

THE ROLE OF SAAS APPLICATIONS IN BUSINESS IT ALIGNMENT: A CLOSER LOOK AT VALUE CREATION IN SERVICE INDUSTRY

Mohammed Banu Ali,

mohammed.ali@mohali.co.uk

*University of Manchester, Manchester Institute of Innovation Research
Innovation Management and Policy Division*

Trevor Wood-Harper,

atwh@manchester.ac.uk

*University of Manchester, Manchester Institute of Innovation Research
Innovation Management and Policy Division*

Ronald Ramlogan,

ronnie.ramlogan@manchester.ac.uk

*University of Manchester, Manchester Institute of Innovation Research
Innovation, Strategy and Sustainability*

Abstract

This paper provides insight into how SaaS applications can be a source of value creation for enterprises operating in the service sector. Using a case study approach and semi-structured interviews, the findings aimed to determine how aligning IT strategy and business strategy can lead to value creation. Meeting service demands, accessibility needs, storage and resource needs, application customisability and cost-effectiveness were among the most influencing dimensions of business-IT alignment. Yet, negative dimensions, such as lack of usability, incompatible software culture and lack of reliability led to the failure of the chosen software tool and thus failed to align both business and IT strategies. Future research could explore other cloud service models, such as Platform-as-a-Service (PaaS) and Infrastructure-as-a-Service (IaaS) applications that support business-IT alignment to reveal how and why other cloud service applications can succeed or fail.

Keywords: Business-IT alignment, Business Operations, Information Technology, SaaS, Value Creation

1.0 Introduction

Information technology (IT) is a critical resource for 21st century businesses. By applying an application software package in enterprises, it will ultimately improve on earnings through improved operational efficiency, decrease in costs, enhanced ability to make knowledgeable decisions and creating competitive advantages by enabling innovative practices (Hacklin et al., 2018; Rachinger et al., 2018). Despite these benefits, it is expected that software packages will become more turbulent and difficult

in the future. This situation will result in one of the most common challenges top management face, which is the decision to make significant investments in application software packages (Sivarajah et al., 2017). Although top management may perceive that acquiring an application software package may result in the enhancement of enterprise performance, it is important to remember that implementing an application software package goes further than merely changing components; it usually requires a complete refit of the enterprise itself (Günsel, 2015). This refit of the enterprise entails the strategic alignment of business strategies and IT strategies (Pearlson et al., 2016).

Investing in the appropriate software package (IT strategy) will require a significant amount of enterprise resources (business strategy) to align the new IT package to the business goals. This means that business-IT alignment becomes an important issue for numerous enterprises since it is necessary for fostering enterprise visibility and efficiency which helps in staying ahead of the competition (Hacklin et al., 2018). Despite the prudence of business-IT alignment, businesses can face dire consequences if there is a misalignment between business and IT strategy. For example, Peters and Verhoef (2008) argued that 30% of IT projects fail due to an unclear cost-leadership strategy that leads to businesses incurring significant operational costs. Whitney and Daniels (2013) confirms that only 29% of IT-projects are considered a success, with the UK service industry have reporting similar failures with the adoption of software packages. This shows that the major cause of IT package failure is down to a lack of manager experience and lack of deep feasibility studies. Despite the enterprise failure of software packages, the literature demonstrates the success of business-IT alignment. A good example of this success is the proliferation of business-IT models such as Software-as-a-Service.

While on-premises solutions still help enterprises to create value, Software as a Service (SaaS) as a method of software delivery is a promising IT solution for creating business value (Rodrigues et al., 2014). SaaS is a rapidly growing and exciting in the cloud-computing arena, and compared to the traditional method of installing the software directly on a computer or server, SaaS is delivered to the user via the Internet. This mode of software delivery has various benefits including improved cost, time, ease of use and maintenance capabilities. The greatest advantage of SaaS is that it creates value through financial savings for enterprises through offering affordable subscription

services (Loukis et al., 2019). Enterprises can also save on the human resources, thus reducing business overhead. Although SaaS applications cannot always help enterprises to align their business and IT needs, the increased uptake of SaaS is why it is becoming a popular choice as a cost-effective, supportive and scalable software package solution (Fuzes, 2018).

1.1 Research Significance

Enterprises lose millions of investments in new IT projects because it does not match their business needs. Although business IT alignment is not a new topic, enterprises are still facing radical failures due to the rise of emerging technologies which has been under investigated or lack appropriate consultation. Although the literature has discussed the alignment of business strategy and IT strategy in relation the adoption of software packages, this research provides insight into IT as a business process strategy using cloud SaaS applications that aim to create value through the provision of on-demand, ubiquitous, elastic, centralised and customisable SaaS applications. To achieve this research goal, this paper critically analyses two business cases in the service industry in terms of how they apply their strategic alignment of business strategies and IT strategies using SaaS solutions. This helped to provide insight into how SaaS applications can be a source of value creation for enterprises operating in the service sector.

2.0 Theoretical Background

2.1 Business-IT Strategic Alignment

Within the past 25 years, business-IT alignment plays an important role in enterprises and has attracted considerable attention from academic scholars in the IS domain (Al-Surmi et al., 2019; Gbangou & Rusu, 2016; Seman & Salim, 2013; Wang & Rusu, 2018). Information Technology (IT) can assist enterprises in its business process design strategies that are required to add or adapt enterprise processes or activities. Several authors (Bhattacharya, 2017; Coltman et al., 2015; Habba et al., 2019) have emphasised that enterprise stakeholders can use its business-IT strategic alignment (BISA) to provide applications such as on and off premises software applications needed to design new business processes and activities, as well as to create business value (Rodrigues et al., 2014). Although software applications can assist enterprises to develop new

business processes, the selection and implementation of inappropriate applications from decision-makers can cause a misalignment between IT strategy and business strategy (Kamesh & Jin, 2018). Poor decision-making practices indicate a lack of understanding of BISA from not only enterprises in general, but also from decision-makers who are involved within the feasibility study of BISA applications.

BISA includes the aspects that enterprises deem necessary to align their business strategy with their IT strategy as means to improve business process design and create value using ubiquitous software applications (Seman & Salim, 2013). But aligning business and IT strategies requires software specialists and business experts to create and improve business processes or activities, and ultimately assist in the innovative process of enterprises (Gbangou & Rusu, 2016; Seman & Salim, 2013; Wang & Rusu, 2018; Zarvić & Wieringa, 2014). A number of authors have cited typical goals of BISA programmes to foster innovative business process design and value creation.

In terms of value creation, Bhattacharya (2017) emphasised that an effective BISA strategy to improve business process design through online applications, which can reduce operating costs, thus saving enterprises time and money to reallocate human resources (Lange & Mendling, 2011). Similarly, Seman and Salim (2013) stated that successful BISA can promote business efficiency or transformation, while Gellweiler (2017) confirms that effective BISA can improve enterprise decision making, as well as inspire decision-makers to modify their communication and process flows to maximise productivity. Several authors also affirm that effective BISA can improve business process design through the continuity of enterprise knowledge and skilled manpower (Antunes & Pinheiro, 2019; Kangilaski, 2013; Sadeghi, 2011). These goals embody the efficient and cost-effectiveness of online applications to provide an effective BISA for enterprises to improve their business process design. A number of studies (Chan et al., 1997; Coltman et al., 2015; Gbangou & Rusu, 2016; Irani, 2002; Kearns & Lederer, 2003; Sadeghi, 2011; Wang & Rusu, 2018; Zarvić & Wieringa, 2014) have identified relationships between the goals which reflect strategic implications of BISA, particularly in relation to decision-making outcomes.

Gutierrez et al. (2009) compared BISAs of various enterprises and found that communications between IT and business decision makers, clear definitions of

authority given for making IT decisions, partnership between business and IT decision-makers, enterprise readiness and decision-maker skills and competencies impact the way decision-makers align business and IT strategy. Chong et al. (2011) deduced that the most significant factors were partnerships between business and IT decision-makers and decision-maker skills and competencies. IT decision-makers will often focus more on the tool itself as opposed to how it can foster business strategy, while business decision-makers may have very little knowledge about the appropriate IT tools needed to effectively align business and IT strategies (Gbangou & Rusu, 2016; Kearns & Lederer, 2003; Kruger, 2012; Rathnam et al., 2005). There needs to be a harmony between both IT and business decision-makers in which they work together, combine their own expertise and be committed towards meeting the enterprise's needs to come to an effective BISA to support the business process design.

Gagnon et al. (2008) argues about a lack of understanding on the tools by which individuals come to aligned with strategies. Considering this connection, it is significant to consider the alignments of IT and business decision-makers and conducting feasibility plans to determine whether such alignments can influence successful BISAs with support of appropriate software tools. Ubiquitous technologies are a good example of successful BISA since they are tools that can change the way enterprises use IT as a service from external providers to meet IT led business objectives (Fuzes, 2018), such as reducing operational cost, minimising waste resource output and promote collaboration among decision-makers. Ubiquitous tools in this paper are referred to as cloud software-as-a-service (SaaS) and serves as the focus of the next section.

2.2 Business-IT Alignment in SaaS

Enterprises worldwide are implementing online tools as a better alternative to existing in-house solutions to help meet business goals more efficiently, better align their IT and business strategies (Fuzes, 2018) and create business value (Rodrigues et al., 2014). For example, ubiquitous software solutions such as cloud SaaS have gained much traction within the past decade. In 2015, the SaaS market for application sales was said to be worth an estimated \$33.4billion and this figure was expected to double in 2019 with a worth of over \$67billion (KPMG, 2015). Remarkably, the SaaS market is now worth \$141billion, which is over double of KPMG's projections, and the SaaS market is expected to be worth almost \$160billion in 2020 (Statista, 2019). This demonstrates a

rapid demand for cloud SaaS software solutions to better align business and IT strategies and ultimately meet business goals and create business value through a number of cloud characteristics, such as on-demand self-service, broad network access, resource pooling, rapid elasticity and measured service (Fig.1).

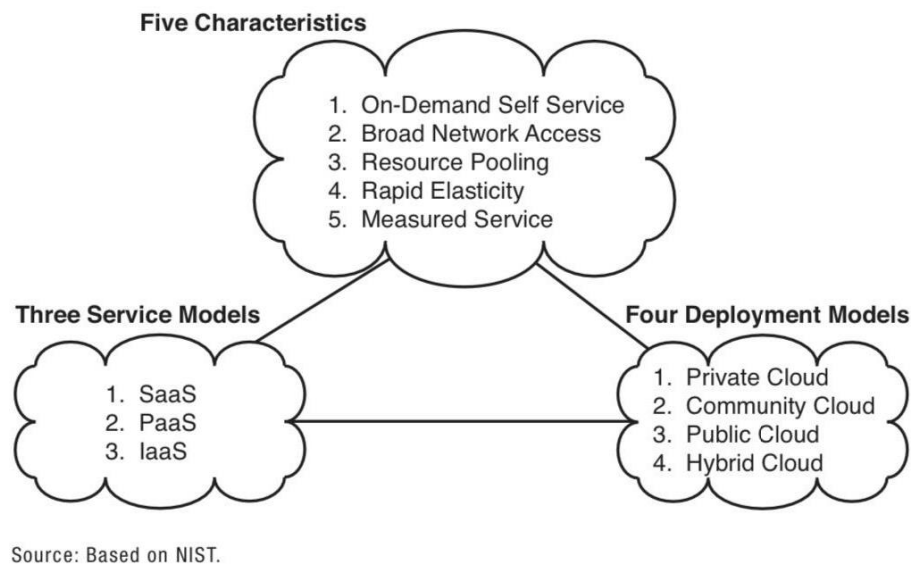


Figure 1: Characteristics of Cloud SaaS: NIST in Willcocks et al. (2014)

Various authors (Ali, 2019; Fuzes, 2018; Kavis, 2014; Li et al., 2011) have advocated for a SaaS software solution to enable enterprises to develop a solution that helps to align their business needs with their IT needs. In this case, enterprises and their systems users can bypass company IT, and implement a software as a service (SaaS) solution directly from a cloud provider (Rodrigues et al., 2014). This eliminates the need for both the IT and business departments to understand each other's business and IT needs since enterprises can access business applications faster from the SaaS provider with very minimal interaction required. IT inflexibility owing to the complexity and inhomogeneity of in-house systems is also eliminated when implementing SaaS since the services are directly managed by the provider with very little intervention required from the business user who can use the applications when they demand it (Duan, 2017).

Although SaaS cannot fully resolve system complexity issues, they can be used outside the bounds of on-premises access (Fuzes, 2018). For example, SaaS can be used to recruit new employees to advertise available positions online, accept and screen CVs, and provide a workflow for the selection process. In addition, these processes do not

have to be integrated within the enterprise's existing ERP system. Some authors confirm that SaaS offers a new business solution to provide customisable and efficient software applications to improve the alignment between IT and business strategy to support meeting business goals (Tian et al., 2015), enhancing overall performance (Loukis et al., 2019) and creating business value (Rodrigues et al., 2014) through the provision of on-demand, ubiquitous, elastic, centralised and customisable SaaS applications (Willcocks et al., 2014). Although SaaS applications can enhance the alignment of IT and business strategy, the ever changing role of the IT department present a clear threat in the coordination of different IT systems that could be out of their control.

2.3 Comparison of In-House and SaaS Software Packages

Comparing the difference between in-house and SaaS from a BISA perspective can be measured by exploring the different elements associated with the implementation of business-led IT solutions. Such elements include cost, nature of implementation, technical characteristics to support business operations (e.g. customisation, maintenance and support, scalability, upgrading and security) and communication.

In terms of cost, SaaS packages are fairly cost-effective compared to on-premises solutions that can incur huge implementation and maintenance costs (Li et al., 2014). Despite the cost-effectiveness of SaaS solutions, from a BISA perspective, enterprises may end up spending more in the long-term and thus enterprises have to carefully plan the right SaaS solution for them to ensure their business cost strategy aligns with their IT needs in order to create value from it. If planned correctly, SaaS can minimise the cost of internal resources, helping the enterprise to create more value while optimising resource use (Loukis et al., 2019). This cannot be achieved with on-premises solutions as they require many human resources and an IT infrastructure, in addition to the added maintenance costs. This leads on to the nature of implementing software solutions.

Unlike on-premises solutions, enterprises can start using SaaS solutions with minimal implementation time since it merely requires a subscription (Tsai et al., 2016). SaaS solutions also leverage existing platforms that vendors have previously implemented, provisioned and tested. Though on-premises solutions require internal resources to manually upgrade the system. From a BISA perspective, this is why many implementations fail owing to the high cost and resource intensive nature of on-

premises solutions (Lewandowski et al., 2013), which in turn hampers value creation owing to a misalignment between IT (slow implementation) and business (improve operations) strategic outcomes. For that reason, enterprises often customise their solutions to carry out their business strategy.

Customisation of multitenant SaaS solutions is often not an option since a vast number of users have to simultaneously share the same application. This is why enterprises often turn to single tenant SaaS solutions as customisation is an option if the application permits it (Tsai et al., 2016). Despite the potentials of SaaS customisation, on-premises solutions appear to be the winner here because they can provide more flexibility and enable enterprises to customise their solution more openly together with online storage solutions. From a BISA perspective, this enables enterprises to better align with business needs with their IT needs through only using the IT resources required to achieve their business goals, though the elastic nature of SaaS solutions also provides such an opportunity, but perhaps not to the extent of what on-premises solutions provide. This however links to the communicative benefits of SaaS solutions in that they enable enterprises to control how their information is processed, stored and presented, as well as monitor information sharing capabilities (Ali et al., 2017; Loukis et al., 2019; Mohammed Banu et al., 2018). Despite this, information needs to be protected and so enterprises have to consider the security aspects of their solution in their business-IT strategy to ensure business value can be created without any system downtime.

Unlike SaaS solutions, on-premises solutions require additional resources to meet security needs. In order to create business value without any external interference from attackers, which can comprise business output, enterprises often turn to high-end SaaS providers who provide strong security and supervise network activity (Ali et al., 2020; Bhardwaj & Goundar, 2019; Chadwick et al., 2020; O'Donovan et al., 2019; Stergiou et al., 2018). From a BISA standpoint, a secure SaaS solution (IT strategy) can help enterprises to fulfil their business goals and improve operational efficiency (business strategy) without any compromises from external attackers who could potentially stall trading (Al-Surmi et al., 2019; Loukis et al., 2019).

Successful cases of SaaS implementation in terms of BISA have been documented in the literature, e.g. Greenwich University and MBA Group Projects (Ali, 2018; Sultan, 2010). Greenwich University introduced an “Education as a Service” (EaaS) solution based on SaaS architecture. This helped Universities to align their business strategy (improving educational service access for students with its IT strategy (application of efficient EaaS solution)). This solution was a success in terms of BISA because it helped to consolidate existing educational resources and services, as well as improving students’ learning satisfaction and learning experience. Similarly, the MBA group case focussed on using Google Docs as a potential viable alternative to their outdated Microsoft Office package. Google Docs helped Universities to meet their BISA requirements through providing a cheaper office package solution that most students found useful (IT strategy), which in turn improved their productivity and overall learning experience (business strategy). The above discussion, in addition to other miscellaneous facets of on-premises and SaaS software solutions are summarised in Table 1.

On-Premises Solutions	SaaS Solutions
Time consuming and requires many human and material resources to install	Rapid and simple installation
Need to purchase and maintain hardware	No hardware needed
Long-term planning and strong commitment	Lower commitment needed based on subscription model
Large monthly fees	Small monthly fees
Upgrades are time consuming and costly	Rapid and cost-effective upgrades
Additional software needed for security	Monitored network and server security
Need to purchase backup facility	Off-site backup facilities
Need to physically access servers and storage on-premises	No need to physically access servers and storage
No need for internet connection (optional)	Need for internet connection

Table 1. On-premises Vs. SaaS Software Solutions

The role of IT departments is changing because of the growing use of SaaS services, and such change could resolve a number of problematic areas of BISA. The IT department plays an important role to coordinate and integrate between different on-premises and SaaS solutions. Through outsourcing basic tasks to cloud providers and reassigning roles, enterprises have a better chance of focusing on the higher level business solutions and to become the strategic partner of the business. Table 2

summarises some of the key dimensions of BISA in terms of the characteristics of SaaS applications that can help enterprises to create value.

Characteristic	Dimension	Author(s)
On-demand Self-service	Using vendor controlled applications when required No need to physically access servers and storage	Duan (2017); Loukis et al. (2019)
Broad network access	Faster access to vendor applications External access to applications from various devices Communicativeness (e.g. collaboration and information sharing)	Rodrigues et al. (2014); Fuzes (2018); Ali et al. (2017); Loukis et al. (2019); Mohammed Banu et al. (2018)
Resource pooling	Off-site backup facilities	Ali (2018); Ali et al. (2017)
Rapid elasticity	Customisable and efficient software applications	Tian et al. (2015); Tsai et al. (2016)
Measured Service	Lower commitment needed based on subscription model	Loukis et al. (2019)

Table 2. Key dimensions of BISA in terms of the characteristics of SaaS applications

The potentials business-IT strategy alignment through the provision of on-demand, ubiquitous, elastic, centralised and customisable SaaS applications to create business value has not been clarified, so it is not obvious whether ubiquitous technologies can indeed create value. This research gap can be confirmed by our comparative analyses of on-premises and SaaS solutions with successful cases, in which despite the success of these SaaS applications, the question of whether they can create value in the long-term is still an area that requires further exploration and attention. This gap prompted the following research question:

How can enterprises align IT strategy with business strategy to create business value in the long-term using on-demand, ubiquitous, elastic, centralised and customisable SaaS applications?

Methods of how this research question was answered via empirical research are deliberated.

3.0 Research Methodology

A case study research was conducted on two enterprises in the UK. The aim of the case studies were to determine whether the two enterprises have adopted and implemented some form of SaaS IT solution to improve their business process design and fulfil enterprise needs in a more efficient manner. Another assumption is that the cases have aligned both their business and IT strategies in order to successfully implement the SaaS solution. These case studies were appropriate to discover whether the enterprises have utilised software tools to foster their daily operations and attempt to align both their business and IT together the best they can to achieve optimal productivity. This would also help to ensure both business and IT teams have a mutual understanding about IT-led business tools to fulfil the enterprise's needs to create business value. For that reason, the following research question was devised:

***RQ:** How can enterprises align IT strategy with business strategy to create business value in the long-term using on-demand, ubiquitous, elastic, centralised and customisable SaaS applications?*

Both enterprise's management teams whom the author had access were initially contacted via email and followed up with a telephone call. Thereafter, the management team helped to identify decision makers who work closely with the implementation and maintenance of the enterprises' software tools to participate in the study based on their experience and insights they were willing to share to address the research problem.

Yin (2012) argues that well-informed interviewees are needed to provide important insights concerning case studies. So the eligibility criteria for the research sample was that the interviewees had to have a minimum of three years' experience working in a business or IT management position in which they have made informed and critical decisions regarding business and IT strategies. The interviews were semi-structured as this would enable the participants to freely express their views without any close-ended restrictions (Myers & Newman, 2007). Thematic analysis was used to analyse the data

in which the researcher interpreted different dimensions of business-IT alignment. This also included the identification of themes in the data to ultimately develop a conceptual framework of these themes and compare them across the two case respondents (Boyatzis, 1998; Guest et al., 2011).

Prior to the interviews, participants were told in advance the nature and duration of the interviews. Emphasising the research aim and the goal of the interview helped the interviewees to prepare and understand the nature of the research. The participants were also given an informed consent letter stating their consented participation and agree to the research terms which ensured their anonymity. Permission to record the interviews was also asked to enable the researcher to transcribe the recordings to support the data collection and analysis phases, while maintaining the participants' anonymity. Face-to-face interviews were conducted and recorded using a voice recorder and each interview lasted an average of 30 minutes. Moreover, a total of 30 interviews were conducted across two enterprises. However, 5 interviews were omitted as 2 participants were unable to attend the interview and the other 3 yielded insufficient data to be used for the analysis, leaving clear 25 responses. Various departmental managers (e.g. IT, finance, HR) were interviewed with 13 interviews from case 1 (enterprise 1) and 12 from case 2 (enterprise 2) taking place.

Coding the participants was achieved by replacing the participants' real names with an abbreviated number and letter combination to protect their real identity e.g. PE1-1 (participant 1 of enterprise 1). This code ethics that was agreed prior to the research and was also stated in the plain language statement (see Appendix). As for documentation, these were coded in a similar way e.g. D1, to simplify the representation of the documents during data analysis. Table 3 summarises the participants across the two case studies and Table 4 summarises the documentation used across the two cases.

Participant No.	Case	Position	Duration
Participant 1 (PE1-1)	Case 1	HR manager	33 minutes
Participant 2 (PE1-2)	Case 1	Accounting manager	28 minutes
Participant 3 (PE1-3)	Case 1	Sales manager	29 minutes
Participant 4 (PE1-4)	Case 1	General business manager	31 minutes
Participant 5 (PE1-5)	Case 1	Administration manager	30 minutes
Participant 6 (PE1-6)	Case 1	Director	27 minutes
Participant 7 (PE1-7)	Case 1	Office manager	34 minutes
Participant 8 (PE1-8)	Case 1	Marketing manager	32 minutes

Participant 9 (PE1-9)	Case 1	Audit manager	30 minutes
Participant 10 (PE1-10)	Case 1	Systems support manager	31 minutes
Participant 11 (PE1-11)	Case 1	Operations manager	26 minutes
Participant 12 (PE1-12)	Case 1	Regional manager	32 minutes
Participant 13 (PE1-13)	Case 1	Team leader	31 minutes
Participant 14 (PE2-1)	Case 2	Accounting manager	28 minutes
Participant 15 (PE2-2)	Case 2	HR manager	30 minutes
Participant 16 (PE2-3)	Case 2	Sales manager	33 minutes
Participant 17 (PE2-4)	Case 2	Administration manager	34 minutes
Participant 18 (PE2-5)	Case 2	General business manager	35 minutes
Participant 19 (PE2-6)	Case 2	Director	26 minutes
Participant 20 (PE2-7)	Case 2	Marketing manager	28 minutes
Participant 21 (PE2-8)	Case 2	Office manager	27 minutes
Participant 22 (PE2-9)	Case 2	Audit manager	30 minutes
Participant 23 (PE2-10)	Case 2	Regional manager	31 minutes
Participant 24 (PE2-11)	Case 2	Operations manager	34 minutes
Participant 25 (PE2-12)	Case 2	Systems support manager	29 minutes

Table 3. Summary of Case Participants

Documentation No.	Case	Description
Doc1 (D1)	Case 1	Enterprise Info/Annual Report
Doc2 (D2)	Case 1	SAGE documentation
Doc3 (D3)	Case 2	Enterprise Info/Annual Report
Doc4 (D4)	Case 2	SugarCRM documentation

Table 4. Summary of Documentation

4.0 Findings

4.1 Case Study 1

Enterprise 1 is a small UK-based insurance enterprise. The enterprise is a recently established firm that has been operating for roughly 3 years. The enterprise employs roughly 800 personnel and has recently recorded an annual turnover of £150m in their second year of operating (D1, pg25). Recently, the enterprise was looking to migrate to an alternative software solution since they have outgrown their traditional accounting system they installed during the start-up period. The IT department with input from other business departments handle all IT services. The solution was an ERP SaaS package called “SAGE”, which is a versatile accounting solution for small enterprises (D2, pg43).

The participants reported that SAGE had completely replaced and minimised upfront costs, installation and maintenance cost with a small monthly rental fee.

“Our old accounting system required significant maintenance and was slow at working out our accounts, which could have been done faster through manual or paper methods. SAGE is a breath of fresh air because it is a highly responsive and rapid system that requires no maintenance from our end as a SaaS provider manages all our maintenance needs.”
(PE1-2, pg2: 10-12)

This suggests the **cost-effectiveness** and **efficiency** of SAGE as it helped the enterprise to minimise operational costs, while increasing productivity. This is a good example of business-IT alignment as the SAGE software tool (IT strategy) assisted in reducing operational and cost requirements (business strategy). Sticking with productivity, the participants emphasised a number of supportive features of SAGE to increase their output.

“Using SAGE has enabled me to view my data or files, as well as edit and perform other functions exporting data through excel or PDF without any functionality or efficiency loss. The best feature about SAGE is that the files can be downloaded from any device from any location.” (PE1-5, pg19: 50-53)

This shows that SAGE is not only an **efficient** software package, but it is also a **ubiquitous** tool that enables better **accessibility**. This is a real game changer for small enterprises as employees do not have to be physically on-premises to perform their duties. This is another good example of business-IT alignment given that SAGE is a perpetual tool that provides multi-access capabilities to employees. Similarly, several other participants commented about the accessibility benefits of SAGE.

“SAGE is a fantastic tool as allows me to work over the internet which our localised system was unable to achieve. This level of accessibility has enabled me to collaborate with fellow colleagues working in accounting department as we can work on a single file simultaneously without having to be in the same physical location.” (PE1-9, pg10: 35-39)

This shows that enterprises who operate in multiple locations find that centralised access to data provides a simulated work environment that acts as if they were in the same physical location, which is ideal when working with others who are in two completely geographical location. SAGE is therefore a multi-access **collaborative** tool that promotes the **dissemination** of work **efficiency** and **accessibility**, hence is another good example of business-IT alignment, **aligning SaaS with accessibility needs**. In keeping with the collaborative nature of SAGE, a number of participants further commented about how the tool promotes easy collaboration.

“Ever since SAGE was implemented, collaboration with the internal or outsourced employee or accountant has been much easier. This has enabled my accountants to work longer on their clients’ accounts more often. The collaborative nature of SAGE has also helped to seamlessly share information with our clients even when they are working in the system.” (PE1-6, pg25: 65-70)

This shows that the **collaboration** and **sharing culture** around SAGE eliminates the need to sync or copy files, thus making it easier for outsourced employees to work more closely with the accountants. This is a significant factor in the success of an outsourced relationship. This demonstrates how strong the company’s business-IT alignment strategy is given that the tool is helping to streamline business operations. Participants also reported the high security of SAGE.

“Since SAGE is a SaaS hosted on cloud, all our system security needs are taken care of by the cloud provider. They do a remarkable job of ensuring that my data is secure and use encryption techniques. This on a business level ensures minimal downtime, meaning that my work will ever be disrupted owing to a security concern. Data loss is also minimised, meaning that business operations will run smoothly for the most part.” (PE1-10, pg3: 13-18)

This shows that secure tools ensure maximum **productivity** and **minimal disruptions**, and ultimately maintain operational **efficiency**. Since SAGE is a SaaS driven by cloud data centralisation, it promotes a paperless environment. High security is therefore

linked to system efficiency, and thus **good business-IT alignment** and even **good socio-technical alignment** since it is meeting the needs of individuals working in the enterprise e.g. employees.

“SAGE on the cloud provides me with a centralised databases that is able to cater for all my documentation needs. With older methods, we had to use paper-based accounts along with the old legacy system, which brought not only productivity issues, but also environmental issues as we would waste a lot of paper. I firmly believe in green businesses so when we moved away from paper methods, I was relieved and respected the business for making this decision.” (PE1-5, pg24: 58-64)

This suggests that SAGE is a **resource efficient** system as it helped the enterprise to eliminate unnecessary paperwork. This creates a **paperless work-culture**, and ultimately promotes **greener businesses** and contributes towards **minimising environmental impact**. Consequently, this is an example of **aligning online storage and resource needs with SaaS**.

Other issues raised by the participants include **round the clock support** or **24*7 access**, which means that support is always available on-demand at any time and **saving on software upgrades** as the cloud provider now manages any technical issues and costs associated with the cloud (PE1-4, pg23: 52-57; PE1-5, pg24: 58-64).

A lesson learned from this case is that implementing the right tools to support business operations or aligning IT strategies with business strategies can in the case of SAGE, facilitate the accounting process by providing simplicity, in addition to saving money and increasing efficiency. Consequently, this is an example of **aligning application demands with SaaS**.

4.2 Case Study 2

Despite the success of case 1, case 2 was not as successful in implementing their SaaS solution. Case 2 is another small insurance company operating in the UK. The enterprise has been operating for 6 years, employs roughly 400 personnel and has recently recorded an annual turnover of £100m (D3, pg25). Recently, the enterprise had

migrated to a SaaS CRM solution to replace their traditional CRM, but failed to deliver its intended purpose owing to various complications on both the IT and business side. The solution was a social CRM package called “SugarCRM”, which is a web application for small enterprises and offers functionality including sales-force automation, marketing tools, customer support and collaboration among other features (D4, pg45).

A number participants reported the benefit of SugarCRM in delivering effective sales and marketing tools to drive sales and increase the enterprise’s profit ability. Despite these benefits, the SaaS CRM solution eventually become a burden since the enterprise had a considerable number of sales objectives, which even the solution could not achieve.

“We [the company] thought that SugarCRM would be the answer to our sales and marketing needs, but the system was not robust enough to handle our considerable sales objectives. The company therefore overestimated the capabilities of the solution. We continued to use the system, but it was only helping us to achieve half of our sales objectives. Unfortunately, we grew to hate the system in the end.” (PE2-1, pg31: 78-83)

This demonstrated the **lack of scalability** and **lack of adaptability** of the CRM solution to deliver the operational needs of the enterprise, which therefore is a poor example of business-IT alignment (IT strategy outweighing business strategy). Similarly, the participants pointed out that CRM systems often miss the mark when comes to increasing sales because they are often used as an inspection tool.

“I found the new CRM system to be rather redundant because it only supported some minor business operations, such as monitoring progress, increasing data accuracy in forecasts, provide visibility, predict project delivery dates, and provide a range of other business intelligence as opposed to improving the sales process, which was the intended purpose of the system.” (PE2-3, pg60: 112-117)

This demonstrated that the participants rarely found the capabilities of the CRM useful in attracting more business opportunities to the enterprise, thereby demonstrating a **lack of flexibility** and **lack of usability** of the system. This again, is a poor example of business-IT alignment since the system that was supposed to bring more sales to the company had failed to achieve this goal. Although the sales team liked the easy-access dashboard to report sales metrics and forecasts, they were unhappy about that sales monitoring capabilities of the system to help measure sales.

“I liked the accessibility features of SugarCRM, but when it came to monitoring sales, it failed to deliver this feature, which led me to use the traditional CRM which has monitoring capabilities. In the end, I had enter in a significant amount of information into the system, which should be unnecessary as less input was needed for the traditional system. So the system provided very little support to help me to sell more.” (PE2-10, pg57: 98-103)

This showed that because the sales team had no desire to keep up with the data entry requirements, the **data quality diminished** and become **less reliable** over time. As a result of the CRM mishaps, the enterprise ended up being exported to an Excel spreadsheet for further manipulation. This is poor business-IT alignment, namely **misaligning application customisability with SaaS** given the system’s unreliability to deliver effective sales monitoring. The participants also reported poor collaborative features within the CRM solution.

“The emailing system integrated in the CRM is very poor because of the painful email campaign design feature. I had to use my regular emailing system to maintain collaboration with my team. The user interface of the CRM system is also not that intuitive and attractive and can be difficult to navigate. In critical situations in which rapid communication is vital, the system would considerably delay me, thus impacting the company in terms of potential sales and profitability.” (PE2-6, pg33: 88-93)

This further demonstrates that the CRM is failing to improve even the most simple of business operations, such as communication, accessibility and usability. This is another

example of poor business-IT alignment since the system has a **lack of collaborative** and **lack of usability** features to help the enterprise make rapid business decisions. The participants pointed out that software culture led to the failure of the CRM solution.

“SugarCRM is an American system and we are a UK company so the way in which we interpret the software could be different. This may be the reason why the CRM solution has failed here because it may be incompatible with our business culture. It would be ideal to stick to UK-based solutions to ensure that we better understand the benefits of the system that align with our business needs.” (PE2-1, p52: 90-94)

This shows that an incompatible software culture affects cross-cultural differences that manifest in areas, such as management, enterprise culture, human resources and customer relationship management. This caused a **misalignment between IT and business strategy** since the software is **incompatible to meet the enterprises operational requirements**, thus resulting in system failure. This is also linked to the conflicts associated with the CRM solution.

When the system solution was implemented, a challenge arose in the form of incompatibility with the old features of the previous system that the enterprise was accustomed to. This has led to the failure of the new system project owing to the **costs to procure the system exceeding the budget** since the enterprise had to revert back to the old system. This led to a **misalignment of the expected benefits of the system and the original organisational budget**.

“The problem with SugarCRM is that the features of the system did not align with the features of the old system which we were accustomed to. As a result, we had to revert back to the old system as my colleagues and I could not adopt to SugarCRM which caused all kinds of budgetary issues, since the cost did not justify the expected benefits from SugarCRM.” (PE2-4, p59: 104-108)

This is a good example of enterprises failing to **align their budgets with the needs of systems users** since they chose a system that did not suit their needs, which in turn led

to organisational conflict. The solution in the end was to revert back to the old system, which came with budgetary ramifications since it failed to **align cost-effectiveness with the SaaS application** solution.

Business Characteristics (from literature)	IT Characteristics (from literature)	Business-IT Characteristics (from findings)
Service demands	On-demand self-service	Aligning SaaS with service demands
Accessibility needs	Broad Network Access	Aligning SaaS with accessibility needs
Storage needs	Resource pooling	Aligning online storage and resource needs with SaaS
Customisability	Rapid Elasticity	Aligning application customisability with SaaS
Cost	Measured Service	Aligning cost-effectiveness with SaaS

Table 5. Comparison of BISA Characteristics (from findings) with Cloud SaaS Characteristics (from literature)
BISA = aligning IT strategy (SaaS) with business strategy for value creation

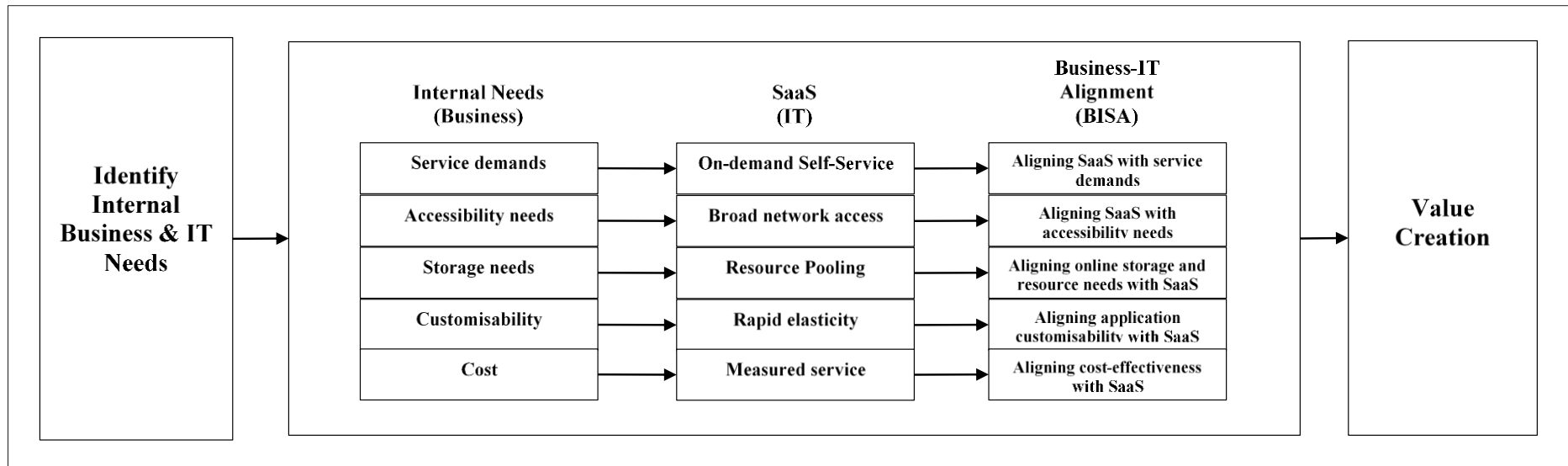


Figure 2. Conceptual Model of Business-IT Alignment SaaS Solution
BISA = Business-IT Strategy Alignment; SaaS = Software as a Service

The greatest lesson to be learned from this case is to ensure that the SaaS solution has to align with their value creation needs. In this case, the company was quick to implement the system without thinking through the capability of software culture which in the end led to a chain of issues such as lack of scalability, usability, reliability and communication issues. The lesson to take from this is to ensure that the application aligns with the value creation needs. For example, measured service, which is part of the IT strategy in relation to SaaS applications helps to create value, which in this case is cost-effectiveness as this helps the enterprise to minimise IT infrastructure costs. This analysis helped to develop a conceptual framework of the dimensions of BISA in service industry firms (Table 5 & Fig.2).

5.0 Discussion

The aim of this research was to insight into SaaS solutions as a business process strategy when transitioning from on-premises or legacy software packages that will affect their business-IT alignment. A number of structural, strategic, social and cultural dimensions were identified from the two cases.

In the first case, a strategic dimension in the form of minimising upfront costs demonstrated the cost-effectiveness and efficiency of SAGE was identified which ultimately increased productivity and helped the enterprise to create value through better sales and business growth (Rodrigues et al., 2014). To support this point, the participants further highlighted the supportive features of SAGE to increase productivity. The ubiquitous nature of SAGE meant that it was more accessible to users in the sense that users do not have to be physically on-premises to perform their duties. The company was able to successfully align both their business and IT strategy, namely tools (IT) assisting to minimise cost and increase productivity (business), as well as improve accessibility (Fuzes, 2018; Seman & Salim, 2013). SAGE was also found to be a multi-access collaborative tool to support work efficiency. This social dimension of the tool showed that collaboration and sharing culture around SAGE can streamline business operations and promote a dynamic business environment (Antunes & Pinheiro, 2019; Kangilaski, 2013). Other structural and cultural dimensions, such as high security, paperless operations and round the clock support or 24*7 access. This shows

that implementing the right tools helps to effectively align business and IT strategies through providing simplicity, cost savings and increasing efficiency.

Although the experience with SAGE was positive, the same cannot be said for the second case regarding SugarCRM, which reported a number of problems. The participants reported some benefits of the software solution, such as delivering effective sales and marketing tools to drive sales and increase the enterprise's profit ability, but the solution eventually had the opposite effect and become a burden. This strategic and structural dimension showed that the participants found the solution to be more of an inspection tool as opposed to a tool that helps to drive sales, and thus the capabilities of the CRM were rarely found be useful from the participants (Zarvić & Wieringa, 2014). This demonstrates a partial CRM system failure because it failed to support the alignment of the enterprise's business and IT strategy. Additional CRM system failure was found in the cultural dimension in which poor collaborative features hindered the enterprise from making rapid business decisions. CRM failure was further demonstrated by software culture. The use of an American software in a UK enterprise showed that incompatible software had affected areas of management, enterprise culture, human resources and customer relationships that led to a further misalignment of business and IT strategy (Kangilaski, 2013). Although the CRM did provide some benefit to the enterprise in terms of sale inspections, the tool was merely limited to this feature. Therefore, a lesson to be learned from is to plan the right tool that aligns with both business and IT strategy and not be too hasty about implementing the system like in this case.

6.0 Conclusion & Future Work

People have come accept that IT plays a significant role in creating value. This is the reason why IT has become a vital component of any successful enterprise. Although the reliance on IT is helping enterprises to overcome many complex issues in a more cost-effective and efficient manner, the literature shows that enterprises often find it difficult to select the appropriate IT solution that aligns with their business strategy and goals. So enterprises have to first plan what business requirements need to be met and select an IT solution that can aligns with these requirements. SaaS is a new technological paradigm which brings radical changes to enterprises through promising

on-demand, ubiquitous, elastic, centralised and customisable applications that creates value in the form of meeting service demands, accessibility needs, storage and resource needs, application customisability and cost-effectiveness. Despite the notable benefits of SaaS, there are a number of potential pitfalls such as lack of usability, incompatible software culture and lack of reliability which potentially lead to a misalignment between business and IT strategy that can hamper value creation.

This paper provided insight into how SaaS applications can be a source of value creation for enterprises operating in the service sector. The literature deduced a number of characteristics associated with SaaS applications, which helped to establish a research gap in the form of how enterprises can align their IT strategy with their business strategy to create business value through the provision of on-demand, ubiquitous, elastic, centralised and customisable SaaS applications. This prompted research into a real-world enterprise perspective to deduce the extent of business-IT alignment in the service industry. The cases gave positive and negative accounts of aligning IT strategy (application of SaaS software tools) with business strategy (meeting service demands, accessibility needs, storage and resource needs, application customisability and cost-effectiveness). However, negative dimensions, such as lack of usability, incompatible software culture and lack of reliability led to the failure of the chosen SaaS application which resulted in misalignment between business and IT strategy.

Although this paper provided a holistic case study of two enterprises using an IT solution (SaaS applications) to better align both business and IT strategies, little emphasis was placed on other service models of cloud applications. This prompts future research to explore other cloud service models, such as Platform-as-a-Service (PaaS) and Infrastructure-as-a-Service (IaaS) applications that support business-IT alignment to reveal how and why other cloud service applications can succeed or fail. Despite the application of a holistic case study design in this paper, it was only limited to two enterprises which limited the generalisability of the research data. Future studies could potentially adopt quantitative enquiry to allow future researchers to generalise the data.

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Appendices

Appendix 1: Interview Process

Plain Language Statement

This is an invitation to participate in a research project entitled: “The Role of SaaS Applications in Business IT Alignment: A Closer Look at Value Creation in Service Industry.” Before deciding upon your participation, please understand the purpose of the paper. Please take your time to read all the necessary information included in this statement. If anything is unclear to you, please refer to the contact details stated at the end of this document. Again, take your time to read the statement before making your participatory decision.

Paper scope/purpose

The purpose of this paper is to provide insight into IT as a business process strategy using in-house and cloud software packages that aimed to create value, such as increasing efficiency and productivity, leading to better sales and improved business growth through a service industry lens.

Reasons for being chosen

You are an individual who works either in the IT or business departments of enterprises operating in the service industry who has recently taken up an IT solution to better align business and IT needs for the sake of creating enterprise value.

Nature of participation

No, your participation is completely voluntary and you have the right to withdraw from the research at any time without reason. But should you withdraw during the interview process, any information given before your withdrawal may still be used owing to you signing the initial agreement. Any concerns about your participation that cannot be resolved will also justify your withdrawal at this stage.

In the event of participation

In the event of agreeing to participate, you will be invited to a face-to-face interview and be asked a series of questions. The responses you give will be recorded using an audio recording application. Pseudonyms will replace your real name to maintain participant confidentiality and anonymity. All recorded data is to be stored on a secure laptop and will be destroyed after the paper has been submitted. To confirm your participation, please sign the consent statement below. Again, if at any point you feel uncomfortable, the interview will be stopped and you will be asked whether you wish to continue or withdraw from the interview.

Concerns about the research data

The data will be published if the paper is accepted for publication and as soon as the research process has been concluded, the data will be deleted, including audio recordings and notes.

Interview questions

During the interview process, 10 questions about business-IT strategic alignment and value creation will be asked. The questions are as follows:

1. General background question – about the company – costs – speciality etc...
2. Describe your strategy for migrating to alternatives to on-premises or legacy systems? E.g. SaaS
3. What was the organisation's motivation that led to the consideration of alternative software solutions?
4. What stage is the organisation at regarding the deployment of the software solution?
5. What criteria have you or would you follow when measuring the success of deploying the software solution?
6. What criteria would you use when assessing the suitability of an application?
7. What communication tactics does the organisation use when deploying legacy systems or alternative systems?
8. What is your migration approach regarding on-premises and alternative systems to align your business strategy with your IT strategy?
9. How would you measure the quality and investment appraisal of the new system?
10. What lessons did you learn from project lifecycle?

Researcher Contact Details:

Name: Dr Mohammed Ali

Email: mohammed.ali@mohali.co.uk