Chapter 17

Benefits and Barriers of Using XML in Government Websites

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ABSTRACT

Electronic government can be understood as the use of information technologies in public sector organizations. One of the most visible strategies of electronic government is the development of Websites. As these government Websites have grown in size, complexity, and prominence, Website management, content management, maintenance costs, and accessibility have become growing concerns for federal, state, and local governments. Government webmasters and system administrators have come to realize that the technologies and strategies used in the past to build most Websites are designed to produce individual Web pages. However, they do not provide a structure to easily maintain entire Websites, keep them responsive to changing needs, or manage the workflow involved in Web content production and maintenance; nor do they facilitate the sharing and reuse of Website content. Based on semi-structured interviews and a survey to program and IT staff from five government agencies, this paper examines the potential of XML (Extensible Markup Language) for Website content management in government settings. 

It identifies expected benefits and perceived barriers. It also provides some examples and explanations about the usefulness of XML for Website content management in government.

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INTRODUCTION

Previous research has identified electronic government as a strategy for administrative reform (Heeks, 1999; Kraemer & King, 2003). Improved service quality, cost savings, productivity gains, and more effective policies and programs are some examples of potential benefits from e-government initiatives (Brown, 2001; Kim & Kim, 2003; OECD, 2003). Electronic government has been conceptualized in different ways ranging from the provision of services only through the Internet to the use of any information and communication technologies in government settings (Gil-Garcia & Luna-Reyes, 2003; 2006; Schelin, 2003). Many of the current e-government applications involve the use of Internet and related Web technologies. Among these applications, one of the most pervasive, are government Websites. As these Websites have grown in size, complexity, and prominence, Website management, content management, maintenance costs, and accessibility have become growing concerns (Costello, Adhya, Gil-Garcia, Pardo, & Werthmuller, 2004; Kerer, Kirda, Jazayeri, & Kurmanowitsch, 2001).

Despite the Web’s promise for ease of use and access, creativity, and efficiency, agency managers and leaders are finding their Websites increasingly present challenges of inflexibility, inconsistency, workflow bottlenecks, and new costs. Consequently, government agencies are losing the ability to be responsive and flexible in providing new information and services. In addition, the costs of maintaining complex Websites could become prohibitive (Costello, 2002). Government webmasters and system administrators have come to realize that the technologies and strategies used in the past to build most Websites are designed to produce individual Web pages. However, they do not provide a structure to easily maintain entire Websites, keep them responsive to changing needs, or manage the workflow involved in Web content production and maintenance; nor do they facilitate the sharing and reuse of Website content.

One approach to address the above Website management problems has been to implement Content Management Systems (CMS) that can be acquired through a vendor or as an open-source solution or via an internally developed system. This paper does not focus on the relative merits of CMS, but rather on the underlying content (data) structure on which CMS operate. If that underlying source content is structured and formatted in XML, this paper makes the case that the content lends itself to more efficient management. If that underlying source content is structured and formatted in HTML, then management becomes increasingly problematic. Use of a CMS is more of a strategic choice based on an agency’s workflow. This paper argues that many content management benefits can be accrued through implementation of XML alone. The addition of a CMS or use of a CMS based on XML is not opposed to these benefits, but reinforces and enhances them.

Dealing with some of the limitations of HTML, XML offers a viable solution to these Website management problems. However, it is not clear what benefits government agencies can expect from XML, given the particular characteristics of government settings. In addition, the use of XML could have differentiated impacts depending on the type or organization and the process in which it is used. Similarly, it is important to understand whether XML initiatives are expected to face the same or different barriers and challenges in comparison with other government IT initiatives. Based on semi-structured interviews and a survey to program and IT staff from five government agencies, this chapter identifies the main benefits of and barriers to the adoption of XML for Website content management in government. The paper also provides some explanations related to the main benefits and barriers and highlights some differences in perceptions about these benefits and barriers between technical and program staff. Finally, this chapter suggests a set of solutions and recommendations to deal with the main barriers and obtain the expected benefits.