

## A Review on E-Government Integration Studies

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### Abstract

E-government integration has gained interest of researchers from different perspectives. Some have studied it from organizational perspective; other researchers have proposed models and recommended solutions for technical problems in some government applications. Despite all efforts done, there is no unified definition for e-government integration among scholars. The IS researchers have not done much in e-government domain. In this article, we set out to progress IS research on e-government integration by recommending a common ground for future research for IS literature. We present a holistic and inclusive definition of e-government integration and discuss the primacy of objectives of undertaking such project so far.

**Keywords.** integration; e-government integration

### 1 Introduction

The main objective of implementing e-government projects is providing services to all stakeholders in the society with a single access point to get the services needed. This goal will not be attained without integrating all services together in a portal accessible to government organizations (G2G), citizens (G2C), businesses (G2B) and employees (G2E) (Shan et al., 2011; Hermana & Silfianti, 2011). E-government seeking to centralize and making cohesive and seamless set of government services available online for its users. Therefore, e-government integration is seen as a critical element to reach the mature level of e-government (Golden et al., 2003). There are enormous reasons for undertaking e-government projects like more efficiency, greater access to government services, better government services, more transparency as result of government reform, low corruption levels and more citizen empowerment (Schware & Deane, 2003).

E-government integration projects have been studied from different perspectives. Some has been studied from pure technical side, others studied from managerial aspect. Till now, the majority of projects have not been studied comprehensively to reflect the complexity of such projects. Those projects are interacting with legal, organizational and technical issues and barriers. Therefore, the integration projects in e-government run in big failure risk and the constraint problem is complicated (Scholl & Klischewski, 2007).

This paper is a comprehensive investigation on literature available about e-government integration. The objectives of this study are first to methodologically collect, analyze and synthesize all related literature about e-government integration. Second, it is helpful to understand its current status and trends on the e-government integration literature. Finally, it will derive future research agenda for e-government. The paper is organized as follows. The coming section, Section 2 presents the research method. Then, the results and discussion from the literature review analysis are explained in Section 3. It presents broad definition for e-government integration and its objectives. Finally, Section 4 concludes with summary and potential research agenda for e-government integration.

## 2 Research Method

By following the guidelines of Vom Brocke, et al., (2009), we used a three-phase method to report the findings from the literature which are extract, analyze and interpret. The extraction phase includes methodological search, identification and extraction of articles to include them in this paper. The analysis phase starts with the preparation for the analysis design. Then implementing the appropriate classification and coding scheme that will meet the objectives of this study. Later, it moves to conducting the analysis by applying the selected scheme. Finally, the interpretation phase involves synthesizing the coded details founded and analyzing the literature to match the research objectives of this paper.

As the aim of this literature review paper is to explore and synthesize e-government integration research, we focused on literature sources targeted by IS community from different disciplines. Thus, academically refereed, full text papers were sought from a clearly defined sampling frame that included diversify pool of journals. The journals selected are from diversified sources (i.e., Emerald, Web of Science, Science Direct, IEEE Xplore, Taylor and Francis and ProQuest databases) which emphasis the multi-disciplinary of the IS field. From these sources, the articles were scanned to know the IS researchers in which perspective they resolve the integration problems. It was very difficult to find articles related to integration in government related issues. Most of we managed to get are from other domains (e.g., supply chain management).<sup>1</sup> This indicates that there is a gab in the IS field that need to be filled.

The paper extraction process occurred in two steps. First, the focus was on extracting papers where integration was our central focus, therefore the keyword was “integration”. It was searched for in title, abstract or keywords of the sampling described above. This yielded 27 papers from different collection of journals and 6 from a conference. Given this relatively small number of papers, we extended the search, this time extracting papers using different keyword which is “e-government integration”. We tended to get almost the same papers for using the integration keyword. We included those in which appeared to be relatively more prominent, based on our limited information. In the first step, all sources from which the primary papers originated were added. Second, those sources in which more than one paper mentioned ‘integration’ in the body-text were included. As mentioned, we searched these criteria using the search facilities of the journal and the host databases. From the new sources, 27 further related papers which mentioned integration somewhere in the text of the paper in a meaningful manner were identified. The 27 articles were filtered carefully reviewed all papers to determine their relevance. In general, we followed a comprehensive approach for extracting papers which is the suited for this study. We do acknowledge that there may be some papers which may be relevant but excluded due to our defined scope and the applied approach. It is worth mentioning that this can be expected from any literature review (Vom Brocke, et al., 2009). A researcher can only try to define feasible and appropriate scope, clear approach and demonstrate in a transparent manner how all relevant papers that matched the specifications were included in the analysis (Chiasson et al., 2008).

The pre-determination of what is important to capture and report is very critical aspect for any effective and efficient archival analysis (Okoli & Schabram, 2010). The goal of this paper was to derive a synthesized review of e-government integration literature within academe. Hence, the pre-codification scheme was based on what and why basic questions to understand the concepts of e-government integration. The authors capture the ‘what’ and ‘why’ of e-government integration by addressing the definitions and objectives. Our approach is consistent with the past similar meta literature review studies (Chen & Hirschheim, 2004) and with the high level analysis of e-government integration which is based on an initial scan of the most cited papers from the selected pool (Sia et al., 2008).

The data for each of those articles were analyzed in different ways. The analysis depended on the kind of its topic, what was reported in the identified literature and other prior work that could support the analysis. In the first phase of analysis, an inductive manner in search of emerging themes was implemented. It is done by adapting an open coding approach; where the content of each paper coded under a certain topic of the pre-coding scheme. Then, the themes were analyzed in isolation and in depth. After that, those

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<sup>1</sup> The IS journals searched for this purpose are Association for Information System, Information System Journal, MIS quarterly and MIS Journal. Moreover, the IS conferences are investigated like proceedings of International Conference on Information Systems (ICIS), European Conference on Information Systems (ECIS), Pacific Asia Conference on Information Systems (PACIS), Australasian Conference on Information Systems (ACIS), and Americas Conference on Information Systems (AMCIS).

themes were then grouped into higher level themes by adapting an axial coding approach. When prior research on our topic existed we would introduce them at this point.

### **3 Results and Discussion**

#### **3.1 The Status of E-Government Integration Literature**

Recall that 33 papers were extracted from the available literature from different disciplines. The sample consists of 33 papers (27 journal and 6 conference papers) specifically focusing on e-government integration. The first mention of e-government integration in the literature analyzed was in 2000, when Sprehe (2000) talked about integration problems regarding the electronic records management in federal agencies. His paper has identified some barriers (i.e., management, technology, implementation and definitional) that government agencies need to encounter when considering how to create and maintain an electronic records management process.

There are only few papers which focus more into integration challenges. For instance, Gulledge (2006) provides clarification of the meaning of integration. The author stated that the term 'integration' is not unified and it is full of misunderstanding in different contexts. Scholl & Klischewski (2007) also contributes to the development of a research framework on integration and system interoperation in e-government. They contribute to the academic knowledge of the field by proposing the directions of research about the complex subject area of e-government integration and interoperability. On the other hand, Scholl et al. (2012) have systematically portray, assess and compare the main focal areas of integration, information sharing and interoperability projects in government from a stakeholder wants-and-needs perspective as well as by identifying the specific constraints and limitations in those projects. The authors also aim at shedding light on success and failure measures in such projects as well as on the socio-technical processes, which were key to success and failure of integration, information sharing and interoperability projects in government. Other papers are categorized based on its purpose and findings. Some of them focus more on the proposing models (Kamal & Alsudairi, 2009; Kamal, 2011; Kamal et al., 2013), technical solutions for the integration purpose (Maluf & Tran, 2008; Chen et al., 2009) and the management or organizational aspects in the integration (Kamal et al. 2011; Yang et al. 2012; Al-Sebie 2014).

#### **3.2 Defining E-Government Integration**

To advance the understanding of e-government integration in the literature and to grow a cumulative body of knowledge, it is essential to define the meaning of the concept. As Gulledge (2006) mentioned, the term integration is full of confusion. The overview of definitions shows little consensus. A grounded look at definitions is warranted during the continuing genesis of this phenomenon; convergence of thought is important for an emerging area to grow. Though presented definitions are diverse, therefore the key theme is consolidation. Some refer to back-office integration of functions and the services they deliver via processes and IT (Gulledge, 2006; Bekkers, 2007). Others refer to organizational and governance aspects (Scholl et al., 2012). There are also themes that relate to government approach (Scholl & Klischewski, 2007; Virili & Sorrentino, 2009), in terms of being managed like entities; being service and customer oriented and having a provider-client relationship (e.g., service level agreements, service quality, agreement type). Governance, therefore, is implicit in the concept of 'integration' and in themes like collaboration.

While there are similarities between the definitions and common themes can be identified, there are also some significant differences in terms of characteristics included, as well as conflicting characteristics. For example, Klischewski (2004) mentions that integration extends process integration and Kubicek & Cimander (2009) state that integration extend information integration. In addition, some definitions include one or more objectives of integration such as providing services or sharing information (e.g. (Klischewski, 2004; Scholl & Klischewski, 2007) whereas Borman & Janssen (2008) argues to keep objectives out of the definition. While these studies have made progress toward a common understanding of e-government integration, however, it remains unclear whether a unified definition is actually feasible. It

seems that there is no consolidated theme exists as a common understanding about e-government integration from the previous studies. This shows that the e-government integration as a concept is not well established. As a consequence, we propose a broadly define e-government integration as “An organizational arrangement whereby multiple organizational units collaborate in the concentration of providing accurate and timely services in a single access point to all users. This arrangement needs unified efforts from all stakeholders to overcome all obstacles faced on the way.” This definition captures the main ideas behind e-government integration in terms of organizational units collaborating by concentrating in providing good service to customers or users by highlighting the importance of stakeholders’ coordination to resolve any issues. With respect to the latter, this reflects the understanding of e-government integration as supporting the processes of customers so that value can be created (Grönroos, 2006).

### 3.3 Specifying Objectives of E-Government Integration

Specifying organizational objectives from e-government integration is known to be valuable because specific objectives give direction and focus attention and efforts. Luna-Reyes et al. (2007) mentioned that “the benefits of integration have not been fully attained because of the incompatible IS, platforms and high maintenance costs coupled with a lack of understanding of the true purpose value and power of integrated IS”. It is a need to identify some benefits from e-government integration. In line with this, we identified only 10 articles have mentioned reasons behind e-government integration in the literature to aid us to synthesize them into higher level categories. However, it was hard to find articles discussing specifically the objectives of e-government integration and their categories. Therefore, we categorize the objectives as mentioned from different researchers into three groups by referring to outsourcing motives framework by (Baldwin et al., 2001) as follows:

- a) Technical objectives and strategic, and organizational objectives are most prevalent with six articles (Scholl & Klischewski, 2007; Kamal, 2009).
- b) Economic objectives are mentioned in two articles (Maluf & Bell, 2005; Luna-Reyes et al., 2007). Economical objectives are important to measure the effects on service delivery after integration on people and to create measurable social and economic impacts.
- c) Political objectives are stated only in one paper (Luna-Reyes et al. (2007).
- d) Within the strategic and organizational category, improved service delivery was the most cited objective (Luna-Reyes et al. (2007).

## 4 Conclusion

We conclude that the conceptual foundation of research in e-government integration with respect to definitions and objectives are not well-established yet. We found that definitions of e-government integration are scarce. We expect there is yet room for refinement, with the aim of a holistic and inclusive definition unconstrained by pre-specified objectives. In this paper, we propose a broad definition of e-government integration which supports the process of customers with not neglecting a value creation aspect.

The literature suggests not that broad range of objectives for e-government integration. Therefore, the future research should focus on understanding the objectives of it. Also, it is still unclear how realistic the benefits expected or how they can be realized. We have to understand as IS researchers what are the implications of e-government integration in the organizational arrangement for the IS function. Also, we need to clearly display how IS can play an enabling role for objectives of e-government integration in general.

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