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Exploring Shared Services from an IS Perspective: A Literature Review and Research Agenda

Erwin Fielt

Science and Engineering Faculty, Queensland University of Technology, Australia

e.fielt@qut.edu.au

Wasana Bandara

Science and Engineering Faculty, Queensland University of Technology, Australia

Suraya Miskon

Faculty of Computing, Universiti Teknologi Malaysia, Malaysia

Guy Gable

Science and Engineering Faculty, Queensland University of Technology, Australia

Abstract:

Shared services have gained significance as an organizational arrangement, in particular for support functions, to reduce costs, increase quality and create new capabilities. The Information Systems (IS) function is amenable to sharing arrangements and information systems can enable sharing in other functional areas. However, despite being a promising area for IS research, literature on shared services in the IS discipline is scarce and scattered. There is still little consensus on what shared services is. Moreover, a thorough understanding of why shared services are adopted, who are involved, and how things are shared is lacking. In this article, we set out to progress IS research on shared services by establishing a common ground for future research and proposing a research agenda to shape the field based on an analysis of the IS literature. We present a holistic and inclusive definition, discuss the primacy of economic-strategic objectives so far, and introduce conceptual frameworks for stakeholders and the notion of sharing. We also provide an overview of the theories and research methods applied. We propose a research agenda that addresses fundamental issues related to objectives, stakeholders, and the notion of sharing to lay the foundation for taking IS research on shared services forward.

Keywords: Information systems, shared services, literature review, NVivo, archival analysis, stakeholders, characteristics

I. INTRODUCTION

Competitive challenges require organizations to innovate customer offerings, improve business processes, and operate at lower costs. Managers are looking to 'shared services' as one means of improving organizational performance [Wagenaar, 2006]. Shared services have become increasingly prevalent during the past decade in both private and public sectors [e.g., Borman, 2008a, Borman, 2008b, Schulz and Brenner, 2010]. Essentially, shared services entails the consolidation of replicate business functions; predominantly support functions like Finance, Human Resources (HR) or Information Technology (IT), in a separate unit that thereafter provides customer oriented services to the originating business units [e.g., Bergeron, 2003, Schulman et al., 1999]. The Information Systems (IS) discipline is an important domain of shared services interest, first because the IS function is amenable to the shared services organizational arrangement, and second because IS is an important enabler of shared services in other functional areas (e.g., Finance, HR) through IS infrastructure and applications.

The concept of shared services has evolved over more than three decades, commencing in the 1970's in the banking sector [Alt and Smits, 2007]. Software vendor 'Real-Time Center' reports on the development of a core banking system (IBIS) implemented cooperatively by several Swiss banks [Alt and Smits, 2007]. In the 1980s most organizations implementing shared services, did so within the Finance area [e.g., Beard and Rupp, 2004, Walsh et al., 2008]. General Electric is recognized as one of the first large-scale shared services adopters, when in 1984 they implemented shared financial and accounting services across all companies. Digital Equipment Corporation followed in 1985, sharing financial services across their divisions and subsidiaries [Lacity and Fox, 2008, Ulbrich, 2006]. Later that decade, Baxter Healthcare and A.T. Kearny commenced implementing shared services for Accounting and Finance and other functions [Quinn et al., 2000, Rohleder, 2004].

In the 1990's, the scope of shared services evolved beyond individual functional areas towards consolidation of the full back-office, including HR, Finance, Procurement and IT. Examples of such broader implementations are Proctor & Gamble and Solteria. Proctor & Gamble created a Global Business Services group in 1999 by combining HR, Finance, Facilities, and IT [Sia et al., 2008]. Solteria created a shared services project named "Jigsaw" in 1999 that encompassed IT, HR, Accounting, and other functions such as supply chain, procurement, and customer relationship management [Lee and Myers, 2004]. Towards 2000, organizations began using shared services for managing and operating ERP systems, such as SAP [Leknes and Munkvold, 2006], PeopleSoft and Oracle [Sedera and Dey, 2007]. For example, Aker Kvaerner, a global contractor of engineering services, implemented SAP via shared services to rationalize its application portfolio across different companies [Leknes and Munkvold, 2006].

Shared services have been extensively discussed in the commercial press, citing benefits such as *"efficiency, value generation, costs savings and improved service for the internal customers of the parent corporation*" [Bergeron, 2003]. Industry reports show that as at 2000, 16 of the top 20 Fortune 500 companies used shared services centers [Cecil, 2000]. A report from Ferrarini [2000] states *"… Nearly half of the Fortune 500 have set up shared services organizations, primarily to support financial transactions, followed by human resources and IT activities…"* There are many shared services success stories such as General Electric [Lacity and Fox, 2008], Digital Equipment Corporation [Lacity and Fox, 2008], Reuters Asia [Business Intelligence, 2005, Lacity and Fox, 2008] and Allianz [Lodestone, n. d]. Leading research firms such as Gartner, provide a range of reports that describe the application of shared services in different industries, for example, one such report stating that "*Many enterprises are looking to shared services to support efficiency goals and to enhance business integration and agility*" [Gartner, 2008]. Deloitte argues that shared services are strategic enablers as well as an administrative supporters, illustrating that though cost reduction may be the most prominent priority, shared services can also deliver many other benefits; such as to facilitate enterprise growth, improve business focus, and enhance talent management, among other strategic pursuits [Deloitte, 2009].

Information Systems have dual relevance to shared services; as a core function amenable to the shared services arrangement, and as a key enabler of shared services across other functions. Though not as widespread as in Finance or HR, the adoption of shared services for the IS function is growing rapidly [Lacity and Fox, 2008, Peters and Silver, 2005]. "*Successful management of IS shared services was recently listed as one of the seven habits of effective CIOs*" [Lacity and Fox, 2008]. As this trend continues, it is incumbent upon CIOs and IS professionals to better understand the potential from shared services [Lacity and Fox, 2008]. Additionally, IS applications and infrastructure are both a driver and enabler of shared services across functional areas (e.g., in Finance, HR, etc.).

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As computer-based corporate information systems have become de facto and the internet pervasive and increasingly the backbone of administrative systems, the technical impediments to sharing have come down dramatically. Moreover, shared services has the potential to leverage IT related benefits with respect to faster, more accurate process coordination and execution and greater accuracy of and visibility into organizational data [Seddon et al., 2010]. In addition, shared services can also require (radical) change to the IS applications and infrastructure, for example combining corporate-wide standardization with business unit specific customization. IS can also, either internally or through an external service provider, play a major role in transitioning to a shared services environment and its ongoing operation and evolution.

As an applied discipline "that is driven by rigor and relevance" [Benbasat and Zmud, 1999, Davenport and Markus, 1999, Lee, 1999], it is incumbent upon IS academics to understand shared services and inform the wider IS community and practice. To date, research focusing on shared services has been slight; fewer than 30 articles in mainstream IS journals and conferences[1]. However, more than 150 IS papers 'refer' to shared services, suggesting its relevance to the discipline. Moreover, a review of these papers suggests our understanding is limited with respect to what shared services are, why shared services are adopted, who are involved, and how things are shared. These fundamentals require attention in order to advance our understanding of shared services and develop a theoretical base. This may also open the way for IS research to contribute significantly to the shared services domain, in a manner similar to how IS research has been prominent in the outsourcing domain [e.g., Lacity et al., 2010]. Beyond academe, there is need for clarity in practice, anecdotal evidence suggesting that many organizations have difficulty understanding the context and details of shared services [Craike and Singh, 2006, Janssen and Joha, 2006b, Lawson, 2007, Shah, 1998]. Though industry reports have been useful, these are typically limited to trend analysis [e.g., Accenture, 2005, Deloitte, 2007a, Deloitte, 2007b] or narrative descriptions of the journey from shared services concept to implementation [e.g., Farquhar et al., 2006, Gartner, 2008, Longwood and Harris, 2007].

This study entails a comprehensive archival analysis of IS literature on shared services. Guided by Chiasson et al. [2008], Dibbern et al. [2004], Leedy and Ormrod [2001] and Levy and Ellis [2006], the aims of this study are; (1) to methodologically collect, analyze and synthesize all related literature within this domain; (2) to understand its current status and trends; (3) to provide a firm foundation to the fundamental understanding and characterization of shared services through the IS lens; and (4) to derive a research agenda to guide shared services research in the IS discipline, including the identification of potential theoretical bases and guidelines. Apparent early in the study was the dearth of relevant IS research on shared services. Though we synthesize salient existing literature, usefully we think, and contribute to improved understanding of shared services in the IS discipline, there is much need for further research in this area, as reflected in the proposed research agenda ending the paper.

The remainder of this paper proceeds as follows. The next section presents the research design. Subsequently, an overview of the findings from the literature analysis is presented. We then address the current understanding of shared services reflected in the IS literature by discussing definitions, objectives, stakeholders, and the notion of sharing itself (i.e., what is shared and how). Thereafter, we discuss the shared services literature from a research perspective in terms of the theories and research methods applied. The paper concludes with a summary and a potential research agenda.

II. RESEARCH DESIGN

Following recommendations by Levy and Ellis [2006], vom Brocke et al. [2009] and Webster and Watson [2002] , the authors followed a three-phase method to extract, analyze and interpret (and report) the literature based findings. The first extraction phase involved the methodical search, identification and extraction of articles to be included in this review. The subsequent analysis phase comprised (a) preparing for the analysis - designing and implementing an appropriate classification and coding scheme to match the study objectives, and (b) conducting the analysis by applying the scheme. Finally, the third interpretation phase entailed synthesizing the coded details and analyzing the literature to respond to the research objectives of this study. The next sections describe each phase in detail.

Extraction of relevant papers

Systematic review of the IS literature on shared services requires that two main criteria are clarified: (1) the literature sources, i.e., those outlets to be searched [Webster and Watson, 2002], and (2) the search strategy, i.e., the choice of search terms to utilize during the article extraction process [Cooper, 1998, Levy and Ellis, 2006].

Specifically focused on the status of research in a selected domain, academically refereed, full text papers were sought employing a clearly defined sampling frame that includes all relevant reputable outlets of the target domain

[1] This statement, and the following statements, about the status of shared services research in IS will be further substantiated in the rest of the paper.

[following Levy and Ellis, 2006]. Selecting a target set of sources within a predetermined justified scope, has been practiced in past IS literature studies [e.g., Esteves and Pastor, 2001, Orlikowski and Baroudi, 1991, Vessey et al., 2002]. As the aim of this study is to explore and synthesize shared services research from an IS perspective, we focused on literature sources targeted at the IS community. Thus, academically refereed, full text papers were sought from a clearly defined sampling frame that included the main IS outlets, derived by consolidating a list of IS journals and conferences of four main sorts (see **Figure 1**)[2]. The study started in 2010 and hence the selected outlets were defined based on the information that was then available. The extraction and analysis has continued, with the information reported herein based on data extracted from the selected outlets through September 2011.

Figure 1: Overview of the sampling frame

The IS journals included in the search were; firstly, the 8 journals listed as the 'Senior Scholars' basket of journals[3], which the Association of Information Systems (AIS) represents as "top journals in our field." Next, it was resolved to further canvass the 40 IS journals listed at the AIS web site[4]. This extended journal list from AIS was derived though comparison of 9 published papers on IS academic journal rankings [namely; Hardgrave and Walstrom, 1997, Katerattanakul et al., 2003, Lowry et al., 2004, Mylonopoulos and Theoharakis, 2001, Peffers and Ya, 2003, Rainer and Miller, 2005, Walstrom et al., 1995, Whitman et al., 1999 - as reported by AIS]. The latest study used to derive this list was from 2005. Hence, in order to assure completeness and to also include journals that have more recently achieved recognition in the field, more current ranking lists were sought. Since the research team was based in Australia, and the study commenced in 2010, the 2010 Excellence in Research for Australia (ERA) Ranked Journal List[5] was used as an additional resource for the sampling frame. The ERA is an initiative of the Australian Federal Government to identify and promote excellence across the full spectrum of research activity in Australian Higher Education institutions, and commenced with research outlet rankings based on impact factors and other elements. The ranks range from A* to C (A* been the highest and C the lowest). For feasibility, only the top 3 layers (A*, A, and B) of the 2010 ERA journal ranking levels were included, and only those journals which were categorized as Information Systems (under primary research code 0806) were included.

Given the relative newness of shared services in IS, and to ensure that the literature reviewed was as current and inclusive as possible, the proceedings from major IS conferences were also examined; namely those IS conferences sponsored by or affiliated with the AIS or run by an AIS chapter that were included in the top layer (A) of the 2010 ERA Ranked Conference List[6] [categorized as Information Systems (under primary research code 0806)]. The conferences papers, (like for the journals) included all articles published from the conferences' inception to

[2] Though this approach ignores IS papers published in non-IS outlets, the scope is appropriate and sufficient given the study goals.

[3] See http://home.aisnet.org/displaycommon.cfm?an=1&subarticlenbr=346 for further details. Last accessed April 8th 2010. The journals listed here include; European Journal of Information Systems, Information Systems Journal, Information Systems Research, Journal of AIS, Journal of MIS, MIS Quarterly, Journal of Strategic Information Systems and Journal of Information Technology.

[4] Available at: http://ais.affiniscape.com/displaycommon.cfm?an=1&subarticlenbr=432, last accessed November 7th 2011.

[5] See http://www.arc.gov.au/era/default.htm for further details on what the ERA initiative is. In January 2011, the Australian Government revised the ERA system and removed all rankings for journals across all disciplines. A copy of the full list of the ERA rankings used as the base of this study can be obtained from the authors. Though not an official ERA site, the details of the prior ERA journal rankings for the IS discipline are still maintained and available at a web portal maintained by Professor John Lamp, of Deakin University (http://lamp.infosys.deakin.edu.au/era/), the ERA rankings list for IS journals can be found under historical information stored at http://lamp.infosys.deakin.edu.au/era/?page=fordet10&selfor=0806.

[6] Thus, the following IS Conferences were included within the scope; the proceedings of International Conference on Information Systems (ICIS), European Conference on Information Systems (ECIS), Pacific Asia Conference on Information Systems (PACIS), Australasian Conference on Information Systems (ACIS), and Americas Conference on Information Systems (AMCIS).

September 2011, which were accessible through the relevant conference proceedings[7].

Paper extraction occurred in two steps. In the first step, the focus was on extracting papers where shared services was a central focus, thus the key word "shared service*" was searched for in the title, abstract or keywords of the sampling frame described above. This yielded 8 papers from IS journals and 21 from conferences (henceforth, we refer to these 29 as the "primary" set of papers) (see papers indicated with an Asterisk "*" in the reference list). Given the small number, we extended the search, this time extracting papers that may have mentioned shared services in a meaningful way (e.g., within the context of some other IS study focus). Thus, the research team decided to conduct a systematic search for "shared service*" in the body-text of the papers within the sampling frame.

Given the magnitude of this highly manual effort, it was infeasible to fully canvass the entire sampling frame employing a body-text search. To constrain scope, we first included all papers from the 8 journals listed as the 'Senior Scholars' basket of journals, as well as all selected IS conferences' proceedings. The 'Senior Scholars' basket of journals were included, as these are recognized as the most prominent outlets in the IS field[8].Conferences were included as they are more appropriate targets to search in emerging fields (like shared services) [Klaus et al., 2000, Thomson Reuters, 2008]. From the remaining sources[9] (see **Figure 1)**, we included those in which Shared Services appeared to be relatively more prominent, based on our limited information. First, all sources from which the primary papers originated were added. Next, those sources in which, more than one paper mentioned 'shared services' in the body-text, were included (we searched this criteria using the search facilities of the journal, host databases). From these sources, 164 further papers which mentioned shared services somewhere in the text of the paper in a meaningful manner[10] were identified. Two researchers carefully reviewed all papers to determine their relevance. The 164 additional papers were included in the study as the "secondary" set; the analysis phase thus commencing with a sample paper pool of 193 papers (29 primary and 164 secondary). Overall, while a comprehensive approach was followed in extracting papers deemed most suited for this review, we do acknowledge that there may be some papers which might be relevant, still excluded due to the defined scope and applied approach. This can be expected with any literature review [vom Brocke et al., 2009, Webster and Watson, 2002] ; one can only try to define a feasible and appropriate scope and approach and demonstrate in a transparent manner, how all relevant papers that fitted the specifications were included in the analysis [e.g., Chiasson et al., 2008].

Preparing for the analysis

A protocol was devised that articulated the analysis procedures and related preparations. The protocol included a pre-codification scheme and guidelines on how to apply the tool (NVivo) to support the overall analysis.

Pre-determining what is important to capture and report is a critical aspect for an effective and efficient archival analysis [Okoli and Schabram, 2010]. The goal of the study was to derive a synthesized review of shared services literature within IS academe. Hence, the pre-codification scheme was based on the basic questions of what, why, who and how for understanding shared services. We capture the 'what' and 'why' of shared services by addressing the definitions and objectives. We also analyzed and synthesized the 'who' and 'how 'by identifying the stakeholders and exploring the 'notion of sharing.' In addition, we addressed the research perspective by capturing the reported theoretical backgrounds and research methods. This is consistent with (1) past similar meta-literature-review papers [i.e., Chen and Hirschheim, 2004, Orlikowski and Baroudi, 1991, Vessey et al., 2002], (2) exemplar literature reviews in award winning IS dissertations[11] from which to identify and extract common themes reported in IS, and (3) a high level analysis of shared services publications based on an initial scan of most cited papers in the field [Borman, 2008a, Lacity and Fox, 2008, Sia et al., 2008, Ulbrich, 2006].

The data for each of these topics were analyzed in different ways, depending on the kind of topic, what was reported in the identified IS literature, and other prior work that could support the analysis. The first round of analysis was done primarily in an inductive manner in search of emerging themes (adapting an open coding approach) – where content coded under a certain topic of the pre-coding scheme was analyzed in isolation and in depth. These themes

[7] Some conferences do not have poster sessions in their proceedings. Such papers that might have been presented at a conference, but was not included in the proceedings were not included.
[8] Extracted from http://home.aisnet.org/displaycommon.cfm?an=1&subarticlenbr=346. Last accessed April 8th, 2011.
[9] Remaining sources refer to 40 IS Journals listed at the 'AIS webpage' and IS Journals ranked in the ERA ranking list.
[10] Those papers that did not discuss shared services in a meaningful context were removed. Examples included papers that had the term shared services only mentioned once in passing, or it was a part of a title in the references list.
[11] Past award winning thesis's from the ACM SIGMIS Doctoral Dissertation Award Competition listed at http://home.aisnet.org/displaycommon.cfm?an=1&subarticlenbr=138#dissertation (last accessed July 31st 2010), and the Australian Council of Professors and Heads of Information Systems (ACPHIS) PhD Medal, available at http://www.acphis.org.au/index.php?option=content&task=category&sectionid=2&id=23&Itemid=40 (last accessed July 31st 2010) were observed.

were then grouped into higher level themes (adapting an axial coding approach). When prior research on the topic existed we would introduce them at this point (after preliminary synthesis of the data had taken place), allowing the literature's frameworks and theories to then influence the coding in an abductive manner. "Abductive inference combines in a creative way new and interesting empirical facts with previous theoretical knowledge" [Kelle, 1997], hence at times, introducing literature called for revisions to the inductively derived themes. The coding approaches used for the different outcomes are discussed in more detail as each section is presented.

Analysis of 'stakeholders' and the 'notion of sharing' resulted in a priori conceptual frameworks. Conceptual frameworks explain, either graphically or in narrative form, the main aspects of the phenomena of interest. It is the researcher's *representation* of the conceptual structure brought to the research; which will capture core concepts, possible interrelationships between these concepts and related boundaries [Miles and Huberman, 1999]. Carroll and Swatman [2000] explain how conceptual frameworks can form an essential start for theory building and further investigations. Some studies [i.e., Beyer and Trice, 1982, Detlor, 2003, Xia and Lee, 2005] are solely dedicated to deriving literature based conceptual frameworks for topics of interest. IS research still relies heavily on conceptual/framework developments [Chen and Hirschheim, 2004]**.** We too present conceptual frameworks in an attempt to better understand the stakeholders and the notion of sharing. These conceptual frameworks are a springboard to assist the derivation of broader research themes, intended to provide an understanding of current knowledge in the areas to which they relate [following Miles and Huberman, 1999].

The application of a qualitative data analysis tool in a literature review process can increase 'representation'; "*the ability to extract adequate meaning from the underlying data*" [Leech and Onwuegbuzie, 2007]. Most of the main qualitative data analysis software packages (there are many tool options, such as NVivo, Atlas/ti) have similar features [Lewis, 2004] that can be used to systematically capture, code, and analyze the literature within a single repository. The study employed NVivo 8.0, adapting coding-and-analysis strategies from prior work by [Bandara, 2006, Beekhuyzen et al., 2010, Gregorio, 2000]. The study protocol prescribed how extracted papers would be stored in the data base, how they would be coded and analyzed, and how the results would be captured and presented. The high-level analysis approaches are explained below, following brief introduction to the tool used (and tool-related terminology employed hereafter in the paper). Further details of how the outcomes were derived will be explained as the findings unfold.

NVivo is a computer program for qualitative data analysis that allows one to import and code textual data, edit the text; retrieve, review and recode coded data; search for combinations of words in the text or patterns in the coding; and import from or export data to other platforms. All data within the NVivo tool is arranged around 'Documents' and 'Nodes'. Documents are simply data that one analyzes in the study. Nodes are places where one stores ideas and categories. It is important to note the difference between a code and a node, in NVivo parlance. A Node is a physical location where you store the groups of ideas that would be coded, and these nodes can be organized in branches (like a folder-tree) or as free nodes. Coding (putting things into codes) is a process; a way to label certain aspects of the data and to sort information in distinct categories. The node on the other hand holds all the information that has been coded under a certain category. Another useful aspect in the tool is 'Attributes'. Attributes are properties assigned to nodes or documents. Once attributes are defined, each document or node will have specific values for each attribute. These attribute values can be numeric, string, Boolean or date-time type and they can be usefully applied for better data management and effective searches. The NVivo 'Query' functions can be used to search for strings, coding patterns or attribute values in the project database; which enables one to search for patterns across their data.

All 193 articles selected were entered and saved within NVivo as 'documents'. The overall coding was designed to be conducted at two levels. The goal of the first-level-coding was to capture the content that related to each main theme (based on the pre-codification scheme), as main tree-level nodes within the NVivo database (a tree-level node being a logical location within NVivo, where one can capture and store content and ideas that are logically grouped together). The protocol specified that the content be identified inductively from the data, where each paper was manually scanned within NVivo. Coding involved mapping relevant sentences/statements to the nodes (with annotations and memo notes made, to keep track of emerging thoughts), at single or multiple nodes as deemed relevant. Two coders coded a sample of 5 primary papers from the data set, to confirm this first level coding scheme. There was little disagreement with the coding at this level, so one coder continued coding all papers to the high level nodes (that mapped to the topic areas of interest) as specified in the pre-coding scheme. With second-level-coding, coded content of the nodes resulting from the first level analysis was reviewed in detail to synthesize and derive further findings from the data coded. As described above, themes were first inductively derived (using an open coding approach). Sub-folders (with relevant labels) were created to group the statements that described the same (or similar) aspects within these themes. Two coders coded the full content at this level, and the results were corroborated. At times, themes were either redefined, merged or dissolved in this corroboration effort. Once the lower level themes were confirmed, these themes were grouped to form higher level themes using a mixed approach. First an axial coding approach was used to inductively derive higher level themes, which was completed in full and corroborated by both coders. Relevant literature was introduced, in support of the corroboration effort and

as a result the content was abductively re-coded at times – with the full involvement and consensus of both coders. The analysis was conducted iteratively, yielding summary concepts (including definitions), synthesized lists, and conceptual frameworks based in the literature. The overall research findings and the analytical activities that supported these findings are presented in detail in the next sections.

III. THE STATUS OF SHARED SERVICES LITERATURE IN THE IS DISCIPLINE

This section provides a descriptive overview of shared services literature found within the IS discipline. As in any other study, a descriptive overview is a useful precursor to presenting the detailed research findings, as it clearly positions the data-context from which the analysis is drawn.

Recall that 193 papers were extracted from the pool of IS outlets in our sample: 29 primary papers (8 journal and 21 conference papers) specifically focusing on shared services, and 164 secondary papers that mention shared services as part of a different topic (63 journal and 101 conference papers). **Figure 2** plots these papers across the 18 years (from 1994 till 2011 September) covered by the study. It is notable that none of these papers appeared in high-ranked IS journals e.g., the 'Senior Scholars Basket of eight' or the ERA 2010 A* or A journals.

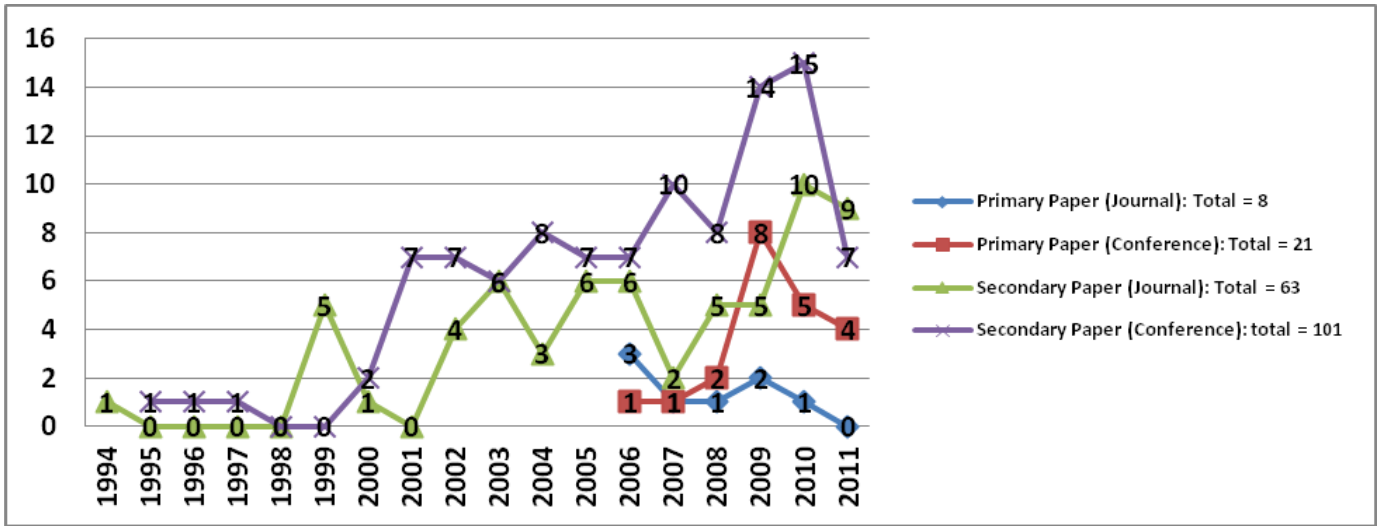

Figure 2: Number of IS Journal and Conference Articles Pertaining to Shared Services

The first mention of shared services in the IS literature analyzed was in 1994, when Earl [1994] talked of shared services as "*another route to administrative efficiency"* in his paper on Business Process Design. He presented Baxter Healthcare, as an example of how to "*combine and centralize many accounting and related services"* [Earl, 1994] and spoke of 'economies of scale' that shared services can yield, in particular for administrative processes. The first papers to 'focus' on shared services (from the primary set) appeared in 2006. Versteeg and Bouwman [2006] discuss how business architectures help to clarify the complexity within an organization and help to develop subsequent functional, information, process and application architectures that form a useful starting point from which to create shared service centers. Ulbrich [2006] presents a literature-based study that depicts the similarities between the business process reengineering (BPR) and shared service approaches and discusses how emerging shared services initiatives can learn from the implementation lessons of the BPR era. Motives for introducing shared services centers in public administration are discussed by Janssen and Joha [2006a]. They compare the initial motives for introducing a shared services centre with post-implementation benefits. Janssen and Joha [2006b] provide an analytical overview (with case study data) of the governance of shared services in public administration.

While only 29 papers focus on shared services (our primary set of papers), 164 papers mention shared services (our secondary set of papers), indicating a growing interest in and prevalence of shared services in IS, especially in relation to the topics – Sourcing [e.g., Ghodeswar and Vaidyanathan, 2008, Mani et al., 2010]; IT Governance [e.g., Weill, 2004]; E-Government [e.g., Feller et al., 2011]; Public and Private Sector [e.g.Gewald and Dibbern, 2009, Manwani and O'Keefe, 2003, Ross, 2003, Wheeler et al., 2002]; Healthcare [e.g., Bennett and Eustis, 1999, Lockamy III and Smith, 2009]; Business Process Management [e.g., Al-Mashari and Zairi, 1999] and Enterprise Systems [e.g., Davenport, 2000, Elbanna, 2008, Shang and Seddon, 2002]. Nonetheless, though **Figure 2** depicts growth, the sample constitutes an extremely small portion of the total research output from the pool of IS outlets in our sample. This is surprising, considering the shared services notion has been around in IS literature since 1994, and its relevance is endorsed by extensive discussion of potential related benefits in the commercial press [A.T. Kearny, 2005, Beard and Rupp, 2004, Deloitte, 2009, Firecone, 2007].

The next sections present an analytical review and synthesis of IS literature on shared services, also identifying the current gaps and suggesting potential research directions. We will first address the understanding of shared services in the IS literature in terms of definitions, objectives, stakeholders, and notions of sharing. Thereafter, we will discuss the research perspective in terms of the theories applied and methods used.

IV. THE UNDERSTANDING OF SHARED SERVICES IN THE IS LITERATURE

This section discusses in detail the understanding of shared services derived from the IS literature. It addresses both what we know and what we yet need to know. It is structured along the basic questions of 'what', 'why', 'who' and 'how'. Firstly, we discuss what shared services are by addressing the definitions. Thereafter, we look closer at the why and who by identifying the objectives and the stakeholders. Finally, we discuss the 'how' by describing different notions of sharing.

Defining shared services

To advance the understanding of shared services in IS and to grow a cumulative body of knowledge, it is essential to define the meaning of the concept. The definitions of shared services originating or cited in the primary and secondary papers are presented in **Table 1**. Of the 193 papers, 16 include an explicit attempt to define shared services; 12 primary papers (out of 29) and 4 secondary papers (out of 164). Several other papers cite definitions originating from articles outside the IS discipline. The overview of definitions shows little consensus. A grounded look at definitions is warranted during the continuing genesis of this phenomenon; convergence of thought is important for an emerging area to grow.

Table 1 : Summary of definitions of shared services found within IS literature

		Paper	Definition	Comment
IS papers specifically defining shared services				
Primary Papers	1	Becker et al. [2009]	*"The term 'shared services' might be defined as the concentration of company resources performing activities in order to service multiple internal partners (Schulman et al. 1999), which comes along with the standardisation and consolidation of redundant information processes (Wang & Wang, 2007)."*	Refers to definitions of Schulman et al [1999, pp. 9] and Wang and Wang [2007].
	2	Borman [2010]	*"…the aggregated provision of back-office services typically underpinned by ITs"*	Citing Quinn et al. [2000], Ulbrich [2006], Longwood and Harris [2007], and Hagel III and Brown [2001].
	3	Goh et. al [2007]	*"Shared services is a collaborative strategy whereby the staff functions of a firm are concentrated in a semi-autonomous organization and managed like a business unit competing in the open market to promote greater efficiency, value generation and improved service for internal customers."*	
	4	Lacity and Fox [2008]	*"the consolidation of support functions (such as human resources, finance, information technology, and procurement) from several departments into a standalone organizational entity whose only mission is to provide services as efficiently and effectively as possible."*	Citing Accenture [2005]
	5	Miskon et al. [2009]	*"shared services as the internal provisioning of services by a semi-autonomous organizational unit to multiple organisational units involving the consolidation of business functions supported by a sharing arrangement".*	Based on a review of IS literature on shared services
	6	Schulz et al. [2009b]	*"An SSC consolidates processes within a concern in order to reduce redundancies; it delivers support processes; it is a separate organizational unit within the group; it is aligned with external customers; cost-cutting is a major driver for implementation; it is focused on internal customers; and it is operated like a business."*	Based on a review of literature on shared services
	7	Sedera and Dey [2007]	*"The concept is simple; bring-together functions that are frequently duplicated across divisions, subsidiaries or operating units and offer these services more efficiently and at a lower cost."*	Refers to definition of Schulman et al [1999, pp. 9].
	8	Su et al. [2009]	*shared services refers to an organizational model where a firm merges common business functions performed by multiple operating entities into a distinct unit that delivers*	Refers to definition of Ulrich [1995].

			services to the rest of the firm as its business clients.	
	9	Ulbrich [2009]	*"Shared services centers are commonly described as independent organizational entities that provide well-defined services for more than one unit within an organization"*	Refer to definition of Moller [cited in Ulbrich, 2009].
	10	Ulbrich [2006]	*"… shared services gather a selection of common and well-defined services to provide these services to an organization's units, acting independently."*	Refers to definitions of Schulman et al [1999, pp. 9], Bergeron [2003, pp. 3], Quinn et al. [2000], and Moller [cited in Ulbrich, 2006].
	11	Yee and Chan [2009]	*"…the sharing of services across more than one organisation is made. IOSS, as opposed to traditional SS which involves intra-organisational sharing of services, inherits the benefits of SS and in addition to efficiencies and economies, may also result in collaborative decision-making and "cooperative competition" (co-opetition) whereby organisations cooperate on one level, while remaining competitors on another."*	Refer to definitions of Bergeron [2003, pp. 3] and Quinn et al. [2000].
	12	Yee et al. [2009]	*"Shared Services (SS) is a collaborative strategy in which a subset of existing business functions are concentrated into a new, semi-autonomous business unit for the internal customers of the parent corporation, like a business competing in the open market"*	Refer to definition of Bergeron [2003, pp. 3].
Secondary Papers	13	Gibson and Arnott [2005]	*"A shared service is the standardisation and consolidation of business functions, in order to reduce process duplication and at the same time centralise controls and processes."*	
	14	Bækgaard [2009]	*"Shared services are support processes from which many parties can benefit"*	Refer to definition of Ulbrich [2006].
	15	Van Veenstra et. al [2009]	*"Shared service centers can then be formed, in which services from multiple organizations are concentrated in one joint centre"*	Refer to definition of Janssen and Joha [2006b].
	16	Whitaker et al [2006]	*"…consolidating IT and business processes throughout the firm into a single or small number of centers owned and run by the firm."*	Refer to definition of Shah [1998] and Ulrich [1995].
Other common definitions (from outside the IS literature) cited by IS authors				
Papers Outside IS (cited by IS Authors)	1	Bergeron [2003]	*"Shared services is a collaborative strategy in which a subset of existing business functions are concentrated into a new semi-autonomous business unit that has a management structure designed to promote efficiency, value generation, costs savings and improved service for the internal customers of the parent corporation "*	Referred to by Ulbrich [2006], Borman [2008a], Yee and Chan [2009] and Yee and et al. [2009].
	2	Longwood and Harris [2007]	*"Shared services involve the aggregated provision of a business process"*	Referred to by Borman [2008a].
	3	Moller [1997, cited in Ulbrich, 2006]	*". . . a shared service centre (SSC) is an independent organisational entity which provides well defined services for more than one unit (which may be a division or business unit) within an organisation. The SSC is responsible for managing its costs and the quality and timeliness of the services it provides to its internal customers. It has its own dedicated resources and typically will have informal or formal contractual arrangements, often called service level agreements, with its customers."*	Referred to by Ulbrich [2006, 2009].
	4	Schulman et al. [1999]	*"The concentration of company resources performing like activities, typically spread across the organization, in order to service multiple internal partners at lower cost and with higher service levels, with the common goal of delighting external customers and enhancing corporate value"*	Referred to by Becker et al. [2009], Ulbrich [2006], Sedera and Dey [2007] and Borman [2008a].
	5	Ulrich [1995]	*"Shared services is as its name implies – the combining or consolidating of services within a corporation."*	Referred to by Su et al. [2009] and Whitaker et al. [2006]
	6	Quinn et al. [2000]	*". . . shared services at a simple level refers to the practice of business units, operating companies and organizations deciding to share a common set of services rather than have a series of duplicate staff functions."*	Referred to by Borman [2010], Ulbrich [2006] and Yee and Chan [2009].

Though the definitions are diverse, concentration or consolidation is a key theme. Many refer to support or back-office functions (e.g., Finance, HR, IT and procurement) and the services they deliver via processes and IT. Several refer to organizational, business and governance aspects. Some refer to a specific organizational model, where the services are provided by a (semi-)autonomous organizational entity to multiple other entities. This is sometimes included more explicitly in the definition, with specific reference made to a shared service 'centre'. There are also themes that relate to a business approach, in terms of being managed like a business, being service and customer oriented, and having a provider-client relationship (e.g., service level agreements). Governance is implicit in the concept of 'sharing' and in themes like collaboration.

While there are similarities between the definitions and common themes can be identified, there are also some significant differences in terms of characteristics included, as well as conflicting characteristics. An example of the former is the semi-autonomous entity, which is sometimes included in the definition [e.g., Yee et al., 2009] and sometimes not mentioned at all [e.g., Becker et al., 2009]. Moreover, some refer explicitly to a shared services 'centre' [e.g., Whitaker et al., 2006]. An example of conflicting characteristics is whether shared services are intra-organizational (within a single organizational boundary) [e.g., Goh et al., 2007] or can also be extended across inter-organizational (multiple organizations) boundaries [e.g., Yee and Chan, 2009]. In addition, we see that some definitions include one or more objectives of shared services such as increase efficiency, create value or improve services [e.g., Goh et al., 2007], whereas Borman [2008a] argues to keep objectives out of the definition.

Two papers on shared services in the IS literature explicitly canvass then existing definitions and their interrelations: Miskon et al. [2009] and Schultz et al. [2009b]. The former defines shared services as "*the internal provisioning of services by a semi-autonomous organizational unit to multiple organisational units involving the consolidation of business functions supported by a sharing arrangement*." Schultz et al. [2009b] is followed by Schulz and Brenner [2010], a publication which defines the shared services centre as "*an organizational concept with the following characteristics: consolidates processes within the group in order to reduce redundancies; delivers support processes as its core competency; has cost cutting as a major driver for implementation; has a clear focus on internal customers; is aligned with external competitors; is a separate organizational unit within the group; and is operated like a business*." While these integrative definitions progress toward a common understanding of shared services, it remains unclear whether a unified definition is feasible. Commenting from a Management rather than IS perspective, Bangemann [2005] attributes the diversity of definitions to the diverse perspectives on shared services – strategic, operational, process, and technical (IT), and differential reasoning and goals. In a similar vein, Schulman et al. [1999] argue that shared services need to be tailored to each organization. Therefore, a variety of approaches to shared services have been proposed and implemented. In addition, there is yet uncertainty about the most appropriate ways to conceive, implement and manage shared services [Aksin and Masini, 2008]. This would argue for a broad definition of shared services that includes different types and implementations.

So while there is convergence around the concentration or consolidation theme, there exists no common understanding or agreement on a specific definition within, and even outside, the IS community. Given that only 16 of 193 papers explicitly define shared services (recognizing, in the secondary papers, shared services may not be sufficiently central to warrant a definition), it may be the notion is considered well understood (inappropriately), requiring little explanation. However, as preceding discussion shows, the concept is neither well-established nor consistent in the IS discipline. For the remainder of this paper we define shared services broadly as "*an organizational arrangement whereby multiple organizational units collaborate in the concentration of resources to provide services that support their business activities*." This definition captures the main ideas of 'sharing' in terms of organizational units collaborating by concentrating their resources and 'service' in term of supporting the business activities of the organizational units as customers/users. With respect to the latter, this reflects the understanding of services as supporting the processes of customers so that value can be created [Grönroos, 2006]. The definition is inclusive, accommodating most perspectives on shared services found in the IS literature (e.g., whether based on consolidation or not, whether specifying a shared services centre or not, and whether intra- or inter-organizational, etc.), while excluding specific mention of objectives, as suggested by Borman [2008a]. A more specific version of this definition for shared services as organizational arrangement for the IS function can refer to 'IS resources' and 'IS services' in the definition.

While our holistic and inclusive definition can serve as a tentative definition, further research into a conceptualization for IS is required; we call for closer and careful attention to the meaning of shared services in IS research. Deriving from the preceding analysis and discussion of shared services definitions, we suggest the following questions for further, more focused future research on the definition of shared service from an IS perspective:

1. What is shared services in the IS context?
   a. What are the core themes or characteristics of shared services in IS?
   b. What characteristics of shared services in IS, can be included in the definition of shared services?

c. How to deal with (conflicting) characteristics of shared services in IS (e.g., intra- or inter-organizational)?
d. To what extent is shared services in IS similar or different to shared services in other domains (e.g., Finance, HR)?

Important in understanding shared services and its distinctiveness, is its relation with centralization/decentralization and outsourcing, seemingly overlapping concepts. The need for consolidation is in some sense a reaction to the negative effects of decentralization (or duplication) of business functions in multi-business-unit organizations. Shared services differs though from centralization, in particular with respect to customer intimacy and control by the customer[e.g., Janssen and Joha, 2006b]. Goh et al. [2007] see shared services as a specific form of a 'federal' mode of IT organization in large division-based organizations, combining centralization and decentralization. Hodgkinson [1996] suggests, this way of organizing the IS function attempts to capture the benefits of both centralized and decentralized IT.

Shared services can be perceived as a sourcing arrangement and thus, a clear description of what shared services is and how it differs from other forms of sourcing, is required. In reference to confusion regarding alternative sourcing arrangements, Whitaker et al. [2006, pp. 3249] suggest *"There is a need to integrate these concepts for a comprehensive view";* it is important to clearly understand what sourcing arrangement is used and when it is best to change from one arrangement to another. Davenport [2000, pp. 175] maintains, "*Looking to the future, the large-scale changes to the business environment... are likely to tip the balance of factors associated with outsourcing toward... shared services.*" Some authors make an attempt to compare and contrast shared services to other sourcing arrangements. Ulbrich [2006] states that shared services is somewhat similar to outsourcing, and that *"the main difference is where the service provider is located organizationally and that internal resources are used rather than those of a contractual partner"* [Ulbrich, 2006, pp. 197]. Shared services can also be seen as a step towards external outsourcing [Kagelmann, 2000, pp. 79-81; cited in Ulbrich, 2006]. Therefore, a more advanced understanding of shared services in relation to other forms of organizing and sourcing the IS function, applications and infrastructure should be a priority for future research.

2. What are the similarities and differences with other forms of organizing and sourcing the IS function, applications and infrastructure?
   a. How does shared services relate to centralization and decentralization?
   b. How does shared services relate to the federal mode of organization?
   c. How does shared services relate to outsourcing?
   d. What are other areas in IS that are relevant for or have similarities with shared services?

Specifying objectives of shared services

Specifying organizational objectives is known to be valuable, as specific objectives give direction and focus attention and resources. The introduction of shared services is a highly consequential, strategic decision requiring long-term commitment and entailing substantial complexity and risk [Janssen and Joha, 2006b]. Industry analysts stress the importance of understanding the objectives of shared services, e.g., Gartner [2008] stating "*Make sure you know why you're implementing shared services*".

As discussed in the research design section above, we first captured all instances of any direct or indirect mention of shared services objectives and motives, through open coding to an 'objectives' node. A total of 103 objective-instances were identified from 41 primary and secondary papers, which were initially grouped into low level themes. We identified IS literature that discussed shared services objectives, to aid us with the synthesis of these lower level themes into higher level categories. Three primary papers, Goh et al. [2007], Janssen and Joha [2006b], and Su et al. [2009], specifically discuss shared services objectives. We chose the Janssen and Joha [2006b] framework, which we saw as the most comprehensive framework on shared services objectives. They discuss four categories of motives for shared services: (1) strategic and organizational, (2) political, (3) technical, and (4) economic. This categorization is an adapted version of outsourcing motives by Baldwin et al. [2001].

The different (initial) themes that were identified in the first round of inductive analysis were mapped on to Jansen and Joha's [2006b] framework. All four categories of the Jansen and Joha framework were instantiated. As neither Janssen and Joha [2006b] nor Baldwin et al. [2001] very explicitly define each category, the instances captured under each category were reviewed to confirm the themes and subthemes. What stood out under the strategic and organizational objectives, were process related instances that were mentioned explicitly several times (see Figure 3 below). Processes are also discussed prominently in shared services literature such as Ulbrich [2006] and Lacity and Fox [2008], who specifically refer to the role of processes within shared services. Shared services is characterized by a process orientation [Ulbrich, 2006]. The redesign and management of business processes is a core phase within shared services initiatives [Lacity and Fox, 2008]. Based on the number of citations and the specific attention in

literature, we proposed a new category to capture 'process' objectives. We see strategic and organizational motives as those that are more long-term, high-level goals related to achieving a company's vision while we see process motives as those that are more related to operational, day-to-day activities.

Figure 3 presents a summary of this analysis depicting the main categories, how many papers mentioned each category, and how many times each category was mentioned across the different papers. Two coders reviewed and confirmed the coding procedures and results. The results provide a clear account of the objectives of shared services as reported in IS literature, although they may not be complete or mutually exclusive due to the approach applied (i.e., limitations of content analysis in general).

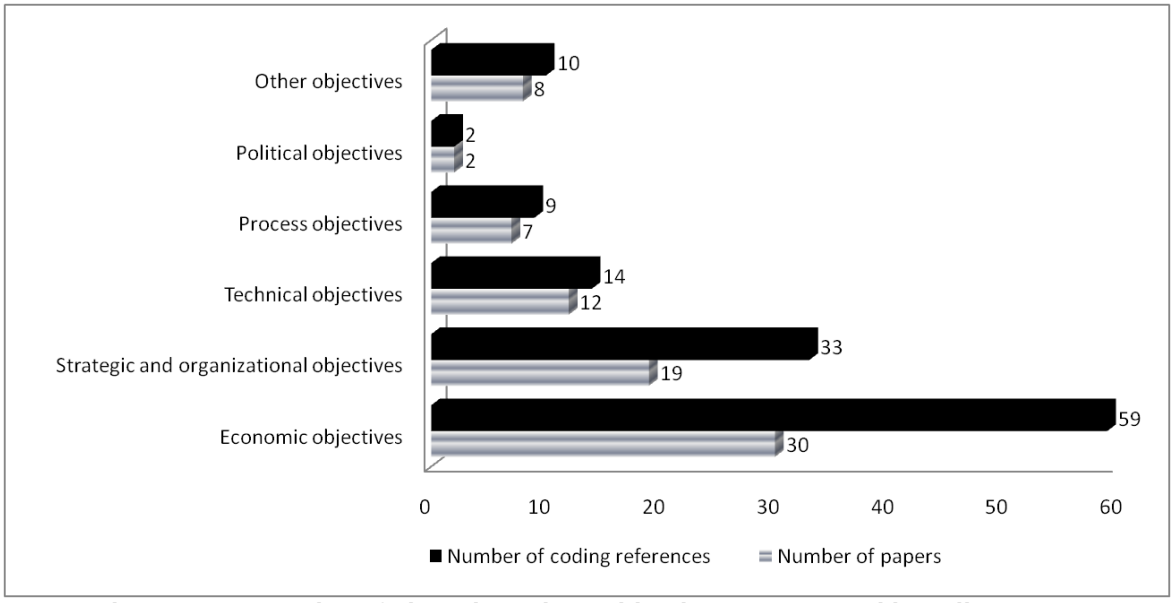

Figure 3: Categories of shared services objectives as reported in IS literature.

Economic objectives are most prevalent (59 instances from 30 papers), followed by strategic and organizational objectives (33 instances from 19 papers). Economic objectives relate mainly to cost reduction. For example, Becker et al. [2009] state that "*We assumed that reduction of costs is the crucial motive for establishing a shared service organization*." Schulz et al. [2009a, 2009b] also conclude that the main objective of shared services is cost reduction. In addition, economies of scale and leveraging resources are also often mentioned as economic objectives, which are related to cost reduction.

Within the strategic and organizational category, professional service delivery was the most cited objective; also mentioned were customer orientation, synergy and innovation, restructuring and working better across multiple regions. For example, Su et al. [2009] argue that "*shared services may increase service quality by forming a customer-oriented mindset within the service organization and professionalizing service delivery*." Economic and strategic objectives are often stated jointly, the core goal being provision of better services against lower costs. For example, Lacity and Fox [2008] mention that "*organizations create shared services to dramatically reduce costs, improve services, and even to generate revenue*." Janssen and Joha [2006b] emphasize the value of economic and strategic objectives of shared services even more extensively by stating that "*The popularity of SSCs seems to originate from a combination of advantages, including efficiency gains and an increase in service levels without giving up the control of the organizational and technical arrangements and expertise*."

Technical objectives (14 instances from 12 papers) relate to, for example, business/IT alignment, access to expertise and technology, and the use of ERP systems. From an IS perspective, technical objectives and motives are an area of particular interest, both in terms of shared services as an organizational arrangement for the IS function, as well as the role of IS in shared services in general. For example, Janssen and Joha [2006a] state that "*By creating a SSC, the municipalities have access to more skills and expertise and they were able to develop new systems and services, as prior to the introduction of the SSC, the maintenance and control efforts consumed almost all resources*."

The process objectives (9 instances from 7 papers) related mostly to process improvement. Goh et al, [2007] report on the formation of shared services with global governance to improve processes, and Boh and Yellin [2006] state that "*the sharing of IT services helps organizations to innovate business processes.*" Process objectives are particularly relevant from an IS perspective; business processes being a core IS research focus [e.g., Kettinger et al., 1997] and seen as fundamental to capturing value from IT [e.g., Melville et al., 2004].

Political objectives received little attention in the IS literature on shared services. Other than Janssen and Joha [2006b], only Su et al. [2009] stated that "*shared services may also bring political advantages such as enhancing credibility and solving internal conflicts*." More research into the political objectives of shared services may be warranted as their importance in relation to the centralization or decentralization of IS has been recognized early in the IS discipline. For example, King [1983], from a behavioral viewpoint, states that the driving issues in the centralization or decentralization debate are the politics of organization and resources, centering on the issue of control. Moreover, the prominence of political objectives may differ based on study context. For example, political objectives may be more or less prominent depending on the sector (e.g., public or private sector).

Some 'other' objectives did not fit the five categories (10 instances from 8 papers) and none of these 'other' objectives were mentioned in more than 1 or 2 papers. Examples of themes within the 'other' category are; 'Information sharing', a topic of interest to IS – e.g., "*The objective of the ERP implementation was to create a shared service hub for the organizational logistics and financial systems so as to facilitate multi-functional information sharing*" [Wan et al., 2001] and 'a less risky alternative to outsourcing' [e.g., Goh et al., 2007, Schulz et al., 2010].

Within the IS context, the objectives for shared services can relate both to shared services as an organizational arrangement and sourcing approach for the IS function, and to the enabling role of information systems for shared services in general. Firstly, the question rises whether shared services as an organizational arrangement for the IS function, requires an IS specific understanding of the objectives. Hence, we encourage further research about the objectives of shared services as an organizational arrangement for the IS function based on the discussion above of economic, strategic and organizational, technical, process and political objectives:

1. What are the objectives for shared services as an organizational arrangement for the IS function?
    a. Can we better understand and explain the core idea of shared services in terms of better service at lower cost for the IS function?
    b. What combination of different (economic and strategic) objectives of shared services is most relevant for the IS function?
    c. What is the role of technical and process objectives of shared services for the IS function and how do these relate to the economic and strategic objectives?
    d. Do we need a better understanding of political motives of shared services for the IS function and, if so, what are the possible political motives?
    e. What other types of objectives, such as those related to information, are relevant for shared services for the IS function?
    f. What is similar and different for the objectives of shared services for the IS function relative to other functional areas (e.g., Finance, HR)?

In addition, more research is required to gain a deeper understanding of the objectives of shared services in general (e.g., Finance, HR, IS) in relation to the enabling role of IS, such as the role of IT infrastructure, the need for IT service management, or experimentation with new technology. For example, Lacity and Fox state that "*Reuters found that technology was a critical enabler of its regional shared services […] This is worth investing in before anything else*" [Lacity and Fox, 2008] and "*In 2001, the corporate CFO decided to significantly reduce finance costs by standardizing finance policies for global delivery (BPR), implementing standard, global enterprise resource planning (ERP) and workflow systems (technology enablement)*" [Lacity and Fox, 2008]. This discussion suggests the following research questions in relation to IS as an enabler of shared services:

2. What is the role of IS in relation to the objectives for shared services as an organizational arrangement in general?
    a. What is the role of IT infrastructure in relation to the objectives for shared services and what does shared services mean for the IT infrastructure?
    b. What is the role of IT applications, in particular integrative enterprise software, in relation to the objectives for shared services and what does shared services mean for the IT applications?
    c. What do the objectives of shared services mean for the development or procurement of new software?
    d. What do the objectives of shared services mean for the IT function and/or IT outsourcing?
    e. How can an IS perspective contribute to better understanding the objectives of shared services; in particular, technical, process and information objectives?

As implied in the earlier discussion on the definition, shared services is often seen as combining the benefits of centralization, decentralization and outsourcing [e.g., Goh et al., 2007, Ulbrich, 2009]; for example, providing efficiency gains and an increase in service levels without yielding control of organizational and technical arrangements and expertise [Janssen and Joha, 2006b]. While this combination of advantages has made shared services popular, Janssen and Joha observe that it has also resulted in unrealistic expectations. They warn that stakeholders often have different requirements and expectations and that best practices can be conflicting. For example, economies of scale often come at the expense of customer focus. Janssen and Joha [2006b] consider

expected versus realized benefits (relating to objectives) and based on a public sector case study, observe that some main benefits anticipated from initiating shared services are not realized, while other benefits realized, were not anticipated. To realize the benefits of shared services, Lacity and Fox [2008] argue that coordinated integration of four change programs is required: business process redesign (BPR), organizational redesign, sourcing redesign, and technology enablement. Similarly, Ulbrich [2006] concludes that the implementation of shared services can benefit from lessons learned in the BPR area. A critical approach to the objectives and benefits of shared services and their realization is warranted. Hence, we also suggest the following research questions:

3. How can the objectives for shared services as an organizational arrangement be realized?
    a. How realistic are the objectives of shared services in terms of combining the benefits of different approaches such as centralization, decentralization and outsourcing?
    b. What is needed for the realization of the objectives of shared services? What is required in terms of business process redesign, organizational redesign, sourcing redesign, and technology enablement?

In summary, the literature suggests a broad range of objectives for shared services, however, it is unclear how realistic benefit expectations are or how they can be realized. The onus is on IS researchers to understand, on the one hand, what the implications of shared services are for the organizational arrangement of the IS function, and on the other hand, how IS can play an enabling role for objectives of shared services in general.

Identifying stakeholders of shared services

Prior research in IS as discussed in Jiang et al. [2006] and Seddon et al. [1999], has shown the importance of properly identifying the correct stakeholders. Seeking the appropriate perspectives of the relevant stakeholders is important for research (e.g., when defining the unit of analysis, framing the research questions and deriving and executing the research design) and in practice (e.g., when gathering requirements for the implementation of shared services or when evaluating the initiatives). However, the IS literature about stakeholders in relation to shared services is very limited. There have not yet been any papers in the IS literature (our primary and secondary sets of papers) that are specifically dedicated to the topic of shared services stakeholders or have a section specifically dedicated to this topic.

Here we aim to address the gap in understanding of shared services stakeholders by deriving a preliminary conceptual framework, based on a synthesized summary of references to stakeholders in the IS literature on shared services. The synthesis proceeded in multiple phases: first any mention of any type of stakeholder (a person, group or organization with an interest and/ or role in the shared services arrangements) was captured under a single main node 'Stakeholders'. This was further analyzed in a second round of analysis, where specific roles/groups were identified from the data. At the end of this stage (when extracted quotes were grouped into similar categories as indicated by the data), we sought literature on organizational stakeholders, to help further justify and confirm the observations. **Table 2** presents the summary results of this analysis.

Papers dedicated to stakeholders in shared services were scarce. Those that did discuss stakeholders were always in the context of a shared services centre (SSC), a semi-autonomous unit responsible for providing the shared services. The roles identified from the analysis above were grouped around those that were 'internal' – within the SSC, and those that were 'external' – outside the SSC (as depicted in Column 1 of **Table 2**). The roles, both internal and external to the SSC, identified from this analysis are depicted in Column 2 of **Table 2**. Columns 3, 4 and 5 provide supporting evidence for each role, with the number of citations, number of sources and example citations. In addition to the different roles and their groupings, special attention was given to capturing key terms that indicate the relationships between these various parties (e.g., 'serves', 'is in charge of', 'interacts with'). The results of this analysis were used to derive a conceptual framework of shared services stakeholders, as graphically illustrated in **Figure 4.**

Table 2: Overview of data gathered from literature about shared services stakeholders

1	2	3	4	5
Higher level classifications	Role(s)/ groups identified	# of citations	# of sources	Example Citations[12]
nal to the shar ed	Strategic roles	9	5	*"A new position - VP Corporate IT (i.e., CIO) - was created to* ***take charge of*** *global IT management and coordination of* ***shared service activities****"* [Sia et al., 2011]

[12] Some text in the examples provided here have been made bold for emphasis, to illustrate the key words that supported the classifications we observed.

				"In July 2004, the company hired a **new manager to head up the captive center***... this man knew how to efficiently and effectively manage a center."* [Lacity and Fox, 2008]
	Middle management roles	5	4	*"the governance model also* **specified global IT officers assigned to each business function***"* [Goh et al., 2007] *"A Shared Services Center (SSC) was established...* The SSC was co-managed by one university employee (**responsible for managing SSC operations**)*.... and was staffed by ... an administrative head (**responsible for aligning the facility's IT architecture with that of the university**)* [Huang and Zmud, 2010] " *...four '**channel managers'**, each responsible for the relations with a specific group of stakeholders (citizens, government, business, visitors)." **[Vaast and Binz-Scharf, 2008]**.*
	Operational roles	4	4	"*A* **helpdesk** *function was created functioning as a one-stop shop for all users. The helpdesk prioritizes requests and forwards the user requests to the right person."* [Janssen and Joha, 2006a]. "*The recommended organizational structure envisaged the creation of a* **web portal core team***, ...It consisted of a director and* **six core team members: A portal manager, a webmaster,** *..."* [Vaast and Binz-Scharf, 2008].
	Support roles	1	1	"*One federal employee [was] responsible for* **ensuring that the SSC was not in violation of federal security policies***"* [Huang and Zmud, 2010].
Stakeholders *external* to the shared services centre	Parent Organization	12	7	*"Finally, in the role of shared services, the* **parent** *assumes responsibility for various operative processes of the SBUs and tries to improve efficiency by centralizing them"* [Böhm et al., 2010] *"The three options were presented in late January 2004 to the* **executive sponsor of shared services***, the Director of Shared Services, and the shared services leaders"* [Lacity and Fox, 2008] *"Managers [of the parent organisation] who are presently dissatisfied with an organization's current performance often consider shared services as one of their first-choice change alternatives"* [Ulbrich, 2006]
	Customers	17	5	"*The federation has several* **user boards** *consisting of representatives of the users, which might be process owners, line managers, and administrative workers*" [Janssen and Joha, 2006a]. *"It delivers IT services to the* **various business units** *in the organization, i.e.,* **its customers.***"* [Ulbrich et al., 2010]. *"....four 'channel managers', each responsible for the relations with a specific group of stakeholders (**citizens, government, business, visitors**)."* [Vaast and Binz-Scharf, 2008].
	Outsourcing partners	5	4	"*In the Reuters case, the sequence for creating shared financial services was iterative and involved two overlapping phases….They established a new captive center in Bangalore, India, and* **outsourced specialized financial services to third-party suppliers***.*" [Lacity and Fox, 2008] "... Selective use of **outsourcing partners** would fill in gaps..." [Lacity and Fox, 2008]. "*By the time P&G's shared services were* **outsourced***, their operations were drastically transformed and streamlined*" [Gospel and Sako, 2010]
	3rd party Suppliers	2	1	*"In addition to the major outsourcing partner,* **specialty partners were engaged to perform very specific processes like scanning, facilities administration, and local taxes.***"...."...The shared services team also expanded existing relationships with Reuters'* **banking partners** *to ensure that global shared services could handle payment transactions across borders and across partners."* [Lacity and Fox, 2008].
	Consultants	7	6	*"The company hired a management* **consulting firm** *to help the finance and HR functions roll out Oracle and launch the shared services initiative."* [Lacity and Fox, 2008] "**Consultants** *from shared services organization (APSS) provided expertise in SAP package and business processes tailored for region".* [Brown and Vessey, 2003]

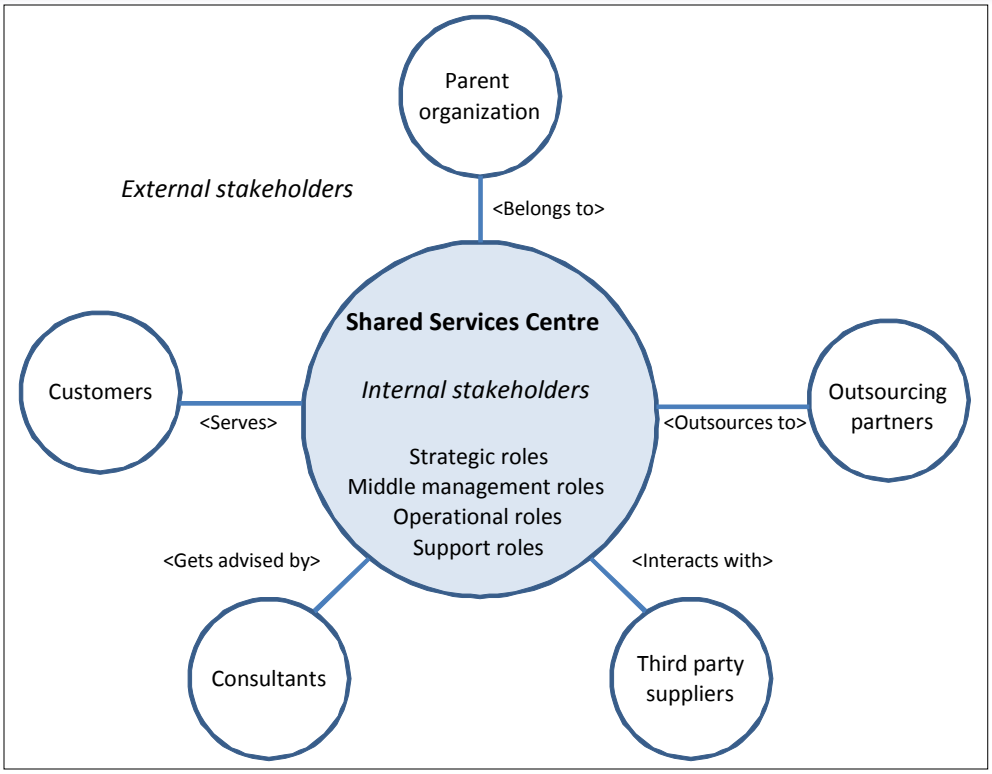

Figure 4: Stakeholders of shared services a conceptual framework

The ***internal stakeholders*** of a shared services centre are: strategic roles within the SSC (those who control the SSC); middle managers (those who connect the strategy with the operational tasks and manage the operational activities); operational roles (those who are directly involved in producing the services of the SSC), and support roles (those who provide support to the rest of the organization, including those who are involved with the planning and control of work). These categories were identified from the inductive coding and mapped on the basic parts of an organization as described by Mintzberg's [1979] organizational structure model. Prior studies [e.g., Carver and Lewis, 2000, Peterson et al., 2000] have applied Mintzberg's model when describing stakeholders through an organizational-structure-lens and when describing governance through authority and division of responsibilities for various tasks. We found it a useful framework to justify the categories we had formed inductively. These findings are also consistent with common roles in SSCs as reported in shared services practitioner reports [i.e., Corporate Leadership Council, 2006].

The strategic roles in shared services consist of designations such as: General Manager Shared Services; Director Corporate Services; Manager Client Services; Finance Director, Group Executive Shared services etc [Borman, 2008a]. This role involves overseeing the overall conduct of the Shared Services Centre (SSC) and managing relationships the SSC has with the business unit leaders, in particular advising the business units on how to realize the full potential of shared services [Borman, 2008a, Lacity and Fox, 2008]. The senior executives are the figureheads of the SSC when interacting with the external members. Lacity and Fox [2008] explain how the senior management of a SSC may act as *"coaches who evangelized the vision set by the 'owners'* of the business units". The middle management role in shared services is responsible for overlooking specific functional areas within a SSC; people in a shared services middle management role may be known by designations such as: account manager or line manager (Lacity and Fox, [2008]. Only a few operational roles of SSCs were described in the IS literature. Personnel in operational roles consist of those that actually perform the core business of the SSC. For instance, in an IT shared services centre, this would include all those who serve in the helpdesk function. As with all organizations, shared services units also require support tasks to take place. Huang and Zmud [2010], for instance, mention how a dedicated role exists to assist the SSC to conform with required security policies.

With respect to ***external stakeholders***, the literature points to the SSC interacting with a parent organization, which is often an organization or a group of organizations that have collaborated to create the shared services centre. These are the founders of the SSC. The SSC has its own responsibilities and is accountable to a 'board' of the parent organization, as they provide services to the business units and customers of the parent organization.

The most prominent external interactions of the SSC are with the customers to whom the SSC provides its services. Most of the customers are the business units within the parent organization. Sometimes, the SSC may also directly

serve the customers of the business units and parent organization. Research studies discuss in detail the issues that SSCs face when trying to get their "clients" in the business units to accept and appreciate the services they offer [Lacity and Fox, 2008]. The SSCs should not only consider the needs of the business units they serve, but also need to be well attuned to the needs of the business unit's customers. For example, Janssen and Joha [2006a], describe a shared services initiative in the public sector where the potential users of the shared services were *all* public government agencies in the Netherlands; hence the need to understand the needs of the citizens that these agencies serviced.

At certain times, the SSC might decide to collaborate with external service providers to fill in gaps in the SSC's capabilities. This can be through outsourcing services, involving consultants, or through partnering with special service providers (e.g., banks for financial services). For example, Lacity and Fox [2008] describe how Reuters filled their gaps with "*one major outsourcing partner, several specialty partners, and expanded relationships with its existing banking partners*". Often, specialized consultants are brought in when designing and implementing shared services. For example, Lacity and Fox [2008] describe how Reuters hired a management consulting firm to help the Finance and HR functions roll out Oracle and launch the shared services initiative.

Overall, information about stakeholders of shared services is scarce and scattered, with very little dedicated IS literature addressing the topic of shared services stakeholders to date. While the framework presented in **Figure 4** provides an initial conceptualization of shared services stakeholders, more work is warranted to better understand stakeholders within a shared services context, as diverse interests and influences from different stakeholder groups can be a success or failure factor for shared services. Thus, research is required to further develop and respecify the a-priori conceptual framework presented here and empirically validate this initial framework. Further development of the preliminary stakeholder framework should not only address who the stakeholders are, but also their specific interests; the latter are related to the objectives of shared services, as discussed earlier. Hence, we suggest future research to better understand different stakeholders and their diverse interests:

1. What are the roles and interests of stakeholders in relation to the shared services centre?
    a. What are the roles and interests of the internal stakeholders and how do they relate to each other?
    b. What are the roles and interests of the external stakeholders and how do they relate to each other?
    c. How do the roles and interests of internal and external stakeholders relate to each other?
    d. How do the interests of stakeholders relate to the shared services objectives?

More attention to shared services stakeholders and their interests is a necessary first step, but by itself not sufficient to progress academic understanding and derive managerial implications. We suggest that future research should also inform the shared services centre and the stakeholders on how to manage their interests. This can be informed by a theoretical foundation that builds on stakeholder theory as it has evolved in the management literature. This can provide insights into how top management of the shared service centre can manage and engage the stakeholders (in particular its core external stakeholders: the customers and the parent organization) [see for example, Freeman, 1984 on stakeholder management] and, on the other hand, how stakeholders can influence the shared service centre [see for example, Frooman, 1999 on stakeholder influence strategies]. We propose some potential questions for future research on these aspects:

2. How can a shared services centre manage the stakeholders and their interests?
    a. How can a shared services centre manage and engage the internal and external stakeholders?
    b. How can a shared services centre deal with diverse and conflicting interests of stakeholders?
    c. How can a shared services centre manage the relation with customers (i.e., the business units) and the parent organization?
3. How can the stakeholders influence the shared services centre's decisions, processes and outcomes?
    a. How can internal stakeholders influence the shared services centre?
    b. How can external stakeholders influence the shared services centre?
    c. What is the impact of stakeholder influence on the decisions, processes and outcomes?

Understanding the notion of 'sharing'

This section aims to provide a synthesized understanding of '*what'* is being shared and '*how',* as reported in the IS literature. The analysis process was similar to that described under stakeholder analysis above. The overall synthesis occurred in multiple phases where any mention of 'sharing' was first captured under a single high level node. Recurring themes were extracted inductively from the next detailed analysis rounds, and are presented below. The '*what'* is being shared has as its main themes business and technology perspectives; '*how'* things are shared has as its main themes the structural arrangements for sharing, the organizational boundary within which the sharing occurs, and geographical dispersion of the sharing.

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As **Table 3** presents, two broad themes were identified when analyzing the details of what had been reported as being shared: a 'business' perspective and a 'technology' perspective. From the business perspective, the literature explains sharing of **business functions** such as Human Resources, Information Technology, Finance, Legal etc and at times discusses the sharing of specific **processes** (such as payroll, IT helpdesk, accounts payable etc.). The literature also refers to sharing of **knowledge & expertise** that can be accumulated and accessible when sharing business functions and processes, in particular in relation to identifying and executing best practices and developing new services and products (including technologically supported solutions).

From the technology perspective, the analysis points to the sharing of **IT applications, IT infrastructure** and **data & information**. Authors such as Ulbrich [2006] show how new leading-edge technologies (including software and related infrastructure) and systems updates, that a single company business unit might not be able to afford or manage, can be made accessible by sharing. Organizations can also use shared services to consolidate and integrate data and information.

The different categories of sharing are interrelated. For example, when large scale *IT Applications* (such as ERP packages) are shared, the *IT infrastructure* to support the sharing of these applications is also included in the sharing, and the technology is often used to collaboratively conduct the tasks of the *business functions* and *processes.* For instance Lim et al. [2005] provide an example of how multinational companies like GlobalMNC used SAP (an ERP package) to facilitate the data & information sharing across multi-functions [i.e., Finance, Human Resources, etc].

Table 3: Summary of data gathered from literature about different forms of sharing

1		2	3	4
What is been shared		**# of citations**	**# of sources**	**Example citations[13]**
Business Perspective	1) **Business functions** – core business functions of the organizations (e.g., HR, Finance, IT etc)	20	15	*"A functional SSC covers processes of a function (e.g., finance, HR, IT).... By contrast, a multi-functional SSC offers various functional fields, e.g., IT and HR"* [Schulz et al., 2009b] *"The business functions that may be shared are very diverse, including both front-office work, such as customer support, and back-office work, such as finance" [Su et al., 2009]*
	2) **Process** – A process or several processes in a function (e.g., payroll, budgeting)	14	12	*"Therefore, shared services can especially be applicable for supporting processes like wage and salary administration"* [Becker et al., 2009] "*Thirty-three percent of the organizations in our study are even taking the concept of consolidation and shared services beyond the organization's four walls by sharing applications, hardware or core business processes with other firms to further reduce costs.*" [Davenport et al., 2004]
	3) Knowledge and Expertise – knowledge and expertise that can be shared	4	3	*"The sharing of IT services helps organizations to innovate business processes, share best practices, gain economies of scale, and reduce redundancy, waste, and suboptimal allocation of IT human resources"* [Boh and Yellin, 2006] *"ITU (www.ITu.nl) is a central knowledge sharing and IT-development foundation aimed at supporting local organizations to adopt information technology."* [Janssen and Joha, 2006a]
Technology Perspective	4) **IT Infrastructure** – hardware, storage and networks that can be shared.	21	17	*"Therefore, shared services can especially be applicable for ....IT-infrastructure..."* [Becker et al., 2009] *"One is to create an internal shared services IT organization. The IT group may begin by identifying a set of infrastructure services needed by multiple business units and then provide them firmwide." [Weill and Vitale, 2002]*
	5) IT Applications – Software and application suites that can be shared.	15	13	*"The delivered services comprise applications in the area of citizen data, human resources, transportation and housing, social and youth affairs, and SAP applications"* [Becker et al., 2009] *"those investments in enterprise-wide software programs such as ERP*

[13] Like in Table 2, above, some text in the examples provided here have been made bold for emphasis, to illustrate the key words that supported the classifications we observed.

				systems, or e-commerce solutions, can be realized earlier or at all. Moreover, adjustments – needed to response to external changes such as ***software evolution or updating systems*** *to legal requirements in, e.g., accounting – will be easier to implement"* [Ulbrich, 2006]
	6) **Data & Information** – data or information that can be shared within organizations.	5	4	*"....shared services unit providing* ***data*** *.... to twelve work units housed in a newly-constructed facility on the research campus of a university"* [Huang and Zmud, 2010] *"The objective of the ERP implementation was to create a shared service hub for the logistical and financial systems in order to facilitate multi-functional* ***information-sharing*** *processes."* [Lim et al., 2005]

Overall, a clear articulation of *what* is shared within shared services is yet to be developed. We presented a first conceptualization of "what is being shared". However, this is a preliminary model based on inductive evidence from a limited pool of literature, which requires further development, re-specification and validation with empirical evidence. Moreover, research should then advance to identifying what different things are shared or not depending on the situation. Hence, we suggest to investigate this further;

1. 'What' can be shared within shared services contexts?
   a. What can be shared from a business perspective? What can be shared form a technology perspective? (a further re-specification and validation of the a priori model presented here)
   b. What contingency factors influence the different types of things being shared? – are certain things better for sharing based on certain contingency variables?

For *how* things are shared three main themes were identified from inductively identifying instances that explained how sharing took place. Again, detailed documentation was scarce from the IS Literature. The three themes comprise: (1) the **structural arrangements** for sharing, (2) the **organizational boundary** within which the sharing occurs, and (3) **geographical dispersion** of sharing.

The analysis captured potential instances of **structural arrangements** for shared services – how the sharing was structured from an organizational design perspective. Few papers made any attempt to explain the shared services centre as an organizational entity in its own right. Generally, there is little discussion in the IS literature about the structuring of shared services. Schulz et al. [2009a], present a shared services centre as a separate legal entity where contractual agreements are concerned. The relationship to other entities can be that of a preferred service provider [Borman, 2008a, Gericke et al., 2006, Heinrich and Winter, 2004, Schulz et al., 2009a, Smyth, 2001, Weill and Vitale, 2002] or one that is mandated [Borman, 2008a, Weill and Vitale, 2002]. Lacity and Fox [2008] discuss the option of using a low-cost captive center that is located offshore combined with the selective use of outsourcing partners. A few authors, Agarwal and Sambamurthy [2002], Lacity et al. [2003], Martin and Cheung [2005], and Schulz et al. [2009a], briefly mention models of service costing where a shared services centre may apply for separate cost recovery and revenue generation.

In terms of the **organizational boundary** within which the sharing occurs, the literature points to shared services that can occur, on the one hand, within a single organization (intra-organizational) or, on the other, across multiple organizations (inter-organizational). "*SSCs can be used to share services between departments within an organization or between organizations. The former kind of SSC type can be called an intra organizational SSC"* [Janssen and Joha, 2006b]. "*While traditional shared services involves the sharing of services internally within an organisation (Intra-Organisational), Inter-Organisational Shared Services (IOSS) involves the sharing of services across more than one organisation"* [Yee et al., 2009].

In terms of the **geographical dispersion** of the sharing, the literature points to sharing that can occur at a **global** level, **regional** level or **local** level. These different geographical shared services units are centralized structures to achieve global/regional/local scale efficiencies, through the provision of standardized services and IT infrastructure [Sia et al., 2008]. For example, Sako et al [2010] describe how Procter & Gamble created an internal global shared services unit which pulled all essential corporate functions - finance and accounting, human resources, and IT into a single Global Business Services operation. Borman [2008a], provides the example of "*Bristol Myers Squib's global business service unit realising annual savings of $1.5billion".* Regional shared services involve providing services across a given geographical region (i.e. a state or a few cities). Local level shared services arrangements can be viewed as a part of regional shared services. For example, Sia et al. [2008] describe how Microsoft, *"created regional shared services at Richmond (corporate headquarters), Dublin, and Singapore to manage the extension of IT services across the globe."* and how Procter & Gamble's IT shared services provided IT services with three shared services centers in San Jose, Costa Rica, in Newcastle, UK, and in Manila, Philippines. These different

regional shared service units tap into the different time zones as well as the differential cost and competencies of each region.

The detail and discussion on 'how' things are shared is also under addressed in the IS literature, with rare brief mention of structural arrangements having varying organizational boundaries and geographical dispersions. A clear framework that identifies the different dimensions that distinguish different ways of sharing or a typology that describes the potential sharing options is warranted. Moreover, research should also advance to identifying how different ways of sharing relate to the sharing of the different types of things (i.e., how the 'how' and 'what' of sharing are related) and how different ways of sharing are more or less successful depending on the context. Thus, we recommend further investigation into;

2. How does sharing occur in shared services contexts?
   a. What are the structural arrangements for shared services?
   b. What defines the organizational boundaries of shared services
   c. What are the different geographic levels across which sharing can occur?
   d. How does the way of sharing (in terms of organizational structure, boundaries and geography) influence the sharing of different types of things?
   e. What contingency factors influence the different ways of sharing? – are certain ways of sharing better based on certain contingency variables?

V. THE RESEACH PERSPECTIVE ON SHARED SERVICES IN THE IS LITERATURE

The goal of this paper is to explore the concept of shared services as perceived within the IS discipline and to propose a research agenda for IS researchers, pointing to the salient gaps worthy of investigation. The prior sections of the paper present a synthesized overview of definitions, objectives, stakeholders and the notion of sharing (i.e. *what* is shared and *how* things are shared). While this analysis shows the growing importance of the shared services phenomenon in IS, it also points to many gaps that warrant attention. In order to support IS researchers in the future design and conduct of shared services research, we next revisit the IS literature on shared services and present an overview theories applied, followed by a comparison of the research methods used.

An overview of theory

Theorizing helps to describe, explain, and enhance understanding of phenomena and, sometimes, to provide predictions of what may happen in the future and to give a basis for intervention and action [Gregor, 2006]. The development and application of theory is important to improve a field's current status and future prospects, both as an intellectual and a professional discipline. A discipline is essentially based on an underlying body of theoretical knowledge as well as practical knowledge. Thus, in an attempt to describe the current status of a field (in this case shared services within the IS discipline), it is important to try to reveal its theoretical perspectives. Such analysis can also assist and guide the expansion of a field's knowledge base.

A search for theories in the papers that focus on shared services (the primary set of 29 papers) resulted in the identification of 6 papers applying theory and 6 theories being applied with 5 papers applying 1 theory and 1 paper applying 3 theories. Additionally, all the secondary papers were also searched for the application of theory in relation to shared services. No additional papers or theories were identified. **Table 4** depicts an overview of the results. Overall one can state that the low number of papers applying a theoretical approach (6 out of 29 primary papers) is not surprising considering the dearth of literature on shared services in the IS discipline and its current state of maturity. As discussed earlier, most IS literature on shared services is seemingly very 'young', evidenced by specific papers on the topic only appearing since 2006 and most papers only reaching conferences and practitioner outlets to date. Shared services as a relatively new phenomenon may require more explorative and descriptive approaches at this stage. Consequently, it is too early to provide any rich insights into the development and application of theory in the domain. Instead we will provide a descriptive overview of the different theories applied so far and how they were applied to provide an impression of this early theoretical work on shared services.

Table 4: Overview of the theories mentioned in shared services research within the IS discipline

Theory	Application of theory	Source (all primary papers)	No. of papers
Resource-based View (RBV)	To understand, plan, source, organize, and deliver the IT shared services optimally in a shared services model	Goh et al. [2007]	2
	As a determinant for the type of IT governance necessary to share services in public administration	Janssen and Joha [2006a]	
Dynamic Capabilities Theory (DCT)	As a determinant for the type of IT governance necessary to share services in public	Janssen and Joha [2006a]	1

	administration		
IT Governance Theory (ITG)	To understand the governance structure and mechanisms to share services and accomplish the objectives in public administration	Janssen and Joha [2006a]	2
	To position shared services as a structural element in global IT organizations, which needs to work with other structural elements	Sia et al. [2008]	
Resource Dependence Theory (RDT)	To understand the motivation for and the composition of shared services partnerships in local government	Borman [2010]	1
Real Options Theory (ROT)	To conceptualize service organizations and their shared services transformation in an uncertain business environment	Su et al. [2009]	1
Transaction Cost Economics (TCE)	To argue for or against the decisions to adopt shared services (versus outsourcing)	Yee et al. [2009]	1

The Resource-Based View (RBV) has been applied to shared services by Goh et al. [2007] and Janssen and Joha [2006a]. RBV has been widely used to analyze firm level attributes in the strategic management literature [Barney et al., 2001]. RBV describes how organizations can gain competitive advantage by differentiating themselves in their collection of resources and how they can sustain competitive advantage by virtue of the inability of other firms to obtain comparable resources [Barney, 1991]. RBV is useful for the IS discipline as it can help to understand how information systems relate to firm strategy and performance, in particular to evaluate the strategic value of information systems resources and to differentiate among various types of information systems [Wade and Hulland, 2004]. Goh et al. [2007] apply RBV to describe a shared services model for the IT function in terms of IT services, IT capabilities and IT resources. They claim that "*the RBV approach had helped the IT unit to understand, plan, source, organize, and deliver the IT shared services optimally in a shared services model*." Janssen and Joha [2006a] applied RBV (in combination with DCT, discussed below) to better understand the IT governance necessary to share services in public administration, They argue that "*RBV explores shared services as a strategic decision often having a long-term impact. The RBV attracts the attention to achieving efficiency and customer-orientation objectives through managing an organization's internal resources*" [Janssen and Joha, 2006a]. In their analysis, they particularly focus on resources that are valuable, rare or hard to create [Barney, 1991], requiring organizations to look at the sharing of services. Janssen and Joha [2006a] conclude that the resource attributes account for differences between providing commodity services to large number of users with centralized governance and providing customized services to a limited number of users with decentralized governance.

Janssen and Joha [2006a] applied Dynamic Capabilities Theory (DCT) (in combination with the RBV) to better understand the IT governance necessary to share services in public administration. Dynamic capability is defined as a *"firm's ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments"* [Teece et al., 1997]. According to Eisenhardt and Martin [2000], DCT is an extension of RBV theory, explaining how organizations can achieve new resource configurations in rapidly changing environments. Janssen and Joha [2006a] argue that establishing shared services can be viewed as a reaction to the changing environment, such as new legislation or new technology. Moreover, shared services needs to develop the ability to identify new opportunities and respond to them instead of just matching current resources to opportunities in the marketplace. In their DCT analysis, Janssen and Joha [2006a] particularly focus on the organizational and managerial processes, the asset position and path dependency. They conclude that there is a need for users to have organizational and managerial capabilities to integrate shared services in their processes. The asset position impacts the urgency to adopt shared services and the way shared services are governed. Moreover, different paths result in different governance structures; a top-down approach results in centralized governance while a bottom-up approach results in decentralized governance.

IT Governance Theory (ITG) is used both by Janssen and Joha [2006a] and by Sia et al. [2008]. IT Governance specifies the decision rights and accountabilities conducive to encouraging desirable behaviors in the use of IT [Weill, 2004]. Desirable behaviors are viewed as those consistent with the organization's mission, strategy, values, norms, and culture. Weill argues that IT governance matters because the benefits received from IT investments depend on it. IT governance requires an understanding of what IT decisions must be made and determining who should make these decisions and who should be involved. Weill and Ross [2004] distinguish a number of IT governance decision areas, which can be related to different IT governance archetypes. Sambamurthy and Zmud [1999] discuss the multiple organizational contingencies related to corporate governance, economies of scope, and absorptive capacity, which act together in influencing the mode of IT governance. Janssen and Joha [2006a] argue that "*governance is necessary for creating, assembling and exploiting shared services in a network of public agencies, all having various resources and capabilities*." The sharing of resources via centralized or decentralized structures requires the coordination of dependencies among public agencies and the service centre. Three kinds of

governance mechanisms can be used for that: decision-making structures, alignment processes and formal communications [Weill and Ross, 2004]. Janssen and Joha conclude that the governance structure and mechanisms largely determine the ability to share services and the accomplishment of objectives, and need to carefully balance customization and commoditization. Sia et al. [2008] study global IT strategies from an ITG perspective, with a particular focus on global-local tensions. They position global/regional shared services within the structuring of global IT organizations as "*centralized structures to achieve global scale efficiencies through the provision of standardized services and IT infrastructure*." In addition to global/regional shared services, Sia et al [2008] also identify global/regional centres of excellence and regional/local site IT support units. They stress that "*much of the inherent global-local tension in global IT plays out in the establishment of these structural elements and the interactions among them, and has to be carefully coordinated through a central planning unit*." They also notice that different governance processes evolve when organizations move to global IT from different legacies of governance structures.

Shared services can also be understood from a Resource Dependence Theory (RDT) perspective. Borman [2010] applies RDT to understand the motivation for and the composition of shared services partnerships in local government. RDT stresses the dependence of organizations on external sources of resources, the strategic choices organizations have in relation to external constraints, and the role of power (as opposed to, for example, rationality or efficiency) [Pfeffer and Salancik, 2003]. According to Pfeffer and Salancik the survival of organizations is determined by their effectiveness, that is, its ability to create acceptable outcomes and actions. Organizational effectiveness "*derives from the management of demands, in particular the demands of interests groups upon which the organizations depend for resources and support*" [Pfeffer and Salancik, 2003]. Within RDT, organizations are viewed as coalitions, altering their structure and patterns of behavior to acquire and maintain needed external resources thereby decreasing the organization's dependence on others and/or increasing others' dependence on it [Ulrich and Barney, 1984]. Borman [2010] argues that "*the establishment of an effective shared services partnership at the local government level can help participants manage their dependencies on other levels of government*" and that "*the effectiveness of the shared services partnership is influenced by its composition, in terms of the resources it provides and the relationships established for its operation*." Based on a case study, Borman states that RDT helps to understand *why* certain objectives are important for the establishment of a shared services partnership and provides insight into the effectiveness of the shared services partnership and dependency management for the composition of the shared services partnership in terms of the resources and relationships. With respect to dependency, Borman concludes that while shared services can be a means to manage dependency, it also introduces new dependencies between the participants.

Su et al. [2009] applied Real Options Theory (ROT) as a theoretical lens for conceptualizing service organizations and their shared services transformation in an uncertain business environment. Myers [1977] linked the investment strategy of the firm to real options, which are opportunities to purchase real assets on possibly favorable terms, similar to call options in financial markets. In this way organizational resource investments can be viewed in their ability to generate choices and gain preferential access, which is helpful for strategic decision making [Bowman and Hurry, 1993]. Real options help to capture the value of managerial flexibility by properly structuring the evaluation and management of investment opportunities when uncertainty and irreversibility are high [Fichman et al., 2005]. An attractive feature of the real options perspective is its seeming correspondence to the resource allocation process at many firms [Adner, 2007]. According to Su et al. [2009] firms need to strategically decide whether and how to pursue various service transformation alternatives (e.g., simplification, standardization, consolidation, in-sourcing, or outsourcing) to implement shared services successfully. A service organization can be viewed as a bundle of options that give the firm preferential access to future transformation opportunities. Su et al. [2009] provide a decision methodology for valuing alternative shared services transformation approaches, supported by a taxonomy of transformation options: stage, defer, alter scale, abandon, switch and grow.

In distinguishing shared services from outsourcing, Yee et al. [2009] build on Transaction Cost Economics (TCE). TCE describes the firm and market as alternative modes of governance, the choice between which is decided by transaction cost differences [Williamson, 1999]. According to Commons [1931] transactions are the ultimate units of economic activity. Transaction cost analysis examines the comparative costs of planning, adapting, and monitoring activity completion under alternative governance structures. Although the principal ideas were in place earlier [e.g., Coase, 1937], TCE became well known via the work of Williamson [e.g., 1979, 1981]. According to Williamson a transaction occurs when a good or service is transferred across a technologically separable interface: one stage of activity terminates and another begins. Transactions can be described by three attributes: uncertainty, frequency and asset specificity. Depending on these attributes, transaction costs (in combination with production costs) will determine the most efficient boundaries of organizations because of bounded rationality and opportunism. TCE has been widely applied to information systems outsourcing [e.g., Dibbern et al., 2004, Miranda and Kim, 2006]. For example, Thouin et al. [2009] show that asset specificity can be used to guide outsourcing decisions and Bahli and Rivard [2003] use transaction costs in their conceptualization of IT outsourcing risks. Yee et al. [2009] argue that a

transaction cost approach could also be useful to argue for or against the decisions to adopt shared services (versus outsourcing). However, their application of TCE is very exploratory and their findings with respect to TCE and shared services are rather limited.

As only a few papers have applied a theoretical approach, it is too early to draw conclusions from this pool of papers by itself. However, a comparison with outsourcing, an area closely related to shared services, can provide some insights for future research. The theories applied in IS literature on shared services are mainly reference discipline theories that focus on economic and strategic aspects. This is similar to the early literature on outsourcing, which was initially focused on the outsourcing decision with respect to competitive, costs and risk considerations (see literature reviews from Lacity and Willcocks [2009]; Mahnke et al. [2005]; and Dibbern et al.[2004]). Later, literature on outsourcing made use of social and organizational theoretical perspectives to understand the process and outcomes of outsourcing. Drawing on this, one can, on the one hand, argue for a further development of theoretical perspectives from economics and strategy for the shared services decision and, on the other hand, for the addition of social and organizational theoretical perspectives addressing the process and outcomes of shared services. This further theoretical development can be guided by the themes addressed in the primary papers, such as business process redesign [Ulbrich, 2006], (out)sourcing [Sako, 2010, Yee and Chan, 2009], organizing visions [Huang and Zmud, 2010], alignment [Borman, 2008a, Fonstad and Subramani, 2009], service management [Ulbrich et al., 2010], organizational structure [Becker et al., 2009, Miskon et al., 2011], knowledge management [Hertlein et al., 2010], business architecture [Versteeg and Bouwman, 2006], and technology (ERP) [Sedera and Dey, 2007].

While so far the emphasis in IS literature on shared services has been on how reference discipline theories can contribute to understanding shared services, the contribution of IS research on shared services to the reference discipline theories should also be recognized as an opportunity once shared services research has matured. As Grover et al. [2006] conclude, IS is more and more becoming an important intellectual contributor to its reference disciplines as well as to other disciplines. Understanding and identifying this potential early may contribute to shaping the future research on shared services research in IS. For example, the Resource-Based View (RBV) is an important theory for IS in general [Wade and Hulland, 2004] as well as for IS research on shared services (as discussed above). Wade and Hulland see the refinement of the resource complementarity concept as a contribution of IS to RBV as IS resources mostly act in conjunction with other firm resources to create strategic benefits. IS research on shared services can advance the understanding of resource complementarity as shared services may, on the one hand, strive to achieve the further development of IS resources via consolidation, and, on the other hand, need to maintain an enhancing relationship between the shared resources and the other firm resources. For example, shared services could be positioned as an integration effort to ensure that the IT asset and the organizational resource are purposefully combined [Nevo and Wade, 2010].

Based on the analysis and discussion of the application of reference discipline theory in IS literature on shared services (and the comparison with the theoretical development of outsourcing research), we propose several questions for future research:

1. What reference discipline theories are valid for describing, explaining, predicting and/or prescribing shared services in information systems?
    a. What are the reference discipline theories shared services can apply? How are these theories related to reference discipline theories in information systems and to reference discipline theories in related areas such as outsourcing?
    b. What theoretical perspectives, other than from economic and strategic perspectives, are valid for shared services, in particular organizational and social perspectives?
    c. What theoretical perspectives go beyond a focus on the shared services decision, in particular a focus on the shared services process and outcome?
    d. How can shared services research contribute to reference discipline theories?

The IS discipline has a growing number of indigenous theories, for example Straub [2012] provides a sample of IS-specific theories that have appeared over the years. Within the IS research on shared services, IT Governance Theory has been the only indigenous theory applied so far. IS research on shared services could potentially leverage IS-specific theories related to governance, organizational design and sourcing. Shared services research could also contribute to the further development of these theories. For example, could the notion of ‘sharing’ be seen as an alternative to a centralized or decentralized organization of the IS function, and how it is distinctive (or not) from other alternatives such as a federal organization of the IS function [e.g., Hodgkinson, 1996, Zmud et al., 1986].

In addition to the application of theories, we also set out to identify the development of indigenous shared services theory. As may be expected given the limited number of primary papers and the current maturity of shared services research in IS, none of the papers tried to develop indigenous shared services theory (see also the next section on

research methods). Whether or not there is a need and opportunity to develop indigenous shared services theory, similar to an indigenous theory of IT outsourcing [Lacity et al., 2010], could be an important topic in the future debate on shared services. It is also worth debating whether or not IS research could contribute to an indigenous theory on sharing and shared services and whether this could or should be IS-specific. In summary, the application and development of indigenous, IS-specific theories on shared services is still in a very early stage. We propose several questions for future research:

2. What indigenous, IS-specific theories are valid for describing, explaining, predicting and/or prescribing shared services in Information Systems?
   a. Is there a need for building indigenous theory on shared services and would this be viable and feasible?
   b. Should shared services be included in indigenous theories in related areas such as governance, organizational design, and/or sourcing?
   c. How would indigenous theory on shared services relate to the reference disciplines theories used for shared services?
   d. What is the role of the IS discipline in building indigenous theory on sharing and shared services, and should this be IS-specific?

While there are only a few IS papers on shared services applying theory, different theories have been applied in different papers and one paper [Janssen and Joha, 2006a] uses multiple theories. The application of multiple theories in IS research on shared services will also raise the question of whether this theoretical diversity is beneficial and desirable or not, as also discussed in IS research in general [e.g., Benbasat and Weber, 1996, Robey, 1996] and in IS research on outsourcing [Dibbern et al., 2004, e.g., Lacity and Willcocks, 2009, Mahnke et al., 2005]. A multi-theoretical perspective on shared services can cater for the many different aspects of IS shared services. This means that different theories are perceived as complementary and research will evolve into integrated multi-theoretical approaches and frameworks. Alternatively, a multi-theoretical perspective on shared services acknowledges the early, pre-paradigmatic phase of shared services research. This means that different theories are perceived as competing and research will need to determine the most valid theory. We propose several questions for future research related to the potential of theoretical diversity for shared services research in the IS discipline:

3. Will shared services research benefit from a diversity of theoretical perspectives?
   a. Should shared services research strive for developing and applying different indigenous and/or reference discipline theories?
   b. Should different theories in shared services research be seen as complementary or competing?

An overview of research methods

This section reports on the different types of research methods that have been applied in the IS literature on shared services. The purpose was to ascertain the nature of the research by deriving a descriptive overview of the reported research approaches in the IS shared services literature, and also, to build a point of reference for future research on the topic when authors seek examples and justifications for their selected approaches and their design. Only those papers that focus on shared services (the primary set of 29 papers) were included in this analysis. The articles were first grouped into two broad categories, *empirical* and *non-empirical*. Following Chen and Hirschheim [2004], we categorized as empirical papers (25 of 29) those papers that obtained data or observations (primary or secondary empirical data); which could be gathered through quantitative, qualitative, or a mixed approach, including archival data) and the rest as non-empirical papers (4 of 29). Any practitioner oriented papers and those that were mere conceptual papers or argumentative notes were captured under the non-empirical category.

The empirical papers were classified into further sub categories – adopting the classification framework of Chen and Hirschheim [2004]. In addition to the original sub categories of survey, case study, laboratory experiment, field experiment, and action research we also included: archival analysis [following Bandara et al., 2011, Boell and Cezec-Kecmanovic, 2011, Gable, 2010, Oates, 2011] and design science [Iivari, 2007, Kuechler and Vaishnavi, 2008]. These were added as they have become popular and emerging approaches used within IS research.

The classification was done based on what the authors directly or implicitly stated as the approach used. The coding of the primary shared services papers only instantiated the case study (18), archival analysis (6), design science (2) and action research (1) categories. Note that 3 studies used multi-method, 1 of which used 2 methods, and 2 used 3 methods. In addition to the type of research method used, we also captured how well the method-design had been documented. Firstly, we checked to see if there was a dedicated section in the paper that was specifically about the design of the method (see Column 11 of **Table 5**). We also evaluated the quality of the description of the method design (which sometimes may have been integrated with other parts of the study instead of being within a dedicated research method section – see Column 12 of **Table 5**). Here we looked for documented details such as who the target respondents were, where they came from and why they were selected, what phases were involved and the

associated time frames, and how the data was analyzed. **Table 5** provides a summary of this analysis. Two researchers coded and checked all the papers that were classified (using the above mentioned categories), until full agreement of the results was reached.

Table 5: Overview of the methods applied

		Non-empirical		EMPIRICAL RESEARCH								
		PRACTICAL EXPERIENCES	CONCEPTUAL	Survey	Experiment	Case Study	Action Research	Archival Analysis	Design Science	Others	RESEARCH METHOD (Dedicated Section)	Quality Research Method Description
	1	2	3	4	5	6	7	8	9	10	11	12
1	Bandara et al. [2011]	-	√	-	-	-	-	-	-	-	√	√
2	Becker et al. [2009]	-	-	-	-	√	-	-	-	-	√	√
3	Borman [2008a]	-	-	-	-	√	-	-	-	-	√	√
4	Borman [2010]	-	-	-	-	√	-	-	-	-	√	√
5	Fonstad and Subramani [2009]	-	-	-	-	√	-	-	-	-	√	☑
6	Goh et al. [2007]	-	-	-	-	√	-	-	-	-	√	√
7	Hertlein et al. [2010]	-	-	-	-	-	-	-	√	-	√	√
8	Huang and Zmud [2010]	-	-	-	-	-	√	-	-	-	√	√
9	Janssen and Joha [2006a]	-	-	-	-	√	-	-	-	-	-	☑
10	Janssen and Joha [2006b]	-	-	-	-	√	-	-	-	-	√	√
11	Knol and Sol [2011]	-	-	-	-	√	-	-	-	-	√	√
12	Lacity and Fox [2008]	√	-	-	-	-	-	-	-	-	-	-
13	Miskon et al. [2011]	-	-	-	-	-	-	√	-	-	√	√
14	Miskon et al. [2009]	-	-	-	-	-	-	√	-	-	√	√
15	Rehm [2009]	-	-	-	-	-	-	-	√	-	-	☑
16	Sako [2010]	-	√	-	-	-	-	-	-	-	-	-
17	Schulz et al. [2010]	-	-	-	-	√	-	-	-	√	√	√
18	Schulz et al. [2009b]	-	-	-	-	√	-	√	-	√	√	√
19	Schulz et al. [2009a]	-	-	-	-	√	-	√	-	√	√	√
20	Sedera and Dey [2007]	-	-	-	-	-	-	√	-	-	-	☑
21	Sia et al. [2008]	-	-	-	-	√	-	-	-	-	√	√
22	Stewart and Chakraborty [2011]	-	-	-	-	-	-	√	-	-	√	√
23	Su et al. [2009]	-	-	-	-	√	-	-	-	-	-	☑
24	Ulbrich [2006]	-	√	-	-	-	-	-	-	-	-	-
25	Ulbrich [2009]	-	-	-	-	√	-	-	-	-	√	√
26	Ulbrich et al. [2010]	-	-	-	-	√	-	-	-	-	√	√
27	Versteeg and Bouwman [2006]	-	-	-	-	√	-	-	-	-	√	√
28	Yee and Chan [2009]	-	-	-	-	√	-	-	-	-	√	√
29	Yee et al. [2009]	-	-	-	-	√	-	-	-	-	-	√

☑A weak mentioning of the research method

Only 4 of the 29 papers were non-empirical papers. The paper by Bandara et al. [2011] dealt with how to conduct an archival analysis, using the domain of shared services as an example. The remaining 3 papers were very much practitioner oriented and were about lessons learned with normative guidelines on what had worked and not worked in prior shared services contexts.

The majority of the empirical papers (20 out of 25) had a dedicated 'Research Methods' section, and most (22 out of 25) empirical papers had evidence of documenting the overall design of the research. The documentation of the research method is important for the progression of the field, as current and future researchers can judge the quality of existing work and build on this work when the approach used is communicated and well understood. A preliminary

analysis of the overall domains covered indicates that most empirical work on shared services in IS is focused on strategic issues in the public sector.

From the empirical work reported (25 papers in total), 18 papers (Column 6 of **Table 5**) used case studies as the main research methodology. Case studies are popular in IS research, being used to gather rich data [Chen and Hirschheim, 2004]. They are also appropriate and popular for a new area [Yin, 2009]. The fact that shared services is a 'young' and emerging phenomenon in IS, warranting the investigation of rich contextual data, explains the popularity of the case study method in these studies. 6 papers (Column 8 of **Table 5**) used archival analysis, drawing on readily available information about case sites which had implemented shared services. 2 studies (Column 9 of **Table 5**) used design science while 1 study (Column 7 of **Table 5**) used action research. An overview of the research approaches used can provide a preliminary impression on the maturity of the field of research. Case studies are most prominent in the very early phases of a field's maturity, where qualitative, exploratory work is essential to derive a common understanding of the core concepts of the field; commonly, there is a tendency to proceed with more quantitative approaches, such as surveys and experiments, in later phases of maturity [Yin, 2009].

Papers that had used a case study approach (the most prominent approach) were analyzed in more depth. See **Table 6** for the summary results of this. The papers were analyzed by capturing how they contributed towards knowledge accrual. Benbasat et al. [1987] suggest three categories of knowledge accrual phases: descriptive cases, exploratory cases (for theory/ hypothesis generation) and explanatory cases (for theory/ hypothesis testing) (Column 2 of **Table 6**). The overall Case study design was captured, based on whether it was a single case study or a multiple case study design (and, if multiple cases, how many were included; see Column 3a of **Table 6**), and if the study depended solely on the case study method or used case studies with other methods (Column 3b and 3c of **Table 6**). Finally, this analysis reviewed the nature of the papers' data collection and analysis (Column 4 - 5 of **Table 6**). The different data collection methods were captured and classified as per the classification of Dube and Pare [2003] (Column 4 of **Table 6**). The time period of the study was analyzed based on Orlikowski and Baroudi's [1991] classification (Column 5 of **Table 6**).

8 of the 18 papers used case studies for descriptive purposes. The rest used it for exploration and/or explanation. As presented in the prior section [see **Table 6** and those cells of **Table 6** - Column 2 denoted by a ⍁], 6 of these papers used one or more reference discipline theories to support the exploratory/ explanatory activities in their studies. None of these studies tested shared services theories that originated from the shared services domain. Those that did attempt to make novel theoretical contributions were only in the very early phases of theoretical exploration, where very early versions of frameworks and models were built and presented (none being empirically validated).

8 of the 18 case based studies used a single case study design, where the rest used multiple case designs, with the number of included cases ranging from 2 to 20 cases. A few (4) reported on the use of other methods such as expert interviews, archival/ literature analysis and focus groups to complement the case study findings.

Interviews and documentation (and the combination of these two) were the most common methods of data collection in the reported cases. The occasional use of questionnaires and observations (mostly in combination with interviews) was also reported. All studies were cross-sectional-single-snapshots except for Jansen and Joha [2006b], who presented a single case study with evidence of cross-sectional, multiple- snapshots.

Table 6: Deeper analysis of papers that used the case study method

		Contributions to knowledge and theory			Overall case study design			Data collection and analysis	
		Descriptive	Exploration	Explanation	cases	Single Case Study	used with other	Data collection method	Time period of study

								Interviews	Documentations	Observations	Questionnaires	Artifacts	Time series	Others	Cross-Sectional: single snapshot	Longitudinal	Cross Sectional: multiple snapshot	Process Traces
	1	2			3			4							5			
		2a	2b	2c	3a	3b	3c											
1	Becker et al. [2009]	-	☑	-	M(3)	√	-	√	√	-	-	-	-	-	√	-	-	-
2	Borman [2008a]	-	√	-	M(11)	√	-	√	-	-	-	-	-	-	√	-	-	-
3	Borman [2010]	-	-	⊠	S	√	-	√	√	-	-	-	-	-	√	-	-	-
4	Fonstad and Subramani [2009]	√	-	-	S	√	-	√	√	-	√	-	-	-	√	-	-	-
5	Goh et al. [2007]	-	⊠	⊠	S	√	-	√	√	-	-	-	-	-	√	-	-	-
6	Janssen and Joha [2006a]	-	⊠	⊠	M(2)	√	-	√	-	-	-	-	-	-	√	-	-	-
7	Janssen and Joha [2006b]	√	-	-	S	√	-	√	√	-	-	-	-	-	-	-	√	-
8	Knol and Sol [2011]	-	√	-	M(3)	√	-	√	√	-	-	-	-	-	√	-	-	-
9	Schulz et al. [2010]	√	-	-	M(8)	-	√	√	√	-	√	-	-	-	√	-	-	-
10	Schulz et al. [2009b]	√	-	-	M(7)	-	√	√	√	-	-	-	-	-	√	-	-	-
11	Schulz et al. [2009a]	√	-	-	M(7)	-	√	√	-	-	√	-	-	-	√	-	-	-
12	Sia et al. [2008]	-	⊠	-	M(6)	√	-	√	√	-	-	-	-	-	√	-	-	-
13	Su et al. [2009]	-	⊠	⊠	S	√	-	-	-	√	-	-	-	-	√	-	-	-
14	Ulbrich [2009]	√	-	-	M(6)	√	-	√	√	√	-	-	-	-	√	-	-	-
15	Ulbrich et al. [2010]	√	-	-	M(20)	√	-	√	-	-	-	-	-	-	√	-	-	-
16	Versteeg and Bouwman [2006]	√	-	-	S	√	-	-	-	-	-	-	-	-	√	-	-	-
17	Yee and Chan [2009]	-	√	-	S	-	√	√	-	-	√	-	-	-	√	-	-	-
18	Yee et al. [2009]	-	⊠	-	S	-	-	√	-	-	√	-	-	-	√	-	-	-

☑ - A weak mentioning of the topic considered (i.e., degree of evidence of exploration).
⊠ - Application of reference discipline theories
S – Single / M - Multiple

We call for IS researchers to pay more attention to the articulation of the research method – to make sure that all essential aspects in the selection, design and conduct of the research approach are made transparent – and to conduct more rigorous empirical work on shared services. In particular we suggest that academic studies of IS researchers can contribute to understanding shared services by:

1. Conduct further exploratory research, in particular in areas that have not been addressed to date and empirically validate practical observations (such as lessons learned and documented guidelines) discussed in practitioner outlets

2. Better design and conduct case studies when this is chosen as the research approach:
   a. Consider multiple case study designs that complement other methods
   b. Consider longitudinal case designs

3. Build and test theories in areas where initial exploratory work has been conducted

VI. CONCLUSION AND OUTLOOK

This study examines the current understanding of shared services as reported in the IS literature. Though shared services have gained significance and have become a well-established and regarded organizational arrangement in business and government organizations, the current body of knowledge in the IS discipline remains limited. There is strong need for a better understanding of the *what* (valuable and compelling conceptions of shared services), *why* (objectives of shared services), *who* (stakeholders involved) and *how* (what is being shared and in what way). We are not the first to highlight this need. The lack of maturity of shared services research has been recognized by other

researchers over the years [e.g., Borman, 2008a, Craike and Singh, 2006, Ulbrich, 2006, Yee et al., 2009], but still shared services is not well understood. Therefore, this study contributes to laying a foundation for advancing the understanding of shared services from an IS perspective by synthesizing the current literature, by developing conceptual frameworks, and by proposing a research agenda. To provide a descriptive overview of the status of shared services from an IS perspective, this study systematically identified relevant papers on shared services in IS literature, resulting in a primary set of 29 papers that focused on shared services, and a secondary set of 164 papers that mentioned shared services. As a basis for the subsequent analysis, the review examined diverse descriptions, analyses and discussions of shared services in the IS context.

Overall we can conclude that the conceptual foundation of IS research on shared services with respect to definitions, objectives, stakeholders, and the notion of sharing is not well-established yet. We found that definitions of shared services are scare, in particular in the secondary papers, which may assume the term is well-understood. This may be incorrect as while the different definitions have similarities (in particular related to the concentration theme), there are also significant differences (e.g., whether based on consolidation or not, whether specifying a shared services centre or not, and whether intra- or inter-organizational, etc.). Though we expect there is yet room for refinement, with the aim of a holistic and inclusive definition unconstrained by pre-specified objectives, we define shared services as "*an organizational arrangement whereby multiple organizational units collaborate in the concentration of resources to provide services that support their business activities*."

The literature suggests a broad range of objectives for shared services for IS. Economic and strategic objectives are the most prevalent while political objectives have so far received little attention. From an IS perspective, objectives related to process, information and technology can be of particular interest. One of the challenges for the objectives of shared services is that it is unclear how realistic benefits expectations are or how they can be realized and how IS can play an enabling role for objectives of shared services in general. Having identified a dearth of research into the perspectives of different stakeholders in a shared services context, we sought to address this shortcoming by presenting a preliminary conceptual framework delineating stakeholders. This framework focuses on the shared services centre and differentiates between the internal and external stakeholders. The paper then presented an analysis of the overall notion of sharing, looking at what is being shared and how. The '*what'* is being shared has as its main themes business and technology perspectives; '*how'* things are shared has as its main themes the structural arrangements for sharing, the organizational boundary within which the sharing occurs, and geographical dispersion of the sharing. In addition to understanding what is being shared and how, shared services research can further advance by understanding how these relate to each other (i.e. what is shared in what way) and what the relevant contingency factors are.

The second part of the paper focuses on the research perspective and presents an analytical overview of theories and methods used in IS research on shared services. A search for theories in the primary papers resulted in the identification of 6 papers applying theory and 6 theories being applied, mainly using reference discipline theories from economics and strategy. The limited attention to theory is not surprising given the low number of primary papers and the fact that most research still seems to be in the conceptual stages as shown from the discussion on definitions, objectives, stakeholders, and the notion of sharing. We do see potential for theoretical research on shared services from an IS perspective, in particular in relation to IS-specific theory on IT governance and organizational design of the IS function. For the research methods applied in IS research on shared services, most primary papers are empirical studies (25 out of the 29) and case study was the dominant research method. More empirical work on shared services from an IS perspective is a pre-requisite for this evolving research.

Future work on shared services in the IS discipline should start from awareness of the open challenges and be guided by appropriate methodological procedures [Keen, 1980, Weber, 1997]. Thus, beyond reviewing what we know about shared services, we also address what we need to know, by identifying relevant research questions. **Table 7** presents a high-level research agenda, providing a summary of these research questions. As part of this research agenda, we also provide some theoretical considerations and methodological guidelines (as summarized in the last two rows of **Table 7**) to support better research in this domain. Given the current status of shared services research in IS, the research agenda stresses the need to address some fundamental, conceptual issues first. Only then can IS research on shared services move forward and provide rigorous and relevant contributions to understanding shared services in relation to IS and making broader contributions to shared services in general and the wider IS domain. Thus, our hope is that this study and paper stimulate awareness and action. Like outsourcing and enterprise systems, shared services are highly consequential, multidisciplinary initiatives in which information systems play a central role. The IS discipline has successfully staked a strong claim to the former, but is yet vacillating regarding shared services. This paper establishes the status quo in IS, highlighting both the lack and the potential. The onus is on IS academe to insure we adequately and appropriately involved in both related research and teaching.

Table 7: A research agenda for understanding shared services in the IS discipline			
Conceptual Considerations	What?	Definitions	1. What is shared services in the IS context? 2. What are the similarities and differences with other forms of organizing and sourcing the IS function, applications and infrastructure?
	Why?	Objectives	1. What are the objectives for shared services as an organizational arrangement for the IS function? 2. What is the role of IS in relation to the objectives for shared services in general? 3. How can the objectives for shared services be realized?
	Who?	Stakeholders	1. What are the roles and interests of internal and external stakeholders in relation to the shared services centre? 2. How can a shared services centre manage the stakeholders and their interests? 3. How can the stakeholders influence the shared services centre's decisions, processes and outcomes?
	How?	Service offerings, arrangements, and structures	1. 'What' can be shared within shared services contexts from a business and technology perspective? 2. How does sharing occur in shared services contexts with respect to structural arrangements, organizational boundaries and geographical dispersion?
Theoretical Considerations	1. What reference discipline theories are valid for describing, explaining, predicting and/or prescribing shared services in Information Systems? 2. What indigenous, IS-specific theories are valid for describing, explaining, predicting and/or prescribing shared services in Information Systems? 3. Will shared services research benefit from a diversity of theoretical perspectives?		
Methodological Guidelines	1. Conduct further exploratory research in new areas and validate observations discussed in practitioner outlets 2. Better design and conduct case studies when this is chosen as the research approach 3. Build and test theories in areas where initial exploratory work has been conducted		

While this paper presents a comprehensive analysis of the shared services literature in IS, we acknowledge several limitations. Constraining the analysis for feasibility reasons to shared services literature in the IS discipline, resulted in relatively few primary papers (i.e., papers focusing on shared services). To partially address this limitation, the study also included a larger number of secondary papers (i.e., papers mentioning shared services), resulting in a total of 193 papers (29 primary papers and 164 secondary papers). While this scope aligns with the objective of the literature review – to analyze how shared services are understood within the IS discipline – we acknowledge that there are other papers in the broader shared services literature that may relate to IS. Nonetheless, as for this paper the IS discipline was specified based on the main IS outlets (i.e. the most important outlets that are targeted at the IS academic community) and the research presented within these selected outlets, the defined and executed scope was relevant and complete for the objective of the literature review. Further research can extent the literature review by also including IS papers published outside of the IS discipline to provide a broader, more inclusive perspective. In addition, results presented here share limitations more generally associated with qualitative research (for example, researcher bias in source selection, coding and interpretations). While we employed strategies to minimize these (such as the design and application of detailed protocols and coding procedures, maintenance of a trail of evidence, triangulation with other literature, and coding by multiple coders), further validation and testing of the outcomes presented here is warranted to confirm study findings. In spite of these acknowledged limitations, the paper presents a thorough analysis of the current literature of shared services in IS and provides a firm foundation for future research in this discipline. Practice will also benefit from the conceptualizations and status markers presented in this paper. Furthermore, the comprehensive research design presented and executed here can be applied when conducting similar literature analysis in other domains. We encourage to extend this work on shared services beyond IS in other relevant domains, applying the approach presented and applied here. This can then also contribute to consolidating and advancing shared services work inside and outside IS.

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ABOUT THE AUTHORS

Erwin Fielt is a Lecturer in the Information Systems School of the Science and Engineering Faculty at the Queensland University of Technology, Brisbane, Australia. In his research and teaching, he focuses on the intersection between business and IT, where information systems have to create value for individuals and organizations, in particular in relation to strategy, business models, innovation and entrepreneurship. Erwin Fielt has published and presented his research at numerous international outlets, such as Electronic Markets, International Journal of Healthcare Technology and Management, and Info. Erwin Fielt has a PhD from the Delft University of Technology and a MSc from the University of Twente, both in the Netherlands.

Wasana Bandara is a Senior Lecturer in the Information Systems School of the Science and Engineering Faculty at the Queensland University of Technology, Brisbane, Australia. Dr. Bandara received her PhD from Queensland University of Technology, in 2007. She has published and presented her research at numerous international outlets; such as the International Conference of Information Systems and the European Journal of Information Systems. Her research interests include Business Process Management, Process Modeling, BPM & IS Expertise and Education, ICT enabled BPM for development, IS Success, IS Research Methods, and Shared Services.

Suraya Miskon is a Lecturer at Faculty of Computing, Universiti Teknologi Malaysia. She has been involved in teaching, research and consultancy works in the Department of Information Systems for over 5 years. Currently, she is pursuing PhD research in Shared Services at the Information Systems School of the Science and Engineering Faculty at Queensland University of Technology, Brisbane, Australia. Her research interests include Shared Services, Information Systems (IS) Success, IS Development and IS Planning. She has published her work at a numerous international conferences and journals; such as the Americas Conference on Information Systems, Electronic Markets, and the International Journal of E-Services and Mobile Applications.

Guy G. Gable is Professor in the Information Systems School of the Science and Engineering Faculty at Queensland University of Technology, Brisbane, Australia, where he heads their IT Evaluation Research Program. He is Senior Editor Journal of Strategic Information Systems, and has served on the editorial boards of MISQ, JAIS, EJIS and others. Dr Gable is a Charter Member of AIS, has held a range of AIS roles, and has been highly active in main Pacific Asia region conferences (Pacific Asia Conference on IS and Australasian Conference on IS). Most recently he was Conference co-Chair of PACIS'11 hosted at QUT July 2011. Main research interests are IT Evaluation, IT Professional Services, IS-Impact, Enterprise Systems, Service Quality Measurement and Research Methods. His doctorate is from University of Bradford England (ICIS'91, 1st prize), and his MBA from University Western Ontario (Ivey School of Business). He has over 100 refereed publications (e.g., Management Science, Journal of the AIS, Journal of Strategic Information Systems, Information & Management, and European Journal of Information Systems).