

Governing With Information Technologies

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PROJECT HIGHLIGHT

Visions of Digital Government see people easily accessing government information while simultaneously encouraging a more efficient, transparent, and accountable government. The implementation of these visions requires government to carefully consider the design of information technologies or "code", i.e., the physical hardware, software and architecture of information technologies. This research seeks an understanding of how choices in code can govern or regulate society. This will improve the ability of digital government to meet societal goals and concerns through modifications of code.

The research project involves several different activities. The first activity, which have completed, is the development of a theoretical framework for how code regulates. The next step was the identification of salient regulatory characteristics for code, which can be manipulated or modified. Our current research involves refining our understanding of these governance characteristics through case studies and experimental methods. Finally, we will analyze the development and implementation of code by a leader in digital government. This project, which is not yet underway, will provide another method for testing our framework and analysis.

Our first research contribution is the development of a theoretical framework, the Recursive Regulatory Model (RRM). It provides policymakers and technologists with a framework for analyzing how code affects public policy issues. RRM is a technology-centered approach that allows society to understand how code is developed, used, and shaped by society. Consequently, RRM can provide solutions for contemporary issues, such as the privacy concerns with Radio Frequency Identification (RFID) technology. RRM's solutions are an improvement over past approaches that overlook the role of technology in affecting societal concerns.

The RRM framework and an understanding of computer science have allowed us to identify several governance characteristics of code. These governance characteristics are analogous to "knobs and levers" that policymakers can manipulate to influence behavior. They include defaults, standards, transparency, and modularity. For example, default settings can serve as a technological method for enacting social policy. Microsoft's

recent update to its XP operating system changed the default settings for the built-in firewall. The new default setting turns on the firewall to enhance computer security. This example suggests how policymakers could use governance characteristics to address societal concerns.

Our current activities include two projects, which will provide empirical data on these governance characteristics. The first study involves analyzing common network devices, such as wireless routers and network cameras, from a computer security perspective. The goal is not to point out security flaws, but to study how the design of the interfaces influences users to modify security settings or defer to them. The second project involves an experimental study on the role of defaults. The goal is to identify why some people are willing to change some settings, while deferring to others. Ideally, the results will improve our ability to utilize default settings.

The last activity, which is expected to begin this summer, involves studying the design and implementation of intelligent video surveillance systems in Chicago. We are currently in the process of establishing collaboration with the Office of Emergency Management and Communications for the City of Chicago. They are emerging as a leader in the deployment of intelligent cameras systems for crime and traffic congestion. Our goal is to study how this technology is developed and implemented. This should provide us with another dimension to test our theoretical insights.

The goal of our research is to provide a theoretical informed, but grounded understanding of how information technology affects society. After all, the design of these systems affects the interaction between citizens and government, as well as a wide variety of public policy domains including privacy, intellectual property, free speech, and accessibility. An understanding of the relationship between information technology and individuals is crucial to the effective implementation and operation of digital government.

The project web page is located at
<http://www.governingwithcode.org>