Understanding the benefits of IT shared services: Insights from the Higher Education sector

Completed Research Paper

Suraya Miskon
Faculty of Computing
Universiti Teknologi Malaysia
suraya@utm.my

Wasana Bandara
Science and Engineering Faculty
Queensland University of Technology
w.bandara@qut.edu.au

Erwin Fielt
Science and Engineering Faculty
Queensland University of Technology
e.fielt@qut.edu.au

Abstract

In search of efficiencies and effectiveness demanded by a changing marketplace, universities are rethinking their IT services and are considering shared services options. While studies suggest that a wide range of IT services could be shared across Higher Education Institutions (HEIs) offering many potential benefits, there has been little empirical evidence of the specific benefits that apply to this sector and their relationships. A deeper understanding of shared services benefits will inform decision making in practice while progressing research in this field. Through a series of case studies of shared services in the Malaysian Higher Education sector, 5 key categories of benefits are empirically explored: (i) Economic, (ii) Technical, (iii) Process Improvement, (iv) Strategic and Organizational, and (v) Political benefits. The study identified specific sub-themes for each of these broad, generic benefit categories. In addition, potential relationships between these categories are also investigated to form an early theoretical framework on the complex associations between these different benefit categories that can potentially contribute to the wider shared services research.

Keywords: *Shared services, Benefits framework, Higher education sector, NVivo analysis, Qualitative research, Interviews*

Introduction

Shared services is an organizational redesign option that emphasizes the efficiency of corporate functions and can be seen as an alternative to outsourcing (Sako, 2010). Traditionally, shared services has entailed the consolidation of replicate business functions; predominantly support functions like Finance, Human Resources or Information Technology (IT), into a separate unit which provides customer-oriented services to the originating business units (Bergeron, 2003; Richter and Brühl, 2017; Schulman et al., 1999). Today however, we see a broader conceptualization of shared services, also including sharing across organizations (Janssen and Joha, 2006; Wang and Wang, 2007) and distributed sharing without a separate shared services unit (Bækgaard, 2009; Gibson and Arnott, 2005). For the purpose of this paper, we adopt the more contemporary and inclusive definition of shared services adapted from Fielt et al. (2014, p. 1009); *"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 terms of supporting the business activities of the organizational units as customers/users.

The adoption of shared IT services is growing rapidly (Lacity and Fox, 2008; Peters and Silvers, 2005; Richter and Brühl, 2017); perceived as an attractive option for both the IT function and the business units (McKeen and Smith, 2011; Richter and Brühl, 2017). Though an important development for IT services, and closely related to significant areas of IT research like outsourcing and business process redesign (Paagman et al., 2015), the topic has received little attention so far in the IS literature (Fielt et al., 2014); there is a dearth of empirical evidence (Röder and Keuper, 2013; Joha and Janssen, 2010). Moreover, while sharing IT services seems a relatively simple notion, anecdotal evidence suggests it is difficult to realize in practice (Ulbrich et al., 2010).

The introduction of shared services is a highly consequential, strategic decision requiring long-term commitment and entailing substantial complexity and risk (Janssen and Joha, 2006). Decision-makers should carefully consider the anticipated benefits of shared services arrangements prior to implementation (Janssen et al., 2009); expected benefits should be explicitly documented (Hope, 2010, pg 457; cited in McIvor et al., 2011).

Anecdotal evidence suggests that higher education institutions (HEIs) like universities are prime candidates for embracing shared services and have much potential to further exploit the arrangement, with growth and changes in the sector demanding more efficient and improved processes (Miskon et al., 2013; Young and Haynes, 2013). Universities warrant special attention because they typically use an enormous amount of diverse IT systems within a single organization, or at times across multiple universities (or other entities). Thus, there is much opportunity for universities to share duplicate IT systems with one another, saving costs through economies of scale (Miskon, 2013). While many universities are at the stage of introducing 'shared services' as a means of improving organizational performance (Wagenaar, 2006), shared services in the Higher Education (HE) sector has received little research attention (Dove, 2004; Miskon et al., 2013; Yee et al., 2009b). The main goal of this paper is to address the research question; *'What are the benefits of IT shared services in the Higher Education context?'* This paper reports benefits observed from a series of case studies of IT shared services in Malaysian universities.

The paper commences with a literature review and then describes the research approach employed, which is followed by presentation of the findings. The paper concludes with a summary discussion, acknowledgement of limitations, and several pointers to future work.

Literature Review

In this section we further argue prospects for IT shared services in the Higher Education sector, and the need for related research and understanding of shared services benefits.

IT Shared Services in the Higher Education Sector

The emerging global Higher Education (HE) market is challenging all universities to reconsider their mission; to respond to changing marketplace demands in order to function effectively and efficiently. The comparatively homogenous business requirements of universities (compared to many other sectors), combined with strong impetus to respond to a raft of common influences across the Higher Education (HE) sector worldwide, suggest potential for the sharing of similar activities and resources via shared services (Miskon et al., 2011; KPMG, 2006; Deloitte Touche Tohmatsu et al., 2001).

Environmental drivers that influence interest in shared services from universities include: continuing growth in student numbers, changes in the nature of academic work, increasing competition between universities and other tertiary education providers, government pressure to improve operational efficiency, and generally diverse and shifting expectations of stakeholders (KPMG, 2006; Deloitte Touche Tohmatsu et al., 2001). These substantial and continuing shifts in the sector demand more efficient and improved processes. Universities thus seek to identify services that can be managed at a lower cost and to determine the most effective means of delivering those services. In order to achieve cost savings and improvements in performance, they are considering co-operating or sharing in a wide range of areas. Furthermore, there is also a growing desire and willingness amongst universities to share information, solutions and skills with each other (Boyle and Brown, 2010; Hoffman, 2009; KPMG, 2006; Millet et al., 2005).

Universities are heavy users of technology; *"progress, convergence, and integration in IT have driven fundamental change in the information technologies faculty, students, colleges, and universities have or might be expected to acquire"* and this will continue (Jackson, 2012, p. 9). Even in the midst of budget cuts, CIOs of HEIs *"continue to plan for changes in IT to ensure that the institutions' information needs are securely met"* (Zastrocky, 2012, p. 22). Information technology is an important driver and enabler of shared services. Though many IT related shared services observed in Higher Education are focused on academic infrastructure (i.e. shared data centers, library resources) (Young and Haynes, 2013, p. 54), shared services is gaining prominence in the IT function itself (Yee et al., 2009a). By implementing shared services, colleges and universities are able to consolidate IT functions to one location, reducing costs across the board (Laserfiche, 2012).

Studies about shared services in the Higher Education sector are scarce and mainly limited to practitioner reports. Two universities in Australia; University of South Australia and Flinders University, carried out a joint initiative to consider the feasibility of sharing administrative service delivery (Deloitte Touche Tohmatsu et al., 2001). A KPMG report (KPMG, 2006, p. 23) details the range of existing shared services in HE in the UK. The JISC; Joint Information Systems Committee (2008a, b, c, d) reported the awareness, likely responses of key stakeholders, prevalence and extent of, and attitudes towards shared services in the UK. The KPMG study sought to list the benefits gained from shared services, and beyond cost savings identifies; *"Improved service, leading to improved customer experience,… improved morale amongst staff..., and the opportunity to re-organize services around the customer..., senior management focusing their attention on adding value, rather than transaction processing activities..., greater resilience from a wider base..., more staff with key skills for the specific services..., and shared training and development opportunities for staff"*. Young and Haynes (2013) presents a study of shared services in the public Higher Education Sector of Scotland; describing the key drivers for shared service adoption and an inventory of shared services observed throughout the sector.

Shared services benefits

The implementation of a shared service can be viewed as *"a particular kind of sourcing arrangement with long term and strategic impact"* (Janssen and Joha, 2006, p. 102). It is often driven by a series of complex, interrelated motives that should be well understood (Janssen and Joha, 2006). Managing the benefits for shared services can be complex and challenging. First *"the promise of the SSC [shared services centre] comes from a hybridization of traditional models aimed at capturing the benefits of both centralized and decentralized arrangements"* (Bergeron, 2003 cited in Janssen and Joha, 2006, p. 104). Shared services should ideally combine the advantages of both centralization and decentralization, and this can create conflicts (Hirschheim and Lacity, 2000). Furthermore, the expected benefits of SSCs are often high and unrealistic (Janssen and Joha, 2006, p. 104).

Prior studies of shared services benefits are few (Röder and Keuper, 2013; Joha and Janssen, 2010). Ward and Daniels (2006) when discussing benefits management, see investment *objectives* as the 'why' and business *benefits* as the 'what' of an IT investment project. The anticipated benefits are often in alignment with the objectives/motives for benefits planning and realization. In addition, there can be emergent benefits, which are often 'second order' benefits as they arise from achieving initial or planned benefits (Ward and Daniel, 2006). When positioned from a project lifecycle view, objectives/motives are the reasons an organization may consider shared services (at the start of the lifecycle), whereas the benefits are the outcomes (towards the end of the lifecycle) of such an initiative. Hence, objectives are highly aligned to 'anticipated' benefits. More broadly, benefits and objectives can be seen as part of a series of means/ends chains in strategic IS planning (Henderson and Sifonis, 1988). Thus, while the focus of this work was to gain insights into the benefits of shared services, due to the aforementioned dearth of directly relevant literature, and given the relationship between anticipated

benefits and motives, prior work that discussed objectives/motives of shared services were also considered in this study. It is acknowledged that anticipated benefits can differ from the actual achieved benefits; as Jansen and Joha (2006) show in their empirical work.

Jansen and Joha (2006), is a key study that looks at motives for introducing a shared services center in public administration. They suggest 4 categories of shared services motives, namely; (1) strategic and organizational, (2) political, (3) technical, and (4) economic. This categorization is an adapted version of outsourcing motives by Baldwin, Irani and Love (2001). Janssen and Joha's (2006) benefits framework was derived based on a single case study, and was primarily aimed at; identifying the motives for introducing a shared services center. They compared anticipated motives at the start of the initiative, with those benefits that were actually achieved. This was done by using the framework presented by Baldwin et al. (2001) - which looked at motives for outsourcing, as a lens to collate and compare evidence. Janssen and Joha (2006) also compare shared services and outsourcing motives. Fielt et al., (2014) take the Janssen and Joha (2006) shared services benefits framework and further re-specify and validate it with evidence from an archival analysis of IS literature on shared services. They present a revised framework with 5 main categories, with process improvement objectives added. This study has used the revised Janssen and Joha's benefits framework as presented in Fielt et al. (2014) as the a priori framework for investigating shared services benefits in the HE sector.

Research Method

A study of IT shared services benefits specific to the HE sector is warranted as a means to further test and re-specify existing benefits frameworks, while also assessing their validity and gen*eralizability to this new context. Studies that extend an existing framework, by altering the context are "contribute to an associated stream of literature via confirmation of existing knowledge and expanding cumulative knowledge"* (Brown et al., 2006, p. 11).

Lorence and Spink (2004) argue that motives affecting outsourcing decisions are influenced by the contextual elements of the domain, and Yang and Huang (2000) conclude that different organizations will have different motives for outsourcing. Given that shared services and outsourcing have many similarities (Janssen and Joha, 2006, 2008; Ulbrich, 2006), it is inferred that the HE sector, with its unique features (Burke, 2005), will have HE specific motives and thus warrants separate in-depth investigation.

In-depth interviews were used as the primary research approach. Though the interviews were augmented by supporting documentation identified before and after the interviews (following Miles and Huberman, 1984), these documents did not play a central role in the data analysis presented herein.

Interviews are the most common source of information in qualitative IS research, and can be designed to be open ended, semi-structured or survey type. An open, series of semi-structured interviews were conducted to explore the research question, and gain a broad range of perspectives on the benefits of shared services in the higher education sector. The open nature of the questions also permitted further elaboration. The strength of this approach is to allow participants to frame their answers by sharing what is significant to them. This kind of semi structured interview is known to enable interviewees to think about the topics, themes and core content in a new way and to reflect upon their experiences and perceptions (Miles and Huberman, 1984; Kramp, 2004).

The study had a pilot phase followed by a series of interviews across three cases. The pilot study was conducted solely to prepare for the field work (and hence is not reported here). The primary goal of the field work was to inductively identify benefits of IT shared services identified from the targeted practice-domain (in this case the HE sector of Malaysia), and later substantiate them with observations from the literature (for theoretical triangulation purposes).

The study focused on IT related/supported shared services within the Higher Education context. The study team had good access to public universities in Malaysia, who were interested to participate. Participants from three public universities in Malaysia were included in the study. We use pseudonyms for the three universities to maintain confidentiality - Alpha, Beta, and Gamma. Investigation into the anticipated benefits of shared services, required insights from those who are directly involved with the area of study (in this case; IT shared services). Hence, institutional and department heads who are responsible for providing and managing IT in each organization were sought as candidate case study participants. Interviews were planned with the major decision makers and executors of these decisions – those who influence, or are influenced by existing and potential sharing arrangements in IT projects.

Table 1 presents the interviewees' background. Nine interviews were conducted (each 60-90 minutes in length) over a 6 week period. All interviews followed the same structure and format (as pre-specified by the case protocol), commencing with an open discussion on understanding and perception of shared services and perceived potential benefits. They were all conducted in the Malay language and later transcribed and translated into English. The majority of the data collection occurred at case [Alpha] due to - their high involvement in IT shared services in the Malaysian HE context, researchers' relatively good access to related data, and their ready willingness to participate. Members from three other public sector Malaysian universities were subsequently included following a literal replication sampling approach- until data and theoretical saturation was reached.

Table 1. Overview of Participants

	University	Role	Years of experience in current role
1	Alpha	IT Director	3 – 5 years
2	Alpha	Deputy IT Director	5 – 10 years
3	Alpha	IT Project Leader	5 – 10 years
4	Alpha	IT Project Leader	5 – 10 years
5	Alpha	IT Project Leader	5 – 10 years
6	Alpha	IT Project Leader	5 – 10 years
7	Beta	IT Director	More than 10 years
8	Beta	Deputy IT Director	3 - 5 years
9	Gamma	Deputy IT Director	5 – 10 years

All relevant data (interview transcripts, research memos, documents about the sharing arrangement, etc.) were maintained in an NVivo database (following Yin, 2009; Miles and Huberman, 1999). Throughout the analysis, close linkages between the research questions, evidence, interpretations and conclusions were maintained with the support of the qualitative data analysis tool (NVivo) employed.

The interviews were analyzed using a content analysis approach (following Flick, 2009). The supplementary documentation were used to collect 'rich' evidence about the shared services initiatives and the respective higher education institutions investigated, and were used to augment and corroborate interview data, which was the main input to data analysis. A deductive approach was used when analyzing the shared service benefits (note that the interviews were however collected in an open ended, inductive manner). The research team sought to use prior shared services frameworks to support coding and analysis of benefits identified from the case data.

Coding and analysis took place in multiple rounds. The main categories of the shared services benefits framework from Fielt et al. (2014) were used as the primary classification categories in the detailed coding- enabling any new categories to also emerge – if supported with case evidence. Thus, the content captured under the 'Benefits' high level node, were mapped (coded) against the categories of the a-priori framework. This was done by two coders, maintaining inter-coder reliability of >85%. No new categories emerged. While coding at this level, reoccurring sub-themes that supported the observations were also grouped together (and later discussed and confirmed by both coders - with 90% agreement). Construct validity was strengthened within the study through the use of multiple sources of evidence, establishing a chain of evidence with a well-structured study database, and by having key informants review the draft study report at the completion of data analysis. Predictive validity was increased through data analysis techniques such as pattern matching and explanation building. External validity, or extensibility of the findings, has been improved through the conduct of multiple interviews from different contexts. The following section presents the findings of this phase.

Study Findings

This section presents the findings from case study analysis[1], reporting on the observed benefits of IT shared services in the HE sector in Malaysia. It first presents the (anticipated) benefits for shared services, and then discusses how these benefits are inter-related.

Anticipated Benefits from Shared Services

Overall, five main categories of benefits were identified from the case study data, as graphically summarized in Figure 1.

As anticipated, Economic benefits were most mentioned in the interviews. Financial and cost benefits are often put forward as the key reasons why organizations pursue various sourcing options (Baldwin et al., 2001, p. 15). The study data also suggested that shifts to shared services are motivated by not only financial considerations, but also socio-technical reasons - as illustrated by the other (non-economic) benefits instantiated by the case data. The following section discusses each of the different benefit categories.

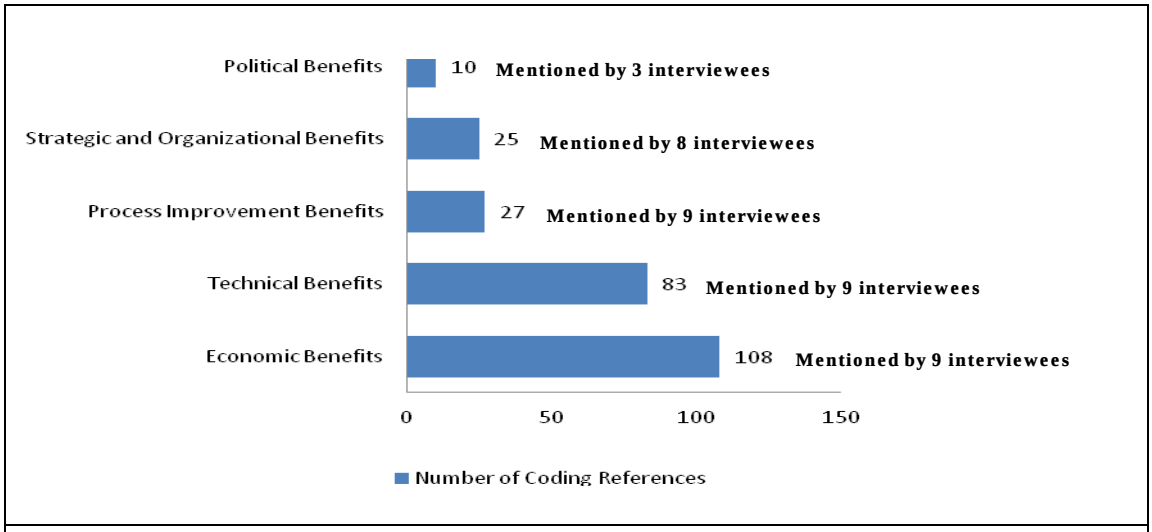

Figure 1. Overview of the shared services benefits as observed from the case study data

Economic benefits

Economic benefits were the most cited (108 citations), with all nine interviewees mentioning this as a primary goal of shared services. The data pointed to three specific sub-themes; Cost Advantages, Leveraging Resources, and Transparency in costs. *Cost Advantages* included general reduction of costs and overall cost efficiencies due to economies of scale. *Leveraging Resources* captured how costs can be reduced through better utilization of existing resources (e.g. resource pooling), especially for operational tasks. *Transparency in costs* was the ability to show how and where costs occur, and was discussed almost as a side effect of having shared services.

Technical benefits

Technical benefits related to the objectives associated with Information and Technology (a focus of this study). This, the second most cited category (83 citations), was also mentioned by all nine interviewees. The data suggested advantage from a *standardized IT application development process*, within shared services environments – and how this can facilitate data and information integration, and common interfaces, while at

[1] Evidence showing the detailed mapping of the interview data to the shared services benefits categories, that shows sample data points (from the interviews), the number of interviews supporting the identified sub-categories, and the number of citations across all interviews, are available upon request from the authors. This was not included here due to space constraints.

the same time reducing costs of IT development and maintenance. *Access to Technology and IT expertise* was another main technical benefit that was mentioned, where applications, infrastructure and expertise are pooled through the sharing efforts. Sharing/ shared services also enables the institutions to *better align IT and its functionality to business requirements* and presents *improved IT opportunities*; like making use of cloud computing and grid computing.

Process improvement benefits

Implementation of shared services can have substantive impact on the business processes of involved parties, with improved processes noted in the study with 27 citations. The *removal of duplicate processes and related resources* and tasks is one of the main process improvement related benefits. Shared services also encourage the *standardization of processes and functions*, which contributes to cost savings, improved services and better control over processes.

Strategic & organizational benefits

Strategic & organizational benefits were mentioned by eight interviewees. Three main sub-themes emerged for this category. The case data showed that *enabling collaboration* through shared services has explicit and implicit strategic intent. *Professionalized service delivery* was also mentioned as a strategic imperative, where core and supporting processes and services can be delivered more efficiently and at a high standard. *Customer orientation*, where a customer focus can be maintained for service delivery, was mentioned. Several other sub-themes were also mentioned, but were logically subsumed within the afore-mentioned three sub-themes (evident through analyzing the coded content in detail, where the same content was captured under different sub-themes) – e.g. competitive advantage (1 source - 2 citations), engagement with stakeholders (2 sources - 2 citations), and HR development (2 sources - 2 citations).

Political benefits

Political benefits were the least mentioned (10 citations) in the case data. When mentioned, 'Good will' was emphasized, and it was more from the perspective of leading a sharing initiative (by developing services/ products that can be shared) - than from adopting shared services; being a shared services user.

Interrelatedness of Benefits

As Janssen and Joha (2006) state, shared services are often driven by a series of complex, interrelated motives. These lead to and influence (anticipated) benefits, hence should be well understood. Once the benefits were identified and confirmed via case data coded by two coders (and inter coder reliability achieved- as discussed in the approach section above), potential interrelationships were investigated.

The study database was searched to identify: (1) potential positive relationships, where fulfilment of one benefit can subsequently influence the fulfilment of another, (2) potential negative relationships, where realization of one benefit may conflict with the fulfilment of another benefit, and (3) potential reciprocal effects between two benefits, each of which can positively influence realization of the other (mutually reinforcing). Table 2 provides summary results derived by running matrix intersection and proximity queries using the NVivo tool. A Matrix Intersection ('AND') search is a two-dimensional type of Boolean search made available through NVivo. It takes the searched feature from two collections at a time, and finds passages in the documents or nodes in which the search term is contained in both - thus indicating possible overlap and/ or relationships. A proximity search is a special kind of Matrix search within NVivo, which allows the researchers to seek associations between nodes, *"A proximity search finds passages with specific features which are close to each other"* (Bandara, 2007, p. 377). Basically, proximity searches seek items that are near, precede or surround other items. Investigating interactions between benefits suggested the preliminary shared services benefit-chain in Figure 2.

Table 2. Potential inter-relationships amongst the benefits - summary results

Motive Category	Economic	Technical	Process Improvement	Strategic & Organizational	Political
Economic					
Technical	→ (a)				

Process Improvement	→ (b)	↔ (d)			
Strategic & Organizational	→ (c)	← (e)	← (f)		
Political	-	-	-	-	

→: A potential positive relationship, where fulfilling one benefit can subsequently influence fulfilment of another
↔: A potential reciprocal relationship between two benefits, each of which can positively influence realization of the other

Though literature e.g. (Hirschheim and Lacity, 2000) suggests some (anticipated) benefits can conflict (negative relationship), hence increase the challenge of managing benefits, analysis herein did not reveal such conflict. Rather, all relationships identified were positive - either one-way or two-way (reciprocal). It must be acknowledged that case study participants were not specifically asked about interrelationships and that results are limited to observations made inductively from the data. Nonetheless, similar to Janssen and Joha's (2006) motives study, shared services are here seen (Figure 2) to be driven by a series of complex, interrelated target benefits, prior understanding of which can usefully inform benefits priorities and management.

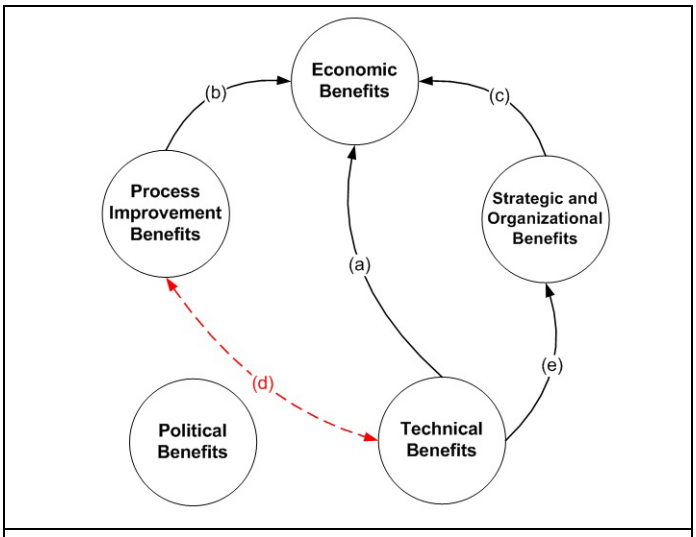

Figure 2. A preliminary shared services benefit-chain

A relationship [see path (a)] was observed between 'economic' and 'technical' benefit categories; where participating entities can reduce costs through technical efficiencies, such as not having to create and maintain IT services and infrastructure: *"Save cost which the faculties/units do not have to develop the same application to manage their staff information needs…this improves utilization of resources in terms of hardware, software and also staff"* (Project Leader 3, Alpha), *"the university no longer needs to develop the same application. The University may continue to use existing applications, thus saving costs"* (IT Director, Alpha), and *"other public universities also can save their cost. They can use existing resources. Existing resources provided by the [Alpha]. What I mean here, resources refers to hardware and software, no need to develop a similar system, and they also can use the services of staff that is responsible for maintaining the systems"* (Project Leader 1, Alpha)

The analysis showed how 'process improvement' can in turn influence the achievement of 'economic' benefits [see path (b)]. Interviewees referred to possible cost savings from elimination of duplication: *"Cost can be reduced by identifying the redundant effort...in terms of cost, we can reduce the operating cost. We can reduce cost through better utilization of resources"* (IT Director, Alpha). Comments also pointed to cost savings due to the better utilization of related resources within different processes such as systems maintenance and development: *"The most important thing is make better use of existing hardware – this will save cost"* (Project Leader 4, Alpha), and *"In addition, there is no cost incurred by any university or UPU (one of the units in MOHE) in this project - can save a lot of cost by the use of existing infrastructure"* (Project Leader 2, Alpha).

Collaboration identified as a 'strategic & organizational' benefit, can also promote cost reduction [see path (c)] *"Easier to collaborate with other organizations and the most important thing is make better use of existing hardware – this will save costs"* (Project Leader 4, Alpha).

The data implied how 'technical' benefits (such as standardization and utilization of IT resources) and 'process improvement' benefits (such as standardization of processes and functions and removal of duplicate processes and related resources and tasks) work hand-in-hand, thus illustrating a reciprocal effect [see path (d)] between these two: *"the faculties/units do not have to develop the same application to manage their staff information. At the same time, this effort is able to avoid duplication in terms of developing the same application to be implemented in each faculties/units…. the shared HR system was able to promote the standardization of common processes"* (Project Leader 3, Alpha) and *"for example migrating to a common standardization system — reduces the number of system setups, interfaces, security profiles, and manual workarounds, all of which streamline control design and testing processes"* (IT Director, Beta).

As path (e) illustrates, the case study data described how shared IT systems can contribute towards obtaining strategic & organizational goals, *"shared systems like the grid can solve larger, more complex problems in a shorter time. Easier to collaborate with other organizations"* (Project Leader 4, Alpha), thus, implying a potential link between 'technical' benefits (i.e. to share complex IT systems) and strategic & organizational intentions, in particular to harness collaboration. The case data showed that streamlining operations (via process improvements) enabled collaboration and professional service delivery which are core aspects of strategic & organizational benefits [see path (f)]; *"Where practicable, we need to consider options for streamlining the administrative operations to maximize the level and quality of administrative service, achieve cost savings, and look for ways of improving the quality of service in support of their teaching and learning, and research activities"* (Deputy IT Director, Alpha).

Discussion

This section provides a discussion of the findings from the interviews. It also discusses anticipated contributions of the study, illustrating progress to date and pointing to future work.

Anticipated benefits and primary motives for implementing IT shared services in the HE sector were used in this exploratory study, to identify anticipated benefits of shared services. The interview data was analyzed based on the benefits framework presented in Fielt et al (2014), which was an extension to the shared services benefits framework of Jansen and Joha (2006). The case study confirmed that the IT related shared services benefits from the HE sector were within the categories of: (1) Economic; (2) Technical; (3) Process improvement; (4) Strategic & organizational; and (5) Political benefits. The inductively derived sub elements pertaining to each of the benefits categories illustrates better what these shared services benefits categories mean to the context of these case studies, which represent the Malaysian Higher Education Sector. Preliminary investigation into the relationships of these benefits (see Figure 2) forms an important and useful foundation for practice and academia, which enables a clearer understanding of benefits and supports the better realization of benefits from shared services.

The study findings show that for shared services in the HE sector, economic benefits are most prominent, similar to observations made in Fielt et al.'s (2014) literature review about shared services in the IS literature. In our study, technical benefits are more prominent than in the Fielt et al. (2014) literature review. This may be specifically influenced by the HE context where many challenges inhibit the ability to obtain and sustain the IT required to fulfill demands (Young and Haynes, 2013). However, this can also be influenced by the focus of the current study on IT managers. This would argue for analyzing the benefits from multiple perspectives due to, for example, different interests (e.g., Soh et al., (2011)) or frames of reference (e.g., Orlikowski and Gash, (1994)).

Moreover, the study goes beyond prior research on shared services benefits by exploring the interrelationships between the benefits, and as such, has the potential to make a wider contribution. We observed that economic benefits are positively influenced by the other benefits (except political benefits) and that technical benefits can contribute to the other benefits (except political benefits). The interrelatedness of benefits observed in Figure 2 suggests strong potential for synergy. Given all interactions identified are positive, it is likely that the 'whole is more than the sum of its parts'. This potential argues for a holistic perspective on benefits. Even given a full account of individual benefits expected, a myopic understanding of benefits without regard to possible amplification effects can result in inappropriate decisions. Understanding these interrelationships has important implications for realizing the benefits from shared services.

Conclusion

This paper presented the benefits for IT related shared services as observed from the HE sector in Malaysia. The main purpose of this paper was to address the research question *"What are the benefits of IT shared services in the Higher Education Context?"*

The study commenced by deriving a clear understanding of what benefits can be expected from shared services initiatives in the HE sector. This having been established (which was the scope and focus of this paper), development of a comprehensive benefits realization framework to guide HE institutions in the management and realization of such benefits can proceed. The preliminary benefits chain derived from analysis of interrelationships observed in case evidence is a further step in this direction. It starts to capture the complex, interrelated nature of shared services benefits, which can inform benefits prioritization and management.

We acknowledge inherent limitations in the study, starting from the interview design and conduct. The results presented here were limited to 9 interviews across 3 organizations. Though other documentation was reviewed- the analysis was based on interviews of selected stakeholders (i.e. the directors and higher level IT managers of the selected universities). The study was also prone to the more general limitations of qualitative research such as selection bias, analysis limitations due to only 9 interviews, and researcher bias in data collection and analysis, although mitigated by multiple coders and inter-coder reliability. It is acknowledged that this could have impacted the completeness and accuracy of the findings presented from the case study data.

While the data in this study was collected in an inductive manner; primarily based on responses to a single open ended question in the case study interview protocol, the analysis was done deductively, employing the shared services benefits framework of Fielt et al. (2014). While this assisted in the overall analysis, this could have also influenced extraction and interpretation of the benefits discussed in the case data. This was somewhat mitigated by the two coders independently coding the full content until consensus was reached.

The study was conducted in the Malaysian HE sector. Though nothing observed suggested context-specificity of findings, some related caution is counseled with interpretation. Additional similar studies in other contexts are warranted. Furthermore, a multi-perspective analysis of benefits, where data is collected from different shared services stakeholder groups; beyond IT managers (as scoped in this study), could provide richer insights to how shared services benefits are perceived.

This paper presented a benefits-chain of IT related shared services from the HE sector, by using the data to inductively identify possible inter-relationships with the different benefits categories. Identification of these IT shared services anticipated benefits might provide an understanding of why an organization should consider shared services. A deeper understanding (with new data) on how the benefits depend on each other, in particular how the achievement of one benefit can amplify (or block) the achievement of another needs to be further investigated. As stated in the discussion section, identifying the benefits is (only) the first step towards a detailed benefits realization plan, where resources to achieve benefits should also be investigated. Braun et al. (2010, p. 5) argue resources that supports the benefits management process *"increase the organization's capability to exploit"* related initiatives and resources and argue the need to derive three basic types of benefits management resources: (1) resources supporting benefits identification, evaluation and measurement (benefits measurement resources), (2) resources supporting benefits realization planning, and (3) resources supporting benefits implementation. Documenting such resources for IT related shared services benefits realization has been recommended as an extension of this work. We also recommend that future work in this space should more carefully consider potential risks and disadvantages of shared services. Finally, the interrelatedness of benefits is intriguing and warrants further research attention.

References

Bækgaard L (2009) Service Scenarios - A Socio-Technical Approach to Business Service Modeling. Paper presented at the 17th European Conference on Information Systems,

Baldwin LPL, Irani ZZ, Love PEDP (2001) Outsourcing information systems: drawing lessons from a banking case study. European Journal of Information Systems 10 (1):15-24

Bandara W (2007) Process Modelling Success Factors and Measures. Queensland University of Technology, Brisbane

Bergeron B (2003) Essentials of Shared Services. John Wiley & Sons, Inc., Hoboken, New Jersey

Boyle F, Brown C (2010) The UK Research Reserve (UKRR): machinations, mayhem and magic. Interlending & Document Supply 38 (3):140-146
Braun J, Ahlemann F, Mohan K (2010) Understand Benefits Management Success - Results of a Field Study. Proceedings of the 18th European Conferences on Information Systems.
Brown SA, Kelley H, Schwarz A (2006) Special Issue on Re-Searching Paradigmatic Extensions of Existing Theory: Special Issue. Database for Advances in Information Systems 37:8-14
Burke JC (2005) The many faces of accountability. In: Burke JC (ed) Achieving accountability in higher education: Balancing public, academic, and market demands Jossey-Bass, San Francisco, pp 1-24
Deloitte Touche Tohmatsu, Flinders University of South Australia, University of South Australia (2001) Shared Services Initiative: A joint initiative of the University of South Australia and the Flinders University of South Australia. Commonwealth of Australia, Canberra
Dove CS (2004) The Shared Service Center: A Model for University Efficiency?. University of Pennsylvania,
Fielt E, Bandara W, Miskon S, Gable G (2014) Exploring Shared Services from an IS Perspective: A Literature Review and Research Agenda. Communications of the Association for Information Systems 34 (54):1001-1041
Flick U (2009) Introduction to qualitative research. Sage Publications, London
Gibson M, Arnott D (2005) The Evaluation of Business Intelligence: A Case Study in a Major Financial Institution. In: Proceedings of the 16th Australasian Conference on Information Systems, Sydney, 29 Nov – 2 Dec 2005
Henderson JC, Sifonis JG (1988) The Value of Strategic IS Planning: Understanding Consistency, Validity, and IS Markets. MIS Quarterly 12 (2):187-200. doi:10.2307/248843
Hirschheim R, Lacity M (2000) The myths and realities of information technology insourcing. Commun ACM 43 (2):99-107. doi:10.1145/328236.328112
Hoffman T (2009) From Cloud Computing to Shared Services: Why CIOs Are Taking a New Look at Sharing IT Infrastructure and Applications.
Jackson GA (2012) IT-Based Transformation in Higher Education: Possibilities and Prospects. EDUCAUSE Publications, Washington
Janssen M, Joha A (2006) Motives for establishing shared service centers in public administrations. International Journal of Information Management 26:102-115
Janssen M, Joha A (2008) Emerging shared service organizations and the service-oriented enterprise Strategic Outsourcing: An International Journal 1 (1):35-49
JISC Report 1: The current landscape of shared systems implementation and planning for administrative systems in UK FE and HE. In: JISC Study of Shared Services in UK Further and Higher Education, 2008a.
JISC Report 2: The software currently in use for administrative systems in UK FE and HE. In: JISC Study of Shared Services in UK Further and Higher Education, 2008b.
JISC Report 3: The potential for shared service models for the delivery of administrative systems in UK FE and HE. In: JISC Study of Shared Services in UK Further and Higher Education, 2008c.
JISC Report 4: Conclusions and Proposals. In: JISC Study of Shared Services in UK Further and Higher Education, 2008d.
Joha A, Janssen M (2010) Content Management Implemented as Shared Service: A Public Sector Case Study. In: Janssen M, Lamersdorf W, Pries-Heje J, Rosemann M (eds) E-Government, E-Services and Global Processes, vol 334. IFIP Advances in Information and Communication Technology. Springer Berlin Heidelberg, pp 138-151. doi:10.1007/978-3-642-15346-4_11
KPMG (2006) Shared services in the higher education sector: Report to HEFCE by KPMG. Higher Education Funding Council for England,
Kramp MK (2004) Exploring Life and Experience Through Narrative Inquiry. In: Marrais Kd, Lapan SD (eds) Foundations for research: Methods in education and the social sciences. Erlbaum, Mahwah, NJ, pp 103-121
Lacity MC, Fox J (2008) Creating Global Shared Services: Lessons from REUTERS. Management Information Systems Quarterly Executive 7 (1):17-32
Laserfiche (2012) Implementing ECM as a Shared Service in Higher Education. Higher Education Focus White Paper
Lorence DP, Spink A (2004) Healthcare information systems outsourcing. International Journal of Information Management 24 (2):131-145. doi:10.1016/j.ijinfomgt.2003.12.011
McIvor R, McCracken M, McHugh M (2011) Creating outsourced shared services arrangements: Lessons from the public sector. European Management Journal (In Press):1-14
McKeen JD, Smith HA (2011) Creating IT Shared Services. Communications of the Association for Information Systems 29 (1):645-657

Miles MB, Huberman AM (1984) Qualitative data analysis: A source book of new methods. Sage Publications, California
Miles MB, Huberman AM (1999) Qualitative data analysis: an expanded sourcebook. Sage, Thousand Oaks, California
Millet B, Te'o T, Rhodes D, Clarke J, Carswell S SharePoint Portal as a Strategic Management and Planning Tool: University of Southern Queensland (USQ) as a case study. In: Proceedings of 2005 Forum of the Australasian Association for Institutional Research., 2005. pp 7-16
Miskon S (2013) ICT shared services in the higher education sector: foundations, benefits, success factors and issues. PhD thesis, Queensland University of Technology.
Miskon S, Bandara W, Fielt E, Gable G (2011) An Exploration of Shared Services Types in Higher Education. In: Proceedings of the Seventeenth Americas Conference on Information Systems, Detroit, Michigan.
Miskon S, Fielt E, Bandara W, Gable G (2013) Towards a typology of structural arrangements for shared services: evidence from the higher education sector. Electron Markets 23 (2):149-162. doi:10.1007/s12525-012-0116-0
Orlikowski, W. J., and Gash, D. C. (1994). "Technological frames: making sense of information technology in organizations," ACM Trans. Inf. Syst. (12:2), pp 174-207.
Paagman, A., Tate, M., Furtmueller, E., and de Bloom, J. (2015). "An integrative literature review and empirical validation of motives for introducing shared services in government organizations," International Journal of Information Management (35:1) 2//, pp 110-123.
Peters P, Silvers J (2005) Renewed Interest In Shared Services. Optimize 4 (6):69
Röder S, Keuper F (2013) A Conceptual Model for Measuring the Service Quality of Shared Services Organizations. In: Keuper F, Lueg K-E (eds) Finance Bundling and Finance Transformation. Springer Fachmedien Wiesbaden, pp 253-271. doi:10.1007/978-3-658-00373-9_13
Richter, P. C., and Brühl, R. 2017. "Shared service center research: A review of the past, present, and future," European Management Journal (35:1) 2//, pp 26-38.
Sako M (2010) Technology Strategy and Management: Outsourcing Versus Shared Services. Communications of the ACM 53 (7):27-29
Soh, C., Chua, C. E. H., and Singh, H. 2011. "Managing diverse stakeholders in enterprise systems projects: a control portfolio approach," Journal of Information Technology (26:1), pp 16-31.
Schulman D, Harmer M, Dunleavy J, Lusk J (1999) Shared Services: Adding Value to Business Units. John Wiley & Sons, Inc.,
Ulbrich F (2006) Improving shared service implementation: adopting lessons from the BPR movement. Business Process Management Journal 12 (2):191-205
Ulbrich F, Schulz V, Brenner W (August 12-15) Generic Management Challenges of Adopting IT-Shared Services. In: Sixteenth Americas Conference on Information Systems, Lima, Peru, 2010.
Wagenaar RW Governance of Shared Services Centers in Public Administration: Dilemma's and Trade-offs. In: Proceeding of the Eighth International Conference on Electric Commerce, Fredericton, Canada, 2006. pp 354-363
Wang S, Wang H (2007) Shared services beyond sourcing the back offices: Organizational design. Human Systems Management 26:281-290
Ward J, Daniel E (2006) Benefits Management: Delivering Value from IS & IT Management. John Willey & Sons, Ltd, West Sussex, England
Yang C, Huang J-B (2000) A decision model for IS outsourcing. International Journal of Information Management 20 (3):225-239. doi:10.1016/s0268-4012(00)00007-4
Yee J, Tan F, Chan T (2009a) A Preliminary Decision Model for Shared Services: Insights from an Australian University Context. Proceedings of the 20th Australasian Conference on Information Systems. Melbourne
Yee J, Tan FTC, Chan T (2009b) A Preliminary Decision Model for Shared Services: Insights from an Australian University Context. Proceedings of the 20th Australasian Conference on Information Systems. Melbourne
Yin RK (2009) Case Study Research: Design and Methods. 4th edn. Sage Inc., California
Young F, Haynes R (2013) An Assessment of Shared Services in Scotland's Higher Education Sector. Scotland Universities, London, UK
Zastrocky M (2012) Information Technology in Higher Education: 2012 Survey of Chief Information Officers. The Leadership Board of CIO's, Broomfield, USA