Future-oriented eGovernance: The sustainability concept in eGov research, and ways forward

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ABSTRACT

eGov (eGovernment/eGovernance) is a complex endeavor involving many actors, ambitions, and perspectives. The field has, in research and in practice, over the years expanded its focus from service orientation to a comprehensive perspective with the ambition to integrate all of government in coherent action. Comprehensive integration requires a future-oriented perspective so investment is made in robust and flexible solutions meeting not only today's demands but also sustainable to meet those of the future. This paper addresses the use of the sustainability concept in eGov research. We discuss definitions and elements of sustainability and conduct a structured review of eGov literature investigating how various sustainability areas (social, economic, environmental and technical) are addressed. We find 21 overall themes in 94 papers, with the highest number in the "social" category. Two cross-cutting themes to which 21 overall themes relate are also identified; Decision-making and Infrastructure. Findings show that sustainability is mainly addressed narrowly, focusing on projects rather than general issues, and shallowly with a focus on single factors rather than the complex interaction among them, and with little foundation in sustainability theory. The paper contributes with an overview of themes in previous research as well as theory-based input for future research efforts on eGov sustainability, from a dynamic and sociotechnical sustainability perspective.

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1. Introduction

eGov (eGovernment and/or eGovernance) has been defined as "the use of ICTs, especially the internet, as a tool to achieve better government" (OECD, 2003). In a large amount of earlier eGov research the application of ICTs in the public sector has been promoted as if not a silver bullet so at least the best available solution to solving problems of efficiency in the public sector and thus providing opportunities for cutting costs and providing better services to citizens. However, the goals of eGov are many and diverse, and sometimes conflicting, so the way to get there is far from straight. As eGov focus has moved from department and service orientation to comprehensive all-of-government approaches, research has increasingly highlighted the complexities, interactions, and conflicts intrinsic to the public sector as pivotal for understanding eGov (Cordella & Iannacci, 2010; Dawes, 2009). Hence, the emphasis has shifted to focusing on *governance*, which is understood as a dynamic process involving a multitude of actors with a large degree of independence, rather than just focusing on *government*, i.e. the bureaucracy and institutions of the public sector. This emphasis following the changes in organizing core societal activities that includes involving not just government but also private actors as service providers, tied together by providing service and control components

over shared electronic communication networks regulated by various arrangements such as outsourcing, accreditation, partnerships, and service level agreements.

1.1. Complexities of governance

Dawes (2009) discusses the need for a future oriented perspective where eGov is seen as a "dynamic socio-technical system encompassing interactions among societal trends, human elements, changing technology, information management, interaction and complexity, and the purpose and role of government". From this perspective, public sector use of ICT is increasingly perceived as matter of politics, societal fluctuations, changing information needs, changing technologies, and an increased amount of stakeholders and actors. It becomes a matter of eGoverNANCE, rather than a straightforward process of building a unified eGovernMENT to make the public sector more efficient. eGovernance means executions of various service tasks are distributed among many actors. However, distributing tasks does not mean that government can let go of leadership. In particular this has to do with values and control, which are the core of government; a fair distribution of resources, human rights, equality, privacy etc. Maintaining such values becomes increasingly difficult when tasks are distributed and at the same time more automated and standardized. eGov implementations often carry with them unintended consequences or new issues. For instance, it has been shown that the durability of such public sector values, risks to become diffused due to the often narrow

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focus on efficiency and effectiveness of eGov initiatives (Smith, Noorman, & Martin, 2010). Others have also pointed towards the issues of eGov initiatives that act in ways which are not consistent with the public sector values and structures, thus disregarding democratic principles (Scholl, Kubicek, & Cimander, 2011). A prevalent issue hence is what the purpose of eGov should be, as the public sector is changing while it still has to uphold certain public values.

Perceiving eGov as an open dynamic socio-technical system means that a large number of factors are acknowledged to influence eGov, many of which lie outside the control of the public sector. Dawes (2009) outlines six areas of concern as vital to eGov; Purpose and role of government, Societal trends, Human elements, Interactions & complexity, Information management and Changing technologies. The model depicts eGov as integrated in a larger context, in which it influences and is influenced by other factors. Perceiving eGov in this way raises the question of to what extent a government governs a country. This question is central to governance research (Pierre & Peters, 2000), and the answer is not yes or no but a matter of to what extent, and how. This means that the different interests to an increasing extent are influencing how the public sector operates.

This problematic picture is not unique to eGov research but adheres to general governance research, which acknowledges the importance of actors outside the public sector as influential in public services and policy making. For instance, the sheer number of actors in the public sector, the increasing involvement of private actors, as well as supra-national institutions, like the EU, and governance networks (with little or no decision making capacity) need to be taken into consideration (Hedlund & Montin, 2009). When looking at eGov projects, network approaches are often being employed where several public and private actors cooperate across traditional borders, for instance in interoperability efforts (Larsson, 2011). It is shown that public and private actors are included in the planning and execution of public duties. However management or leadership is challenged in such networks which has to be governed in very different ways compared to traditional bureaucratic structures. They are often rather loose initiatives, which due to this have little or no decision making power (Hedlund & Montin, 2009). This situation shows that although eGovernMENT is still the most commonly used word, eGoverNANCE is a more appropriate term to describe what is really going on. Government is only one actor out of many providing the necessary technical-, informational-, and institutional infrastructures, and indeed specific services. Although government in many ways is the central actor, public sector ICT efforts must be complemented by, and aligned and integrated with, other actors, such as businesses and civil society organizations, and indeed the citizens themselves. In a governance perspective, eGov research needs to be future-oriented (Dawes, 2009). To this end the concept of sustainability is fruitful as it is future oriented as well as holistic.

1.2. eGov from a sustainability perspective

The sustainability concept has been established as a central concept for the public debate and indeed established as a mainstream idea in policy on all levels (Blewitt, 2008). A canonical definition of sustainability outlines the concept as "development which meets the needs of current generations without compromising the ability of future generations to meet their own needs" (WECD, 1987). What this means for eGov is a relevant issue indeed. Heeks (2001) joked that "These days you cannot find the elephants' graveyard because it is hidden behind the ICT projects' graveyard where the bleached boards of thousands of PCs lie rotting. Considerations of sustainability must therefore be high on the agenda in planning e-governance initiatives". In recent publications sustainability has been highlighted as a suitable way to look into the full spectrum of eGov (Lessa, Belachew, & Anteneh, 2011). Furthermore, Klischewski and Lessa (2012) conceptualize eGov sustainability as interconnected with eGov success, as solutions need to be sustainable in order to succeed in the long run. They outline a framework of the

relation between eGov success and sustainability, based on a review of selected eGov literature. Similarly Dzhusupova, Janowski, Ojo, and Estevez (2011) outline a number of vital aspects for sustainability of eGov programs in developing countries, based on eGov literature. However, while both papers include numerous important issues no common frame of reference does yet exist, neither an overview of the use of the sustainability concept in eGov research. As eGov today is mainly about connecting and integrating government the task of eGov extends beyond simply providing "better government" (OECD, 2003) to also incorporate a future-oriented perspective where the dynamics of government and society becomes highly relevant, i.e. in "better" is also included the ability to survive huge and sometimes rapid changes in many fundamental, social, technical and economic variables. This means that in order to understand the complex nature of eGov, existing in a governance context where several actors and complex interaction patterns are involved, we need to employ a perspective that allows us to not only highlight the needs of today but also understand how different initiatives shape the future of eGov in a societal context. What this means in practice is far from clear, and this is where our inquiry begins. To address these issues in a structured way we turn to the concept of sustainability, which is much used in other important societal areas. To address sustainability productively across government there is a need for a clear understanding of what is meant, as addressing sustainability will mean intervening in other interests. For example there may have to be trade-offs made between current and future needs.

1.3. Research question and paper outline

The sustainability concept has been shown to lack a common definition, and can hence refer to a great number of different things (Faber, Jorna, & Van Engelen, 2005). In the eGov field, Klischewski and Lessa (2012) have proposed a research agenda for sustainability. However, no overview of relevant existing research exists. Therefore this paper aims to provide and so as to shape future research. The research questions are,

RQ1: How is sustainability treated in eGov research?
RQ2: How can the concept of sustainability be incorporated into eGov research?

Hence, one objective is to outline existing eGov research where the sustainability concept is used, in terms of what the different perspectives on sustainability are and what is to be made sustainable. A second objective is to outline directions and foci for future research based on this review as well as on sustainability theory. Hence we aim to contribute to the Klischewski and Lessa (2012) call for an eGov sustainability research agenda by providing an overview and a theoretically founded way forward.

First the conceptual framework is presented, followed by the literature review- and analysis method. The results of the review are then presented and discussed with regards to the different focuses of extant research. The paper is then concluded with a summary of the use of the sustainability concept in eGov research, as well as ways forward.

2. Sustainability as dynamic processes

Sustainability is a concept of the time. The colloquial use refers to various concerns for nature and environment. Typical examples include reducing transport and certain kinds of hazardous production so as to reduce, or stop the increase of, carbon emissions to the atmosphere. For such environmental care to happen, however, there needs obviously to be strong ties to economy; there must be a cost calculated for harming nature so that reducing the harm can be calculated as a gain not only for nature but also in companies' and governments' accounting. But economy cannot be discussed without social concerns. This has been clearly visible for example in the conflicts involved in distributing