Framework for Benefits Realization in e-Government Interoperability Efforts

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Abstract

The purpose of this position paper is to generate support for research into benefits realization in e-government interoperability projects. As e-Government practice matures, one can observe a shift in focus towards quality management, evaluation and ultimately a quest for realized benefits. Hence, Norway, like many countries, is now attempting to introduce practices related to benefits management or benefits realization (BM/BR). However, BM is in many ways an immature field with limited studies available.

Keywords: benefits realization, interoperability, e-government.

Introduction

The term electronic government or e-government appeared about a decade ago, and there is no commonly accepted definition for this terminology (Gottschalk and Solli-Sæther, 2009). This paper uses e-government, digital government, and electronic government synonymously with the use of information and communication technology in the public sector (Pardo and Tayi, 2007). To provide citizen-centric, efficient operations and services, governments must challenge the traditional way of cooperation, and improve technical, semantic, as well as organizational interoperability. Interoperability and e-government has been studied by several researchers (e.g., Millard et al., 2004; Tambouris et al., 2007). The interoperability concept is interpreted and divided by different authors. According to The European Interoperability Framework, interoperability can be divided into organizational, semantic, technological, legal, and political (IDABC, 2008).

Horizontal and vertical interoperability can be regarded as the key to realizing the potential gains in e-government. With e-government, we understand the use of information and communication technology, combined with organizational change and new skills, to achieve improvements in public services, promote democratic participation and improve public policy formulation (EU, 2003). Interoperability can be defined as a company's organizational and operational ability to collaborate with its partners to effectively establish, implement and develop IT-supported business relationships that create value (Legner and Lebreton, 2007). Although the global assessment of electronic government is increasing, a United Nations (UN) survey indicates that the aims to which IT is put to use vary (United Nations, 2008). According to the UN survey, e-government solutions are fairly well developed in Europe, particularly in Norway which ranks third. The selection of cases for the study is from cooperating government organizations in Norway.

Investments in e-government interoperability improve value for government agencies, businesses and citizens, but traditional performance measures are found difficult to use in measuring the success of e-government interoperability, since stakeholders with different value dimensions are involved. This requires a comprehensive understanding of technology use in governments, coordination at a high level, and a joint effect model. According to the Office of the Auditor General of Norway (OAG, 2008), there is poor utilization of the potential for the electronic exchange of information in the government administration: "Many public sector agencies possess information that is useful to other public agencies,' says Auditor General [...]. 'Better utilisation of this information could contribute to more secure, speedier and more efficient services for citizens and businesses."

Through years of interaction with government agencies, formalized through the Semicolon project (i.e., 2008-2010, 2011-2013), we have learnt that benefit realization from e-government interoperability projects poses several changes. We argue in this paper that benefits realization from e-government interoperability efforts poses several challenges, e.g., how to organize benefits realization in collaborative settings, collect benefit reports, how to ensure realistic estimates up-front, and how to organize work in a portfolio of projects. Thus, our opinion (position) is that current benefits realization frameworks must be improved to ensure benefits realization from e-government interoperability projects.

Benefits Realization Model

In this section we present brief background information and raise some issues related to benefits realization in e-government interoperability projects.

Existing benefits realization models (e.g., Peppard and Ward, 2007; Ashurst et al., 2008; Seddon et al., 2010) have been used to guide the design of the benefits realization model for interoperability in e-government. Although the existing models found in the literature typically focus on a single organization, none have been developed specifically for the public sector nor have they been extensively validated for interoperability projects.

Background

The Norwegian portal for public reporting (see www.altinn.no) was launched in December 2003 under the name `Altinn' and has been in full operation since that time. Altinn is the government's interface between industry and government and offers a technological platform for service development and delivery to prospective service owners. Altinn is operated and maintained by the Brønnøysund Register Centre (BRC), which reports directly to the Ministry of Finance.

More than 120 different public forms are available and more than 23 million forms have been submitted through Altinn. The users of Altinn can either fill in the forms directly at the Internet portal or they can use their own IT systems to transfer data, for example, salary and accounting systems or a year-end accounting package. The companies' own IT systems transfer pre-filled forms to the portal through a simple interface where the forms can be subsequently completed and signed in the portal. Efforts have been made to make the forms as easily accessible as possible. Altinn is a 24/7 solution, which provides high flexibility for the users. It allows users the opportunity to use the solution anywhere and at any time.

The registers contain information and key data about such matters as liabilities and titles in mortgaged moveable property, business enterprises, annual accounts and auditors' reports of limited companies, bankruptcies and compulsory liquidations, and marriage settlements. Other data include a shareholder register list, notification of change of address, monthly reports on biomass and salmon lice, turnover reports, tax returns for wage earners and pensioners, coordinated register notification, tax returns for businesses, operators and companies, term reports, annual accounts (Brønnøysund Register Centre, 2009). The overall aim is to prevent the superfluous collection and registration of information. A specific profit-taking project shows Altinn has saved Norwegian businesses a thousand man-years of effort since it was launched in 2003.

Since 2008, all prospective services in the Altinn portal have been required to follow BRC´s method for benefits realization. The method includes, among several things, up-front cost-benefits analysis and annual reporting of realized benefits after implementation. The BRC approach to benefits realization is consistent with Ward and Daniel's (2006) model in Figure 1 and can be seen as a variant of this.

Figure 1. The benefits realization model
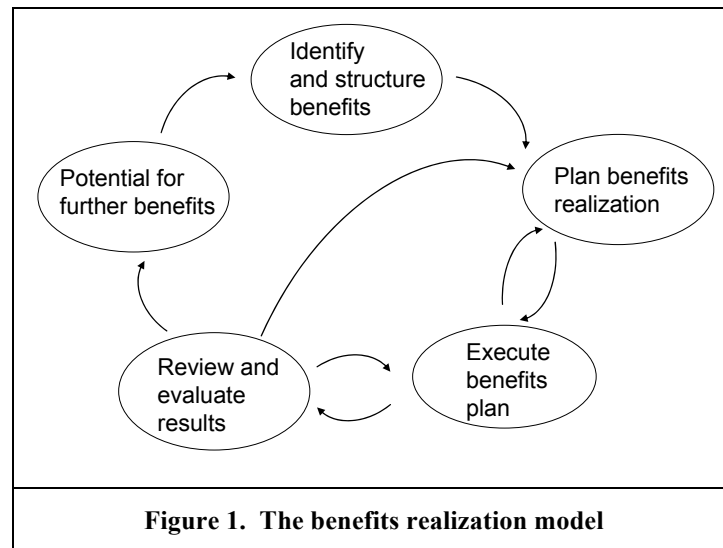
As a partner of the Semicolon project, supported by the Research Council of Norway, BRC wants to evaluate and improve its benefits realization model.

Supporting evidence or facts

BRC has experienced various challenges in its benefits realization practice, e.g. related to governance models for distributing funds to services that may not benefit the service owner directly – but rather other agencies or society at large, quality assurance of cost-benefits analysis, quality assurance of reported benefits and capacity building for service owners in order to facilitate benefits realization. We therefore regard problem formulation as practice-inspired research – it is challenging to realize benefits from IT investments in general and interoperability projects in specific. In interoperability projects, where several agencies are involved, cost and benefits are distributed across organizational borders. BRC has no legal authority over other agencies, and thus we claim that BRC has a challenge collecting benefit reports.

Investments in e-government interoperability improve value for government agencies, businesses and citizens, but traditional performance measures are found difficult to use in measuring the success of e-government interoperability, since stakeholders with different value dimensions are involved. Since the portal was launched, more than 23 million forms have been submitted through Altinn. The users of Altinn can either fill in the forms directly at the internet portal or they can use their own IT systems to transfer data, for example, salary and accounting systems or a year-end accounting package. It is reasonable to state that Altinn has contributed to more efficient and better public and private services for citizens and businesses. A specific profit-taking project shows that Altinn has saved Norwegian businesses 1000 man-years of effort since it was launched in 2003 (Brønnøysund Register Centre, 2007). Although these measures are quite impressive it is a challenge for BRC to measure benefits obtained by businesses and citizens. It is also a challenge to measure internal agency benefits whether they are improved efficiency in work processes, effectiveness and learning, or cross agency benefits such as added value from interoperability. As many stakeholders are involved in this process, we claim that it is a challenge to ensure realistic estimates up-front, as well as subsequent benefits reports.

Conclusions

Although we are still at the starting phase of a three-year project, a joint problem formulation is emerging between practitioners and academics. Realizing and documenting effects of e-government investments is a priority for government agencies but faced with a number of challenges – particularly so in interoperability settings. The benefits realization framework applied by BRC is consistent with academic suggestions but practitioners still experience several challenges. In the following, we suggest possible

courses of action to advance our understanding of, and actual practice of benefits realization in e-government interoperability settings.

Suggested Courses of Action

The research objective relates to a well-established class of problems, namely how to realize benefits from IT investments. The objective of this specific research is to evaluate and improve the benefits realization model used in BRC as this model is used in e-government interoperability projects. The research problem and questions will be further refined in close cooperation with BRC. The researchers are responsible for development and evaluation of the new benefit realization model, while BRC will be responsible for practical implementation of the model.

As this research has a dual mission to: 1) make theory contribution, and 2) assist BRC in solving current problems, we are in line with action research (e.g., Baskerville and Stage, 1996; Baskerville and Myers, 2004). We select action design research (Sein et al., 2011) (ADR) as an overall guide for our research. ADR conceptualizes the research process as containing the inseparable and inherently interwoven activities of building an IT artefact, intervening in the organization, and evaluating it concurrently. The following sections describe how we will approach each of the four ADR stages.

Possible Solution

The IT artefact to be built, implemented and evaluated in BRC, is the benefits realization model for e-government interoperability efforts. Researchers and the practitioners of BRC will first develop an alpha version of the model. Then, end-users, in terms of service owners, will evaluate and contribute to the refinement of the model (formative). A second beta version of the model will be developed and evaluated again by the end-users (summative). Then, the IT artefact will be ready for implementation in BRC. Researchers, benefit realization managers and staff at BRC, and service owners will be involved in the cycles. Stakeholders will bring different perspectives and knowledge into the process.

Decisions about the design and shape of the model and integrating it into the BRC's work practice should be interwoven with ongoing evaluations. Once a year benefits are reported from service owners to BCR, which aggregates benefits and reports to the Ministry. The study will follow the annual reporting process and will thus be able to identify limitations of the benefit realization model and propose improvements.

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