

***INFORMATION SYSTEMS OUTSOURCING IN PUBLIC ADMINISTRATION: AN  
EMERGENT RESEARCH TOPIC***

**Josep M. Marco-Simó, Rafael Macau-Nadal,**

UOC – Universitat Oberta de Catalunya

**Joan A. Pastor-Collado**

UPC – Universitat Politècnica de Catalunya

***Abstract***

After reviewing the most relevant academic sources, we believe that there is still little academic literature on information systems (IS) outsourcing specialized for public administration (PA). In this paper we present the few we have discovered references while deriving and expanding some analysis from them. The sparse results of this analysis are then summarized and classified. This situation contrasts with the clear importance of PA as an IS consumer and often as a change leader in IS management practices, which is also depicted in the paper. As an example of what future research questions could be posed and of what findings could be expected from this research domain, we present a real IS outsourcing case of study which appears to be rather original in the approach taken by the involved PA. Hence, with all the issues outlined in this preliminary research work, we believe that it is possible to justify an interest in researching this topic and to encourage new scientific activities resulting from it, such as new proposals for PA of specific IS outsourcing frameworks, methods or in-depth case studies like the one introduced here.

***Keywords:*** *Information Systems, Outsourcing, Public Administration.*

## **1 INTRODUCTION**

It is well known that information systems (IS) outsourcing in general has become a current issue since companies as popular as Ford or Kodak began to apply it – the Kodak case study was examined at the end of the 80's (Loh and Venkatraman, 1992). Nowadays, and after mixed results, debates and proposals ranging from total to selective alternatives, IS outsourcing is considered as an acceptable way to deal with certain IS tasks. The basic purpose of outsourcing consists in externalizing those organizational activities which are not directly related to the core competences of the organization, given that the inherent risks and opportunities have been studied and rules for managing them are clearly drawn up (Lee et al, 2003). Consequently, a lot of literature on IS outsourcing has been generated both in well known scientific journals and international conferences as well as in relevant professional magazines. This published research has been carried out either from theoretical or from

empirical points of view, which leads us to consider IS outsourcing as a maturing research domain.

In common with private enterprises, the public administration (PA) started experimenting with IS outsourcing processes driven by market and political trends. The UK's Compulsory Competitive Tendering (CTT) was probably the first relevant example, introduced during the 80's at the local administration level (Hancox and Hackney, 1999), while the USA's National Performance Review (NPR) employed IS outsourcing during the 90's (Beyah and Gallivan, 2001). Many other countries have followed these initial exemplars and some methodologies such as the Euromethod (Helmerich 1998; García, 1996) have been devised to help with this process.

Currently, PAs are investing great amounts of public money on IS and information technology in general. According to Gartner, the USA Federal Government spent \$66 billion on IS/IT goods and services in 2006 and 11% of professional PCs worldwide were purchased by government agencies. They also mentioned that the procurement of such systems and services is mainly done through market suppliers. In addition, as in other fields of economic activity, environmental and organizational differences between the public and private sector have been widely accepted (Hancox & Hackney, 1999). However, despite the great interest that general IS outsourcing has produced in IS research circles, as has been stated before, it appears that the subtopic of IS outsourcing in PA has not produced a level of research interest proportional to its economic importance.

This paper, which must be considered as a preliminary research work, puts forward evidence of this state of affairs. With it we would like to share with the IS research community the reasons for our interest in IS outsourcing in PA. First and foremost, our findings from our literature review in this subtopic are summarised. Secondly, the importance of IS outsourcing in PA is clearly shown. Also, we present some issues of general research on IS outsourcing that could be studied in relation to their application to PA. Finally, we introduce a real case of an IS outsourcing approach within an important Spanish public administration body, as a way to illustrate and emphasise the need for more research on this area, while the contributions expected to be gained from its in-depth study are outlined.

## **2 PRIOR RESEARCH ON INFORMATION SYSTEMS OUTSOURCING IN PUBLIC ADMINISTRATION**

### **2.1 Prior research reviews on IS outsourcing**

As a relevant subject, the topic of IS outsourcing has produced a considerable amount of literature in IS and IT scientific publications, as well as in some management publications. It has appeared both in journals and in related congresses. All these works have brought about the need to summarize and organise the literature and, in this sense, some works have been produced.

Among these summarised works, we believe that two of them are of particular interest. The first one is the in-depth work by Dibbern et al. (2004). This work starts by reviewing the history, the base definitions and the theoretical foundations of IS outsourcing and its related research. Subsequently, it presents the main results offered by such literature, organized at the outsourcing stage, with detailed classification of constructs, findings, research approach and

conclusions. This work also points out some of the weaknesses in the research of IS outsourcing.

The second reviewing work is the recent work by González et al. (2006). This work classifies the results not only from the outsourcing stage dimension, as in Dibbern et al., but also according to several perspectives: that of the actors (client and provider), that of the relationship between them, and also that of economic theories. They also summarize their bibliographic review findings with respect the countries, authors and research methodologies used.

The work of Dibbern et al. covers the period from 1988 to 2000 and examines relevant journals and two main congresses, covering a total of 84 papers. Gonzalez et al. cover from 1988 to 2005 and examine relevant journals, but not the main congresses, with a total of 131 papers. From this data, we can consider that a recent in-depth review and analysis of the literature for IS outsourcing in scientific journals has been made. Although extending the study to relevant congresses would be considered necessary, we believe that these works are a solid starting point to examine the sub-topic of IS outsourcing in PA.

## 2.2 Narrowing the scope to IS outsourcing in PA

Following the work of Dibbern et al. (2004) and González et al. (2006), we found those references most closely related to our topic of interest: IS outsourcing in PA. In our search, we considered “Public Administration” in an inclusive way, i.e. from local to regional or state, to national or supranational level. Thus, for this research, we use a combination of terms such as “public”, “administration”, “sector”, “local” or “government”. In our selection we included any paper that presents IS outsourcing in PA as its main topic, or as a secondary one.

Only six references were found (five in IS journals and one in an IS conference) and only three (Currie 1996, Hancocks and Hackney 1999, Lacity and Willcocks 1997) had IS outsourcing in PA as their main topic, and always corresponding to a particular country’s experience. No papers after 2002 were found. A brief explanation of those six references is given as follows:

- Currie (1996) reviews and compares experiences in the UK’s private and public sectors. Lacity and Willcocks (1997) also compare the US’s private and public experiences. Hancocks and Hackney (1999) also explain two UK experiences under CCT from four conceptual frameworks.
- Slaughter and Ang (1996) highlight tendencies in IS human resources outsourcing in the public sector. Willcocks and Kern (1998) make a reference to political and technological uncertainties inherent in public sector outsourcing. Finally, Allen et al (2002) study sociological factors of outsourcing in Higher Education Institutions and of some other PA institutions.

Deriving and expanding the literature research from the above references and their authors, only six more relevant papers were found. The main papers on this topic were again related to a particular country’s experience and its context. A brief explanation is provided in the following:

- As in Allen et al (2002), the work of Andrade (2004) comes from a sociological perspective. However, it is interesting in its attempt to summarize a perspective on IS

outsourcing in PA. He concludes that interest in this topic is not highly demonstrated in scientific publications.

- Willcocks and Currie (1997) analyse two cases in the UK public sector and compare selective-outsourcing versus large-scale outsourcing. Lewis (1998) presents a risk-remedy method for evaluating tenders in Australia, and Beyah and Gallivan (2001) put forward a theoretical knowledge management framework as a way to explore UK and USA experiences.
- Rapcsak and Zagi (2000) apply a general method, that includes a suppliers prequalification phase, to the evaluation of public administration tenders in Hungary; and García (1996) reviews how Euromethod (Helmerich 1998) has been used in Spain.
- The influence of outsourcing on IS jobs in the public sector, as pointed out before by Slaughter and Ang (1996), is stated by CACM Staff (2004) as an important element in the news section of their publication.

In order to summarize this section of 12 references, we follow the classification of broad areas of topics proposed by González et al. (2006). Results are shown in Table 1.

Finally, two books should be mentioned which do not overlook this topic: the chapter of Khalfan & Gough (2003), that illustrates a case experience in Kuwait; and also De Loof (1996), which makes some mention of public sector factors across the IS outsourcing process.

<b>Journal (1)</b>	<b>Perspective of client</b>	<b>Perspective of provider</b>	<b>Perspective of relationship</b>	<b>Perspective of economic theories</b>	<b>Others</b>
<b>IS Journals</b>					
CACM				Slaughter & Ang (1996)	
EJIS			Currie (1996) Willcocks & Kern (1998)		Allen (2002)
ISJ			Lacity & Willcocks (1997)		
<b>Management Journals</b>					
BJM (*)			Willcocks & Currie (1997)		
DSS	Rapcsak & Zagi (2000)				
RVG (*)					Andrade

					(2004)
<b>Other Journals</b>					
Novática (*)			García (2004)		
<b>IS Conferenc es</b>					
ECIS (*)				Lewis (1998)	
HICSS			Hancocks & Hacney (1999)		Beyah & Gallivan (2001)
<p>(1) CACM: <i>Communications of ACM</i>, EJIS: <i>European Journal of Information Systems</i>, ISJ: <i>Information Systems Journal</i>, BJM: <i>British Journal of Management</i>, DSS: <i>Decision Support Systems Journal</i>, RVG: <i>Revista Venezolana de Gestión</i>, ECIS: <i>European Conference on Information Systems</i>, HICSS: <i>Hawaii International Conference on Information Systems Science</i>.</p> <p>(*) these sources are not used by González et al (2006) and Dibbern et al (2004).</p>					

Table 1. Classification of references found on IS outsourcing in PA.

### 2.3 Obvious conclusion: Too few papers on IS outsourcing in PA.

To conclude, drawing from the main reviews mentioned above, we have found only a dozen scientific papers dealing directly or indirectly with IS outsourcing in PA: six papers found among the 84 studied by Dibbern et al. and the 131 studied by Gonzalez et al., and six more papers found by following their references. Furthermore, most of these papers are not recent papers.

As a result of the classification, we can conclude that the perspective of the relationship between client and provider is the one most often adopted. In addition, it has become apparent that different sources other than the usual ones can be included to approach this topic.

All this suggests that, for a more extensive study of the literature on IS outsourcing in PA, it is still necessary to carry out several other tasks such as:

- To search for relevant papers from IS conferences such as the *International Conference on Information Systems (ICIS)*, *Americas Conference on Information Systems (AMCIS)*, *European Conference on Information Systems (ECIS)*, *Hawaii International Conference on Systems Science (HICSS)*, *Pacific Asia Conference on Information Systems (PACIS)*, and the *European and Mediterranean Conference on Information Systems (EMCIS)*.

- To expand the search and review in scientific journals from solely IS journals to those directly related to Public Administration and Procurement, such as the *International Journal of Public Sector Management* (IJPSM), *American Review of Public Administration* (ARPA) and *Public Administration Review* (PAR).
- To also consider the review of IS/IT magazines, congresses, or journals addressed to professionals, in addition to the scientific ones.

On the whole, so far we believe that a critical mass of research, as represented by published references, does not yet exist, and thus we consider the topic of IS outsourcing in PA far from being well covered.

### **3 NEED AND OPPORTUNITY FOR MORE RESEARCH ON INFORMATION SYSTEMS OUTSOURCING IN PUBLIC ADMINISTRATION**

At this point, we would like to highlight the two main arguments from an economic point of view to defend the importance of having more research on IS outsourcing in PA,:

- The first one is the efficiency of the management of public money. Monitoring the correct use of this money is, like that of private organizations or even more, so a fundamental reason for evaluating the practices of IS management. Furthermore, from a political point of view, this is one of the social requirements that governments must accomplish in order to address the usual citizens' concerns about PA.
- The second one is related to the fact that PAs are great IS consumers, as we have mentioned before. An evident consequence of this is that PA is thus a very interesting and prime customer for any supplier of information systems, technologies or services. Furthermore, a second consequence of this is that the PA can become a leader in promoting positive changes in the ways that IS outsourcing is performed, on how providers act or how the relationship must be managed. For example, by including adequate references to some methodologies or standards in IS calls-for-tenders (i.e. CMMI, ITIL or COBIT), as a compulsory or valuable requirement to accept a bid for any possible provider, a PA automatically increases the awareness, perceived importance and interest of those methodologies or standards within the IS industry under the influence of the PA.

From a scientific research point of view, the importance of IS outsourcing in PA as a worthwhile topic can be found in issues such as:

- The opportunities for extending and innovating on its actual application in the public sector. For example by locating, depicting, analyzing and comparing different real experiences or case studies, by adapting some existing theories (from economic ones such as agency or transaction costs, to organizational ones such as social exchange or power politics), by innovation within IS outsourcing practices (from pre-qualifying providers to monitoring relationships), trends (from total to selective outsourcing, from global to local outsourcing) or in IS outsourcing methodologies or standards (from specific ones like ISPL to general ones such as CMMI or ITIL).
- The possibility of analysing how the existing contextual and idiosyncratic differences between the public and the private sector influence the application of IS outsourcing. That is, trying to find if accepted trends exist that work in the private sector but that

can not be applied to the public one, or that have a different level of usefulness in this specific context.

- The chance for defining a specific recommendation framework for IS outsourcing in PA, through adapting the accepted trends in private sectors, or by developing new ones.

We believe that the above points are fundamental reasons in justifying the need for much more research in this area. Hence, we conclude that there is no reason that justifies the scarcity of scientific research of this topic. As a result of this work, we would like to emphasise the opportunity of this void both from a scientific sense as well as a professional one.

#### 4 OUR MAIN MOTIVATING CASE

Our interest on how information systems of public administrations can be outsourced has led us to examine a real and recent case that we have close at hand: that of the *Generalitat de Catalunya*; the public administration of Catalonia's autonomous government, within Spain.

The autonomous governments (called *autonomías*) are administrations that manage the 19 different territories that make up the Spanish state. As a kind of asymmetrical federal organization, each *autonomía* has its own political framework and each territory has a different degree of influence in economic and political terms. Catalonia contains almost 16% of the Spain's population; it is the second most populated *autonomía* and makes the main contribution to Spain's production of goods and services (GDP: 20.8% in 2005).

The history of IS/IT deployment and management at the *Generalitat* has followed a typical pattern. Aibar et al. (2006) provides an account on that history, but we rely more directly on the second author of this paper, Rafael Macau, who held during many years the position of CEO for the IS/IT business unit within the *Generalitat*, and who was in charge of organizing and putting into practice a total outsourcing project of the unit.

At the beginning of the 80's, each department had its own IS group. This organization lasted only until 1983, given its unavoidable inefficiency. That year, a central office was created as a state-owned company called CIGESA. This company concentrated both human and technological resources and became the IS/IT provider for all the different departments. CIGESA achieved high levels of efficiency and normalized the way things were done. But as the political competences and the importance of the *Generalitat* were increasing, CIGESA also grew. In order to avoid an unaffordable company size, two possibilities were considered. The first one was to maintain the company size by outsourcing part of its activities. The second one was a total outsourcing strategy.

At that moment an urgent need for outsourcing did not exist: lack of productivity or cost opportunities in contrast to market conditions were no reported. However, the expected future grown could have difficult to keep the appropriate skills of technical teams and also the achieved service level. For this reasons, and also driven by environmental tendencies in the public sector and by the incipient *Generalitat* outsourcing policy, CIGESA was proposed as the first relevant outsourcing experience within this particular PA. At the end, total outsourcing was chosen, in spite of some *Generalitat*'s managers considered selective outsourcing as a more accurate decision.

So, in 1998 CIGESA was finally sold to a German group (*Debis Sytemahaus GmbH* that some years later was taken over by *Deutsche Telekom*) for an amount of almost 18 million euros (Gelonch, 1999). The sale included two contracts: one directly related to the CIGESA acquisition and the other related to a four-year servicing relationship. In terms of the first contract, *Debis* had to keep the human resources inherited from CIGESA. In terms of the second one, in order to give *Debis* some guarantees of a reasonable ROI, the company also had to keep a simplified administrative process to maintain the provision for the *Generalitat* public projects. These temporary simplifications and guarantees did not produce a monopolistic situation given that, in the subsequent years, almost 50% of the acquisitions were not made from *Debis*. In addition, as a way of controlling the relationships with all the different providers, including *Debis*, CTTI was created. CTTI is an internal entity within the *Generalitat* that also is responsible for the policy making and management of telecommunications.

After the end of this four-year period, it was planned that *Debis* did not enjoy these favourable conditions anymore. However, as a consequence of the internal situation in the *Generalitat* government, the relationship was automatically extended for two more years but then some criticism of this relationship between *Debis* and *Generalitat* arose. This criticism was centred around possible price differences compared to other market alternatives and with respect to the dangerous dependencies on the provider of the services.

During this time, the government of Catalonia underwent a political change. This change facilitated a move to a new relationship with providers, based on a selective sourcing strategy. Hence, in 2004, procurement activities were addressed to create a pool of authorised providers by pre-qualifying them. So, after the companies passed a certification process, they were allowed to make a bid to the different *Generalitat* projects. The final amount for all the services required was superior to 180 millions euros.

The final stage of the story is what we believe needs to be studied in greater depth as it is of great interest. Similar experiences of pre-qualification are found in the private sector but not in the public one. So, from a in-depth study of this case, we hope to demonstrate the real application of selective sourcing and the pre-qualifying process, its impact on the customer-provider relationship and the results achieved (measured in terms of success and satisfaction indicators).

We expect that with similar research in other cases, it will be possible to advance in the understanding of, and the generation of innovative ideas in IS outsourcing in PA.

## 5 CONCLUSIONS AND INVITATION

In this paper, we have endeavoured to explain that, despite the economic and social importance of the public sector in IS outsourcing, to date not much scientific interest in this topic exists. This is underlined by the few references on this topic found during the analysis of two recent literature reviews on general IS outsourcing.

We also believe that there are no clear reasons that explain this lack of research activity. The importance of investments in this field, the business opportunities for suppliers, the leadership of public activities promoting IS management changes and tendencies or the need to contrast private practices with public ones, all justify the need for much more researching on this subject.

This void provides us with the opportunity of studying a real case in the Spanish PA context, from which we expect to achieve some useful results and conclusions relevant to other similar experiences. In this case study, we want to focus on the current stage of outsourcing: a selective sourcing phase with pre-qualification of suppliers.

Finally, as a consequence of this initial research study, we would like to point out that a research opportunity exists in IS outsourcing in PA. We believe that it is possible to cover this topic starting, as has been usual in the IS field, by studying real cases, and after that, by trying to generalise the findings. Hence, we are interested in promoting a research community to share the knowledge in this field and we would like other researchers to join us in this endeavour.

## References

- Aibar, E., Urgell, F. & Web, Y. 2006. 'Project internet Catalonia (PIC). E-governance and citizens in the Generalitat of Catalonia.' Cap. 9. Catalan version retrieved 14/02, 2007, from [http://www.uoc.edu/in3/pic/cat/pdf/PIC\\_Generalitat\\_2\\_9.pdf](http://www.uoc.edu/in3/pic/cat/pdf/PIC_Generalitat_2_9.pdf)
- Allen, D., Kern, T. & Mattison, D. 2002. 'Culture, power and politics in ICT outsourcing in higher education institutions'. *European Journal of Information Systems*, 11(2), 159-173.
- Andrade, J.A. & Mandrillo, C. 2004. 'El outsourcing de los sistemas de información en las organizaciones públicas'. *Revista venezolana de gerencia*, 9(28), 607-622.
- Beyah, G. & Gallivan, M. 2001. 'Knowledge management as a framework for understanding public sector outsourcing'. *Hawaii International Conference on System Sciences, Proceedings of the 34th, CACM Staff*. 2004, 04. 'News track - political agendas'. *Communications of the ACM*, 47(4) 9-9.
- Currie, W.L. 1996. 'Outsourcing in the private and public sectors: An unpredictable IT strategy'. *European Journal of Information Systems*, 4(4), 226-236.
- De Loff, L.A. 1996. 'Information systems outsourcing decision making: A managerial approach'. *Hershey, PA, USA: Idea Group Publishing*.
- Dibbern, J., Goles, T., Hirschheim, R. & Jayatilaka, B. 2004. 'Information systems outsourcing: A survey and analysis of the literature'. *SIGMIS Database*, 35(4), 6-102.
- García, G. 1996. 'Eurométodo en España'. *Novática* (119). Retrieved 10 oct. 2006.
- Gelonch, A. 1999. 'Incrementant l'eficàcia de l'administració i el servei als ciutadans: El procés d'externalització dels serveis informàtics de la Generalitat de Catalunya'. (Study case No. 1). Barcelona: *Universitat Ramon Llull*.
- González, R., Gascó, J. & Llopis, J. 2006/10. 'Information systems outsourcing: A literature analysis'. *Information & Management*, 43(7), 821-834.
- Hancox, M. & Hackney, R. 1999. 'Information technology outsourcing: Conceptualizing practice in the public and private sector'. *Hawaii International Conference on System Sciences, 1999. (HICSS). Proceedings of the 32nd Annual*.
- Helmerich, A. 'Euromethod Contract Management', in *Handbook on Architectures of Information Systems*, P. Bernus, K. Mertins, G. Schmidt (eds.), Springer, 1998.
- Khalfan, A.M. & Gough, T.G. 2003. 'The IS/IT outsourcing phenomenon in the public sector of a developing country: An exploration of critical issues.' in *Advanced topics in global information management* (pp. 173-206). Hershey, PA, USA: *Idea Group Publishing*.
- Lacity, M. & Willcocks, L.P. 1997. 'Information systems sourcing: Examining the privatization option in USA public administration'. *Information Systems Journal*, 7(2), 85.
- Lee, J.N., Huynh, M.Q., Kwok, R.C.W. & Pi, S.M. (2003). 'IT outsourcing evolution--past, present, and future'. *Communications of the ACM*, 46(5; 5), 84-89.
- Lewis, E.J.E. 1998. 'The use of the risk-remedy method for evaluating tenders for outsourcing information technology in the Australian public sector'. *Information Systems. Proceedings of the Sixth European Conference on, Aix-en-provence, France*.
- Loh, L. & Venkatraman, N. 1992. 'Diffusion of information technology outsourcing: Influence sources and the kodak effect'. *Information Systems Research*, 3(4; 4), 334-358.
- Rapsak, T. & Zagi, Z. 2000. 'Evaluation of tenders in information technology'. *Decision Support Systems*, 30(1), 1.

- Slaughter, S. & Ang, S. 1996. 'Employment outsourcing in information systems'. *Communications of the ACM*, 39(7), 47-54.
- Willcocks, L.P. & Currie, W.L. 1997. 'Information technology in public services: Towards the contractual organization?'. *British Journal of Management*, 8(s1), 107.
- Willcocks, L.P. & Kern, T. 1998. 'IT outsourcing as strategic partnering: The case of the UK inland revenue'. *European Journal of Information Systems*, 7(1), 29-45.