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Service Models For IT Management, IT Alignment and IT Governance

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Abstract

The working relationship between business and IT is predominantly a product life cycle based approach for meeting IT requirements through the specification of product and production management methods. There is evidence that this is an incomplete and unsatisfactory model. We illustrate how a service based relationship model using new concepts, validated in practice, can improve the business experience and provide more comprehensive methods of alignment and governance. The research method used is based on two overlapping and interacting phases: empirical, situated research and Grounded Theory development. The findings are timely because the convergence with business and the commoditisation of IT are changing the dynamics between the two and changing the nature of the IT supply industry. We discuss the emerging business-focused approach to IT management, alignment, and governance as it applies today and in the context of self-adaptive and self-managing systems.

Keywords: Business-focused IT, service management, IT management, IT alignment, IT governance, business-IT relationship model.

1 Weaknesses of the Current IT Delivery Model

Because computing technology continues to evolve (as predicted by G.E. Moore and others), information technology (IT) can still be considered as a new management discipline that keeps re-inventing itself: businesses are still adapting their business models to take advantage of the new possibilities offered by new technology and the IT industry itself is adapting as new market opportunities in the sector emerge. For the relationship between business and IT these dynamics are challenging. Business has been transformed by IT over the last forty (or even ten) years. However, there is an observable perception gap between business and IT concerning the effectiveness of the relationship. This can be attributed to inappropriate methods and a consequential lack of business focus (Miller, 2005) and different perspectives on what is being

measured (Miller and Woodman, 2010). Many business people would agree that there is also a reality gap in the sense that the success rates associated with IT investment need to be improved as reported and argued by (Standish, 2009), (Boehm, 2003), and others since 1970. Our work, described below, has clarified that the perception gap and the reality gap are linked and that IT management methods must change if the situation is to be improved.

Over the last forty years aspects of IT management have been a focus of considerable investment, for example, in terms of new methods, best practice, standards, etc and demonstrating compliance with or aptitude in them. However, the fundamental model for the delivery of IT systems to business has remained constant: it is a model concerned with standards for good quality in techno-centric processes aimed at the creation and execution of products. We coin the term IT *delivery model* for the specification/design, development/acquisition, deployment and maintenance of information systems and the management of the associated IT operational services. The model is principally comprised of:

- an IT requirements specification which, although known to be in practice subject to change, is used as a set start point for many IT methods simply because it is fixed contractually,
- architectural alignment (using an ontology defined principally using the business objects of data, process, and network or organisation) (Zachman, 1987, Zachman, 1978),
- testing the functionality against the IT requirements specification,
- measuring operational performance after deployment against a service level agreement (SLA) using production metrics – e.g. availability, time to respond, time to fix, etc.

This IT delivery model matches many interpretations (or misinterpretations) of the classic software engineering life-cycle paradigm (Bourque and Dupuis, 2004). Whatever the variation in how the model is executed, and whatever the quality of the deliverables, the model is always product-oriented. IT management arrangements are based around building IT product, strategic planning looks for requirements to build/buy new/replacement/upgraded IT product, and governance arrangements are centred on the management of a portfolio of IT products.

Despite the increased use of IT by business and the increased investment in IT management methodologies, the success rates of IT projects have remained stubbornly low at 30–35% for as long as these have been measured (since 1970). Recent empirical evidence confirms this low success rate in modern business and also suggests that there is little or no correlation between a successful business outcome and the use of the major IT management methodologies that frame the current IT delivery model (Miller, 2008). The major IT management methods within the IT delivery model are designed to manage IT processes and resources for the creation or execution of product. Furthermore, although business change is a constant phenomenon that should permeate all IT methods, because of project management requirements, the desirable start point for most is in fact a *fixed* IT requirements specification created by IT in its terms and modified through a formal change control process. Consequently, where compliance with these IT management methods is mandated it is often the case that they reinforce the need for the product/production paradigm such that the creation of a requirements specification or an SLA becomes a specialist tasks within IT. Thus we can argue that we have a situation today where IT often defines the terms of the contract against which it is measured or (more likely) it will measure itself. The general expectation is that, because of the methods, what IT defines and delivers will meet the business needs whereas this needs to be a design principle against which the experience in use can be assessed.

To mitigate against this current IT focus businesses rely upon alignment and governance procedures: alignment – a set of processes designed to optimize the relationship mechanisms between the business and IT in order to maximise the business value from IT; governance – a set of processes in which all stakeholders have clear accountability for their respective responsibilities in the decision-making that affects IT. The former often relies upon the architectural alignment of static business objects with their IT equivalent; new requirements give rise to new development projects (to create new product). The latter often consists of managing and prioritising the many competing IT requirements and rationing the limited business resources available for investment (for new product) and allocating the cost or defining ownership. Prioritisation is usually undertaken annually in advance of setting the overall budget for IT. It is possible for the portfolio management process to throw up a bow-wave of investment projects, annually equivalent to several times the

annual IT operating budget, and consequential incremental IT running costs. As an investment programme proceeds it is not unusual for the management of the delivery model to be considered successful, yet for the business to be unhappy with what is eventually delivered: "a development may be a superb technological success but a total failure for the business" (Ben-Menachem and Gelbard, 2002).

The paper reports ongoing research and work in practice that addresses the question of what constitutes an effective IT relationship model. Given the past and current failures of business and IT, and confirmatory practical results, we adopt a philosophical position that a business focus must be maintained throughout the research. This has enabled the IT offer to be more broadly viewed and for developments in other fields to be considered.

The paper proceeds by next briefly describing the research methods employed so as to demonstrate the validity of the early findings reported. Section 3 provides details of themes emerging from the data; elements of the evidence and its analysis are given. Section 4 contains a brief review of the literature from IT and elsewhere that is relevant to the themes emerging from the research. Section 5 summarises how the research and the literature combine to shape an improved IT relationship model. Section 6 outlines the emergent empirical and practice-based relationship models that embrace a service and product mix. The concluding section reflects on what has emerged so far from the research and points to future work.

2 Research Approach and Evidence Base

The research is designed to better understand the relationship between business and IT and to explore methods by which the business impact of IT can be maximised. A particular aim is to use this enquiry to identify an IT relationship model that can make successful business outcomes more likely.

The work is using a Grounded Theory method (Corbin and Strauss, 2008) following their most recent articulation of the method. After evaluating several qualitative data analysis tools, MAXQDA was chosen, thus following the Corbin and Strauss tool usage. MAXQDA does not automate the coding but it is making the analysis of the large volume of data more manageable and makes it possible to quickly see emergent relationships in the coding of data. The data is in the form of documents containing

anonymised field notes from discussions with 100 different people from, so far, three major organisations where there is a need to improve IT services. At this point there are almost 2000 coded segments of text, almost 100 codes, and 218 memos. The data has proven to be a rich source of information that is leading to a refined view of the relationship between business and IT and the factors that must be taken into consideration when managing this relationship. In the discussion that follows, relevant examples of the data are given and related to the coding from which concepts and their properties and dimensions are emerging.

Overlapping with this Grounded Theory is situated, empirical research using and developing new service models to address client needs but which are also used to validate and test the broader findings. Supporting this strand is the literature on marketing and customer expectation measurement and management, which is being synthesized with relevant publications from the fields of information systems, software engineering, IT management and service science.

The grounded theory development is refining the empirical thinking, increasing the understanding of what is being observed, setting new practical challenges, and suggesting future opportunities. The literature is providing a better understanding of the IT problem and what is being done within the sector, what has been tried in other sectors that can be applied to this problem, and the direction of travel of IT in its relationship to business.

3 Research Findings and Key Themes

In this section we discuss some of the concepts emerging from the data through grounded theory coding. What is revealed from the data is an IT management landscape dominated by the following themes:

- Business needs
- Service specification
- Total business experience
- Change
- Alignment.

3.1 What Connects Business and IT

The conceptual model from which the emergent themes are abstracted is derived by identifying concepts within the text and by coding text segments where the concepts are used. Coding is a manual task based on the rules of grounded theory (see below); MAXQDA is used to remember the reasoning and encoding. In this way we build an understanding of the concepts, which we have grouped into themes. These themes are then related to each other as determined by their usage and properties. Figure 1 (generated within MAXQDA) shows the relationships among the five themes of business need, total business experience, service specification, change, and alignment as determined in this way.
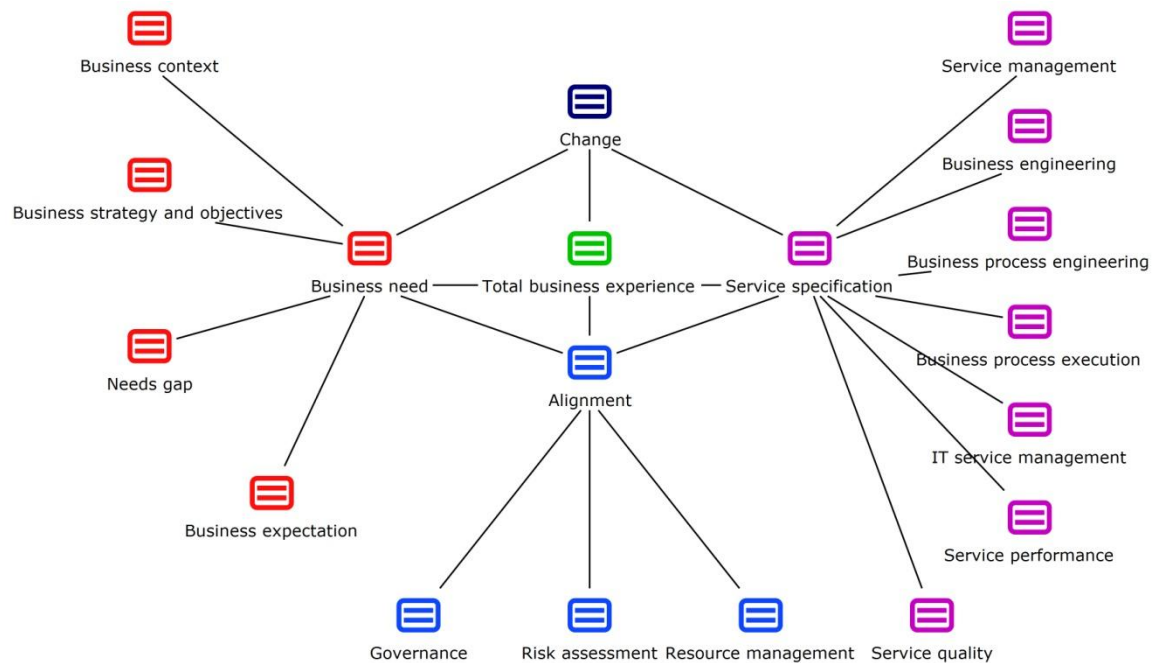

Figure 1. High level relationship diagram

The theme of total business experience is what ties all of the themes together. The properties specific to business need, service specification, and alignment respectively are also shown; these are formed from the concepts derived at the time of the coding and subsequently through memos created as the understanding developed of how the data and the concepts interrelate. Thus aspects of the service specification will apply at various levels from business engineering to the lowest operational levels of core IT services and IT service management (i.e. in this context software engineering/integration and IT operations). Service management describes the overall management and coordination across all of the levels. These services will be designed

to address various business needs according to the business context (internal and external value networks) and business strategy and objectives, the current needs gaps, and perhaps business expectation. Alignment is comprised of governance, risk assessment, and resource management properties. The properties of the total business experience are shown separately in Figure 2.

These properties are of special interest because they are frequently common with business need, service specification and alignment. This is an important finding as it provides the contextual link between the themes in terms of needs, expectation, achievement, or aspiration.
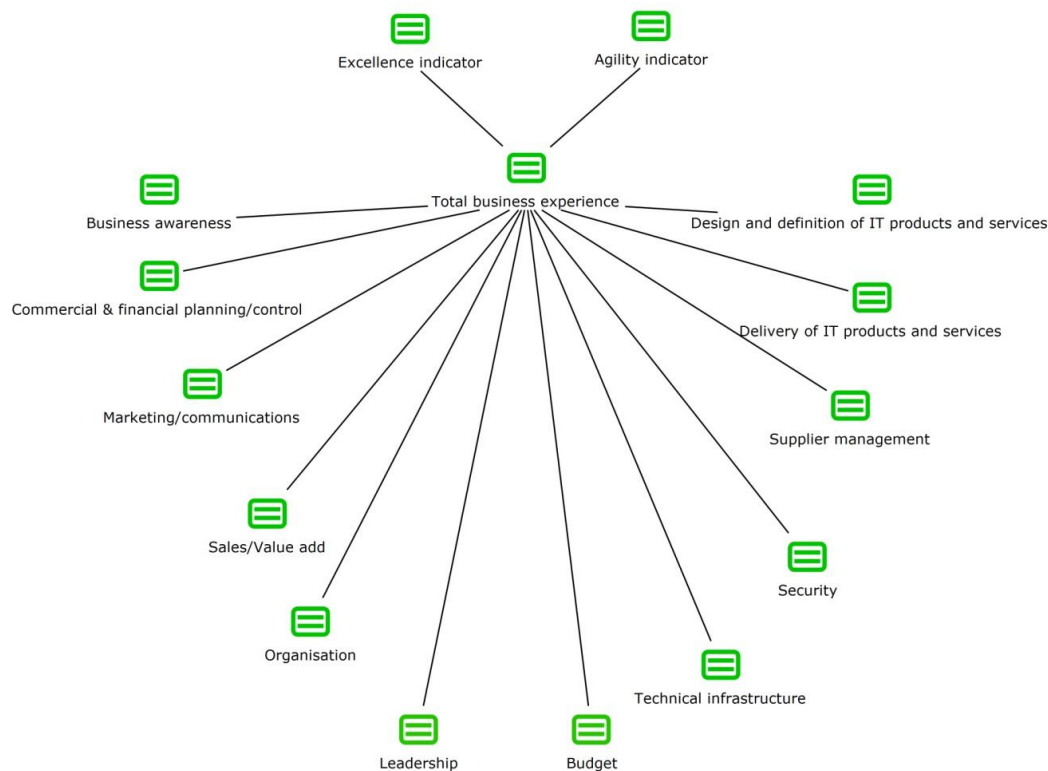
Figure 2. Total business experience and its properties

From open coding of over 1000 coded text segments that refer to the concept of the business experience we have so far been able to identify ten properties of the theme total business experience. Figure 2 illustrates the coding structure emerging from the data. It shows two indicators (discussed in Sections 6.1 and 6.2), ten properties, and leadership and budget. These latter two are actually treated as dimensions of all ten properties. At this stage the properties are still being refined and their dimensions are being identified (60 of which have been identified so far).

Whilst Figures 1 and 2 are a representation of the emerging coding structures, the structure itself is derived by careful analysis of the open coding and memos. The qualitative data analysis tool can be used to analyse the complex relationships created between concepts and themes and between and concepts and memos. The co-occurrence of the themes and other concepts within the text segment have been analysed. It shows their proximity within the text and it is a way of examining the detail of the relationships, synonymous with axial coding or cross-cutting in Grounded Theory. A similar cross-cutting analysis can be carried out to examine the relationship between themes and the concepts referenced within the memos. It is by reference to the text segments and the memos that we can determine the themes and their properties. For example, Figure 2 shows technical infrastructure as a property of the total business experience. In fact analysis shows that it is also referenced in the context of the service specification, the business need, change, and alignment. Using this kind of analysis it became clear that each of the properties of the total business experience seen in Figure 2 can also have a relationship with the business need and the service specification.

3.2 What Separates Business and IT

Whilst the analysis (in Section 3.1) reveals a strong connection between the properties and dimensions of the total business experience and the other themes on the one hand further analysis reveals a much separated world of business and IT on the other. The separation is illustrated most graphically in Figure 3 which compares the coded data.

Each row represents a discussion and the colours on that row illustrate how the subject matter of the discussion is divided amongst the themes. The first screen (top half) of Figure 3 shows discussions with IT people; it is predominantly green and purple showing that the business experience and service specification (and their common properties) are the dominant themes. IT people talk about requirements specifications and technology, managing expectation, change management, service performance and governance. The second screen (bottom half of Figure 3) illustrates discussions with business people and is predominantly red, green and blue reflecting the themes of business needs, the total business experience and alignment/governance. Business people are more likely to talk about their business needs, their IT experiences, the needs gaps, service quality and IT alignment.
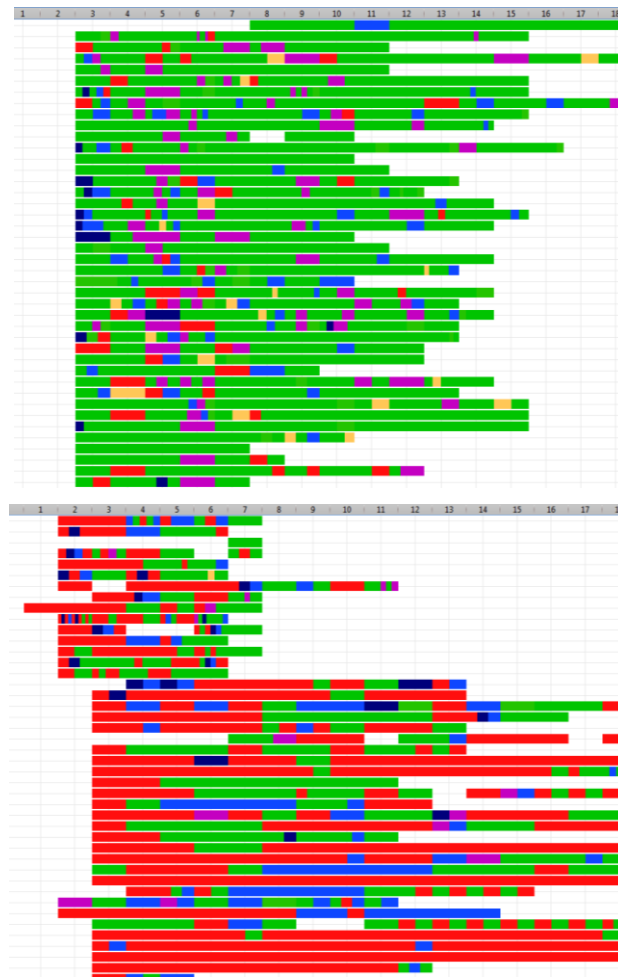
Figure 3. Document comparison charts illustrating the differences in the data

3.3 A Common Language for Service Assessment and Business/IT Alignment

These examples of the use of the language indicate that, possibly more than other business disciplines, business and IT are different worlds separated by their working practices with no common management language. This explains why service measures used by IT don't necessarily resonate with the business. Because the total business experience is a connecting theme between business needs and service specification, by detailed questioning it is possible to build a profile of the services that assesses their adequacy and the extent of alignment using each property of the total business experience (see Figure 2) as an axis (not illustrated). What emerges from the data provides a common language for assessment and alignment that truly reflects the complexity of the relationship between business and IT.

There is some recognition of the problem amongst IT people. Even though many interviewed are deploying state-of-the-art technology across world-class organisations, they frequently express the view that they have little understanding of

the business need and suspect that the business is less than happy with the IT service it is experiencing. Failing to measure performance from a business perspective has given rise to wildly different and speculative views by IT people of how the business regards its IT services as illustrated by these example quotations from senior IT staff in ORG1:

> "[We] are seen as a large disconnected IT organisation that doesn't know what the business is thinking. Poor awareness, many new people; none have any contact with the business. Internal focus giving preference to benefits to Systems rather than to the business"

> "Overall they [the business] are probably satisfied; we do a lot for them and try our best"

> "The business probably feels it is getting nothing."

The third of these quotations above is a stark realisation by IT people of what business people think. It is typical of many statements in the data. The business people interviewed frequently describe what they experience and relate this experience to what they actually need from IT. Whereas in many cases they would not be qualified to produce an IT requirements specification they can express their needs in the form of a gap or a shortfall between what they receive and what they would like. In many cases they can describe this needs gap very precisely. As a bid manager for the business in ORG2 said:

> "[our ERP system] does not provide cost estimating functionality with any degree of sophistication and so new front-end application systems are being developed to meet the needs of the department which will interface cleanly with [the ERP system]. The systems include a construction estimating package, a modified P&E system, a new D&E system that will be implemented company wide (which will interface initially with some bespoke systems, and later with [the ERP]), a replacement cost estimating and summary system, and Risk Controller to replace an Access database."

3.4 The Need for Services

The data also reveals that both business people and IT people talk about products *and* services when describing what is needed from the IT relationship. In this context our position is that if the value is *inherent* in a product and is realised by its consumption then we have a product-orientated supply chain. If the value is *co-created* by the provider of the service and its customer who implicitly enters a mutually dependent relationship then we have a services-orientated supply chain. Thus services are people-dependant activities, which may be exploiting product within a mix. What the

grounded-theory work is exposing is the need for a services-oriented supply chain that through the business and IT relationship can engage in the "co-creation of value" (Spohrer and Maglio, 2008). In fact there will always be a complex mix of service and product, and the services must adapt to new product as it appears. The business, however, may see both the people-related services and the information-based products as integral and will judge the IT services provider accordingly. Hence, we should consider products *and* services when describing all aspects of the relationship, the delivery model, alignment and governance.

3.5 Attitudes to Change and its Meaning

The concept of change in our data is used by both IT people and business people. It is discussed by IT people in the context of both the business and IT, is seen as being problematic, and "resistance to change" is raised quite routinely. Business people by contrast are more likely to describe the specific (often external) change taking place and its impact on their needs: there is an acceptance that change is happening and it can be articulated. Business expresses its concerns about change in terms of the need for IT alignment with the business as change takes place; IT can often be seen to be an inhibitor to business change. Senior IT managers in ORG1 said,

> "[We want you to] carry out some kind of health check in order that I can gather the evidence and find the drivers for change [i.e. within IT]."

> "[We] need to overcome the obstacles to change [i.e. within IT]."

> "[We have] no good handle on business change management."

Contrast this with typical quotes from business managers in ORG2 and a finance manager in ORG3 talking about change:

> "The key business drivers are partnering and the change of focus for ORG2 from profit centre to cost centre…"

> "The new legislative requirement is proving to be a challenge…"

> "The publicity surrounding the business planning is an attempt to communicate the need to save money in functions and redirect to priority tasks. One thousand people will need to be redeployed. The efficiency saving required is …. If IT is key to achieving this then its costs must be covered to yield the savings."

Accordingly we observe that change is variously seen as an external event that influences business needs and also a response to an external event. The data coding

allows us to regard change as an external event – i.e. either in the market place or to the legislative framework that affects demand or supply.

3.6 Alignment and Governance

The concept of alignment is apparent from coding our data as a response to an external change or an intervention resulting from an assessment that shows a lack of alignment. The data would suggest that alignment is conventionally not understood, not well defined and does not occur often - even in world-class organisations. Simple project prioritisation is often substituted for alignment; consider the following statements from two senior IT managers in ORG1:

"[the alignment] plan and objectives are agreed at the year-end. The plan comprises major projects",

"Major concerns are … project alignment".

Governance is often linked with alignment and, like alignment, suffers from being insufficiently understood. Consider two contrasting statements firstly from a manager in ORG3,

"[We] appear to be externally driven. It is onerous to make changes. There is an over-prescriptive approach to governance."

And from a business manager in ORG3,

"An information governance meeting has been called [by the CIO]. There is as yet no agenda."

The managers and the CIO all acknowledged that there was no clear understanding of how governance was going to be improved.

The most popular interpretation of the governance process in the data is to make visible to the business the new investment and lead times required by IT in order to deliver the necessary content of the project portfolio. Both the cost and the lead times provide two potential reasons for business dissatisfaction. The data shows how this focus on the creation of product can inhibit IT from discussions about alignment with business strategy if it is thought it may lead to requirements for further IT investment that cannot quickly be satisfied.

The data also provides evidence that we are now seeing IT people who are reluctant to talk to the business about new requirements because they fear "stimulating demand" and being "unable to manage expectation". Consider remarks made by two senior IT managers in ORG1:

> "There appears to be an air of caution in that IT does not want to stimulate the business to the point where they cannot supply demand."

> "Major concerns about managing expectation and delivering a service to meet the business needs."

3.7 The Operational Mindset of IT

Finally, it was very clear from the data that IT predominantly functions at an operational level through production processes. This limits its ability to add value. IT strategy in the data emerges as a communications mechanism between IT and the business and internally within IT among departments. Business innovation is barely mentioned in the data either by IT people or by business people in relation to IT, but the business people are certainly very aware of the opportunities for innovation within their markets and supply chains, their business strategies, and in the creation of new and improved business models. Some of the IT people interviewed were frustrated by this situation, e.g. a senior IT manager in ORG1:

> "Need to communicate with business more effectively. Would like a better forum for talking about new technologies, opportunities to increase efficiency and effectiveness, create new business models, etc."

This manager went on to say that he felt inhibited by the methods of communication with the business, "Communication is currently very point to point, e.g. e-mail, v-mail", i.e. technology is actually preventing the co-creation of value.

4 Review of the Literature

4.1 Service Models for Improved Performance

Our research approach is grounded in practice. The use of Grounded Theory methodology especially gives confidence in the emergent results. However an examination of the literature allows us to further direct and validate our findings.

Early work to understand and develop service quality was a marketing view of a business to consumer relationship (Parasuraman et al., 1985). It considered the gaps

between personal needs and the management perceptions of consumer expectation around which the service offering was developed. Improvement came from a better understanding of the consumer's viewpoint.

The new logic of *value* and value *constellations* rather than value *chains* (Normann and Ramírez, 1993) described successful companies as conceiving of strategy as systematic social innovation involving the continuous design and redesign of complex business systems. Normann's marketing perspective, it has been suggested, contributed to defining Service-dominant Logic by conceiving of the customer as value creator and the offering as an input to a value-creating process. He primarily defines value in terms of *value-in-use*, from which, in virtually all cases in a market-based society, *value-in-exchange* can be derived (Vargo and Lusch, 2007). It is claimed that for these reasons Normann's concepts enrich and expand Service-dominant Logic by reframing the overall value-creation system (Michel et al., 2007) with service logic – i.e. by framing production logic rather than replacing it.

The service science movement is an interdisciplinary area of study to address the challenge of becoming more systematic about innovating (Spohrer and Maglio, 2008). It includes IT but is not specifically about IT. It recognises that measuring service quality as the gap from expectations and perceptions are "not only often more realistic but also more informative" than simply measuring satisfaction when addressing improvements to the human computer interface (Pinhanez, 2008).

Boehm commenting upon the Standish CHAOS report (Boehm, 2003) said that most software project failures are caused by value-oriented shortfalls such as lack of user input, incomplete requirements, changing requirements, lack of resources, unrealistic expectations, unclear objectives, and unrealistic time frames. This introduces value-based considerations into the software engineering process using financial management, risk management, and control management disciplines as a "value-based experience factory framework" and organisational learning process. Boehm uses the term "value creation" but the disciplines discussed primarily enhance decision-making during value (and production) *delivery*.

Service is defined by the co-creation of value but the data shows that the dominant product and production paradigm inhibits IT's abilities in this regard. In IT, services

are often treated as a production process or refer to products (e.g. applications such as "web services"). In the experience-centric services sector, designing services around the major touch points between the customer and the service provider is considered to be a way of identifying the major opportunities for service improvement and for adding value (Zomerdijk and Voss, 2009). By taking the perspective of the "customer journey" and working with the touch points with the business it becomes important to "tightly couple backstage activity with front stage experiences".

Innovation is closely associated with value creation and creating the conditions that are favourable to value creation is important. Mindfulness is the process of drawing novel distinctions. Increases in mindfulness are associated with increases in creativity and in conjunction with perspective has been found to increase performance (Langer and Moldoveanu, 2000). Langer and Moldoveanu tell us that rules and routines (perhaps such as those used to ensure compliance with IT delivery methods) are more likely to retard this process of mindfulness and so inhibit creativity. The value of mindfulness in IT has been recognised by others to explain the success of agile development (Elbanna and Murray, 2009). Most companies encourage incremental innovation as opposed to discontinuous innovation, which they see as disruptive (risky and threatening). However businesses must promote discontinuous innovation to maintain competitive advantage. Organizational inertia, structured routines, and less absorptive capacity are three among other hindrances to discontinuous innovation (Junarsin, 2009). The current product and production paradigm of IT must suffer many such hindrances. Creativity, incremental innovation for improved performance, and sensing when discontinuous innovation is taking place (to maintain competitive advantage) must be encouraged.

4.2 Alignment and Governance

For many, IT alignment is an architectural concept stemming from (Zachman, 1987, Zachman, 1978) and subsequently developed into a complex ontological discipline (TOGAF, 2010). Extensions are offered as new technologies appear, e.g. for e-services (Karagiannis et al., 2007), SOA (Schepers et al., 2008), business objects (Velitchkov, 2008), and value webs (Zarvic et al., 2008).

Alignment has been defined more broadly in terms of communications, value, governance, partnership, scope, architecture, and skills measured on a maturity scale

(Luftman and Kempaiah, 2007). The idea of alignment with a maturity scale as opposed to alignment with the business need is adopted by others (Khaiata and Zualkernan, 2009). The common problem seems to be getting agreement amongst those surveyed on the meaning and usefulness of the type of maturity scale.

The alignment of IT with business strategy remains a perennial concern for firms worldwide (Tallon, 2007). Tallon prefers a business-process centred micro-level approach to alignment. This excludes so many other criteria and we must question whether such a simplification can be generally applicable. The balanced scorecard (Kaplan and Norton, 1996) has been similarly used as a means of introducing a standard framework (Huang and Hu, 2007). Whilst providing a good business focus the balanced scorecard approach has a tendency to treat information technology has a support activity and may not be such a good choice today where IT is typically at the centre of value networks. Simplifying the inherent complexity of the relationship between business and IT may not maximise the business impact of IT.

Alignment is often explained in terms of the deployment of governance methods which include a steering group, portfolio management, budgetary controls, IT leadership, IT project steering committee, reporting line of the CIO, and the use of management methodologies (Haes and Grembergen, 2009).

When we consider alignment and governance in the literature we see that there is a drive to connect IT and the business more effectively and on more levels, but we can still see the constructs of a separated world of traditional operational IT dividing the two and imposing limitations on what can be achieved. This is seen in the ISO standard for the corporate governance of information technology (ISO/IEC38500, 2008) where the output is focused on managing "ICT projects" and "ICT operations" – i.e. it supports the product and production paradigm.

Furthermore, at a time when the technology is facilitating business and IT convergence and the commoditisation of IT (e.g. in cloud "services"), and when autonomics is gradually playing a greater role in the management of the infrastructure and systems, we must consider not just how alignment and governance can be improved for this world, but for a future self-adaptive and self-managing world.

5 Shaping the Business and IT Relationship Model

The literature recognises the low success rates of IT. The work of others is telling us that there are problems with IT itself – raising a question as to whether the service sciences movement in looking to integrate disciplines across the services sector will ultimately fail with IT as it is.

The research shows that there is a need to take a more business-focused and experiential view of what is provided by IT and that this is also multidisciplinary and operating at many levels. IT is rooted in a product and production paradigm but this could be framed within a service-dominant logic, i.e. the product/production paradigm is not wrong but is incomplete and insufficient. By identifying and examining the touch points between business and IT, it may be possible to identify IT services that are of high potential value to the business where creativity and innovation will be rewarded and where convergence and commoditisation can be encouraged. New service models are required to encourage both discontinuous and incremental innovation. Alignment is not well defined, needs to be improved, and must be extended to the alignment of services as well as the ontology. Governance must be business-focused and framed to apply to the present and the future. Neither must simplify the complexity of the relationship but rather create a rich source of management possibilities and a focus and mechanisms for control.

6 The Emergent Frameworks

The empirical aspect of the research involved developing a consultancy offering to improve IT services to business; it is being continuously developed through the overlapping qualitative research programme. It acknowledges the importance of a Service-dominant Logic to embrace the product and production paradigm. This is not a false construct; the presence of service in most IT activities is, according to our data, what prevents the whole delivery process from failing more often:

> "People are very responsive, there is a strong work ethic and staff are treated well. The culture is built around success, delivery to the customer, and the ability to help colleagues. It is a meritocracy with a 'can-do' attitude. The only way to promotion is to be liked by colleagues".

The models below are being used successfully in consultancy assignments.

6.1 Service Assessment and the Service Excellence Model

To counter the IT requirements and IT focused methods of current IT management methods the approach involves a business needs-based assessment of IT. IT services are considered against a broad spectrum of properties derived from the research. Triangulation is used to validate and calibrate multiple views wherever possible and to drive consensus as to where improvement is needed in order to meet the needs of the business. The assessment profiles the service (as described in Section 3.3) and arrives at an expression for the total business experience. From this assessment an improvement programme for the IT services to the business can be derived.

An extension of this work includes the development of the Service Excellence Model (SEM) (Miller, 2008), see Figure 4, that uses gap analysis to compare the business need, business expectation, and business experience, with the service specification.
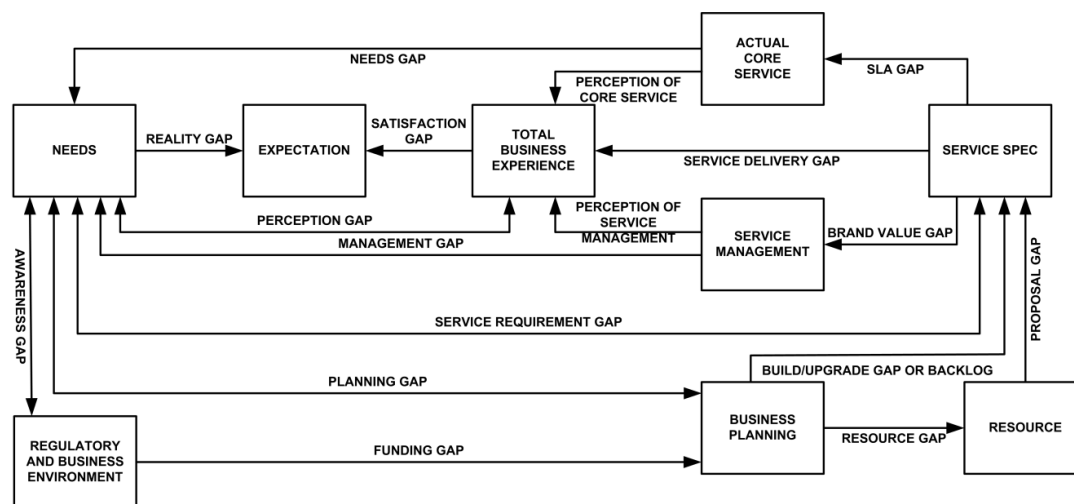

Figure 4. Service excellence model

The SEM is used as an indicator of service quality and it is a B2B development of the 1985 B2C work in the field of marketing by Parasuraman et al (Section 4.1). This provides a means to derive an understanding of the success of the relationship in terms of service planning and service delivery that is independent of the IT methods and technologies deployed.

6.3 The New Maturity Model as an Indicator of Service Agility

The SEM also provides an interesting vehicle for speculating about the maturity of IT. A new maturity model (Figure 5) was postulated which is the result of disintermediation arising from the effects of convergence and commoditisation on the

SEM. It illustrates a trend that is obscured by the traditional maturity models and could describe a self-adapting world where IT responds dynamically to the changing needs of the business. Behaviourally it can explain the impatience of business with IT and planning and delivery delays. Simply measuring delays to respond to needs it produces a measure of agility.
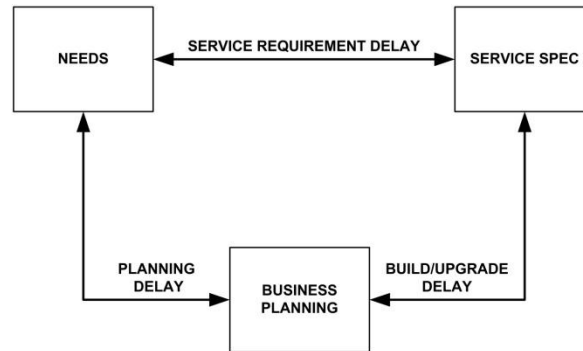

Figure 5 New maturity model

6.4 The Major Touch Points between Business and IT

The data shows that IT generally functions at an operational level as is evidenced by the IT management methodologies. The standardisation and improvement of business process introduces further automation with the resultant output being more applications or programs. This operational focus can limit IT's ability to add business value through efficiency gains rather than through effectiveness or transformational benefits arising from business (re) engineering. A service model based upon the major touch points between business and IT has the potential to widen the scope of the IT service through a service specification that identifies the need a broader range of services and through a measurement of the service experienced. This is Miller's service stack which was described in an earlier work (Miller and Woodman, 2010) and which is illustrated in Figure 6.

This shows the hierarchy of services around four key touch points: business engineering, business process engineering, business process execution, and at the lowest level the core IT services of service design, development, and IT operations. Service or IT management is applied to the stack creating a further touch point.

Creativity and innovation are given a focus at the higher levels of the stack where it is likely to be of the most business value. The dis-intermediating effect of convergence and commoditisation can also be understood by considering this new model. The

convergence of business and IT is being driven by technologies such as BPM and SOA and these are most felt at the business engineering, business process engineering and business process execution levels of the stack. These technologies allow business people to take control of their own processes i.e. becoming both a consumer and a configurator (Sharif, 2010). Commoditisation through technologies such as Cloud Computing is most felt at the business process execution and core IT services levels allowing new requirements to be met quickly without the need for capital expenditure or even IT involvement. The business is emerging as the most important Cloud entity and the principle quality driver (Vouk, 2008). The business need and business experience and not the IT requirement will thus become increasingly more important and able to benefit from changes within the IT supply industry.
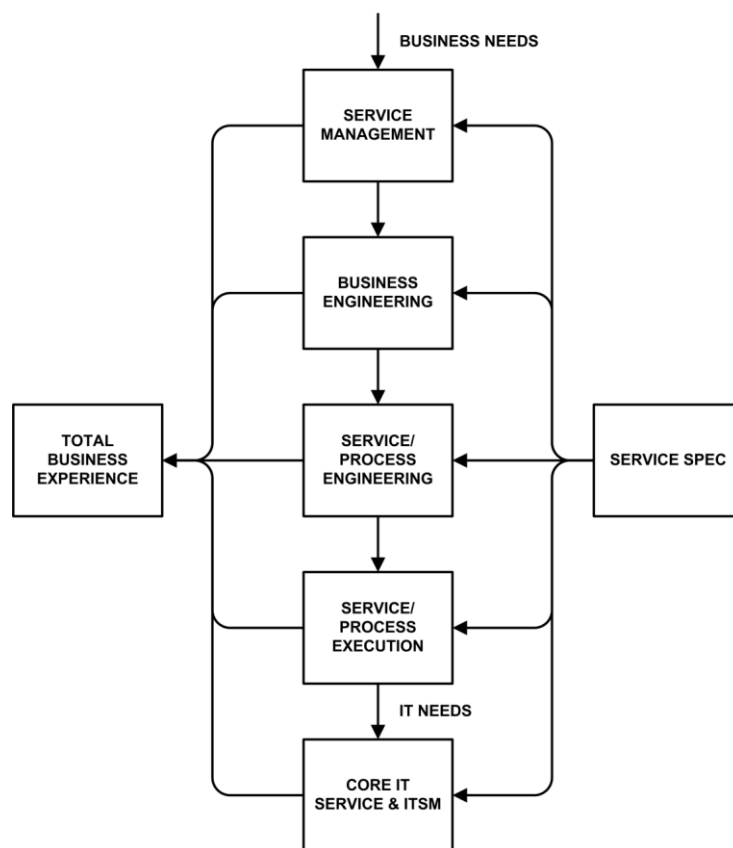
Figure 6. The service stack

6.5 Total Alignment

The theme total business experience, as well being a central feature of the data uncovered through Grounded Theory, is a central feature of the empirical approach. It featured as a service output in the SEM and from the service stack. In all cases it is an expression of what is delivered by IT and what is experienced by the business.

Used by both business and IT to assess the IT service and to agree on what improvement is required, it embraces the product paradigm of the separated world but recognises the business need for service as the means of co-creating value – just as in Service-dominant Logic the service frames the production worldview. The research revealed a comprehensive range of properties that are common to the total business experience, the service specification and to the business need. Thus it becomes clear that we have an expression that can be described in some detail that embraces existing methods, which can be measured both before and after alignment, and provides the language for alignment. This more comprehensive understanding of what is required to align the business and IT contrasted by the former ontological emphasis is shown diagrammatically in Figure 7 and is called total alignment.
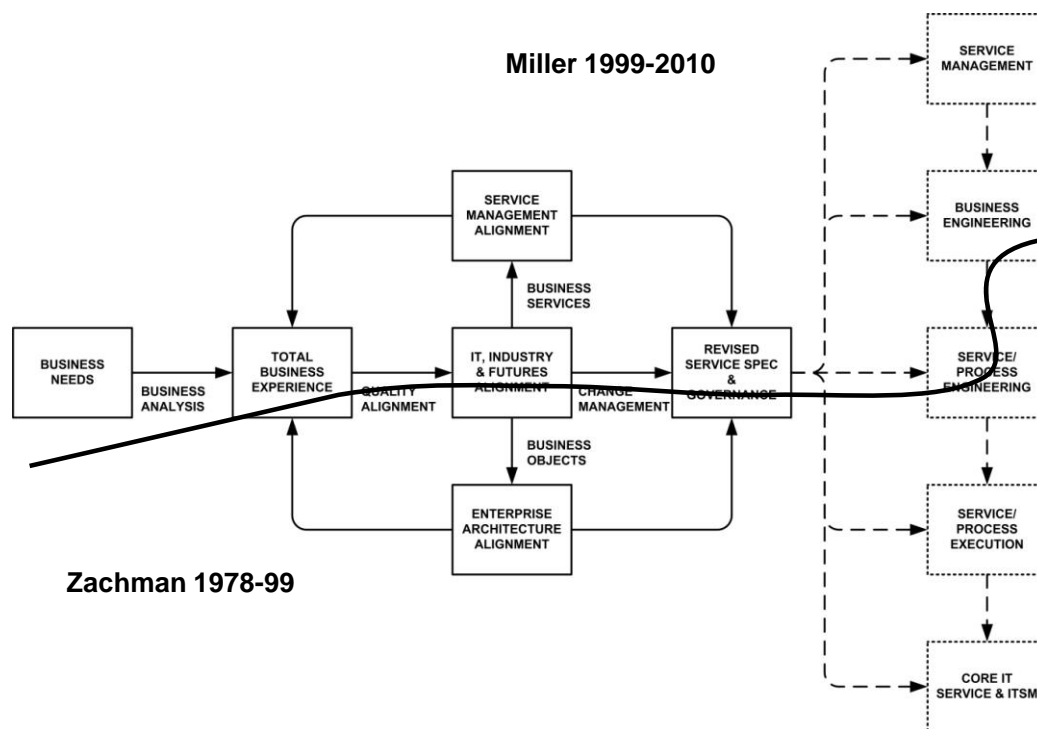

Figure 7. Total alignment

6.6 A Business and IT Relationship Model and IT Management Framework

The key themes from the research are shown diagrammatically in Figure 8 and together they form a service based IT relationship model and IT management framework that is responsive to the business and to external change.

The detail embraces all aspects of the relationship between the business and IT that is required for a successful business outcome. The similarities between this and the NMM are coincidental (because they arise by different mechanisms) but reassuring. It

is simple enough to integrate with other cyclic management models (e.g. Deming and lifecycle models) but the total business experience is a comprehensive measure of delivered service quality that is as meaningful to the business as it is to the IT services provider. Monitoring this has been shown to provide a means of alerting IT management to the need for realignment (or improvement) even where discontinuous innovation is taking place. Accordingly, alignment becomes a shared activity, the key control point for the business (risk assessment) and the focus for IT governance (where alignment issues can be addressed using available business resources). The supporting detail provided by the coding, concept formulation, and empirical development provide an improved level of understanding for the assessment, alignment, and governance possibilities and mechanisms.
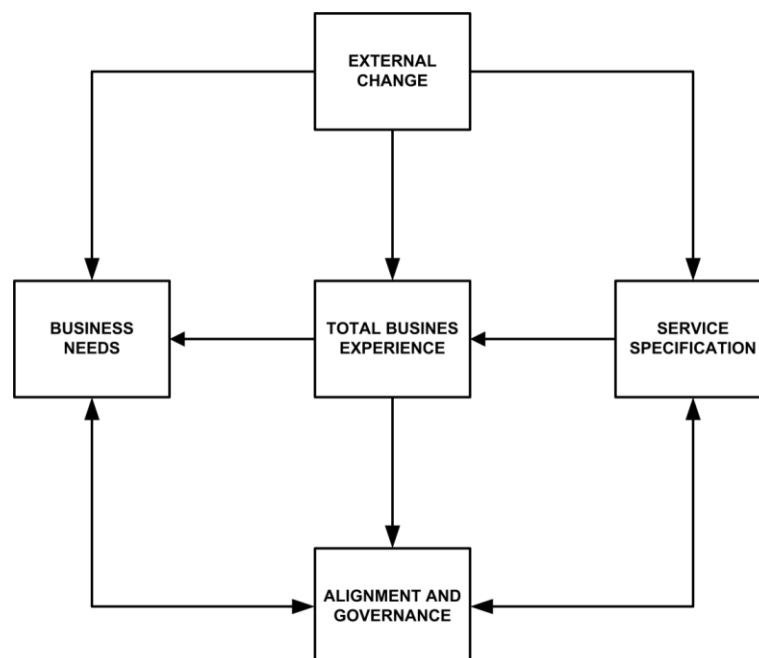
Figure 8. Business and IT Relationship Model and IT Management Framework

In a self-adaptive or self-managing world much of the complexity will be managed by technology but there will still be a need to create value, manage the business experience, provide good governance, and detect discontinuous change. In some instances an adaptive system may be significantly less variable to a user's eyes as the adaptations will obscure otherwise significant observable differences – this must be understood by management so that there can be a focus on the value added activities rather than the complex mechanisms that underlie them (Dobson et al., 2006).

7 Conclusion

Our evidence and experience shows that the current IT management methods that are based upon a product/production paradigm have been responsible for creating a separated world between business and IT. The 'distance' thus created has given rise to a frequently observable perception gap and, we argue, most likely to be responsible for the well documented low levels of success that have improved little over the last forty years. If distance is a problem, then 'closeness' between IT and business is an important property to seek and the IT delivery model must be improved.

The two overlapping and interacting phases of research involving situated, empirical research and Grounded Theory show that services are as relevant to the business need and to alignment as the ontology that defines the products. The literature review identified developments in service concepts in other contexts allowing us to embrace and extend the current IT product/production paradigm.

The emergent service-based IT relationship model and IT management frameworks are based around the themes of business need, service specification, the total business experience, change, and alignment. These themes and their interaction were identified by the data through a complex but clear range of concepts and relationships. The total business experience provides a common language between the business and IT and provides a design principle (being based on the business need), an experiential measure of assessment, and a means of alignment.

We have shown that alignment is the response to external change or a need for service improvement and becomes a shared activity (between the business and IT), the key control point for the business, and the focus for IT governance. This greatly improves what we understand by alignment and governance and how they should ideally be executed. The service-based and business-focused IT relationship model is more responsive to inadequacies of specification, design or change than the current IT-focused delivery model, and so it offers interesting possibilities for alignment and governance not just for today but for the converged, commoditised, self-adaptive, and self-managing world of tomorrow.

Work is in hand to complete the qualitative analysis and the definitions from the data of the properties and dimensions. More data and theoretical sampling are being used where necessary to enable the emerging theory to benefit from more case material.

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