

Exploring Enterprise Information Systems Procurement in Public Service Organisations

Deepak Saxena and Joe McDonagh

Trinity Business School, Trinity College Dublin, Ireland

saxenad@tcd.ie

jmcdongh@tcd.ie

DOI: 10.34190/EJEG.18.1.005

Abstract: Enterprise Information Systems (EIS) are often used by organisations to automate and integrate their business processes to create value and efficiency. However, the majority of EIS research is centred on the implementation phase with relatively little work on the pre-implementation phase. Another gap in the existing literature is that it usually ignores the wider institutional context when determining the generalisability of research findings. This study focuses on the procurement process and analyses three instances of EIS procurement in a public service organisation. The data collection is conducted using a socio-technical systems framework embedded within a case study methodology. Narrative analysis with a processual lens is used as an analytical tool in this study. In contrast to the existing conception of the procurement process as a completely rational and linear decision-making process, our findings explain it as a multi-level process where factors from the work-system and the macrosocial level play a crucial role in influencing the decisions at the organisational level. Technological imperative (work-system level) and business case (organisational level) are found to be critical factors in EIS procurement, in line with previous findings. However, the findings suggest a greater role of the macrosocial factors – EIS market, EIS vendor, and the institutional context. This study also notes the demonstrative nature of certain elements of the EIS procurement process in public service organisations. Thus, this study brings out the complexity and contextual nature of EIS procurement in public service organisations by demonstrating the interplay of factors operating at the work-system, organisational, and macrosocial levels.

Keywords: enterprise information system, EIS, procurement, acquisition, socio-technical systems

1. Introduction

Enterprise Information Systems (EIS) may be defined as complex and large information systems that “integrate and streamline business processes across various functional departments/areas” (Hsieh and Wang, 2007, p. 216) in an organisation. EIS, such as Enterprise Resource Planning systems, are increasingly being deployed by public service organisations to further the goal of digital transformation. However, a major research gap in existing literature is that the majority of EIS research belongs to the implementation phase (Esteves and Pastor, 2001; Esteves and Bohorquez, 2007; Eden, Sedera and Tan, 2012; Saxena and McDonagh, 2017) with relatively less attention given to other phases. Therefore, there have been calls for conducting research on the pre-implementation (Howcroft and Light, 2006; Pollock and Williams, 2007) and the post-implementation (Wagner, Newell and Piccoli, 2010) phases. Another gap in existing research is that it usually ignores the wider institutional context (Avgerou, 2001; Currie, 2009) and generalises findings to all types of organisations, thereby lacking a context-aware perspective (Howcroft, Newell and Wagner, 2004). The crucial role of the institutional context is especially evident in the case of public service organisations which, due to their unique institutional setting, need to fulfil some context-specific requirements (Matinheikki, Aaltonen and Walker, 2019; Moe, Newman and Sein, 2017) during EIS procurement and implementation. Considering the increasing focus of governments towards digital transformation of public services (Curtis, 2019), more research is required in this domain to increase our understanding of EIS procurement in a public service context.

The research question for this study is: *how does the EIS procurement process unfold in a public service organisation and what are the influencing factors?* To answer the question, this study presents a process-oriented socio-technical case study based on three instances of EIS procurement in a public service organisation. The case method is used since the study was conducted in a real-world context where the researcher has limited control over unfolding events (Yin, 2017). The process-oriented perspective allowed us to focus on the sequence of events unfolding over time (Pentland, 1999; Pettigrew, 1997) to search for patterns (Langley et al., 2013; Pettigrew, Woodman and Cameron, 2001) across multiples instances of EIS procurement. Finally, the inclusion of the sociotechnical systems (STS) framework not only supported the examination of the social and the technical (Robey, Anderson and Raymond, 2013), but also helped in presenting a contextual perspective due to inclusion of the macrosocial level (Avgerou, 2001, 2019; Trist, 1981; Winter et al., 2014).

The remainder of the paper is structured as follows. Section 2 presents the literature review associated with EIS procurement. Section 3 provides the justification for and outlines the research methodology employed in this study, along with a short description of the case study organisation. The narrative analysis of the procurement process is presented in Section 4. Section 5 presents a socio-technical understanding of EIS procurement in public service organisations and discusses it in light of existing literature. Finally, section six concludes the paper and notes the implications and the limitations of the study.

2. Literature review

In this study, we refrain from subscribing to any specific model of the procurement process and rely on the empirical case study to develop a socio-technical understanding of the EIS procurement process in public service organisations. Based on the literature review, the EIS procurement process may be viewed as a result of two interrelated processes – technical-managerial and socio-political (Figure 1).

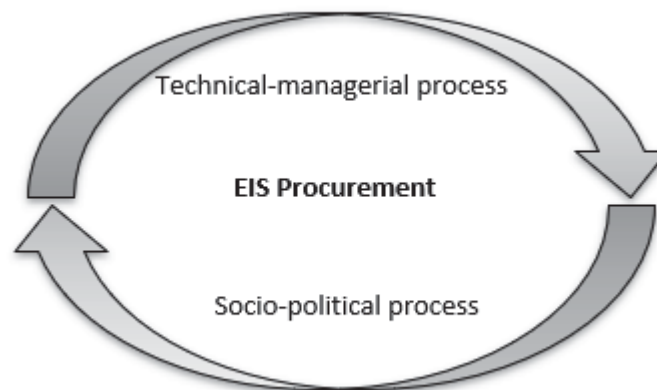


Figure 1: EIS procurement as a technical-managerial and a socio-political process

While EIS lifecycle models (e.g. Markus and Tanis, 2000) often present procurement/adoption/acquisition as one single phase, Verville and Halington (2003) divide EIS acquisition process into six distinctive and interrelated stages – planning, information search, selection, evaluation, choice, and negotiations. However, irrespective of the number of stages, such models essentially subscribe to a technical-managerial philosophy and present EIS procurement as a liner decision-making process within the organisational boundaries (Howcroft and Light, 2010), what Winter et al. (2014) call a ‘container’ approach.

During the early stages of procurement, the organisation becomes aware of the possibility of adopting an off-the-shelf EIS as against developing a bespoke information system. Perceived or expected benefits are usually listed by the organisations as motivations/justifications (Bwalya and Healy, 2010; Oliver and Romm, 2002; Poba-Nzaou et al., 2014) for the EIS adoption decision. System-related justifications relate to system aspects such as dissatisfaction with the existing system, maintainability of the existing system, systems modernisation, integration of IT systems, improvement in IT infrastructure, and improved information access across organisations. Process-related justifications relate to business process aspect of the organisations. These include standardisation and integration of administrative processes, improvement in administrative data accuracy, and improvement in effectiveness of administrative processes. Strategy-related justifications relate to long-term strategy associated with the EIS adoption. These include organisational vision of integration, business considerations, improvement in service quality, supporting organisation growth, and compliance with laws and regulations.

Once the business case is accepted, organisations engage in evaluating diverse EIS packages. In this stream of research (e.g. Gürbüz, Alptekin and Alptekin, 2012; Kilic, Zaim and Delen, 2015), scholars try to isolate selection criteria and to devise algorithms for selecting the ‘best’ EIS for the organisation. In most cases, these criteria are drawn from the justifications/motivations presented earlier. System-related criteria relate to features of the EIS software such as software functionality, system reliability, compatibility with existing systems, ability of cross-module integration, underlying technology standards and protocols, compliance to international standards, ease of use, ease of customisation, maintainability of the system, and security.

Business-related criteria usually flow from the business case put forward during the adoption phase and include business related aspects such as business vision, brand image, market position, better fit with organisational structure, fit with parent/allied EIS, prevalent EIS in the same industry, and fit with business processes. Vendor related criteria primarily relate to project cost. The cost considerations include hardware, software and network cost, license cost, consultancy cost, user training cost, and support and maintenance cost. Other vendor related criteria include vendor's market position, vendor's domain knowledge, vendor and product reputation, adequacy of consultants, and quality of after-sales service.

While the literature discussed so far exhibits a technical-managerial orientation, another interpretation of EIS procurement rejects the notion of completely rational procurement processes and offers a socio-political view. This view rests upon two main arguments. The first argument focuses on the fluid nature of the organisation's requirements and the EIS package. The requirements of the organisation may be unclear or continually emerging (Cox, Roberts and Walton, 2012; Howcroft and Light, 2010), and different units may present differing and competing sets of requirements (Berente et al., 2019; Matinheikki, Aaltonen and Walker, 2019) for an EIS package. Similarly, although the EIS package is often portrayed by vendors as a comprehensive and complete solution, scholars (Gosain, 2004; Pollock and Cornford, 2004) argue that an EIS is usually a work-in-progress which is in constant development and should be viewed in more fluid terms. Due to the opaque nature of the EIS architecture, the precise characteristics of an EIS are difficult to ascertain (Entwistle and Light, 2008; Moe and Päivärinta, 2013; Pollock and Williams, 2007) without actually implementing it. Although adopters may visit reference sites, such sites may not be completely similar to the adopting organisation (Entwistle and Light, 2008; Pollock and Williams, 2007). The second argument in this strand speaks to the social and political nature of the acquisition process. Even if one may accept the notion of EIS as a static system, the same technology may be evaluated differently by different social groups in the organisation (Berente et al., 2019; Cox, Roberts and Walton, 2012; Saxena and McDonagh, 2016). The formal evaluation process may not occur at all or it may be conducted only to support a pre-determined decision arrived at based on politics between senior management, IT managers, vendors, consultants, and end-users (Howcroft and Light, 2006, 2010). Further complicating the matter, there might be multiple institutional logics (Berente, Gal and Yoo, 2010; Berente et al., 2019; Matinheikki, Aaltonen and Walker, 2019) operating in public service organisations, making it difficult to form a universally accepted view of the procurement process.

Reconciling the technical-managerial and socio-political view of the EIS acquisition process, Pollock and Williams (2007) argue that although the packaged software procurement process is influenced by social factors, organisations do not completely do away with the rational evaluation process. As Moe, Newman and Sein (2017) demonstrate, the public procurement process can be understood more as a dialectic between the two. In other words, although the procurement process is not smooth and linear as suggested by the technical-managerial strand, organisations still try to rationalise and formalise the decision-making. To paraphrase Tingling & Parent (2004) – processes of rationality, organisational structures, and processes of legitimisation – all have an impact on the procurement decision. Hence, in this research we adopt a socio-technical perspective to examine all relevant factors influencing the procurement process.

3. Research methodology

To answer the research question (*how does the EIS procurement process unfold in a public service organisation and what are the influencing factors?*), we adopted a multi-level qualitative case study involving retrospective and real-time processual analysis (Leonard-Barton, 1990; Pettigrew, 1990). Since the research question is of the 'how' type, and we wanted to conduct research in the real-world context (Yin, 2017), we opted for a case study methodology. Since we were analysing multiple instances of EIS procurement, process tracing (George and Bennett, 2005) was a major goal of the case study and there was a search for patterns (Pettigrew, 1997; Pettigrew, Woodman and Cameron, 2001) across process instances. Finally, an STS framework was included as a theoretical lens in the case study since it allows for the incorporation of the macrosocial context (Avgerou, 2001, 2019; Trist, 1981), thereby moving beyond a 'container' approach (Winter et al., 2014).

The case organisation is a Blood Service Organisation (BSO, a pseudonym) engaged in the processing of blood and associated products. BSO belongs to the public sector of one of the parliamentary democracies from Western Europe. Although constituted as a self-financed public service body, BSO requires the approval of its parent government department for major capital investment, including strategic information systems procurements. Due to the key requirement of traceability, the blood bank industry is information intensive.

Therefore, BSO engaged in three instances of a Blood Bank System (BBS) procurement and implementation between 1999-2015. The case was considered ideal in terms of presenting an opportunity to look for patterns (Langley, 1999; Langley et al., 2013; Pentland, 1999; Pettigrew, 1997; Pettigrew, Woodman and Cameron, 2001) across three instances and to explore the influence of one instance on subsequent ones (Pollock and Williams, 2009; Williams and Pollock, 2012).



Figure 2: Research methodology used in the study

Figure 2 illustrates the research methodology used in this study. Data collection for the study commenced with secondary data collection (Table 1). Secondary data included documentation made publicly available by the case organisation as well as other public agencies. Some project documentation was also provided by the case organisation. We performed a preliminary analysis of the secondary data before conducting the interviews. Analysis of the documents served three purposes. First, it enabled us to arrive at a detailed chronology of events. Second, it guided us towards identification of key actors as interview participants. Finally, it also sensitised us towards certain aspects around which interview questions could be framed.

Table 1: Classification of secondary data collection

Corresponding level (Trist, 1981)	Secondary data collected
Macrosocial	Reports from the public auditor, debates of parliamentary committee, reports by other commissions
Organisational	Annual reports, board meeting minutes, strategic plans
Work-system	User requirement specifications, project audit

Primary data collection consisted of in-depth qualitative interviews with the participants identified based on the secondary documents. To ensure internal generalisation, we interviewed participants from top management, implementation team (with members drawn from IT and business), and user groups. Furthermore, we also asked participants if they would recommend additional key actors to be interviewed. We took special care in balancing the affiliation in terms of top management team, project team, and user groups in order to increase internal generalisation. In total, we conducted 24 interviews with 25 participants (one interview had two participants) which amounted to 1312 minutes averaging to 54.6 minutes per interview. All but three interviews were recorded and transcribed verbatim by the first author. Detailed notes were taken during the three interviews for which the recording was not permitted. Table 2 presents the interview participants’ profile. In the paper, interview participants are referred to as P1, P2, P3 and so on along with their affiliation as noted in the table.

Table 2: Profile of interview participants.

Participant’s Primary Affiliation	No. of Participants
Top Management Team (TMT)	6
Project Team (PT)	8
User Groups (UG)	11

To ensure consistency with the STS framework, the interview schedule included questions related to the project (work-system), organisational, and the external context (macrosocial level). However, instead of following a fixed structure, the responsive interviewing method (Rubin and Rubin, 2011) was followed in which subsequent questions are asked based on a participant’s initial responses. Once the data was collected, a descriptive case narrative was written describing the events, structure and context. The strategy of temporal bracketing (Langley, 1999) was used to write the case narrative. For this purpose, the key events at all three levels (macrosocial, organisation, and work-system) were identified across the timeline (1999-2015). Subsequently, the event-sequence and related interconnections were identified (as presented in Section 4).

In this study, the narrative was not merely used as a description tool but also served as an analytical device (Cloutier and Langley, 2020) for identifying underlying structures in processual analysis. Narrative analysis was chosen over other analytical methods since the processual analysis that draws on narrative data is considered “particularly close to the phenomena” (Pentland, 1999 p.712) it seeks to explain. This essentially reflects a ‘theory as narrative’ view (DiMaggio, 1995) in which an explanation is viewed as a story describing the sequence of events, connecting the cause with effects. Once the narrative was complete, further analysis involved examining and explaining the narrative based on the patterns (Langley et al., 2013; Pettigrew, Woodman and Cameron, 2001; Pentland, 1999) observed across EIS procurement instances and explaining the sequence of events. The focus was on developing an explanatory framework (Cloutier and Langley, 2020) that moves beyond the description and provides an explanation of unfolding events within a well-defined context (Avgerou, 2019). The resultant explanatory framework is presented in section 5 in the form of a socio-technical understanding of the procurement process in a public service organisation.

4. Narrating the sequence of events

Figure 3 illustrates the sequence of events in the case study. Following Langley’s (1999) strategy of temporal bracketing for processual analysis, the case narrative (Pentland, 1999) is divided into three procurement instances, with the pseudonyms given as BBS-I, BBS-II, and BBS-III with the separation between instances denoted by solid lines. It is understood that this separation includes the implementation (which is not investigated in this work). Here we discuss the predominant events at the three STS levels (Trist, 1981; Winter et al., 2014) as they relate to the EIS procurement process. Since events at one level have an impact on the events at other levels, the division between the levels is shown as dotted lines.

4.1 Existing system limitations

The motivation for adopting BBS-I stemmed from the work-system level due to the limitations of the existing system. The existing system, namely Blood Bank Control System (BBCS), had limited functionality and offered limited avenues for analysis due to a lack of integration across offices, as noted below.

When I came in 1999, there was a system called BBCS, which was bespoke system. It only managed the donor records. It didn't manage anything happening at the clinic, and it didn't manage the laboratories. (P2, TMT)

Before the BBS-I, we had the BBCS and we had the separate box in [Centre 1] and a separate box in [Centre 2]. So, the results, you know, there was no link between them. (P20, PT)

Another crucial issue was the prevailing Y2K issue which, if unresolved, could cripple the system. BSO was concerned that BBCS was not Y2K compliant and there was no assurance that it could be made so. It was identified that urgent action was required to ensure the continuity of operations after 31st December 1999.

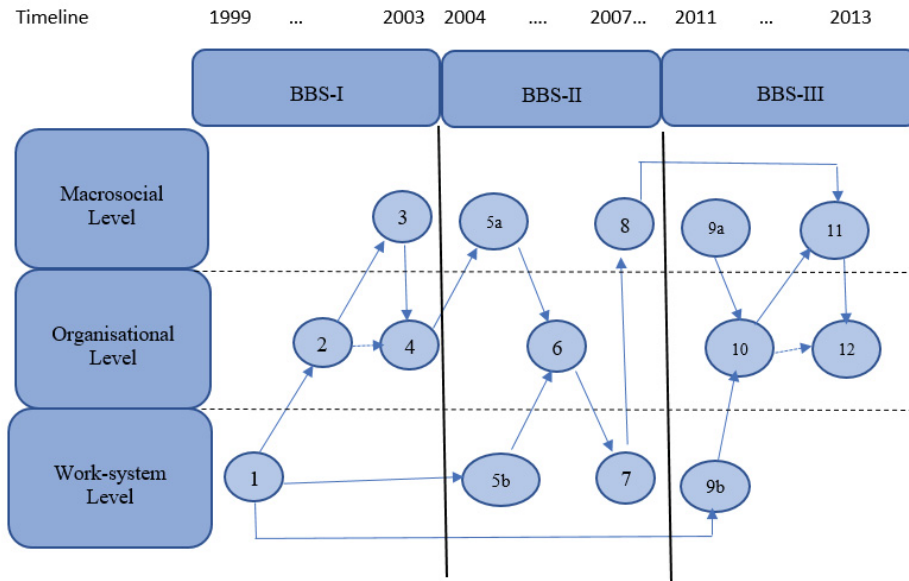


Figure 3: Sequence of Events in the Case Study

1. Existing system limitations motivate adoption of a new system.
2. Business case for EIS adoption
3. Institutional approval, public tendering and market response
4. BBS-I acquisition
- 5a. The vendor offers BBS-II
- 5b. Proposed features of BBS-II
6. Business case and acquisition of BBS-II
7. Implementation failure
8. Parliamentary scrutiny
- 9a. Vendor’s push for adopting new system
- 9b. System obsolescence motivates adoption of a new system
10. Business case for BBS-III adoption
11. Institutional approval, public tendering and market response
12. BBS-III acquisition

4.2 Business case for EIS adoption

At the organisational level, the justification for BBS-I was expressed in terms of what it could offer upon implementation. For BSO, BBS-I offered the opportunity to integrate its donor information from procurement to transfusion following industry’s best practices and to build a national database of blood banking. While integration motivations are justified, the ‘best practices’ motivation looks more like rhetoric since BSO ended up implementing the same business processes on BBS-I, as noted by one participant:

We took BBS-I and we changed it to suit us rather than take BBS-I and say - well, okay, well that's a different way of doing things; we're going to move and do it that way. So, we did some of that, but it was slow. So, instead there was an awful lot of, and BBS-I does allow for a lot of user configuration, but we did probably too much user configuration and ended up doing more or less of what we'd always been doing... using BBS-I to, not to, not to drive that process but to record that process. (P19, UG)

A major focus of the adoption argument was also geared towards provision of increased donor and patient safety made possible by the new system. The safety could be ensured by donor recruitment and screening (aided by database integration) at the donation stage, tracking of blood from donation clinics to the hospitals (due to business process integration), and parameter checks (made possible by parameterisation of the system) at issue stage.

4.3 Institutional approval, public tendering and market response

For BBS-I, the BSO approached the parent government departments for its approval. Upon receiving approval, BSO went with a public tender for the acquisition of a new system. Going with a public tender is a key feature of public sector procurement processes (Matinheikki, Aaltonen and Walker, 2019; Moe, Newman and Sein, 2017) in the European Union. However, due to niche nature of the blood bank market, only two vendors were short-listed for consideration.

4.4 BBS-I acquisition

One of the vendors was a dominant supplier of blood bank control systems to transfusion services across the world at the time. As one participant recalls:

When we went with BBS-I, it was in New Zealand, it was in Australia, it was in Scotland, it was in several places in the US, it was in France, it was in Netherlands, it was in Finland and one or two other places as well. (P19, UG)

Another key factor for BBS-I acquisition was the level of integration offered by the product. The solution from the other vendor did not have an integrated system. It offered two different software packages to manage the blood collection process and the production process. In contrast, BBS-I offered an integrated system to manage the entire blood operations. After evaluation, BSO selected BBS-I for implementation.

4.5 A new system (BBS-II)

Within a year after BBS-I rollout in 2003, BSO decided to adopt BBS-II developed by the same vendor. Like BBS-I, adoption motivations for BBS-II also stemmed from the work-system level. Work-system related justification included hardware obsolescence, limitations of flat-file system underlying BBS-I, and data recovery ability of BBS-II. As one participant notes:

Because of the length of time taken to implement BBS-I, the BSO was left in a situation where the hardware on which it was operating had reached the end of its life and needed to be replaced. It made good economic sense to upgrade the current blood bank control system at the same time... [BBS-I] technology has a flat-file structure which makes it very difficult to extract effective management information in a timely manner. (P2, TMT)

The flat-file structure underlying BBS-I offered limited data recovery abilities and always had the risk of data inconsistency where the same data was updated in one file and not updated in the other. BBS-II, due to its underlying relational database system, offered to solve these two problems. A relational database design not only ensured data consistency across different tables; it also offered the facility to fully recover the data right up to the point of failure.

4.6 Business case and acquisition of BBS-II

At the organisational level, justifications for BBS-II included introducing operational efficiency, generation of management reports, and providing strategic advantage to BSO among its peers.

Part of the reason we went early with BBS-II was we thought it gave us a good opportunity for improving the costs in our donor collections... We were very inefficient at the clinics. It's laborious, it's time-consuming; it's the opposite of lean... We saw it as solving a whole lot of problems that we had mostly at the clinic level. (P19, UG)

The justifications for BBS-II adoption reflects the assumption that merely connecting all the information systems will solve the organisational problems, despite some cautionary tales (Mangan and Kelly, 2009) that merely automating business processes using IT may not result in operational efficiency. Similarly, although it is known that relational databases allow generation of management reports due to connectivity among tables, BBS-II was a new software and was not implemented elsewhere. Consequently, BSO did not have any evidence for the reporting functionality offered by BBS-II. The justification was based more on the potential reporting capabilities rather than actual reporting capabilities.

For BBS-II acquisition though, BSO neither sought approval from its parent government department nor did it go with the full public tendering process. First, a project definition for the implementation of BBS-II, which included a business case, was drawn up in May 2004. The vendor sent an official proposal for the BBS-II project to the BSO in Oct 2004, which was then accepted by the project steering group.

4.7 Implementation failure

However, since BBS-II was the first time the vendor was offering a relational database version of its system, it was not fully developed when BSO decided to implement it. BSO was the first user of the software and the vendor was still developing the software. As participants recall:

(BBS-II) wasn't a mature software application... We probably would have been one of the first sites to go with it... it would have been the first time they were really cutting their teeth in the open market. (P3, PT)

When we went with BBS-I, it was the state of the art and if there was a problem in getting it in, it was because of us, not because of the system. The system was working very well in very good blood transfusion services. BBS-II wasn't like that. (P19, PT)

As it turned out, this was the single biggest challenge in the BBS-II implementation. Due to consistent bugs identified in the system, eventually BSO decided to abandon the project in 2007, writing off €729,000.

4.8 Parliamentary scrutiny

This loss of public money invited bad press and an audit by the public auditor in 2008. The audit revolved around the procurement process and the implementation. In its review, the auditor asked questions on the absence of public tendering processes in BBS-II acquisition. BSO justified the procurement process before the parliamentary committee as noted below:

When [BSO] initially purchased BBS-I it followed a full tender process and there was only one other supplier shortlisted for consideration. Senior staff of the [BSO] regularly attend conferences and scientific meetings where suppliers of all major systems and equipment for use in blood transfusion services exhibit. In addition, the national blood services in Europe have formed an association that meets biannually where all areas of activity are discussed. There was no evidence at either of these fora that an appropriate alternative system to BBS-I had come to market. Therefore, it was a reasonable course of action not to go through a formal tender process when the decision was taken to upgrade to BBS-II. In fact, during this time one European blood service had carried out a benchmarking exercise to examine all possible systems available or that could be customized to provide a blood bank control system and decided to purchase BBS-II.

As one can see here, the justifications for this were primarily drawn from the external market context and included system usage in other blood banks coupled with the dominant market position of the vendor. It also made use of the benchmarking exercise conducted by other blood banks to justify BBS-II acquisition.

4.9 BBS-III adoption

Adoption motivations for BBS-III were primarily work-system and vendor driven. The case evidence suggests that the end of software lifecycle and vendor support were the two main reasons for BBS-III adoption.

We have to do it because it the end of life [for the software]. If we don't, [the vendor] won't support any longer. (P9, PT)

BBS-I software is towards the end of its operational life and... [the vendor] has indicated that they could support the existing version of BBS-I only around 2014 or so. (BSO Board Minutes, 2010)

Consequently, BSO either needed an upgrade of the existing system or a replacement of the existing system with a new one. It cannot be denied that since the vendor was offering a new system, BSO sought to adopt it. The vendor arguably played a major role in BBS-III adoption by indicating the end of support for BBS-I, thereby nudging BSO to look for a new solution.

4.10 Business case for BBS-III

Once the adoption decision was taken, BSO included organisational justifications in the business case. Users were involved in writing user requirement specification (URS) documents for their respective functional areas.

We set down with all the user departments, we gathered up all the requirements, we determined what was phase-1; we determined what was phase-2. (P5, PT)

However, it was also expressed by participants that writing URS was probably not given much attention and users had very little role in decision-making processes.

I think, again more time should be given to writing the URS... Probably not enough time was put in at that stage of the process. (P16, PT)

I was told I was being part of URS... We were given documents from the (another) blood service and more or less told to copy and paste them... To my mind, I wasn't given any opportunity... to say - okay, what are the problems we have with BBS-I that really give us headaches, and let's try and avoid that for the next time... but it's only kind of dawning on me now. I feel that we were pushed into the project. (P17, UG)

4.11 Institutional approval, public tendering and market response

Although earlier instances also note it, the acquisition process for BBS-III demonstrates the full impact of BSO's institutional context. After taking an acquisition decision, when BSO approached the parent government department for its approval, the department vetoed not only the BBS-III project but also the other IT projects (BSO Board Minutes, Dec 2010). Interestingly, this was due to some other factors not directly related to the project, as noted below:

We were getting at this thing, what we were getting to the decision-making points of this thing, right to the point of the crash hitting the country. So, there was whole question of how much money we are going to spend. Which were, these were very legitimate questions to ask us - 'why do you need to do this?' (P1, TMT)

We did need to get department of health approval to proceed with the project. That was difficult to achieve because we are in dispute with them over [an administrative] issue... I think it didn't impact on conduct of the project. It was more to get approval at the beginning of the project to commence, the project initiated. (P3, PT)

Here one can note the importance of macro-economic and institutional contexts in the acquisition phase. The recession at the macro-economic level forced governments to be prudent in their spending and questioning the requirement and justification for the investment. At the same time, it also underscores the importance of institutional context in terms of getting approval. The logjam with the department continued for some months where BSO kept trying to convince the department and the department kept vetoing the implementation. Ultimately, BSO used similar arguments to those used in the adoption phase – technical constraints, and the criticality of blood operations, as noted below:

[The CEO] eventually wrote to the department, saying - 'That's okay. If the existing hardware falls over, and if the existing software is no longer supported, I'm sure you'll take responsibility for the impact of that on the national blood supply and the supply of that to the patient.'... They straightaway came back and said, okay go ahead. (P1, TMT)

Once the project got approval, BSO went ahead with the public tendering process, perhaps learning from its earlier experience.

4.12 BBS-III Acquisition

However, external market conditions did not change much in terms of the availability of solutions or the vendor's dominance, as noted by one respondent:

We held a competitive tendering process. Okay, so, we went for Request for Information first and then we had the tendering process. The request for information process came back with four suppliers. A lot of the responses didn't cover tissue system and didn't cover a patient or a risk system or whatever else.... we didn't have a conglomerate that came together and say we'll give you all these... [Existing vendor] came out to be clear winners because they could answer very much all the elements of it. (P3, PT)

At the time of acquisition, BSO also decided to go for the complete suite offered by the vendor to further its goal of further business process integration. Although it was theoretically possible for BSO to implement different modules for different functions, they opted for the complete suite offered by the same vendor. The justifications mainly relate to interfacing between modules, as noted below:

There may be a case – and some services have done it – to take individual modules like appointments systems or a customer relationship management and to buy those off the shelf from specific companies; but then they have always got the problem of bringing it back in-house and integrating the two together. So, my preference would always be to try to go for the full integrated package. (P1, TMT)

The vendor’s push was also evident in the acquisition of the complete suite since acquisition of only one module would have resulted in the loss of business integration. As one participant notes:

Our main system was still going to be provided by [existing vendor] and we were going to have to have multiple, I suppose, systems then trying to communicate with them. They already provide a solution in that space. (P5, PT)

5. A socio-technical understanding of the EIS procurement process

Based on narrative analysis and the patterns identified in the three instances (Langley, 1999; Pentland, 1999; Pettigrew, 1997), it becomes clear that EIS procurement is a complex process and is influenced by various socio-technical factors at different levels. Figure 4 represents a socio-technical understanding of the EIS acquisition process. It may be noted that Figure 4 essentially draws from Figure 3 in deriving the general (factors) from the specific (case events), thus developing an explanatory process theory (Cloutier and Langley, 2020; Pentland, 1999) providing contextual explanation (Avgerou, 2001, 2019).

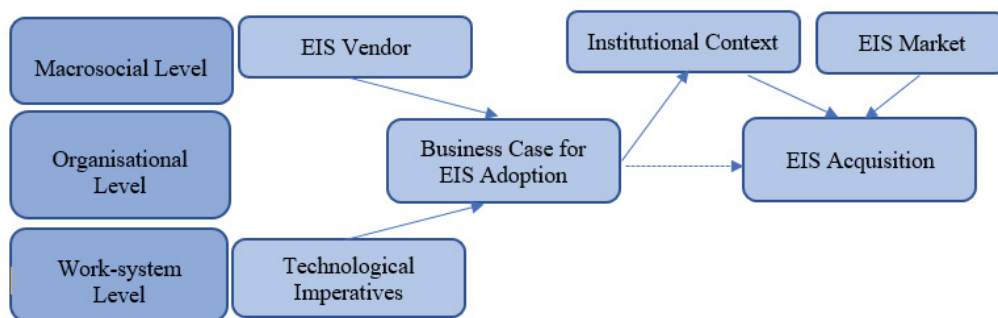


Figure 4: A socio-technical understanding of the EIS acquisition process

5.1 Technological Imperatives

Technological imperatives operate at the work-system level and are primarily related to constraints/features of the technology. The constraints associated with the existing EIS usually provide the justifications for moving away from the old system. BBS’s inability to integrate information and limited functionality paved the way for BBS-I adoption, whereas limited reporting capabilities of BBS-I provided justification for moving to BBS-II. At the same time, enabling features of new technology also act as justification for the introduction of the system. While BBS-I offered benefits of database integration across two centres of BSO, BBS-II seemed to offer the benefits associated with a relational database in terms of data consistency and data recovery. Therefore, the findings support the assertion that adoption motivations stem from the constraints of existing systems and the

affordance of the proposed system (Alves and Matos, 2011; Oliver and Romm, 2002; Laukkanen, Sarpola and Hallikainen, 2007; Raymond, Uwizeyemungu and Bergeron, 2006; Poba-Nzaou et al., 2014).

5.2 EIS Vendor

Factors related to the EIS vendors operate at the macrosocial level and reflect in the vendor's push for EIS adoption. Since BBS was developed in-house, there was no influence of any vendor in the adoption motivation for BBS-I. However, since BSO was already using BBS-I, it considered implementing BBS-II from the same vendor immediately after BBS-I was rolled out. The finding supports the observation (Markus and Tanis, 2000) that once the customers have signed the contract and have put substantial organisational and financial resources into the process of implementation, they become reluctant to shift allegiance and in turn may become locked into a vendor's product development trajectory. Furthermore, as evident in the case of BBS-III procurement, customers often do not wish to replace the system (Furneaux and Wade, 2017) considering the learning and training costs associated with a new system. To paraphrase Howcroft and Light (2010, p.142), technological legacies and histories shape decisions for the future. In such a case of being tied to a vendor, the client becomes active in the user group and engages with the vendor in an attempt to influence their plans for product enhancement (Markus and Tanis, 2000; Howcroft and Light, 2010), as BSO tried to do by being the first implementer of BBS-II. As far as BBS-III adoption is concerned, it is clear from the case that the vendor played a major role by signalling the end of support for the existing system, thereby supporting the findings by Khoo and Robey (2007) and Khoo, Robey and Rao (2011) on the vendor's role in the post-implementation phase.

5.3 Business case for EIS Adoption

Supporting the existing literature (Adam and O'Doherty, 2000; Alves and Matos, 2011; Laukkanen, Sarpola and Hallikainen, 2007), the business case for EIS adoption in BSO included operational and strategic justifications such as business process integration, operational efficiency, and business vision. BBS-I adoption was characterised by focus on integration of blood operations from blood donation to issue to hospitals. It was also justified by the business vision for donor and patient safety due to an integrated database. Empirical evidence from the case study also supports the applicability of factors such as perceived benefits (Bwalya and Healy, 2010; Oliver and Romm, 2002; Poba-Nzaou et al., 2014). For BBS-II, the business case put forward was that of ensuring organisational efficiency, enabling managerial decision-making, and organisation's strategic advantage. It was argued that generation of management reports by BBS-II would result in better managerial decision-making. For BBS-III, organisational motivations involved pursuing further business process integration and portraying an image of a 'twenty-first century' organisation, showing compliance with the accepted norms (Currie, 2009; Oliver and Romm, 2002) to obtain legitimacy.

Analysis also points at the partly demonstrative nature (Berente, Gal and Yoo, 2010) of the business case. While the organisational motivation of business process integration was followed in all three cases, business vision mostly seemed to serve demonstrative purpose. Although the business vision of efficiency was put forward in all three cases, there was no serious effort on reengineering business processes for efficiency. Similarly, generation of management reports was put forward as a justification for BBS-II although there was no prior evidence for the claim. As the evidence from BBS-III suggests, the user community was a bit marginalised (Lyytinen and Newman, 2015) in the procurement decision and the business case was prepared mostly to support a pre-determined decision (Howcroft and Light, 2006, 2010) based on the two macrosocial factors, as discussed in the following sections.

5.4 Institutional context

Based on the patterns identified in the three instances, it becomes clear that the macrosocial context played a crucial role in the EIS procurement process at BSO. As noted earlier, business case largely served the demonstrative purpose and there was no serious pursuit of organisational justifications beside business process integration. This might be due to the public service context of the organisation, since Berente, Gal and Yoo (2010) report similar practice of the public display of compliance through demonstrative actions. Based on their study of four public universities, Oliver and Romm (2002) also note that public organisations often engage in justifying their EIS adoption by alluding to what they call 'technical rationality'. They note that compliance with the accepted and emerging norms of technical rationality (e.g. following best practices, using the state-of-the-art system) becomes a way of obtaining legitimacy but never gets institutionalised in the organisation.

For both BBS-I and BBS-III, the institutional context mandated the public tendering process (Cox, Roberts and Walton, 2012; Matinheikki, Aaltonen and Walker, 2019; Moe, Newman and Sein, 2017) for procurement. In case of BBS-II where the public procurement process was not followed, BSO ended up providing a post-facto justification to the public auditor and the parliamentary committee of public accounts. In this sense, institutional context of BSO was influential in all three instances of procurement. Case findings also highlight the specific role played by top management in working with the institutional context (Liang et al., 2007) during the procurement process.

5.5 EIS market

Apart from institutional context, EIS market was also found to be influential at the macro level in all three instances. This was primarily due to vendor's dominance in a niche market and widespread use of the system in the blood bank industry. Monopoly market structure of the niche market (Olsen and Sætre, 2007; Pollock and Cornford, 2004) constrained the choices available to BSO. Standard EIS vendors such as SAP prefer to compete in the crowded (oligopolistic) market since their commitments to the crowded market can mitigate concerns about compatibility between the components purchased from several suppliers (Chellappa, Sambamurthy and Saraf, 2010). In the context of health services, however, very few IT vendors possess the appropriate capabilities and skills to fully appreciate, understand, and mediate with institutional context of the health sector (Currie, 2008). Moreover, blood banks form a very small part of the larger healthcare IT market (Raghupathi and Tan, 2002, 2008). Furthermore, the widespread use (Raymond and Uwizeyemungu, 2007) of BBS-I in the blood bank market drove BSO towards the acquisition decision. Similar market conditions prevailed during BBS-II and BBS-III acquisitions, resulting in the EIS procurement from the same vendor. The niche nature of the blood service seems to be responsible for the influential role played by a dominant vendor.

5.6 EIS acquisition

Not much data was available on the tender evaluations for BBS-I and BBS-II. The tender evaluation for BBS-III reportedly involved technical evaluation, business fit evaluation, project methodology, and cost. System functionality was measured mostly in terms of availability of the functions specified in the URS, though it appears that evaluation was primarily based on information submitted in the bid by the vendor. This is why the arrow from the business case to EIS acquisition is shown as dotted lines in Figure 4, since the acquisition seems to be driven more by the institutional context and EIS market and less by the business case. The findings partly support the prescription of techno-managerial literature (Gürbüz, Alptekin and Alptekin, 2012; Kilic, Zaim and Delen, 2015) that organisations evaluate the EIS based on the technical and business criteria. The study rather strongly supports the observation (Entwistle and Light, 2008; Moe and Päivärinta, 2013; Pollock and Williams, 2007) that it is usually difficult to evaluate the functionality of an EIS artefact without actually implementing it. This makes the gap analysis and evaluation process dependent on the features reported by the vendor and renders it less than rational. However, BSO still engaged in a formal gap analysis of the EIS during the tendering process. It supports the contention that despite its limitations, organisations do not completely discard the rational evaluation process (Pollock and Williams, 2007; Moe, Newman and Sein, 2017). BBS-III acquisition in particular supports the finding by Kauffman and Tsai (2009) that firms have moved toward a unified procurement strategy for EIS solutions, thereby trying to avoid any integration issues (Laukkanen, Sarpola and Hallikainen, 2007).

6. Conclusion, implications and limitations

Governments all over the world are increasingly focussing on the digital transformation of public services (Curtis, 2019). EIS may play a big role in this transformation by providing business process standardisation and integration. However, limited research is done on EIS procurement in the public service context. By conducting a case study of three instances of EIS procurement, this study responds to the call for research on pre-implementation phase (Howcroft and Light, 2006; Pollock and Williams, 2007). By explicitly focussing a public service organisation, this study helps in developing a contextual perspective (Avgerou, 2001, 2019; Howcroft, Newell and Wagner, 2004) on EIS research. The study demonstrates that EIS procurement is a socio-political process and the factors emerging at all three STS levels influence the procurement process in a public service organisation. However, the most notable finding of this study is influence of the macrosocial factors, namely the institutional context and the EIS market structure over the procurement process. While the work-system and organisational-level factors prompt the adoption decision, macrosocial factors tend to have more influence over the acquisition process. In summary, this study brings out the complexity of EIS procurement in

public service organisations that result from the interplay of factors operating at the work-system, organisational, and macrosocial levels.

A key implication of this study is that public service practitioners need to be aware of the institutional and sector-specific context in order to align the procurement process with the prevalent legitimacy expectations. They also need to engage more closely with the vendors if they are operating in a niche sector. In this regard, public policy makers may also need to think beyond their standard operating procedures and support alternate procurement strategies. For instance, Matinheikki, Aaltonen and Walker (2019) outline the formation of multiparty alliance for a lakeside tunnel project in response to the institutional complexity of the public sector. This kind of temporary structure may help managers in successfully coping with multiple institutional logics (Berente et al., 2019) in operation.

A couple of limitations of this study are to be noted. One limitation stems from the research methodology adopted. Following a case study approach, we cannot claim for the external/statistical generalisation, as findings are context specific to a public sector organisation in a western democracy. However, what we aim for is providing a contextual explanation (Avgerou, 2001, 2019; Cloutier and Langley, 2020; Pentland, 1999) which could be used to drive theoretical propositions. Therefore, to achieve external generalisation, the future work may engage in investigating case organisations from other sectors/countries to explore the EIS procurement process in other contexts. A second limitation stems from the composition of the participants who belong to the organisation procuring the EIS, thereby excluding the viewpoints of the vendor and the parent department. Although the triangulation of data (Yin, 2017) partly remedies this situation, inclusion of a vendor perspective in future work would strengthen the findings of the study. Despite these limitations, however, we believe that we have presented a rich picture of the procurement process from a socio-technical perspective and have uncovered contextual aspects largely ignored in extant literature.

References

- Adam, F. and O'Doherty, P., 2000. Lessons from enterprise resource planning implementations in Ireland—towards smaller and shorter ERP projects. *Journal of Information Technology*, 15(4), pp.305-316.
- Alves, M. and Matos, S., 2011. An investigation into the use of ERP systems in the public sector. *Journal of Enterprise Resource Planning Studies*, 2011, pp.1-5.
- Avgerou, C., 2001. The significance of context in information systems and organizational change. *Information Systems Journal*, 11(1), pp.43-63.
- Avgerou, C., 2019. Contextual explanation: alternative approaches and persistent challenges. *MIS Quarterly*, 43(3), pp.977-1006.
- Berente, N., Gal, U. and Yoo, Y., 2010. Dressage, control, and enterprise systems: the case of NASA's Full Cost initiative. *European Journal of Information Systems*, 19(1), pp.21-34.
- Berente, N., Lyytinen, K., Yoo, Y. and Maurer, C., 2019. Institutional logics and pluralistic responses to enterprise system implementation: a qualitative meta-analysis. *MIS quarterly*, 43(3), pp.873-902.
- Bwalya, K.J. and Healy, M., 2010. Harnessing e-government adoption in the SADC region: a conceptual underpinning. *Electronic Journal of E-government*, 8(1), pp. 23-32.
- Chellappa, R.K., Sambamurthy, V. and Saraf, N., 2010. Competing in crowded markets: Multimarket contact and the nature of competition in the enterprise systems software industry. *Information Systems Research*, 21(3), pp.614-630.
- Cloutier, C. and Langley, A., 2020. What makes a process theoretical contribution?. *Organization Theory*, 1(1), pp.1-32.
- Cox, M., Roberts, M. and Walton, J., 2012). IT outsourcing in the Public Sector Local Government: experiences of the management and selection of IT service providers. *The Electronic Journal Information Systems Evaluation*, 15(3), pp.231-243.
- Currie, W., 2008. Evaluating the governance structure for public sector IT: The UK National Programme in the Health Service. IN: Z. Irani and P. E Love,, Eds. *Evaluating information systems: public and private sector*. London: Routledge. pp.199-217.
- Currie, W., 2009. Contextualising the IT artefact: towards a wider research agenda for IS using institutional theory. *Information Technology & People*, 22(1), pp.63-77.
- Curtis, S., 2019. Digital transformation—the silver bullet to public service improvement?. *Public Money & Management*, 39(5), pp.322-324.
- DiMaggio, P.J., 1995. Comments on “What theory is not”. *Administrative Science Quarterly*, 40(3), pp.391-397.
- Eden, R., Sedera, D.D. and Tan, F., 2012. Archival analysis of enterprise resource planning systems: the current state and future directions. *Thirty Third International Conference on Information Systems*, Orlando 2012
- Entwistle, I. and Light, B., 2008. Spot the difference: evaluation of custom and package applications. In: Z. Irani and P. E., Love, Eds.) *Evaluating information systems: public and private sector*. London: Routledge. pp.154-169.
- Esteves, J. and Pastor, J., 2001. Enterprise resource planning systems research: an annotated bibliography. *Communications of the Association for Information Systems*, 7(8), pp.1-52.

- Esteves, J. and Bohorquez, V., 2007. An Updated ERP systems annotated bibliography: 2001-2005. *Communications of the Association for Information Systems*, 19(1), pp.386-446.
- Furneaux, B. and Wade, M., 2017. Impediments to information systems replacement: a calculus of discontinuance. *Journal of Management Information Systems*, 34(3), pp.902-932.
- George, A. L. and Bennett, A., 2005. *Case studies and theory development in the social sciences*. Cambridge, Massachusetts: MIT Press.
- Gosain, S., 2004. Enterprise information systems as objects and carriers of institutional forces: the new iron cage? *Journal of the Association for Information Systems*, 5(4), pp.151-182.
- Gürbüz, T., Alptekin, S.E. and Alptekin, G.I., 2012. A hybrid MCDM methodology for ERP selection problem with interacting criteria. *Decision Support Systems*, 54(1), pp.206-214.
- Howcroft, D. and Light, B., 2006. Reflections on issues of power in packaged software selection. *Information Systems Journal*, 16(3), pp.215-235.
- Howcroft, D. and Light, B., 2010. The social shaping of packaged software selection. *Journal of the Association for Information Systems*, 11(3), pp.122-148
- Howcroft, D., Newell, S. and Wagner, E., 2004. Understanding the contextual influences on enterprise system design, implementation, use and evaluation. *The Journal of Strategic Information Systems*, 13(4), pp.271-277.
- Hsieh, J.P.A. and Wang, W., 2007. Explaining employees' extended use of complex information systems. *European Journal of Information Systems*, 16(3), pp.216-227.
- Kauffman, R.J. and Tsai, J.Y., 2009. The unified procurement strategy for enterprise software: A test of the "move to the middle" hypothesis. *Journal of Management Information Systems*, 26(2), pp.177-204.
- Khoo, H. M. and Robey, D., 2007. Deciding to upgrade packaged software: a comparative case study of motives, contingencies and dependencies. *European Journal of Information Systems*, 16(5), pp.555-567.
- Khoo, H. M., Robey, D. and Rao, S. V., 2011. An exploratory study of the impacts of upgrading packaged software: a stakeholder perspective. *Journal of Information Technology*, 26(3), pp.153-169.
- Kilic, H.S., Zaim, S. and Delen, D., 2015. Selecting "The Best" ERP system for SMEs using a combination of ANP and PROMETHEE methods. *Expert Systems with Applications*, 42(5), pp.2343-2352.
- Langley, A., 1999. Strategies for theorizing from process data. *Academy of Management Review*, 24(4), pp.691-710.
- Langley, A., Smallman, C., Tsoukas, H. and Van de Ven, A. H., 2013. Process studies of change in organization and management: unveiling temporality, activity, and flow. *Academy of Management Journal*, 56(1), pp.1-13.
- Laukkanen, S., Sarpola, S. and Hallikainen, P., 2007. Enterprise size matters: objectives and constraints of ERP adoption. *Journal of Enterprise Information Management*, 20(3), pp.319-334.
- Leonard-Barton, D., 1990. A dual methodology for case studies: synergistic use of a longitudinal single site with replicated multiple sites. *Organization Science*, 1(3), pp.248-266.
- Liang, H., Saraf, N., Hu, Q. and Xue, Y., 2007. Assimilation of enterprise systems: the effect of institutional pressures and the mediating role of top management. *MIS Quarterly*, 28(4), pp.59-87.
- Lyytinen, K. and Newman, M., 2015. A tale of two coalitions – marginalising the users while successfully implementing an enterprise resource planning system. *Information Systems Journal*, 25(2), pp.71-101.
- Mangan, A. and Kelly, S., 2009. Information systems and the allure of organisational integration: a cautionary tale from the Irish financial services sector. *European Journal of Information Systems*, 18(1), pp.66-78.
- Markus, M.L. and Tanis, C., 2000. The enterprise systems experience—from adoption to success. In: R. Zmud and M., Price, Eds. 2000. Framing the domains of IT Management: projecting the future through the past. Michigan: Pinnaflex Educational Resources, Inc. pp.207-173.
- Matinheikki, J., Aaltonen, K. and Walker, D., 2019. Politics, public servants, and profits: Institutional complexity and temporary hybridization in a public infrastructure alliance project. *International Journal of Project Management*, 37(2), pp.298-317.
- Moe, C. E. and Päivärinta, T., 2013. Challenges in information systems procurement in the public sector. *Electronic Journal of e-Government Volume*, 11(2), pp.308-323.
- Moe, C. E., Newman, M. and Sein, M. K., 2017. The public procurement of information systems: dialectics in requirements specification. *European Journal of Information Systems*, 26(2), pp.143-163.
- Oliver, D. and Romm, C., 2002. Justifying enterprise resource planning adoption. *Journal of Information Technology*, 17(4), pp.199-213.
- Olsen, K. A. and Saetre, P., 2007. IT for niche companies: is an ERP system the solution? *Information Systems Journal*, 17(1), pp.37-58.
- Pentland, B.T., 1999. Building process theory with narrative: From description to explanation. *Academy of Management Review*, 24(4), pp.711-724.
- Pettigrew, A. M., 1990. Longitudinal field research on change: Theory and practice. *Organization Science*, 1(3), pp.267-292.
- Pettigrew, A. M., 1997. What is a processual analysis? *Scandinavian Journal of Management*, 13(4), pp. 337-348
- Pettigrew, A. M., Woodman, R. W. and Cameron, K. S., 2001. Studying organizational change and development: challenges for future research. *Academy of Management Journal*, 44(4), pp.697-713.
- Poba-Nzaou, P., Uwizeyemungu, S., Raymond, L. and Paré, G., 2014. Motivations underlying the adoption of ERP systems in healthcare organizations: insights from online stories. *Information Systems Frontiers*, 16(4), pp.591-605.
- Pollock, N. and Cornford, J., 2004. ERP systems and the university as a "unique" organisation. *Information Technology and People*, 17(1), pp.31-52.

- Pollock, N. and Williams, R., 2007. Technology choice and its performance: towards a sociology of software package procurement. *Information and Organization*, 17(3), pp.131-161.
- Raghupathi, W. and Tan, J., 2002. Strategic IT applications in health care. *Communications of the ACM*, 45(12), pp.56-61.
- Raghupathi, W. and Tan, J., 2008. Information systems and healthcare XXX: charting a strategic path for health information technology. *Communications of the Association for Information Systems*, 23(1), pp.501-522.
- Raymond, L. and Uwizeyemungu, S., 2007. A profile of ERP adoption in manufacturing SMEs. *Journal of Enterprise Information Management*, 20(4), pp.487-502.
- Raymond, L., Uwizeyemungu, S. and Bergeron, F., 2006. Motivations to implement ERP in e-government: an analysis from success stories. *Electronic Government, an International Journal*, 3(3), pp.225-240.
- Robey, D., Anderson, C. and Raymond, B., 2013. Information technology, materiality, and organizational change: A professional odyssey. *Journal of the Association for Information Systems*, 14(7), pp.379-398.
- Rubin, H. J., & Rubin, I. S., 2011. *Qualitative interviewing: the art of hearing data*. London: Sage.
- Saxena, D. and McDonagh, J., 2016. Beyond the one-dimensional construct of failure: The curious case of enterprise systems failure rates. In: *21st UKAIS Conference on Information Systems*. Oxford, 12-13 April 2016.
- Saxena, D. and McDonagh, J., 2017. A systematic literature review of the enterprise systems research in leading IS journals (2000-2015). In: *Proceedings of the Twelfth Midwest Association for Information Systems Conference 2017*. Springfield, Illinois, 18-19 May 2017.
- Tingling, P. and Parent, M., 2004. An exploration of enterprise technology selection and evaluation. *The Journal of Strategic Information Systems*, 13(4), pp.329-354.
- Trist, E., 1981. *The evolution of socio-technical systems*. Toronto: Ontario Quality of Working Life Centre.
- Verville, J. and Halingten, A., 2003. A six-stage model of the buying process for ERP software. *Industrial Marketing Management*, 32(7), pp.585-594.
- Wagner, E.L., Newell, S. and Piccoli, G., 2010. Understanding project survival in an ES environment: a sociomaterial practice perspective. *Journal of the Association for Information Systems*, 11(5), pp.276-297.
- Williams, R. and Pollock, N., 2012. Research commentary—moving beyond the single site implementation study: how (and why) we should study the biography of packaged enterprise solutions. *Information Systems Research*, 23(1), pp.1-22.
- Winter, S., Berente, N., Howison, J. and Butler, B., 2014. Beyond the organizational 'container': Conceptualizing 21st century sociotechnical work." *Information and Organization*, 24(4), pp.250-269.
- Yin, R.K., 2017. *Case study research and applications: Design and methods*. London: Sage publications.