E-government and vanilla software

The common system paradox?

Lykke Nielsen, Marianne; Newman, Mike

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White Paper[1]: E-government and vanilla software: The common system paradox?

Marianne Lykke Nielsen
Information Interaction and Architecture
Royal School of Library and Information Science, Denmark
&
Faculty of Journalism, Library and Information Science, Oslo University College, Norway

Mike Newman
Manchester Accounting and Finance Group
Manchester Business School
&
Norwegian School of Economics and Business Administration, Bergen, Norway

Abstract

There is a strong pressure in local and national government to standardise software systems through the implementation of so-called vanilla software. However, this contrasts with instantiations of accommodating the unique features of organizations, leading to what has been called the common system paradox. This position paper explores these issues in the context of Denmark's Project eGovernment. The paper motivates why it is important to study this paradox in e-government, ends with some research questions and suggests how we might address these questions as researchers.

1. Introduction

In commercial systems such as ERPs, there appears to be a trade-off between achieving the benefits of standardization and accommodating the uniqueness of the organisation and this is sometimes referred to as the common system paradox (Markus and Tanis, 2000; Newman and Westrup, 2006; Fosser *et al.,* 2008).

There is also a wide-spread use of vanilla software and vanilla (best) practices in the implementation of e-government systems. In Denmark the Danish e-government initiative, *Project eGovernment*, has been initiated by the central government and the regional and local administration in order to promote and coordinate the transition to e-government in the pubic sector (The Digital Task Force, 2004). The political goal is to create an efficient and coherent public sector with a high quality of service which focuses on the needs of citizens and businesses**.** Inter-operability is a seen as a key factor, and common systems, common standards and best practices are promoted as means to obtain interoperability between e-government IT systems. The guiding idea behind the project is that the responsibility for the implementation of systems and practices lies at the decentralised level, but in order to get an infrastructure where data can be recycled across the boundaries of public authorities there is also a need for central, common guidelines, procedures and solutions to the general problems of legal, technical, and organizational nature to facilitate the transition process.

[1] "A white paper is an authoritative report or guide that often addresses problems and how to solve them. White papers are used to educate readers and help people make decisions…." Wikipedia. Some of these ideas were originally expressed in Nielsen and Newman (2007).

This "white paper" describes a research project in progress, and should be considered as a discussion medium for important research issues in eGovernment research. The paper presents the background and motivation for the research project, and outlines the overall research questions and the planned research design. In the next section we start by summing up the experiences gained from ERP systems. We describe the use of vanilla systems in Danish e-government EDRM systems, followed by a section that discusses why this is a significant problem and how that problem might be explored by researchers.

2. Disparity between vanilla systems and enterprise uniqueness

Vendors argue that standard systems and the adoption of best practices makes the configuring of the software less costly and as the best practices are built on suppliers' or consultants' "recipes" for conducting successful business, this brings about improvement in the organization's processes. In contrast, Orlikowski (2002) points out that practices are situated, recurrent activities of human agents. Best practices are not fixed, static objects. They are situational and contextual, and they develop in use with a multitude of people involved in interpreting and enacting the practices (Feldman & Pentland, 2003). Gosain (2004) suggests that organisations will construct their own unique instantiation of the technology.

Organisational and individual differences may lead to different interpretations and enactments of the technology and result in local and individual adoptions of the best practices (Wagner & Newell, 2004). Over time, people will develop various ways to "work the system" (Spinuzzi, 2003; Boudreau & Robey, 2005). In a recent study of an ERP implementation at a University (Bob-Jones *et al.*, 2008), the authors detail a wide discrepancy between the views of senior managers and the users of the system. Whereas the former were happy with the implementation which resulted in a heavily modified, centralized instantiation, the users were left as "angry orphans" (Ciborra, 1991) who developed workarounds as coping strategies. Potentially, workarounds undermine the organisation's ability to take advantage of the system and the best practices embedded in it. Based on a case study of a Dutch SME, Van Stijn & Wensley (2005) conclude that an ERP's best practices are not necessarily "best" for the organisation. They question the extent to which there are truly standard, best practices independent of a rich variety of subtly different instantiations of each particular best practice, accommodating for their uniqueness. They question whether the organisation obtains the planned benefits of increased effectiveness and efficacy in managing the organisation and obtaining competitive advantages. In summary, it is **not** the vanilla system and its standardised procedures *per se* that foster innovation and benefits, but local managerial processes (Fosser *et al*., 2008).

The key strategy of the Danish government project is one of a decentralised implementation guided by common systems, common standards and best practices as the means to obtain interoperability and flexibility between e-government IT systems. Two support units, the IT-Policy Centre in the Ministry of Science, Technology and Innovation and the Digital Task Force in the Ministry of Finance, assist as catalysts in solving problems of coordination and cooperation in the digitalization process across the levels of the public sector.

A special unit, Fællesoffentligt Elektronisk Sags- og Dokumenthåndtering (FESD)[2], was established in 2002 to support the process of digital document management (Digital forvaltning, 2006). In line with the overall e-government strategy the unit has prepared a framework for system development and implementation consisting of three individual entities: a system development model, a set of technical standards, and framework agreements with three consortia of suppliers. The standard framework has been in use since January 2004.

In November 2006, FESD carried out an interview survey to map experiences and status of fifteen implementation projects (FESD, 2006). The survey investigated how the government organisations as well as the three software consortia manage the process of implementing document management. The aim was to gain insight about each of the development phases and how the systems and the standard framework developed by the FESD unit are used in practical system design. The interviews emphasize that implementation of EDRM is a demanding task for the organisation as well as the supplier. The FESD framework is useful, but it is important that the organisations know the details of the framework, know how to manage suppliers and contracts, and have a clear picture of the organisational needs and goals for document management.

In general, the organisations developed well-defined high-level goals, but in the majority of cases the organisations did not developed operational and specific goals. Only in four cases the organisation carried out analyses of business or work processes as part of the system development process. It means that most organisations take over the standard software and the best practices that are inherent in the system without any customization. It means too that the majority of organisations do not develop formal, written best practices. As consequence, many organisations restart the whole development process in phrase 3 during the implementation of the system, because they lack knowledge about organisational work processes and specific needs and characteristics. This delays the implementation, and it means that test and evaluation of systems are based on the standard requirements defined by FESD, not on company-specific requirements. In many cases the organisations take over defective systems. The report concludes that the majority of implementations are in operation, that the staff uses the systems, but so far we have no report how the systems perform or if they provide the expected benefits.

3. Research questions and future work

Summing up the findings it seems natural to put the question as to whether vanilla, standard systems and standard best practices provide the required benefits in e-government EDRM systems, or alternatively does the history of ERP systems repeat itself? The goals of ERP systems and EDRM systems are not identical. Using ERP systems the enterprise seeks efficiency as well as competitive advantage: enterprises want to distinguish themselves from the com-

[2] Fællesoffentligt Elektronisk Sags- og Dokumenthåndtering (FESD) stands for Common, public Electronic Case and Document management. The idea behind the project and the special unit is to develop the common framework for implementation of document and records management (EDRM) systems in the public sector. The unit cooperates with eleven government organisations that try out and gather the first experiences with the selected consortia and the developed procedures and best practices.

petitors. In e-government the organisations are not competing; they seek interoperability and liaison. These goals fit much better with the idea of standard systems and standard procedures that are provided by vanilla systems and common best practices, which support the idea of standard frameworks for implementation. At the same time, the practical use cases as well as research about the essential components of EDRM systems emphasize tailored systems and processes that build on a thorough analysis and understanding of the organisation.

In the research project, we want to follow up on this dichotomy. We will study how and to what extent the use of pre-engineered, vanilla software and reference models support the two primary goals of EDRM systems: a) inter-operability across agencies, and b) effective, efficient and higher quality in the organisational handling of cases and documents. As such, we have two dichotomies in play: tailor-made systems versus vanilla systems, and interoperability versus distinctiveness. The purpose is not to develop standards or best practices, but to gain insight about the standardised implementation process, which may be valuable for undertaking future e-government ERDM projects. We want to explore how government organisations can avoid the inherent clash between standardization and accommodating the uniqueness of the organisation that has been observed in the implementation of ERP systems. From the status report we have a good reason to suspect that the same conflict is related to EDRM systems (FESD, 2006).

By use of the PSIC model, developed by Lyytinen & Newman (2008), we will study the narrative of two Danish e-government EDRM projects. We will use the model to obtain a multifaceted understanding of the development process such as project organisation and institutional arrangements, interactions between organisational context and processes, work system activities, events and change sequences. We would also examine the role of stakeholders in the processes of developing, adopting and modifying EDRM systems (e.g. management, users, vendors, consultants, government bodies). Under what circumstances will we observe the deployment of standardized systems vs. customised systems and various user-coping strategies such as workarounds?

By analysing the interplay between technologies, actors, organisational relationships and tasks, antecedent conditions as well as outcomes, we hope to get a better understanding of the sub processes and pitfalls in the implementation process and the possibilities in system design.

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