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STRATEGIC ALIGNMENT IN THE VIRTUAL ORGANISATION

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Abstract
This paper reviews the literature in relation to virtual E-business models and strategies. From this the authors develop a framework to test two new strategic alignment instruments designed to measure the espoused readiness of an organisation to collaborate virtually and the actual preparedness to operate virtually. These instruments will assist organisations in recognising and exploiting their degree of virtuality and can assist organisations in developing new organisational forms that fully leverage the value of their ICT assets.

Key Words:*ICT, Strategic Alignment, Virtual Readiness, Virtual Preparedness*

1. INTRODUCTION

This paper endeavours to clarify some of the concepts related to the Virtual Organisation (VO) and to augment the definition of a VO as one with few or no tangible assets, existing in virtual space created through Information Communication Technologies (Warner & Witzel, 2004). The authors focus on the concept of an organisation which is virtually organised; employing ICT for the majority of its communication, asset management, knowledge management and customer resource management, across a network of customers, suppliers and employees (Venkatraman & Henderson, 1998).

As organisations enter an era of information superhighways, expanded electronic commerce, and 'virtualness' executives increasingly realise that in addition to business strategy influencing IT, IT now influences business strategy (Rockart et al, 1996). Hirschheim & Sabherwal, (2001) confirmed the validity of previous findings and determined that it is important for organisations to understand the dynamic and emergent nature of business-information systems alignment. Recent perspectives on strategy argue that the basis for achieving competitive advantage, even short term advantage, lies in the configuration of resources that enable value creation through a sustained dynamic and continuous process of adaptation and change (Wheeler, 2002; Zahra & George, 2002; Breu & Peppard, 2001). Alignment competencies are created by leveraging the organisation's specific resources and processes, structures and practices (Cumps et al, 2006).

The framework introduced in this paper as Figure 1, draws from earlier work by Henderson and Venkatraman (1993) and seeks to take the process further in relation to the VO by providing a more comprehensive view of the strategic context of VO based on two building blocks, strategic fit and operational integration. The study seeks to address three research questions; firstly what we know about virtual organisational

forms? Secondly, if we accept that there is such a form, can instruments be developed that have the potential to assist organisations in identifying their internal preparedness to operate more virtually and external readiness to collaborate more virtually? Thirdly can a framework and in turn a methodology be developed that tests the validity of these instruments?

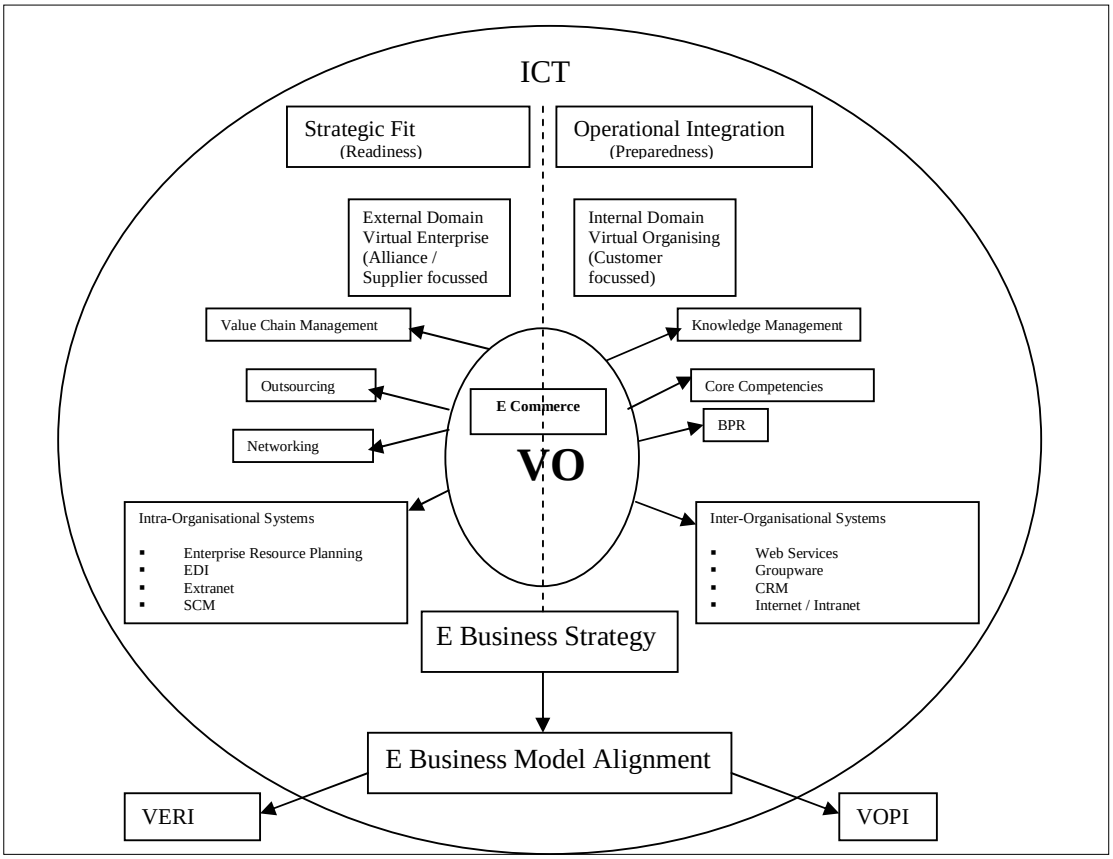

Figure 1. Strategic & Operational Context of VO

2. THE VIRTUAL ORGANISATIONAL FORM

The literature provides numerous descriptions such as virtual (Webster's, 1998) virtuality (Evaristo & Scudder, 2000) virtual organisation (Mowshowitz, 1986), virtual organising (Venkatraman & Henderson, 1998), virtual team (Lipnack, 1997) virtual enterprise (Davidrajuh, 2003; Hardwick, 1996), virtual communities (Camarinha-Matos & Afsarmanesh, 2005), Collaborative Networked Organisation (Borrelli & Conte, 2006; Sturm & Wolf, 2006), and Information Rich Commerce (Fichman & Cronin, 2003). The virtual organisation of the future will be much more dynamic and sensitive to the need for tuning operational parameters of the enterprise as a whole, optimising the whole chain of value creation (Walters, 2004). Virtualisation is an approach to ICT that lets businesses pool resources so utilisation is optimised and supply automatically meets demand (Bittman, 2004). Based on literature spanning 20 years the authors have defined VO as simply "an organisations ability to fully exploit ICT in prioritising their degree of

internal operational integration and external strategic fit, for sustainable competitive advantage".
The Readiness and Preparedness frameworks were developed to provide a clear distinction between dimensions that constitute external readiness to collaborate virtually and internal preparedness to operate more virtually. Two acronyms were adopted to reinforce the distinction; the VOPI – Virtual Operations Preparedness Instrument and the VERI – Virtual Enterprise Readiness Instrument.

3. DEVELOPMENT OF THE INSTRUMENTS: VOPI

Three existing models have been used to develop the VOPI instrument. The Venkatraman & Henderson (1998) model focuses on Strategic Planning. The Guha et al., (1997) model explores the concept of e-business Operational Management and the Zigurs & Kozar (2006) model looks at Strategic Process Management in a networked world. All three of these strategic change theories focus on conceptualising organisational preparedness.

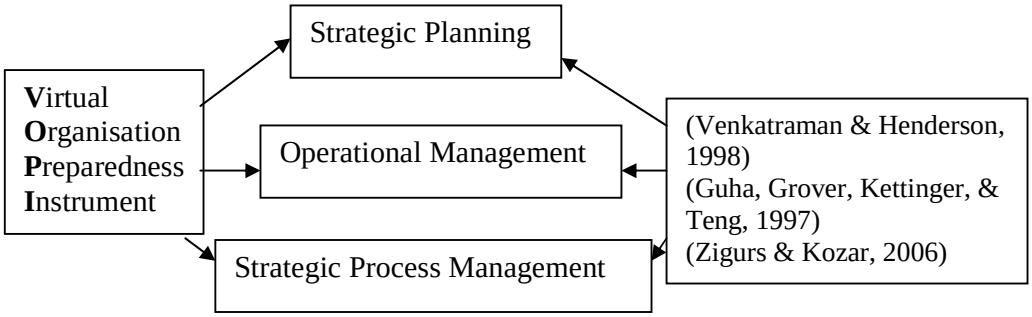

Figure 2. Virtual Operations Preparedness Instrument

3.1 Virtual Organising

Venkatraman and Henderson (1998) spent two years undertaking a systematic study to conceptualise the architecture of virtual organising. Each organisation has its core of experts. In virtual organising, companies are increasingly leveraging the expertise in the extended network (suppliers, customers, partners, and alliances). Key dimensions were identified and used to construct the first component of the VOPI model: Customer Interaction, Asset Configuration, Knowledge Leverage and Work Unit Expertise.

3.2 Operational Management

Guha et al., (1997) argue that traditional models of hierarchy and control have been described as pathological, appropriate for an erstwhile era of stability but inappropriate for today's dynamic business world. Although the study related to business process change, it is also useful in identifying internal enablers for virtual organisations. Key dimensions were identified and used to construct the second component of the VOPI model: Relationship Balance, IT Leverage, Cultural Readiness and Learning Capabilities.

3.3 Process Management

The Zigurs and Kozar (2006) Project Management Dimensions model identifies project management dimensions identified by CeTIM and are an attempt to understand the concept of VO. Coordination, Knowledge and Process are internal to the way in which an organisation seeks to become more virtual and external in the way in which organisations seek to collaborate more virtually. The dimensions are addressed from both a traditional perspective and a refined virtual perspective. Key dimensions were identified and used to construct the third component of the VOPI model: Coordination, Knowledge, Innovation and Process Management.

Table 1 pinpoints the key elements of each of the four dimensions identified in each of the models. Column 1 of Appendix 1 extrapolates out the commonalities and develops an all encompassing set of six new dimensions, which are the foundation of the VOPI.

Table 1

Strategic Planning (Venkatraman & Henderson, 1998)	**Operational Management** (Guha et al., 1997)	**Strategic Process Management** (Zigurs et al, 2006)
Customer Interaction Multi stage distribution Efficiency Linear value chain Innovation Customisation Communities	**Relationship Balance** Dialectic of cooperation Dialectic of competition Cooperative behaviour Conflict level Inter organisational linkage Cross functional cooperation	**Coordination** Trust Competence Based Experts Liaisons
Asset Configuration Sourcing Integration Dynamic Portfolios Relationships Co-ordination	**IT Leverage** Information Imperatives Bidirectional relationships Socio/technical relationships Coordinated interaction	**Knowledge** Attributions Non Linear Complex Intelligence Repositories
Knowledge Leverage Source diversity Value Creation Organisational efficiency	**Cultural Readiness** Change agents Leadership Shared organisational goals Trust / Cooperation / Coordination Exchange relationships Risk Aversion Open Communications	**Innovation** Dynamics Web Networked Diverse Culture Adaptive Interfaces
Work Unit Expertise Distributed tasks Decomposition Effectiveness Knowledge capture Knowledge sharing Process driven	**Learning Capabilities** Positive outcomes Adaptation to environmental change Cross functional entities Core competencies Technical gatekeepers Causation Adaptability	**Process Management** Emergent Tasks Non Linear Ubiquitous Self Organising Systems System Re-organisation

4. DEVELOPMENT OF THE INSTRUMENTS: VERI

Traditional thinking about the management of innovation focuses almost exclusively on internal factors; the capabilities and processes within companies for creating and commercialising technology. Although the importance of these factors is undeniable, the external environment for innovation is at least as important (Porter, 2001). Due to the nature of the new ICT enabled economy, those nations and businesses that can adapt quickly to new technology, seize new opportunities and take strategic risks, will prosper. A common aspect of the majority of these new organisational forms is that they are partially structured as collaborative networks (Lemken et al, 1998). The network model, bringing people together to collaborate across organisational and geographical distances, needs to be applied at all levels to promote global e-readiness (McConnell, 2000). While a number of different instruments exist to evaluate the readiness of economies and organisations to utilise ICT effectively and participate in the global market through e-business initiatives; only three were judged to be specific enough to enable organisations to identify their degree of readiness to 'collaborate virtually'. The three models are introduced in Figure 3 as they meet each of the dimensions. Commonalities between all three will be used to create an extended instrument; Virtual Enterprise Readiness Instrument; VERI.

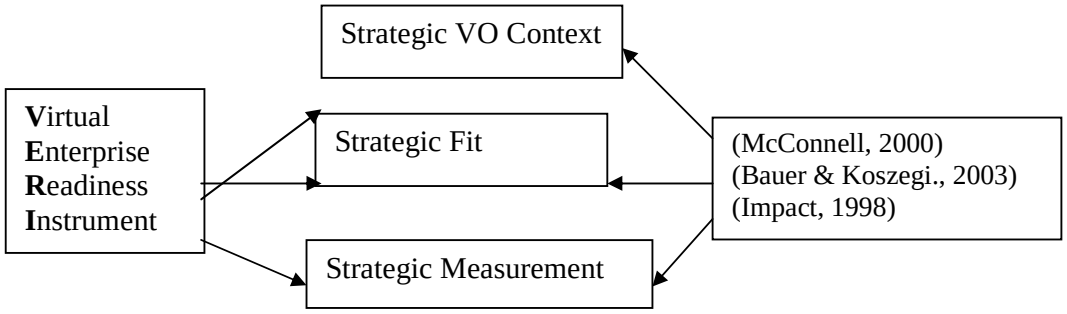

Figure 3. VERI

4.1 Strategic VO Context

An effective E-readiness assessment should introduce clear indicators to measure capacity and benchmark progress in Connectivity, E-Leadership, Human Capital, and E-Business Climate. McConnell examines 42 critical economies for their E-readiness. E-readiness measures the capacity of nations to participate in the digital economy (McConnell, 2000). The model has been developed as an instrument that recognises the recent economic expansion that has enabled exponential growth in the value that comes from connecting more people and organisations to a global network.

4.2 Strategic Fit

(Bauer & Koszegi., 2003) provide dimensions to identify the progress of an organisation in moving from a traditional viewpoint a virtually ready structure. This model uses structural dimensions; modularity and heterogeneity (differentiation), configuration (temporary and loose-coupled networks), integration, and technology to measure the DV (Degree of Virtualisation) of 116 Austrian and German consulting firms in 10

European countries. The authors have identified key concepts and used them to construct the second component of the VERI model.

4.3 Strategic Measurement

Impact (1998) takes the process a step further by providing a tool for measuring organisational readiness using a sample consisting of the managers of 32 companies in 10 European countries. This model also uses four structural dimensions; dispersion, empowerment, interdependence and restlessness. The report outlines best practice in tackling these issues, which makes it the logical third model selected. Virtuality is of course not an end in itself. It is an important ingredient of business strategy, and the overall business strategy must dictate the approach to virtuality, not vice versa (Impact, 1998).

Table 2 pinpoints the key elements of each of the four dimensions identified in each of the models. Column 2 of Appendix 1 extrapolates out the commonalities and develops an all encompassing set of six new dimensions, which are the foundation of the VERI.

Strategic VO Context (McConnell, 2000)	**Strategic Fit** (Bauer & Koszegi., 2003)	**Strategic Measurement** (Impact, 1998)
Connectivity Communications access Network access Power supplies – supply chains	Technology ICT as enabler Coordination of activities Process value adding Virtual corporation Temporary Loosely coupled network Combining core competencies Mutual trust Coordination of production	Dispersion Number of physical locations Number of personal workplaces Technology facilitated mobility Reach: ease of access to customers, suppliers Economic / political support Visibility to customer
E-Leadership VO promotion Automation processes Alliances / Partnerships Universal access	Configuration Independent configuration of networked companies Uniting collaborators Exploiting opportunities Standing network pool Historically motivated Structural cultural assimilation, loose coupling Stability – change enabled	Interdependence Number of formal / informal relationships (Int & Ext) Level of external influence Staff / Line function Parallel line functions Product collaborations Cross-functional teams

Human Capital Qualifications Cadre of skilled partners Knowledge network population Educational systems participation Creativity & information sharing Workforce skills & efficiencies Intellectual capital Understanding knowledge	Integration Heterogeneity (hesitation) Dynamical configuration of core competencies Shared organisational goals Trust / Cooperation / Coordination Exchange relationships High uncertainty High interdependence Shared output and process controls	Empowerment Defined accountabilities Decision levels Complexity, magnitude and scope of decision making Levels of repeat business Acceptance of empowerment and risk Workforce skills investment
E Business Climate Regulatory policies Standards & Rules Institutional arrangements Premiums for risk Effective competition Transparency & predictability of implementation Financial stability & soundness Electronic transaction support	Modularity and heterogeneity Satisfier modules Specific requirements core competence Flexible & dynamic combination Unique value chains Competitive advantage Virtually increasing resources Increases in capacity Quality, flexibility, timing Synergistic cooperating partners	Restlessness New products / services New markets entered New / changed processes New / changed job profiles New / interdependencies Response time Levels of stress Openness to change Change appraisal criteria Level of staff education

Table 2.

5. METHODOLOGY – CASE STUDY

The organisation chosen for the initial case study was a GDE (Geographically Dispersed Entity) providing essential services to a division of the Department of Defence. The organisational structure consisted of 15 group managers and a staff of 150. The authors identified the 15 group managers on the basis that they represented all the groups within the organisation charged with responsibility for critical and essential services. The research was conducted using the VERI and the VOPI instruments through four phases within this organisation. Phase 1 was to conduct pre-interview audits, posing 30 questions each with the 15 group managers focussing on identifying how Important (I) the groupings and dimensions and questions were to the case study organisation. The initial questions were devised from the elements identified in each dimension for each instrument. Phase 2 was one-on-one interviews conducted with the 15 group managers to confirm the validity of the groupings and the questions posed and make any revisions recommended. In Phase 3 the revised instruments were tested again on the same 15 group managers posing the same 30 questions for each instrument but focussing on

whether the organisation felt that they were actually Doing (D) the things that the previous pre-interview audit had identified as important. Phase 4 was devoted to undertaking an empirical analysis of the results.

In this paper only the results of applying the process to the VERI are provided. It is important to point out however that similar findings were achieved in applying the process to the VOPI. Figure 4 shows an example of the total responses for the VERI instrument in the pre-audit stage phase 1 with answers shown against SA-strongly agree; A – Agree; D-Disagree; SD- Strongly disagree and DK – Don't know. These figures relate to how important respondents believed these issues were for the organisation. Figure 5 shows the same total of responses but in relation to whether or not the organisation felt they were actually doing the things they regarded as important. The responses were largely in SA and A for importance but in A and D for doing, suggesting a considerable gap between the intended strategy and actual implementation. Similar results were found when applying the VOPI instrument.

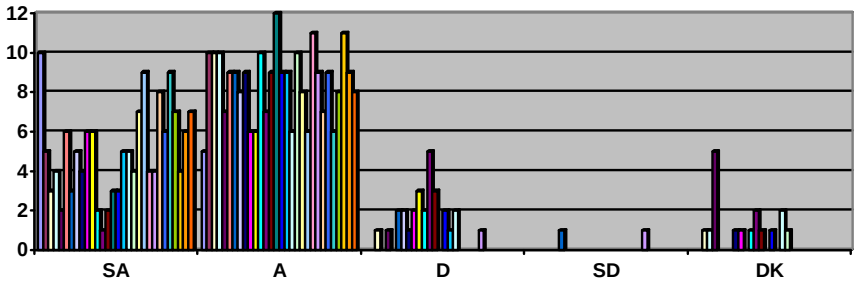

Figure 4. Phase 1 (Important)

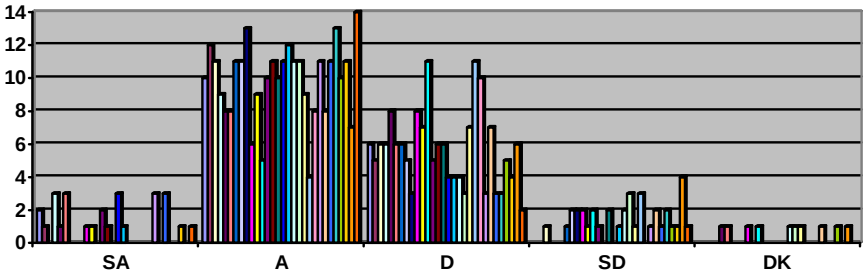

Figure 5. Phase 3 (Doing)

6. OUTCOMES

Even at this early stage of the data analysis of the case study, two significant outcomes were achieved. The Phase 1 chart demonstrates that in terms of importance the case study organisation agreed that the dimensions created were of value to their organisation. This is substantiated by the invaluable feedback provided in Phase 2, the one-on-one interviews. This feedback included recommendations on how the groupings, dimensions and questions could be improved. The Phase 3 chart demonstrates that the group managers felt that there were a number of areas that need improvement. Further analysis

of the individual data will enable the authors to identify which dimensions require urgent attention and recommend ICT solutions to resolve the problems. Appendix 2 reflects Phase 4 of the process and provides empirical analysis of the key findings in terms of how the case study sponsor responded to a series of questions posed.

7. CONCLUSIONS

Existing models and frameworks for measuring virtuality appear to provide a sound basis for developing more integrated instruments; the VERI and VOPI models. The next stage of this research study will be to validate the extended VERI & VOPI models using a number of secondary case studies as the basis of the validation. Additional verification of the validity of the VERI and VOPI instruments in measuring internal as well as external virtuality will also be undertaken. The VERI and VOPI models have the potential to become the template for exploitation not only of organisational virtuality, but also become the enabler for ICT convergent organisations to use virtual strategic alignment instruments to create more sustainable competitive advantage.

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APPENDIX 1

VOPI (Applied)	VERI (Applied)
Communications Shared goals Trust / Cooperation / Coordination Open communications Asset leverage Strategic direction **Efficiency** Value creation Organisational efficiency Effectiveness Knowledge sharing Process driven **Viability** Long / short term ROI Sustainable profitability Economic value Customer centric Visibility to customers **Supply & Value** Linear value chain Innovation Customisation Integration Coordination **Linkages** Cooperative interpersonal behaviour Inter-functionality Inter organisational linkage Cross functional cooperation Interdependence **Adaptability** Change agents Core competencies	**Enablement** Communication access Process value adding Loosely coupled networks Combining core competencies Coordination of modularised production **Collaboration** Facilitated mobility Reach: ease of access to customers & suppliers Independent configuration of networked companies Uniting collaborators Exploiting specific opportunities **Influence** Alliances and partnerships Number of formal / informal relationships Level of external influence Product collaborations Cross functional / cross process teams **Accountabilities** Cadre of skilled partners Knowledgeable network population Intellectual capital Acceptance of empowerment / risk Defined accountabilities **Standards & Stability** Standards & rules Transparency & predictability of implementation Financial stability and soundness Response time Openness to change **Interdependence** Shared organisational goals

Adaptability Imperatives Coordinated interaction	High interdependence Unique value chains Increased capacity Quality, Flexibility, Timing

APPENDIX 2

QUESTIONS

1.	Did your organisation think that the process had value?
2.	Were the priorities identified relevant to your organisation?
3.	Was the time devoted to the process considered time well spent?
4.	Do you think your organisation gained anything from undertaking the process?
5.	Were positive results achieved?
6.	Were there elements missing from the process?
7.	Did the changes made to the process reflect your organisations needs?
8.	Should anything else have been added to the process?
9.	Does you organisation intend to do additional due diligence on the priorities identified?
10.	Does the process provide you with an effective means of identifying priorities?

ANSWERS

No	Y/N	General Consensus, Observations and Feedback
1	Y	The sponsor's initial reaction was that what had been discovered was common sense and would have been identified over time. However the sponsor did acknowledge that the information regarding priorities was useful, because it enabled him to understand which issues were most important to the groups under his control and also whether or not the groups shared his belief that issues were being addressed to the organisations satisfaction.
2	Y	The sponsor grudgingly admitted that some of these issues were important, but clarified this by stating that due to a major restructuring that occurred during the process, the results were not unexpected.
3	Y	The sponsor conceded that although he felt the process had been time consuming the priorities identified were important
4	Y	The sponsor felt that he gained an understanding of priorities that concerned staff. However he felt that the restructure was to blame for the negative feedback and would be resolved over time.

5	Y	As far as the sponsor was concerned on the surface the results were positive but he blamed the restructure for the negative feedback
6	Y	The sponsor felt that the in terms of elements that were missing the solutions identified did not go far enough. He felt that a lot of the solutions recommended were already an extension of current plans under the restructure and the issues would be resolved.
7	Y	Yes, the changes made were significant in recognising the unique nature of the organisation.
8	N	The sponsor was of the opinion that the VOPI and VERI covered most of the issues facing his organisation but commented that it was not enough just to identify the issues. The researcher responded by alerting the sponsor to the fact that Phase 4 is just the beginning. Next steps would include due diligence of the problem area and on completion, recommendations for solutions.
9	Y	The sponsor indicated that based on the information contained in the report he would be following up with the group managers on the priorities they had identified
10	Y	The sponsor indicated that the process had been a good first step; however he did comment that as the restructure was a work in progress occurring during the case study, the results might be substantially different were the case study to be repeated after the restructure. Although he did not go as far as to invite the researcher back to repeat the process, he did suggest that he would support initiatives designed to undertake due diligence on the priorities identified.