



Understanding the e-government paradox: Learning from literature and practice on barriers to adoption



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ABSTRACT

We have identified a paradox in the still low adoption of e-government after more than two decades of policy efforts and public investments for the deployment of online public services. Using as evidence the focus and evolution of this focus over the period 1994–2013 in a vast body of literature produced by academia, international organisations and practitioners, we show that: a) the deployment of e-government was for a long time concentrated on more technological and operational matters and that only more recently attention switched to broadly defined institutional and political issues (hypothesis 1a); and b) institutional and political barriers are one of the main factors explaining lack of e-government adoption (hypothesis 1b). A decision making process that is still unstructured, untrustworthy, and not fully leveraging the available evidence hinder the perception of public value and citizens' trust in government, which contribute to low level of e-government adoption. We conclude suggesting that a smart government producing public value is grounded in a triangle of good decision defined by politics, values, and evidence and that to achieve it public sector should go beyond the traditional concept of service innovation. It should rather introduce conceptual and systemic innovation pertaining to a new way of thinking and of interacting with stakeholders and citizens as sources of both legitimacy and evidence.

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1. Introduction

In the past 30 years the public sector in most part of the world and in Europe in particular has been shaken by various intellectual and political waves of (attempted) innovation and reform going under different names (Muccio & Mauri, 2012): 'New Public Management' (Dunleavy & Hood, 1994), 'Public Value Management' (O'Flynn, 2007), 'Reinventing Government' (Osborne & Gaebler, 1993), New Governance (Osborne, 2006; Rhodes, 1996). In the mid-1990s anchoring expectation of changes to Information and Communication Technology (ICT) represented the last of these waves (Misuraca, Codagnone, & Rossel, 2013). Following the new EU2020 strategy emphasis on being 'smart', the new drive for 2010–2015 is framed as harnessing ICT to promote smarter, sustainable, and innovative government (European Commission, 2010a). This focus on innovation in the public sector is more than normal given the sheer size of public value for which governments account for in Europe (Bauby & Similie, 2010). The focus

on changes and innovation in the public sector to maximise public value rests on wider and more important function assigned to the public actor than what orthodox neoclassic economics and even the now declined New Public Management would concede. The public sector can be an innovator in many ways, not simply in the final production/provision of services and policies, but also in the way it conceptualises and designs them and in the kind of interaction it entertains with stakeholders, and external sources of knowledge (Windrum, 2008). Innovation can lead to the production of new public value, that is 'value created by government through services, law regulations and other actions' (Kelly, Mulgan, & Muers, 2002). The introduction of ICT in the public sector is a key strategy to achieve many of the different facets of public value by innovating both upstream (in the definition of policies and design of services) and downstream in their production and final provision.

A large body of inter-disciplinary literature (scientific, institutional, and practitioners generated) has accumulated on the topic and has been critically reviewed (Dwivedi, 2009; Gupta & Jana, 2003; Hassan, Shehab, & Peppard, 2011; Heeks, 2006; Kolsker & Lee-Kelley, 2008; Lofstedt, 2005; Norris, 2006; OECD, 2007, 2009; Osborne, 1993; Pratchett et al., 2009; Rana, Dwivedi, & Williams, 2013; Reddick, 2004; Titah & Barki, 2005; UN-DESA, 2003, 2010; Wang & Wan Wart, 2007;

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Yildiz, 2007). As yet, however, there is still limited evidence that the expected promises have been achieved and e-government's potential remains hypothetical (Dawes, 2008; Misuraca & Rossel, 2011; Misuraca et al., 2013).

If we consider only e-government, defined as 'the process of innovation of public administration in order to achieve innovative forms of government and governance through the use of ICTs' (OECD, 2003), two decades of investments and no evidence on impacts justify the use of the expression 'e-government paradox' (Bertot & Jaeger, 2008; Castelnovo, 2010; Misuraca, Savoldelli, & Codagnone, 2014).

In the case of e-government, it seems, the paradox cannot be attributed, as was done when the 'IT paradox' was discussed for the private sector between the late 1980s and early 1990s (see review in Misuraca et al., 2013) to measurement errors or lag time. In fact, since ICT is a General Purpose Technology (GPT), it cannot produce anything unless complementary changes take place. The classical complementarity discussed in the literature on firms is 're-organisation' and this is naturally valid also for e-government. Yet, in the latter case, there is a much more important and decisive complementarity: take up on the side of citizens, businesses, and also public sector employees themselves (for internal applications, or for cross-government services aimed at seamless delivery through inter-institutional collaboration). If available online services are not used, there will be no files and transactions handled electronically and, hence, no full-time equivalent and/or dematerialisation gains.

In this respect it is easy to skim through the last two reports on the 2012 benchmarking of e-government services offering and of their usage in Europe (Capgemini et al., 2012a,b) and see a clear gap between the supply of services (where most countries reach 75% and above of the index used) and their usage (where the index of adoption is below 30%). A statistical analysis using earlier data available until 2009 found that there is no statistically significant correlation between the level of supply of e-government services and the level of usage (Fernández-i-Marín, 2011).

While in the public context the terminology may sound inappropriate, for simplicity we can say the offering of the supply side is not capable to understand, capture, and meet the 'values' sought by the demand, where we define values as representing both higher level ones (a trustable government) and lower and more concrete ones (saving time, finding what one is looking for, having quick responses, etc.). It is almost self-explanatory that if adoption does not reach significant levels, then the financial resources invested in e-government simply creates a stratification of costs (one additional channel is introduced that does not replace traditional ones) and no benefits, either internal or external will accrue.

Our claim in this article is that for a long time e-government deployment has focussed mostly on technological and operational issues, disregarding those aspects (of a more institutional and political character) that might favour adoption. More specifically we advance two related hypotheses:

H1a. The deployment of e-government has been for quite some time concentrated on more technological and operational matters and only more recently attention switched to broadly defined institutional and political issues.

H1b. Institutional and political barriers are one of the main factors explaining lack of e-government adoption.

We tested these two hypotheses by using as empirical evidence the focus and evolution of this focus over the period 1994–2013 in a vast body of literature produced by academia, international organisations, and practitioners. In particular we look diachronically and synchronically at which types of e-government barriers have been mostly addressed in such literature in different periods over the course of almost two decades going from 1994 until today.

In Section 2, we illustrate the method and conceptualisation used for the analysis of the literature, in Section 3 we report the findings, in Section 4 we discuss them with respect to our two hypotheses, and in Section 5 we present our main conclusions and suggestions on the new focus for public sector innovation research and practice, that aims at enhancing smarter governments and public value production.

2. Method and conceptualisation

The systematic and diachronic account of e-government adoption barriers we present is based on a bibliometric analysis covering different types of sources (conference proceedings, journals articles, scientific databases, research notes, policy reports, etc.) for the period early 1990–2013. In our approach we followed the criteria suggested to ensure consistency, exhaustiveness, and stability of findings (Frandsen & Nicolaisen, 2008; Gil-Garcia & Pardo, 2006; Rhoda, 2013). Clearly, we are using a second order type of empirical evidence and assume that the work produced by scholars, policy makers, and practitioners is a valid and reliable proxy of the socio-political and economic processes defining in practice the deployment of e-government.

2.1. The sources of the analysis

The first sources used were *Google Scholar*® and the advanced *Google Search engine*. The data was gathered using years (1990–2013) and key words such as: 'e-government', 'electronic government', 'on line government', 'e-government barriers', 'adoption', 'acceptance', 'diffusion', 'impact', 'implementation', 'trust', 'public value', 'participation', 'security', 'privacy', 'policy making', 'usage/use', 'challenges', and 'opportunity'. Next a similar search was performed to cross-reference the findings and extract relevant knowledge in selected scientific databases such as: SCOPUS® and the Journal Citation Report®. Finally, we systematically searched and analysed entries found in dedicated journals of e-government research such as: *Elsevier's Government Information Quarterly (GIQ)*; *Emerald's Transforming Government Process, People and Policy (TGPPP)*; *IGI's International Journal of Electronic Government Research (IJEGR)*; *Inderscience's Electronic Government an International Journal (EGIJ)*; *ACI's Electronic Journal of e-government (EJEG)*; *IOS's Press' Information Polity* In this respect, we first applied a wider selection criterion and identified articles directly or indirectly touching upon e-government adoption and subsequently filtered them as to analyse only those strictly focussing on barriers and critical success factors. As a result we moved from an initial total of about 250 generally relevant articles to the final set of 60 articles whose analysis is presented in this article.

2.2. The dimensions of the analysis

From a synchronic perspective we identified the following three periods with respect to the key elements characterising the development of e-government: 1994–2004; 2005–2009; and 2010–2013. The different length of the three periods just mirrors the physiological evolutionary pathways with a much slower path in the first decade, where efforts went mostly to deployment of ICT infrastructures and awareness actions, and faster, later on, when the pathways were related to deployment and take-up of e-government services. It must be stressed, however, that whereas for the general conceptualisation and identification of barriers our analysis can be considered global, for the periodization our focus concerns mostly the context of the European Union. We should also note that inclusion of sources to one period or the other has been flexible, in that some scholars may have anticipated the changes occurring in the policy framing of a period but their contribution is considered as part of the latter.

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