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Business benefits and challenges of a multiple ERP landscape

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Abstract

Enterprise Resource Planning (ERP) systems are complex software systems which are expensive and risky to implement. Yet many organisations still struggle to produce strong business cases and the post implementation of ERP and the benefits that accrue to organisations is under studied. While ERP systems were designed to replace most business applications with one centralized system, organisations are increasingly implementing multiple ERP systems. In a multiple ERP landscape, there is less clarity on what benefits can accrue to organisations and whether the ERP investment is justified. This paper describes some ERP implementation challenges which an organisation with a multiple ERP landscape experienced and identifies the drivers for a multiple ERP landscape, it then compares published business benefits from organisations who have a traditional single ERP landscape to business benefits identified at the organisation. This single case study was performed at a financial services organisations in South Africa. This interpretive qualitative research followed a predominantly deductive approach. Fewer benefits accrued to the organisation with a multiple ERP landscape when compared to benefits from a traditional single ERP landscape and the differences are described in this paper. The study found that the achievement of strategic, organisational and infrastructural benefits are substantially compromised. The study contributes to post ERP implementation research and ERP benefits research. The findings will assist organisations when considering the business case for different ERP landscapes.

Keywords

Enterprise Resource Planning, ERP, Benefits, Multiple ERP Landscape

1. Introduction

In the quest to gain competitive advantage and increase turnover and profits, organisations have invested billions of dollars into ERP since the 1990's. Despite this massive investment, research and literature still indicates that the benefits linked to ERP implementations are not consistent. Some organisations have had great success with ERP implementations and in other cases implementations have ended catastrophically. With a wide body of knowledge and literature

available concerning different ERP aspects there still exists an inadequate understanding and explanation for the different implementation results of ERP (Staehr, 2010).

Enterprise Resource Planning (ERP) systems are complex software systems which enable integrated processing of core business transactions across the organisation and its departments (Bancroft et al., 1998). Post implementations of ERP are under studied as ERP research mainly focusses on critical success factors for ERP implementations (Staehr et al., 2012). There are also many organisations who do not produce strong business cases before the implementation (Mukwasi & Seymour, 2014). Consequently these organisations cannot predict if their ERP implementations will provide business value (Zhu et al., 2010). ERP systems were designed and sold to replace all business applications with one centralized system. With the integration of all organisational departments, more benefits are gained (Uwizeyemungu & Raymond, 2012). Yet organisations are increasingly implementing multiple ERP systems and only implementing a few ERP modules such as HR and finance from one ERP software application. In a multiple ERP landscape, there is a lack of understanding as to what benefits can accrue to the organisation and whether the investment in ERP can be justified. This is the focus of this paper.

2. Literature Review

There is a large array of ERP implementation research focusing on critical success factors (Finney & Corbett 2007), benefits from a market valuation perspective (Dehning, Richardson & Stratopoulo 2003), productivity and production gains (Hitt & DJ Wu 2002), failures (Gargeya & Brady 2005) and risks (Scheer & Habermann 2000). Literature confirms that ERP systems are expensive and difficult to implement with implementations being complex and lengthy. In the past failure rates (not implemented after 36 months) were judged to be as high as 70% (Lindley, Topping & Lindley 2008). The majority of ERP costs (60%) are typically for implementation resources, employee training and consultancy and 25% for infrastructure (Ehie & Madsen 2005; Mabert, Soni & Venkataramanan 2001). Despite massive costs, organisations and governments still invest in ERP software systems. With the maturity of ERP knowledge, the belief that one centralized system can replace all business applications has crumbled. Hyvönen (2003) in comparing the use of ERP versus best of breed (BoB) found that in the cases where motives were either strategic or technical, the choice was for BoB. Bapna et al. (2010) reviewed multisourcing, the practice of stitching together BoB IT services from multiple, geographically dispersed service providers, and found it to be on the leading edge for modern organizational forms. Their study laid a foundation for normative theories of multisourcing. Due to the high cost of ERP, the need for organisations to justify their investment as part of an initial implementation step is said to be crucial (Al-Twairesh & Al-Mudimigh 2011) and creating a business case is a necessity to understand how the maximum benefits can be achieved (Davenport 2000).

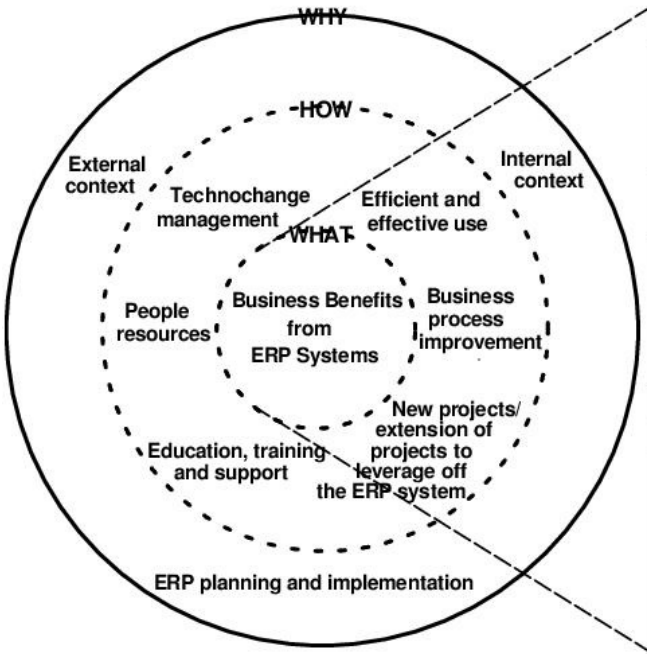
Some organisations have indicated that they were not able to initially identify possible benefits and predict the benefit value as benefits achieved increase over time and some benefits are not expected (James & Wolf, 2000). Some researchers have pointed to the possibility of the benefits being overstated in business cases to secure finances for projects or that the benefits were never achievable (Mukwasi & Seymour, 2012). Successful ERP implementations change business operations and can be very beneficial (King, 2005). To monitor whether potential benefits arising from the use of IT are actually realised, benefit realisation management is necessary (Ward &

Daniel, 2006). Effective benefit realisation requires continuous focus and commitment on the actual benefits instead of the technology (Ashurst et al., 2008). Literature refers to benefits being broken up into tangible or "hard" benefits and intangible or "soft" benefits. Tangible benefits are more directly measurable by financial or quantitative measures. Although the literature points to a growing consensus that benefit realisation should be a focus point for IT projects rather than technical solution delivery, the area is under researched. Ashurst et al. (2008) have developed a framework to assist organisations in the benefit realisation process. They identified four main competencies as the drivers to successful and consistent IT benefit realisation:

- Benefits Planning - effectively identify and enumerate the planned outcomes of all IT projects in the organisation and explicitly stipulate the means by which they will be achieved
- Benefits Delivery - design and execute the program of organisational change necessary to realise all of the benefits specified in the benefits realisation plan.
- Benefits Review - effectively assess the success of a project in terms of the potential benefits, the delivered benefits, and the identification of the ways and means by which further benefits might be realized (also see Lin, 2007).
- Benefits Exploitation - adoption of the portfolio of practices required to realise the potential benefits from information, applications and IT services, over their operational life (also see Ward & Daniel, 2006)

A classification of benefits achieved by ERP systems was developed by Shang & Seddon (2000). They distinguish five dimensions of benefits: Operational, Managerial, Strategic, IT Infrastructure and Organisational. The framework provides a comprehensive base for future objective research concerning ERP benefits. Davenport's more recent Enterprise benefit model (Davenport et al., 2004) focuses on the business benefits achieved by the organisation from a holistic point of view. Three driving factors were identified: Integration, optimization and information. This model does include time which has been identified by previous studies as an important factor influencing the achievement of business benefits (Staehr, 2010). Subsequently, the Organisational Benefits from Enterprise Systems (OBES) model was developed (Seddon et al., 2010). The benefit model of Zhu et al. (2010) is based on the Technology-Organisation-Environment (TOE) theory and identified Implementation quality, organisational readiness and external support as factors that influence post implementation operational and managerial benefits achieved. To explain how and why business benefits are achieved from ERP systems Staehr et al. (2012) developed a new framework which consists of 9 themes and relationships between them. The framework is designed to measure benefits achieved post implementation and supports literature in that the time lapsed after implementation does influence the benefits achieved (Staehr, 2010). This framework also supports the Shang & Seddon (2000) ERP benefits framework to assess the benefits achieved.

After reviewing the various frameworks they were selectively merged to show a more in depth understanding of ERP benefits. The resultant literature framework shown in Figure 1 is a combination of the ERP business benefits framework (Shang & Seddon, 2000) with extra benefits from the subsequent literature and with the model by Staehr et al. (2012). The merged theoretical framework links what, why and how the business benefits were achieved with the published recognised ERP business benefits.



BENEFIT DIMENSION	BENEFIT CATEGORIES
1. OPERATIONAL	1.1 Cost reduction 1.2 Cycle time reduction 1.3 Productivity improvement 1.4 Data quality improvement 1.5 Customer services improvement *1.6 User accountability*
2. MANAGERIAL	2.1 Better resource management 2.2 Better decision making 2.3 Better performance control
3. STRATEGIC	3.1 Supports current and future business growth plan 3.2 Supports business innovation 3.3 Supports cost leadership 3.4 Supports product *and service* differentiation 3.5 Enables external linkages 3.6 Enables world wide expansion
4. IT INFRASTRUCTURE	4.1 Increased business flexibility 4.2 IT cost reduction 4.3 Increased IT infrastructure capability
5. ORGANIZATIONAL	5.1 Facilitates business organizational changes 5.2 Facilitates business learning and broadens employee skills 5.3 Empowerment 5.4 Changed culture with a common vision 5.5 Changed employee behavior with a shifted focus 5.6 Better employee morale and satisfaction *5.7 Standardization*

Figure 1: Theoretical ERP Benefits Framework

3. Research Methodology

The main research question for this study is: "What are the business benefits of a multiple ERP landscape?" The objectives are to identify the business benefits achieved when an organisation has multiple ERP systems implemented in their ERP landscape and to explain why other benefits were not achieved and whether the architecture presented any challenges. This study was conducted following an interpretive philosophy. The findings of this research rely on the researcher's interpretation of data collected from a single organisational case which had a multiple ERP landscape. The purpose of this study is explanatory as it attempted to also identify how the business benefits were achieved post ERP implementation. The benefits were compared to those present in a more traditional ERP landscape. Single case studies have been shown to be useful for creating and testing models (Flyvbjerg, 2006). Seven individual semi-structured interviews were conducted with business managers, IT managers and IT analysts involved in the multiple ERP systems (Table 1). These candidates were chosen via purposive sampling, as they are highly knowledgeable regarding the ERP systems. Two of the managers were at a strategic level in the organisation and hence were able to comment on strategic benefits. The interview data was supplemented by ERP implementation related documentation allowing for triangulation and improving the validity of the analysis (Biggam, 2011). The data collected was analysed using thematic analysis with a combination of deductive and inductive coding (Fereday & Muir-Cochrane, 2006) utilising the resultant frameworks from the literature (Biggam, 2011). Analysed interview data was reviewed by all respondents after the analysis to add to the rigor and validity of the analysis (Attride-Stirling, 2001; Saunders et al., 2009).

Respondent	Organisational Department	Organisational Role
RA	Finance	Change Manager
RB	IT	Program Manager
RC	Finance	Reporting and Transformational manager
RD	Finance	General Manager Financial Services
RE	IT	Service manager
RF	IT	Senior Business Analyst
RG	Finance	Senior Manager

Table 1: Respondents Interviewed

4. Case Description and Challenges Experienced

The cross-sectional study was performed in 2014 at an insurance organisation in South Africa. The organisation serves over 5 million clients and has over 25 000 employees. The financial services industry is highly competitive and it is imperative for the organisation to provide the best service and products possible to its current and potential clients. In 2000 Executive management made the announcement that the organisation was moving away from the bespoke mainframe systems. In the words of the Chief Executive Officer at the time, the purpose of the project was "to re-engineer the financial processes and systems to enable the organisation to achieve world-class standards of financial management and reporting".

Strategic Objective	Initiative	Benefits	
Grow profitability & reduce costs	Cost effective business model	Tangible overall reduction in process cost Reduced Operating cost management Reduction in administrative hours VAT Savings	Reduction in procurement spend Reduction in procurement process cost per purchase
		Tangible Improved process outputs Reduction in time to produce budget. G/L can close later for adjustments. Monthly financial reporting cycle.	Draft of reporting pack Statutory account values Number of days to report
		Increased process compatibility & standardisation Decreased operational risk	Increased report relevancy and delivery Better focus on value added activities
	Effective data management	Better platform & application integration Improved Financial data accuracy & integrity Improved organisational information	Improved financial data availability & accessibility Improved financial module integration
Reinforce cultural transformation	Proactive financial management	Decision making and decision support capability	Staff empowerment & professionalism

Table 2: Benefits

Executive management indicated that Oracle was the ERP system of choice and that this project was linked to other strategic projects that was part of a wider enterprise solution. The organisation identified initial benefits that were to be gained from the Oracle implementation with the strategic objectives of the organisation in mind and grouped the benefits into initiatives that assisted in achieving strategic objectives. The organisation identified tangible and intangible benefits (Table 2) and were able to place a current monetary value and projected monetary value to the tangible benefits, calculating the projected saving.. Yet from that point onwards the organisation appeared to make decisions or actions that prevented the realisation of this vision.

The first decision was to separate Finance and Human Resources (HR). Oracle was first implemented in 2001 and due to time constraints politics and availability, HR and Finance were implemented on separate infrastructure. This resulted in extra infrastructural costs:

"It was a very foolish way to go. But HR needed to make the shift before Finance could be ready so they made the shift. They ran that way, separately" (RC).
"So exactly why they did it, I think it is more politics, and political, but yes, the two teams not wanting to work with each other" (RE).
"You have to pay for the infrastructure on both sides, you had to write interfaces between the two, you know, to do a bit of customisations on both sides, because they were separate. So there was costs attached to physically keeping the infrastructure up and running" (RE).

In about 2005 they implemented a third ERP system due to a lack of functionality with their existing ERP package.

"And the SAP one we did in about 2004 – 2006… it was implemented from a commission point of view. I think there is not even a commission module today in the Oracle suite" (RB).

The organisation then introduced substantial customisation of their separate Oracle systems over a 10 year period. Excessive customisation has been identified in the literature as leading to project implementation failure and an inability to upgrade (Momoh, Roy & Shehab 2010). These customisations did result in increased costs.

"So the customisation in my view delivered some very good benefits to the business, but yes, every time you apply a patch to this environment… So customisation does increase your cost of owning the application" (RE).

As their Oracle systems were at the end of their support the organisation needed to upgrade but could not because of their heavy customisation. So in 2012 a further ERP, Oracle E-Business Suite R12 (EBS), was implemented on its own infrastructure and some new modules were implemented. The decision was made to migrate all Oracle Finance and HR modules onto the EBS. This improved integration although Finance and HR were not collaborating. Transactions were not migrated which meant the previous Oracle systems needed to remain operational. A decision was made to at the same time to remove customisation. The removal of customisation resulted in a loss of functionality and made some processes more manual and less automated.

"Integration is better, but other than that, there is no real collaboration between the two" (RF).
"The business took quite a straight forward view that there is not going to be more customisations" (RE).
"We also removed a lot of customisation. We called it the Vanilla approach" (RA).
"We lost functionality – because we were not allowed to customise anything" (RG).
"We were able, through customisation, to automate things that are [now] more manual, more labour intensive… it is a classic example of what happens when you put technology in the front and run a technology project without actually apply your mind to kind of the business process improvement. You know, what you are trying to achieve from a business perspective" (RD).

While the EBS implementation was still in progress a decision was made to implement a beta version of the latest ERP version (Fusion) to be able to implement two new modules. The vision

for this new system was real time reporting as well as executive dashboards, the implementation was completed one year prior to this research. This decision was a very expensive one.

> *"At the moment we only have two modules in that stack. So you have this huge truck of servers and money and cost and module-wise your work is still coming from EBS*" (RE).
> *"With Fusion our total cost of ownership went up considerably and not only that, it is something we are not very happy about" (RA).*
> *But I was surprised that we took a Beta version.. there were thousands of bugs logged… it is a lot slower than what we have had, and we had a lot of funnies on the application…we have not been live for a year yet, and we have now had five upgrades at the moment – five in a row (RF).*

There are now five separate ERP systems in the landscape (SAP, two Oracle 11 systems, EBS and Oracle Fusion) each on separate infrastructure. Historical transactions are on the Oracle 11 systems, the bulk of the organisation's transactions are performed on EBS with two modules being supported by the Fusion platform and one module on SAP. The tentative plan is to ultimately migrate all data onto the Fusion platform, but this could take years. The multiple systems have resulted in extra IT costs in terms of patching, support and interfaces.

> *"let's give patching as an example. So patching, I have to patch this environment and this environment and this environment. I have to support…"(RE).*
> *"so what happens is that every day, a lot of transactions happen in this space… and every night there is an interface that goes across to Fusion through what is called a gate" (RE.)*

In summary in this case study five reasons for the multiple ERP landscape were identified:

- Politics and a lack of collaboration across business functions
- A lack of resources or capacity in some business functions and not others
- Missing ERP functionality in one ERP product
- Wanting to access new functionality available in the latest ERP release
- An inability to upgrade due to excessive customisation.

While the multiple ERP environment resulted in many IT challenges and costs, the organisation underwent many challenges which are not unique to a multiple ERP landscape such as struggling to standardise processes, excessive customisations (Momoh et al. 2010), struggling to collaborate across business functions, choosing an early adopter approach with an immature ERP release with resultant high costs and dealing with resistance to the removal of customisation and "going vanilla" (Chen, Law & Yang, 2009). This study then went on to determine the impact of the architecture on benefits.

5. Benefits Achieved

This study then compared the published business benefits from organisations who have a single ERP landscape to those business benefits identified at the case organisation which has a multiple ERP landscape and also tried to establish how and why these benefits were achieved. The organisation acknowledged that it experienced multiple challenges as detailed before and that it struggled with achieving benefits, yet some benefits were achieved.

"Yes, getting the benefits and standardisations out of the packages and we battle with that" (RB).

Benefit Themes	Count	Literature theme	References
Operational	**36**		
Centralised & self services	10	Customer services improvement	Shang & Seddon, 2000
Cost savings	6	Cost reduction	Shang & Seddon, 2000
Better understanding of finances	3		
Procurement benefits	3		
Increased productivity	13	Productivity improvement	Shang & Seddon, 2000
Cycle time reduction	1	Cycle time reduction	Williams & Schubert, 2010
User accountability	1	User accountability	Staehr, 2010
		Data quality improvement	Gattiker & Goodhue, 2005
Managerial	**24**		
Improved control	5	Better resource management Better decision making Better performance control	Shang & Seddon, 2000; Staehr, 2010
Improved governance	2		
Improved reporting	14		
Business intelligence capabilities	2		
Improved resource management	1	Better resource management	Staehr, 2010
Strategic	**11**		
Alliance and Cost benefit	2	Supports cost leader ship	Shang & Seddon, 2000
Internal Integration	4	Integration across departments	Uwizeyemungu & Raymond, 2012
Expansion	4	Enables global expansion	Shang & Seddon, 2000
Business optimisation	1		
		Supports current and future growth plan	Esteves, 2009
		Supports business innovation	Shang & Seddon, 2000
		Supports product and service differentiation	Esteves, 2009
		Enables external linkages	Esteves, 2009
Infrastructure	**1**		
Increased Infrastructure Capability	1	Increase IT Infrastructure capability	Shang & Seddon, 2000
		Capability for current and future applications	Weill & Broadbent, 1998
		IT cost reduction	Esteves, 2009
		Increased business flexibility	Esteves, 2009
Organisational	**5**		
Organisational wide business changes	2	Facilitates business organisational changes	Staehr, 2010
Standardisation	3	Standardisation	Shang & Seddon, 2000
		Facilitates employee skills	Shang & Seddon, 2000
		empowerment	Esteves, 2009
		Changed culture with a common vision	Esteves, 2009
		Changed employee behaviour and focus	Shang & Seddon, 2000
		Better employee morale and satisfaction	Shang & Seddon, 2000
Grand Total	**77**		

Table 3: Benefit Themes

The benefits achieved are listed Table 3 grouped according to the Shang & Seddon (2000) benefit dimensions and contrasted with the literature. The count column indicates the count of empirical data observations from interview data. Part of the reason given to achieving the benefits relate to recently treating the implementation more as a business project and less as an IT project:

"So they are combining the implementation with some business decisions. And that is savings" (RB).

5.1 Operational Benefits

The operational benefit category was identified as the category with the most identified benefits. Only data quality improvement was not discussed. The themes identified are centralised and self services, cost savings, financial benefits, cycle time reduction, business process improvement, increased productivity, user accountability and procurement benefits.

The analyses of the data collected points to all respondents naming centralised or self services as a benefit. This is very applicable in this case. Having a centralised accounts payable and general ledger function is more beneficial than having disconnected silo operational areas each processing their transactions in a different manner as was the case prior to ERP.

> *"45 different finance entities within the organisation doing things in different ways. And the chart of accounts is now a single chart of accounts that supports all of them" (RA).*
> *"So now, instead of people filling out forms and sending it to someone, they can actually do things online. So I think that is a clear benefit" (RD).*

Cost reduction is one of the operational benefits indicated by the ERP business benefits framework (Shang & Seddon, 2000). From the research data it is evident that the respondents interviewed are also of the opinion that operational cost saving is a benefit achieved from utilizing an ERP system regardless of the landscape.

> *"… So your operating cost will drop significantly" (RB).*

Not to be confused with cost saving, better understanding of finances is not identified by the ERP business benefits framework but it was identified by 2 of the respondents.

> *"… cash flow was much better, return on dormant money in bank accounts (RC)."*

Procurement benefit is not specifically mentioned by the ERP business benefits framework and could be grouped under improved business process. However it stood out as a benefit identified in the initial stages of the implementation that the organisation maximised to their advantage.

In terms of increased productivity, automating transactions and improving business processes provide business benefits by decreasing run time of the processes, automating labor and increasing productivity (Shang & Seddon, 2000). All respondents mentioned productivity improvements. Even with multiple systems, an ERP implementation forces an organisation to standardise processes. Increase in productivity seems to come hand in hand with the process improvement as respondents referred to the fact that once the processes improved the productivity improved.

> *"same amount of people and there are more transactions going through. So you are basically definitely seeing a productivity improvement" (RD).*
> *"yes, everybody had their own processes and everybody was doing their own thing and there was nothing, there was no defined process that everybody followed. So I think when we went onto Oracle… you are kind of forced to adopt those processes" (RF).*

Cycle time reduction for certain processes did improve, for example month end closes took one fifth of the time.

> *"When they close their month, they used to do reporting 20 days, 21 days after… the close has been moved out with like 4 days. People get reports out on day 5 or day 6 now. It is a hell of a lot better than what is was" (RF).*

5.2 Managerial Benefits

The managerial benefits cover benefits that improves business manager's information, resource management capabilities and transactional information. These benefits assist the business managers to make improved and informed decisions. All benefits from the literature framework

(Figure 1) were mentioned. Benefits identified are business intelligence capabilities, improved control, improved governance, improved reporting, and improved resource management.

Improved Control was identified as an added benefit, brought by processes of the ERP systems.

> *"Using a Vanilla standard purchasing process meant no purchase order no payment so we got improved control over purchasing" (RA).*
> *"I think control is a big thing, because one does not know what the guys in the African counties or South Africa are doing, so you can enforce rigid region controls" (RE).*

Senior managerial roles described improved governance as a benefit. The new chart of accounts module was seen to improve data governance.

> *"… we put in a new chart of accounts so we have much more improved data governance around chart of accounts" (RA).*

Improved reporting was the most recognized. Improved reporting is not a benefit specifically named in the ERP business benefits framework but could be grouped under all 3 of the mentioned benefits in the managerial benefit category as it is a major contributor to better resource management, better decision making and better performance control. The organisation was able to achieve improved reporting but in some cases only because of their data warehouse.

> *"So we have got the finance view, but if you want to see product sales, you want to see customer sales, which is happening in a bunch of other places … So then you have to pull all that together… And then you have to create your own data warehouse so that you can in fact pull in the ERP data" (RD).*

Benefits of Business Intelligence capabilities is distinct from the improved reporting theme due to the fact that this benefit had not been completely realised but it has been identified and work is in progress to enable the organisation to fully capitalise on the platform that the ERP system provides. In the future the business hopes to leverage the transactional information gathered from the ERP platform to produce BI information that ultimately improves on customer understanding and helps with understanding what consumers want and need.

Improved resource management is one of the managerial benefits listed by the ERP business benefits framework. ERP enabled the managers to track the work of employees better and to monitor errors and resubmissions. This is in line with literature (Staehr, 2010).

> *"We were able to track invoices per accounts payable clerk, error rates, resubmissions. So that was not possible before. Which enabled us to create a fairly well-oiled accounts payable team of people. So as a manager, you could now lead them from a productivity perspective. Track processes" (RC).*

5.3 Strategic Benefits

According to Shang & Seddon (2000) strategic benefits enable the organisation to gain an advantage over competitors. The benefits identified are alliance and cost benefit, internal integration, expansion, and business optimisation. Four literature benefits were not mentioned by respondents; supports current and future business growth, supports business innovation, supports product and service differentiation and enables external linkages. Many of the literature benefits

were not achieved. It seems that having multiple ERP systems erodes the ability of ERP systems to provide strategic benefit.

> *"But it is not something that is part of our core business strategy" (RB).*

Alliance and cost benefit is identified by the ERP business benefits framework as supporting cost leadership. Only one respondent identified this benefit and stated that he is of the opinion that the organisation is not maximising this benefit. If maximised this could hold a massive cost saving for the organisation.

> *"So to be able to get group procurement properly done. I don't think we are there yet. So you can then start, across the group, see those savings" (RE).*

Integration across organisational departments plays a big contributing role in the success of any ERP system (Uwizeyemungu & Raymond, 2012). The multiple ERP landscape actually depends on integration to fulfil the business requirements of the ERP platform. Furthermore when the HR and financial platforms merged immediate integration benefits were identified as described by respondents.

> *"… being on the same platform, I mean, the integration is there so those files can just float through" (RF).*

Expansion is identified by the ERP business benefits framework. It is evident that the ERP systems in their current form do provide the business with the platform and leverage to enable expansion into other business worldwide.

> *"Then linked to that, is the ride into Africa. So that would actually be using this platform to enable the countries and for them to actually start running their financials and their HR management on the shared service platform as well. So then again that is increasing our footprint in that perspective" (RD).*

Business optimisation is not specified by the ERP business benefits framework. It was identified that the ERP systems provided business with the opportunity to optimise the business. This business optimisation might be a result of optimising their processes.

> *"It gave them the opportunity to stand back and relook at the business and really optimise it" (RB).*

5.4 IT Infrastructure Benefits

The literature framework identified 3 organisational benefits. Increased business flexibility was not mentioned by respondents as a benefit of ERP. It seems that having multiple ERP systems introduces IT complexity which erodes the ability to provide business flexibility.

One of the infrastructure benefits that was identified was that the ERP systems did increase the capability of the infrastructure moving from mainframe.

> *"More processing power, more storage capability, more fluent and so on. So the infrastructure benefits were there, from de-risking mainframe and benefitting from UNIX" (RC).*

Shang & Seddon (2000) identify IT cost reduction as a benefit of an ERP system implementation. From the data collected, the actual cost of the IT infrastructure increased substantially due to the multiple ERP landscape.

5.5 Organisational Benefits

From an organisational benefit point only standardisation and organisational business change was mentioned as benefits gained from the ERP systems. The literature framework lists 7 organisational benefits (Figure 1). It appears that many organisational benefits such as "changed culture with a common vision" are only achieved from the organisation collaborating on one central ERP system. A limitation of this study is that it was not able to look in depth at many of the organisational benefits. More research is required in this field to confirm organisational benefits gained from a multiple ERP landscape.

Organisational wide change is something that goes hand in hand with any ERP implementation (Staehr, 2010). In this study the change that was identified as a benefit was that of the organisational procurement process being fronted by contracts with the suppliers. These contracts with the preferred suppliers ensured that the organisation received improved rates, catalogues and ultimately saving on procurement costs.

> *"I think the main benefit was strategic sourcing and catalogues and better rates and so on" (RC).*

Standardisation is one of the most recognised benefits gained from ERP implementations (Shang & Seddon, 2000) and goes hand in hand with process improvement. Standardisation allows the business to perform the same task across organisational departments in the same manner. From an organisational perspective the standardisation brings less rework and more governance.

> *"The other benefit that is, let's say as far as, if you look at a maturity curve perspective, it would still be in the earlier stages – is the standardisation of process" (RC).*

6. Conclusion

This research project set to understand the motivations for and challenges of an organisation to choose multiple ERP systems and then identify the business benefits achieved. Once identified the benefits achieved were compared to the published business benefits achieved by organisations who have a more traditional single ERP landscape. Reasons for an organisation choosing multiple ERP systems included politics and a lack of collaboration across business functions; a lack of resources or capacity in some business functions and not others; missing ERP functionality in one ERP product; wanting to access new functionality available in the latest release; and an inability to upgrade due to excessive customisation. The multiple ERP landscape was costly for the organisation and resulted in many benefits not being achieved. While operational and managerial benefits were achieved the achievement of strategic, organisational and infrastructural benefits were substantially compromised. Although the benefits gained from the multiple ERP landscape are fewer than those benefits published from the more traditional single ERP landscape, it is important to realise that many benefits were still gained.

The theoretical contribution of this case study is to the post ERP implementation research field, the theoretical model explains the main benefits achieved and drivers for benefits. From a practical

perspective the study adds to the understanding of ERP benefits and the challenges with and drivers for a multiple ERP environment. It is believed that this literature will assist organisations when it comes to deciding on an ERP landscape and when preparing business cases through giving a better understanding of the potential benefits which could accrue.

The limitations of this research stems from the single organisational case and hence not a clear understanding of the generalisation of the findings to other contexts. This study has unearthed future research needed from a post-implementation perspective. The achievement of organisational benefits and the enablers for this are not well understood, the balance between necessary customisation and business first versus the IT first vanilla implementation is also not clearly understood.

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