Employing a Mixed Methods Approach to Benefit Business-IT Alignment and Levels of Maturity

Sally Eaves
Aston business school, Birmingham, UK
research@sallyeaves.co.uk

Abstract: This paper examines the design, implementation, benefits and challenges of employing a mixed methods research approach with the aim to provide an emergent, integrative and multi-layered perspective on Business-IT alignment influences and maturity measurement. The application of mixed methods is underutilised in this domain and it is opined that it can serve to elucidate this perennial, but often elusive, core objective of senior management. It also begins to redress the predominance of quantitative studies and the frequent application of tools and techniques in isolation, not combination. The case of a leading UK Communications Service Provider in a two year period of joint venture integration provides a transformational context for examination, with a methodological focus. It is argued that mixed methods can achieve a mutually supporting depth and breadth of coverage that is appropriate to complex and multifaceted phenomena such as Business-IT alignment and facilitates consideration of both process and outcomes. A transparently presented two phased, sequential exploratory and emergent design is adopted, with embedded integration. This is underpinned by a reflexive and intelligent-action orientated pragmatic lens. Innovative use of observation, photography, interviews, focus groups and survey data are synthesised to unfold the Business-IT alignment relationship, whilst the Strategic Alignment Maturity Model supports incremental maturity evaluation. The approach facilitates a responsive, integrative, pluralistic and holistic evaluation of alignment and maturity measurement, *moving beyond* traditional snapshot techniques. It encourages reflexive, in situ surfacing of core themes and builds cumulative insight into the fluctuating impact of events, interventions and culture. The design benefits data richness, elaboration, validation, illustration and the identification of situated knowledge regarding enablers, inhibitors and interdependencies. Further, a robust and repeatable assessment of maturity can be achieved to support benchmarking and decision making on an emergent basis. The discussion endeavours to scaffold the ongoing development of "good practice" that combines both methodological rigor and professional relevance, bridging gaps between researchers and practitioners (McGahan 2007). The paper is structured into five parts as follows: in the first, an introduction to the problem situation is provided. In the second, the foregrounding of a mixed methods research strategy is outlined. Part three moves to focus on the contextual background of the case organisation, specific methodological considerations and the selected mixed methods research design. In part four, integrated findings and discussion are presented, with part five offering conclusions to support future research development.

Keywords: Mixed Methods Research, Business-IT Alignment, Strategic Alignment Maturity Model (SAMM), Strategic Alignment, Joint Venture, Communications Sector

1. Introduction

Business-IT alignment is a much debated concept with academics and practitioners emphasising different dimensions of the relationship. It may be considered a harmonious, mutually supporting and timely association; a continuous contributor to performance over time; a facilitator of change that can drive transformation and the degree of fit or integration (Van Grembergen & De Haes 2010; Luftman 2011). It is intellectual, structural, social and cultural, and constantly evolving. Despite nuances in definition, perspective and scope, *complementarity* and *coevolution* across IT and business processes, underpinned by supporting organisational factors is required to create value and synergy, support effectiveness and efficiency, enhance competitive position and facilitate dexterity and responsiveness to react to, shape and enact change (Wade & Hulland 2004; Luftman 2011).

A significant issue for 25 years, achievement of Business-IT alignment remains a leading C-level concern (Benbya & McKelvey 2006; Luftman 2011). Problems include how to demonstrate the value/payoff of IT and a lack of consideration of respective positions, with IT frequently regarded as a subordinate partner (Carr 2003). Indeed, poor alignment is cited as a primary reason for not fully capturing and actualising the business value of IT (Marthandan & Tang 2010). Various performance associations have been empirically validated but the relationship remains nebulous both as a construct and in its capacity to achieve. It is vicariously considered as difficult to measure, perspective and time dependant, consuming to manage and subject to a gap between theoretical exposition and experience in praxis. The overarching study purpose is therefore to develop more

Reference this paper as Eaves S. "Employing a Mixed Methods Approach to Benefit Business-IT Alignment and Levels of Maturity" *The Electronic Journal of Business Research Methods Volume 13 Issue 1 2015 (pp 49-62),* available online at www.ejbrm.com

panoptic and longitudinal (Chan & Reich 2007) understanding of the factors influencing Business-IT alignment, and to build an emergent assessment of maturity; whilst the primary focus of this paper is methodological, specifically the use of mixed methods to enable these outcomes for research and practice benefits.

1.1 Traditional Measures of Business-IT Alignment

A range of alignment measurement models and supporting frameworks are identified across research and practitioner literature, broadly related to governance, architecture and relationships. Prominent, well validated exemplars include the Strategic Alignment Model (Henderson & Venkatraman 1993), and its augmentation and operationalisation within the Strategic Alignment Maturity Model (SAMM) by Luftman (2000, 2011). Dimensions identified within the Balanced Scorecard (BSC) and the frameworks I*TIL* - IT Infrastructure Library and COBIT - *Control Objectives for Information and related Technology* are also utilised in the sectoral context of this study (Moeller 2013). Additional approaches may involve an evaluation from a knowledge management (AlAmmary & Fung 2008); project management (Srivannaboon 2009); software development (Slaughter et al. 2006) or value chain–information intensity perspective (Kearns & Lederer 2003).

The researcher's industry experience enables them to draw on cumulative "technical human capital" (Lin & Bozeman 2006) to consider these measures. Based on this knowledge, there are indications that the techniques discussed are being typically employed in isolation not combination; focussing on effectiveness, efficiency and levels, directed towards a specific scope. It is therefore argued that it is critical to consider different perspectives and achieve broad domain coverage. Indeed, the use of more than one approach can be mutually supporting and elucidatory (Zeinolabedin, Khademi & Rahbar 2013) if tailored to context, well planned, managed and prioritised, and made transparent to all stakeholders. This can mitigate limitations associated with a particular tool and further; can reduce the issue of too narrow a focus on either the harder features (IT metrics) or softer competencies (trust style) which can influence the Business-IT alignment relationship, thereby supporting a whole enterprise view.

2. Mixed Methods Research Strategy

As a relatively young third major methodological movement, the application of mixed methods continues to rise, especially in the social and behavioural sciences (Hanson et al. 2005), but remains underutilised in management research (van der Roest, Spaaij & van Bottenburg 2015). This may be considered surprising given the messy, complex and dynamic reality of problems typically explored and the potential for deeper insight that may be afforded (Bryman & Bell 2015). Such underutilisation is associated with discipline traditions (Onwuegbuzie & Leech 2005) alongside individual researcher and publication preferences (Miles, Huberman & Saldana 2013). However, a recent review of studies does indicate that its adoption by business scholars maybe higher than first appears, partly due to issues in paper classification and the publication process; for example a large study can be broken into smaller parts and ostensibly appear quantitative or qualitative in orientation (Molina Azorin & Cameron 2015).

The definition of mixed methods is subject to variation but maybe described as comprising the systematic combination of qualitative and quantitative modes of enquiry within, or across, the phases of research design, data collection, analysis, interpretation and presentation in a single study or multiphase program (Eaves & Glanfield 2016). It transverses the interlinked perspectives of paradigm, epistemology, theory and methodology, with the latter regarded as the point of connection between the abstract levels of epistemology and the mechanical levels of methods (Morgan 2007).

Employing mixed methods aims to emphasise the strengths and negate the weaknesses of a mono method approach (Jick 1979; Andrew & Halcomb 2006) where considered appropriate to best address the research problem and questions in order to maximise 'knowledge yield' (McCall & Bobko 1990) and allow fuller, more authentic comprehension (Creswell & Plano Clark 2011). The specific rationale for adoption can be multifarious, including completeness, triangulation, sampling, illustration, explanation, differential capacity, instrument development and enhancement, and ameliorating internal and external validity and reliability (Teddlie & Tashakkori 2003; Greene 2007; Cameron 2011; Bryman 2013). Tailored to context and design, the approach can support both in-depth discovery and a capacity for generalisation (De Lisle 2011).

In order to consistently foreground quality (Bryman 2013) and achieve a robust study that mitigates criticisms of mixed methods rigor (Heyvaert et al. 2013), a publication must be framed within a coherent philosophical

and to varying degrees theoretical research position, stated purpose, with clear explanation and articulation of design. Adoption and transparent discussion of practices of integration (Bazeley 2010), sequencing and weighting (Saunders 2015) and data validation is also critical. Of these, integration remains a core issue which has been found to be undertaken in an ad hoq rather than systematic manner (Kanbur 2000) or studies may demonstrate a lack of synthesis of data and findings *across* and *between* research components, typically embodied in side-by-side or adjunct presentation. A lack of focus on any divergent or inconsistent findings is also identified (O'Cathain, Murphy & Nicholl 2008). The specific mixed methods design selected in this study is explicated in Section 3.2.

Within the area of Business-IT alignment evaluation, the application of a mixed methods perspective remains underexplored, with deductive, quantitative-statistical studies predominant and no similar studies of this type identified. Recognised as a *"challenging research domain"* (Van Grembergen & De Haes 2010, p1), it is argued that the use of mixed approaches can afford enhanced value, being well poised to address complex, messy problems (Meisiek, Irgens & Barry 2008) and consider both process and outcomes (Maxwell 2004) that scaffold "*fuller understanding"* (Mertens & Hesse-Biber 2013, p5).

Gaining insight into multifaceted phenomena can benefit from adopting a mixed methods approach (Cameron & Sankaran 2015). Specifically, it can build pluralistic and practical utilization-orientated capabilities which may be multi-layered, multi-sensory and multi-modal (Eaves & Glanfield 2016). Business-IT alignment necessitates a panoptic perspective to reflect varying stakeholder lenses (Sage 2006); a restricted focus on specific channels or criteria within an organisation negates elaboration of the fullest picture and may reduce representational authenticity (Eaves & Walton 2013).

3. Contextual Background

The contextual discussion commences at industry level as antecedents to Business-IT alignment can be contingent on this (Chan, Sabherwal & Thatcher 2006). The European Telecommunications industry has been recognised to demonstrate lower than average IT and Business strategic alignment maturity scores, notably in Skills; Communications; Competency/Values and Partnership dimensions (Luftman 2011). The knowledge intensive UK Communications Sector is highly dynamic, with market convergence across mobile and fixed-line, media, networks and associated devices (SASSARD, BARZIC & AUCHARD 2014). It is subject to emergent, complex and interrelated challenges transversing market, business models, network, talent, regulation, sustainability and technological dimensions (Ofcom 2015). Strong Business-IT alignment can therefore catalyse benefits of transformation, value and competitive advantage through efficiency, effectiveness and the introduction of novel and integrative multi-play product and service propositions.

Despite this, there remains a deficiency of research to advance understanding, especially in a UK context. The case organisation, *DigitalMediaCorp* (anonymised), becomes a pertinent focus as a leading UK Communications Service Provider. It is active across Mobile, Home, Business and MVNO customer markets, highly project-focussed and adopts a functional matrix structure. Operating as a rapidly evolving 50-50% domestic joint venture since Q2 2011, the study covers a two year period where the organisation is operating in a phase of acceleration centred on advancing M-commerce and 4G. At the same time, it is seeking to achieve cost leadership through optimisation synergies; cost reduction, consolidation and increasing profitability. In this discussion, *Business* refers to Business Services teams such as marketing whilst *IT* considers the IT/Network Services functions including infrastructure design.

3.1 Methodological Overview

Drawing on Haneef's (2013) conceptual framework of the flow of empirical research, this section explicates the Pre-Empirical Content, within which a need for broad skills proficiency is acknowledged, a noted challenge for mixed methods researchers given the breadth and depth of competencies required (Saunders 2015). The study is underpinned by a single paradigmatic stance of pragmatism; this is not from *what works* convenience (Denzin 2012) but rather, a reflexive, purposeful choice that aligns with the pragmatic nature of the field and the philosophical position of the researcher.

It lies congruent with the action-orientated, responsive and bricolage-influenced capacities often necessitated from practitioners to navigate complex problem situations (Halme, Lindeman & Linna 2012) and takes into

consideration effects and consequences. This stance is closely related to Rescher's (2000) realistic or common-sense emphasis and Morgan's (2007) pragmatic lens which focuses on methodology as a point of connection between abstract levels of epistemology and mechanical levels of methods. It aligns with Dewey's (1920) foregrounding of persuasive, intelligent and reflective action, consequential validity, warranted assertions and embedded integration (Hall 2013).

The research also demonstrates *engaged scholarship*, similarly underpinned by pragmatism (Garner 2013), with the investigator bridging roles in academia and industry in a researcher-as-practitioner capacity. The time frame selected, Q2 2011-Q2 2013, resonates with the view that Business-IT alignment is an evolutionary process so benefits from extended analysis. DigitalMediaCorp also affords rich opportunity to elaborate the emergent alignment relationship across a dynamic period of post joint venture change which can be inherently challenging (Beamish & Lupton 2009). Furthermore, attention to the organisational culture aspects of Business-IT alignment is poorly evidenced in the literature and warrants additional focus (El-Mekawy 2012).

With respect to method selection, to provide appropriate depth, breadth and multi-level insight into the alignment relationship and its emergent development, a range of primary qualitative techniques were employed. This integrates individual participant interviews and focus groups alongside systematic and unobtrusive researcher observation using STRIKE, a technique developed according to the Design Science Research approach (Eaves & Walton 2013). It also benefited from integrating secondary quantitative data for comparative inquiry in the form of regular *Pulse* survey findings which measure employee engagement in specific dimensions, at set intervals (Shriar 2014). The mobilisation of these different methods with multiple sources of data provides a rich enabler for triangulation (Jick 1979).

Luftman's (2000) Strategic Alignment Maturity Model (SAMM) was adopted as the primary quantitative tool to evaluate alignment maturity. A purposeful sample of Business and IT managers assessed maturity from Level-1 (initial) to Level-5 (optimised) across 39 attributes within Communications, Competency/Value Measurements, Governance, Partnership, Scope and Architecture, and Skills. This was conducted using the established 1-5 Likert scale questionnaire (Evers 2010), administered by individual structured interviews at the end of each phase. Responding to the developing problem situation, SAMM "snapshot" reviews were also undertaken to elucidate evolving interventions or events, employing a smaller participant group to provide in situ feedback. These findings can only be considered indicative but add value as a rich barometer of the perceptions of the actors impacting, and impacted by, change.

The SAMM model was selected due to its multifaceted nature, addressing operational, tactical and strategic levels. Its coverage reflects the complexity of the construct and the need for holism to allow greater consideration to cognitive, social and behavioral relationship dimensions. The technique has been widely cited, affords both practical and conceptual value and is in receipt of cross-sectoral empirical support and validation (Sledgianowski, Luftman & Reilly 2006). Conversely, it has been subject to mono-method, social-desirability bias criticism (Poels 2006). It is therefore argued that the combined approach discussed is congruent with, and indeed can benefit, the move away from a bivariate to *holistic conceptualization* of Business-IT alignment (King 2009).

3.2 Mixed Methods Research Design

Adopting a particularistic discourse position (Bryman 2013), the design of the study is now explicated. This two year, two phase research can be described as sequential exploratory, emergent and recursive in the form QUAL →← QUAN (Nastasi et. al. 2007), with equal weighting of components. The resources needed to undertake this approach are acknowledged, in this case primarily related to time and capacity to utilise the range of methods incorporated (Saunders 2015). Adapting Cameron's (2012) extended notation system; Figure 1 and Figure 2 expand the design depiction to aid communicability and evaluation. The INTEG notation reflects use of debriefing interviews (Leech & Onwuegbuzie 2008) as a dedicated integration technique.

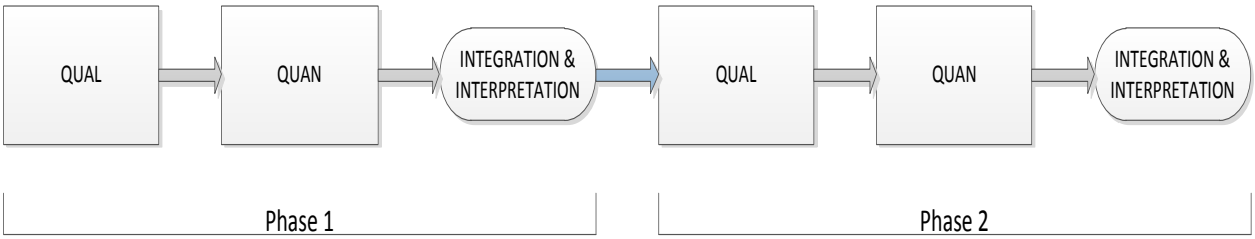


Figure 1: Mixed Methods Research Design

Phase 1		*Phase 2*	
QUAL	**QUAN**	**QUAL**	**QUAN**
DS: Primary(1) S-SIZE 1: (N/A) INST: QL (STRIKE) ANAL: QL (Open coding)	DS: Primary(4) S-SIZE 4: (n=60) INST: QT (Survey) ANAL: QT-1 (Descriptive) ANAL: QT-2 (Mean Analysis)	DS: Primary(6) S-SIZE 6: (N/A) INST: QL (STRIKE) ANAL: QL (Open coding)	DS:2ndy(1) **S-SIZE 7: (n=4) INST: QT (Pulse Survey) ANAL: QT-2 (Descriptive)
DS: Primary(2) *S-SIZE 2: (n=4) INST: QL (Focus Group) ANAL: QL (Open coding)		DS: Primary(8) S-SIZE 9: (n=25) INST: QL (Interview) ANAL: QL (Open coding)	DS: Primary(7) S-SIZE 8: (n=10) INST: QT (Snap Survey) ANAL: QT-1 (Descriptive) ANAL: QT-2 (Mean Analysis)
DS: Primary(3) S-SIZE 3: (n=15) INST: QL (Interview) ANAL: QL (Open coding)		DS: Primary(11) S-SIZE 12: (n=8) INST: QL (Interview) INTEG:QL (Triangulation)	DS: Primary(9) S-SIZE 10: (n=12) INST: QT (Snap Survey) ANAL: QT-1 (Descriptive) ANAL: QT-2 (Mean Analysis)
DS: Primary(5) S-SIZE 5: (n=8) INST: QL (Interview) INTEG:QL (Triangulation)			DS: Primary(10) S-SIZE 11: (n=58) INST: QT (Survey) ANAL: QT-1 (Descriptive) ANAL: QT-2 (Mean Analysis)

**FG1 (n=9); FG2 (n=12); FG3 (n=11); FG4 (n=12)*
***PS1 (n=26); PS2 (n=38); PS3 (n=32); PS4 (n=40)*

Figure 2: Data Sources, Sample Sizes, Instrumentation and Analysis

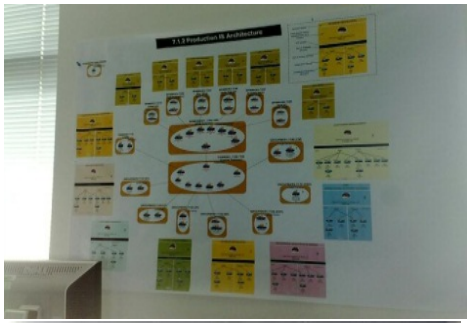
4. Integrated Findings and Discussion

The capacity to fully present, synthesise and discuss mixed methods research within publication constraints is well recognised, particularly when using a complex, multi-layered, longitudinal design. Haneef's (2013) conceptual framework supports reflexivity in the selection, positioning and explication of empirical and post-empirical research products and contents. To foreground the applicability of the approach and articulate the gestalt of the study, pertinent exemplars are presented in two ways a) to demonstrate findings thematically with triangulation and b) to explicate techniques to surface the impact of both evolving contextual events and deliberate organisational interventions. The approach consisted of an iterative moving between, and back and forth across, the different data sources in a similar way to Almandoz (2014), notably during evaluation and the presentation of findings, in order to surface new insights. Emphasis is given to results which illuminate this new understanding gained from mixing methods. Integration is evidenced across the research lifecycle with emergent evaluation employed and supported by a transparent, reflexive and aligned trajectory. Reporting is integrative rather than sequential and benefits from the use of visual methods and matrices to *bring together* data and demonstrate emergent integration in praxis. Further, direct participant quotations are incorporated within the thematic overviews as an *"inter-textual relationship"*, not isolated *"adjuncts"* (Eaves & Walton 2013, p72).

4.1 Exemplar One (*Thematic*): Governance by Function

IT governance can operate to deliver business value through IT, achieved via Business-IT alignment (*Van Grembergen* & De *Haes 2010). Applied governance approaches are evidenced strongly in Phase 1 of the study but these are robust functionally, not cross-functionally.* This serves to *"heighten problems of fragmented, complex, inter-dependant and cumbersome"* legacy IT infrastructure post joint venture (IT Service Manager). As an example, the COBIT framework was not utilised whereas ITIL was applied, but in varying levels of maturity and tailored to localised norms. Adaptations of the balanced scorecard were identified in specific IT teams, using differing, highly technical metrics that did not align easily with the format and measures used within the Business. Similarly, project metrics were explicit and widely visible within IT but lacked transparent business project linkages with performance measures such as Return-on-Investment not consistently examined post-implementation. This is exemplified by the Project Delivery Lifecycle process, which is ex-ante orientated and *"fails to consider project impact past its warranty".*

Table 1: STRIKE Observation Triangulated with Focus Group Thematic Evaluation

Technique	**Synthesis: Description and Integrative Evidence**
STRIKE Observation	Emphasis on technical, functionally orientated knowledge sources. High visibility of IT project progress across status, success and challenge dimensions and employing technological nomenclature but without clear linkages to strategic business plans. This can reduce communicability and serve to reinforce silo-thinking (Feld & Stoddard 2004).
Focus Groups	  Findings were elaborated within the interview setting, with word selection consistently inferring disjuncture as explicated by choices including *"ambiguous", "function-based", "lacking vision"* and moreover, *"divisive"* and *"tick-box exercise".* This method also served to elucidate additional understanding in respect to the Project Delivery Lifecycle. Senior designers stated a lack of ex-post focus or *"designated feedback channel on how our designs impact productivity/usability"* as a key concern, especially with high actor rotation across projects. This negates the capture of emergent feedback to support continuous learning to benefit future projects (Doll, Deng & Scazzero 2003).

4.2 Exemplar Two (*Thematic*): Professional and Cultural *Mis*alignment

The relationship between organisational culture dimensions and Business-IT alignment influences and maturity is poorly evidenced in the literature (El-Mekawy 2012) but data captured in Phase 1 foregrounds its importance in two respects. There is evidence of a professional cultural disconnect between IT and Business teams, centred on nomenclature, alongside perceived attitudes and behaviours. Additionally, a lack of cultural integration emerges as an influencing alignment factor within domestic joint ventures, raising the need for specific consideration in similar contexts.

Table 2: Focus Group Thematic Evaluation Triangulated with Interview Analysis

Technique	Synthesis: Description and Integrative Evidence
Focus Groups	A perception of IT as an occupational subculture (Guzman 2006) emerges, particularly in terms of communication styles. Over-use of acronyms and lack of "*patience to explain"* was cited as a cause of significant ambiguity, frustration and described as *"deliberately arrogant and done to assert superiority".* This can increase the propensity for misinterpretation and deficient outcomes, whilst reducing cross-functional relationship cultivation. One participant stated: *"I find IT guy's kind of geeky but more than that, most come across as so self-assured, backed up by grand, complex sounding terms so I don't want to ask questions – I feel inadequate. Sometimes I have been unsure but didn't address the issue and regretted it later when the solution wasn't what we needed".*
Interviews	New insight is gained regarding a cultural alignment gap across the joint venture partners. Inconsistency and moreover, tension is evidenced in respect to *"how things are done"* alongside a *"disconnect of values"*, *"lethargy", "unclear direction"* and a determination to *"preserve the way things were".* This is primarily espoused by actors associated with one partner, perceived as *"unofficially dominant"* and occupying the locus of power. This can inhibit wider Business-IT alignment as it reduces the capacity to enact a complete process to build common shared understanding across the enterprise (Deresky 2010).

4.3 Consolidated Strategic Alignment Maturity Findings – Q1 2012

Mean calculations were performed for all valid data respondent pairings across both functions, each of the six alignment criteria areas and all 39 questions. Consolidated scores assess the majority of DigitalMediaCorp measurement dimensions at a mid-level 2, with an overall average of **2.57**. This is .17 below the 2011 European comparable sector average of 2.74 and .25 lower than the cross-sectoral European average of 2.82 (Luftman 2011). Perspectives of Business and IT managers are relatively consistent, with the Business scoring slighter higher by an average of 0.05. The *Business Perception of IT Value* attribute was actually rated more mature by Business Managers than their IT counterparts. This could relate to a prevalence of technical and functionally orientated metrics within IT and the identified lack of Business feedback mechanisms regarding IT project value outcomes.

The average alignment maturity scores were: Communications 2.6; Competency/Value 2.61; Governance 2.66; Partnership 2.61; Scope and Architecture 2.64 and Skills 2.33. In congruence with European findings, the Skills dimension performed most poorly. As indicated in Table 3, the highest maturity was identified within Governance, reflecting strong individual, but not cross-functional focus.

Table 3: Synopsis of Specific Attribute Findings Phase 1

Highest Attributes	Dimension	Averages
Business Sponsor/Champion	Partnership	2.9
Prioritization Process	Governance	2.85
IT Metrics	Competency/Value	2.83
IT Investment Management	Governance	2.82
Scope of IT Systems	Scope and Architecture	2.78
Steering Committees	Governance	2.75
IT Program Management	Partnership	2.73
Lowest Attributes	**Dimension**	**Averages**
Education/Cross-Training	Skills	2.21
Career Cross-Over	Skills	2.25
Attract & Retain Best Talent	Skills	2.25
Change Readiness	Skills	2.35
Locus of Power	Skills	2.38
Architectural Integration	Scope and Architecture	2.42
Understanding of Business by IT	Communications	2.45
Balanced Metrics	Competency/Value	2.45

These attribute findings allow focus to be directed on selected enablers to target for reinforcement as driving forces, alongside key inhibitors that may require tailored intervention. At an integrative debriefing interview, the specific benefits of the Business Sponsor role to "*open doors"* was further elucidated, with the potential to strengthen its impact identified by addressing the strongly expressed issue of frequent role rotation which negates accumulation of tacit understanding. This elaboration demonstrates the utility of combining methods and incorporating collaborative reflexivity *in situ*. The results broadly reflect the position of IT as a service provider rather than an embedded strategic business partner. Many of the attributes scored in the lowest category, and indeed the highest rated element, are those which are most impacted by organisational culture and human behavioural characteristics (El-Mekawy 2012).

4.4 Exemplar Three (*Event*): Alignment Impact Post IT Outsourcing

Moving into Phase 2, the actualisation of an IT Outsourcing agreement stimulated additional measurement focus and research opportunity. Senior management introduced a cross-functional employee "Pulse" survey in the three months prior to this decision with measurements scheduled at bi-monthly intervals to support perception benchmarking. This provided secondary data to assess *during* the event alongside primary sources, revealing integrative capability to afford new insight.

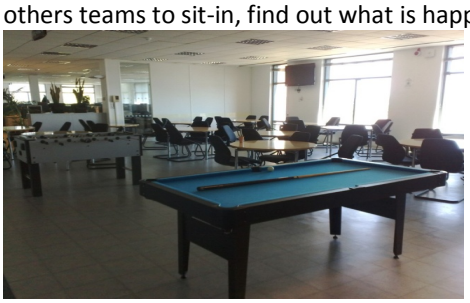
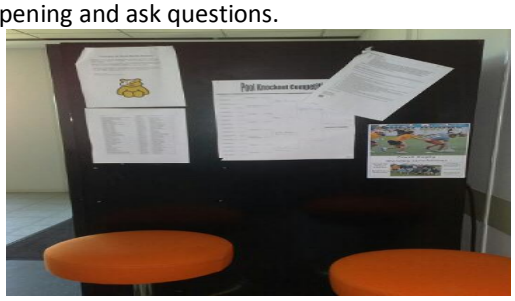
Table 4: Primary and Secondary QUAL & QUAN Triangulation

Technique	Synthesis: Description and Integrative Evidence
Pulse Survey	Communication problems; skill gaps, changing priorities; poor understanding of brand and ambiguous organisational strategy were core, increasing concerns with lack of clarity a continuing theme. The *Net Promoter Score* which measures employee engagement and pride was significantly below the identified benchmark industry average. A noted positive finding was that line manager relationships were consistently rated highly, notably for fairness and trust.
SAMM Snapshot	The findings indicated a consistent overall reduction in maturity alignment scores across all dimensions, at an average of -.09.
Interviews	Events can impact human emotional responses that reinforce alignment gaps. As one IT Analyst asserted*, "it is fine for the business to champion this move but none of them have jobs on the line".* Lack of *overall* engagement alongside high levels of frustration and anxiety emerged strongly; in terms of language selection and its articulation through tone and gesture. Business-IT alignment is multifaceted and interlinked, therefore combined with the potential for self-report bias based on a heightened emotional state, this may explain why there was deterioration across all alignment scores, not just Skills and Communications for example.

4.5 Exemplar Four (*Intervention*): Evaluating an Alignment Initiative

A new initiative was directed at the workplace environment which can significantly impact socialisation, collaboration and creativity (Walter 2012). It was considered a quick, cost-effective and highly visible "win" to support informal alignment activities. Provision of shared spaces with games tables provided a neutral, relaxed area, supporting interaction across functional boundaries and acting as an informal conduit to enhance alignment, promote dialogue and foster knowledge sharing. This provided an emergent opportunity to study a specific intervention in situ alongside its response.

Table 5: STRIKE Observation Triangulated with SAMM Snapshot and Interview Data

Technique	Synthesis: Description and Integrative Evidence
STRIKE Observation	Open areas with group orientated relaxation facilitities. Use of the space rapidly extended to organising events such as charity activities and inter-team competitions, developing norms of wider integration. Some managers pragmatically use the area for "road-show" events to promote and discuss work streams and recognise successes. There is an open invitation for actors from others teams to sit-in, find out what is happening and ask questions.  
Interviews	Discussions demonstrated the link between informal and formal alignment. As one Business Analyst described: *"It's much easier going back to a team to ask a follow-up question, request clarification or seek a favour if you actually know people on a first name basis. It doesn't feel a task, its friendly and you know you've got each other's backs."* Similarly, manager events are enabling actors to understand how their efforts fit in and impact the *"bigger picture".*
SAMM Snapshot	The exploratory results infer consistent improvement in maturity across *all* dimensions, particularly Skills and Communications, which imply averages of 2.42 and 2.69 respectively. Due to the timing of the assessment and absence of other concurrently introduced alignment projects, this increases the propensity for the results to authentically corroborate qualitative findings.

4.6 Consolidated Strategic Alignment Maturity Findings – Q2 2013

The majority of DigitalMediaCorp maturity measurement dimensions were assessed at a strong level 2 with an overall average of **2.71**, bringing it close to the 2011 European comparable sector benchmark of 2.74. This is a notable maturity increase considering the timescale and destabilising impact of outsourcing, alongside the continuing process of joint venture cultural integration. Although not a highest scoring attribute, the average IT management rating of "*Demonstrated contribution of IT to Business*" climbed .15. This implies that IT is becoming more embedded, moving towards a strategic partner relationship alongside the business and away from the service provider status interpreted in Phase 1.

The average alignment maturity scores are: Communications 2.72; Competency/Value 2.75; Governance 2.80; Partnership 2.75; Scope and Architecture 2.76 and Skills 2.47. These reflect an incremental development of maturity levels. Although Skills remains the least mature dimension, it has actually seen a notable score improvement reflecting on the comparable sector average of 2.44. Table 6 elucidates the specific highest and

lowest rated elements to enable exploration and comparison with earlier findings. Prioritization Process has achieved a low level 3 maturity rating.

Table 6: Synopsis of Specific Attribute Findings Phase 2

Highest Attributes	Dimension	Averages
Prioritization Process	Governance	3.03
Business Sponsor/Champion	Partnership	2.98
IT Investment Appraisal	Governance	2.96
IT Metrics	Competency/Value	2.93
Protocol Rigidity	Communications	2.87
Relationship/Trust Style	Partnership	2.87
Standards Articulation & Compliance	Scope & Architecture	2.86
Lowest Attributes	**Dimension**	**Averages**
Career Cross-Over	Skills	2.31
Education/Cross-Training	Skills	2.36
Attract & Retain Best Talent	Skills	2.43
Change Readiness	Skills	2.5
Locus of Power	Skills	2.51
Architectural Integration	Scope & Architecture	2.56
Shared Goals, Risks, Rewards/Penalties	Partnership	2.57

5. Conclusions and Implications

This paper supports calls for increased methodological diversity in management research, focussing on the design and application of mixed methods to the persistent and pervasive problem of Business-IT alignment and maturity development. It elucidates particular capabilities of this approach to build panoptic understanding of highly complex, constantly evolving and multidimensional relationships. Whilst surfacing an underexplored sectoral context, the research responds to the call for longitudinal enquiry in this domain (Chan & Reich 2007) including a focus on organisational culture dimensions (El-Mekawy 2012). It also addresses the predominance of quantitative studies (Evers 2010) and concerns regarding specific mono method approaches (Poels 2006).

Mixing methods is demonstrated to surface new insights that could not have been observed nor developed through a mono method study and can offer multilevel understanding of a problem situation, where appropriately designed. In this research, the sequential exploratory, emergent and recursive design created value by benefiting incremental and iterative depth, breadth and uniqueness of insight; gaining and validating an array of perspectives and reducing bias; whilst addressing gaps in the domain literature. The capacity for triangulation and emergent elaboration of understanding is foregrounded in such a dynamic context. Dimensions of quality and rigour (Bryman 2013; Heyvaert et al. 2013), particularly integration and transparency are highlighted, alongside achieving relevance for research and practice (Tushman & O'Reilly 2007). The benefits of researcher flexibility to pragmatically evolve with, and respond to, an emerging contextual setting are also outlined to attain new understanding.

Utilising a range of qualitative and quantitative techniques over time benefits a holistic elaboration of a complex context across multiple stakeholder lenses, affording complementary and elucidatory strengths whilst reducing the limitations of specific tools. As an example, SAMM is effective as an analysis and positioning technique but has a potential for social desirability bias (Poels 2006) which can be mitigated by using anonymous Pulse survey benchmarking, alongside unobtrusive but structured observation. The repertoire of skills required to actualise this design highlights the level of proficiency required (Saunders 2015) and raises implications for early career training (Hesse-Biber & Burke Johnson 2013) in order for the full potential of mixed methods research to be realised (Molina-Azorin & Cameron 2010).

The dynamic flux and multifaceted nature of the Business-IT alignment relationship and challenges of increasing maturity emerges strongly during this process, alongside the influence of transformational change. It supports the need for a holistic lens: uncertainties, events, multiple viewpoints and the risk of silo functional

thinking must be considered. There is no single-fit solution (Durant & Legge 2006) or any one-off intervention project to "fix" things. Rather any change must centre on the behaviours, practices, values and processes that are embedded across the multiple levels of the organisation and the strategic, tactical and operational activities which intersect them.

It is argued that the combination of methods and incorporation of collaborative reflexivity benefits incremental translation into praxis, with the capacity to identify and act on alignment drivers, inhibitors and intervention pathways, which moves beyond the scope of this paper. It necessitates an integrated engagement experience that can be aided through a rigorous mixed methods approach to offer a more holistic conceptualisation of Business-IT alignment (King 2009). To expand the research further, the participant sample could be extended beyond the predominantly Senior Business and IT management representatives, to more closely reflect the perspectives of those actualising roles at a middle management level, who typically occupy key knowledge broker positions (Nonaka & Takeuchi 1995).

Acknowledgements

Gratitude is expressed to Dr. Jerry Luftman for his valued feedback on a draft version of this paper.

References

Aiammary, J. and Fung, C. (2008) Knowledge Management Strategic Alignment in the Gulf Cooperation Council Countries, The Electronic Journal of Knowledge Management, 6(2), 75-84.

Almandoz, J. (2014) 'Founding teams as carriers of competing logics: When institutional forces predict banks' risk exposure', Administrative Science Quarterly, 59(3), 442-473.

Andrew, S. and Halcomb, E. (2000) Mixed methods research is an effective method of enquiry for community health research, Advances in Contemporary Nursing, 23(2), 145-153.

Bazeley, P. (2010) 'Computer assisted integration of mixed methods data sources and analyses', in Tashakkori, A. & Teddlie, C. (eds.), Handbook of mixed methods in social and behavioral research, 2nd edition, pp. 431-467, Thousand Oaks, CA: Sage.

Beamish, P. and Lupton, N. (2009) Managing Joint Ventures, Academy of Management Perspectives, 75-94.

Benbya, H. and Mckelvey, B. (2006) Using Coevolutionary and Complexity Theories to Improve IS Alignment: A multi-level approach, Journal of Information Technology, 21(4), 284–298.

Bryman, A. (2013) Quality Issues in Mixed Methods Research, The White Rose Social Science DTC Second Annual Spring Conference, 7th May 2013, University of Leeds, UK.

Bryman, A. and Bell, E. (2015). Business Research Methods, 4th Ed, Oxford University Press.

Cameron, R. (2011) Mixed Methods Research: The Five Ps Framework, The Electronic Journal of Business Research Methods, 9(2), 96-108.

Cameron, R. (2012) Applying the newly developed Extended Mixed Methods Research (MMR) Notation System. British Academy of Management Conference 2012, September 11-13, Cardiff University, Wales.

Cameron, R. and Sankaran, S. (2015) "Mixed methods research in project management" in Designs, methods, and practices for research of Project Management, (Eds) Beverly Pasian, Gower Publishing. Chapter 22, pp. 273-286.

Carr, N. (2003) IT Doesn't Matter, Harvard Business Review, 81(5), 41-49.

Chan, Y. and Reich, B. (2007) IT Alignment: What Have We Learned? Journal of Information Technology, 22(4), 297–315.

Chan, Y., Sabherwal, R. and Thatcher, J. (2006) Antecedents and Outcomes of Strategic IS Alignment: An Empirical Investigation, IEEE Transactions on Engineering Management, 53(1), 27–47.

Creswell, J. and Plano Clark, V. (2011) Designing and Conducting Mixed Methods Research, 2nd Ed, Thousand Oaks, CA: Sage Publications.

De Lisle, J. (2011) The Benefits and Challenges of Mixing Methods and Methodologies: Lessons Learnt From Implementing Qualitatively Led Mixed Methods Research Designs in Trinidad and Tobago, Caribbean Curriculum, 18, 87–120.

Denzin, N. (2012) Triangulation 2.0, Journal of Mixed Methods Research, 6(2), 80-88.

Deresky, H. (2010) International Management: Managing Across Borders and Cultures, Text and Cases. 7th Ed., Prentice Hall.

Dewey, J. (1920) Reconstruction in philosophy, New York, NY: Henry Holt.

Doll, W., Deng, X. and Scazzero, J (2003) A process for post-implementation IT benchmarking, Information and Management, 41(2), 199-212.

Durant, R. and Legge, J. (2006) 'Wicked problems,' public policy, and administrative theory: lessons from the GM food regulatory arena, Administration Society, 38, 309-334.

Eaves, S. and Glanfield, K (Forthcoming 2016) *Doing it differently*: Transforming STEM Teaching by Engaging with New Educational Contexts, Special issue of the Journal of Education for Teaching, Understanding the teaching of STEM education through dialogue and transformative learning: the case of Mexico and the UK.

Eaves, S. and Walton, J. (2013) Advancing Polyphonic, Multi-layered and Authentic Narrative Inquiry: Actor Sensemaking during Transformational Change, The Electronic Journal of Business Research Methods, 11(2), 67-83.

Evers, K. (2010) Business-It Alignment: A Current-State Evaluation of Strategic Alignment within the Hospital Organization, Doctoral Thesis, Capella University, USA.

El-Mekawy, M. (2012) From Societal to Organisational Culture: The Impact on Business-IT Alignment, Report Series-12-011, Stockholm University, Sweden.

Feld, C. and Stoddard, D. (2004) Getting IT Right, Harvard Business Review, 82(2), 72-79.

Garner, J. (2013) Different Ways to Disagree: A Study of Organizational Dissent to Explore Connections between Mixed Methods Research and Engaged Scholarship, Journal of Mixed Methods Research, 1–18.

Greene, J. (2007) Mixed Methods in Social Inquiry, Jossey-Bass.

Guzman, I. (2006) As you like I.T. - Occupational culture and commitment of new information technologists, Doctoral Thesis, Syracuse University, USA.

Hall, R. (2013) Mixed Methods: In Search of a Paradigm, In: T. Lê & Q. Lê (Eds.), Conducting Research in a Changing and Challenging World, (pp. 71-78), Nova Science Publishers.

Halme, M., Lindeman, S. and Linna, P. (2012) Innovation for Inclusive Business: Intrapreneurial Bricolage in Multinational Corporations, Journal of Management Studies, 49(4), 743-784.

Haneef, N. (2013) Empirical research consolidation: a generic overview and a classification scheme for methods, Quality and Quantity, 47, 383-410.

Hanson, W., Creswell, J., Plano Clark, V., Petska, K. and Creswell, D. (2005) Mixed Methods Research Designs in Counseling Psychology, Faculty Publications, Department of Psychology, Paper 373.

Henderson, J. and Venkatraman, N. (1993) Strategic Alignment: Leveraging information technology for transforming organizations, IBM Systems Journal, 32(1), 4-16.

Hesse-Biber, S. and Burke Johnson, R. (2013) Coming at Things Differently: Future Directions of Possible Engagement With Mixed Methods Research, Journal of Mixed Methods Research, 7(2), **103-109.**

Heyvaert, M., Hannes, K., Maes, B. & Onghena, P. (2013) Critical Appraisal of Mixed Methods Studies, Journal of Mixed Methods Research.

Jick, T. (1979) "Mixing Qualitative and Quantitative Methods: Triangulation in Action", Administrative Science Quarterly, 24(4), 602-611.

Kanbur, R. (2000) Q-Squared: qualitative and quantitative methods of poverty appraisal, New Delhi: Permanent Black.

Kearns, G. and Lederer, A. (2003) A Resourced–Based View of Strategic IT Alignment: How Knowledge Sharing Creates Competitive Advantage, Decision Sciences, 34(1), 1-29.

King, W. (2009) Planning for Information Systems, M.E. Sharpe.

Leech, N. and Onwuegbuzie, A. (2008) Debriefing, In L. Given (Ed.), The Sage encyclopedia of qualitative research methods (pp. 199-201), Thousand Oaks, CA: Sage.

Lin, M-W. and Bozeman, B. (2006) Researchers' Industry Experience and Productivity in University–Industry Research Centers: A "Scientific and Technical Human Capital" Explanation, Journal of Technology Transfer, 31, 269–290.

Luftman, J. (2000) Assessing Business & IT Alignment Maturity, Communication of the Association for Information Systems, 4(14), 1-50.

Luftman, J. (2011) Business-IT Strategic Alignment Maturity, Open Seminar Presentation at Stockholm University, Sweden, March 21 2011.

Marthandan, G. and Tang, C. (2010) Thirst for Business Value of Information Systems, International Journal of Technology Diffusion, 1(1), 28-40.

Maxwell, J. (2004) Causal explanation, qualitative research, and scientific inquiry in education, Educational Researcher, 33(2), 3-11.

McCall, M. and Bobko, P. (1990) Research methods in the service of discovery, Handbook of industrial and organizational psychology, 1, 381-418.

McGahan, A. (2007) 'Academic research that matters to managers: On zebras, dogs, lemmings, hammers, and turnips', Academy of Management Journal, 50(4), 748-753.

Meisiek, S., Irgens, E. and Barry, D. (2008) Forms of Knowing: From Habitual Blindness to Binocular Vision in Management Education, Organization Learning, Knowledge and Capabilities Conference, Copenhagen, 28-30 April 2008.

Mertens, D. and Hesse-Biber, S. (2013) Mixed Methods and Credibility of Evidence in Evaluation, 138. Jossey-Bass/American Evaluation Association.

Miles, M., Huberman, A. and Saldana, J. (2013) Qualitative Data Analysis, A Methods Sourcebook, Third Edition, Sage Publications.

Moeller, R. (2013) Executive's Guide to IT Governance: Improving Systems Processes with Service Management, COBIT, and ITIL, John Wiley & Sons.

Molina Azorin, J. and Cameron, R. (2010) "The Application of Mixed Methods in Organisational Research: A Literature Review", Electronic Journal of Business Research Methods, 8(2), 95-105.

Molina Azorín, J. and Cameron, R. (2015) History and Emergent Practices of Multimethod and Mixed Methods in Business Research. In: S. Hesse-Biber and R. Johnson (Eds.), Oxford Handbook of Multimethod and Mixed Methods Research Inquiry, (pp. 466-485), New York: Oxford University Press.

Morgan, D. (2007) "Paradigms Lost and Pragmatism Regained: Methodological Implications of Combining Qualitative and Quantitative Methods", Journal of Mixed Methods Research, 1(1), 48-76.

Nastasi, B., Hitchcock, J., Sarkar, S., Burkholder, G., Varjas, K. and Jayasena, A. (2007) Mixed methods in intervention research: Theory to adaptation, Journal of Mixed Methods Research, 1(2), 164–182.

Niglas, K. (2004) The combined use of qualitative and quantitative methods in educational research, PhD Thesis, Tallinn Pedagogical University, Estonia.

Nonaka, I. and Takeuchi, H. (1995) The knowledge creating company, Oxford University Press

Ofcom (2015). Communications Market Report 2015, Ofcom.

O'Cathain, A., Murphy, E. & Nicholl, J. (2008) The quality of mixed methods studies in health services research, The Journal of Health Services Research & Policy, 13(2), 92-98.

Onwuegbuzie A. and Leech N. (2005) "Taking the "q" Out of Research: Teaching Research Methodology Courses without the Divide between Quantitative and Qualitative Paradigms", Quality & Quantity: International Journal of Methodology, 39(3), 267-295.

Poels, R. (2006) Influence and Measurement of Business-IT Alignment, Doctoral Thesis, Vrije University, The Netherlands.

Rescher, N. (2000) Realistic Pragmatism: An Introduction to Pragmatic Philosophy, Albany: State University of New York Press.

Sage, T. (2006) A model of factors affecting business and information technology alignment enabled by enterprise architecture: A structural equation modelling analysis, Doctoral Thesis, Capella University, USA.

SASSARD, S., BARZIC, S. AND AUCHARD, E. (2014) UK TELECOMS MARKET POISED FOR MORE CONVERGED SERVICES, SAYS EE DIRECTOR [online]. Retrieved 15 December 2015 from URL: http://uk.reuters.com/article/uk-telecommunications-ee-idUKKCN0IC2BM20141023

Saunders, M. (2015) The (Re) emergence of Mixed Methods Research: to Combine or Not Combine? Keynote address at the ECRM conference, Malta, June 11-12.

Shriar, J. (2014) Why HR needs to invest in Employee Pulse Surveys [online]. Retrieved 15 December 2015 from URL: https://www.officevibe.com/blog/human-resources-needs-invest-employee-pulse-surveys

Slaughter, S., Levien, L., Ramesh, B., Pries-Heje, J. and Baskerville, R. (2006) Aligning Software Processes with Strategy, MIS Quarterly, 30(4), 891-918.

Sledgianowski, D., Luftman, J. and Reilly, R. (2006) Development and validation of an instrument to measure maturity of IT business strategic alignment mechanisms, Information Resources Management Journal, 19(3), 18-32.

Srivannaboon, S. (2009) Achieving competitive advantage through the use of project management under the plan-do-check-act concept', Journal of General Management, 34(3).

Teddlie, C. and Tashakkori, A. (2003) "Major Issues and Controversies in the Use of Mixed Methods in the Social and Behavioral Sciences". In A. Tashakkori & Teddlie (Eds.), Handbook of Mixed Methods in Social and Behavioral Research, TO, Sage, 3-50.

Tushman, M. & O'Reilly, C. (2007) 'Research and relevance: Implications of Pasteur's quadrant for doctoral programs and faculty development', Academy of Management Journal, 50(4), 769-774.

Van Der Roest, J., Spaaij, R. and Van Bottenburg, M. (2015) Mixed methods in Emerging Academic Sub disciplines: The Case of Sport Management', Journal of Mixed Methods Research, 9(1), 70-90.

Van Grembergen, W. and De Haes, S. (2010) A Research Journey into Enterprise Governance of IT, Business/IT alignment and Value Creation, International Journal on IT/Business Alignment and Governance, 1(1), 1-13.

Wade, M. and Hulland, J. (2004) Review: The resource-based view and information systems research: Review, extension, and suggestions for future research, MIS Quarterly, 28(1), 107-142.

Walter, C. (2012) A Framework for Creating Creative Workspaces, 13th European Conference on Knowledge Management, Universidad Politécnica de Cartagena, Spain, 6-7 September 2012.

Zeinolabedin, N., Khademi, M. and Rahbar, N. (2013) Assessing Efficiency of ITIL Framework to Align Business and IT, Research Inventy: International Journal of Engineering and Science, 2(5), 13-26.