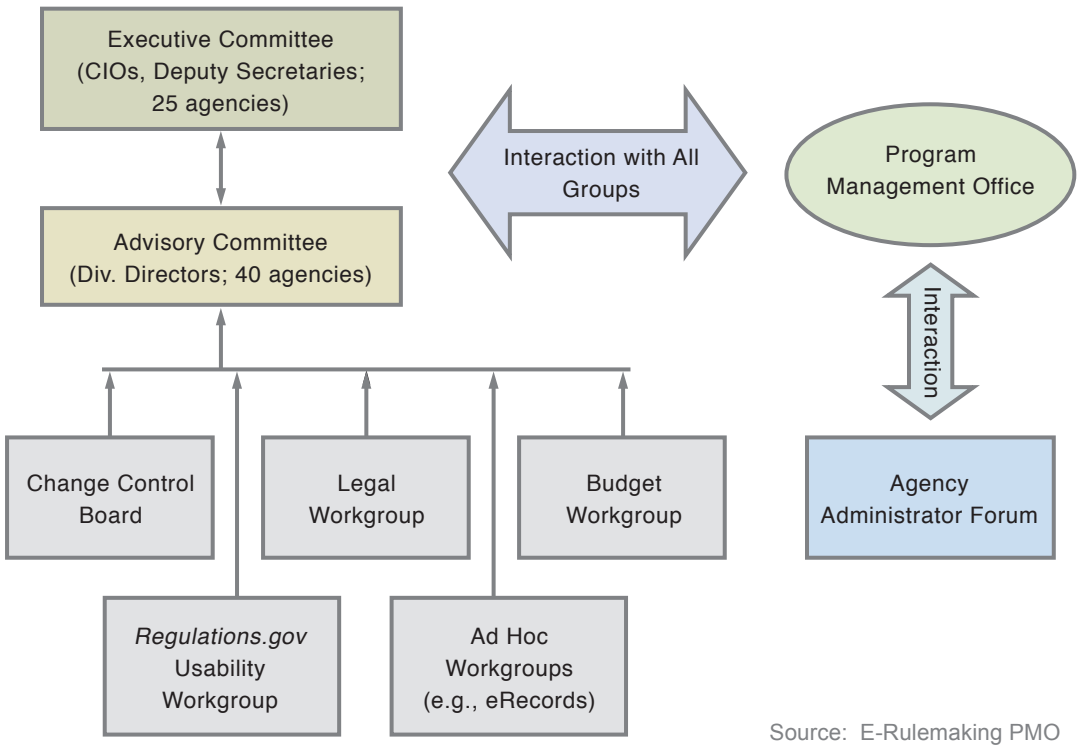
[23] The Office comprises units responsible for information collection and management, and technology development and operations; it is headed by EPA's CIO.

Technology (E-Government Office) has a representative on the Executive Committee.

The middle tier is the Advisory Committee, comprised of Division Directors of about 40 constituent agencies.[24] Finally, a number of standing and special work groups, typically staffed with line personnel, cover a variety of substantive areas including Budget, Legal and, at present, Usability. One of the most important of these is the Change Control Board, which receives requests for modifications and improvements from agencies and the public. The Board vets these requests, gets cost estimates from the Contractor through the PMO, and makes recommendations to the other governance bodies.

The participating agencies fund the system, including the cost of the PMO. The money, in the form of "contributions" transferred to the Initiative, has come from their existing budgets rather than new appropriations. As of FY08, agencies have contributed just over $51 million to developing the system (OMB 2008:398). The Executive Committee (on recommendation from the Budget Committee) determines the overall budget and the apportionment formula for contributions. With the anticipated completion of all agencies' migration to FDMS in 2008, agencies' allocated funding shares are now denominated "fee for service" rather than "contribution."[25] The change in terminology makes little practical difference. The current algorithm for apportioning the annual system budget uses many of the same elements as before the change, and monies still come from agencies' existing budgets.[26]

The history of the e-rulemaking system's development, along with additional details of its operation and capabilities, are discussed in Part II infra.



Source: E-Rulemaking PMO

[24] Apparently, the 40 Advisory Committee seats represent all the Cabinet departments, stand-alone Executive Branch agencies (e.g., EPA), and independent regulatory commissions who use the system PLUS additional representatives from some rulemaking agencies within the departments. Although we understand that participation is a matter of choice for agencies, we remain uncertain about how170-plus entities with rulemaking authority translate to 25 Executive Committee seats and 40 Advisory Committee seats.

[25] OMB has placed great emphasis on shifting from "contributions" to "fee for service." Possible reasons for this shift may be controversies about legal authority (Copeland 2007:26-28) and strained relations with appropriators. See Part II H infra.

[26] The present formula differentially weights three factors: (i) the number of rules the agency issues; (ii) the number of comments the agency receives through *regulations.gov*; and (iii) the agency's *Federal Register* publication costs (based on page space used).

E. Summary Assessment

Specific recommendations to Congress, the President and the agencies themselves for strengthening the current system and supporting its evolution to new levels of functionality are made in Part III infra. Here, we summarize the principal issues facing the Initiative as of this writing.

The FDMS system is now primarily a Level I (**Information**) system. It focuses on making rules, comments and other rulemaking materials available online. It has Level II (**Automation**) capabilities to the extent of allowing stakeholders and other members of the public to submit comments electronically.

Bringing more than 170 different rulemaking entities in 15 Cabinet departments and a few freestanding Executive Branch agencies and independent regulatory commissions to the point of using a common database for rulemaking documents (the FDMS e-docket), a universal docket management interface (*fdms.gov*), and a single public interface (*regulations.gov*) for accepting online comments, is a remarkable achievement. EPA as managing partner, the small group of employees who have staffed the PMO over the years, and the participating agencies whose personnel have worked on the Initiative, deserve much commendation and gratitude.[27] They were given an inherently challenging task, which was further complicated by political complexities and resource limitations. Yet every participant interviewed for this report displayed remarkable commitment to e-rulemaking, even if they voiced reservations about the current state of the system.

Nothing in this report should be taken as slighting the dedication of the people involved in the Initiative or diminishing the importance of what they have achieved thus far. Nonetheless, without significant changes in several critical areas, the goals of e-rulemaking will not be fully accomplished and its potential will not be realized.

1. DATA STANDARDS

A central problem is that FDMS lacks adequate data standardization. For a multi-agency database to support searches of complex materials that yield reliable, easily interpreted results, the participants must agree on certain basics, including: how documents will be named and classified; what information about them ("metadata") will be supplied; and what documents and metadata will be made publicly available. Yet, common practices in these crucial areas have not been specified or agreed to. Perhaps more accurately, participants agreed that each agency retained autonomous choice outside a very small number of data areas.[28]

This lack of harmonization fundamentally undermines the concept of a cross-agency database of rulemaking materials. If, for example, a searcher wants to locate notices of proposed rulemaking issued by an agency in a specified time period, she will discover at least *nine* different names for such documents in the current list of available search parameters.[29] If she searches for a particular document and the results include several items with the same or similar name, she cannot reliably use the date of creation or publication to identify the correct document. This is so because such information is not required when agencies post documents to *regulations.gov*, and even if it is provided, agencies can choose to make the field not publicly visible.[30]

Given the monumental task of capturing the multiplicity of statutory mandates and rulemaking needs and practices of all participating agencies and their clients within a single data model, it is not surprising that data harmonization has proved difficult. Still, overcoming those difficulties is essential if public and government users are to be able to *find* information in this expanding database. Unless decisive steps are taken to standardize key data practices – in terms of both inputs from agencies and outputs to *regulations.gov* – it will be hard for agencies, and impossible for the public, to reap the benefits of a government-wide rulemaking database.

[27] This has been acknowledged by a number of awards given to the Initiative; these are detailed on *regulations.gov* (see http://www.regulations.gov/search/whats_new.jsp).

[28] As *regulations.gov* puts it, "The information displayed on *Regulations.gov* docket and document details screens and comment forms is unique for each Department and Agency and conforms to each Department or Agency's internal policy." http://www.regulations.gov/search/this_site.jsp?css=0& ("What is on this site?")

[29] The nine are: "Notice of Proposed Rulemaking," "Proposed Rules," "Proposed Rule," "NPR-Notice of Proposed Rule-Making," "NPRM," "Notice of Proposed Rulemaking (NPRM NOPR)," "NOPR," "Notice of Proposed Rulemaking (NPRM)." There are also at least nine terms for Advance Notice of Proposed Rulemaking, the procedure for inviting comments when an agency wants public input during the formulation of the proposed rule. The problem is aggravated because the search approach is, in this area at least, absolutely literal. Thus, "FINAL RULE", "Final Rule" and "Final rule" and "Final rule;" show up as four different document subtypes, each with distinct content.

[30] Even if "author date" is made publicly viewable, it is not shown either in the docket or the summary of search results. (To find it, the searcher must open an information page for each individual document.) The docket shows only date *posted* – i.e., when the document was added to the database – a relatively worthless bit of information to public users since it will not reliably approximate date of creation, publication or submission, especially for older documents added to the system. No date information is given in the search summaries.

2. AGENCY UNDERUTILIZATION & RISK-AVERSENESS

The E-Government Act requires agencies not only to accept comments "by electronic means" but also to make available in their electronic dockets "public submissions [i.e., comments] and other materials that by agency rule or practice are included in the rulemaking docket … whether or not submitted electronically" (§ 206(c),(d)). This mandate is qualified by "to the extent practicable," but the intent is clear: The public should be able to find in the online docket everything they could review if they went to the agency reading room and requested the rulemaking file. Unfortunately, current agency practice falls far short of compliance with the Act.

Not all comments received by agencies are posted for public access on *regulations.gov*. This is true both of comments submitted online through *regulations.gov* and by email, as well as of faxed, mailed or hand delivered comments that must be digitized before they can be added to FDMS. Moreover, comments are only one subset of the "materials that by agency rule or practice are included in the rulemaking docket." At a minimum, the e-docket should contain the various regulatory assessments required by statute and executive order, as well as data, studies and similar material relied on by the agency in formulating the proposed rule. Yet beyond agencies that had experience with electronic online docketing prior to FDMS (notably, DOT and EPA), the amount of such material actually being made available on *regulations.gov* appears to be low.

A variety of reasons seem to account for this lag in putting rulemaking materials into FMDS and posting them to *regulations.gov,* including*:* lack of resources to digitize, enter and post paper documents; reluctance to "lose control" over crucial data by sending it to a central database maintained by someone else; concern about Internet dissemination of material, even if it is part of the agency's public files; and lack of knowledge about the E-Government Act mandate or commitment to its underlying objectives. Obviously, different sorts of responses would be required to address these various reasons, but unless they *are* addressed, so that all agencies are maintaining the full, *authoritative* rulemaking docket in electronic form, sophisticated users will be reluctant to use the electronic docket because they realize it is not predictably reliable. Perhaps worse, less knowledgeable users who believe they are viewing the entire set of comments and other relevant materials will be misled.[31] Moreover, underutilization of the electronic docket by agencies deprives the government itself of much of the value of the project, for a cross-agency searchable rulemaking database is only as good as the material within it.

3. DIVERSIFICATION AND CUSTOMIZATION

There are definite advantages to a government-wide rulemaking database – both for agencies trying to coordinate regulatory activities and reduce overlapping regulatory responsibilities, and for public users trying to sort out regulatory rights or duties created by multiple federal entities – and to a single Internet portal that allows access to all federal rulemakings. Nonetheless, the strength of a centralized system with a single public interface is also its weakness: It can define and make accessible a common core of rulemaking materials and practices – but beyond what are truly shared practices, it will be ineffective and incomplete at best.[32]

As the problems with data standardization reveal, it is extraordinarily difficult to map a single e-rulemaking model onto the many rulemaking needs and circumstances of all participating agencies. No matter how well-designed, one universal interface cannot adequately capture and convey the kind of agency-specific and rule-specific information many stakeholders and members of the public will need to understand rulemaking and effectively participate (Deloitte 2008). To meet the needs of both public and agency users, the system must enable and support diversification on top of the common core, through customized applications and web presentations that supplement the core without sacrificing government-wide document access and other interoperability.

The technical Systems Architecture *and* the policy environment in which agencies seek approval and funding for IT projects currently preclude such development.[33] Specifically, the existing closed, exclusive architecture does not permit new components, tools and presentation formats to be built out by agencies or interested individuals and groups outside government, while at the policy level, OMB has prohibited development of any "ancillary or duplicative"

[31] For example, a search on *regulations.gov* for the "real ID" rule proposed by the Department of Homeland Security returns 10,661 "public submissions," 10,500 of which are categorized as "public comments." Yet according to the statement accompanying the final rule promulgated in January 2008, "over 21,000 comments" were submitted during the 60-day comment period in 2007. Although some agencies batch duplicate comments as a single submission (usually then indicating how many individual copies were received), it appears that duplicates are posted separately in this docket.

[32] The most extreme example involves the absorption of DOT's entire adjudicatory docket into FDMS when DMS was shut down. An entire hemisphere of agency activity – including enforcement actions, tariff and other pricing decisions, orders about licenses, certificates, exemptions – has now been reduced to the document type "Other." The resulting presentation of these materials is so non-intuitive and opaque that DOT dedicates a section on its own website to providing its stakeholders directions on finding things on *regulations.gov* (see http://dockets info.dot.gov/).

[33] We use *systems architecture* in the broader sense encompassing not only hardware, software and their relationship to each other, but also the relationship of various components to the environment, particularly anticipated users. See note 90 infra.

systems. Changes are required to enable evolution of the system into one that expands document availability, provides rule-writing tools, promotes new collaborative and participatory processes, and assists public users through richer, more detailed and varied presentations of regulatory data and processes.

4. THE IT/PROGRAM EXPERTISE GAP

In a project that faced many challenges, one of the most fundamental has been effective communication across the gap between technological knowledge and operational rulemaking expertise. The Clinger Cohen Act and the E-Government Act put ultimate responsibility for design and implementation of e-government systems in the hands of technology specialists: the CIOs and their staffs. Yet, as studies of large software projects repeatedly reveal, the understanding of organizational needs and practices essential to *successful* design and implementation is often located in frontline program personnel (Dawes 2008:121; Wagner& Newell 2005). If these two sources of knowledge are not brought together in effective and sympathetic communication and truly joint decisionmaking, the result is likely to be a system ill-suited to the tasks at hand, one that frontline personnel underutilize or work around (Dawes 2008:107; Fountain 2001:167-92).

Although the Initiative's Executive and Advisory Committees have always included participation by both technical and program officials, this has not always been adequate to bridge the expertise gap. IT professionals underestimated both the range of substantive, procedural and organizational variables that affect rulemaking practices across agencies, and the impact this diversity would have on designing a single, exclusive system for all. At the same time, program officials failed to comprehend the significance of standardizing data practices, and the way that maximizing autonomous agency choice in this area would undermine the integrity and usefulness of a government-wide database of rulemaking materials.

As the system advances to the next phase of development, steps must be taken to address the IT/Program Expertise gap. Identification and development of desirable new capabilities will require a true partnership between technology and rulemaking expertise. Both existing institutions, such as the CIO Council[34] on the technical side and the Regulatory Working Group[35] on the program side, and new resources and mechanisms[36] could be useful in this regard.

5. THE PUBLIC INTERFACE

Since a special Initiative workgroup was created in 2007, the PMO and participating agencies have put substantial time and energy into improving *regulations.gov*. This is a most welcome development. The Initiative's success in enhancing public understanding and participation depends directly on the quality of the public interface. However, despite several significant modifications and at least one substantial redesign, *regulations.gov* remains difficult to use – even for those knowledgeable about rulemaking.

Paradoxically, public users require both more uniformity *and* more diversity from *regulations.gov*. Variation among agencies with respect to names and availability of key rulemaking documents and basic commenting practices is confusing – particularly when it is explained only by brief statements about agency discretion and advice to consult agency websites via *USA.gov*.[37] At the same time, many public users will be unable to comprehend the significance of rulemaking materials, or to formulate effective comments, without the sort of particularized information about substance and process that can be provided only by agency-prepared presentations tailored to the specific rule, program or regulatory issue.[38] Achieving harmonization *and* encouraging customization are *both* essential to creating an interface that serves the range of potential *regulations.gov* users.

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[34] The *CIO Council* was established by Executive Order 13011 and codified by the E-Government Act. Chaired by OMB's Deputy Director for Management, it comprises the CIOs of the Cabinet Departments and several other Executive agencies, and is the principal inter-agency forum for improving practices in the design, modernization, use, sharing and performance of federal agency information resources.

[35] The *Regulatory Working Group* was created by Executive Order 12,866. Chaired by the OIRA Administrator, it is defined as comprising senior White House officials, the Vice-President, and representatives of the heads of each agency that has significant domestic regulatory authority. Dormant in recent years, it could (and should) be reinvigorated. The people who are expected to attend these meetings should have personal experience with, or be able to draw on staff with personal experience with, the *operational* aspects of the rulemaking process.

[36] See, e.g., *Regulatory Matters*, EPA's pathbreaking new online collaborative workspace for rulemaking professionals across government, discussed in Rec. D1 infra.

[37] As *regulations.gov* has evolved, the warnings to users about agency-specific variability have, commendably, become more specific and numerous. See, e.g., *What is on this Site*: "Each Department or Agency determines what information is made available on the site. Therefore, the information displayed on *Regulations.gov* docket and document details screens and comment forms is unique for each Department and Agency and conforms to each Department or Agency's internal policy. For additional information on a specific Department or Agency, visit www.usa.gov."). Unfortunately, this still leaves users unsure about whether the relevant agencies have policies affecting the information they seek and, if so, where (and whether) those policies are stated online.

[38] Compare *Grants.gov*: The portal itself provides core information about the availability, terms and application procedures for grants from all agencies, *and* it contains direct links, within that information, to individual agency webpages providing additional detail.

More fundamentally, the site design continues to reflect an "insider" perspective – i.e., it embodies the viewpoint of someone familiar with the rulemaking process and the agencies that use it. Aesthetically and functionally, it neither orients less knowledgeable users nor provides the support many need to find the information they want and make use of it. Several studies have now demonstrated that simply transferring the standard notice-and-comment process to the Internet is not enough significantly to alter traditional patterns of who participates in rulemaking (Balla & Daniels 2007; Shafie 2007). Without a fundamental reconceptualization of *regulations.gov* that incorporates insight into the needs of various user groups and draws on expertise in new web technologies and design, there is a very real possibility that the Initiative will be no more successful than earlier online rulemaking efforts in increasing the breadth and quality of public participation.

6. GOVERNANCE AND FUNDING

Designing the e-rulemaking system through a process of collective decisionmaking, and funding it from agencies' ordinary budgets, has had unintended consequences. Forging agreement across so many entities with different rulemaking practices is time-consuming and difficult. When costs have to be covered from existing budgets, agencies are rationally inclined to vote for only those features that seem obviously worthwhile to their own operations. The result is a slow, risk-averse process not conducive to system growth and evolution. Also, a few major rulemaking agencies now carry the lion's share of system costs. Unless this changes, they will find it difficult to make additional e-rulemaking investments even though they have the greatest programmatic motivation to do so.

Along with a change in funding method and a shift in focus to encouraging supplemental development by individual agencies, modification of the governance structure has to be considered. Unless a single lead agency is given authority over system development and day-to-day management, it will be difficult either to streamline decisionmaking or to create a clear locus of responsibility for designing an effective public interface and keeping the system technologically current. Moreover, unless persistent concerns about the Federal Advisory Committee Act implications of public user input are addressed, stakeholders outside the federal government will continue to have no sustained, systematic voice in important system decisions.

7. EXPERIMENTATION AND INNOVATION

Advancing e-rulemaking to the levels of process **Reengineering** and transformative **Innovation** will involve electronic tools and techniques that are still unfamiliar to most agency rulemakers. Some of this technology is only in the development stage (Coglianese 2004; Noveck 2004). Not all participating agencies will want such applications, let alone be willing to pay for them; in any event, immediate government-wide integration of innovative technology into the centralized system may be premature as a matter of sound policy (Dawes, et al. 1999:5).

A more workable scenario for exploring new information management tools and public participation technologies involves encouraging small-scale trial projects and experimental research partnerships, undertaken by individual agencies and groups of agencies interested in such capabilities and services. Several agencies had been involved in such efforts, some of which ended with the compulsory shut down of individual e-systems in 2006.[39] Others have been stymied by the formidable obstacles to experimentation now that the government-wide system is the only permissible venue for e-rulemaking.

Opportunities for innovation must be re-created, and the willingness to pioneer reinvigorated. The technical prerequisite is a properly specified open architecture that enables agencies and outside groups to explore new technologies, and new applications of existing technologies. The financial prerequisite is a method for funding the Initiative that frees up agency resources for research and development. The institutional prerequisite is a shift in policy emphasis from mandating exclusive use of a single central system with no "ancillary" development, to encouraging and rewarding creativity, in extending and supplementing the common core, within particular agency environments. Such technological entrepreneurship need not be isolated, or necessarily entail substantial truly duplicative expenditures.[40] Steps taken to narrow the gap between information technology professionals and program personnel will also increase opportunities for circulating ideas, developing collaborative ventures between agencies with similar needs and interests, and sharing results. And ultimately, OMB oversight can and should prevent large-scale duplicative technology investments.

[39] For example, the Fisheries Service of the National Oceanic and Atmospheric Administration had begun experimenting with forms of web-based presentation that sought better comments by providing additional information about the rule and soliciting comments via targeted questions.

[40] As we develop further below, see Rec. D2 infra, the mere fact that two agencies each wish to explore applications of a particular technology to rulemaking does not necessarily mean that such dual expenditures will be wasteful or valueless.

The focus of this report is forward-looking, to discover how federal e-rulemaking can achieve its full potential, rather than backward-looking to critique past actions and developments. At the same time, we strongly believe that understanding the role of certain key decisions and events in creating the current e-rulemaking system is essential to charting a successful future course. For this reason, this section discusses those aspects of the eRulemaking Initiative that particularly inform the recommendations in Part III infra. [41]

A. Developments Prior to the eRulemaking Initiative

The roots of federal e-rulemaking stretch back almost as far as creation of the World Wide Web. In the early 1990s, the National Performance Review flagged many of the knowledge acquisition and information management challenges rulemaking poses for agencies (see Part IA supra), and discussed the hurdles to public understanding and effective participation. It urged agencies to "[u]se information technology and other techniques to increase opportunities for early, frequent and interactive public participation during the rulemaking process and to increase program evaluation efforts" (NPR 1993: App.C REG04). Specific suggestions included: "computerization of rulemaking dockets;" collecting "guidance and policy statements … in one place" and making them electronically accessible; using teleconferencing and other technology to gather public input earlier in the rulemaking process, and as a supplement to formal commenting; creating "computer bulletin boards to circulate requests for information" and draft agency policy proposals; and using technology to improve access to compliance resources and make it easier for regulated parties to submit required information (NPR Reg Systems 1993: REG04; Lubbers 1994).

Momentum towards electronic rulemaking built throughout the decade. In 1994, the National Archives and Records Administration (NARA) and the Government Printing Office (GPO) began offering the *Federal Register* online in searchable format (www.gpoaccess.gov/fr/index.html). The following year, the Regulatory Information Service Center (RISC) in the General Services Administration (GSA) began electronic publication of the *Unified Agenda*, available in searchable form at both RISC's own website (www.reginfo.gov) and the *Federal Register* site. NARA and GPO added an online searchable version of the *Code of Federal Regulations* in 1996 (www.gpoaccess.gov/cfr/index.html).[42] In 2000, *USA.gov* (originally *FirstGov.gov*) became the first federal government-wide web portal. Managed by GSA's Office of Citizen Services and Communications, it has offered links to and information about an expanding range of government entities and services.

Simultaneously, several agencies began to use their newly created websites to offer rulemaking information. EPA, already established as a rulemaking innovator by its pioneering pilot study in negotiated rulemaking,[43] used its site to provide the text of many proposed rules, as well as some supporting materials and comments. Initially, the site did not accept online comments, but by the turn of the century EPA was building E-Docket, an electronic document management and public access system (OMB May 2002:1). Among the independent regulatory commissions, the FCC developed an electronic docket and filing system that eventually incorporated citation links to its own adjudications (www.fcc.gov/cgi-bin/EFBoards/systemstatus.cgi?index_t=%2e%2e/%2e%2e/pub/e-file/EFBoards.html). Other agencies, including OSHA (DOL), the Food & Drug Administration (HHS), and the Animal & Plant Health Inspection Service (USDA), also began experimenting with online access to the text, as well as some supporting regulatory materials and comments, for at least certain rules. All accepted electronic comments (via the website or email) in at least some rulemakings (GAO 2000).

The acknowledged agency leader in electronic access during this early period was the Department of Transportation. DOT's 12 rulemaking entities account for a significant proportion of the annual federal rule output. Like EPA, it had a history of rulemaking innovation, having been the other major agency to pioneer and advocate use of negotiated rulemaking (Pritzker & Dalton 1995:383-87).

[41] The Initiative has already been chronicled in a number of sources including a recent Congressional Research Service study (Copeland 2007); reports by the Government Accountability Office (GAO 2003; GAO 2004; GAO April 2005; GAO Sept. 2005); and articles by participants, academic researchers and reporters (Morales & Moses 2006; Shulman 2005: 627-32; Lindeman 2007). Not surprisingly, no one source is considered completely accurate by all the Initiative's participants and observers. For the best collection of reports and research papers on e-rulemaking, see http://www.law.upenn.edu/academics/institutes/regulation/erulemaking/papersandreports.html.

[42] The official CFR is updated annually. Users can also access a "non-official" e-CFR, updated daily from the *Federal Register*. http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=%2Findex.tpl.

[43] Data from this pilot were crucial to recommendations that became the Negotiated Rulemaking Act (Pritzker & Dalton 1995:20-65, 387-95).

DOT had been moving toward digitization of rulemaking records since the early 1990s. In 1998 it implemented DMS, a comprehensive electronic docket system covering rulemakings and adjudications for all agencies within the Department. Publicly accessible through DOT's website, DMS accepted comments electronically and, in conjunction with the Department's internal workflow system (the Rulemaking Management System), it allowed users to track a rulemaking's documentary progress online.

Once DMS was available, DOT invested in conversion of existing paper records, and dramatically scaled down its Public Docket Reading Room. The Department continued to accept comments by fax or mail, but these paper submissions were scanned into DMS so that all comments were available online. DMS included a "listserv" function to provide email notification of docket additions by agency or, as time went on, by specified subject areas. The ability to specify notice by subject area is important because it allows the public not only to track developments in proceedings of which they are already aware, but also to learn of new rulemakings. Moreover, by using the RIN[44] given in the Department's Regulatory Agenda, users could sign up for notification of developments even before a rulemaking docket was actually opened. DOT's correlative Rulemaking Management System allowed the Department to collect data as rules moved through the process and to generate status and historical reports about both internal workflow and patterns of public participation.[45]

In this initial period of experimentation and development, the nature and extent of the rulemaking information offered online varied considerably across agencies, as did the ease of finding information on agencies' websites. In a 2000 study, GAO reported that some individuals and non-governmental organizations thought the public would benefit from a more common "look and feel" to online presentation of regulatory information (GAO 2000:13-14). According to GAO, both agency program officials and non-governmental respondents supported more inter-agency coordination; they also favored exploring methods of consolidating public access to individual agency sites, including by providing a single web portal. However, the prevailing sentiment of both public and agency respondents was that a "one-size-fits-all" approach to e-rulemaking would be a mistake. Among the reasons given were:

- "Each agency and each rulemaking is different;" agencies need flexibility to design their public participation procedures to fit the particular circumstances.
- A single-system approach could "inhibit further agency innovation by freezing into place the particular practices that have been developed so far."
- Because IT changes so rapidly, one exclusive approach might "lock[ ] agencies into outmoded technologies."
- A one-size-fits-all system would be difficult to tailor to "agencies with vastly different missions" and institutional structures.
- Although more coordination is needed, a single-system approach might neglect the interests of some sectors of the potential user community, such as small business (Id. at 14-16).

B. President Bush's e-Government Initiatives

In 2001, the President's Management Council (PMC) identified e-government as one of five management priorities of the new Bush Administration.[46] OMB established an e-Government Task Force comprised of information technology and management officials from various agencies. In February 2002, it published the E-Government Strategy (OMB Feb. 2002). Creating an "online rulemaking management" system was one of 24 government-wide initiatives, selected from over 350 proposed e-government projects "on the basis of value to citizens, potential improvement in agency efficiency and likelihood of deploying within 18-24 months" (id. at 9). Each initiative was to be led by an agency "managing partner." Not surprisingly, DOT was designated the e-rulemaking managing agency.

The February Strategy report described the planned system in a way that seemed consistent with the concept of greater coordination while preserving agency-specific adaptation. It explained that "[a]n existing 'e-Docket' system would be expanded and enhanced to serve as a government-wide system for agency dockets. Other agency systems would use the system by creating 'storefronts' consistent with statutory requirement for each agency…" (id. at 27). Three months later, however, OMB announced

[44] The *RIN (*Regulation Identifier Number, or Regulatory Information Number) is assigned by the Regulatory Information Service Center to identify each regulatory action listed in the Unified Agenda.

[45] DOT's Rulemaking Management System was eventually shared with the Department of Commerce, which adapted and enhanced it for its own agencies. From Commerce, interest in the system spread to the Department of Homeland Security, which was particularly interested in the module supporting internal document drafting.

[46] PMC consists of the "chief operating officer" of Cabinet Departments and other important Executive agencies; these are Presidentially appointed officials typically holding the "number 2" position in the Department (PMC 2001:5). The other management priorities are strategic management of human capital, competitive sourcing, improved financial performance, and integration of budget and performance (id. at 11-32).

> our intention to consolidate redundant IT systems relating to the President's on-line rulemaking initiative. Redundant systems make it difficult to find and comment on the large number of proposed regulations – and create performance gaps in the form of reduced customer service and lead to duplicative spending. Consolidating technology investments will better serve citizens by decreasing existing islands of automation and minimizing government costs (OMB May 2002).

This memo outlined a two-phase plan for producing a single system used by all agencies. In Phase I, OMB would review the business cases for eight "potentially redundant" existing systems: those at DOT, EPA, Department of Defense, OSHA, APHIS, FDA (two systems) and the RISC system at GSA. Based on this review, plus a new business case to be prepared by DOT with a technical assessment of the systems, "a single, front-end web application for receiving public comments on proposed agency rules will be leveraged and used by federal rulemaking agencies" (id. at 2). This was to be completed by the end of 2002. Phase II would involve assessing the capabilities of "any 'back end' regulatory/knowledge management system that is currently being utilized or developed by the agencies" (id.). The result would be "consolidate[ing] duplicative 'back-end' information technology systems and deploy[ing] an integrated solution built on an existing system and processes" (id.). Phase II was to be completed by the end of 2003.

Viewed with the clarity of hindsight, this memo set the stage for problems that would bedevil the Initiative for the next several years. By specifying an 18-month timeline, it created expectations that building a government-wide "regulatory/knowledge management system" was the sort of task that could be completed (and start to show calculable benefits) relatively quickly. In addition, it made manifest a conception of the rulemaking process that was implicit in the February Strategy report: a business function replicated across multiple agencies, which effective management should integrate, streamline and standardize government-wide.[47] Finally, it put two of the most important and institutionally innovative rulemaking agencies – EPA and DOT – on a collision course. DOT had accomplished the at-times painful task of converting all its constituent agencies (and their regulatory clients) to the DMS system and was continually adding new capabilities.[48] EPA had already spent millions, and was committing millions more, on its new Regulatory Public Access System, known as EDocket.[49] Only one of these systems would survive.

C. The Choice of a Single, Centralized System

As contemplated in OMB's memo, an outside contractor was hired to evaluate the e-systems of DOT, EPA and five other agencies. In August 2002, it recommended EPA's EDocket system (EPA 2003:10; GAO 2005:10).[50] Shortly after receiving DOT's September 2002 business case reporting this evaluation, OMB transferred responsibilities for managing the Initiative from DOT to EPA.

In its business case, DOT had presented three possible design models for a government-wide system. One, the "centralized design," was essentially the concept described in OMB's May memo: A single set of components would service all agencies, displacing all existing systems. A second concept, the "tiered design," also involved a designated set of common hardware and software, but components would be placed in multiple locations: In particular, responsibility for data would remain with individual agencies. Finally, the "distributed design" preserved the e-systems of agencies that had them: Customized software would link them to a government-wide system, which would allow public and agency access to dockets maintained in all systems. EPA's business case, submitted to OMB shortly after EPA took over as managing partner, was based on the single, centralized design.

Clearly OMB preferred that approach. In March 2003 Mark Forman, OMB's Associate Director for e-Government and Information Technology, told a Subcommittee of the House Committee on Government Reform that OMB was dealing with the "chronic problem" of "unnecessarily duplicative information technology investments" by identifying "redundant IT investments made for the same purpose and supporting the same lines of business across multiple

[47] The February report included "regulation creation" in the "30 major functions and business lines in the Executive Branch" having "significant overlap and redundancy" (OMB May 2002:6-8). Along with such activities as Procurement, Administration, HR, Travel and Payroll, it was determined to be present in every agency (id. at 6-7). "The Task Force found that this 'business architecture' redundancy creates excessive duplicative spending on staff, IT, and administration" (id. at 7).

[48] The conversion was experienced as such an ordeal by some of these agencies that more senior employees still speak, a decade later, of the time "when DOT took away our system."

[49] EPA had spent $2.8 million on Edocket in FY02 and budgeted the same amount for FY03 (OMB May 2002:1).

[50] The systems, evaluated by Excella Consulting, were somewhat different than those identified in the May OMB memo: In addition to those at DOT and EPA, systems at FCC, the Department of Energy, the Nuclear Regulatory Commission, FDA and OSHA were included. DOT's system was an early custom design; EPA's was based on commercial components: an Oracle database on Unix servers, with Documentum content management software and Input Accel document capture capability. On a multi-dimensional assessment of technical and usability factors, EDocket scored 87.4 while DMS scored 82.5 (EPA 2003:10, 24).

agencies." The 24 e-Government projects would "achieve results by simplifying and unifying redundant work processes and IT." In particular, the e-rulemaking system would "save $94 million by creating a single system that makes the rulemaking process more efficient" (Forman 2003). This savings estimate was repeated in OMB's report, a month later, on implementing the E-Government Strategy (OMB April 2003:12). This report identified the "requirement for 2003 and 2004" as "mov[ing or] consolidat[ing] the management of systems, data, and business processes from multiple agencies to a joint solution, supported by one or two service providers" (id. at 15). In the list of performance metrics for each project, the eRulemaking Initiative's included "# of online docket systems decommissioned" (id. at 5, 26). In June 2003, EPA submitted another business case for the Initiative. This one explained the $94 million estimate as derived from "consolidating redundant docket information technology systems across agencies" ($56 million) and "reducing duplicative spending for these systems" ($38 million) (EPA June 2003:37).[51]

Late in 2003, an outside contractor was retained to do cost, risk and best-practice assessments of the three designs. Its report estimated that in comparison to the distributed design, the centralized design would be markedly cheaper, faster to implement, and less prone to technical instability and security failures.[52] The tiered system was rejected because, among other things, consistent data quality and practices would be difficult to maintain if responsibility for the underlying data was dispersed across agencies (GAO 2005: 12). In February 2004, the Executive Committee of the Initiative – comprised of CIOs and Deputy Secretaries of the 17 departments and agencies then involved in the project – voted to proceed with the centralized design.

D. The Absence of Harmonization

Once the formal decision to create a single, centralized system was made, it became necessary to specify an e-docket and online commenting configuration capable of serving all agencies. The challenge this posed should not be underestimated (Dawes 2008:116-18; Kwon, Pardo, et al. 2006:281). The EPA Project Management Office at that time identified 150 "federal entities actively involved with issuing federal regulations open for comments" (EPA 2003:7). To be sure, 12-14 such entities might exist within a single Cabinet department. Yet, as DOT experienced when developing a Department-wide e-docket, even entities within a single Department can have very different rulemaking practices rooted in their particular history and program mandates. In an hierarchically organized Department, harmonization of data practices can be achieved through a solution ordained by higher authority if attempts at negotiation among the involved entities fail. According to a senior DOT official involved, this had been necessary at times during the creation of DMS. The eRulemaking Initiative, however, was not structured hierarchically: All participating agencies have an equal voice in decisionmaking, irrespective of amount of rulemaking activity or extent of financial contribution.[53]

In this partnership of equals, agreement on data standards and practices beyond the most minimal level of harmonization never happened. Optimistically, EPA's 2003 business case explicitly assumed "develop[ment of] a common approach to legal and policy related issues that agencies are currently handling in a variety of ways" (id. at 27). Treatment of confidential business information, copyrighted materials, identifiable personal information and obscenity were listed as examples of this anticipated coordination of underlying rulemaking practices. However, the participating agencies did not agree on even the far less substantive issues of standard names for basic rulemaking documents, data about the documents ("metadata" or "data fields") that would be needed for effective searching, and data fields that must be public for users to locate and understand rulemaking materials.

Clearly, EPA understood the importance of defining common data and metadata standards and practices to building a well-functioning cross-governmental database and knowledge management system. However, the Project Management Team was working under the repeatedly expressed expectation that the Initiative could be concluded, and start demonstrating its value, on a relatively short timeline. EPA had no greater formal decisional power than

[51] The $94 million figure has been questioned as based on the unrealistic assumption that every rulemaking entity would develop its own unique system (Copeland 2007:32-33). In 2007, a new consultant was hired to reassess the benefits of a "centrally managed solution" over "decentralized architectures;" it increased the figure to $106-129 million (OMB 2008:8). See also FY09 Budget at161 ("An E-Rulemaking analysis of *Regulations.gov* projects the initiative will save the Federal government more than $100 million over a five-year period since agencies will not need to deploy or maintain duplicative electronic comment management systems"). We have been told that this study projects costs of unique system construction at both the individual agency and the department levels.

[52] The contractor estimated that the centralized design would cost $18.7-$20.1 million and could be completed in one year, while the distributed system would cost $87.2-$94.9 million and take three years to implement (GAO 2005:10-12). As with the figures in the previous note, the validity of these estimates is disputed. We see no reason, now, to try to resolve either controversy inasmuch as any idea of multiple agencies' and/or Departments' building complete, independently capable e-rulemaking systems is not relevant to – indeed, is at odds with – our recommendations.

[53] The number of participating agencies has changed over time. There were six partner agencies at the outset (EPA, DOT, FCC, HHS/FDA, DOL, and USDA). The number had reached 17 by the vote on the centralized system. Today, more than two dozen Departments and other entities have seats on the Executive Committee and 40 send representatives to the Advisory Committee.

any other participating agency, and OMB did not act to broker (or compel) harmonization.[54] So, system development proceeded without it. The FDMS database was designed to be capable of maintaining many useful pieces of information about documents (metadata), but also to permit each agency to "configure" its particular e-dockets with only the elements it desired. Only a handful of items, designated "FDMS required," were configured so as to be mandatory government-wide.[55]

Ultimately, the lack of data and metadata standardization was framed as a virtue. The fact that "each agency determines configuration (data fields, field labels, field access, workflow)" became the system's "flexibility" to adapt to varied agency needs (Morales & Moses 2006:2; Fornay & Perkins 2006:10,14; Morales Dec. 2005:8).

E. Configurability as the Measure of System Adaptability

To some extent, agency discretion about e-docket configuration does sensibly acknowledge the demands of individual regulatory cultures. A good example is whether to accept anonymous comments. Agencies have emphatically different views on this, rooted in principle, beliefs about the nature of their regulatory issues or clients, and/or practical experience. A single configuration of mandatory identity fields for commenting would require participating agencies to agree to a unitary position on the issue – or it effectively would impose one upon them.

Yet, the extent of configurability built into the system cannot be attributed solely – or even primarily– to accommodating genuine differences in regulatory needs and defensible variations in rulemaking practices. Rather, discretion in docket design was permitted for such seemingly uncontroversial fields as document author, the date of creation or publication, and even the RIN of the proceeding to which it belongs. To be sure, entering information into such fields requires resources that will be scarcer in some agencies than others; respect for agencies' ability to set internal work priorities might argue against locking them into a universal docket format. However, *creating* a docket field does not compel the agency to *fill* it,[56] and some fields are filled directly from the *Federal Register* feed (FDMS 2007, App. D). Yet even several of the latter fields – most notably RIN and comment due date – were not designated as required.[57]

F. Access to Information and Data "Ownership"

Configurability had yet another layer beyond whether a particular type of information would be included, at all, in the agency's e-docket: whether information that *is* included will be accessible to those outside the agency. Again, deeply contested policy issues sometimes lurked beneath technical specification. But here as well, the extent of variability built into FDMS greatly exceeded the plausible range of genuine contest for a system that is supposed to make rulemaking more comprehensible and accessible to the public.

Indeed, the area of "public viewability" most clearly shows that fundamental goals of the Initiative got lost in the approach that was taken to data and metadata harmonization. An e-rulemaking system aimed at greater understanding and information access should not equivocate about making public such items as "CFR Citation," "Effective Date" or "Legacy ID." A system designed to facilitate participation could not seriously contemplate that "Comment Start" and "Due" dates would be inaccessible to public view. Yet agencies were given these choices in configuring the fields of their e-dockets. Most agencies doubtless made the "right" choices in most cases. But the strategic decision to design-in maximum agency autonomy precluded the opportunity to design for broader, better understanding and participation.

The "citizen-centric" goals of the Initiative were not the only ones compromised. Studies of multi-unit IT projects confirm that such projects often trigger resistance to "losing control" over one's "own" data (Dawes 1996:379-82; Pardo, et al. 2006). Centralization of data storage raises fears of actual

[54] We have been told that OMB did, on occasion, override decisions of the agency governing bodies, but that it did not choose to intervene on standardization issues.

[55] The required docket fields are: Docket ID, Title, Type, Phase and Status; only the first two are viewable to users outside the responsible agency. The required document fields are: Docket ID, Document ID, Title, Document Type, Docket Phase, Phase Sequence, and Status; only the first four are viewable to users outside the responsible agency. There are no required fields for comments (FDMS 2007:Appendix A).

[56] The system allows a separate set of configuration decisions about whether filling the fields is mandatory or optional (FDMS 2007:Appendix A).

[57] It has been said, in response to our surprise that fields such as RIN are left optional, that not all agencies use the RIN for any internal docketing or monitoring purposes. This response exemplifies the point made in the next section: Configuration decisions have not consciously considered the full range of goals set for the e-rulemaking system. RIN is the identifier publicly associated with a rulemaking from its initial appearance in the Unified Agenda; it is prominently listed in all Federal Register notices about the rulemaking. Whether or not it helps the originating agency keep track of the proceeding, RIN is a prime location aid for the public – and indeed for other federal government entities. These users are substantially disadvantaged if it is not reliably available as a search criterion.

loss or destruction; broadened accessibility breeds concern about how "outsiders" will use or share the data. When a hierarchical organization undertakes a cross-enterprise IT project, data control issues can be managed in the same way as data harmonization issues: Negotiation among the various "owners" occurs in the shadow of compulsion from on-high. However, in a partnership of equals, the only check on undue data possessiveness is a broad-based conviction that the potential benefits of cross-accessibility outweigh the risks. This conviction never developed within the Initiative.

As a result, agency autonomy over configuration had a corollary principle: Each agency continues to "own" its own rulemaking data.[58] Many consequences flowed from this, but one of the most important was the design of data access rights. In FDMS, the right to access data is allocated according to a simple dichotomy: the owner, and everyone else. Agency configuration decisions about *public* access to certain information determine *other agencies'* access to that information as well. Whether or not such metadata as the "Organization" (unit) or "Program" responsible for the proceeding, the "Authors" of a document, or the "Status" of documents or dockets should be available to all the world, the fact that they might not be available even *within the federal government* undermined the goals of inter-agency policy coordination.[59] Perhaps more fundamental, conceptualizing data in FDMS as "owned" separately by each originating agency substantially complicates the issue of authorizing bulk data transfer[60] – a capability that is essential to generating government-wide rulemaking statistics, conducting cross-agency program analysis, and extracting other kinds of information that a multi-agency system ostensibly makes available.

The lack of data harmonization, the acceptance of agency autonomy in configuration, and the incorporation of a strong norm of agency data "ownership" all point to the absence of a shared vision, among the participating agencies, of the desirable objectives of a government-wide e-rulemaking system.

To be sure, cultivating such a shared vision posed a major challenge. Agencies that lacked substantial prior experience with electronic document and information management technology had little basis for envisioning how their rulewriters and program managers could benefit from a system that made other agencies' rulemaking materials as accessible as their own. Moreover, many rulemakers associated e-rulemaking principally with the risk of inundation by interest group-initiated email comments, the processing costs of which, in their view, vastly outweighed any policymaking benefits. The voices for promoting a robust, cross-agency e-rulemaking system were simply no match for those taking an agency-centric view.

G. Governance, Funding and System Design

Perhaps no single factor had a greater effect on system design and development decisions than the choices about how the Initiative would be governed and funded.

The E-Government Act – passed shortly after EPA took over as managing partner – explicitly recognized that "Internet-based Government services involving inter-agency cooperation are especially difficult to develop and promote, in part because of a lack of sufficient funding mechanisms to support such inter-agency cooperation" (Finding (4), § 2 (a)(4)). Accordingly, the Act created, and authorized multiple years' appropriations for, an E-Government Fund administered by GSA to support projects approved by the Director of OMB. However, no more than a small percentage of the statutorily specified amounts was ever appropriated for e-government initiatives: The Act authorized a total of $354 million for fiscal years 2003-07, but only $19 million in new money was actually appropriated over that period.

As a result, funds to build the e-rulemaking system had to come from the existing budgets of participating agencies – many of whom were also funding several other e-government initiatives in the President's Management Agenda. This had several consequences. First, it put a premium on ensuring as quickly as possible that agency resources were being dedicated to the centralized system and no other. EPA, in its capacity as managing partner, recognized this. In its 2003 business case to OMB, it warned:

[58] Ironically, one factor leading to rejection of the "tiered design" (see Part IIC supra) had been that dispersed responsibility for data would make data consistency difficult (GAO Sept. 2005:12).

[59] The agency personnel who actually determined their agency's e-docket configuration may not have focused clearly on the fact that decisions about access would affect cross-agency information availability, as well as what the public could see. The FDMS configuration Manual uses the terms "Agency Viewable" and "Publicly Viewable." At no point does the Manual explain that the latter category includes all other agencies. Awareness that the value of the database for intra-governmental policy coordination was also at stake might have tipped the balance towards viewability for particular fields.

[60] *Bulk data transfer* is the process of moving large amounts of electronic data from one location to another using a minimal number of requests. A *bulk data transfer service* facilitates this process through use of a common, well-understood data standard (like XML) and a variety of automated techniques (e.g., data compression) that optimize speed and efficiency.

> The strongest barrier to successful implementation of this initiative is obtaining sufficient funding over the life of the project. For this initiative to be a success, the Office of Management and Budget will need to reduce or eliminate agencies' ability to develop new or maintain existing electronic docket systems. The longer it takes to make these funding decisions, the more Federal funds will be expended on redundant systems, and the more difficult it will become to consolidate or coordinate these systems (EPA 2003:27).

At that time, EPA estimated that 33 different agencies had developed rulemaking websites and/or e-document systems (id. at 6). More recent OMB estimates have been higher (e.g., OMB 2008:17). In any event, when agencies' online rulemaking sites were shut down in Fall 2006, additional tension and resentment arose because many agencies had not yet migrated to FDMS, and some had developed capabilities that the central system did not provide.[61]

Second, the funding method encouraged emergence of a broad-based participatory governance structure for the Initiative. Understandably, agencies footing the bill for the system from existing budgets wanted ample opportunities for input, oversight and approval. In the complex governance system that was created, front-line staff would engage specific issue areas in work groups, developing recommendations that would be vetted by mid-level agency representatives on the Advisory Committee. Agency leadership, represented by CIOs and/or Assistant Secretaries, would make final decisions through the Executive Committee. Unhappiness with having OMB mandate contribution amounts led to a standing Budget Committee, which would work with the Director of the PMO to recommend spending levels and contribution allocation to the Executive Committee. And a Change Control Board would assure group-wide vetting of the likely operational and financial impact of any agency's proposal to modify or add to the system.

Scores of agency employees have invested hundreds of hours in Initiative governance – a level of dedication that underscores rulemaking's central importance to the participating agencies. When GAO issued its 2005 assessment of the Initiative's progress, it was able to report considerable satisfaction with the degree of involvement that the governance structure provided.[62] However, the same structure which ensured that agencies would be heard, and which preserved some budgetary self-determination, also provided multiple veto points. Lacking a shared vision of the potential benefits of a powerful and versatile government-wide e-rulemaking system, each agency's rational tendency was to conserve its resources and agree only to what it would use. Individual agencies' requests for modifications or enhancements often foundered at the Change Control Board – not for lack of attention or interest by Board members, but because the proposal would not command cross-agency financial support.

At least with hindsight, the outcome was not surprising. The system was defined by what could garner collective approval: a set of basic document management capabilities supporting core notice-and-comment functions.

H. Funding Controversies

The lack of new funding for e-government projects also led to financial instability in the Initiative. Under a series of memorandum agreements with the PMO, agencies were to contribute to the project by transferring funds from existing budgets (Nelson 2004:7). In FY04, only about half of planned agency contributions eventuated because of miscommunication between OMB and several agencies during budget reviews (Copeland 2007:20). Although EPA provided additional support for the project, the PMO had to instruct Lockheed Martin to scale back work substantially, which contributed to postponing the scheduled migration of several agencies to the system (GAO Apr. 2005:25-28).

Even without such unusual complications, agencies often withheld scheduled transfers until late in the fiscal year, which sometimes made it difficult for the PMO to meet scheduled payments (EPA 2006:32). To some extent, transfer delays can be attributed to late passage of appropriations bills, but the bigger factor appears to have been Congressional dissatisfaction with the general funding method for the e-government initiatives. This dissatisfaction has been evidenced most dramatically by a series of appropriations measures – which continue to be inserted in appropriations bills (Lindeman 2008) – restricting both government-wide and agency-specific transfers of funds for these initiatives; typically transfers were conditioned on prior notice to the Appropriations Committee, and sometimes on its consent (Copeland 2007:21-26). These transfer restrictions – which extended to all the e-government initiatives, not just eRulemaking – appear to reflect several concerns: that agencies were being "forced" to fund projects

[61] For example, the Fisheries Service in the National Oceanic Space Administration. See note 39 supra.

[62] GAO wrote:

> The tenor of our discussions with officials of 14 of the 27 agencies serving on the Advisory Board was that they were satisfied with the level of collaboration. Participating agencies indicated that they had adequate opportunity to provide input and described the collaboration of e-Rulemaking officials as effective. Officials from a few agencies even said that in terms of the e-government initiatives, the e-Rulemaking initiative was one of the better collaborative efforts in which they have participated (GAO Sept. 2005: 14).

Congress had not reviewed and agreed to fund; that OMB's preference for single, centralized systems would interfere with statutory requirements, force agencies into arbitrary "one-size-fits-all" solutions, and stifle innovation; and that contribution levels cut into scarce program resources (id. at 22-25).

Specifically with respect to the eRulemaking Initiative, appropriators reportedly were concerned with the fairness of how system development costs were being allocated. Until recently, annual contributions levels were determined by a tier formula. For example, in FY07 there were four contribution tiers: $835,000; $615,000; $280,000; and $155,000 (EPA 2006:25-26).[63] An agency's position in the tiers depended on a score derived from several factors, the content and weighting of which changed over time.[64] The small number of tiers and the significant monetary differences between them tended to incite controversy when there was a wide range of agency scores within a tier and a relatively small scoring difference between the scores of the highest agency in one tier and the lowest in the next.

Perceived appropriator unhappiness with the tier system contributed to the decision of the Initiative Budget Committee to try a different approach. Beginning FY09, base operating costs of the system would be divided equally among all agencies, producing a common charge of about $107,000.[65] Remaining costs would be allocated proportionally by a formula comprised of (i) number of rules, (ii) number of comments received through *regulations.gov*, and (iii) amount of material published in the *Federal Register*.[66] Agencies that issued relatively few rules would pay little more than the base operating charge. Although some aspects of this approach are problematic – especially, increasing an agency's costs for being successful in encouraging commenters to use *regulations.gov* rather than conventional submission methods – the proposal to divide base operating expenses equally among all participating agencies reflects the reality (confirmed by technical staff at the PMO) that the costs of running a large database system are affected only marginally by the volume of documents entered and stored.[67]

Representatives of all agencies signed off on the new approach, and the Budget Committee believed that this consensus, plus the greater tailoring and transparency of the base-cost-plus-usage formula, would allay appropriator concerns.

OMB's E-Government Office, however, preferred a different approach. It considered a universal base operating cost charge to be inconsistent with the "fee for service" method OMB had directed agencies to use once initiative systems became operational. Accordingly, the Executive Committee voted to allocate the entire FY09 budget using the three-factor formula. This caused a significant shift in relative cost across agencies. Now, many agencies pay virtually nothing for FDMS, costs of most agencies previously in the middle allocation tiers have declined substantially, and three agencies – DOT, EPA and USDA – carry nearly half the total system costs[68] (EPA 2007:3,16-17).

I. Impediments to Expansion and Innovation

OMB's announced goal for the group of e-government initiatives has been "decreased investment and increased performance" (OMB 2006:5; OMB May 2008:6). By FY10, the FDMS system annual budget is expected to decline to about $8 million, where the Budget Committee expects it to remain.[69] The $8 million steady-state figure includes routine maintenance as well as upgrades of the system, but does not contemplate major expansions.

[63] The FY08 tiers are $735,000, $535,000, $241,000 and $135,000 (EPA 2007:16-17).

[64] USDA, HHS, Homeland Security, Labor and DOT were in the highest tier; the Departments of Education and State, NSF, OPM, SBA and SSA were in the lowest (EPA 2006:25-26).

[65] The base operating cost comprised hardware, software, licensing, and operation of the PMO and Helpdesk; it represented about 45% of total system budget. The rationale was explained to us as follows: "Those five things went into the [base operating cost] because everyone is using those five elements. It's the cost for turning on the lights. If you play, you gotta pay."

[66] The "number of comments" factor was limited to those submitted through *regulations.gov* because this figure was considered "verifiable."

[67] Costs of data storage have sharply declined. In 1990 it cost about $20,000 to store a gigabyte of material; today, the cost is less than $1.00 (Sedona Conf. 2007:198). According to commonly used estimates of digitized legal material, a gigabyte comprises about 15,000 pages of image-based files (e.g., PDFs), 100,000 pages of email files, or 678,000 pages of text files. See, e.g., http://www.lexisnexis.com/applieddiscovery/lawlibrary/whitePapers/ADI_FS_PagesInAGigabyte.pdf. Using these estimates, if each of one million documents in FDMS contained 15 pages, and all were the bulkiest, image-based files, storage costs should be about $1000.

[68] EPA's costs rose from $535,000 in FY08 to $1.531 million; DOT's rose from $735,000 to $1.051 million; and USDA's rose from $735,000 to $1.308 million. By contrast, agencies including the Departments of Commerce, Defense, Energy, Interior, Labor, and Health & Human Services saw their costs reduced by 35%-65% (EPA 2007:16-17).

[69] The total federal IT budget is $71 billion. http://www.whitehouse.gov/omb/egov/g-9 budget_highlights.html. Numbers for the e-Rulemaking Initiative's expenditures over time vary from source to source. Compare OMB 2008:398 with EPA 2007:3. The following come from the recent Congressional Research Service Report (Copeland 2007) and OMB's latest Report to Congress on the E-Government Initiatives (OMB 2008): FY03 - $5.7 million; FY04 - $6 million; FY05 - $11.3 million; FY06 - $12 million; FY07 - $ 10.2 million; FY08 - $8.5 million. We could not obtain a confirmed figure for the FY09 budget. These numbers do not include agency-specific costs for paper document conversion, data entry, etc.

Even without OMB's emphasis on "reducing overall annual e-government spending" (OMB 2006:5), several circumstances make it difficult for the system to evolve significantly beyond its present, basic functionality. Funding remains the most obvious one. Unlike some e-government initiatives that can, when completed, generate actual savings by lowering the cost of goods or services (e.g., e-Travel, e-Payroll: http://www.whitehouse.gov/omb/egov/g-10-Section_841.html), migration to FDMS cannot alone save agencies substantial money that might then be reinvested in increased system capability. As both DOT and EPA experienced, the most tangible and substantial savings from an electronic document management system come when the agency can effectively retire its paper-based docket. EPA's early business case for the Initiative contemplated that this would occur for participating agencies. Among the "significant tasks" involved in moving to the central e-docket, it listed: "Convert and integrate agency's existing regulatory and comment data (determine strategy for old comments and supporting documentation like reports, studies, etc.)" (EPA 2003:24, 25). However, because digitization of paper rulemaking records would have required substantial additional investment, converting existing paper records never became part of the migration process.

As a result, moving to FDMS does not automatically free up a pool of previously committed monies because most agencies must continue funding operation and maintenance of their paper docket systems. Simply stated, agencies' savings from electronic document storage are "day-forward" incremental ones – and even these must first cover their annual FDMS fees before representing net savings that might be spent to enhance the system.[70]

Thus, absent change, the same dynamics that shaped decisions about creating the current system will shape decisions about its future. Indeed, because the most broadly useful and obviously practicable elements have already been incorporated into the design, another characteristic of current funding and governance methods is likely to become more prominent: risk-averseness. As explained earlier, as an e-system moves from the initial levels of providing **information** and **automating** existing processes to the more ambitious levels of **reengineering** and transformative **innovation**, the technology and its applications become more pioneering, even experimental. *Individual* agencies might be willing e-rulemaking pathbreakers; agencies *collectively* probably will not be.

The likelihood that collective risk-averseness will impede system evolution is enhanced by the current Systems Architecture. We have been told that participating agencies resisted providing a web services or other application programming interface (API) for FDMS from fear it would increase "spam" commenting – bulk uploads of thousands of repetitive comments from servers of private organizations. Whether or not this concern was well-founded, the lack of an API also limits possible interactions between FDMS and agencies' own servers. Even if an agency were able itself to fund a new capability it needs, or an innovative functionality it wants to try, it must persuade others to permit the common system to be modified. At a minimum, such modification will make the system more complex for all – a legitimate concern, especially for smaller rulemaking agencies. Therefore, a request to incorporate in the common system technology that is perceived as novel or experimental will likely be met by collective wariness of unforeseen impacts and unpredictable consequences – wariness that will not be allayed simply because the proposing agency is willing to foot the bill.

Current OMB policy also makes it difficult for an individual agency to explore new e-rulemaking capabilities. OMB's oft-repeated concern over "duplicate or ancillary systems" has been emphatic, and sweeps quite broadly. When DOT shared its very successful internal workflow system with the Department of Commerce (see note 45 supra) and Commerce wanted to enhance its system by, among other things, providing a direct interface with FDMS to allow seamless document transfer, Commerce officials were told this would amount to prohibited development of an ancillary system.

[70] Such incremental savings are apparently what OMB refers to in its most recent e-government report to Congress: "The shift from paper to the Internet will help save Federal regulatory agencies an estimated $800,000 per year" (OMB Feb. 2008:iii). Assuming this estimate holds good in practice, it still covers only about 10% of the steady-state system budget. A later section of the Report estimates that FDMS will "provide cost avoidance benefits over traditional baseline paper processes to a level of $30 million over 5 years" (id. at 8). This considerably higher estimate may assume conversion of at least some existing paper records, although it is not clear whether the figure accounts for the costs of that process. Even assuming the estimate is net of these costs, average government-wide savings of $6 million annually will not cover the steady-state budget of $8 million. We do not point this out to suggest that the Initiative's cost exceeds its value – earlier discussion has identified the substantial benefits a powerful e-rulemaking system can offer apart from near-term cost-savings, see Part IC supra – but rather to explain why using FDMS does not necessarily generate agency savings that can be reinvested in e-rulemaking.

DOT is atypically situated because it has had no paper dockets for several years. For it, the question is whether participating in FDMS is cheaper than operating DMS. So far, the answer seems to be no. Some DOT estimates indicate that FDMS is significantly more expensive; at best, operating costs appear to be about the same. Compare FY09 Budget, available at http://www.whitehouse.gov/omb/budget/fy2009/sheets/itspending.xls (DOT spreadsheet lines 78, 82), with FY07 Budget, available at http://www.gpoaccess.gov/usbudget/fy07/sheets/itspending.xls (IT Investment Details spreadsheet line 3057, 3062).

J. Development of the Public Interface

Regulations.gov was launched very early in the Initiative. In January 2003, EPA and GPO jointly hosted a NARA-designed website incorporating elements from several agencies' existing e-systems (Russell & Morales 2003:8; Morales 2003:12).[71] Because the object was to provide a government-wide e-commenting site while the new electronic docket system was being designed, this provisional version of *regulations.gov* had no "back-end" capability to store documents. Other than the text of the proposed rule itself, provided from the electronic version of the *Federal Register*, rulemaking materials (including comments submitted through the site) could be viewed only by consulting the responsible agency's existing docket system.

In this first version of the public interface, agency-specific practices for formatting information and soliciting comments were preserved. A GAO report issued in September 2003 noted that "*[r]egulations.gov* follows whatever commenting procedure the agencies tell EPA to use" (GAO 2003:23). The desire to provide universal online comment submission as quickly as possible understandably argued against time-consuming efforts to negotiate a government-wide "common look and feel." Still, the practices of this first government-wide e-rulemaking portal foreshadowed the acceptance of agency autonomy that would so fundamentally affect the design of FDMS. The 2003 GAO report worried that "the eRulemaking Initiative had not considered how certain fields might affect the public's willingness or ability to comment" (id.).

One important functionality offered by the temporary *regulations.gov* application was not available in its successor: full-text search across proposed rules (Russell & Morales 2003:8). When the permanent version – the "front-end" of the new FDMS system – was launched in September 2005, full-text search was available on *fdms.gov* to agency users but not (as in EPA's original EDocket system) to public users. The new *regulations.gov* provided only metadata searching (sometimes called "fielded searching").[72] Two characteristics of the underlying FDMS system make metadata searching particularly problematic: agency discretion with respect to configurability and lack of data harmonization. The metadata available to be searched depend on: (i) which fields the agency has chosen to include in its e-docket; (ii) whether they have been configured for public availability; and (iii) whether they are actually filled at the time of document entry. Given the variations in agency practice on each of these dimensions, reliability of fielded search results is compromised to a degree that, from the user's perspective, is unknown and unknowable.[73] Not only can users therefore not rely on search results as authoritative, but that fact alone greatly reduces the incentive to use *regulations.gov* in the first place.

In 2007, the Initiative purchased an Endeca search engine, which allowed full-text search on *regulations.gov* as of December 2007. The significance of this step cannot be overemphasized – but it has not solved all the problems public users encounter in searching for documents in FDMS. For one thing, metadata inconsistency remains a serious issue. In large collections of complex material, full text search must often be used in tandem with fielded searches.[74] Given the growing number of documents in FDMS and the recurrence of identical or very similar document titles, many forms of metadata (e.g., "author date") will often be crucial to the user trying to winnow large search returns. A second and different sort of problem is that the current search configuration does not reflect and adequately support the fundamental organizational unit of rulemakings: the docket. The capacity to search across and within dockets as units is at least as important as searching across and within documents.[75]

[71] This first e-rulemaking portal was a remarkable inter-agency collaboration. NARA also designed the search function and the database application that tracked proposed rules for comment. GPO hosted (i.e., provided the web servers and other hardware to run) these applications, and provided the Helpdesk services. EPA hosted the application for online submission of comments, which was a modified version of software from FDA's e-system. Based on OSHA's e-system experience, the Department of Labor provided technical support for XML documentation and testing. Because the Internet enables information to be drawn rapidly from multiple sources and presented within a single website, the distributed nature of the underlying structure was not apparent to public users (Russell & Morales 2003:8-9; Morales 2003:12).

[72] That is, users could search the data fields containing various kinds of information about a document, but not the document itself.

[73] The typical public user would logically assume that information is indeed available for all the fields offered by the site as search parameters. Even the extremely sophisticated user who found and understood the search implications of the site disclaimer ("While *Regulations.gov* enables Agencies to post rulemaking and non-rulemaking dockets on the site, it is up to each Department or Agency to determine what information is made available on the site") would have no way to ascertain the extent of data inconsistency.

[74] For example, a user who wishes to find a certain final rule and does only a full text search will get every document that refers to the rule. To efficiently find what she seeks, she must be able to narrow the search using the Document Type and Title fields.

[75] For example, if a user wants to see all comments submitted by, or responding to, the National Association of Manufacturers in a particular EPA rulemaking she cannot search only within that rulemaking docket. She must instead enter "National Association of Manufacturers" as the search term, which produces occurrences of the name in all documents across the FDMS database (17,329 documents as of the date of this Report). She can then narrow the search to EPA, but is likely still to have many results outside the docket of the relevant rulemaking (6,575 documents). Next, she can narrow by whether the comment period is open or closed in the last 30, 60 or 90 days. Eventually, she will get to

Powerful and effective search technology is not the only commonly available web functionality that *regulations.gov* has been slow to offer. Bookmarking[76] did not become available until March 2007. The reason appears to be a combination of risk-averseness and funding constraints. Some agencies feared that bookmarking would facilitate mass-commenting by enabling outside groups to include the link to a specific comment page in a broadly distributed email. Particularly in light of this concern, bookmarking's claim for Initiative dollars could not compete with agencies' own needs in developing and deploying the underlying electronic docket system. Relative funding priorities also appear to account for the delay in offering an email notification function (March 2007) and an RSS feed (December 2007). Both help public users keep track of information added to *regulations.gov*. Moreover, even though these functionalities are now in place, they are still not as convenient or powerful as what is offered on other websites or needed in light of the goals of e-rulemaking. The process described on the site for bookmarking documents or dockets is relatively cumbersome and obscure compared to the method to which most users are accustomed;[77] moreover, it is still not available in some contexts. Email notification can be set only for dockets, not (as in DOT's DMS system) by subject area; as a result, it cannot help the user learn about new rulemakings or other proceedings. The RSS feed is available for items from the daily *Federal Register* feed, but not for additions of other material to FDMS; in any event, it is an all-or-nothing service, which cannot be tailored by subject matter or even by agency. To what extent these limitations have resulted from architecture constraints, design choices, or cost of implementation remains unclear.

K. Challenges for Website Design

It is clear that technical features of the system contributed to a website design that, in terms of aesthetics, usability and sophistication, has lagged substantially behind other federal websites. Early in 2007, the web development components of the content management software used in the FDMS system were replaced with a more flexible and versatile application.[78] This enabled a series of significant changes in the *regulations.gov* interface over the course of 2007. Yet, even with the efforts of a dedicated usability workgroup, *regulations.gov* continues to present users with minimalist design and, at best, indifferent usability. Even users well-versed in rulemaking find the site's organization and searching functions counterintuitive, and often encounter difficulty in efficiently locating material.[79]

Several factors seem to be operating here. One is the difficulty of collective web design. Participating agencies have a sense of "ownership" of the *regulations.gov* site: Not only are they paying for it, but also it is their "official" medium for presenting their rulemaking materials to the public. For a partnership of equals, deciding on design elements and content poses many of the same difficulties as other aspects of system design. Another factor may be the lack of sufficiently sustained and detailed input from non-government users to counteract the natural tendency of designing the site from an insider's perspective. The Initiative has made several efforts to get public input: public hearings, periodic meetings with stakeholders and, most recently, implementation of an online survey that appears episodically to site users. Still, complaints that the public user perspective has not been adequately represented in designing *regulations.gov* seem to have merit. The dearth of commonly used aids to navigation and understanding (e.g., a question mark, "hand," or cursor rollover that reveals a definition or explanation), the failure to follow established

the desired rulemaking, but the process is like flying from Boston to Washington DC via Chicago, Memphis, and Charlotte.

This is another example of the move to FDMS coming at the cost of pre-existing functionality: This search would have been easy and efficient in EPA's original EDocket system. It also appears to illustrate the IT/Program Expertise Gap (see Part IE4 supra), for we are told that the problems of not providing docket-based search capability were recognized, and raised, early in the project by people with operational rulemaking experience.

[76] That is, the user's ability to set her search browser to return to a specific page within the website.

[77] The site instructs users to drag a Bookmark Icon to their desktop, document, or email, or to right click the icon to add to their browser's "Favorites." In fact the conventional methods of capturing the address of a webpage for later reference – copying and pasting the URL or instructing the browser to "Add" to the Favorites list –work just as well.

[78] The Documentum top WDK framework was replaced with a Java-based layer.

[79] One quantitative measure of usability is the continual online user survey being conducted by ForeSee Results. According to the most recent published report, *regulations.gov* scored 44 out of 100 possible points; this was the lowest score for any of the e-government initiatives. For example, *Grants.gov* scored 56, Government Benefits and Government Loans scored 65, and USA Services (which includes *USA.gov* and *gobierno.gov*) scored 74. See http://www.whitehouse.gov/omb/egov/c-7-22-erule.html. In the same period, the aggregate index for federal sites was 72.4, http://www.theacsi.org/images/stories/images/govsatscores/e-gov_Q1_08_press_release.pdf. The top agency sites scored between 70 and 80,http://www.theacsi.org/images/stories/images/govsatscores/e-gov_Q1_2008.xls.

We have been told that regulations.gov scored considerably better in the most recent report; these data are not yet public, and we have no information about how other agency and initiative sites fared.

web conventions (e.g., the configuration of "advance search," bookmarking method), and the absence of options a public e-rulemaking site should clearly provide (e.g., a simple, readily apparent way to display all the comments received for a particular rule) suggests a continuing lack of understanding of the kinds and level of support many public users need from *regulations.gov*.

Finally, cost may be an issue. A review of estimates for proposed items under review by the Change Control Board underscores the expense of additions and modifications to the FDMS system. For example, changing the "Docket Events" metadata field so that it would be publicly viewable was projected to cost $8,000.

Successful organizational web design is a demanding, resource-intensive process at best, and a public rulemaking site presents exceptional design challenges if the range of potential users is to be effectively served. With the added obstacles of collective decisionmaking, constrained resources, and limited participation from those who would actually use the site, the task is nearly impossible.

It is not surprising, then, that even with great effort and dedication on the part of the PMO and agency personnel involved in designing the public interface, *regulations.gov* continues to be no match for websites of some of its participating agencies, let alone the best non-government sites.

Where We Should Be Going

Building a powerful, versatile federal e-rulemaking system – that is, an online collection of rulemaking materials that is comprehensive and authoritative, offered in an open, accessible format with rich explanatory material, supported by effective tools for searching, analyzing and managing information, and accompanied by a variety of methods for collaboration and participation – is not a quick, easy or inexpensive undertaking. Substantial steps towards achieving such a system have been made by the agencies that partnered in the eRulemaking Initiative under the management of EPA.

Now, the Administration and Congress must embrace the e-rulemaking project and support advancing it to the next level, because achieving the full potential of e-rulemaking will take wise policy direction from government leaders, determination, and adequate resources.

E-rulemaking's claim to this kind of attention and support is simple but powerful: Every segment of the public, as well as the government, stands to gain.

Large corporations and small business owners, interest and advocacy groups across the issue and political spectrums, state and local government entities, non-governmental organizations, researchers and the "average" citizen all benefit from having an easier, better way to find information about regulations and to take part in the rulemaking processes that define so much American social and economic policy. Agencies get better ways to obtain, sort and manage relevant information, while Congress and the Administration can obtain previously unavailable data about regulatory programs and processes (Lubbers 2006:217-39). The hard question is not *whether* to have a powerful, versatile federal e-rulemaking system, but *how* to get there from here.

The first issue, of course, is, What should happen to FDMS? If a government-wide electronic docket and rulemaking support system were being designed in today's technological environment, the preferred architecture almost certainly would not be one exclusive, fully centralized system. Web-based and other technologies have made it far easier to integrate data and applications from multiple sources, and to customize presentation and performance for particular needs. User expectations about both format and content have risen correspondingly. Given this, and our conviction that the system as it currently exists restricts functionality and inhibits innovation, we debated at length whether the best solution would be to start afresh with a new design.

We ultimately concluded that starting anew is not the most productive course. Apart from the money already invested and the risk of disaffecting those agency staff most knowledgeable about and committed to e-rulemaking – the hundreds of agency personnel who have dedicated so much time and energy to the Initiative – every Executive Branch agency and several independent regulatory commissions have now become part of an unprecedented collective rulemaking enterprise. Each has, to some extent, already adjusted its processes to FDMS. Perhaps more important, all are beginning to adapt to the vision of rulemaking as a government-wide activity in which everyone gains as regulatory information, wherever it originates, becomes easier to identify, share, retrieve and manage. Much remains to be done to convince agencies that they themselves (in addition to oversight entities and the public) can benefit from realizing this vision, but the experience of building a common system has been a significant start. If that system can be successfully modified and enhanced in several respects, FDMS can become (i) the primary regulatory support system of agencies with modest rulemaking activities; and (ii) the core that larger rulemaking agencies can supplement with more sophisticated, customized and innovative e-rulemaking capabilities. In this way, the extensive work already done is built upon rather than abandoned, and momentum in the right direction is continued.

Accordingly, we provide a number of recommendations for continued evolution of the existing FDSM system into a more responsive, innovative and powerful system that retains – indeed, more effectively realizes – the foundational commitment to government-wide accessibility of rulemaking information. We emphasize that the recommendations made below are integrally interrelated. The history of the eRulemaking Initiative teaches one overarching lesson: Governance, management and funding, technical architecture, agency practice, and public response all interact synergistically. Action must be taken *in all of these areas* if the potential of technology-supported rulemaking is to be realized.

Our recommendations are organized in four major groups, the objectives of which are as follows:

A. Governance, Management, Funding

To establish a framework for governing, managing and funding the next stage of the Initiative that fosters astute and timely decision-making, incorporates the perspectives of stakeholders, and provides the financial support needed for realizing e-rulemaking's potential

B. Architecture

To enhance the capabilities of the existing FDMS so that it can serve as effective core e-rulemaking support, while opening the system to a dynamic process of growth and innovation in which new functions, tools and services are developed by both agencies and interested entities outside government

C. Public Access and Participation

To provide the public with more complete and understandable access to regulatory materials by enhancing the functionality of regulations.gov, and by urging agencies to use their own websites both to offer more detailed online presentations of specific programs, rules, and issues and to develop techniques for more effective public involvement

D. E-Rulemaking Practice and Innovation

To promote processes for discovering and disseminating good e-rulemaking practices and identifying and overcoming barriers to the evolution of e-rulemaking, and to support agencies in exploring innovative tools and methods for information management and interaction with the public

A note about terminology: These recommendations refer throughout to OMB, rather than specifying one or more of its component entities. We recognize that OIRA and the Office of E-Government & Information Technology, both situated in OMB, have statutorily designated roles in this area, and that OIRA has been charged by Presidents since 1981 with responsibility for leadership in rulemaking issues. We believe that OIRA in particular should take a more engaged and supportive role in the next phase of the Initiative. Still, judgments about the most effective institutional form of OMB's involvement belong to Congress, the President and the Director of OMB.

A. Governance, Management, Funding

Energetic growth and creative innovation are virtually impossible so long as the e-rulemaking system is defined by what 15 Cabinet Departments and a score of other Executive agencies and independent regulatory commissions can collectively decide to pay for. To be sure, the Initiative's current complex governance structure has enabled agencies with widely diverse institutional and programmatic needs and goals to come together and advance a joint undertaking about which many had reservations. But it also has been cumbersome, risk-averse and unable to deal effectively with such vital areas as data standardization and design of the public interface. We are not suggesting that this is the "fault" of EPA or of the PMO, which has worked tirelessly over the years to overcome a variety of obstacles and keep the program on track and which gets generally high marks from participating agencies (GAO Sept. 2005:14). Rather, it is the consequence of trying to accomplish something as complex, challenging and novel as a government-wide e-rulemaking system, meant to achieve many different goals and serve many different constituencies, through non-hierarchical collective decisionmaking and using existing resources.

The next stage of federal e-rulemaking hinges on creating a more decisive and focused decisionmaking structure, and on adopting a funding method that does not drive decisions about system design and capabilities towards the lowest common denominator.

We believe it is important for Congress and the President to work together to enact legislation setting out a comprehensive vision and implementing structure for technology-supported rulemaking, just as the Federal Funding Accountability and Transparency Act has done for funding awards and the Federal Financial Assistance Management Improvement Act has done for grants. Rulemaking is, if anything, a more important and ubiquitous vehicle for implementing federal policy than either of these. In any event, legislation focused on e-rulemaking will underscore the commitment at the highest political levels to increasing the availability of rulemaking information, enabling broader, better public participation, and improving rulemaking outcomes. Moreover, such legislation will give legitimacy and authoritativeness to a new governance and funding approach that may initially raise some agency apprehensions.[80]

[80] Should legislation not be feasible in the short-term, many of these recommendations can and should be implemented administratively in the interim.

Recommendation A1: Governance and Management

New legislation should specify a governance and management structure for the e-rulemaking system having the following components:

A Lead Agency, with authority over day-to-day system operations, as well as primary responsibility for creating and implementing the new Systems Architecture (Part IIIB infra), redesigning the *regulations.gov* website (Part IIIC infra), and formulating the annual system budget. The General Services Administration (GSA) should be considered for this role.

An Interagency E-Rulemaking Committee (IEC), charged with advising the Lead Agency on agencies' needs and desires for rulemaking technology, and with acting as a sounding board on significant system decisions and future directions. IEC should be comprised of a knowledgeable senior representative from each major rulemaking agency and a small group of delegates from the remaining agencies.

A Public E-Rulemaking Advisory Committee (PEAC), charged with advising the Lead Agency on needs and desires of the various user communities outside the federal government, and with acting as a sounding board on significant system decisions and future directions. PEAC should be comprised of representative individual, organizational and local/state government users, as well as experts in relevant technical, social science and legal areas. It should be subject to the Federal Advisory Committee Act.

Decisionmaking in the eRulemaking Initiative has been both too participatory and not participatory enough. Astute, forward-thinking system design is hard to accomplish by large-group decisionmaking; tough but necessary implementation choices (e.g., data standards) are probably impossible.[81] As major stakeholders in the system, rulemaking agencies must be involved in strategic decisions about its scope, capability and functionality. But there must be a clear focus of decisional authority, where responsibility and accountability ultimately rest for making decisions that further the objectives of a government-wide e-rulemaking system – and for remedying those that do not. Moreover, agencies are not the only ones with a major stake in e-rulemaking. The right decisions cannot be made without active involvement by those whose understanding and participation the system is supposed to support.

Selection of the Lead Agency is, of course, crucial. We strongly counsel against giving this responsibility to one of the large rulemaking agencies. We do not make this recommendation lightly. This group includes true pioneers in rulemaking innovation and effective use of technology, and EPA has been a committed and generous managing partner without whose support the project would have languished. The fact nonetheless remains that, over the last six years, sharp disagreements about system design and functionality emerged among some of the major rulemaking agencies. More broadly, concern lingers that if any of them has too much control, it will shape the system design in the image of its own particular rulemaking practices. None of this is surprising or blameworthy, given the importance agencies attach to rulemaking and the distinctive approaches that have emerged from organizational history, program mandates and client populations. But it does counsel that apprehensions and past controversies are less likely to be carried forward if an agency perceived as relatively "disinterested" is chosen to lead the next phase of system development.

At the same time, the Lead Agency should have some understanding of regulatory process issues. It should have experience with inter-agency initiatives, have government-wide operational authority (including relationships with OMB and with the independent regulatory commissions) and have administrative capabilities for contract and contractor management. Particularly in light of our recommendation on funding (Rec. A2 infra), it should have support from its authorizing and appropriating committees. Finally and importantly, it should be experienced in designing and implementing information technology systems and have a demonstrated ability successfully to operate a large-scale public use website.

Given these requirements, GSA appears to be the best choice, among existing entities, for Lead Agency. It already coordinates publication of the *Unified Agenda* and *Regulatory Plan*, and handles the *Agenda* and *Plan* interface with the online *Federal Register* and *Code of Federal Regulations*. Effective integration of all these publications into the e-rulemaking system is essential. GSA has worked successfully with OMB across administrations of both parties to lead inter-agency technology initiatives; its oversight committees have government-wide jurisdiction and it receives appropriations from subcommittees with a history of supporting valuable government-wide initiatives. GSA

[81] The harmonization of data and metadata standards, in particular, presents the problem of a *commons dilemma*: Each agency's short term interest is at odds with the long-term interests of the group and the common good.

provides a number of cross-government technology training and collaboration services, and has responsibility for numerous government-wide programs and activities, several of which involve working with the independent regulatory commissions.[82] It has a program oversight office to provide strong project management, and houses the Federal Acquisition Service. Finally, its Office of Citizen Services and Communications operates *USA.gov*, the federal government's central web portal and oldest large-scale public access site. This operation has been notable for proactive use of multiple methods to learn about and respond to the needs of public users, and for continual and successful redesign and innovation.[83] Moreover, its Office of Intergovernmental Solutions has been working to build multi-agency consensus in a number of e-government contexts (see, e.g., http://ontolog.cim3.net/cgi-bin/wiki.pl? Susan Turnbull). We recognize that selecting GSA may be controversial; still, no choice will be uncontested. Unless an entirely new entity were to be created for the purpose, GSA appears on balance to offer greater promise for leading the next phase of e-rulemaking development than any other agency.[84]

Although the new Lead Agency will have ultimate decisional authority, it should consult closely with the other two governance bodies. For the Interagency E-Rulemaking Committee (IEC) effectively to perform its assigned role as the voice of agencies' needs and desires, its membership should be both knowledgeable and not too large. Agencies with substantial rulemaking activity should each send a senior representative to IEC; the remaining agencies should select 2-3 representatives from the entire group.[85] These representatives should be well-versed in the rulemaking practices and requirements of their agencies; it is crucial that decisions about present and future development of the system reflect operational knowledge of rulemaking. The technological perspective is, of course, important as well, and IEC would benefit from participation by a widely respected federal IT professional nominated by, for example, the CIO Council. Still, both the Lead Agency and the Public E-Rulemaking Advisory Committee (PEAC) ought to bring technology expertise to the table, whereas if IEC does not contribute a rich understanding of the operational needs and practices of rulemaking, this essential information will be missing from the discussion. Given the key role OMB plays in inter-governmental management, and the importance of its engagement and support to the Lead Agency's ultimate success, IEC should be co-chaired by senior officials from OMB and the Lead Agency.

PEAC should fill what has been a significant gap in the structure of Initiative decisionmaking: ongoing, systematic and deliberative articulation of the public-side perspective. Its membership should be comprised of non-federal agency[86] users and experts (who may, of course, also be users). Its role should be twofold: (i) to help the Lead Agency understand and respond to the needs of the diverse array of actual and potential users who are not federal rulemakers; and (ii) to contribute the expertise of thought leaders in technology systems, information retrieval, website design, collaborative and participatory tools, presentation of legal information to the public, and other relevant areas. PEAC should not only serve as a sounding board but also be authorized to assess, evaluate and recommend changes to strengthen e-rulemaking now and in the future. It should operate under the Federal Advisory Committee Act.[87] PEAC, like IEC, should be co-chaired by senior officials from OMB and the Lead Agency.

The Lead Agency should foster dialog between IEC and PEAC so that the public representatives and government agency personnel mutually benefit from the other's knowledge and perspective.

[82] These include Federal Management Regulation, Federal Travel Regulation, Federal Acquisition Regulation, and the Federal Advisory Committee Management Secretariat, as well as the Office of Governmentwide Policy.

[83] Not only does the site do well in online user surveys, see note 79 supra, but it has received acknowledgement from independent sources as diverse as Time, http://www.time.com/time/specials/2007/article/0,28804,1638266_1638253_1638243,00.html, PC Magazine, http://www.pcmag.com/article2/0,1895,2168282,00.asp, and the Brookings Institution, http://www.fcw.com/online/news/153621-1.html.

[84] GSA has come under intense criticism in recent years for a variety of management issues, and its operation of the Federal Procurement Data System has been unimpressive. Moreover, the scope of the Office of Governmentwide Policy has been curtailed significantly, and some key personnel with relevant expertise in the Office of Citizen Services and Communications have retired. Still, it is hard to identify a stronger contender among existing agencies for the role. The National Archives and Records Administration would be a logical choice given its records management expertise and operation of the *Federal Register* but, as a relatively small agency, it has tended to shy away from taking on substantial new responsibilities outside the records management area. OMB would have a decided advantage in its cross-agency authority, but it has virtually no operational experience of any kind and, specifically, none in operating a major technology project or maintaining a large scale public website.

[85] Less frequent users of the system may have concerns about complexity and manageability that are qualitatively different than the priorities of large rulemaking agencies.

[86] State agencies are an important constituency, and should be represented.

[87] A possible model for PEAC is the Information Security and Privacy Advisory Board (ISPAB), originally created by the Computer Security Act of 1987 (P.L. 100-235).

Recommendation A2: Funding

New legislation should address funding of federal e-rulemaking in the following ways:

- Authorize appropriations to the Lead Agency needed for upgrading the core e-rulemaking system (see Part III B infra), including:
  - additional personnel and/or other resources required by the Lead Agency to manage the system effectively;
  - annual funding of the core system, including operations and maintenance costs, and a requirement that at least 10% of annual funding be apportioned for system development, modernization and enhancement in a manner that complies with OMB Circular A-11, Exhibit 300;
  - annual support for PEAC's and IEC's activities identified above.
- Authorize appropriations for agencies, including the independent regulatory commissions, to fund development of e-rulemaking subsystems, modules and tools for use with the core system, and to contribute resources to inter-agency development ventures (see Parts III C, III D infra).

The Administration should include this funding in its annual budgets. In particular, it should work with Congress to assure that adequate and secure funding to the Lead Agency for the core system in fact occurs each year.

Funding has been the Achilles heel of the eRulemaking Initiative. Although the system of inter-agency "contributions" promoted agencies' interests by giving them a tangible stake in project outcome, it unfortunately also provoked internal resentment, invited political controversy and constrained system development. The current "fee for service" approach has many of the same problems, and creates new ones because of the cost-allocation formula being employed. Pay-per-use may be a sensible method of covering the cost of an inter-agency e-travel or e-payroll system, but it is a counterproductive method when, as in the present context, the object is to induce agencies to use the new system as much as possible. At present, agencies that *are* encouraging their stakeholders to use *regulations.gov* for comment submission and that *are* complying with the E-Government Act mandate to put all rulemaking materials in the e-docket are "rewarded" by paying a hefty percentage of system costs, while agencies that make minimal progress in these areas pay a minimal fee.[88]

Creating perverse incentives is not the only problem. The current funding method imposes heavy costs on a few large rulemaking agencies – the ones that are also the agencies with the greatest need for, and interest in, developing new e-rulemaking applications and tools beyond the basic offerings of the current system. Modifying the technical architecture to permit such development (see Rec. B1 infra) will not lead to innovative enhancements by agencies unless resources become available.

The challenges of effectively funding cross-agency technology initiatives have been known for some time now (E-Gov Act "Findings" § (a)(4); GAO Apr. 2005; Fountain 2001:101-02,196-98). In the case of *USA.gov*, the Administration and Congress wisely recognized the importance of moving away from the multiple-agency contribution method that supported the project in its early years. Since 2002, GSA has received a dedicated appropriation covering ongoing operation, upgrades and enhancements. This has enabled the Office of Citizen Services & Communications to make decisions about the design and capabilities of the federal government's official web portal based on what will best meet users' needs, rather than on what a large group of agencies will agree to fund.

This same funding transition should now occur for the federal government's official rulemaking system. To grow beyond its current level of functionality, the e-rulemaking system needs the financial independence of its own appropriation. With dedicated funding, the Lead Agency can take responsibility for the system's continued evolution, closely consulting with but not dependent on the affected agencies. And, because it is not dependent on them for funding, the Lead Agency will not find itself trying to persuade reluctant agencies to allocate funds to enhance the public side of the system. A better, more functional *regulations.gov* will then be possible.[89]

[88] Recall that the three elements in the current allocation algorithm are: number of rules issued, number of comments received through *regulations.gov* (but not through other media); and *Federal Register* costs (based on number of pages used).

[89] We note that the Business Gateway initiative, managed by the Small Business Administration (SBA), may be moving towards the single, dedicated line of funding approach. The draft House Committee report accompanying the Financial Services appropriations bill for FY09, which was ordered reported by the Committee on Appropriations on June 25, 2008, included the following language: (continued)

This shift in funding also would relieve the largest rulemaking agencies of the heavy burden of core-system costs. Funds now dedicated to supporting the core system could then be used by these agencies for applications and tools that customize and enhance the system and for innovation. As explained further in the next set of recommendations, federal policy in this area must shift away from requiring all enhancement and innovation to occur at the level of the central system. Agency-initiated development is essential, both to meet the specific needs of rulewriters and the public across the diversity of regulatory programs and to encourage new technology-enabled rulemaking practices (see Recs. C2, D2 infra). Agency entrepreneurialism here need not mean wasteful duplication. Agencies with similar interests and requirements should cooperate in development and experimentation, and our other recommendations should help facilitate such collaboration (see Recs. D1, D2 infra). Both to signal the desirability of multi-agency projects and to forestall possible questions about legality, the legislation should authorize not only individual agency expenditures but also agency contributions to collaborative technology development and e-rulemaking experimentation.

B. Architecture

One of the Internet's extraordinary powers is that it makes the physical location of information irrelevant. In the last few years, web technologies have emerged to exploit this power more fully. Today, both data and the tools for interacting with them can be easily drawn from multiple sources; both content and presentation can be readily tailored to meet user needs. These are exactly the capabilities that an e-rulemaking system serving many different agencies and many different kinds of users requires.

On the government side, regulatory missions, legal mandates, agency organization and history, and relevant stakeholder populations are so diverse that agencies have widely varying information management demands. Consider, for example, just three federal agencies: (i) NARA, which issues a handful of rules of high importance to particular audiences; (ii) EPA, which is continually writing major rules that rest on extensive scientific and technical information and have nationwide economic and health impacts; and (iii) the Social Security Administration, which uses rulemaking to define and manage the behavior of federal and state decisionmakers, private insurance providers, and individual applicants in millions of claims for disability, retirement, survivor and other benefits.

On the public side, the range of needs for regulatory information and supporting services is even broader. The substantive and procedural variations across regulatory subject matter are compounded by wide disparities in users' knowledge, experience and situation. Compare, for example, (i) the National Association of Manufacturers, a sophisticated repeat player in a broad range of regulatory areas; (ii) state and local government entities and non-governmental organizations wanting to participate in proceedings to set federal grant criteria and performance standards, and (iii) the frequent air traveler who learns that the Federal Aviation Administration is considering new standards for airline overbooking practices and compensation.

The profound differences across regulatory domains in the type and scope of relevant information, the nature and degree of complexity in the rules produced, the number of stakeholder groups and the range of their regulatory sophistication, and the level of interest shown by the general public all point to the need for diversity and flexibility in information management, organization and presentation. This diversity and flexibility cannot be provided by a single, centralized system with one public and one government interface, each of which offer a predefined set of services (see Parts IIIC, IIID infra).

The future of technology-supported rulemaking lies in creating an open, flexible, adaptive system, in which both agencies and non-governmental users can add functions and services, draw and combine data from multiple sources, customize presentations of rulemaking materials, and explore innovative methods of information-gathering and public participation.

In this new system design, FDMS becomes one component of an enhanced core that offers capable rulemaking support services (including search, document conversion and social networking tools). This core will likely be sufficient for the many agencies that do a modest amount of rulemaking, and it should be a strong foundation for agencies whose rulemaking activity requires additional functionality. We believe this is a sensible and feasible role for FDMS. Still, the priorities going forward must be clear: Retaining the investment in FDMS is important, but moving to a more robust, innovation-enabling e-rulemaking system is imperative. If the Lead Agency comes to doubt the wisdom or practicability of incorporating FDMS as a component of the open, flexible system described here, then FDMS must give way for the sake of system-wide improvement.

Direct funding for the [Business Gateway] initiative within SBA will improve administrative efficiency by eliminating the need for as many as 80 funding transfers annually from 21 participating agencies. The Committee directs SBA to budget for direct funding for this initiative within its fiscal year 2010 budget request.

Recommendation B.1: A New Systems Architecture

The Lead Agency, assisted by input from the Interagency E-Rulemaking Committee (IEC) and the Public E-Rulemaking Advisory Committee (PEAC), should specify, publish, and take the necessary steps to implement a new e-rulemaking Systems Architecture. This Systems Architecture should be reviewed and revised at periodic, announced intervals.

In the new Systems Architecture, FDMS should be reconfigured as part of a system core that interoperates with, and is extensible by, a variety of subsystems and modules created by government and private entities to enhance functionality and customize presentation for both agencies and public users. The new Systems Architecture should be based on open standards, and be highly scalable and flexible; it should build in as few constraints as possible in order to accommodate expansion, adapt to rapid developments in computing, and support experimentation. It should also look forward to eventual interoperation with systems that manage legislative and judicial legal materials.

Independent regulatory commissions that have not migrated to FDMS should be invited into this process, with the aim of integrating them into the redesigned e-rulemaking network. Integration should be supported by both the Administration and the relevant Congressional oversight committees in whatever ways prove necessary or appropriate.

The purpose of the new Systems Architecture[90] is to plot out the evolution of a closed, inelastic, innovation-limiting system into an expanding and dynamic aggregation of subsystems, modules and applications built off a central core. As the next two recommendations elaborate, the work done in creating FDMS will provide the foundation for an enhanced "core system." For agencies with modest rulemaking activity, the core system should be capable of meeting their rulemaking support needs without supplementation. Agencies with more extensive e-rulemaking needs and interests would be able to draw on and extend the core to provide *more* services, more *tailored* services, and more *innovative* services to their personnel and to the public.[91] The Lead Agency can work with IEC to ensure that agency-specific development indeed focuses on value-added enhancements and innovation, rather than merely duplicating functionality contained in the core.

Non-governmental actors will play a key role as well. It is vital that the new Systems Architecture be based on open standards with appropriately specified and implemented applications programming and other software interfaces (see Rec. B2 infra). In this way, information and components from the core system and from each regulatory agency can interoperate with and be available for public access, comment and research. Innovative supplements to the "official" e-rulemaking system, created by organizations and individuals to provide information and services beyond those available on *regulations.gov*, are already beginning to emerge.[92] Moving to an open, extensible architecture will facilitate and accelerate this salutary trend.

Specifying technical elements and standards is obviously a crucial aspect of creating the new Systems Architecture, but this undertaking implies far more than defining hardware, software and networking capabilities. The eRulemaking Initiative has articulated a number of government- and public-serving goals, but these have not always been translated into a commonly shared vision, at the operational level, of what the system should be designed to achieve. Writing and publishing the new Systems Architecture will be the process by which the Lead Agency, with extensive input from agencies through IEC and public users through PEAC, can lay the essential groundwork of figuring out exactly what to build and why. The process should focus on user interaction with the system and its various components: identifying current and prospective types of government and public users; investigating the range of their likely needs and determining the consequent technical and data requirements; and defining appropriate metrics for verification. The resulting Systems Architecture document should make it more likely that system goals are reflected throughout system design.

Planning, at the outset, for periodic review and revision of the new Systems Architecture is especially important. Even

[90] A *systems architecture* is "[t]he fundamental organization of a system, embodied in its components, their relationships to each other and the environment, and the principles governing its design and evolution." American National Standards Institute/Institute of Electrical and Electronics Engineers Standard 1471-2000. An important aspect is identifying the expected and required interaction of the technology with the various anticipated user groups.

[91] Some agencies already use their own websites to complement *regulations.gov* but these efforts are not accessible to users from the central portal. See, e.g., http://docketsinfo.dot.gov/FDMS_Tips.cfm (DOT); http://www.epa.gov/lawsregs/search/index.html (EPA).

[92] See, e.g., Justia Regulation Tracker, http://regulations.justia.com/; Regulatory Resource Center, http://www.ombwatch.org/regresources; and the OpenRegulations interface at http://www.openregulations.org/.

as rulemaking agencies explore what information and communication technologies can mean for rulemaking, those technologies will be shifting under their feet. In today's technology climate, we cannot realistically expect a federal rulemaking support system to stay technologically current for long. E-rulemaking advances that go beyond merely "e-notice and comment" will be achieved only by periodically reflecting on what has worked well and badly thus far. Multi-method evaluation of existing technology, practices and user experience – on both the agency and the public side – is an essential aspect of determining how and when to incorporate new technologies and innovative practices in the system.

Every effort should be made to bring the remaining independent regulatory commissions into the new system. Several of them, like the Federal Communications Commission, have substantial rulemaking operations; users need and justifiably expect these materials to be accessible through the federal government's e-rulemaking system. A new funding method may persuade those commissions that have been concerned about the cost of FDMS now to migrate; the new design approach may persuade others. If, despite these changes, commission-specific e-systems are going to remain operational, the standards and interface specification process discussed next should explicitly address establishing interoperability between them and the government-wide system.

Finally, the new Systems Architecture should anticipate eventual interoperation with relevant federal systems such as THOMAS (statutory and other legislative material) and PACER (judicial material from the federal courts), as well as relevant regulatory material at White House.gov (Executive Orders, OMB Bulletins, etc.) and *gpoaccess.gov* (the *Code of Federal Regulations*). Stakeholders and other members of the public can fully understand agency rulemaking only when it is placed in context with the legislation that authorizes it, the White House materials that relate to it, and the judicial cases that review and enforce it. Moreover, given the increasingly trans-jurisdictional nature of regulatory problems and solutions, the federal system ultimately should be capable of interoperating with regulatory e-systems of state and local governments and relevant international regulatory bodies. Agencies as well as public users have a strong interest in increased information and coordination across jurisdictions.[93]

Enabling such interactions is obviously a long-range system goal, but particularly in the area of Internet technology, "long-range" may be shorter term than we can currently envision. The Lead Agency may find it useful to form inter-Branch and inter-governmental workgroups to help ensure that current design choices will facilitate future progress along these lines.[94]

[93] The Lead Agency could look to the *Business.gov* initiative for a model of system interactions across multiple levels of government on behalf of users, many of whom would also be users of an enhanced regulatory e-system.

[94] We note that both PACER and THOMAS wrestle with many of the issues (e.g., metadata standards and generation, effective search technologies, web-publication of confidential or sensitive material) that challenge e-rulemaking. Sharing of information and experience might benefit the systems of all three Branches.

Recommendation B2: Information Quality and Accessibility

Achieving and maintaining data quality and accessibility must be high priorities in the new Systems Architecture. Important steps that should be taken in this area include:

- Creating an explicit document model for rulemaking documents (and for any other categories of documents to be included in the core system) that accomplishes the standardization required for accurate and efficient government-wide retrieval of information;
- Modeling the generation, control and editing of metadata to facilitate retrieval and presentation of information by users within the originating agency, by other agencies, and by those outside the federal government;
- Incorporating data quality assurance tools and processes to discover and repair existing poor data, minimize submission of incorrect or incomplete data in the future, and monitor data quality over time;
- Specifying data and services standards for entering, storing and managing documents that support variable levels of secured access within and outside government and across multiple databases;
- Providing full site mapping and indexing to facilitate information retrieval by internal and external search engines and web browsers;
- Defining applications programming and other open software interfaces and offering efficient bulk operation services to enable rapid interchange of information between the system and remote computers within and outside government;
- Specifying permissible formats for public submissions that facilitate electronic information retrieval and management, without unreasonably restricting the ability of the public to comment on proposed agency action.

These modeling and standard-setting processes should be open and inclusive, using IEC and PEAC to obtain agency, public user and expert input. However, the Lead Agency should be ultimately responsible for appropriate and timely resolution of these design control issues, and OMB should support its decisions.

The success of the new Systems Architecture crucially depends on well-designed data and technical standards reinforced by effective quality control tools and protocols. Rulemaking materials must be available in open, structured, machine-readable formats – whether they are being maintained in the central FDMS database or in agency-specific subsystems created to accommodate particular regulatory needs. Attention must be given to profiling errors, omissions and inconsistencies in the data already in FDMS, cleaning these up to the extent reasonably feasible, and building processes into the system that will monitor and minimize future data problems. Complete site maps and similar aids for gathering and parsing must be supplied. Of particular importance, programming and other open interfaces must be appropriately specified and implemented. This is the crucial technical precondition for the development of agency-specific rulemaking applications and the emergence of nongovernmental websites offering rulemaking information, both of which are essential to achieving the potential benefits of e-rulemaking (see Part IIIC infra).

Thus, the Lead Agency has the challenging task of inverting the current state-of-system: that is, moving from largely unstandardized, unmonitored data in a highly standardized presentation, to appropriately standardized, quality-controlled data in widely diversified presentations. To accomplish this, it will need help from IEC and PEAC, support from OMB, a great deal of resolve and, importantly, resources adequate for the task.

Recognizing the history of attempts at standardizing data content and entry, the Lead Agency should consider enlisting the aid of skilled facilitators, and engaging experts in metadata, data quality management and other relevant fields to the extent that such expertise is not already represented on PEAC. Once agencies recognize that the new Systems Architecture allows them room to accommodate truly distinctive needs, they may find it easier to agree in truly common areas. In some instances, technology itself may provide solutions (Hovy 2008; Kaza & Chen 2008; Tsugavva, Matsunaga & Fortés 2008). In any

event, this process should be explicitly and unambiguously independent of any attempt to conform the underlying "business practices" of rulemaking to a standard model. Conflating the two often complicates, and sometimes thwarts, cross-organizational efforts at standardizing data and metadata because it raises the stakes for all participants. It may well be that the exercise of defining common rulemaking data and metadata standards will demonstrate to agencies far more potential for harmonizing underlying rulemaking practices than they currently perceive. But failing clearly to distinguish the two types of standardization (or attempting to do both simultaneously) will substantially impede an already challenging task.

In the end, neither data standards and quality assurance nor the provision of appropriate interfaces and services can continue to depend on the vagaries of inter-agency agreement. The Lead Agency's role is not to restyle the regulatory processes of agencies, but it is ultimately responsible for ensuring that the new Systems Architecture specifies standards and practices that foster accuracy, consistency and completeness of rulemaking data and facilitate exchange, retrieval and management of information by both agencies and the public. It must be prepared to "do the right thing" in these areas, and implement its decisions throughout the system design.[95] OMB, in turn, must be prepared to support the Lead Agency in this vital area.

Security of rulemaking documents[96] and their metadata is also an important and sensitive issue that requires a more nuanced treatment than the current system offers. The existing access dichotomy between the agency "owner" of the data, on the one hand, and all other users (be they members of the public, or other federal agency or governmental users) on the other, seems overly simplistic. Certainly, this "owner"-centric approach undermines the e-rulemaking goals of regulatory coordination and government-wide rulemaking data-gathering and program assessment. Consideration should be given to providing variable levels of access that could be tailored to different groups of users.

Similarly, the role metadata must play in effective search and information retrieval makes it irrational, from the system perspective, to allow each agency wide latitude in specifying which metadata will be exposed to users and systems outside its own. The entire modeling and standard-setting process must continually reference ultimate system objectives: maximizing cross-agency searchability, facilitating fast and accurate sorting and display of search results, providing the information needed by public users to understand and participate in the rulemaking process, and maintaining data in a form readily manageable by e-tools.

Finally, if data "ownership" proves an obstacle to offering bulk data transfer services, OMB should issue a policy authorizing the Lead Agency to act on behalf of all the originating agencies in responding to bulk data requests; the Lead Agency might notify agencies of such requests, but need not get permission before granting them. We recognize that this approach may be considered problematic for data of the independent agencies; a statutory solution might therefore be preferable. What is clearly not preferable is a situation in which bulk data transfer is entangled in obtaining permission from scores of different regulatory entities. [97]

[95] We recognize that metadata, in particular, is a complex issue (Hovy 2008). Many of the services that the e-rulemaking system must provide require accurate, complete and consistent metadata. For example, because rulemaking documents often contain repetitive content, exist in nearly identical form at different stages of the process, and have generic (and reused) names, metadata searching must supplement even the most robust full-text search capability. Yet, metadata is expensive if its generation requires work by skilled staff. Requiring metadata that agencies lack resources to provide will only encourage shortcuts that introduce errors or lead to underutilization of the system.

The metadata modeling process may be helped by conceptualizing metadata as falling into three broad categories: (i) metadata that must be present and accurate, across agencies, to support core e-rulemaking functions; (ii) metadata that can be supplied at little incremental cost because it is already being generated in existing agency processes, but must be standardized; and (iii) metadata that is expensive to create, but supports additional functionality for agency and/or public users. Different strategies and, perhaps, different timelines will be appropriate for each category. Also, such a triage approach may help estimate agency resource needs and provide justification for budget supplementation requests.

[96] Throughout this Part, "documents" is meant to include any type of media, including video or audio materials and interactive computational resources that agencies create or accept.

[97] It should be noted that the absence of an efficient solution to this problem does not, in the end, prevent outside groups from acquiring publicly viewable data in the system without the "owners'" permission: There are methods for extracting data directly from the *regulations.gov* web site (e.g., screen scraping). But producing clean data amenable to machine processing through these methods is time-consuming and expensive. The predictable consequence will be that the "publicly available" data in FDMS will in fact be available to only well-resourced organizations.

Making rulemaking data maximally accessible to existing and emerging e-rulemaking tools begins with a counterintuitive proposition: Effective public access to rulemaking processes requires limiting the ways the public can submit material to agencies. Hard-copy comments and supporting material, and some types of electronic submissions, pose formidable problems for electronic information systems. Converting hard copy to electronic form takes agency time and resources. At best, this means diversion from other rulemaking functions; at worst, it means these submissions do not make it into the e-docket in a timely fashion – or, at all. Moreover, the conversion process often introduces errors (e.g., extraneous characters) that can affect the performance of electronic information management tools. As for electronic submissions, not all formats are equally amenable to search and other forms of information access and management. In particular, image-based versions of text documents cannot be effectively searched by standard search engines or processed by other e-tools. Moreover, they are inaccessible to vision-impaired users because they cannot be read by Braille or audio converters.

The process for defining the new Systems Architecture should include careful assessment of the need for and problems associated with various hard-copy and electronic formats. To be sure, there are vital public policy benefits in ensuring that all sectors of the public can communicate with government agencies. At the same time, however, the public suffers if submitted materials are missing from the e-docket, are inaccessible to users with certain disabilities, or cannot be reliably managed by technology to retrieve, analyze and present the information they contain. We believe that thoughtful attention to this issue can produce a set of format specifications appropriately balancing the several public interests at stake.[98] OMB should work with the Lead Agency to implement these specifications, seeking Congressional approval of any change in current agency practice for which statutory authorization is deemed necessary or appropriate (see Rec. D1 infra).

[98] For an example of what such a process might produce, see FDA's Guidance for Industry: Providing Regulatory Submissions in Electronic Format, available at http://www.fda.gov/Cder/guidance/7087rev2.pdf. Even if particularly problematic formats such as fax and image-based versions of text documents are not entirely prohibited, submitters should be required also to submit a text file version whenever (as will often be the case) one exists.

Recommendation B3: A Fully Capable Core

The new Systems Architecture should provide core components capable, by themselves, of (i) meeting the electronic docketing and rulemaking support needs of agencies with relatively modest rulemaking activity, and (ii) supporting capable interfaces for the public (*regulations.gov*) and for agency users (*fdms.gov*).

Based on current FDMS functionality, at least the following changes are needed to achieve this:

- The database and e-docket components should support interoperation with agency email and word-processing systems, as well as with relevant processes at OMB and with archival storage, so that rulemaking documents can be transferred from stage to stage with minimal effort and reformatting.
- Input services should be provided for all anticipated types of submissions, with particular attention to effective conversion technology for digitizing paper documents.
- The ability to manage documents containing confidential or otherwise sensitive material should be provided, both at the point of public submission and at the point of addition to the rulemaking e-docket.
- Dockets should be explicitly supported by the system as packages of documents, especially with respect to search capability.
- Search capabilities should be improved with respect to both performance quality and ease of formulating searches and sorting results.
- Effective, efficient and customizable notification services should be available to both public and agency users.
- The web development component should be both powerful and flexible, enabling the creation of user interfaces that are technically, functionally and aesthetically suited to the needs of agency and public users.
- A suite of social networking tools (wiki, blog, etc.) should be available to support new forms of collaboration and participation.

The electronic docket must become agencies' comprehensive, authoritative rulemaking record. This is the only way that public users can be assured that there are not two different rulemaking dockets: one accessible to anyone online, and the "real" record accessible only to those able to go to the agency reading room or make (and wait for response to) a FOIA request. It is also necessary so that the government can take full advantage of the information management potential of search technologies and other e-tools, as well as the economies of electronic document storage.

More than just technology is involved in accomplishing this shift from conventional paper systems, but agencies will surely resist moving to a fully electronic docket unless the system (i) offers appropriately structured databases, with convenient, secure, effective services for inputting, managing and retrieving information; and (ii) supports user-friendly interfaces well-tailored for their intended public or agency audience. In the new Systems Architecture, the object of the core system should be to provide all these services at an adequate level, without supplementation, for agencies that have only a modest amount of rulemaking activity. Unlike the major rulemaking agencies, these agencies will likely have little need, ability or incentive to embark on development of modules or subsystems that add, customize and innovate. They require a capable but not overly complex system that is relatively easy to learn and operate. For the large rulemaking agencies, the core system should provide a base on which to build.

Thanks to the work of the EPA Project Management team and scores of partner-agency personnel, FDMS goes a long way towards meeting the basic regulatory support requirements of many agencies. Significantly, it satisfies the Department of Defense 5015.2 Standard for electronic document management, paving the way legally for its use as the document-of-record system. Still, the new Systems Architecture must address crucial gaps and inadequacies.

The system should interface readily with agency business processes from document origination to archiving. At a minimum, this means compatibility with standard word processors and interoperability with commonly used email systems, so that documents already in electronic form can be moved with minimum effort to the e-docket. It should also support interaction with OMB systems.

Increasingly, agencies will be presented with material in video and audio form, and with virtual as well as actual three-dimensional objects; capable input services must anticipate the issues these will present for storage, metadata collection and "viewing." Currently, however, the most crucial input service is probably digitization of paper

documents. At least in this area, the new Systems Architecture should aim for cutting-edge technology. As noted in the previous recommendation, the digital format chosen and the accuracy of conversion have enormous implications for the ability of existing and emerging e-tools to search, extract and manage information from paper documents. The new Systems Architecture must therefore provide the best available conversion technologies, making certain that all financial and technical incentives induce agencies to use them.[99]

Finally, input services must deal with confidential materials. Provision must be made for secure submission of comments and supporting materials for which the submitter claims confidential status.[100] It must be possible not only to maintain the original version securely in the docket, but also to prepare and post a redacted version viewable by the public – or, if redaction is inadequate, to create an entry in the public view of the docket that indicates the existence of the material and provides non-sensitive basic information about it.[101]

Search is one of the most important and most challenging capabilities the core system must provide. A government-wide rulemaking database is of little use without powerful and effective ways to find the information in it – and the closer the system comes to having all agencies create comprehensive, authoritative e-dockets, the more daunting the task becomes of providing effective information retrieval technologies.[102] The current search capability, though much improved, is still far from adequate; users are limited to fairly basic searches that are not always structured in what are now conventional web search formats.[103] "Precision" (i.e., percentage of results that are indeed relevant) is often low. Exposing rulemaking data to external search engines is important (OMB Watch 2007), but this will not moot the internal search engine issue: Among other reasons, external search engines will not reach non-publicly available material that agency users must be able to search.

As the new Systems Architecture process considers search technology and techniques, a few issues are clear. First, dockets are the fundamental typical organizational unit of rulemaking materials, and the system must support them *as units*. While robust full-text and metadata searching of individual documents is clearly important, such searches must also be available within and between dockets *as dockets*.[104] Second, users must be able to perform frequently desired types of searches quickly, easily and accurately. Some of these will be common to many types of users, and hence easy to predict (e.g., all the comments submitted on a proposed rule). Identifying others will require diligent inquiry and attention to actual system experience. Third, the system must be capable of prioritizing search returns according to likely relevance; this should be the default method of presenting results to users, although they should also have the ability to reorder by other possibly useful sorting criteria such as date of creation/ publication.[105] To accomplish relevance-based ranking (as well as to identify commonly desired searches) the new Systems Architecture should determine the extent to which persistent tracking and/or other technologies are needed to obtain ongoing data about usage patterns and evaluate the effectiveness of search design.[106] Fourth, because agency

[99] Thus, for example, a license arrangement that requires large, agency-specific use-based fees will predictably cause at least some agencies to continue using cheaper but less capable conversion software. We have been told that some agencies are not using the conversion application currently available with FDMS because they can find less costly alternatives.

[100] That the submitter makes a confidentiality claim does not mean that the agency will, or should, honor it. But *regulations.gov* is not an adequate electronic submission portal without the capacity to handle such material.

[101] Compare the Vaughn Index agencies prepare in the context of Freedom of Information Act requests. Current agency practice in this area varies substantially (Lubbers 2006:332). Some agencies, notably EPA and DOT, already have a policy of listing documents containing CBI in the docket, although practices differ across units in whether redacted versions are routinely available to the public.

[102] The difficulties of retrieving information from large collections of legal and related complex materials have been recognized (Sedona Conf. 2007; Paul & Baron 2007). Fortunately, work is going on in this area. For example, the Text Retrieval Conference (TREC), convened under the auspices of the National Institute of Standards & Technology and the Department of Defense, "is designed to bring together thought-leading representatives from the government, academia and industry to foster broad-scale collaborative progress in information retrieval – while also serving to provide an objective evaluation framework based upon commonly-used metrics for various information retrieval methodologies applied to document review" http://www.thesedonaconference.org/content/miscFiles/TREC_OPEN_Letter.pdf. Familiarity with these efforts or, more generally, expertise in human computer information retrieval is a type of competence that would usefully be included on PEAC.

[103] See, e.g., the description and instructions at Peggy Garvin, *The Government Domain: Regulations.gov, 2.0* available at http://www.llrx.com/columns/govdomain32.htm.

[104] In a 2003 survey conducted by the Section of Administrative Law & Regulatory Practice of the American Bar Association, 271 of 283 respondents rated full-text docket searching as an "essential" attribute of a federal e-rulemaking system (Strauss 2004). EPA's EDocket system provided full-text search within dockets, as well as links to related dockets.

[105] This assumes that the new Systems Architecture specifies date of creation/publication as a required, publicly viewable type of metadata. See note 30 supra and accompanying text and Rec. B2 supra.

[106] Use of some of these technologies (e.g., cookies, web beacons) on federal sites is restricted. If, however, they are needed to obtain data for improved performance, or to provide customization or other functionalities to users, the Lead Agency should be able to obtain the approvals necessary. See OMB *Guidance*

practices differ about creating a separate docket for rules that amend or are otherwise closely related to another rule, metadata should be specified, and search techniques provided for, identifying the various materials that constitute the life cycle of a particular rule, whether these be one portion of a much larger docket, or an amalgam from multiple dockets.

Information design – the preparation and presentation of information so that it can be located, understood and used efficiently and effectively – is central to the system's performance, from both the agency and the public side. The core system must have powerful and versatile web development capabilities that enable creation of multi-feature, usable and customizable user interfaces. Some experts have urged the federal government to concentrate on creating open data infrastructures and leave building user interfaces to non-governmental individuals and organizations. They are concerned that, as a practical matter, "when open infrastructures drive websites, the infrastructure and site each rely on what the other is doing; it is extremely difficult to innovate on both levels at once" (Robinson, et al. 2008:9). This view has merit, but we believe there are good reasons for the core system to strive to offer a set of well-designed and -functioning user interfaces, at least for the present.

On the agency side (*fdms.gov*), even if the new Systems Architecture results in agencies' accessing input services and other system capabilities through customized internal interfaces in their own websites, this will take time. Some agencies (perhaps the less frequent rulemakers) may always prefer to use the "generic" agency interface. On the public side (*regulations.gov*), even if many sites emerge through which rulemaking information can be obtained and comments submitted (see Part IIIC infra), some stakeholders will likely not be comfortable submitting their comments through a non-governmental site. To be sure, it should increasingly become possible in the new Systems Architecture for the public to submit comments to the e-docket through individual agency sites. Again, though, some agencies may not wish to offer this option, and the core system should accommodate this preference. Moreover, for users seeking a particular rulemaking who do not know the relevant program or agency, and for users who are not sure exactly what they are seeking, an official portal known to be "government-wide" may be the best (or at least the preferred) choice – even if that portal eventually takes them to a specific agency site where they obtain most of the information they want.

Particular attributes important to the public interface are considered in the next set of recommendations (see Rec. C1 infra). One set of services important to both public and agency users, though, is the ability to receive notice (such as by RSS feed or email listserv) of new items or actions. The currently offered docket-specific notification is a key functionality, but it does not help users become aware of the proceeding in the first place. On the other hand, the currently available daily RSS feed from the *Federal Register* will overwhelm many users because it cannot be limited by agency or subject.[107] It should be possible to specify notice by agency or by subject area, as well as by proceeding. The importance of well-designed, tailorable notice services is obvious for public users, but these services can also be a valuable tool for inter-agency coordination and oversight.

Finally, the core system should provide for the social networking tools that enable information to be created and shared by groups of users, and potentially provide new ways for stakeholders and other members of the public to interact with the agency over the course of rule formation and implementation. Many agencies have already had positive experiences using blogs and wikis within their organization; some are now experimenting with these and other web-based collaboration tools as vehicles for public input and participation in contexts other than rulemaking. Much remains to be learned about effective use and management of these new forms of communication in the regulatory setting (see Rec. D2 infra). Still, it is already apparent that their capacity to support broader participation and better interchange of information could significantly change the federal rulemaking process for the better.

for Implementing the Privacy Provisions of the E-Government Act of 2002, available at http://www.whitehouse. gov/omb/memoranda/m03-22.html.

[107] Compare OpenRegulations, http://www.openregulations.org/, an alternative, privately created interface to the material in *regulations.gov*. OpenRegulaions provides not only the full list of proposed rulemakings and other notices published in the most recent *Federal Register*, but also an agency-specific RSS feed.

C. Public Access and Participation

A sure way to improve public participation is *both* to build on existing patterns of public interaction with agencies and to pursue new opportunities created by the World Wide Web. For the e-rulemaking system, this means anticipating and supporting three types of online access points for users who are seeking rulemaking information or wanting to offer input: (i) via the central *regulations.gov* portal; (ii) via individual agency/program websites; and (iii) via the websites of outside interest and advocacy groups. Each of these three avenues of access to rulemaking has a vital role in enhancing public understanding and participation.

Interest and advocacy organizations help individuals filter the massive stream of regulatory activity, so that they can focus on, learn about, and engage with specific issues of relevance to them. Even with state-of-the-art notification services, a single government-wide interface like *regulations.gov* is unlikely ever to have this ability to reach all segments of a large, diverse citizenry. For this reason, the recommendations on Systems Architecture (Rec. B2 supra) emphasize the provision of applications programming and other open software interfaces for all core system and agency-specific components. So long as these interfaces are appropriately specified and properly implemented, outside organizations will be able to develop rulemaking portions of their websites that offer alternative ways of presenting rulemaking information to the public, as well as explore innovative forms of individual and collective participation.[108]

With respect to accessing the rulemaking process through individual agency websites, the concern has been that many members of the public will not know which agency or program is responsible for the particular matter. This is a legitimate issue, and should be addressed by a government-wide portal like *regulations.gov*. Still, the fact remains that many individuals and organizations not only *do* know the relevant agency but also are accustomed to using its website for regulatory information. Insisting that agency sites send such users to *regulations.gov* to obtain rulemaking materials or submit comments is unnecessary, even counter-productive. Established patterns of public interaction with agencies should be cultivated, not disrupted – especially as agency websites will always be better situated to provide background information and program-specific context for rulemaking materials than the government-wide portal.[109]

Public users should be able to seek knowledge about or participation in rulemaking through the approach best suited to their individual interests and needs, whether that be via an organizational site, a program-specific or rule-specific site provided by the responsible agency, or the government-wide portal. An open architecture offering properly specified protocols for interface among multiple systems makes possible such a "no wrong door" approach.[110]

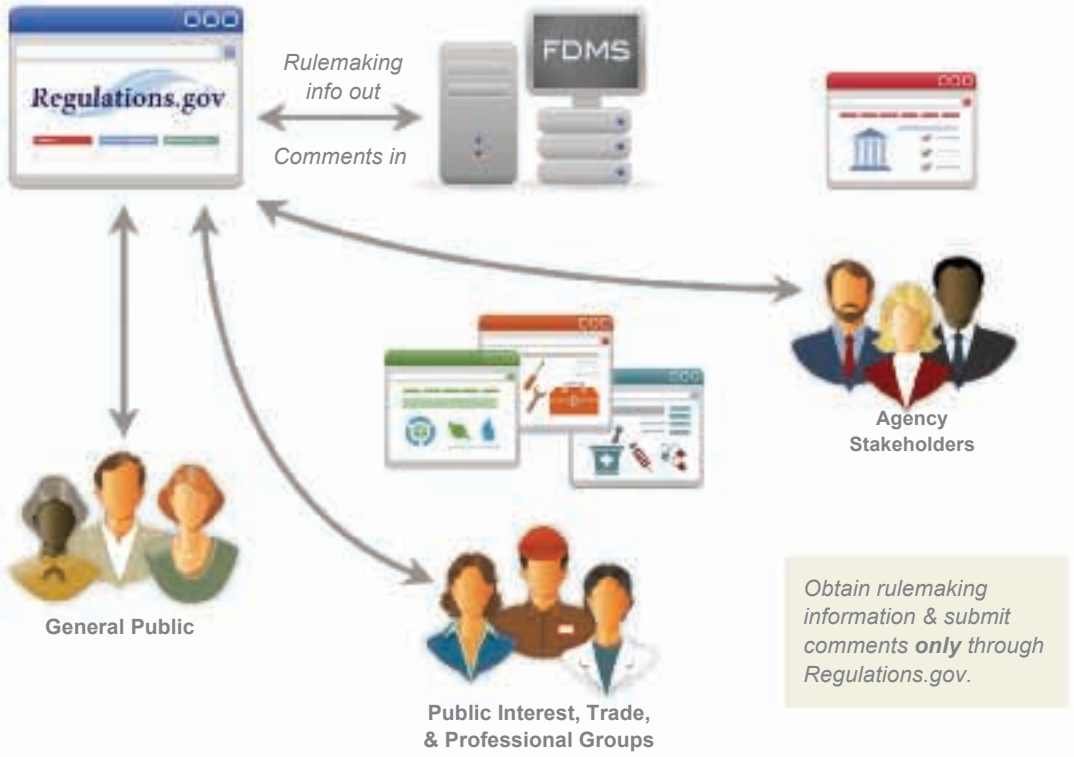
Assuming that the new Systems Architecture provides the appropriate software interfaces to enable organizational and other outside websites to develop as diverse alternative sources of rulemaking information and access, the question becomes what services and support government sites should offer in their public rulemaking interfaces. This set of recommendations addresses that question, first discussing *regulations.gov* and then considering agency-specific websites.

[108] Many have been disappointed in the quality of rulemaking information available, to date, on some organizational websites (e.g., Shulman 2006; Shulman 2007). Equally disappointing, however, has been the difficulty that outside systems have had, to date, in accessing rulemaking materials from FDMS in a way that facilitates analyzing and reformulating those materials into presentations more comprehensible to the public (Shulman 2005:631). Whether or not existing websites improve the way they present rulemaking to their users, the best antidote to a misleading or incomplete picture of the process or substance of rulemaking is enabling other, more informative and accurate sites to emerge as alternatives.

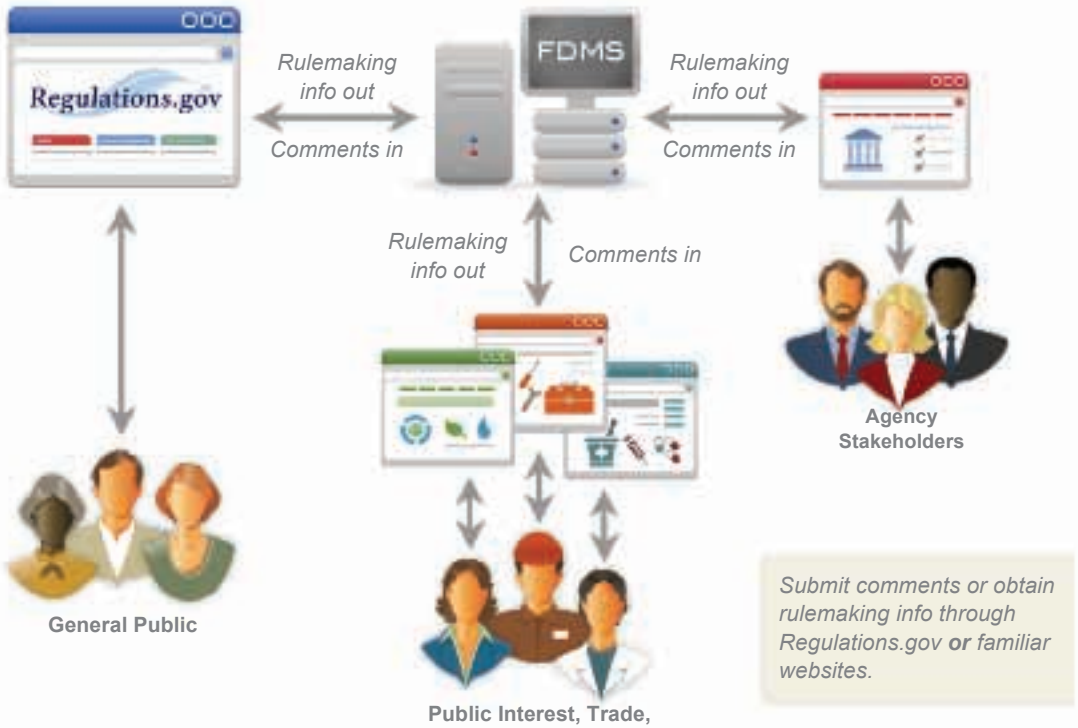
[109] Compare, for example, the frequently excellent materials on EPA and DOT sites with what the user can find on *regulations.gov*.

[110] It has been suggested to us that the bookmarking capability available in the current system in fact allows multiple-point public access to rulemaking because links to relevant *regulations.gov* pages can be inserted in both private and agency sites. This capability is indeed important and useful. However, serving the varying needs of the broad range of actual and potential consumers of online rulemaking information implicates a larger set of information design decisions than simply being able to direct traffic to *regulations.gov*. Navigation, organization and presentation of information, context, access to and integration of information from other sources, and other visual and functional aspects of the user interface are all involved – and only the agencies themselves and interested outside groups are in a position to assess and respond to the diversity of demand.

The Current E-Rulemaking Model – A Single Point of Access



The Proposed E-Rulemaking Model – No Wrong Door



Recommendation C.1: A New *Regulations.gov*

The Lead Agency should institute a complete redesign of the *regulations.gov* site. This redesign should be user-centered and experience-based, and the Public E-Rulemaking Advisory Committee (PEAC) should be actively involved in helping identify the needs and experience of actual and potential public users, and in providing relevant expertise.

The new interface should include:

- Support and ways of providing and organizing information that are tailored to widely different types of users; and features that allow users to customize the presentation and content of information and services;
- Clearly written content that avoids or explains specialized terms; well-organized and responsive "help" services; and logical, straightforward navigation;
- Design elements that enhance accessibility for disabled users;
- Search features that help users formulate effective searches, that compensate for predictable sorts of mistakes, and that present results in formats users find easy to read, sort and understand;
- A regulation mapping and tracking function through which users can access the relevant documents in the rule's lifecycle, and determine its current status;
- Comment solicitation page(s) using format and content to encourage commenting that is more substantively effective and easier for agency analysts to manage;
- Opportunities for agencies to indicate that their websites offer additional relevant rulemaking information and for public users to move easily between *regulations.gov* and these other sites (see Rec. C2 infra).

Periodic, multi-method usability assessment of the *regulations.gov* site should be provided for in the Systems Architecture. The core system budget should support this process and anticipate the need for responsive modifications to the interface.

Regulations.gov is an extremely challenging problem in user-interface design. Its goal is to provide access to a large volume of inherently complex materials, generated in regulatory processes that even many lawyers and government officials do not fully understand. If the site is truly intended to broaden participation beyond those already involved in rulemaking, then at a minimum it must explain actors and processes, define key legal and technical regulatory jargon, guide users in formulating their questions, and assist them in understanding the answers. At the same time, though, it must also serve knowledgeable users, providing them with efficient, intuitive ways to move through familiar regulatory terrain and supporting both targeted information retrieval and large data extraction. Finally, *regulations.gov* exists in a larger Internet environment of increasingly attractive, sophisticated and powerful website design. To establish site credibility and, ultimately, encourage users to return, it must offer a professional appearance, capable web-tools for managing information, and a satisfying user experience.

Meeting these challenges has been particularly difficult when interface development (like all other system decisions) requires collective agreement, when *regulations.gov* has to compete for agency budget dollars with components on the government-side of the system, and when non-government users and experts have no regular, sustained role in the design process. The current version of the interface, though markedly better than initial ones, shows the effect of these limiting factors. Rather than continuing to make incremental changes and add on more layers of complexity, the Lead Agency should start afresh – in what will be a more propitious funding and management environment if our previous recommendations are implemented. In particular, PEAC's status as a formal advisory committee will remove current perceived obstacles to implementing a process that systematically and effectively incorporates the perspective of *regulations.gov* users.

The new design should take advantage of whatever can be learned from critiques of the existing interface. More generally, the site should use available web-design techniques such as "scaffolding" to format and organize information for different types of users,[111] and should enable

[111] *Scaffolding* involves creating a simple interface for novice users that is readily learned and offers basic functionality, and providing alternative interfaces for experienced users that give them more options, features, control and possibly even entirely different interaction models. Successful scaffolding provides intuitive bridges between the simple and advanced interfaces (Baeza-Yates & Ribeiro-Neto 1999:259).

users to create "My regs.gov" customizations.[112] These are important steps towards making the site more manageable and serviceable across the entire user spectrum. In addition, given the density of material and complexity of concepts with which this particular site deals, it is especially important that the site have obvious and fully functional navigation, logical pathways and consistent task sequences, informative labels and menus, and elements that operate exactly as users expect and do precisely what users think they will do. Misleading cues, dead-end pages, obscure headings, and similar design shortcomings multiply the hurdles to public understanding and participation on the site.[113] Moreover, care must be taken to avoid creating barriers to web accessibility and to incorporate design elements that assist disabled users.[114]

Beyond incorporating the best general web-design practices, *regulations.gov* must reflect a conscious orientation towards public education and support. One of the prime justifications for a government-wide rulemaking portal is to reach members of the public who do not have established information and participation relationships with regulatory agencies. Agency sites have a substantial role to play in fostering greater public understanding and engagement (see Rec. C2 infra), but *regulations.gov* should meet basic rulemaking information needs for the public just as the core system should provide capable basic rulemaking support for agencies.

To accomplish this, the *regulations.gov* site (in contrast to the internal interface for agency users, *fdms.gov*) must be built from the *outsider* perspective: i.e., for users who may not know the rulemaking process or agency structure, may not understand the meaning of many legal and technical terms, and may have difficulty properly formulating the questions they came to the site to answer. This means heightened care in sentence structure and vocabulary, rich use of "glosses"[115] and similar devices to provide explanations and definitions, and the provision of a good set of web materials explaining the basic rulemaking process. In addition, it means anticipating and, to the extent possible, compensating for, errors that non-expert users will make in how they seek information – from items as basic as the names of agencies and rulemaking documents through more complex issues of search formulation.

We have discussed the centrality of search operations to the new Systems Architecture (Rec. B3 supra), and the same emphasis must be reflected in designing *regulations.gov*. Many users will require assistance identifying the relevant agency, understanding the significance of various types of documents, and formulating queries that produce the desired result. Search templates, standard configurations for frequently desired types of searches, and query expansion techniques to compensate for predictable errors and knowledge gaps[116] should be part of the search design. Equally important is the ordering and visual representation of search results.[117] Because of the volume of rulemaking documents, the repetition of information at various stages and proceedings, and the likelihood that substantive issues will be revisited over time and addressed by multiple agencies, users will be frequently presented with a bewildering mass of search results. They require not only effective search methods for narrowing returns, but also ways to view results that (i) help efficiently sort and review many documents (including the contents of long dockets); (ii) situate documents within the processes of the relevant proceeding; and (iii) make it easy to request additional information once target documents are located.

An additional highly desirable application would be a regulation mapping and tracking function that allows the user to trace the course of a rule from its origination (e.g., in a petition for rulemaking) and the *Unified Agenda* through to the issuance of post-rulemaking guidance or other implementation materials. Relevant documents should be accessible by appropriate links, and the user should be able to determine where the rulemaking currently is in the lifecycle and get available status information.[118] The longer

[112] More capable and tailorable notification and tracking services are an important dimension of customization.

[113] An excellent government guide to web design basics can be found at the *Usability.gov* site, maintained by the Department of Health and Human Services, http://www.usability.gov/pdfs/guidelines.html#2.

[114] The World Wide Web Consortium has developed the Web Accessibility Guidelines for accessible web design, http://www.w3.org/WAI/, which map fairly closely the requirements of Section 508 of the Americans with Disabilities Act (which was amended specifically to require agencies to make electronic and information technology accessible to disabled users) (Becker 2008). Automated tools are available to check a site's compliance with the Guidelines. With respect to elderly users, see guidelines from the National Institute on Aging, http://www.nlm.nih.gov/pubs/checklist.pdf.

[115] *Glosses* are short explanations or other information that pop up when the user places the cursor near a word or phrase designated as a link.

[116] *Query expansion* is the process of automatically reformulating the user's search request to increase the probabilities of getting desired results. Examples include correcting misspellings and identifying and searching for synonyms.

[117] To experience visual display of search results, go to http://www.kartoo.com/ or its sibling www.ujiko.com/ and type your name (or, *regulations.gov*). A helpful introduction to information visualization techniques for presenting search results can be found in Baeza-Yates & Ribeiro-Neto (1999:259-61).

[118] We recognize that developing this application involves more than just website design. Database structure, metadata standards and non-technology issues such as docketing practices will all be implicated. But the goal of creating such a presentation format for *regulations.gov* will reveal and focus attention on the relevant underlying data and practice issues that must be addressed. See, e.g., Rec. D1 infra (calling for adoption of a universal, consistently-used rulemaking identifier as a part of good e-rulemaking practices).

term goal should be to extend the user's ability to track back into the legislative origins of the rule and forward into its administrative and judicial enforcement (see Rec. B1 supra).[119]

To create a web environment conducive to improved public comment, greater attention must be paid to the comment solicitation portion of the site. Experienced commenters will prepare their submissions in advance and, if they use *regulations.gov* at all, will attach their materials as a file. Thus, an online comment submission form will predictably be used by those less familiar with rulemaking and the notice-and-comment process. It is important that users typing in comments have the capability to preview and edit content before approving the comments for formal submission. More fundamentally, when such users are presented with simply a blank comment box having neither explanation nor assistance (beyond a reiteration of the submission instructions in the *Federal Register,* which now create a self-referential, circular loop to *regulations.gov*), it is unlikely that their comments will be relevant, responsive submissions that the rulewriter will find effective and useful. Materials and submission formats created by the responsible agency will be the best way of providing information and guidance to support better comments in particular rulemakings (see Rec. C2 infra); when such materials exist, the comment solicitation page should clearly signal this fact and enable the user to move directly to their location on the agency site.[120]

But agencies will not always create such materials and some users will choose in any event to use only *regulations.gov*. So, *regulations.gov* itself should provide basic information about effective commenting (e.g., Emery & Emery 2005), and should explore formats (e.g., offering the opportunity to comment on specific segments of the rule) that help users focus and structure their submissions.

Creating an effective public rulemaking interface will necessarily be an iterative process. Although design of commercial websites is quite advanced, we are still in the early stages of discovering how the Web can be most successfully used to communicate complex government information to multiple audiences. Some degree of trial, error and reconceptualization will be inevitable. The Lead Agency should plan and budget for periodic, multi-dimensional usability testing of *regulations.gov* to determine how well the site is meeting user requirements, and to identify and guide modifications as the user population grows, and its needs and preferences evolve. Ongoing collection and assessment of data on how the site is being used will be especially important with respect to improving search options and performance.[121] Finally, integration of one or more social networking tools (wikis, blogs, etc.) to obtain user input and encourage development of supportive user communities may be helpful.

[119] Examples of tracking applications can be found on the European Union websites. See the Procedure Files in the Legislative Observatory of the European Parliament, http://www. europarl.europa.eu/ oeil/index. jsp?language=en, and the Prelex service of the European Commission, http://ec.europa.eu/prelex/apcnet.cfm?CL=en.

[120] Compare *Grants.gov*, which is structured to direct users to more detailed information on the agency website. Although they are not providing rule-specific information, EPA's "Laws, Regulations, Guidance, and Dockets" materials, http://www.epa.gov/lawsregs/, and DOT's "Regulatory Information" materials, http://regs.dot.gov/links.htm, are just two of many examples of agency-created rulemaking materials that public users might find helpful.

[121] With respect to the use of persistent tracking technologies, see Rec. B3 supra and footnote 107 supra.

Recommendation C.2: Development of Agency Public Websites

Agencies that engage in substantial rulemaking activity should provide rulemaking information on their public websites and use web-based methods for increasing effective public participation. Agency sites should enable users to access the same materials they could obtain via *regulations.gov*, but the primary objective of these sites should be (i) offering more rule-specific and program-specific information than the government-wide portal can provide; (ii) developing presentation formats that make both process and substance more comprehensible to users; and (iii) seeking public input in ways more tailored to the particular regulatory context, more flexible and more innovative than *regulations.gov*'s generic comment solicitation page (see Rec. D2 infra).

Specifically, agency websites should:

- Explain the rulemaking process as it is (or could be) conducted in the particular agency or program;
- Provide richer, more informative presentations of rulemaking materials that help users assess substantive and procedural provisions and understand the practical implications of regulatory proposals;
- Provide guidance on formulating effective comments, and develop comment solicitation formats that help users structure their submissions to be as responsive and informative as possible;
- Use social networking and other web-based technologies to support new forms of individual and collaborative public engagement at various stages of the rulemaking process.

Although several studies have found no significant change in the breadth or quality of public participation as a result of online rulemaking efforts to date (Balla & Daniels 2007; Shafie 2007; Zavestoski & Shulman 2006), little attention has been paid to one very likely explanation: Beyond making it easier to view the proposed rule and submit comments online, government sites have done little to help people understand the basis and significance of the proposal, or the nature and requirements of the process (Shapiro & Coglianese 2007). Because existing approaches, by themselves, are not going to produce broader, better participation, the important question is how government will provide the additional information and offer the enhanced opportunities for public engagement that could actually realize e-rulemaking's potential. The answer, for the most part,[122] looks to the individual rulemaking agencies.

Since 2003, agencies' exploration of web-based ways to present rulemaking materials and solicit public participation has been discouraged out of concern that agency-specific approaches would be confusing for public users and duplicative for the government. Yet centralization of this process in an exclusive, government-wide effort has not produced uniformity where it matters most to the public user. Even the basic notice-and-comment process presented at *regulations.gov* is not consistent across agencies for a variety of reasons, some of which are better than others. In this report, we identify several dimensions on which it is important to seek greater consistency, but in the areas of providing rulemaking information and developing more robust and effective methods of public participation, significant progress will occur only by reinvigorating individual agencies as entrepreneurial actors in the evolution of federal e-rulemaking.[123]

Rulewriters within each responsible agency are the only ones in government who can produce rulemaking texts annotated from online glossaries and linked to relevant primary and supporting materials (see Rec. D1 infra). They are the ones – if anyone in government is to do it – who will write explanations of regulatory background and context, draft questions to focus public comment, and explain the

[122] We reiterate the important role that non-governmental entities and websites will undoubtedly play in alerting people to relevant agency decisionmaking, and helping them understand its significance and participate in its resolution. Still, agencies have information and control over regulatory processes and outcomes that no outside actor will ever possess. Non-governmental organizations and sites can supplement government presentations – and will in some circumstances provide better opportunities for information and participation than official sources. But *primary* responsibility for these matters should be accepted by the agency to whom the power to make and implement regulatory policy has been delegated.

[123] We are not unmindful that such agency efforts will further increase the total cost of the e-rulemaking system. As we noted at the outset of these recommendations, achieving a robust, versatile system cannot be done "on the cheap." The amount of increase cannot be readily predicted at this time since it depends on many factors, including individual agency interests and the extent of possible inter-agency collaborations.

We reiterate, however, that cost studies done to date on alternatives to the single, centralized system are not relevant here. They consider scenarios in which agencies (or Departments) construct complete, independent e-systems. This is not our recommendation. Rather, many agencies would use only the enhanced core, while others would develop additional components that supplement the core and so add value justifying their cost.

intricacies of their agency's particular rulemaking procedure. It would be unreasonable to expect even a redesigned *regulations.gov* to offer such material to users across the range of regulatory programs. Individual agencies should have not only the authority, but also the responsibility to use the Web for effectively informing the public about their regulatory processes.

Moreover, as we discuss further below (see Rec. D2 infra), the kind of iterative experimentation needed to discover the most productive methods for obtaining public input (including the most useful rulemaking applications of various collaborative and social networking tools) cannot sensibly be conducted government-wide via the central system. Rather, the major rulemaking agencies, in particular, should encourage rulemakers within their component units to explore different ways of seeking public participation at various points in rule formation and implementation. Supporting this kind of innovation and experimentation, and ensuring that knowledge gained from the effort is shared both within and outside the agency, is the topic of the next set of recommendations.

D. Good E-Rulemaking Practices and Innovation

Streamlined and adequately representative governance structures, decisive management, adequate core system funding and a well-designed and implemented Systems Architecture are necessary for the next stage in federal rulemaking to succeed, but they are not sufficient.

Whether the e-rulemaking system actually achieves its goals depends on the people responsible for rulemaking – from the senior agency officials who set spending priorities and control performance evaluations to the staff who prepare and enter data into the system.

One signal that this area requires thoughtful attention is the fact that only a small percentage of personnel from the 170-plus rulemaking agencies, bureaus and commissions now on FMDS are currently able and willing to use the system.[124] Indeed, it is not clear that many agency staff who might find the system useful in their work are even aware of its existence.[125]

There will never be universal enthusiasm for new technologies that alter traditional practices, and not everyone will welcome the prospect of increased public involvement, greater transparency and more informed oversight. But the most serious obstacle to broad-based commitment to e-rulemaking within the agencies appears to be lack of understanding and inadequate communication. For example, many agency personnel associate online rulemaking with mass email campaigns, which produce thousands of duplicate or near-duplicate comments at the urging of prominent advocacy groups. In the total group of notice-and-comment proceedings, the frequency of mass commenting has actually been quite low. However, when it does occur, the burden on the agency is great, and it is not unreasonable for agency personnel to fear that a government-wide system will simply escalate such campaigns. Fortunately, an e-tool has been created electronically to process mass comments in a way designed to serve both the agency's and the public's interests.[126] The

[124] The latest PMO figures estimate the number of "federal users" (from all170 participating entities) at 4600. To put this number in perspective, the three agencies in the highest fee-for-service tier (EPA, DOT and USDA) collectively employ more than 150,000 people. Of course, many of these personnel are not directly involved in rulemaking, but the value of access to rulemaking material is not limited to rulemakers. See next note.

[125] One Internet-savvy career government attorney, on learning of *FDMS.gov* and *regulations.gov* for the first time in connection with this report, reacted: "It took only about 10 seconds online to convince me of the power of the concept – I sure wish I had used this tool when [naming specific non-rulemaking project]. Why was I unaware of these twin portals? … I do not recall ever seeing an announcement by way of a general notice to [agency staff] about these websites."

[126] The tool, created by researchers from Carnegie Mellon University and the University of Pittsburgh, automatically counts comments with identical text, and identifies all the instances in which individual commenters customized the original, e-form comment by adding or deleting text. It then presents each customized version to the rulewriter, who can thus be better assured of not missing unique material buried in what may be tens of thousands of duplicate and near-duplicate emails (Yang & Callan 2008; Arguello & Callan 2007; Yang & Callan 2006; Yang, et al. 2006).

tool's development process involved rulemaking personnel of several agencies, and it has already been used in several rulemakings.[127] Yet its existence is not widely known. Without reliable vehicles for communication and information distribution among program personnel and technology professionals involved in rulemaking across agencies (and, sometimes, within agencies), the negative association of e-rulemaking with escalating the "problem" of mass email comments continues even after technology has also provided a solution.

This set of recommendations considers how a more "e-rulemaking-friendly" administrative culture might be fostered across the federal government. Specifically, it proposes measures to support a more energetic and effective practice of e-notice and comment (**re-engineering**) and to promote the individual and organizational entrepreneurialism within agencies that can lead to fundamental change (**innovation**).In part, these measures seek to create among agency personnel a broader awareness of the distinctive opportunities and challenges of technology-supported rulemaking, and to cultivate "ownership" in the progress of federal e-rulemaking. In part, they aim to ensure that technology, policy and resources all align to motivate agencies to engage in innovation and experimentation, on their own and in collaboration with other government and private entities. The goal is not only to improve rulemaking processes and public participation with existing technologies and methods, but also to sustain agency engagement going forward, as new technologies and methods emerge to improve rulemaking in ways we cannot now imagine.

[127] These include the recent Fish & Wildlife Service rulemaking on whether to declare polar bears a threatened species. The agency received more than 640,000 email campaign comments, in addition to a substantial number of other comments. Use of the tool allowed a single agency analyst to review these comments rather than contracting out the task to a team of professional comment readers.

Recommendation D.1: Establishing Good e-Rulemaking Practices

The Interagency E-Rulemaking Committee (IEC) and the Public E-Rulemaking Advisory Committee (PEAC) should collaborate in identifying current and emerging practices that enhance online accessibility and manageability of rulemaking information, promote informed and effective public participation, and harness technology to improve rule formation and implementation. Such practices include:

- Incorporate as standard practice in the process of writing rules: (i) specification of hyperlinks that provide relevant primary and secondary materials (e.g., the authorizing statute and related rules, pertinent Executive Orders, impact analyses, and relevant data, studies and models) and that link sections of the proposed rule with applicable portions of the preamble of the notice of proposed rulemaking; and (ii) creation of definitions and other explanatory text to gloss legal and technical terminology, acronyms and abbreviations;
- Develop templates and style sheets for common rulemaking documents to aid automated extraction of metadata;
- Use ways of formatting proposed rules and explanatory material that improve the performance of existing and emerging technologies for information retrieval and text analysis (e.g., creating numbered subsections);
- Employ methods of soliciting comments that can improve the relevance and effectiveness of public responses and facilitate electronic sorting and analysis (e.g., posing specific questions commenters may answer; structuring comment solicitation to encourage section-by-section commenting);
- Establish – and make public – agency policy that provides for timely posting of all comments to *regulations.gov*, and specifies the circumstances in which redacted versions, rather than the entire original submission, will be made public;
- Publicly specify the types of documents that will be made available online to satisfy the E-Government Act requirement that the public e-docket contain all "public submissions and other materials that by agency rule or practice are included in the rulemaking docket … whether or not submitted electronically."

In addition, IEC and PEAC should collaborate in identifying legal provisions, current agency practices, etc. that create particular difficulties for technology-supported rulemaking or pose obstacles to achieving e-rulemaking goals. When possible, they should propose solutions to the agencies or to OMB for appropriate consideration by the Administration and Congress. Areas that call for administrative or legislative attention include:

- Identification of an identifier, not only unique to each rulemaking but also consistently applied over time and across the federal government, that is used to demarcate a rulemaking, as well as a standard method for indicating relationships with other rulemakings;
- Web-publication of submissions containing sensitive business or personal information, or legally-protected intellectual property;
- Censorship of submissions containing material deemed libelous, inappropriate for viewing by minors, or illegally obtained;
- Regulation of comment submission formats, to the extent that restriction of certain media (e.g., fax) or file types (e.g., image-based document files) is deemed problematic under existing law;
- Web-based information brokerage, in which saleable data about companies or individuals are mined from electronic government databases.

Existing and new channels of communication should be cultivated within and across agencies to facilitate the discovery and dissemination of good e-rulemaking practices and the detection and resolution of e-rulemaking problems and obstacles.

Using the Internet and other information and communication technologies in rulemaking creates both opportunities and challenges not found in conventional, paper processes. Some of these will call on agencies to incorporate new elements into their standard procedures. For example, one of the Web's signature characteristics is that information can be embedded and linked so as to allow the user to select what she wants, without being distracted by what she does not need. Yet this remarkable capacity – which is so apt for meeting the broad range of information requirements of public users – can be used only if the process of rulewriting routinely includes defining hyperlinks and creating glosses. In other cases, agencies will have to recognize that existing practices have new significance in the e-rulemaking environment. We have noted how continuing to permit some previously unexceptionable forms of comment submission (e.g., fax) will decrease the efficiency and accuracy of electronic information retrieval and management (see Rec.

B.2 supra). Similarly, such seemingly minor decisions as whether to structure the proposed rule and accompanying explanation as numbered subsections can affect the performance of certain forms of electronic text analysis.

Some of the distinctive opportunities and challenges of technology-supported rulemaking will be fairly obvious (even if the best response is not). For example, agencies are already struggling with whether and how to place on the Internet "public" submissions containing sensitive personal or business information, language or images that might be inappropriate for some potential viewers, possibly libelous statements, or copyrighted material.[128] In other instances, the issue will appear only through an exchange of information between technology professionals and agency rulemakers that creates new understanding and awareness on both sides. A good illustration is the consequences, for the performance of search and other information management technologies, of not regulating the format of public submissions. Finally, sometimes only time and additional experience with these new technologies will reveal desirable practices or problems requiring resolution. For example, the effect of rule structure on computer-assisted text analysis is becoming apparent now as researchers try to extend basic information science research to the creation of new e-rulemaking tools. Similarly, the issues created when information brokers mine large legal records databases for "saleable" information about individuals and businesses are only beginning to be recognized.[129]

Deliberate, sustained and multidisciplinary attention to discovering good e-rulemaking practices and identifying impediments to success will be needed to realize the immanent potential of technology-supported rulemaking. IEC and PEAC can and should provide such attention, but the task cannot rest solely on the shoulders of two groups of individuals. The possibilities and problems of e-rulemaking will emerge from the successes, frustrations, experiences and experiments of rulewriters, rulemaking managers and rulemaking support staff of those 170-plus agencies, bureaus and commissions – as well as of the IT professionals who build and maintain the technology, and the public who use it to understand and participate. Methods must be found to tap this real but diffused knowledge. Existing channels for communication within and across agencies should of course be used, but new channels almost certainly must be created.

It may be that the social networking applications (wikis, blogs, etc.) that should become important tools of e-rulemaking practice will be as important to its development and progress. In this regard, we particularly note the exciting and innovative development of a virtual collaboration space, "Regulatory Matters." EPA has created this password-protected site that is open to regulatory development professionals of all agencies. The goal is to provide a central location for information-sharing about regulatory development processes, resources and tools. Physical gatherings are sponsored in conjunction with this effort and we have been told that, at one recent meeting, personnel of many agencies expressed significant interest in working together on innovative uses of technology in rulemaking.

The process by which good e-rulemaking practices and proposed solutions to e-rulemaking impediments should advance from identification to implementation will vary depending on the issue. Some, like guidelines for rule writing for the Web, will likely be appropriately entrusted to the good judgment of the agencies themselves. Others will require more centralized attention. For example, the current absence of a stable, *consistently used* universal identifier for rulemakings makes it extremely difficult to create essential applications such as a regulation mapping and tracking function (see Rec. C1 supra). Indeed, extracting even such basic data as how many rules federal agencies issue in a year is challenging without a reliable government-wide identifier.[130] Action by OMB may well be needed to resolve this problem. In some instances, matters that initially seem appropriate to leave with the agencies may be revealed, over time, as requiring OMB intervention. If, for example, some agencies fail to be sufficiently comprehensive in specifying the types of rulemaking documents they will publicly post, or to post comments and other specified documents in a timely fashion,[131] OMB may need to define required public e-docket practices. Finally, some areas will call for a statutory solution – for the sake of authoritative closure, if not strict legal necessity. Internet "publication" of certain categories of material in comments may fall into this category. OMB should be the gateway for promptly resolving issues that are unsuited or impossible for agencies to deal with themselves. It should support the work of PEAC and IEC in this area, and give priority to obtaining appropriate resolutions for matters they identify.

[128] Federal, state and international court systems have been struggling for some time with the undeniable reality that, for such materials, being part of "the public record" means something very different when they are paper that must be obtained from an officially held docket, than when they are electronic files that can be readily transmitted to millions via the World Wide Web.

[129] One of the most notorious examples is "Who's A Rat?", http://www.whosarat.com/, a website that, for a fee, allows users to find personal, identifying information about informants and undercover law enforcement agents, much of which has been mined from online judicial records.

[130] It says a great deal about the need for a cross-agency rulemaking database that there is, at present, no efficient, generally accepted way to determine this figure. The RIN (Regulatory Information Number) does not presently serve this function because practices with respect to assigning and reassigning RINs have not been consistent over time and continue to vary across agencies.

[131] Some agencies continue a policy of not making comments public until the close of the comment period. Some who do not have this policy fail to post comments promptly after submission, so that substantial numbers do not become available on *regulations.gov* until after comment period is over.

Recommendation D.2: Fostering E-Rulemaking Innovation

Agencies that engage in substantial rulemaking should exploit existing technology and explore emerging technology to improve their existing rulemaking processes, and to develop new ways of obtaining and providing rulemaking information and seeking public participation. Promising areas include:

- Automatic extraction and database population of metadata;
- "Wizards" that help rulewriters recognize the applicability of, and comply with, statutes and Executive Orders requiring analyses, consultations and reporting when proposed rules implicate certain values or groups;
- Data mining/information retrieval and semantic analysis to help rulewriters identify conflicts between proposed and existing rules;
- Tools that alert rulewriters to jargon and overly complex sentence structure, and that facilitate translation of documents and web pages into languages other than English;
- Tools that facilitate hyperlinking and glossing documents for web presentation;
- Open modeling tools that would permit commenters to explore the assumptions underlying the proposed rule (or the assertions of other commenters) and its real-world implications;
- Natural language processing approaches that aid in more rapidly extracting information from, summarizing and evaluating public submissions, which would facilitate, among other things, a routine agency practice of reply commenting;
- Use of wikis or other collaborative online drafting devices to enable development of a joint submission by similarly situated potential commenters (e.g., scientists or other experts) or interested members of the general public (who might otherwise submit multiple form email comments);
- Use of blogs, chatrooms, or other social networking devices to enable rulemakers to interact with interested members of the public in structured and memorialized ways, to flesh out concerns and ideas about proposed rules, to receive input during the formation of a proposal, or to explore issues arising in implementation;
- "Wizards" that guide members of the regulated community though the steps of complying with new rules and present relevant agency and judicial documents.

Both as a matter of policy and in formulating the budget, OMB should support agencies desiring to extend the core e-rulemaking system through development of applications or engagement in research partnerships, and the Lead Agency should facilitate collaboration among agencies with similar needs, priorities, or interests.

The Administration and Congress should work together to assure funding for agency investments in technology-supported rulemaking and for continued research in new e-rulemaking tools and methods.

Moving federal e-rulemaking to the next level – from a system that provides information electronically and automates some existing processes to a system in which processes are reengineered and innovative change enables new forms of participation and new ways of making and implementing regulatory policy – requires agencies to make creative use of existing technologies and to develop emerging technologies.

We do not suggest that technology, per se, will solve the challenges agencies face in the rulemaking process (see Part IA supra). But, existing and emerging tools can make it easier for agencies to modify the conventional process in ways that address those challenges. Two examples illustrate this.[132]

A frequent complaint is that public participation via notice-and-comment comes only *after* the agency's thinking has coalesced around a specific proposal, and is therefore too late in the process substantially to influence the rulemaking outcome (Coglianese, et al. 2008:6). Although agencies are likely to have considerable informal contact with some stakeholder groups while developing the proposed rule (Balla 2005:81; Kerwin 2003:186-92), the procedural options for seeking broader public input during this earlier stage have been, until now, basically the same as the procedures

[132] For additional suggestions, see Carlitz & Gunn 2002; Coglianese 2004:29-33,51-58; Noveck 2004; Noveck 2005; Noveck 2008.

available after the proposed rule is written: public hearings and formal notice-and-comment (at this stage, via an *Advance* Notice of Proposed Rulemaking). Social networking tools can add not only more options for getting public input but also, significantly, options that may be more attractive to agencies than the traditional forms of participation. The less formal online methods can support interaction between rulewriters and public participants that clarifies ambiguities and elicits further information, and can encourage interchange among participants that refines the nature and scope of legitimate objections and suggests possible solutions (Bierlie 2003:7-8).[133]

A second example is facilitating provision of a period for reply comments – a practice that has been praised for its potential to vet assertions, address data conflicts, develop alternatives and reveal areas of possible compromise (Coglianese, et al. 2008:17-18; Eisner 2005:11-12; Carlitz & Gunn 2004:8; ACUS Rec. No.76-3). Although some agencies routinely offer a reply comment period, many are wary of extending an already lengthy process and proliferating the number of comments that must be considered. Such legitimate fears can be allayed as developing technology offers information management tools to help rulewriters more rapidly sort, categorize and summarize public submissions (see below).

We understand the concern that it could be wastefully duplicative to allow individual agency initiative in these and other areas of technology-supported rulemaking. Initially, it is important to reiterate that we are not advocating that agencies construct multiple complete, independent e-rulemaking systems. Equally important, any full assessment of relative costs and benefits must take into account the unfortunate consequence of building a single, centralized system: E-rulemaking creativity and experimentation within agencies has virtually come to a stop. The flush of interest and exploration in the 1990s and early 2000s, which inspired such initial optimism about electronic rulemaking, has slowed dramatically. Agency rulemaking processes remain essentially as they have been for the last few decades. Some of this torpor can be attributed to the time and money demands of the eRulemaking Initiative, but that is not a complete explanation. Agencies *have* been exploring new technologies, particularly such relatively cheap applications as collaboration and social networking tools, in other contexts.[134] Rulemaking, conspicuously, has lagged.

E-rulemaking ingenuity and innovation can be reinvigorated by encouraging agencies to explore the potential of technology within the context of their own programs. We believe that the risks of redundant development are neither uncontrollable nor as large in this area as in some other e-government contexts – and, in any event, those risks are outweighed by the likely benefits. For one thing, effectively providing rulemaking information and productively increasing public participation seems to be more context-dependent than was previously assumed. Techniques that work for EPA in its massive, scientifically and technically complex rulemakings may not work as well (or at all) for the Federal Transit Administration in helping local government entities and non-governmental organizations develop transportation systems that meet the needs of elderly, disabled and urban mass transit commuters. Especially in the area of soliciting more effective and timely public participation, multiple agency undertakings may not in fact be duplicative. Rather, parallel projects can produce a range of experiential data that aid in understanding the impact of specific information and communication technologies and learning to use them effectively.

Moreover, six years' experience of building a common e-rulemaking system (and, indeed, other government-wide e-government systems) has altered the information technology perspective of many agencies. New lines of communication have been opened, new understanding of other agencies' operations has developed, and new personal networks among officials in different agencies have been established.[136] The idea of agencies working together in the use of new technologies and the development of e-tools is far more plausible now than when only a handful of pioneering agencies were boldly going where none had ventured before. Channels of communication and information sharing that are developed for identification and dissemination of good e-rulemaking practices (Rec. D1 supra) can also reveal potential opportunities for, and generate interest in, multi-agency projects.

Moreover, although the impetus for experimentation and development activities should come from individual agencies, joint action by entities with compatible needs and

[133] Again, we are not suggesting that use of such technologies automatically, or inevitably, produces more interactive and deliberative public participation. Cf. Zavestoski, et al. 2003 (describing two early uses of online commenting, one that enabled responsive submissions and changed the agency's approach, the other of which replayed the conventional pattern of one-way, non-responsive communication). Technology provides the opportunities for, not the certainty of, transforming the practice of rulemaking. At the same time, as agencies are restricted in creating such opportunities, the prospects for transformation become correspondingly uncertain.

[134] For example, EPA is using interactive Webcasting to train communities around the country in new stormwater management requirements.

[136] Consider, for example, how DOT's pathbreaking Regulatory Management System came to the attention of first the Department of Commerce and then the Department of Homeland Security – with each agency having somewhat different priorities and interests in the system (see note 45 supra.) Such voluntarily forged collaborative ventures should become even more common with the emergence of EPA's innovative cross-government virtual regulatory collaboration space, "Regulatory Matters" (see Rec. D1 supra).

interests can certainly be affirmatively encouraged. The Lead Agency will know about projects to supplement the core system; indeed, agencies might sensibly be required to provide it with notice early in the planning stages. The Lead Agency can then broker collaborations, as well as work with IEC to ensure that agency projects will not simply replicate core system functions. Funding incentives could also be created. As discussed above (see Rec. A1 supra), the Lead Agency should devote at least 10% of the annual appropriation to development, modernization and enhancement activities; a portion of this could be made available in multi-agency projects to match some or all of the funds contributed by the collaborating agencies.

In the end, the kinds of innovative approaches and experimental advances described above will happen only if agencies are willing, enthusiastic participants in projects they believe will benefit their internal operations and/or regulatory clients. Centrally designed and undertaken e-rulemaking development does not create such motivation; experience has demonstrated that it reduces redundancy at the price of forward momentum. While we understand the approach taken by the Office of E-Government & Information Technology, and applaud the dedicated efforts of EPA as managing partner, it is time for a change in strategy. The government's as well as the public's interest is best served by fostering the e-rulemaking entrepreneurialism of individual (and voluntarily collaborating) agencies to extend the capabilities of the system and develop new rulemaking tools and methods.

In providing reasonable budgetary support for this effort, the President and Congress should recognize the role that federally-funded research plays in the progress of federal e-rulemaking. For example, support from the National Science Foundation (NSF) has brought together agency personnel involved in rulemaking with researchers in computing and information science and other disciplines (Coglianese 2004; Shulman 2004). This has allowed researchers to discover what is needed, and agencies to learn what might be possible. One of the resulting NSF-supported research partnerships produced the e-tool for analyzing mass email comments mentioned above. Others are currently exploring different kinds of tools for managing rulemaking information, as well as ways of using social networking technologies to improve public participation (Bruce, et al. 2008; Cardie, et al. 2008; Muhlberger, et al. 2008; Kwon & Hovy 2007; Kwon, Hovy, et al. 2006; Lau, et al. 2005). As agencies become more active and venturesome in exploring technology-supported rulemaking, monitoring and evaluation of the results will be crucial to improving e-rulemaking practices. Historically, the Administrative Conference of the United States (ACUS) provided agencies with data, assessment and recommendations about their processes that were difficult for them otherwise to obtain. Current progress towards reviving ACUS represents an opportunity for e-rulemaking to benefit from this same type of expert evaluation and advice.[137]

[137] ACUS has been reauthorized. See the Regulatory Improvement Act of 2007, which authorizes funding through Fiscal 2011. Now, funds must be appropriated.

IV. Conclusion

E-rulemaking is potentially transformative. It can open the regulatory process to a wider audience, provide a broader range of background materials to stakeholders, allow for a dialogue among interested parties, increase transparency and accountability, and help produce better decisions that lead to more effective and enforceable rules.

The path to a robust, versatile e-rulemaking system that effectively serves government and the public is clear: We need only the commitment and political will to go forward.

Terms and Acronyms

ACUS
Administrative Conference of the United States, a federal agency that provided recommendations for improvements in administrative procedure from 1968-1995. It has been reauthorized by Congress in 2004 and again in 2008 but, as of this writing, appropriations have not been made.

ANPRM
Advance Notice of Proposed Rulemaking: a notice inviting public comment when an agency wants public input during the formulation of the proposed rule; it is a typically discretionary round of commenting prior to the required round triggered by the Notice of Proposed Rulemaking.

APHIS
Animal & Plant Health Inspection Service.

API
Applications Programming Interface: a set of protocols that enables one system/computer to exchange information easily and efficiently with another. The system/computer that provides the service "publishes" the API and the other uses it.

Blog
A we**b log**; originally used as online diaries that could be shared with others, blogs are now used more generally as a web site where opinions and other content (including links to other sites) are placed for reaction by other users.

Bookmarking
A way to save the address (URL) of a Web page so that it can be easily re-visited at a later time.

Bulk Data Transfer
The process of moving large amounts of electronic data from one location to another using a minimal number of requests. A "bulk data transfer service" facilitates this process through use of a common, well-understood data standard (like XML) and a variety of automated techniques (e.g., data compression) that optimize speed and efficiency.

CBI
Confidential business information.

CIO
Chief Information Officer.

CIO Council
Established by Executive Order 13011 and codified by the E-Government Act, the CIO Council comprises the Chief Information Officers of the Cabinet Departments and several other Executive agencies. It is the principal interagency forum for improving practices in the design, modernization, use, sharing and performance of federal agency information resources.

DMS
Docket Management System – DOT's comprehensive electronic docket system used prior to migration to FDMS.

Docket
A set of documents collected and maintained specifically to provide regulatory development staff and the public with ready access to copies of the Agency records that support the basis for rulemaking actions. [Source: EPA online Glossary]

DOL
Department of Labor.

E-DOCKET
EPA's electronic docket system, in development at the time the government-wide e-rulemaking system was being planned and which became the basis for FDMS.

EPA
Environmental Protection Agency.

Extensibility
A system's capacity to accommodate expansion of functional capacity and storage without needing fundamental redesign.

FDA
Food and Drug Administration.

FDMS
Federal Docket Management System.

FDMS.gov
The agency-user interface of the federal e-rulemaking system.

Federal Register
Published daily by NARA and GPO, the federal government's official listing of proposed and final regulations and other important agency documents.

FOIA
Freedom of Information Act.

GAO
Government Accountability Office, formerly General Accounting Office.

GPO
Government Printing Office.

GSA
General Services Administration.

HHS
Department of Health and Human Services.

Hyperlink
Text on a Web site that, when "clicked," takes the user to another Web page or a different area of the same Web page.

Image-based document file
A file format that captures the text, with all of its formatting (layout, fonts, graphics, etc.), as a single image; the typical method of creation is Adobe PDF. One advantage is that the document's format remains constant regardless of the operating system, hardware or software used by viewers. One disadvantage is that conventional search engines, programs for automated text analysis, converters for blind viewers, etc. cannot access the contents unless/until it is reconverted to text (or html) format.

Internet
A worldwide system of interconnected computer networks which, through the use of a set of standard communications protocols (the Internet Protocol Suite), enables a user at any computer to exchange information with any other computer (subject to a system of permissions that might require authorization and a password) (cf. Intranet).

Interoperability
The ability of two or more systems or components to exchange information and to use the information that has been exchanged.

Intranet
A network of inter-connected computers within an organization that uses web technologies to share information internally, not world wide (cf. Internet).

NARA
National Archives and Records Administration.

NGO
Non-Governmental Organization.

NPRM
Notice of Proposed Rulemaking: the document, published in the Federal Register, that initiates the public comment period on proposed rules.

NSF
National Science Foundation.

OIRA
Office of Information & Regulatory Affairs.

OMB
Office of Management & Budget.

Open System
One in which the interfaces of its components are fully defined and available to the public, and the implementation of the components actually conforms to the defined interfaces. In this context, interfaces are simply the shared boundaries across which information passes.

OPM
Office of Personnel Management.

OSHA
Office of Safety & Health Administration.

PMC
President's Management Council.

PMO
Project Management Office.

Protocol
In the context of information technology, an agreed-upon format (which can be implemented through hardware, software, or both) by which two computers will exchange data. It will include such basics as how the originating computer will signal that it has finished sending and how the requesting computer will signal that it has received the information, and may include other elements such as how data will be compressed to save time and space during transmission.

Regulations.gov
http://www.regulations.gov/search/index.jsp: the public user interface of the federal e-rulemaking system.

Regulatory Plan
Included in the Fall version of the Unified Agenda, the Regulatory Plan gives status information for agencies' most important rulemakings.

Regulatory Working Group
Created by Executive Order 12866, the Regulatory Working Group comprises senior White House officials, the Vice-President, and representatives of the heads of each agency that has significant domestic regulatory authority. It is chaired by the OIRA Administrator.

RIN
Regulation Identifier Number (sometimes, Regulatory Information Number) – an identifier assigned by the Regulatory Information Service Center to identify each regulatory action listed in the Unified Agenda.

RISC
Regulatory Information Service Center.

RSS Feed
A Really Simple Syndication (or, sometimes, Rich Site Summary) feed is a way of formatting web content using Extensible Markup Language (XML) so that it can be read and used by many different programs. An RSS reader or aggregator, now available in most email programs, can automatically acquire content formulated in this way from many web sites and display it so that the user can view it without going to the originating site. With the help of a "widget" (a string of HTML code) the RSS feed can be inserted directly into another website, allowing users to access the feed from that website location.

SSA
Social Security Administration.

Scalability
A system's ability to be readily enlarged to handle growing demands.

Sitemap Protocol
A sitemap protocol lists the web location (URL) and other information (e.g., date of last update) for material on the site. Such a listing allows search engines more effectively to find all possibly relevant material on the site.

SSA
Social Security Administration.

Unified Agenda
The Unified Agenda of Federal Regulatory & Deregulatory Actions is published twice a year by the Regulatory Information Service Center in the General Services Administration. It summarizes the rules and proposed rules agencies expect to issue in the next year.

USDA
U.S. Department of Agriculture.

Wiki
From the Hawaiian word for "quickly," a website that allows multiple users to create and modify the content of a web page (which can be made to appear as a document) collaboratively .

XML
Extensible Markup Language: a flexible way to create common formats for information, and to share both the format and the information on the Web, intranets, and elsewhere. For example, computer manufacturers might agree on a standard way to describe the information about a computer product (processor speed, memory size, and so forth) and then describe the product information format with XML. [Source: Search SSA.com]

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Commodity Futures Trading Commission:
http://www.cftc.gov/lawandregulation/federalregister/

Federal Deposit Insurance Corp:
http://www.fdic.gov/regulations/laws/;

Federal Elections Commission:
http://www.fec.gov/law/law_rulemakings.shtml

Federal Energy Regulatory Commission:
http://www.ferc.gov/docs-filing/ferconline.asp

Federal Maritime Commission:
http://www.fmc.gov/reading/DocketActivityLogs.asp

Federal Reserve Board:
http://www.federalreserve.gov/regulations/default.htm

Federal Communications Commission:
http://www.fcc.gov/cgi-bin/EFBoards/systemstatus.cgi?index_t=%2e%2e/%2e%2e/pub/e-file/EFBoards.html

National Labor Relations Board:
http://www.nlrb.gov/

Securities & Exchange Commission:
http://www.sec.gov/rules.shtml.