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Abstract

This paper reviews the literature in relation to virtual organisations and eCollaboration. From this, the authors develop two instruments to measure the espoused readiness of the organisation to collaborate virtually and the actual preparedness to operate virtually. These instruments are validated in an eCollaboration environment to measure the extent of alignment of virtual values and virtual culture. The results can assist organisations to develop a virtual strategy and to measure effective implementation.

Key words: *virtual collaboration, virtual organisation, virtual readiness, virtual preparedness*

Introduction

This paper endeavours to clarify some of the concepts related to the virtual organisation and to move away from the definition of a 'virtual organisation' as one with few or no tangible assets, existing in virtual space created through ICT; 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 and Henderson, 1998). The authors consider the concepts of virtual collaboration, virtual organisations and virtual organising; develop instruments which can be used to evaluate organisational readiness to exploit virtual networks and operational preparedness to act as a virtual organisation; and apply the instruments in a virtual enterprise. The instruments are used initially to measure the value of eCollaboration models to the organisation and then reapplied to measure the extent to which these values are actually embraced.

Virtual Organisations

Extensive review of the research literature provides myriad descriptions such as virtual organisation (Mowshowitz, 1986), virtual company (Goldman & Nagel, 1993), virtual enterprise (Davidrajuh, 2003; Hardwick et al., 1996), virtual team (Lipnack & Stamps, 1997) virtual factory (Upton & McAfee, 1996), hubs (Friedheim Jr, 1999) clusters

(Dearlove, 2001) and relationship enterprises (Walters, 2000). The most recent literature even makes a distinction between the virtual organisation and organisational virtualisation. Breu & Hemingway, (2004) claim that previous literature pertaining to virtual organisations focuses on organisational design (eg., (Chesborough & Teece., 1996); (De Sanctis & Monge, 1999) (Cramton, 2001) (Griffith et al., 2003) while in contrast organisational virtualisation addresses the transition from the traditional bricks-and-mortar to a virtual organisation (Boudreau et al., 1998; Dutton, 1999). The authors of this paper support this distinction.

Based on a literature review encompassing noted authors from 1986 to 2004, they all seem to have one thing in common, that the development of the virtual organisation continues to be a focus of organisations seeking competitive advantage in increasingly global marketplaces. The virtual idea proved a bit ahead of its time, but evidence is pointing to continued progress (Lundquist, 2004).

The common theme seems to be the concept of organisations being compelled to consider their degree of virtuality. Even though there has been a proliferation of terminology all authors appear to agree that ICT is a prerequisite, facilitator and even the core of the new emerging virtual organisation paradigm (Burn et al., 2002; Franke, 2000). A view supported by Talukder (2003) who believes that the virtual organisation is a non-traditional, interconnected and customer responsive organisation which mainly operates through ICT in the global market.

The virtual organisation forges temporary links among otherwise independent entities that add value to an economic system (such as the supply chain of a large manufacturer). These virtual links arise and dissolve as needed to reduce transaction costs, increase efficiency and respond more quickly to the needs of customers and initiatives of rivals (RAND, 2004). Organisations in the public and private sector alike face ongoing pressures to become more flexible and responsive to change, and are looking increasingly to virtual forms of organisation to reduce organisational slack, facilitate cross-functional learning, focus on core competencies and lower costs (Dutton, 1999).

Partnerships in virtual markets are temporary alliances of enterprises that come together to share skills and resources in order to attend a business opportunity and whose cooperation is supported by computer networks (Vlachopoulou & Manthou, 2003). Partnerships in a virtual environment are enabled by sophisticated ICT that makes business information transparent, seamless and within reach (Folinas et al., 2001). ICT enables the virtual organisation by mediating the dynamic assignment and coupling of requirements with the resources (Kishore & McLean, 2002).

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). Enduring virtual organisations or enterprises do not simply appear, they are structured alliances that are based upon an acceptance that no one organisation will possess all of the capabilities or competencies required for success (Kay, 2000). Virtual companies, particularly those with strong consumer offerings will define themselves by the services they offer customers via the unified platforms of voice, video and the web (Lundquist, 2004).

Organisations who exploit the potential to develop their own 'automated network' according to noted authors are variously described as virtually organising or virtual organisations. Virtualisation allows one organisation to appear as many or many to appear as one, becoming increasingly adaptive, focussing on dramatically improving the speed and economics of business change to meet new market conditions (Yockelson, 2004).

Virtualisation is an approach to ICT that lets businesses pool resources so utilisation is optimised and supply automatically meets demand (Bittman, 2004). The authors contend that optimisation relies on both internal preparedness and external readiness i.e. how

effectively organisations manage two distinctly different dynamics; their degree of external readiness to collaborate virtually and their degree of internal preparedness to operate more virtually.

Observations shared by Robey et al., (2000) who recommend using ICT to improve an organisations efficiency of, and ability for gathering and sharing information across geographical (external) and functional (internal) divides, and enables greater horizontal and vertical connections among employees and corporate resources. Sharing information across geographical divides could be expressed as a readiness to collaborate while functional divides refer more to internal capabilities and could be expressed as operational preparedness.

Most of the literature reviewed for this paper does not appear to support a distinction. One example being the TEMPLET model which although it met one criteria, that it contains enabling dimensions, seems to be too broad comprising both internal and external categories; technology, information management, process and organisational (Meister, 2000). The authors focussed on identifying literature that enabled an evident distinction to be made.

The Readiness and Preparedness frameworks were chosen because they most clearly developed the concept of a clear distinction between dimensions that constitute external readiness to collaborate virtually and internal preparedness to operate more virtually.

Readiness

Readiness is defined as the aptitude of an economy or an organisation to use internet based computers and information technologies to migrate traditional businesses to the new economy (Bui et al, 2002). E-readiness criteria spans a wide range, from telephone penetration to online security to intellectual property protection, translating into whether a country's business environment is conducive to Internet based commercial opportunities.

Although Bui et al's (2002) focus on economies the strategies they support could be equally relevant to major ICT dependent organisations in identifying their degree of readiness to collaborate. It has been suggested that APEC member economies should examine their strategies along six dimensions: immediacy, re-intermediation and innovation based economy, integration / internetworking, virtualisation, convergence and discordance (Bui et al., 2002).

Strategies can also be used to provide key insights on actions necessary within an organisation, where a well conceived virtual readiness assessment will map the organisations regional and global position. Improving competitive strengths and promoting those areas where a country or organisation by its history, culture or nature, has an advantage over others, will increase competitive advantage.

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; none of the models was judged by the authors to be specific enough to enable organisations to identify their degree of readiness to 'collaborate virtually'. The authors identified three models as shown in Figure 1 that meet this criteria and identified commonalities between all three which were then used to create an extended instrument – The Virtual Enterprise Readiness Instrument; VERI.
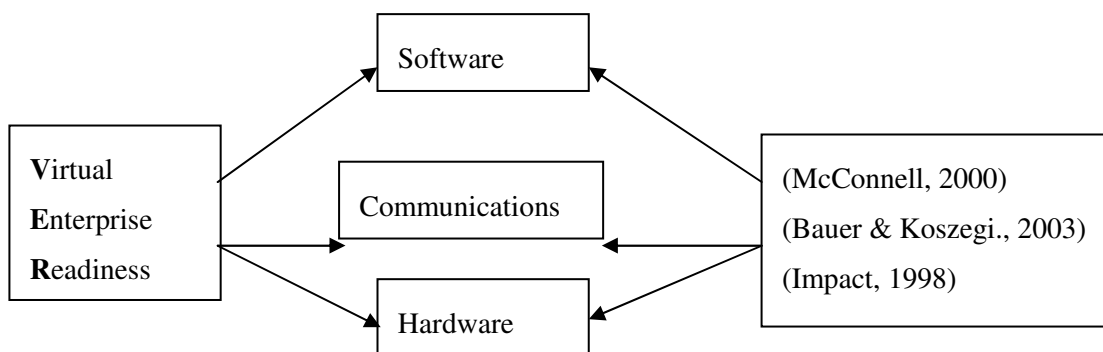
Figure 1: VERI

E-Readiness (McConnell, 2000).

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, 2000). McConnell (2000) examines 42 critical economies for their E-readiness. E-readiness measures the capacity of nations to participate in the digital economy. 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. The survey size is optimum because these countries represent nearly three-quarters of the world's population and a quarter of the worlds GDP. The authors contend that these dimensions are equally applicable to organisations in testing their degree of virtual readiness.

Virtual Corporation Readiness (Bauer & Koszegi., 2003)

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.

Virtual Organisation Readiness (Impact, 1998)

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. An interesting statement in the report, lends credence to the development of an all encompassing readiness instrument. 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 1 pinpoints the four key dimensions identified in each of the models. Appendix 1 extrapolates out the commonalities and develops an all encompassing set of six new dimensions; the VERI.

Table 1: VERI

E Readiness	Gradual Virtuality	Measuring Virtuality
(McConnell, 2000)	(Bauer & Koszegi., 2003)	(Impact, 1998)
Connectivity	**Technology**	**Dispersion**
Communications access	ICT as enabler	Number of physical locations
Network access	Coordination of activities	Number of personal workplaces
Power supplies – supply chains	Process value adding	Technology facilitated mobility
	Virtual corporation	Reach: ease of access to customers, suppliers
	Temporary	
	Loosely coupled network	Economic / political support
	Combining core competencies	Visibility to customer
	Mutual trust	
	Coordination of production	
E-Leadership	**Configuration**	**Interdependence**
VO promotion	Independent configuration of networked companies	Number of formal / informal relationships (Int & Ext)
Automation processes	Uniting collaborators	Level of external influence
Alliances / Partnerships	Exploiting specific opportunities	Staff / Line function
Universal access	Standing network pool	Parallel line functions
	Historically motivated	Product collaborations
	Structural cultural assimilation, loose coupling	Cross-functional teams
	Stability – change enabled	Internal / External SLA's
Human Capital	**Integration**	**Empowerment**
Qualifications	Heterogeneity (hesitation)	Defined accountabilities
Cadre of skilled partners	Dynamical configuration of core competencies	Decision levels
Knowledge network population	Shared organisational goals	Complexity, magnitude and scope of decision making
Educational systems participation	Trust / Cooperation / Coordination	Levels of repeat business
Creativity & information sharing	Exchange relationships	Acceptance of empowerment and risk
Workforce skills & efficiencies	High uncertainty	Workforce skills investment
Intellectual capital	High interdependence	
Agile & change approving	Shared output and process controls	
Understanding knowledge		

E Business Climate	Modularity and heterogeneity	Restlessness
Regulatory policies	Satisfier modules	New products / services
Standards & Rules	Specific requirements core competence	New markets entered
Institutional arrangements		New / changed processes
Premiums for risk	Flexible & dynamic combination	New / changed job profiles
Effective competition	Unique value chains	New / interdependencies
Transparency & predicability of implementation	Competitive advantage	Response time
	Virtually increasing resources	Levels of stress
Financial stability & soundness	Know how endowment	Openness to change
Electronic transaction support	Increases in capacity	Change appraisal criteria
	Quality, flexibility, timing	Level of staff education
	Synergistic cooperating partners	

Preparedness

An organisation can exhibit a degree of virtualness internally depending on how prepared they are. Venkatraman & Henderson (1998) view virtual organising as a strategic approach that is singularly focused on creating, nurturing and deploying key intellectual and knowledge assets while sourcing tangible, physical assets in complex network relationships. The authors define preparedness as the ability of an organisation to understand their degree of internal ICT enablement.

Preparedness represents a generic comprehensive and long term plan and should be focussed on business models, not industry based. The tendency of enterprises is to progress along all dimensions, demonstrating the generic components of virtual change (Ash & Burn, 2003). A virtual organizations goal is to extract the maximum value from its partners while making the minimum investment in permanent staff, fixed assets and working capital (Boudreau et al., 1998). The authors reviewed three specific models as shown in Figure 2 and identified commonalities between all three which could then be used to create an extended instrument – The Virtual Operations Preparedness Instrument (VOPI).
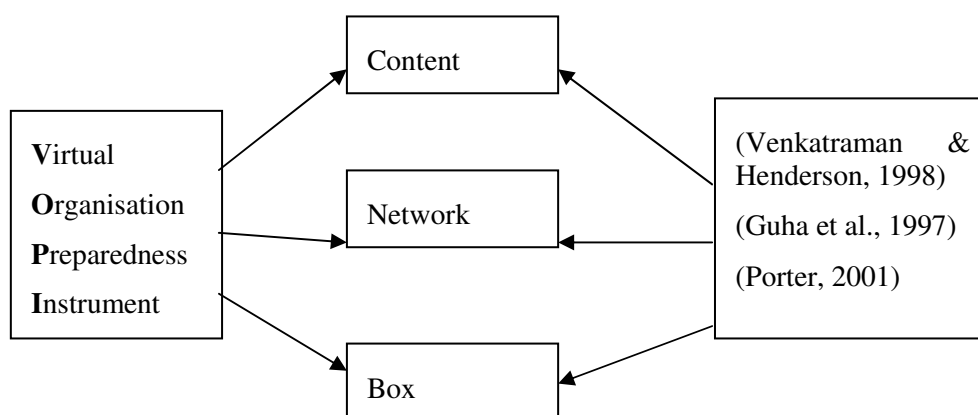

Figure 2: VOPI

Virtual Organising (Venkatraman and Henderson, 1998)

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) (Venkatraman & Henderson, 1998). The authors have identified key dimensions and used them to construct the first component of the VOPI model: Customer Interaction, Asset Configuration, Knowledge Leverage and Work Unit Expertise.

Business Process Change (Guha et al., (1997)

Guha et al's (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 paper was written as an examination of business process change, it is also useful in identifying enablers for virtual organisations. The authors have identified key dimensions and used them to construct the second component of the VOPI model: Relationship Balance, IT Leverage, Cultural Readiness and Learning Capabilities.

Strategic Positioning (Porter, 2001)

The challenge of competing globally reinforces the importance of strategic positioning. Porter states that as it becomes harder to sustain operational advantages, strategic positioning becomes all the more important. The only way to generate higher levels of economic value is to gain a cost advantage or price premium by competing in a distinctive way (Porter, 2001). The authors have identified key dimensions and used them to construct the third component of the VOPI model: Value Proposition, Right Goal, Organisational Fit and Continuity of Direction.

Table 2 pinpoints the four key dimensions identified in each of the models. Appendix 1 extrapolates out the commonalities and develops an all encompassing set of six new dimensions; the VOPI.

Table 2

Model 1 (Venkatraman & Henderson, 1998)	Model 2 (Guha et al., 1997)	Model 3 (Porter, 2001)
Customer Interaction	**Relationship Balance**	**Value Proposition**
Multi stage distribution	Dialectic of cooperation	Benefits
Efficiency	Dialectic of competition	Uniqueness
Linear value chain	Cooperative behaviour	Usability
Innovation	Conflict level	Customer centric
Customisation	Inter functionality	Visibility to customer
Communities	Inter organisational linkage	
	Cross functional cooperation	

Asset Configuration	IT Leverage	Right Goal
Sourcing	Information	Long / Short term ROI
Integration	Imperatives	Sustainable profitability
Dynamic Portfolios	Bidirectional relationships	Economic Value
Relationships	Socio/technical relationships	Parallel line functions
Assembly	Coordinated interaction	
Co-ordination		
Knowledge Leverage	**Cultural Readiness**	**Organisational Fit**
Source diversity	Change agents	Interdependence
Value Creation	Leadership	Mutual reinforcement
Organisational efficiency	Shared organisational goals	Systemic imitations
	Trust / Cooperation / Coordination	Discrete improvements
	Exchange relationships	Workforce skills investment
	Risk Aversion	
	Open Communications	
	Shared output process controls	
Work Unit Expertise	**Learning Capabilities**	**Continuity of direction**
Distributed tasks	Positive outcomes	Unique skills
Decomposition	Adaptation to environmental change	Asset leverage
Effectiveness	Cross functional entities	Reputation
Knowledge capture	Core competencies	Continuous improvement
Knowledge sharing	Technical gatekeepers	Strategic direction
Process driven	Deutero learning	
	Causation	
	Adaptability	

Research Approach – Case Study

The organisation chosen for this case study is a GDE (Geographically Dispersed Entity) providing essential services to a division of the Department of Defence. The organisational structure consists of 17 group managers and a staff of 150. The authors identified the 17 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 three phases within this organisation. Phase 1 was to conduct pre-interview audits, posing 30 questions each with the 17 group managers focussing on identifying how Important (I) the groupings and dimensions and questions were to the case study organisation. Phase 2 was one on one interviews conducted with the 17 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 17 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.

VERI – Virtual Enterprise Readiness Instrument

Tables 3 and 4 provide extracts of the pre-interview audit (Phase 1) and the post-interview questionnaire (Phase 3) detailing the overarching questions asked and one of the six dimensions of the VERI; Enablement. The charts; Figures 3 and 4 shows the overall results for Phase 1 and Phase 3 of the VERI while Figures 5 and 6 provide an example of the responses of one group manager. The first column of each chart denotes the number of questions asked.

PHASE 1:
VERI -VIRTUAL ENTERPRISE READINESS INSTRUMENT PRE-INTERVIEW AUDIT

If a group under my control were to work effectively with <u>other external companies</u> using Information Communication Technologies it would be important that:

KEY *(Circle the response below which is closest to your opinion)*

SA = Strongly Agree   **A** = Agree   **D** = Disagree   **SD** = Strongly Disagree   **DK** = Don't Know

---

Enablement

|					
1. Access levels to suppliers and partners are adequate	SA	A	D	SD	DK
2. My group has strategies in place to add value to collaborative relationships	SA	A	D	SD	DK
3. My group has the authority to facilitate collaborative relationships	SA	A	D	SD	DK
	SA	A	D	SD	DK
4. My group supports the development of core competencies	SA	A	D	SD	DK
5. My group has the resources it needs to collaborate effectively					

Table 3

PHASE 3:
VERI -VIRTUAL ENTERPRISE READINESS INSTRUMENT
POST-INTERVIEW QUESTIONNAIRE

How effectively does your group work with <u>other external companies</u> using Information Communication Technologies under the following headings?

KEY *(Circle the response below which is closest to your opinion)*

SA = Strongly Agree   **A** = Agree   **D** = Disagree   **SD** = Strongly Disagree   **DK** = Don't Know

---

Enablement – Allow, Facilitate, Permit

|					
6. Access levels to suppliers and partners are adequate	SA	A	D	SD	DK
7. My group has strategies in place to add value to collaborative relationships	SA	A	D	SD	DK
8. My group has the authority to facilitate collaborative relationships	SA	A	D	SD	DK
	SA	A	D	SD	DK
9. My group supports the development of core competencies	SA	A	D	SD	DK
10. My group has the resources it needs to collaborate effectively					
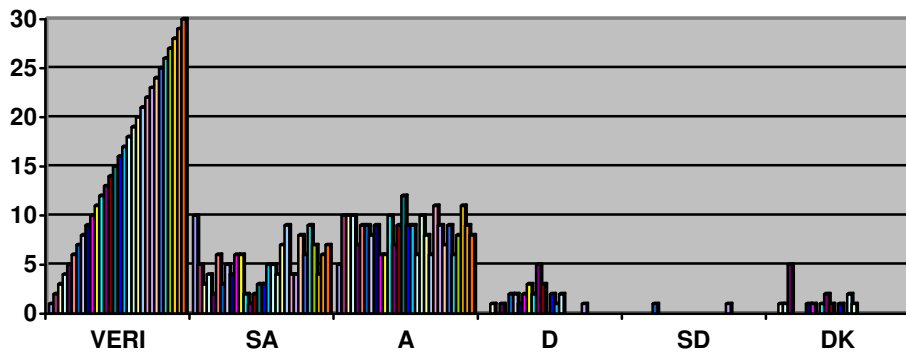
Table 4

Figure 3: Phase 1 (I)
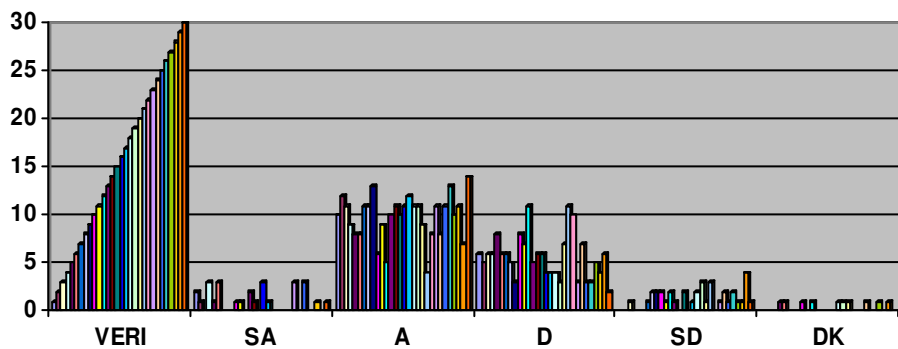
Figure 4: Phase 3 (D)
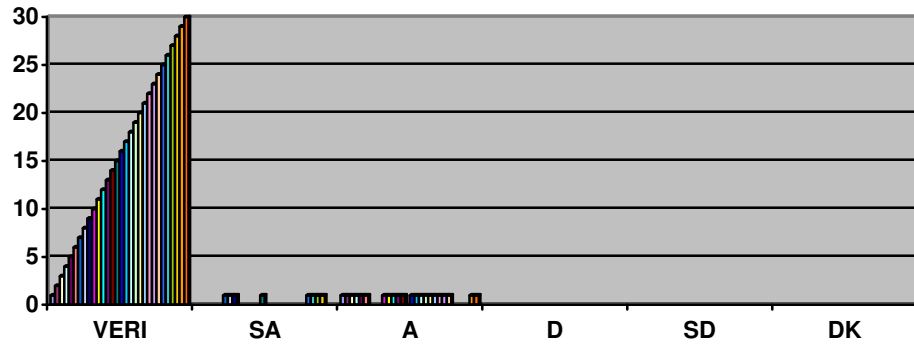
Example – Operations Manager

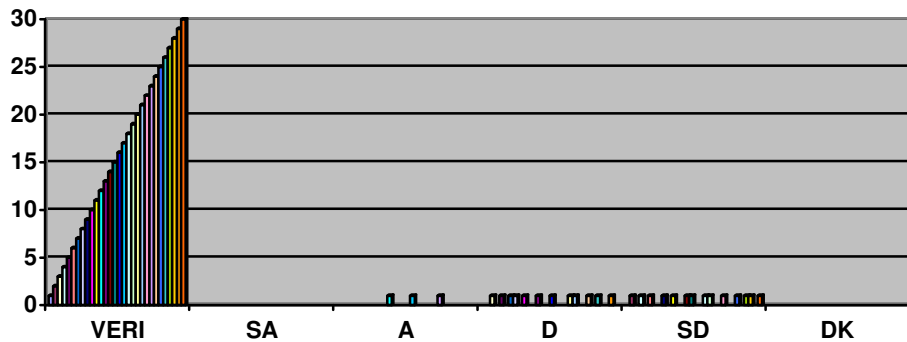*Figure 5 – Phase 1 (I)*

Example – Operations Manager

Figure 6: Phase 3 (D)

VOPI – Virtual Operations Preparedness Instrument

Tables 5 and 6 provide extracts of the pre-interview audit (Phase 1) and the post-interview questionnaire (Phase 3) detailing the overarching questions asked and one of the six dimensions for the VOPI; Efficiency. The charts; Figures 7 and 8 provide the overall results for Phase 1 and Phase 3 of the VOPI while Figures 9 and 10 provide an example of the responses of one group manager. Again the first column of each chart denotes the number of questions asked.

<div style="border:1px solid">

PHASE 1:
VIRTUAL OPERATIONS PREPAREDNESS INSTRUMENT PRE-INTERVIEW AUDIT

</div>

If a group under my control were to work effectively with <u>other internal groups</u> using Information Communication Technologies it would be important that:

KEY *(Circle the response below which is closest to your opinion)*

SA = Strongly Agree   **A** = Agree   **D** = Disagree   **SD** = Strongly Disagree   **DK** = Don't Know

Efficiency

I understand my groups value creation strategies	SA	A	D	SD	DK
Efficiency strategies are effective	SA	A	D	SD	DK
My group operates effectively and efficiently	SA	A	D	SD	DK
Knowledge is shared openly and effectively	SA	A	D	SD	DK
Processes are in place that aid efficiency	SA	A	D	SD	DK

Table 5

<div style="border:1px solid">

PHASE 3:
VIRTUAL OPERATIONS PREPAREDNESS INSTRUMENT
POST INTERVIEW QUESTIONNAIRE

</div>

How effectively does your group work with <u>other internal groups</u> using Information Communication Technologies under the following headings?

KEY *(Circle the response below which is closest to your opinion)*

SA = Strongly Agree   **A** = Agree   **D** = Disagree   **SD** = Strongly Disagree   **DK** = Don't Know

Efficiency – Competence, Effectiveness

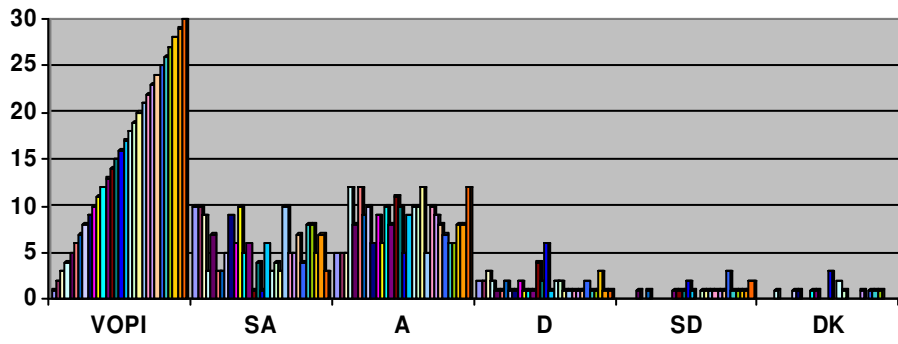|					
11. Efficiency is recognized and rewarded	SA	A	D	SD	DK
12. Efficiency strategies are effective	SA	A	D	SD	DK
13. My group operates efficiently and effectively	SA	A	D	SD	DK
14. Knowledge is shared openly and efficiently	SA	A	D	SD	DK
15. Processes are in place that aid efficiency	SA	A	D	SD	DK

Table 6

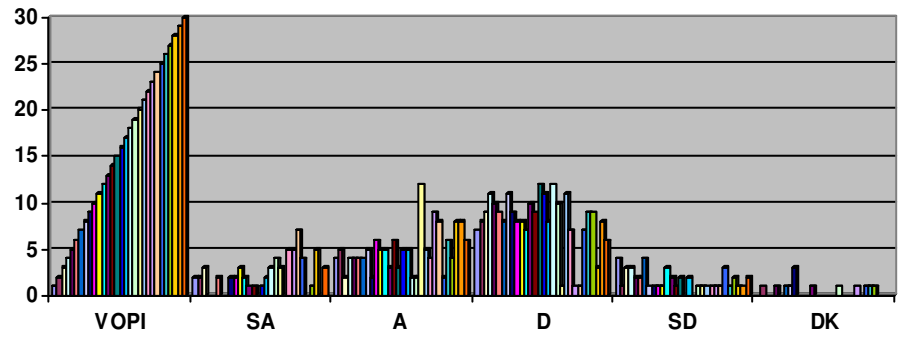*Figure 7: Phase 1 (I)*

Figure 8: Phase 3 (D)
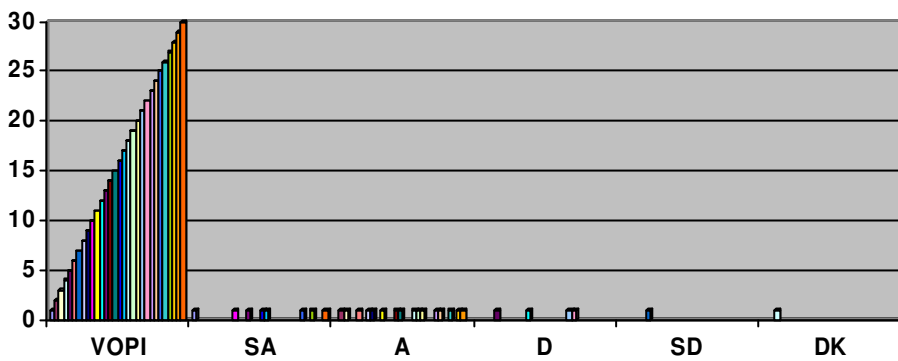
Example – Finance Manager

Figure 9: Phase 1 (I)
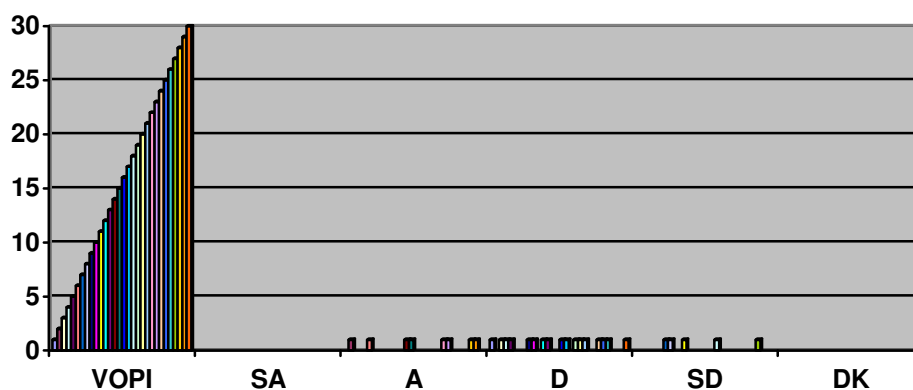
Example – Finance Manager

Figure 10: Phase 3 (D)

Observations

The tables for both instruments provide an example of the changes that were made between Phase 1 and Phase 3. In Phase 1 the overarching question focussed on how important the dimensions were to the case study organisation. In Phase 3 the question focussed on whether or not the organisation felt they were doing the things they felt were important. Also the headings and dimensions changed in Phase 3 i.e. definitions were added to the headings and a number of questions were changed to reflect the feedback from participants. The charts for both instruments detail the number of questions posed and whether or not participants strongly agreed, agreed, disagreed, strongly disagreed or did not know.

The results in Phase 1 support the authors assertion that the 17 group managers feel the instruments are important, as there is a strong concentration in responses in the strongly agree and agree columns. In Phase 3 the results indicate that there are fewer consensuses on whether the participants feel that the organisation is actually doing the things it regards as important, as there is a stronger concentration in responses in strongly disagree and disagree columns.

Outcomes

Even at this early stage of the data analysis of the case study, two significant outcomes have been achieved. The Phase 1 charts demonstrate that in terms of importance the case study organisation agrees that the dimensions created are 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 charts demonstrate that the group managers feel that there are number of areas that need improvement.

The examples of individual Phase 1 and Phase 3 are also enlightening in terms of which of the 30 questions were considered most important / doing. 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. Analysis of individual group manager's responses can help the organisation identify the issues that exist and the priority in which they should be addressed. The case study organisation has indicated that this data would be highly beneficial in terms of enabling an assessment of each group's degree of fit with the strategic direction of the organisation.

Conclusion

The problem that this paper seeks to solve is removing the uncertainty that persists in defining what a virtual organisation is now and should be, in the future. The VERI and VOPI have the potential to provide ICT managers with a means to identify gaps in organisational thinking both at an external and internal level.

The authors are developing instruments to differentiate between what constitutes external readiness to collaborate and internal preparedness to operate virtually. Just because an organisation considers itself prepared internally to operate virtually does not mean it is ready to collaborate externally. The opposite also applies, just because an organisation considers itself ready to collaborate externally does not mean it is prepared internally to operate more virtually. The thoughts expressed by Boudreau et al (1998) are still valid today; designing effective organisations in 2006 depends more than ever on the effective deployment of advanced information technologies because globalisation requires employees and business partners to be geographically and temporarily distant from one another. Deploying information technologies within a virtual organisation is an obvious choice for overcoming spatial and temporal boundaries (Boudreau et al., 1998).

Ongoing research will include applying the instruments using the same methodology in seven additional secondary case studies. The reason for this is to further substantiate the value of the instruments and to test whether or not the instruments have the potential to become templates for other ICT organisations in identifying their degree of external virtual readiness and internal virtual preparedness, in developing globally competitive packaged solutions.

Given the significance of the initial results from the primary case study organisation, it is reasonable to expect that the VERI and the VOPI would produce vastly different results depending on the organisation they were applied to. The authors anticipate that the results of the seven secondary case studies will validate the potential of these instruments to greatly assist a range of ICT enabled organisations in developing their virtual strategy.

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APPENDIX 1

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