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The impact of outsourcing information technology services on business operations

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Background: Organisations outsource Information Technology (IT) services in order to keep up with the IT evolution and to remain competitive. Although the IT operations department is responsible to manage service provider service quality, they are not in a position to evaluate IT services performance because of the loss of control and capability in the IT environment.

Objectives: This article investigated the impact of outsourcing in-house IT services on the performance of IT operations and how it affects the performance of the organisation.

Methods: The qualitative approach was used in this research. Data was collected using structured interviews and were analysed using thematic analysis.

Results: Outsourcing of IT services was found to have negative and positive impact on the organisation. Knowledge of the operating environment proved to be significant in the provision of relevant services that add value to the organisation. The results of the analysis revealed that in-house IT and the quality of IT services provided have a direct impact on the performance of the organisation.

Conclusion: The study demonstrated that outsourcing IT services impacts the quality and the performance of the organisation positively and negatively. The study recommended that in-house IT and outsource service providers need to collaborate to ensure smooth service delivery, process alignment and also to equip in-house IT with skills to handle first-line support.

Keywords: IT services; in-house IT; service provider; IT outsourcing; impact; service quality; organisational performance; IT environment; service level agreement.

Introduction

The evolution of Information Technology (IT) continues to put pressure on organisations and IT managers to keep abreast with the technology changes while ensuring service availability and quality service delivery at all times. Information Technology departments are expected to be agile in light of new business opportunities to demonstrate responsible financial management and to satisfy internal staff and external customers (Marrone et al. 2014). The pressure of wanting to keep abreast with technology is evident in individuals as well as organisations (Anantharam et al. 2015).

Companies turn to outsourcing their IT services in order to keep up with these changes and to remain competitive (Nyameboame & Haddud 2017).

Rajaeian, Cater-Steel and Lane (2017) defined outsourcing as the use of external service providers to deliver maintenance and support internally. According to Chang, Gurbaxani and Ravindran (2017) and Varajãoa, Cruz-Cunha and Da Glória Fraga (2017), outsourcing has a number of benefits to organisations such as cost reduction, leveraging vendor competencies in highly specific areas, avoid technological obsolescence, improve information system (IS) management and maintain or increase flexibility.

Even with the above-mentioned benefits, sourcing IT services to external service providers brings with it some challenges. Some of the noted challenges include loss of control of IS assets, loss of IS management capability, decreased quality of service, greater management effort, loss of technological capacity, loss of capacity and organisational knowledge, decline in service levels, loss of innovation, loss of organisational trust as well as higher than expected transaction costs (Hanafizadeh & Ravasan 2017; Varajãoa et al. 2017).

Although prior studies (Nyameboame & Haddud 2017) reported improvement in productivity and performance as a result of the use of outsourced services, research by Rajaeian et al. (2017), on the other hand, showed that organisations that initially outsourced their IT later brought back their IT in-house because of dissatisfaction with the outsourcing arrangement or internal or external organisational changes. This study investigated the impact of outsourcing in-house IT services on the performance of IT operations of the electricity generation organisation in South Africa and how the performance of IT operations affected the performance of the organisation.

Literature review

According to Chou and Shao (2014), IT services refer to the delivery and support of IT operations and activities in order to satisfy business requirements and to manage IT infrastructure for organisations. Service is about delivering value to customers by facilitating the results they want to achieve without taking costs and risk ownership (Drevland, Lohne & Klakegg 2017). According to Valiente, Garcia-Barriocanal and Sicilia (2011), the concept of service is understood differently depending on the domain or application area, and this has led to confusion. Information Technology services like all other business services are an important part of the business and require to be well managed in order to add value to the business (Khalilian, Ibrahim & Nilashi 2017).

Chou and Shao (2014) alluded that in-house IT department is charged with the function to provide IT services; however, some organisations decide to acquire IT services from external suppliers. According to Chou and Shao (2014), the IT services industry is made up of IT service providers that offer the support of infrastructure, network and desktop support, applications, data and component objects as well as the delivery of software development. According to Marrone et al. (2014), IT functions today are undergoing transformation globally across organisations of all sizes in various industries. Moreover, they indicated that this transformation is not only affecting IT functions, but the management of IT itself is going through a transformation process that is highly dependent on IT.

According to Jaafreh (2017) and Gorla and Somers (2014), service quality is an important measure of IS success in that after the users have received a service they have an expectation of training or support in using the delivered software product and that adds value and affects the way they perceive service quality. Gorla and Somers (2014) defined service quality as the gap between customer's perceptions of the service performance and their service expectations. In IT outsourcing service quality is an important factor to be considered when IS services are delivered by external service providers (Gorla & Somers 2014). According to Kelkar (2010), service success measures include response to inquiry, on-time full delivery, after

sales service and pending issues. Studies found that customer satisfaction with IT services is significantly impacted by the ability of in-house IT employees to instil confidence and deliver relevant information (De Almeda, Medeiros & Halpern 2015).

According to Mckeen and Smith (2009), in the early 2000s, organisations started to realise that they can meet strategic objectives, drive costs down and add capacity by turning to outsourcing.

Salman (2014) defined IT outsourcing as 'the turning over of a firm's computer operations, network operations, software development and maintenance or other IT functions or services to a provider for a specified time'. Gorla and Somers (2014) suggested that IS outsourcing annual growth rate is at 14% with the current IT services market value at $746 billion. Moreover, research on IT outsourcing is enormous with 164 empirical studies conducted on IT outsourcing over the last 24 years. Much as IT outsourcing has been widely discussed its extension has been significant and expected to continue in the future (Ruivo et al. 2015).

According to Gorla and Somers (2014), some activities can be both insourced and outsourced; however, the extent of outsourcing prevails highly on the outsourced activities.

According to Morais, Costa and De Almeida (2014), outsourcing IT services trend has followed the movement of technological innovations and the changes in IT governance. According to Gorla and Somers (2014), IS products and services were traditionally delivered in-house; however, IS outsourcing has become an alternative delivery mechanism. According to Delen et al. (2016), outsourcing is becoming an alternative for in-house development and maintenance for IT.

According to Gorla and Somers (2014), outsourcing can have both negative and positive effects on the quality of IS services. The researchers Lacity and Willcocks (2017) stated that IT sourcing outcomes result in 'success' or 'failure'. Furthermore, they indicated that outcomes are mixed and include outcomes associated with organisational performance, strategic enablement of business objectives, IT costs, service quality, service responsiveness, scalability and user satisfaction.

The study by Rhodes et al. (2016) found that the benefits of services outsourcing were mainly derived from effectively managing the daily 'relationship interaction' factor, for example, communication, conflict resolution, integration and collaboration of activities, rather than relying on the 'relationship quality' factor, for example, trust and loyalty. Hamzah, Sulaiman and Hussein (2013) categorise IT outsourcing benefits into six strategic focus areas, namely business innovation, core competencies, technology catalyst, financial position improvements, business transmission and new markets. According to Liu and Tyagi (2017), one of the economic benefits of outsourcing is that it allows the outsourcing firm to reduce its fixed costs such as expenditure

on equipment, IT, fixed salaries of employees, logistic and overhead expenses.

Five most common IT outsourcing risks are increased dependency on service (Lacity & Willcocks 2017), higher cost, confidentiality (Hamzah et al. 2013), loss of knowledge and know-how (Montaseb et al. 2018) and the difficulty in selecting the right service provider (Aswini 2018).

According to Gorla and Somers (2014), some of the problems with outsourcing include degradations of service, lack of vendor commitment, ineffectiveness of a vendor, delayed deliveries of data and slow implementations.

The study by Sreedevi and Tanwar (2018) found that companies that were not aware of the outsourcing risks fell prey to loss of core activities, being leveraged by suppliers, the failure of strategic flexibility, disruptions to supply, obtaining a poor quality of supply and low employee morale. The literature shows that the aforementioned problems may be attributed to a firms' lack of ability to carry out the outsourcing process. Problems also arise in the relationships between firms, some of which could be attributed to cultural differences, lack of sufficient project specification and/or difficulties in knowledge transfer and process calibration.

De Almeda et al. (2015) asserted that several studies today show a significant increase in IT spending. According to de Almeda et al. (2015), measuring the performance of IT services has become an essential part of IT management. One of the popular ways used is to measure the quality of IT services from the customer's perspective (De Almeda et al. 2015).

According to Gorla and Somers (2014), it is advisable for a firm to retain in-house a group of experts and qualified personnel who can develop and maintain control processes for monitoring and benchmarking the external service provider's work and most importantly to ensure ongoing learning and for continuous improvement and innovation in the organisation.

Theoretical framework

According to Gable, Sedera and Chan (2008), the IS-impact model (see Figure 1) has been extensively validated and is widely adopted for its ability to facilitate cumulative research on IT impact while providing a benchmark for organisations to track their IT performance. Moreover, IS impact may aid in understanding the relationship between IS impact and organisational performance. The study employed the IS-impact measurement model as underpinning theory. This model consists of the following constructs:

- **Individual impact:** It is defined as the measure of the extent to which outsourcing IT services has influenced the capabilities and effectiveness on behalf of the organisation of key users (Gable et al. 2008).
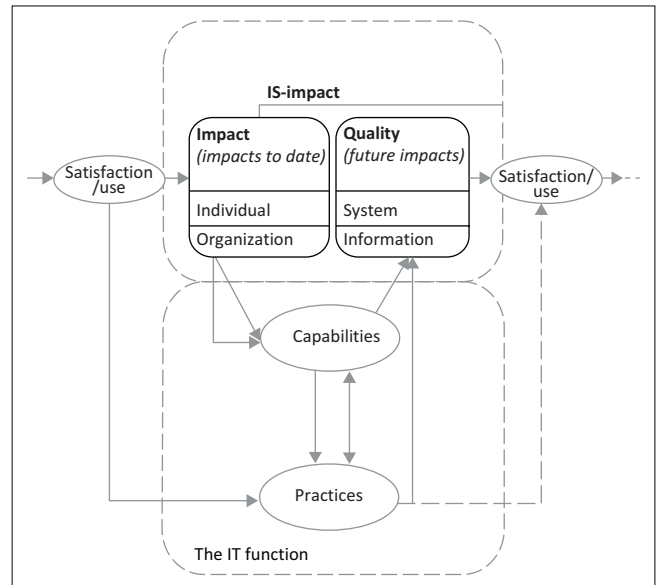
Source: Adopted from Gable, G.G., Sedera, D. & Chan, T., 2008, *Re-conceptualizing information system success: The IS-impact measurement model*, viewed 31 October 2018, from https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1448&context=jais.
IS, information system; IT, information technology.

FIGURE 1: The information system impact measurement model.

- **Organisational impact:** It is defined as a measure of the extent to which IT service outsourcing has promoted improvement in organisational results and capabilities (Gable et al. 2008).

The quality half

Gorla, Somers and Wong (2010) listed the IS quality dimensions as follows: information quality, system quality and service quality:

- **Information quality**: It is defined by Gable et al. (2008) as a measure of the quality of (the IS) outputs namely the quality of the information the system produces in reports and on-screen. Information quality construct is removed from this study because the focus is on the impact of outsourcing in-house IT services.
- **System quality**: It is defined by Gable et al. (2008) as a measure of the performance of (the IS) from a technical and design perspective. System quality is also removed from this study.
- **Service quality**: It refers to the actual support delivered by the service provider regardless of whether this support is delivered by the IT department or the outsource service provider (DeLone & Mclean 2003).

Research methodology

To investigate the impact of outsourcing in-house IT services on the performance of IT operations of the organisation and how the performance of IT operations affects the performance of the organisation, a qualitative methodology was followed. A single case study was conducted in the IT department of the electricity generating organisation. A sample of individual employees in the information management function responsible for IT operations management in the organisation

includes Information Management (IM) customer relations officers, IM operations managers and operating unit IM managers, were selected to participate in the study. A purposive sampling method was used. The researcher aimed to gather their perspective and experiences about outsourcing IT services and how the outsourced service impacts their performance as IT operations department and how their performance impacts the organisation.

A total of 10 interviews were conducted with the IT department employees, eight face-to-face interviews and two interviews over the telephone. The main task in interviewing is to understand the meaning of what the interviewees say (Kvale 1996). All the interview details were recorded and transcribed, MS excel spreadsheet was used to identify the themes. A thematic analysis was used in this study.

Ethical considerations

Participants of the research were given the details and intention of the study and were assured about the confidentiality of their information in the study. Information of the participants were anonymous and not be published to the public. All the data collected for the study from the participants were securely saved, to ensure the safety of participant's information. Faculty of Information and Communication Technology at Tshwane University of Technology granted Ethics Approval Ref#: FCRE/ICT/2017/11/010.

Results and discussion

The study's findings are presented to highlight the impact of outsourcing IT services on the organisation and the perspective or experience of IT employees. The findings and discussions are as follows.

Themes and thematic analysis

The dominant themes for the measurement of impact include individual impact, organisational impact and service quality. Knowledge of operating environment and service provider performance emerged as new themes from the interviews with the participants.

Knowledge of operating environment

It is important that the IT department, both in-house and external service provider, has a strong customer focus in order to ensure that the services that are delivered to the customer are what the customer requires and are adding value to the customer (Wuyts, Rindfleisch & Citrin 2015).

Findings of this study indicate that the knowledge of the operating environment applies both ways on the outsourced service provider as well as on the in-house IT employees. This was supported by the following statements from the participant (H):

> 'With my experience what I've learned with the outsourced is that we first need to have an understanding on the service delivery operations for our business they need to understand

that first so that they are able to know how we operate in our businesses so I found out that actually the expectation would be the standard service delivery that they are coming with not understanding.' (Female, Information Management Operations Manager, 40–49 years)

Service provider performance

Service provider performance focusses on the evaluation of the performance of IT department as a result of employing outsourced IT services. Almost all the participants shared that their performance is dependent on that of the service provider. When the service provider performance is good, it may help improve IT services delivery to the organisation. In contrast, poor performance by the service provider may lead to the IT department being perceived as less competent and unable to deliver services based on the customer perception of service provider performance.

The findings from this study indicated that poor service provider performance does not only affect the productivity but may have also result in damage to company image and cost implications. This result is supported by a statement from Participant J:

> 'If systems like billing system is not working and the downtime is too long we lose revenue … This also impacts the company image.' (Female, Operating Unit Information Management Manager, 40–49 years)

Moreover, the findings are in line with the findings from literature where some of the disadvantages of outsourcing were degradation of service, slow implementations, etc. (Gorla & Somers 2014).

Individual impact

Most participants indicated that with the outsourcing of IT services they have lost control of the IT environment because of the new service provider processes and found that they are now experiencing delays in service response time as well as the loss of the skillset to provide first-line support because the service is now provided by an outsource service provider. This was demonstrated by the following statement from participant A:

> 'We are giving the service provider too much power. For example if tomorrow they say we don't have money to pay the outsourced IT service provider for example, and in-house have to run with the support function there's very few people who'll say they are ready.' (Male, Information management customer relations officer, 40–49 years)

Organisational impact

According to Moon et al. (2018), IT outsourcing reduces the company's Information and Communication Technology (ICT) investment and maintenance costs. As discussed in the literature, organisations turned to outsourcing in order to drive down costs. Most of the participants expressed the view that outsourcing drives the organisation costs up, and some of the reasons

include incorrect scope the client ends up incurring hidden costs (Sreedevi & Tanwar 2018).

Other negative impacts to the organisation as a result of outsourcing as found in this study include loss of valuable organisational information because of equipment theft, information security breaches, long turnaround times, lack of supporting contracts and lack of commitment from the service provider. The findings are consistent with that of Mujasi and Nkosi (2017) and Gorla and Somers (2014).

It has been mentioned by all the participants that the business needs IT to run with their operations. Information Technology is viewed as the backbone of the business. Information Technology employees of the service provider and in-house understand the criticality of the availability of IT services. Participant B shared that:

> 'The backbone basically it is IT at the end of the day.' (Male, Information management Operations Manager, 40–49 years)

Service quality

Service quality refers to the actual support delivered by the service provider regardless of whether or not this support is delivered by the IT department or the outsource service provider; this construct may be the appropriate measure of the quality of the service provided by the IT function (DeLone & Mclean 2003).

All participants indicated that the quality of IT service is dependent on the quality of services the outsourced IT service provider delivers to the organisation. This is supported by the following statements from participant J:

> 'There's a lot that we have outsourced also internally in IT we are unable to do things locally because we are centralized … If service provider is not meeting an SLA then I will also not meet my SLA.' (Female, Operating Unit Information Management Manager, 40–49 years)

The findings from the study are consistent with the literature findings that in IT outsourcing service quality is an important factor to be considered when IS services are delivered by external service providers (Gorla & Somers 2014).

The service quality constructs were further broken down into four dimensions, namely reliability, responsiveness, assurance and empathy.

Reliability

All participants shared that they are not able to make or keep promises that they make to their users because they are a middle person dependent on either the service provider who has their own processes or other IT section that also runs with a separate process. Thus dependency was found in the study that affects IT service response time. This is demonstrated by the following statement from Participant D:

> 'It's difficult to make promises because you are working with outsource company.' (Male, Information management customer relations officer, 50–64 years)

The finding indicates that in-house has a strong customer focus, always interested to resolve users IT problems; however, the limitation is that they do not have control over the process or activity to deliver the service to the customer. This finding is consistent with the literature finding that the time of incidents' resolution is the key performance indicator for IT service management (Zuev, Kalistratov & Zuev 2018). This is also supported by the following statement by participant I:

> 'I do have the ability. Because I'm customer focused and I'm oriented on my service delivery I just have to make sure that my customers I put them first.' (Male, Information management customer relations officer, 30–39 years)

Responsiveness

According to Pankowska (2019) the outsourcing relationship as well as performance evaluation is significantly influenced by goals and expectations of both parties, poorly defined or the absence of goals and expectations makes it difficult to evaluate performance and strains the relationship of the outsourcing partners.

All participants shared that they are always willing to provide service to customer and again on responsiveness they are dependent on factors such as availability of equipment and resources. This is demonstrated by the following statement from participant G:

> 'I always respond on time … I try not to overpromise where I'm unable to I always give feedback.' (Male, Information management customer relations officer, 40–49 years)

The study found that the IT employees value their customer, and they all understand the importance of consistently communicating, providing feedback and building and maintaining a good relationship with the customer.

Assurance

All participants indicated that their users' feeling when dealing with IT employees is dependent on whether IT has been able to meet the user requirements. The study found that users are generally happy when their requirements are met by IT, for example, PC replacement requests and users are dissatisfied when IT does not meet their requirements. The study found that IT employees are consistent and courteous when dealing with their customers always following internal IT processes. This was demonstrated by participant J:

> 'I'm very courteous when it comes to my customers and everything that I do I put myself in their shoes and make sure I deliver accordingly and obviously treat them with respect as well and communicate with them and request even feedback because we've started requesting feedback based on the interaction.' (Female, Operating Unit Information Management Manager, 40–49 years)

The above finding is also supported by the findings from the literature by De Almeda et al. (2015) that customer

satisfaction with IT services is significantly impacted by the ability of in-house IT employees to instil confidence and deliver relevant information.

Empathy

Most participants shared that the availability of the incident management system and the 24/7 service desk helps them to manage customer requests as well as internal processes to manage new business requirements from their customer. The study found that constant customer or stakeholder engagement both formal and informal to receive feedback from customers assists in managing and picking up whether they have new issues or outstanding issues where they require feedback or new business requirements.

Conclusion

Knowledge of operating environment influences IT service delivery as well as the relevance of the service delivered to the customer. It is very important for organisations to ensure there is a strong collaboration between the outsourced team and the in-house team to ensure smooth delivery of services and alignment of processes.

The performance of the service has a direct impact on the performance of IT services and the organisation as a whole. Organisational impact of outsourcing IT services can be so huge when the outsourcing service is not well managed, and the organisation is not getting value to add from the services provided by the service provider.

The study has also found that the service provider is also dependent on in-house IT to ensure that there are contracts in place and infrastructure to enable the delivery of a quality and speedy service to the customer. Misalignment of processes between the service provider and the in-house IT affects the service response time negatively. In-house IT is able to provide reliable and quality IT services to the business with the help of the outsourced service provider.

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Competing interests

Authors' contributions

P.M. was the main author of this article and conducted the research as part of her Master of Computing at Tshwane University of technology while S.M. and M.M. were the co-authors performing the supervisory role.

Funding information

Data availability

Data supporting the results of this study are available from the corresponding author, P.M., on request. The information is not openly available as it contains information that could compromise the privacy of participants in the research.

Disclaimer

The interpretations and thoughts shared in this study are those of the authors and do not generally represent any related organisation with the authors official policy or position.

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