

2013

## Creating business value through e-marketplace trading

Susan Standing  
*Edith Cowan University*

Follow this and additional works at: <https://ro.ecu.edu.au/theses>



Part of the [E-Commerce Commons](#)

---

### Recommended Citation

Standing, S. (2013). *Creating business value through e-marketplace trading*. <https://ro.ecu.edu.au/theses/584>

This Thesis is posted at Research Online.  
<https://ro.ecu.edu.au/theses/584>

# Edith Cowan University

## Copyright Warning

You may print or download ONE copy of this document for the purpose of your own research or study.

The University does not authorize you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site.

You are reminded of the following:

- Copyright owners are entitled to take legal action against persons who infringe their copyright.
- A reproduction of material that is protected by copyright may be a copyright infringement. Where the reproduction of such material is done without attribution of authorship, with false attribution of authorship or the authorship is treated in a derogatory manner, this may be a breach of the author's moral rights contained in Part IX of the Copyright Act 1968 (Cth).
- Courts have the power to impose a wide range of civil and criminal sanctions for infringement of copyright, infringement of moral rights and other offences under the Copyright Act 1968 (Cth). Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

# CREATING BUSINESS VALUE THROUGH E-MARKETPLACE TRADING

A Thesis Submitted in Fulfilment of the  
Requirement for the Award of  
Doctor of Philosophy

By

SUSAN STANDING

At the Faculty of Business & Law,  
Edith Cowan University  
Date of Submission: 26 March 2013

## USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

# ABSTRACT

Electronic marketplaces (e-marketplaces) have been researched over many years from the study of electronic data interchange (EDI) systems to the current internet based trading platforms. Early e-marketplaces connected a buyer and supplier using proprietary systems that established a market hierarchy. The buyer was responsible for the system, established the terms of trade and the electronically enabled supplier could connect to the system. These systems were costly to build, which limited their use, and only organisations with an integrated system could use them. The web based e-marketplaces opened up the possibility of connecting many buyers and suppliers and enabling electronic transactions. The e-marketplace offers opportunities for establishing trade relationships with many organisations across the world. Business to business (B2B) e-commerce is a significant part of the Australian economy and there are opportunities to take advantage of e-marketplace trading. One of the advantages of electronic trading is the ability of the technology to deliver transaction benefits; these can have a significant impact on organisations regardless of organisational size. However, despite the potential of the e-marketplace to deliver organisational benefits there have been limited studies which consider the strategic implementation of e-marketplace trading.

Organisational strategy and the implementation of strategic initiatives involve interactions between organisational structures and agents. The analytical dualism this represents complicates uncovering the fundamental causes of e-marketplace participation. Not only does the adoption of e-marketplace trading impact on the buyer and supplier organisations, it introduces the e-marketplace vendor organisation and the e-marketplace technology into the participation decision. The complexity of the interactions across organisational structures and between organisational agents and technology adoption can produce a diversity of outcomes.

The philosophical underpinning of critical realism for the study is supported by the lack of understanding as to why, and in what circumstances, organisations successfully participate in e-marketplace trading. The critical realist philosophy provides the opportunity to understand the interrelationships between context, organisational structures and agents and identify the causal mechanisms involved in producing various outcomes. It allows for the development of middle level theory as existing theories are examined to explain the perceived phenomena.

Large organisations operating in Western Australia are used as case studies to uncover the causal relationships between context, structures and agents that can produce successful, strategic implementation of e-marketplace participation. Existing literature in relation to e-marketplaces and IT adoption is used to develop the research questions and formulate the interview questions. The structured case methodology is used to analyse each case and relate the findings to possible explanatory theories. Context, mechanism and outcome patterns, identified in each case, are presented.

Building on economic market, institutional and network theories the research identifies organising vision theory and community discourse as explanations for organisational legitimation that can circumscribe the use of e-marketplace trading. Six types of community group that influence organisational adoption of e-marketplace technology are identified. The research suggests that the influence of these groups within the organisation, the fit with organisational culture and strategic objectives can prevent or instigate change. Further, the decision making process supported by the group (or group member) is more influential in the strategic adoption of the e-marketplace than the ability of the technology to deliver efficiency or transaction processing gains. This implies that technology adoption studies should include contextual and environmental issues and practitioners should examine how much their decision making is influenced by organisational and environmental features.

The thesis contributes to the discussion on organising vision theory, e-marketplace trading and business value creation. It demonstrates the application of the structured case study methodology to research that is underpinned by critical realism.

# DECLARATION

*I certify that this thesis does not, to the best of my knowledge and belief:*

- i. incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education;*
- ii. contain any material previously published or written by another person except where due reference is made in the text of this thesis; or*
- iii. contain any defamatory material*

Susan Standing  
26 March 2013

# ACKNOWLEDGMENTS

I would like to thank everyone for the help and encouragement that has been given to me over the duration of this project. Special thanks to my husband Craig, children Gary, Andrew, Oliver, Kyle, Hannah and my principal PhD supervisor Dr Denise Gengatharen.

My family has encouraged me to continue working on the thesis and my supervisors have helped and supported me with the academic research. Without a strong network of support it would have been more difficult to achieve completion of this work. I greatly appreciate all your efforts and your willingness to bear with me through my disillusionment phases! My husband has been a wonderful, understanding support and has an unfailing belief in my academic ability. My children have pushed me to complete the thesis and I know they are proud of me and this achievement.

The Australian Research Council funded work on this project and provided the impetus for me to begin the thesis. Thanks have to go to the ARC and chief investigators who involved me in their work and provided invaluable guidance and support.

Thanks also have to be given to the organisations and people who willingly gave their time to answer my questions and review the interview transcripts. I am sure I express the feelings of every researcher when I say that your generosity is invaluable and research is impossible without it.

I have made many friends amongst my peers at the university and would encourage anyone undertaking postgraduate study to work at the university. The laughter and support from fellow students and faculty staff is a wonderful tonic, so thank you all for sharing those times.

# TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION .....	1
1.1 THE NEED FOR AN ANALYSIS OF E-MARKETPLACE TRADING .....	1
1.2 WHAT IS AN E-MARKETPLACE? .....	6
1.2.1 E-marketplace structures .....	7
1.3 Significance of the Research .....	9
1.4 A Gap in E-marketplace Research .....	10
1.5 Main Contributions of the Thesis .....	13
1.6 Explanation and Structure of the Thesis .....	15
CHAPTER TWO: ORGANISATIONAL AND THEORETICAL PERSPECTIVES ON E-MARKETPLACE TRADING .....	17
2.1 INTRODUCTION .....	17
2.2 The Business Value of ICT and Organisational Strategy .....	20
2.2.1 Resource Centred View of E-Marketplace Trading .....	21
2.2.2 A Contingency View of E-marketplace Trading .....	22
2.2.3 External Constraints and Competitive Strategy .....	23
2.2.4 Information Technology and Information Systems .....	24
2.2.5 A Strategic or Tactical Decision? .....	25
2.2.6 Procurement and E-marketplace Integration .....	27
2.3 The Electronic Markets versus Hierarchies Debate .....	28
2.4 Extent of E-marketplace Participation .....	33
2.4.1 Institutional Theory .....	34
2.4.2 Diffusion of Innovations .....	35
2.5 Business Value and Firm Performance .....	37
2.5.1 Relational Considerations .....	40
2.6 Globalisation .....	43
2.7 SUMMARY .....	43
2.7.1 Research Questions Identified from the Literature Review .....	46
CHAPTER THREE: RESEARCH DESIGN .....	49

3.1	Introduction .....	49
3.2	Overview of Research Design.....	49
3.3	METHODOLOGY.....	51
3.3.1	Objectives of the Research.....	51
3.3.2	Critical Realism - Beyond the Positivist and Interpretivist Case Study.....	51
3.3.3	Data Collection and Analysis Methods.....	59
3.4	RESEARCH QUESTIONS.....	62
3.5	DATA GATHERING .....	66
3.5.1	Selection of Cases .....	67
3.5.2	Interview Protocol.....	71
3.6	DATA ANALYSIS .....	72
3.6.1	Morphogenetic Approach: Technology, Organisational Structures and Agency .....	80
3.7	LIMITATIONS .....	85
3.8	ETHICAL CONSIDERATIONS .....	87
3.9	SUMMARY .....	88
CHAPTER FOUR: CASE STUDY ORGANISATIONS.....		89
4.1	Case Study 1: RevNet .....	89
4.1.2	Respondents .....	90
4.1.3	Morphogenetic Approach.....	91
4.1.4	Business Value: Strategy, Participation, Firm Performance.....	93
4.1.5	Political Influences.....	102
4.1.6	Summary of Case Data .....	103
4.1.7	Practical and Theoretical Implications.....	104
4.2	Case Study 2: EM Consortium.....	106
4.2.1	Business Value and the Business Value Creation Mechanism .....	108
4.2.2	Strategy .....	111
4.2.3	E-Marketplace Participation: Functionality and Social Implications .....	112
4.2.4	Summary of Case Data .....	117
4.2.5	Theoretical Implications.....	120
4.3	Case Study 3: International Mining .....	123
4.3.1	Business Value .....	126
4.3.2	Strategy .....	128

4.3.3	E-Marketplace Participation: Functionality and Social Implications .....	129
4.3.4	Summary of Case Three Data .....	133
4.3.5	Implications for Theory .....	137
4.4	Case Study 4: Energy Pool.....	140
4.4.1	Business Value .....	141
4.4.2	Strategy .....	143
4.4.3	Firm Performance.....	144
4.4.4	E-Marketplace Participation: Functionality and Social Implications .....	146
4.4.5	Summary of Case Data .....	148
4.4.5	Implications for Theory .....	151
4.5	Case Study 5: Department of Treasury and Finance.....	153
4.5.1	Political Influence and Business Value.....	155
4.5.2	Strategy .....	156
4.5.3	E-Marketplace Participation: Functionality and Social Implications .....	157
4.5.4	State Procurement Department Performance .....	162
4.5.5	Case Data Summary .....	162
4.5.5	Theoretical implications.....	164
4.6	Case Study 6: Smartbuy .....	166
4.6.1	Political Influence and Business Value.....	168
4.6.2	Strategy .....	169
4.6.3	Relationships .....	170
4.6.4	Functionality .....	172
4.6.5	Firm Performance.....	174
4.6.6	Case Data Summary .....	174
4.6.7	Implications for Theory .....	178
4.7	Case Study 7: Grand Metals.....	180
4.7.1	Business Value and Organisational Strategy .....	182
4.7.2	Firm Performance.....	182
4.7.3	Functionality of the E-marketplace.....	185
4.7.4	Relationships .....	187
4.7.5	Case Data Summary .....	188
4.7.6	Implications for Theory .....	191
CHAPTER FIVE: DISCUSSION .....		192

5.1 INTRODUCTION .....	192
5.2 RESEARCH QUESTIONS REVISITED .....	192
5.2.1 Research Question 1: Is E-marketplace Trading Part of an Organisational Strategy? Why or Why Not? .....	194
5.2.2 Research Question 2: Where does the e-marketplace fit within the market v hierarchy theoretical frameworks? .....	198
5.2.3 Research Question 3: What determines the extent or level of participation in trading via an e-marketplace? .....	202
5.3 IMPLICATIONS FOR THEORY.....	209
5.3.1 Organising Vision Theory .....	210
5.3.2 Organising Vision Theory and E-Marketplaces.....	214
5.3.3 Methodological Implications .....	221
5.3.4 Recommendations for Practice .....	228
5.3.5 Limitations and Future Research .....	229
5.3.6 Summary .....	229
CHAPTER 6: CONCLUSION.....	231
REFERENCES.....	235

## LIST OF TABLES

Table 2.1: A comparison of strategic and tactical initiatives .....	26
Table 2.2: Benefits, costs and risks of e-auction participation (Chen et al., 2005; Hartley et al., 2004; Jap, 2002) .....	38
Table 2.3: Theories and strategic importance .....	44
Table 3.1: Intensive and extensive research: a summary (Sayer, 2010, p. 163) .....	56
Table 3.2: Research questions and concepts for development of the interview questions .....	63
Table 3.4: E-marketplace providers .....	69
Table 3.5: Organisational buyer and e-marketplace trading .....	69
Table 4.1: Critical realist coding of case data themes for case one .....	93
Table 4.2: Possible morphogenesis/morphostasis from reverse auction participation ...	95
Table 4.3: Relational structures and reverse auction participation .....	99
Table 4.4: Risk, relationships and analysis of e-marketplace participation .....	101
Table 4.5: Context, mechanism and outcome patterns identified from case one.....	103
Table 4.6: Themes and CR concepts identified from case two.....	107
Table 4.7: Context, mechanism and outcome patterns identified from case two data..	118
Table 4.8: The business value object and possible morphogenesis/morphostasis caused through economic, political and market power.....	122
Table 4.9: Themes and CR concepts applicable to case three .....	124
Table 4.10: Market conditions and organisational change.....	132
Table 4.11: Context, mechanism, outcome patterns identified in case three.....	134
Table 4.12: Case four themes identified and applicable CR concepts .....	140
Table 4.13: Context, mechanism, outcome patterns identified in case four .....	149
Table 4.14: Themes and CR concepts identified from case five data.....	154
Table 4.15: Context, mechanism, outcome patterns abstracted from case five .....	163
Table 4.16: Possible morphogenesis and morphostasis associated with Government policy and e-procurement strategy .....	165
Table 4.17: Themes and CR concepts identified from case six .....	166
Table 4.18: Context, mechanism, outcome patterns identified from case six.....	175
Table 4.19: Themes and CR concepts identified in case seven .....	180
Table 4.20: Context, mechanism, outcome patterns identified in case seven.....	188

Table 3.2 (reproduced): Research questions and concepts for development of the interview questions.....	192
Table 5.1: Fashion discourses and community groups involved in e-marketplace discourse, adapted from Baskerville and Myers (2009) and Abrahamson and Fairchild (1999).....	218

## **LIST OF FIGURES**

Figure 1.1: A conceptual classification of the electronic marketplace literature (S. Standing, Standing, & Love, 2010).....	11
Figure 2.1: Conceptual model of existing literature: possible relations between strategy, e-marketplace participation and firm performance.....	19
Figure 2.2: Necessary relations for e-marketplace trading under efficient market hypothesis.....	30
Figure 3.1: Overview of research design .....	50
Figure 3.2: Research method (adapted from Danermark et al. 2002, Carroll & Swatman, 2000) .....	61
Figure 3.3: Primary research themes and relations for e-marketplace participation.....	75
Figure 3.4: Combined model of transformational social action and the morphogenetic/static cycle (Archer, 1995, p. 158), causal explanation (Sayer, 1992) and e-marketplace trading.....	84
Figure 5.1: How organisational structures and organising visions shape community discourse and e-marketplace participation .....	226

# CHAPTER ONE: INTRODUCTION

## **1.1 THE NEED FOR AN ANALYSIS OF E-MARKETPLACE TRADING**

Information communication technology (ICT) can be used as a strategic enabler of efficient operations within an organisation. As a result of the economic downturn in 2008 organisations were forced to focus on cost cutting measures and increased efficiencies. Procurement is an area within organisations where possible cost reductions and efficiencies can be generated from the use of ICT. The evolution of procurement from a largely administrative, paper based system to one that incorporates the electronic integration of procurement information provides the opportunity to examine the relationships between strategy, firm performance and the use of ICT. Electronic marketplaces (e-marketplaces) provide the opportunity for organisations to leverage organisational ICT in procurement activities and supply chain management.

The advent of Internet technologies and access to information has led to the redefining of market structures and business processes (Grover, Ramanlal, & Segars, 1999; Malone, Yates, & Benjamin, 1987; C. Standing, Love, Stockdale, & Gengatharen, 2006). However, within this developing environment, the strategic, tactical and operational benefits of e-marketplace participation are difficult to define.

Malone et al. (1987) proposed an increasing shift towards electronic markets (e-markets) over hierarchies because of their perceived superior efficiency. The terms electronic market and e-marketplace are interchangeable in some literature but in this research an e-marketplace is an Internet based system that provides an exchange mechanism where buyers and sellers can conduct electronic business transactions. E-marketplaces have been a topic of research for over two decades and it is widely recognised that they offer advantages of effective trading and efficiency for participating organisations. In particular, e-marketplaces should reduce the transaction costs related to buying and selling goods and services (Bakos, 1997). A range of benefits from e-market participation have been proposed including reduced search costs

(Bakos, 1997), more product information and relational benefits such as less dependence on a small number of suppliers (Bailey & Bakos, 1997; Bakos, 1991; Dai & Kauffman, 2006).

There have been limited empirical studies of how organisations are using e-marketplaces to inform and enrich their business strategies. Competing in global economies and procuring goods and services in the most time efficient and effective ways are areas where the adoption and use of an e-marketplace can have a significant impact on the creation of business value for the organisation. Knowledge on how e-marketplaces work and the development of the underlying market structures is still evolving. Research suggests that business to business (B2B) electronic markets (e-markets) often have different characteristics to business to consumer (B2C) e-markets and are typically more complex in nature (Driedonks, Gregor, Wassenaar, & van Heck, 2005; Glassberg & Merhout, 2007; Oh & Pinsonneault, 2007; Soh, Markus, & Goh, 2006) highlighting that further research is required, especially on B2B e-markets.

Although organisations may have electronic commerce (e-commerce) strategies and initiatives in place it is not clear if the use of e-marketplaces is part of the organisational strategy, if participation is on an ad hoc basis, or if it has been considered at all. The exploratory nature of this research will enable the discovery of why e-marketplace trading is, or is not, being adopted in an organisation and if any strategies for participation are in place.

The main aim of this research is to investigate the linkages between business value outcomes from B2B e-marketplace participation and organisational strategy. The alignment between strategy and the level of involvement in an e-marketplace will be investigated to discover the causes of effective participation, the mechanisms and structures that support or constrain such participation and evolve because of it, and how enhanced business value can be created through the procurement mechanism. The research will specifically address how organisations can inform and enrich their strategic plans and increase their competitiveness through the effective use of an e-marketplace. To discover if and how e-marketplace participation impacts at a broader organisational level the integration of the e-marketplace with other IS solutions, such as

supply chain management and enterprise resource planning (ERP) will also be considered. The research will demonstrate how firm performance measurement/metrics used for e-marketplace evaluation can influence business processes and an organisation's ability to participate within an e-marketplace.

Business-to-business (B2B) e-commerce is a significant part of the Australian economy and there are opportunities for companies to take advantage of e-marketplace trading. The developing world markets, brought about by e-commerce and the increased ability to trade globally facilitated by e-marketplaces, have created significant opportunities for Australian organisations. E-marketplaces cover a wide range of industries and offer various services to meet the needs of participants. The success of global e-market platforms such as EM Consortium (mining, metals and minerals), IntercontinentalExchange (futures markets, derivatives and over the counter commodity contracts), Hubwoo (source-to-pay electronic solutions and supplier network management) and ShipServ (shipping supplies and services) demonstrates the effectiveness of their e-marketplace business models: EM Consortium supports over 60,000 suppliers and 1,500 buyers with USD\$20 billion in transactions (Emarketservices, 2012); IntercontinentalExchange supports companies in managing financial risk and earned \$1US billion revenue in 2012 (Loeffler, 2012); Hubwoo membership includes 150 buying corporations and over 13,000 connected suppliers in 44 countries worldwide processing over 2.4 million purchase orders producing €25.4 million in revenue (Hubwoo, 2012); ShipServ has more than 40,000 listed suppliers and represents owners of over 7300 ships and rigs, conducting more than 20 million transactions with a trading volume of \$2.3 billion (ShipServ, 2012). The use of e-marketplace trading is widespread in North America and Europe in both the private and public sector. In Australia, the state governments of New South Wales, Victoria, Queensland and Western Australia have adopted e-marketplaces to some extent for procurement and tendering purposes. However, the adoption rate in the private sector, excluding the mining industry, is not as extensive and there is a lack of explanation in the literature for the slow uptake rate.

B2B e-commerce involves a significant investment of capital and resources in information technology (IT). The investment in IT can be leveraged to benefit the firm

through use in e-procurement and e-marketplace trading. The majority of Australian firms realise the strategic importance of e-procurement (NeRPA, 2006) and recognise their limitations in terms of evaluation practices (C. Standing & Lin, 2007). Many firms that engage in e-marketplace trading struggle to develop effective participation strategies (Soh et al., 2006) and fail to identify the benefits and costs associated with participation (NeRPA, 2006; C. Standing & Lin, 2007). However, there is little evidence to explain why organisations do or do not include e-marketplace trading in their procurement initiatives or how participation is evaluated. It seems clear that in order to realise gains from e-marketplace trading, strategies for implementation, allocation of resources, participation and use need to be carefully considered but the underlying causes for participation and success or failure thereof remain unclear.

Procurement is a major function within most firms and consumes a large proportion of business resources. One area of business strategy research focusing on IT and the information system (IS) considers supply chain management (SCM) and IS integration. Closer integration between the buyer and the supplier through the use of IT can reduce costs and result in a more efficient supply chain. A dyadic market has a fixed, usually long-term relationship between one buyer, one supplier or one distributor. This market relationship has been extended through the virtual integration of organisational supply chains. In contrast, an e-market structure is a dynamic market which provides participants with the opportunity to contract with many buyers and suppliers. E-marketplaces have the potential to add value through integration in the supply chain whilst expanding the number of potential suppliers at limited cost (Christiaanse, 2005). This raises the question of whether e-marketplaces are more efficient for procurement than fixed supply chains. Virtual integration of the supply chain has been extensively researched but the adoption and assimilation of e-marketplace procurement in the supply chain has not received the same attention (Ravichandran, Pant, & Chatterjee, 2007).

Glassberg and Merhout (2007) call for further research into the type of market structures that are evolving as a result of using the e-marketplace. The organisational focus of this research and the use of market theories underpinning e-marketplace

adoption will address macro level issues of organisational context, strategy and business value creation whilst adding to knowledge on market theories.

Economic market theories promote value creation through transactional processes. However, the e-marketplace represents more than a mechanism for transaction processing. The concept of service dominant (SD) logic represents a phenomenological or social practice view of value creation (Holttinen, 2010) which can be applied to an e-marketplace. SD logic proposes that firms and vendors share resources through networks, where value is co-created through use rather than from the goods moving through the network (Vargo & Lusch, 2008). As defined by Vargo and Lusch (2008) service reflects the process of using the firm's resources for the benefit of another entity. This study will identify the transactional value created from the use of the e-marketplace technology and the associated service value. It will investigate how, why and in what circumstances organisational and inter-organisational relationships can change as a result of e-marketplace participation.

Organisational context is a significant influence on the adoption or non-adoption of a technology but the underlying causes and relationships that result in successful (or unsuccessful) implementation and participation have not been fully investigated. Organisational context is considered for each of the organisations studied in the attempt to uncover the underlying relationships between e-marketplace participation (or non-participation), the outcomes from participation (or non-participation), and identify if changes in e-marketplace and organisational relationships occur. The results from this research will enable business organisations to develop their strategic planning, decision making, design and management of business processes, and increase their competitiveness in national and international markets with regard to procurement. Additionally it can help e-marketplace providers develop their e-marketplace to address adoption and participation issues and maximise co-created value.

This research is partly funded by an Australian Research Council (ARC) grant and is required to deliver certain outcomes as set out in the grant proposal. Requirements involve the identification of strategic implications and the management of e-marketplace adoption and participation. This will contribute to e-markets theory

development as well as being of practical use to managers for evaluating e-marketplace decisions. Another area of these research requirements is the identification of the performance measures or metrics related to the use and evaluation of an e-marketplace. The identification of these measures provides a greater understanding of how and why e-marketplace participation is assessed. The measures provide an empirical mechanism for validating the decisions taken regarding e-marketplace participation: and can illustrate if there is a specific relationship with the type of participation decision taken i.e. whether the decision was strategic, tactical or operational. In addition the identification of the measures used to validate e-marketplace participation can uncover opportunities for related organisational change.

## **1.2 WHAT IS AN E-MARKETPLACE?**

An e-marketplace represents social structures, an economic market concept, and the application of technology. Research into e-marketplace trading has been divided between the social phenomena of the e-marketplace and the enabling technology. The e-marketplace provides opportunities for conducting business and executing transactions via electronic channels, usually on an Internet based platform. E-marketplaces are sometimes referred to as electronic markets, electronic exchanges, electronic auctions, e-hubs or catalogue aggregators (Kaplan & Sawhey, 2000). In the broadest sense an e-marketplace is an inter-organisational information system in which buyers and sellers in a market communicate information on prices and products and are able to complete transactions via electronic communication channels (Bakos, 1991). An e-marketplace should enable potential trading partners to be identified and a transaction executed (Choudhury, Hartzel, & Konsynski, 1998). Further segmentation of the e-marketplace in the literature concerns governance structure, market focus (Premkumar, 2003), products traded and trading mechanism used (Chelariu & Sangtani, 2009; Kaplan & Sawhey, 2000). As well as the social phenomena of the e-marketplace, structure, ownership model, trading mechanism and products traded through an e-marketplace are also important considerations when analysing the motivations of the e-marketplace owner and the participants.

### **1.2.1 E-marketplace structures**

E-marketplaces exist in many forms and support many different business needs: they can serve vertical or horizontal markets, be owned by buyers, sellers or independent parties, allow fixed, flexible or combination pricing options, be open to many or few participants. There are no definitive typologies for the various types of e-marketplaces. However, e-marketplaces have been established to serve three main forms of trading: business to business (B2B), business to consumer (B2C) and consumer to consumer (C2C). Some e-marketplaces such as eBay combine C2C and B2C trading. The focus of this research is the B2B area of e-marketplaces where procurement occurs between organisations through an Internet platform.

There are four ownership models that can be applied to e-marketplaces:

- Consortia – a group of companies in an industry run and own the e-marketplace and can buy and sell to each other or other companies.
- Private – a single organisation owns and runs its own e-marketplace. It can be a sell side e-marketplace, where the organisation sells products to qualified buyers, or a buy side e-marketplace where the buyer invites supplier participation.
- Public or independent – an independent organisation owns and runs the e-marketplace and participants have no ownership of the e-marketplace.
- Community – a community group or government organisation owns and runs the e-marketplace to support the community.

The various structures of e-marketplaces and the strategies employed by each of these ownership models should ideally reflect the requirements of the stakeholders. The consortia e-marketplace will have a significant influence in the industry if it consists of leading industry organisations who are willing to participate in the e-marketplace (Grieger, 2004). They can dominate the market and push suppliers into trading via the e-marketplace. A private e-marketplace enforces a hierarchy and could form dyadic relationships between the buyer and supplier similar to those in a traditional market structure. The owner chooses which suppliers or buyers can participate in the e-marketplace and has the ability to award or withhold the contract. A private e-marketplace ownership model limits the options for the buyer or seller to build their network beyond known buyers and suppliers. Public e-marketplaces allow many buyers

and suppliers to participate and it is closely aligned with the economic concept of an efficient market. A public e-marketplace represents a marketing channel and revenue generation is a motivation for the e-marketplace provider. The more participants there are in the e-marketplace the more potential exists for the provider to generate revenue. Buyers and suppliers can identify trading partners and build or expand their networks through the e-marketplace. However, there is a perception that these types of e-marketplaces might promote their own and the buyers' interests over those of the vendors (Zhao, Xia, Shaw, & Subramaniam, 2009). Some e-marketplace providers who fit into the public e-marketplace ownership profile provide a private e-marketplace for their customer. The overlap in e-marketplace ownership structures and stakeholder value creation creates complex networks of relationships (Zhao et al., 2009). It is important to distinguish the value creating propositions of the e-marketplace from the perspectives of e-marketplace owner, buyer and seller and identify possible conflicts.

Chelariu and Sangtani (2009) consider that there are three “archetypal” e-marketplace structures: an independent exchange, consortia and a private exchange. In their theoretical paper they distinguish the functional attributes of each structure to illustrate how they embody differing levels of operational integration. They also propose that each structure embodies different inter-firm relationships and governance processes based on organisational trust and inter-firm collaboration. Whilst this goes some way towards understanding e-marketplace structures, operational integration and governance issues, it does not consider why organisations have varying levels of success with e-marketplace trading. E-marketplace use, or non-use, is created through a network of causal relationships and, in order to identify and separate the underlying causes of e-marketplace participation, further investigation needs to be undertaken into the characteristics of organisations and their use (non-use) of the e-marketplace.

The B2B E-marketplaces represented in this thesis have different e-marketplace ownership and trading structures: an e-marketplace owned by a consortium, which serves the mining, resources industries and related industries, and acts as a public e-marketplace open to all interested organisations; an independently owned e-marketplace which is a public e-marketplace, open to registration from organisations, which also provides a private e-marketplace for a client specifically to run electronic auctions, and

participants are restricted to those selected by the client; state government owned e-marketplaces which serve the procurement needs of state government and mainly supports local suppliers.

### **1.3 SIGNIFICANCE OF THE RESEARCH**

The exploitation of Internet-based systems such as e-marketplaces for strategic gain is still developing, with the associated benefits, costs, and risks, structures and metrics remaining relatively unexplored ("The European e-business report 2008. The impact of ICT and e-business on firms, sectors and the economy," 2008). Organisational gain realised from production is limited because the value of the resources input needs to produce an equal or greater value in output. Sustainable organisational success depends on the ability of the organisation to deliver value to the customer without using additional resources (Brynjolfsson & Hitt, 1998). The strategic use of ICT resources and capabilities within the organisation can produce organisational change and create additional value (Bhatt & Grover, 2005). The economic downturn has led to productivity losses and as a result the identification and understanding of the socio-technical factors associated with e-marketplaces are slowly beginning to emerge.

The developing world markets, brought about by e-commerce and the increased ability to trade globally facilitated by e-markets, have created significant opportunities for Australian organisations. The success of global e-marketplace platforms such as EM Consortium, Chemconnect and cc-hubwoo demonstrates the effectiveness of their business models. Emarket Services ([www.emarketservices.com](http://www.emarketservices.com)), a web site dedicated to providing information on e-marketplaces, lists over 700 significant e-marketplaces across most business sectors, many of which are global in scope and open to Australian companies. To take advantage of these trading opportunities companies must be informed of how to effectively select and manage e-marketplace participation in order to derive the full benefits of participation. Although access to global markets has increased the potential for organisations there are added pressures from competing firms also having the ability to trade in each region (Bandyopadhyay, Barron, & Chaturvedi, 2005). Global trading is not simply an extension of regional operations and for the

sustained realisation of benefits there are many influences that need consideration (C. Standing & Lin, 2007; C. Standing, Stockdale, & Love, 2007).

As organisations strive to improve their efficiency and effectiveness, solutions such as e-marketplaces are being viewed as primary enablers for change throughout many business sectors. Increasingly, however, organisations are appreciating that participation within a B2B trading community requires considerable management, not only technically, but also from a human and organisational perspective. This research provides a framework that can be used to not only evaluate e-marketplace participation but a wide range of Internet applications. It can also be used to inform managers about the impact that new technology can have on business processes.

#### **1.4 A GAP IN E-MARKETPLACE RESEARCH**

E-marketplace literature can be classified into five main areas: market efficiency, e-marketplace systems, e-marketplace adoption, organisational issues related to e-marketplace adoption and use, and e-commerce studies which include an e-marketplace component (figure 1.1). All five areas are important and necessary for the development of electronic markets theory. Figure 1.1 highlights the main linkages between these five areas. Moving from left to right in the diagram the work conducted to date becomes more applied and has a greater empirical basis.

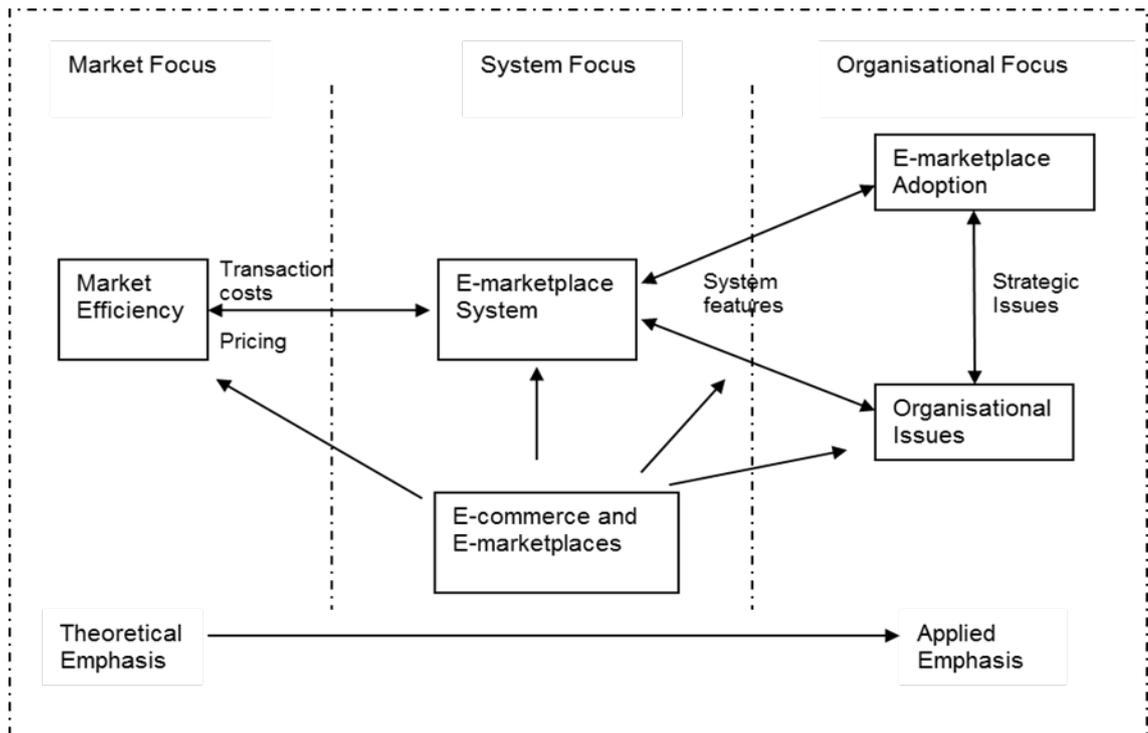


Figure 1.1: A conceptual classification of the electronic marketplace literature (S. Standing, Standing, & Love, 2010)

Although there have been a considerable number of articles published in leading journals on e-marketplaces there are still many unanswered questions and areas that lack clarity. Many articles have focused on auction mechanisms in relation to their efficiency and effectiveness. In comparison, relatively few articles have investigated the organisation implications of e-marketplace participation and the issues involved in adoption and implementation or continual success or failure of the initiative. In contrast to Wareham, Zheng and Straub's (2005) review of electronic commerce research, which found a large percentage of articles examining strategic and business issues, our study (S. Standing et al., 2010) found that relatively few researchers have examined the strategic implications and business value creating aspects of e-marketplace trading. As the adoption of e-marketplace trading can be a major organisational decision with many associated risks, such as the alienation of the incumbent suppliers and potentially unfilled or poorly filled orders, there is a need for more research on the organisational and business implications of e-marketplace trading. In other words, there should be less focus on the e-marketplace and more emphasis on the process of organising and managing e-marketplace participation to produce successful outcomes.

There is little explanation in the existing literature on why organisations do or do not use e-marketplaces and why their efforts are successful or unsuccessful. It is not clear if organisations take a strategic view of e-marketplace use or why some might whilst others do not. In order to discover the answers to these questions and investigate how and why e-marketplace participation occurs, critical realism is used as the philosophical underpinning and method of theorizing in this research. Critical realism overcomes the limitations of positivist and interpretive research where phenomena are viewed either as observable (positivist) or socially constructed (interpretive) (Orlikowski & Baroudi, 1991; Walsham, 1995) and combines these perspectives by presenting a stratified view of reality where events occur whether they are observed or not. It also acknowledges that objects have internal and external relationships that have causal powers (ways of acting) which may or may not produce regularities (Sayer, 1992, pp. 2-3). The objects of any study are theoretical concepts which have linkages with other objects and have both internal and external relationships. The relationships are not cause/effect relationships but are mechanisms which have causal powers and liabilities (Sayer, 1992). Activation of the mechanism can bring about change (morphogenesis) or no change (morphostasis) under certain conditions and can have either intended or unintended consequences (Archer, 1995). Contextual understanding plays a major role in uncovering the mechanisms involved in producing outcomes or events and changing social structures. Technology adoption, and change in the technology through use is also brought about by the activation of causal mechanisms in conjunction with the ability of humans to make decisions and change relational structures between objects. This study of e-marketplace participation combines both social structures and technology; by using a critical realist perspective it is possible to uncover interactions between social and technological objects and combine economic theories of the market and social theories. Case study research provides the opportunity to explore context, social and technological structures in and between the case organisation and the e-marketplace provider.

The e-marketplace (structure, costs, technology and functionalities) can bring about organisational change and will have an effect on organisational adoption decisions. Participation decisions can also affect how the e-marketplace owner responds by changing their organisational strategies or technology. How the e-marketplace impacts

on the organisation and the outcomes from e-marketplace adoption are not fully understood. To understand the underlying causes of e-marketplace adoption, failure and success it is necessary to consider the many relationships between organisational structures, decision making and evaluation mechanisms. Mechanisms refer to the way in which components interact to bring about change, and this can involve many different components or sets of components and one, many or a series of steps (Sayer, 1992). The exploration of these mechanisms provides insights into how technological and social structures interact and how they can influence each other. Technology has the power to bring about organisational change and possibly to constrain it. The use of e-marketplace technology and functional organisational change can be more predictable in the short term than longer term change. In the longer term it is the interplay between the socio-technical objects and their power to generate either positive or negative outcomes from e-marketplace participation that will determine the sustainability of the e-marketplace and e-marketplace participation.

This study aims to discover the causal mechanisms that exist between stakeholders in several e-marketplace scenarios and the outcomes from participation in the e-marketplace. The existence of e-marketplaces in an open system, where e-marketplaces and e-marketplace participation are evolving, complicates the discovery of underlying mechanisms and their causal powers. The ability of social actors to interpret change, develop knowledge and apply novel or surprising solutions to a situation results in objects undergoing continual historical and evolutionary change (Sayer, 1992, pp. 233-235). This is an aspect of the critical realist philosophy that acknowledges objects of a study do not exist in isolation and history and context play important roles in both generating and activating causal mechanisms.

## **1.5 MAIN CONTRIBUTIONS OF THE THESIS**

This thesis makes a contribution in three main areas:

1. It examines the factors that have been identified in current literature that impact on the strategic adoption of business-to-business e-marketplace trading. This

has highlighted gaps in the literature and the need to focus on the organisational impact of e-marketplace trading. In order to gain an understanding of the organisational goals in regards to e-marketplace participation it was necessary to categorise the e-marketplace participation decisions as strategic or tactical. The research has discovered that certain factors, previously linked with the adoption of e-marketplace trading, are unimportant in certain contexts, regardless of whether the decision is strategic or tactical.

2. The thesis explains the strengths of using a critical realist philosophy and adds to the debate on the merits of critical realism as a philosophy underpinning business research. The methodology developed to study the phenomenon illustrates how a critical realist study can be carried out. The thesis uses a critical realist perspective to show how an information technology contributes to creating business value. This is achieved by considering the economic perspectives of efficient markets and the changing social relationships enabled by the technology. The separation of the e-marketplace into a market structure and an IT artefact distinguishes between the social and the technological and illustrates causal mechanisms that exist between social and technological objects. Critical realism is presented as a particularly relevant philosophy where value creation occurs through technology implementation and costs and benefits are intangible, regarded as soft savings or produce process improvements rather than tangible or hard savings and costs where business value metrics can be employed.
3. The thesis explains how organising visions impact on the adoption and use of e-marketplaces and develops the theory of organising visions by examining their multi-faceted nature. The research highlights how industry leaders and vendors in a sector contribute to the development of an organising vision. It also explains how organising visions can create a rationale for non-use of a technology as opposed to a rationale for adoption. This is especially appropriate as it advances the concept of continual structural change that

occurs through social interactions which is underpinned by a critical realist philosophy and an examination of causality.

My research related to this thesis, which has been partly funded by an ARC grant awarded to Professor C. Standing and Professor P. Love in 2008, has been published in the following peer reviewed outlets:

Standing, S., Standing, C., & Love, P. E. (2008, 3-7 July). *A review of electronic marketplace research 1997- 2007*. Paper presented at the Pacific Asia Conference on Information Systems (PACIS). Leveraging ICT for resilient organizations and sustainable growth in the Asia pacific region, Suzhou, PRC.

Standing, C., & Standing, S. (2008, 26-29 November). *An analysis of e-marketplace literature*. Paper presented at the Management International Conference. Intercultural Dialogue and Management, Barcelona, Spain.

Standing, S., Standing, C., & Love, P. E. D. (2009). *A tactical role for reverse auctions: a market maker perspective*. Paper presented at the International Conference of Computing and Informatics 2009.

Standing, C., Sims, I., & Standing, S. (2009). The use and perception of e-marketplaces: an institutional perspective. In C. Standing (Ed.), *Electronic markets: benefits, costs and risks* (pp. 160-173). Basingstoke: Palgrave Macmillan.

Standing, C., & Standing, S. (2009). The relationship between electronic marketplace strategy and structure. In C. Standing (Ed.), *Electronic markets: benefits, costs and risks* (pp. 133-159). Basingstoke: Palgrave MacMillan.

Standing, S., Standing, C., & Love, P. E. D. (2010). A review of research on e-marketplaces 1997-2008. *Decision Support Systems*, 49(1), 41-51.

Standing, S., Standing, C., Love, P. E. D., & Gengatharen D. (2013). How organizing visions influence the adoption and use of reverse auctions. *Electronic Commerce Research* (in progress).

## **1.6 EXPLANATION AND STRUCTURE OF THE THESIS**

The following chapter provides an analysis of existing literature related to the organisational implications of e-marketplace adoption and trading. The literature analysis illustrates gaps in the literature, which leads to the identification and

presentation of the research questions. The research design chapter explains the rationale for taking a critical realist perspective in this study and explains how a multi case study approach can be used. The applicability of a structured case approach is discussed; extending the methodological scope of studies which take a critical realist perspective. The seven case studies are then presented individually in chapter four. The implications of each case are discussed to allow for the retroductive analysis needed when critical realism is the philosophical basis of a research study. This allows issues contextual issues to be explained, relevant theories to be identified and the case data to be recontextualised. The discussion chapter revisits the research questions and provides an analysis of organising vision theory and its relevance to the study. The implications of using a critical realist philosophy are discussed along with the implications for practice. A model of relationships involved in a strategic participation in e-marketplace trading identified from the case examples is presented. The final chapter contains the concluding remarks.

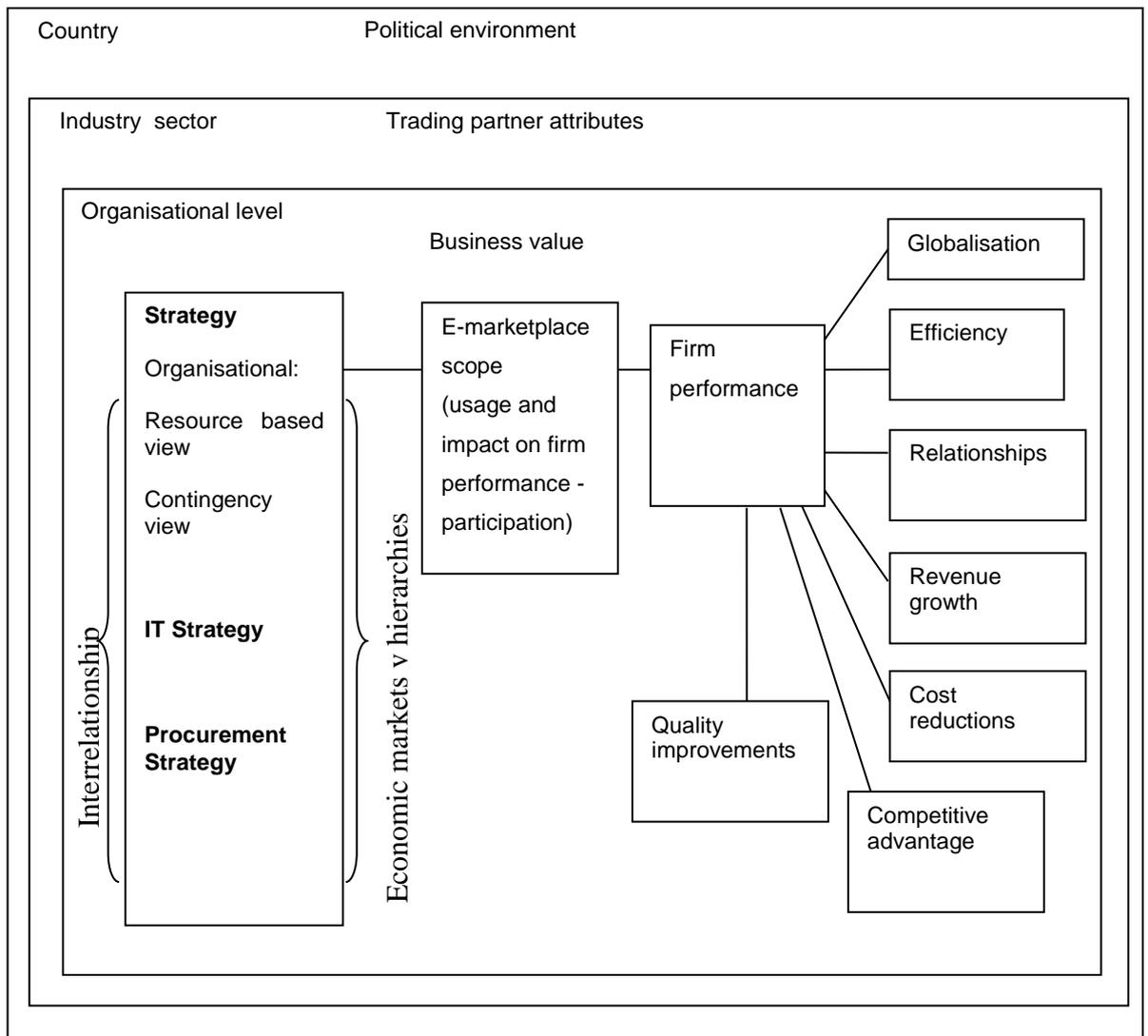
# CHAPTER TWO: ORGANISATIONAL AND THEORETICAL PERSPECTIVES ON E-MARKETPLACE TRADING

## 2.1 INTRODUCTION

The organisational implications of the adoption and use of e-marketplace trading are many and complex (Glassberg & Merhout, 2007). This is because there are many influences related to e-marketplace adoption and use that can potentially impact on participation. Value creation is the primary objective of corporate strategy (Barney, 1991; Porter, 1980; Wernerfelt, 1984) and there is a general lack of literature investigating the strategic implications of e-marketplace trading (S. Standing et al., 2010). Much of the research to date has focused on the structure of e-marketplaces and adoption issues but little attention has been given to the alignment of e-marketplace participation with firm performance and organisational strategy. Organisational commitment to a continual participation in e-marketplace trading requires a significant investment of resources and the delivery of sustainable benefits. Given that the adoption and use of e-marketplace trading is of organisational significance there is a need for research that examines the relationships between strategy, e-marketplace participation, firm performance and value creation. The literature in the area of e-marketplaces is divided between the social aspects of e-marketplace trading and the underlying e-marketplace technology. There is a lack of research examining the causal relationships between social structures, the enabling technology and sustained e-marketplace participation. Creating e-marketplace trading as a valuable organisational resource involves consideration of both the micro and macro environments, the underlying causal relationships between organisational structures, events and outcomes. E-marketplace participation and outcomes from the participation decisions will change as the underlying causal mechanisms are activated and context changes.

The purpose of this chapter is to explain the key areas and concepts that have been identified in the existing literature that can be associated with creating business value through e-marketplace use and highlight the gaps in the literature. Although seemingly broad in its purpose, the review retains a focus by concentrating on areas already established in the literature related to electronic markets and e-marketplaces. Business value is created through the operations of the firm. A significant amount of literature on business value creation is founded on efficient market assumptions, transaction cost economics, and the idea that the optimal allocation of organisational resources will produce enhanced business value (Barney, 1991; Newbert, 2007). Competitive advantage is believed to be produced when organisational resources are strategically leveraged to meet external pressures (Porter, 1980, 2008) or create innovation (Teece, 2009). The business value of information communication technology (ICT) is evidenced through the effective implementation of systems to meet organisational needs and is achieved by building information systems that use technology to store, search and extract information to support those needs (Melville, Kraemer, & Gurbaxani, 2004). Literature in these areas is particularly relevant to e-marketplace participation as it represents the organisational use of ICT in an electronic market space.

The integrative model of IT business value developed by Melville et al. (2004) has been adapted to reflect e-marketplace trading (figure 2.1) and the associated themes identified from the literature. Strategies, internal measures of firm performance and external factors, which effect e-marketplace participation, are consolidated in the model. It is primarily built upon the resource based view of the firm and micro economic assumptions but it sets e-marketplace use within the larger environment. It represents some possible relations between e-marketplace participation, strategy and business value. The areas identified in the literature provide the basis from which to consider the underlying relationships between strategy, e-marketplace participation, and business value creation. However, the e-marketplace represents an electronic trading network and participation consists of a complex web of interactions, which includes processes, IT resources and complementary organisational resources such as policies, rules, and workplace practices as well as organisational structure and culture. It is the complexity in the interactions that has to be explored to identify the underlying causes of e-marketplace participation and business value creation.



———— Possible relationship

Figure 2.1: Conceptual model of existing literature: possible relations between strategy, e-marketplace participation and firm performance

This chapter reviews e-marketplace literature and links the business value of ICT with the resource based view of the firm but aspects of business value creation through e-marketplace participation can be influenced by many social interactions that may not necessarily involve motivations based on economic market concepts. The following section considers the concepts in the existing literature, shown in figure 2.1, that are relevant to e-marketplace participation and presents the research questions. The chapter is organised in the following way: firstly, the business value of ICT, the role of strategy and its relationship with e-marketplace use is discussed. Two widely cited strategic approaches, Resource Based View (RBV) and Contingency View (CV), are used to

frame the use of information technology (and e-marketplaces) within organisations. Secondly the use of IT in procurement and issues related to e-marketplace adoption decisions are discussed. Next theories related to efficient market theory and IT diffusion are presented. Finally, the possible relationships between business value and firm performance in an e-marketplace context are discussed and the research questions are presented.

## **2.2 THE BUSINESS VALUE OF ICT AND ORGANISATIONAL STRATEGY**

Business value research and ICT have been studied in relation to productivity gains and IT investment (Brynjolfsson and Hitt, 1995, 1996) but later studies moved away from trying to attribute such a direct relationship between ICT and productivity and focus instead on how to leverage the use of ICT through business practices and changing organisational needs (Brynjolfsson and Hitt 1998). The most significant contributor to value added growth is through non-ICT capital where more organisations are using strategic e-business to implement organisational and process innovations (European Commission, 2008). Using non-ICT capital to gain additional value through strategic e-business requires leveraging additional resources, developing information systems and changing organisational processes. E-marketplace trading embodies such a change in procurement practices and could be developed to satisfy organisational requirements to deliver supply chain efficiencies. Although the use of e-marketplaces has the potential to be of strategic significance to an organisation (C. Standing et al., 2006) the causes of strategic participation remain relatively unexplored.

Two ways in which the strategic impact of information systems is viewed in the literature are the resource centred view (RCV) and the contingency based view (CBV) (Oh & Pinsonneault, 2007). The RCV emphasises the development of resources, such as skills, knowledge and physical resources, to provide a competitive advantage. The emphasis with the CBV is the degree of alignment of functional areas (and their resources) with organisational strategic objectives. The two approaches are complimentary: the development of information systems' resources needs to be aligned

with organisational objectives to deliver business value; and strategic alignment across functional areas requires resources to be aligned and developed to improve organisational performance. Firm performance can be used as evidence of strategic success or failure since strategies aim to increase the long term business value.

### **2.2.1 Resource Centred View of E-Marketplace Trading**

The resource centred view (RCV) of the firm is a prominent strategy used within the IS literature. It has an internal focus and posits that the resources controlled by the entity can be leveraged to gain a sustainable competitive advantage. There are characteristics of the resources that need to exist for this to occur, (valuable, rare, costly to imitate, and non-substitutable) and there is considerable debate in the literature as to the usefulness of the RCV (Armstrong & Shimizu, 2007; Kraaijenbrink, Spender, & Groen, 2010; Newbert, 2007). However, the alignment of human, technical and other organisational resources can provide sustainable competitive advantages by building “dynamic capabilities” which utilise the capabilities and core competencies within the organisation (Teece, 2007; Teece, Pisano, & Shuen, 1997). Empirical studies increasingly support the dynamic capabilities concept for explaining organisational performance (Bhatt & Grover, 2005; Newbert, 2007; Teece, 2009; Teece et al., 1997) and organisational knowledge (Prieto & Easterby-Smith, 2006). Improvisational capabilities have been defined by Pavlou and El Sawy (2010) as distinct from dynamic capabilities as capabilities that rely on managers’ knowledge and skill and emerge in times of turbulence when actions cannot be planned.

Two categories of the RCV in connection with IT are the production function view and the resource-based view (Oh & Pinsonneault, 2007). The production function view is most appropriate for manufacturing firms where IT has a direct impact upon production and where capital and labour inputs can be directly linked with outputs. In contrast the resource-based view (RBV) focuses on the scope of IT resources and leveraging the capabilities that exist within the organisation. Scope considers usage of the IT resources and the impact it has upon firm performance rather than investment in the components of the IT resource (Devaraj & Kohli, 2003). The capabilities of an organisation are built around innovation, knowledge, skills and abilities within the organisation and organisational growth relies on the strategic use of capabilities (Teece, 2009). A direct

link between the IT resource and participation in an e-marketplace is difficult to establish. However, viewing the adoption and use of the e-marketplace as a development of capabilities and an alignment with organizational objectives positions the RBV as a starting point for the evaluation of organizational strategy in relation to the e-marketplace. The RBV alone does not provide sufficient support for strategic management and should be complemented by other theories on firm performance (Arend & Lévesque, 2010).

An organisation's ability to use IT resources in varied and complex configurations makes IT a heterogeneous resource that can be used for competitive advantage. Oh and Pinsonneault (2007) hypothesise that the contingency-based perspective is a better predictor than the RCV of the strategic value of IT.

### **2.2.2 A Contingency View of E-marketplace Trading**

Contingency theory posits that optimal organisational performance is dependent upon certain internal and external constraints and is a formal process of aligning strategy with the use of resources. Superior firm performance is achieved through the alignment of contextual, structural and strategic factors (Doty, Glick, & Huber, 1993). Contingency theory can be applied to the evaluation of e-marketplace strategies and the creation of business value through an evaluation of firm performance indicators.

Oh and Pinsonneault (2007) take a contingency based approach to the strategic alignment of organisational IT. They operationalise IT strategy through an analysis of core IT applications and classify them on their performance to deliver cost reductions or operational efficiency, quality improvement or revenue growth. Although these measures are also used in the RBV, Oh and Pinsonneault examine the strategies underlying IT use and consider the structure of the IT applications in the organisation rather than the measure. By viewing the e-marketplace as the use of an IT application it is possible to assume a similar contingency perspective to examine the strategies underpinning its use and the firm performance outcomes. Further it allows the consideration of strategic alignment across functional areas and recognises the importance of contextual influences and organisational structure on strategy formation.

### **2.2.3 External Constraints and Competitive Strategy**

External constraints such as industry sector, country characteristics and trading partner attributes have been found to impact upon strategy and the creation of business value. In a study of the Australian beef industry Driedonks, Gregor, Wassenaar and van Heck (2005) found that social and political dimensions had a major impact upon e-marketplace adoption. Porter's five forces model (1980, 2008) illustrates the impact of the forces on competitive strategy and how they can shape industry structure. The five competitive forces are: the bargaining power of the buyer, the bargaining power of the supplier, the threat of new entrants, the threat of substitute products or services and rivalry amongst existing competitors. The major theme of Porter's model is the connection of organisational strategy with the external environment in which it operates and the types of products traded. Although the application of the competitive forces analysis is concerned with adapting strategy in response to external forces it can be applied at an industry, firm or operational level. However, it is founded on economic assumptions of organisational value created through transactions of goods (a goods dominant logic) and does not consider the interactions between economic transactions and social structures. (The economic market concept is discussed further in section 2.3 "The electronic markets versus hierarchies debate".)

In contrast to the competitive advantage ideology the concept of service dominant (SD) logic represents a phenomenological or social practice view of value creation (Holttinen, 2010) which could be applied to e-marketplace participation. Internet based marketplaces form networks where organisations can share and trade information (Dyer & Singh, 1998). SD logic proposes that firms and vendors share resources through networks, where value is co-created through participation in the network rather than from the specific goods moving through the network (Vargo & Lusch, 2008). As defined by Vargo and Lusch (2008) service reflects the process of using the firm's resources for the benefit of another entity. This could change the market competition between network participants as they share certain resources and cooperate to meet organisational objectives rather than compete against each other. Another consideration is the concept of value creation and value capture. Distinctions have been made between value creation and value capture (Pagani, 2012; Wynn & Williams, 2012). Value creation is based on resource based theory and economic profits but value capture by

contributors in a network occurs through multiple interactions (Pagani, 2012) and is mediated by the participant's relative bargaining power (Porter, 1980). Value creation from e-business and the establishment of virtual markets requires an integrated perspective which will consider business models, strategic management and innovation in addition to resource allocation, value chains and transaction costs economics (Amit & Zott, 2001). Bowman and Ambrosini (2000) base their concept of value upon actors' knowledge and perceptions where "value takes the form of:

- perceived use value that is subjectively assessed by the customer who uses consumer surplus as the criterion in making purchase decisions; and
- exchange value, that is the price paid for the use value created, which is realised when the sale takes place" (p13).

Pagani (2012) proposes that IT (in this study the e-marketplace technology) can create multisided networks with many value capture points where small technological innovations can cause vertically integrated networks to become more loosely coupled.

#### **2.2.4 Information Technology and Information Systems**

The e-marketplace is an IT artefact and the processes, procedures, information and data that it generates are part of the organisational information systems. IT is a major facilitator of the information flows of an organisation. This role impacts upon work practices, workflow and the processes within the organisation and reduces the time and costs needed to process information. Procurement is evolving in line with this within organisations and is developing from being a largely clerical role to become an enabler of efficient operations. The e-marketplace is a technology platform that connects with participants' IT infrastructure and the decision to trade via an e-marketplace potentially impacts upon all information systems within the organisation. Supply chain management literature considers the integration of procurement into the supply chain but the impact of e-marketplace trading on organisational information systems has not been considered.

IT is a ubiquitous element within most organisations and has expanded beyond the boundaries of the firm to connect organisations locally, nationally and globally. Inter-organisational integration has been greatly enhanced by the development of electronic data interchange (EDI) which standardised communication protocols allowing easier

electronic connections between trading partners. However EDI are proprietary systems that rely on established relationships between organisations. They are used by larger organisations, able to make the investment in implementation, and participation is constrained through the hierarchical structure defined in the EDI system. Although EDI systems can be Web based they do not offer the advantages that Internet based e-marketplaces can offer participants: The use of the Internet for trading is available to organisations, both large and small, at limited cost. Additionally the e-marketplace can provide advantages of an increased number of buyers and suppliers, new trading partners and reductions in processing costs without the relational constraints imposed when using EDI systems (Dai & Kauffman, 2006). Established organisations that can use Internet technology to restructure traditional activities or to find new combinations of Internet and traditional approaches can gain competitive advantages (Porter, 2001).

The initial decision to adopt e-marketplace trading can be driven by the competitive environment, efficiency gains, cost reduction possibilities and revenue growth (Oh & Pinsonneault, 2007) but it is necessary to have the IT resources to support e-marketplace trading strategies. Although this is a resource based view, sustained competitive advantage from IT is contingent upon the extent of integration with information systems throughout the organisation (Rai, Patnayakuni, & Seth, 2006), the alignment of strategies and objectives (Piccoli & Ives, 2005), and external pressures or constraints (Driedonks et al., 2005; Yu, 2007).

### **2.2.5 A Strategic or Tactical Decision?**

The decision to participate in e-marketplace trading can be shaped by many forces but a distinction can be made between strategic and tactical decisions. This mainly involves an assessment of the decision according to the scope, time scale, level of investment, decision making level, and organisational impact of the decision (Power, 2005; Teo, Ang, & Pavri, 1997). It should be possible to categorise organisational e-marketplace trading decisions using these criteria. However, what causes e-marketplace participation to be employed at a strategic or tactical level is still unknown.

Table 2.1: A comparison of strategic and tactical initiatives

<b>CONCEPT</b>	<b>DEFINITION</b>	<b>STRATEGIC DECISIONS</b>	<b>TACTICAL DECISIONS</b>
Scope	Extent of implementation and adoption	Broad in scope	Targeted and more restricted in scope
Investment	Large, medium and low input of organisational resources	Large investment	Medium or low investment
Time Scale	Long (>3 years), medium (1-3 years), or short (<1 year) time frame	Longer term	Medium term
Decision making level	Senior executives, upper middle managers, operational personnel	Senior executives	Upper middle managers
Impact	High, medium, low impact on firm performance.	High impact in terms of cost reduction, quality improvement and revenue growth	Medium impact in terms of cost reduction, quality improvement and revenue growth

Table 2.1 summarises the differences in strategic and tactical decisions according to five concepts. Scope considers the extent of influence the decision will have within the organisation; time scale and investment are related to organisational commitment to the decision; decision making level considers the managerial structure of the organisation and operational benefits are reflected in the impact of the decision.

Organisations that are striving to achieve a tight integration of the supply chain will be implementing a strategic initiative due to the level of investment required, the scope, timescale, impact and decision making level involved in achieving integration (Jin, 2006). The adoption of a procurement method or technology for a restricted class of goods and services, or changes to processes that are not broad in scope or impact are tactical initiatives (Fawcett, Magnan, & McCarter, 2008). The links between e-marketplace trading and organisational initiatives are unclear.

## **2.2.6 Procurement and E-marketplace Integration**

Procurement is a supporting activity within the value chain that can add value by providing efficiencies to the primary activities of the organisation (Porter, 1980). It involves the transfer of information, materials and financial data throughout the organisation and to other organisations. In this research e-marketplace trading is examined within the value chain as a function of the procurement process. Procurement is a process within the larger supply chain management and contract management areas. The interactions between buyers and suppliers in the supply chain create a complex system that can affect the participant organisations at many levels. The addition of technology into the system adds further complexity as adaptation occurs and systems and technology change. The activation of a combination of significant relationships between the buyer, supplier, e-marketplace provider and technology will produce certain outcomes from e-marketplace participation. The identification of the relational significance between the objects and the circumstances under which they are activated will allow a context, mechanism, outcome pattern, configuration to be identified which will show why certain combinations of context and mechanism produce a certain outcome (Pawson & Tilley, 1997).

The integration of IT infrastructure with supply chain management processes enable sustained gains in operational excellence and revenue growth (Rai et al., 2006). The primary facilitators of integration are data consistency and cross functional supply chain management integration. Supply chain management is an area where significant changes are occurring and benefits arise due to data processing efficiencies that add value for the firm (Phan, 2003).

The extent of integration in the supply chain between organisational systems can improve or hamper firm performance. Rai, Patnayakuni and Seth (2006) found that information flow had a stronger impact on supply chain integration than materials flow or financial data flow. Cordella (2006, p. 201) cites the need to reduce the amount of information, filter it appropriately and reduce coordination needs when the costs of implementation exceed the costs of searching, negotiation and enforcement. This again relates to the economic literature that considers transaction costs and takes a goods dominant logic focus.

The aim of this research is to understand the circumstances that enable organisational value generating outcomes from e-marketplace participation. The areas of literature reviewed above raise several questions related to the aims of the research and highlight a need to examine the competitive advantages of e-marketplace trading.

- Is e-marketplace adoption and participation part of an organisational strategy? Why or why not?
- What strategies are required by firms to leverage e-marketplace participation?
- Can the e-marketplace adoption decision be categorised as strategic or tactical?
- How does e-marketplace participation impact on organisational information systems?
- When are e-marketplaces more efficient for procurement than other methods of procurement used within the organisation?
- What effect does the type of products bought/sold via the e-marketplace have on e-marketplace participation?

The following section is also relevant to the competitive advantage concept and discusses literature on market theories and the e-marketplace.

### **2.3 THE ELECTRONIC MARKETS VERSUS HIERARCHIES DEBATE**

The differences between hierarchies and market structures are the basis from which some research on e-marketplaces has emerged. Fundamental theories that are drawn upon to illustrate these differences are the efficient market hypothesis (EMH) and relational theories.

Hierarchies coordinate the flow of goods or services between the buyer and seller, and prices are based on contractual and relational ties with one supplier. Hierarchies are usually dyadic relationships requiring direct communication and the formation of long-term relationships (Premkumar, 2003). Structural embeddedness proposes that social ties, the associated networks and relationships formed are important in market

transactions and price is not of paramount importance: trust, fine grained information sharing and joint problem solving are constructs of structural embeddedness (Uzzi, 1997) and have an influence on market transactions.

The alternative trading mechanism to a hierarchy is a market structure where all sellers and buyers are able to contract with any other market participant resulting in the optimal price. The efficient market mechanism involves arm's-length transactions and supports the economic price motivation of the participants.

The characteristics of arm's length market relationships suggested by Dyer and Singh (1998) are related to e-marketplaces as follows:

- Non-specific asset investments – technology is widely used in business and the Internet is pervasive, the human resources to trade via the e-marketplace are already located within the procurement unit.
- Minimal information exchange – goods can be bought and sold purely on the price quoted.
- Separable technological and functional systems within each firm that are characterized by low levels of interdependence – each e-marketplace participant possesses hardware and software which are independent of the e-marketplace but can be connected when necessary, there is no requirement to extend or create new connections, products or services through the e-marketplace.
- Low transaction costs and minimal investment in governance mechanisms – transaction costs are thought to be reduced through the use of the e-marketplace and the governance mechanisms already in place for organisational procurement can be adapted to incorporate electronic purchasing.

A perfectly efficient market would eliminate any price advantage by achieving constant price equilibrium. However, consistent with the concept of transaction costs, the opportunistic behaviour of buyers and sellers results in higher than marginal returns (Grover & Ramanlal, 1999) and governance structures are expected to mitigate transactional risk (Chelariu & Sangtani, 2009).

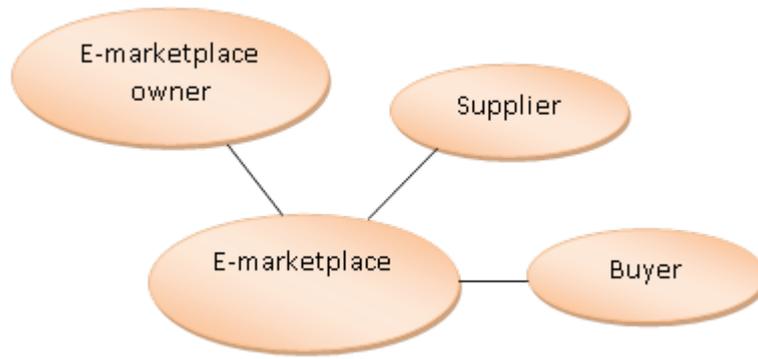


Figure 2.2: Necessary relations for e-marketplace trading under efficient market hypothesis

Figure 2.2 depicts the necessary relations needed to achieve an efficient e-marketplace incorporating arms' length relationships and the fundamental function of an e-marketplace, which is to bring buyers and suppliers together through an electronic communication channel in order to facilitate a transaction where all buyers and suppliers can participate. The owner of the e-marketplace can be a vendor of the e-marketplace technology and related services or a provider such as a government department. In some cases the e-marketplace might be owned by the buyer(s) or supplier(s) but each role is distinguished by the nature of the relationship with the e-marketplace. The buyer, supplier and owner are all connected to the e-marketplace through their organisational structures, and relationships between the objects and structures have powers to cause or limit change. Organisational structures control perceived risks through governance structures which include enforcement, monitoring and evaluation mechanisms; these are established through formal and informal contracts usually based upon some type of benefit, cost, and risk assessment. Formal contracts are established between the e-marketplace owner and participants concerning the provision of the technology and services to be provided; and contracts or arrangements are made between buyers and suppliers when transactions are made through the e-marketplace. Supply contracts represent the outcome of certain negotiations through the e-marketplace and they are necessary if the e-marketplace is to survive. The e-marketplace owner and participants have different relational structures according to their organisational and governance structures. Buyers and suppliers will also have

differing relational structures through organisational and governance structures. It is not necessary for the buyer and supplier to have a relationship outside the e-marketplace but if they establish a transactional contract there is a relationship between the buyer/supplier organisational structures and governance mechanisms. The e-marketplace can substitute some governance structures for those of the buyer/supplier and subsume some aspects of the buyer/supplier relationship. The use of e-marketplace technology in monitoring, enforcing and evaluating trading agreements should increase the efficiency of the e-marketplace for the participants.

The relationships between the e-marketplace, owner, buyer and supplier objects produce costs and cost differences. Costs represent the economic considerations that the supplier, buyer and owner incur to trade via the e-marketplace. These include, not only the prices paid for any goods and services obtained through the e-marketplace, but search costs, negotiation costs, compliance costs, enforcement costs, fees charged by the e-marketplace owner and the costs of e-marketplace operation. Costs are associated with doing business and not always easy to determine but transaction costs are a major expenditure for organisations.

Transaction costs literature in the e-marketplace area is mostly theoretical and draws from the concepts presented by Williamson (1979), Malone (1987) and Bakos (1997, 1998). Transaction costs are the costs associated with finding someone with whom to do business, reaching an agreement about the price and other aspects of the exchange, and ensuring that the terms of the agreement are fulfilled (Williamson, 1975). Transaction costs can be broken down into various cost components such as: negotiation, search and enforcement costs (Cordella, 2006); coordination cost, consisting of search cost, information exchange cost and contracting cost; or perceived as risks such as transactional risk which is concerned with the behaviour of the contracting partner and encompasses the notions of operational risk and opportunism which includes switching costs (Premkumar, 2003).

The development of IT has been viewed as a primary factor in the reduction of transaction costs because of increased communication and processing efficiencies (Malone et al., 1987). Electronic markets have the potential to streamline and manage

these activities and reduce the transaction costs associated with conducting business. These transaction cost savings should be more evident in an e-marketplace than in a hierarchy where a company has to manage its suppliers and procurement processes more closely (Malone et al., 1987). However, it has been proposed that IT can in fact increase transaction costs if a more complex external environment increases information searching or contract handling (Cordella, 2006). Grover, Lim and Ayyagari (2006) also argue that search costs increase due to inconsistent information or extensive information overload and this results in pricing differences. Their study investigates the phenomena of price dispersion from the sellers' perspective and is based on an analysis of product markets.

Early empirical work by Choudhury et al. (1998) investigated the efficiency of an e-marketplace used by the aircraft industry which offered an inventory locator service (ILS). It was found that buyers were more likely to buy frequently used goods from suppliers in a hierarchical dyadic relationship where long-term relationships had been formed than use the ILS. Criticism of the e-marketplace was that finding information was costly in terms of time, resources and finances. The limited degree of sophistication of the ILS technology had a negative impact on the efficiency of the e-marketplace. Increased functionality, availability of price and other information and lower participant fees could have significantly enhanced the use of the e-marketplace.

There are mixed findings in the literature regarding market and hierarchy structures. White et al. (2007) found support for both the move-to-the-middle hypothesis (Clemons, Reddi, & Row, 1993) which proposes a move to closer relationships with a smaller number of suppliers, and the move-to-the market hypotheses (Malone et al., 1987) which suggests increased market coordination. Holland and Lockett (1997) found support for the coexistence of market and hierarchy structures in their study of inter-organisational communication systems. Glassberg and Merhout (2007) suggest that a market structure should be chosen when transaction cost is a primary concern, new suppliers are needed, the market is highly fragmented or for commodity purchases. However, they propose cooperative ventures as a new form of market but whether or not this would occur via an e-marketplace is uncertain. The formation of co-operative ventures or alliances could occur via the e-marketplace but regardless of this, e-

marketplace participants represent network partners. Brennan (2006) proposes that the development of evolutionary economic theory and markets-as-networks theory could benefit by considering the evolutionary nature of network relationships and the role of inter-organisational routines in the evolutionary process.

Research questions:

- Where does the e-marketplace fit within the market v hierarchy theoretical frameworks?
- How does e-marketplace participation change market structures?

## **2.4 EXTENT OF E-MARKETPLACE PARTICIPATION**

Research into the adoption and use of e-marketplaces and the use of e-marketplace functions, such as electronic auctions have been studied but few studies have examined the extent of implementation within organisations or the alignment of implementation with organisational strategies. This section will discuss issues of adoption and use and the extent of adoption within the organisation, and summarise theories which could explain e-marketplace participation.

The development of e-marketplaces has been facilitated by the growth of Internet technologies and application software. However, this has not happened as quickly as anticipated. Some studies have cited difficulties finding sufficient participants or realising anticipated benefits (Christiaanse, Van Diepen, & Damsgaard, 2004). Some of these studies provide explanations of transparency of information leading to advantages for buyers but providing limited value to the supplier (Clemons & Row, 1993; Lee, So, & Tang, 2000), restriction of information from suppliers (Grover et al., 1999) or a trade-off between information transparency and data confidentiality (Zhu, 2004). Other problems cited concern the structure of the marketplace (C. Standing & Standing, 2009) power asymmetries within the marketplace or higher technological asset specificity (Holland & Lockett, 1997).

Although there are difficulties associated with e-marketplace adoption and use, the success of some e-marketplaces indicates that they are a potential source of value creation for an organisation. Yu (2007) found, from a survey of large Taiwanese firms, fundamental questions to be answered when considering e-marketplace trading to be: does the e-marketplace provide levels of functionality compatible with competitive needs; is the system compatible with existing IS, organisational structure, workflow practices; and what external factors will impact upon adoption and use i.e. principal customers/companies within the supply chain, political and social externalities? The answers to these questions indicate the appropriateness of adopting an e-marketplace for trading but they can also be used to discover the level or extent of adoption and use within an organisation and, therefore, the impact upon the creation of value within the organisation. Questions concerning the compatibility with competitive needs, organisational structure and external factors are also indicative of the strategic initiatives driving the adoption and use of an e-marketplace.

The move to e-marketplace trading requires management direction and changes to processes, procedures and interaction between various organisational functions. IT is the core facilitator of e-marketplace trading but human and financial resources are also fundamental requirements. The investment in hardware, software and employee training can impose significant switching costs on an organisation (Agrawal, Hariharan, Kishore, & Rao, 2005; Damsgaard, 1999) which can be a barrier to adoption and use. However, a strategic plan can provide a sustainable competitive advantage by leveraging the interactive effects of human, financial and technological resources (M. Wade & Hulland, 2004). The extent of participation, or evolution of e-marketplace trading, depends upon the alignment of change management strategy, alliances, knowledge and the compatibility of systems (Hackney, Burn, & Salazar, 2004).

### **2.4.1 Institutional Theory**

Prior research has acknowledged that institutional theory explains technology decisions and outcomes (Zhang & Dhaliwal, 2009). Institutional theory and economic theory have been used to examine the motivations and capabilities needed for participation in an e-marketplace, specifically the legitimacy motivations from institutional theory and the efficiency motivations from economic theory (Grewal, Comer, & Mehta, 2001; Son &

Benbasat, 2007; Yu, 2007). Legitimacy considers the external pressures on an institution to conform to or adopt industry standards and norms. Grewal et al. (2001) consider motivation with sub constructs of efficiency and legitimacy, and abilities with sub constructs of learning and IT capabilities to examine adoption of an e-marketplace. Questionnaires were sent to subscribers in an e-marketplace, which acts as an intermediary, to find the extent of marketplace use. They classified subscribers as explorative, expert or passive depending on responses to questions regarding perceived efficiency, legitimacy, learning, IT capabilities and marketplace dynamics. The expert users had IT capabilities, and efficiency motivations, whilst legitimacy was attributed to being a passive subscriber. Likewise, Son and Benbasat (2007) used legitimacy and efficiency to examine the buyers' e-marketplace adoption and use and found that the legitimacy motivation did not lead to participation in the e-marketplace. However, Standing, Sims and Love (2009) propose that legitimacy is also an internal phenomena which occurs at many levels throughout the organisation; additionally it can have either a positive or negative impact upon adoption and use of the e-marketplace. Leca and Naccache (2006) argue that the role of agency in institutional analysis has to link actors' actions with the institutional structures in which they are embedded.

Whilst both legitimacy and efficiency have been identified as important for e-marketplace participation it is still unclear how they motivate the adoption and continued use of the e-marketplace for participants. It is particularly difficult to identify the underlying causal relationships between e-marketplace participation and use when the use of the e-marketplace technology impacts on many levels within the organisation from micro interactions at the personal level, through the larger departmental levels and into the macro organisational levels. The impact of e-marketplace participation extends beyond the individual organisation, impacting on other organisations in the supply chain or potential suppliers.

## **2.4.2 Diffusion of Innovations**

The diffusion of innovations has been applied as a framework to examine the adoption of consortium e-marketplaces. Compatibility with senior management views is identified as a key feature for the adoption of an innovative technology (White et al., 2007). Whilst the study identified the motivating strategy for suppliers participating in

the e-marketplace to be the generation of new business no clear picture emerged from the buyers' perspective. Also based on the diffusion of innovations theory proposed by Rogers (2003), Zhu, Kraemer and Xu (2006) explain e-business capability within organisations using data from ten countries. They propose a model of initiation, adoption and routinisation to explain the implementation of e-business within the organisation. Competition was found to influence initiation and adoption but was less influential on use. Routinisation is the phase of assimilation where the technology becomes embedded in work practices and is suggested as a key determinant of assimilation. Although diffusion of innovations is useful to demonstrate the extent of e-marketplace technology assimilation it does not consider the post adoption effects of the technology on strategy, operations or performance.

In summary, e-marketplace participation can be influenced by the e-marketplace structure but it has to be compatible with organisational strategy in order to maximise the advantages of using the e-marketplace (C. Standing et al., 2006). Consideration also has to be given to any additional value added services that the e-marketplace can deliver (White et al., 2007) and how they can contribute to enhancing business value. Both internal and external pressures on the organisation to adopt and use an e-marketplace can influence the extent of participation. These pressures can occur at the micro, meso or macro levels but their significance on e-marketplace participation and their relationships with organisational structures is not known. The literature discusses adoption and use of an e-marketplace both pre adoption and post adoption but what drives the extent of participation in the e-marketplace is still unclear. Additionally, the causes of the degree of alignment between participation and organisational strategies are not fully understood.

The following research questions are raised by this section of literature:

- What determines the extent or level of participation in trading via an e-marketplace?
- How does the functionality of the e-marketplace affect organisational relationships?

## 2.5 BUSINESS VALUE AND FIRM PERFORMANCE

IT business value research has been defined as “any conceptual, theoretical, analytic, or empirical study that examines the organizational performance impacts of IT” (Melville et al., 2004). Business value measures include financial measures, perceptual measures and usage metrics (Melville et al., p. 296). As the use of an e-marketplace is only possible through an organisation’s IT infrastructure this research fits within this definition and links e-marketplace trading with its impact on organisational performance.

A variety of areas connected with e-commerce have been identified in the literature as having an impact on firm performance. These are primarily based on the benefits gained, costs imposed and potential risks associated with using the e-marketplace. E-marketplaces have been studied from the technological perspective and organisational perspective, such as effective electronic auction program design (Anandalingam, Day, & Raghavan, 2005; Day & Raghavan, 2008; Parkes & Kalagnanam, 2005) and the business implications of electronic auctions (Chen, Roundy, Zhang, & Janakiraman, 2005; Hartley, Lane, & Hong, 2004; Jap, 2002). The buyer and supplier often have different participation criteria but they are mainly concerned with gaining operational efficiencies or legitimacy (Son & Benbasat, 2007) which are representations of both social and economic factors. Relationships between the economic and social phenomena are many and complex and impossible to quantify in hard cost terms. Quantification of the business value from e-marketplace participation is problematic because many of the suggested benefits are intangible or opportunity costs (i.e. the cost of an opportunity forgone in order to participate) and difficult to link directly to business value creation. Value creation from relationships through social structures, likewise, is not measured in hard cost terms. However, the social capital of the organisation and the relationships between organisational and interorganisational structures are mechanisms that can create value for the organisation. This study focuses on the business effects of e-marketplace trading created through relational mechanisms and includes the e-marketplace technology.

Some of the relationships between e-marketplace use and organisational value creation can be seen through a cost/benefit analysis. The benefits, costs and risks associated with electronic auction use in B2B trading are summarised in table 2.2. These could be equally valid for other forms of trading taking place through the e-marketplace, such as requests for quotes. However, the applicability would depend on the functionality offered by the e-marketplace, the features utilised by the participating organisations and organisational structures. Organisational decisions are generally considered to be the result of rational evaluations but the contexts in which decisions are made and the norms and behaviours that exist in organisational structures influence decision making. The evaluation of the benefits, costs and risks of e-marketplace participation provide a rationale for e-marketplace participation decisions. Although the benefits, costs, risks occur at the operational level they have an impact at other organisational levels. Operational outcomes are used for firm performance evaluation and therefore have implications for strategic initiatives and, strategic initiatives are made in order to improve firm performance outcomes.

Table 2.2: Benefits, costs and risks of e-auction participation (Chen et al., 2005; Hartley et al., 2004; Jap, 2002)

<b>BENEFITS</b>	<b>COSTS</b>	<b>RISKS</b>
<b>BUYER</b>		
lower transaction costs	increased long term costs	price emphasis
shorter order-cycle times	pre-qualifying, evaluating suppliers	reduced quality of goods
a large pool of potential suppliers	fees and charges	delivery
competitive purchase prices	IT, staff and infrastructure	relationships
less time needed for e-auction	transportation costs	service
world-class suppliers	procurement costs	
gather and analyse market information	contract specification	
more time to focus on strategic sourcing		
volume leveraging		

BENEFITS	COSTS	RISKS
reduce inventory holdings reduce total ownership costs		
<b>SUPPLIER</b> obtaining market information an outlet to better manage excess capacity business from new customers less time needed for e-auction reliance on forecasting for planning reduced volume leveraging decreased production and shipping costs	reduced profit margins auction fees/charges IT, staff and infrastructure	price emphasis shorten production runs increased competition long-term relationships damage

Firm performance measures reflect the strategies of an organisation for assessing business value. Subramani (2004) divides firm performance measures into first order operational factors with an internal focus, and second order strategic factors. Oh and Pinsonneault (2007) consider how strategic alignment of information technologies affects firm performance in the Canadian SME manufacturing sector. They merge business strategy factors from earlier literature into three broader categories of cost reduction, quality improvement and revenue growth (p. 247). However, their study uses mainly financial performance measures and does not include intangible constructs. In contrast, Rai et al. (2006) use subjective measures of revenue growth, customer relationships and operational efficiency.

The interrelationships between the various strategies and alignment with business processes create business value through measures of firm performance. The definition of business value used in this research is taken from Melville et al. (2004 p. 287) “as the organizational performance impacts of IT at intermediate process level and organization wide level and comprising efficiency and competitive impacts”. This recognises the internal efficiencies and performance metrics of e-marketplace participation and the external competitive forces that influence organisational strategies related to the e-marketplace. In addition, the notion of value creation and its relationships with the

knowledge and perceptions of organisational stakeholders and organisational strategy have to be considered (see section 2.2.3).

Research questions:

- What firm performance issues are considered when evaluating trading via an e-marketplace?
- Are the firm performance issues and the business value created from e-marketplace use subjective or financial?
- How well defined are business value measurement metrics for e-marketplace use?
- Does the extent of e-marketplace adoption and use reflect organisational strategy? Why or why not?

### **2.5.1 Relational Considerations**

Maintaining, developing and nurturing relationships have to be considered when adopting an e-marketplace. The resource based view considers relationships as intangible assets which should be managed in the same way as other firm resources. The extent of relational embeddedness within the business value creation process will impact upon the decision to transact business via an e-marketplace. However, relational structures encompass human interactions, knowledge generation and decision making which can change over time. The role of social capital in relational structures and changing organisational contexts has to be considered. The following section will discuss some literature which represents an economic perspective and some that represents a social capital perspective of relational structures.

Buyers' strategies for adopting an e-marketplace focus on increasing the supplier base and reducing transaction costs. Dominant firms or important customers in a supply chain network can benefit at the expense of suppliers (Clemons & Row, 1993). The buyer can impose system adoption upon suppliers potentially increasing suppliers' costs or transferring costs from the buyer to the seller (Lee et al., 2000). However, relational asymmetry can be mitigated to some extent by the supplier.

A supplier perspective has been adopted by Subramani (2004) to evaluate how suppliers can gain advantages when a dominant network leader instigates supply chain integration measures. Domain knowledge (critical expertise of the supplier is particular to the buyer) and business processes (supplier's key business processes are particular to the requirements of the buyer) are linked to relationship-specific intangible assets and investigated using correlations and path coefficients. The findings suggest that intangible relational assets can be employed to mediate power asymmetries and create supplier differentiation whilst increasing competitive performance. Likewise Mukhopadhyay and Kekre (2002) found that suppliers gain strategic advantages in the procurement process if the buyer initiates the relationship and the supplier can enhance the system's capabilities. White et al. (2007) identify increased levels of collaboration when trading via consortium e-marketplaces from both a buyer and supplier perspective. This suggests that the alignment of strategies between a dominant firm and the supplier can deliver competitive performance gains for both parties.

Consideration of market relationships and structures prior to joining the e-marketplace could indicate if participation will be beneficial. Zhao, Xia, Shaw and Subramaniam (2009) propose that biased e-markets are more likely to succeed when the less competitive side owns the e-marketplace (i.e. a buyer biased e-market where there are few buyers but many suppliers or a supplier biased e-market where there are few suppliers and many buyers) but neutral e-markets can succeed in either situation. Dai and Kaufmann (2006) model the reasons for adopting an extranet (closed network) or an e-marketplace (open network) and demonstrate advantages from a non-competitive, buyer biased, e-marketplace. The e-marketplace structure is hierarchical where the buyer is the initiator and controller of the e-marketplace. Buyer subsidies are included in their model to demonstrate how suppliers can be enticed to adopt the electronic channel. Their findings support the view that relational specific assets can increase a supplier's competitiveness. From the buyer's perspective an e-marketplace should be used when operational efficiency is desired and the supplier's competitive advantage compared to a rival is marginal. However, where there is only a small number of suppliers and relational assets are critical, an extranet is more beneficial for the buyer.

Trust has been identified as an important element in the formation and continuation of relationships when using an e-marketplace (Cazier, Shao, & St Louis, 2006; Mithas, Jones, & Mitchell, 2008; Pavlou, 2002; Ratnasingam, 2005). Trust is a multi-dimensional element occurring in the social context of the buyer supplier relationship at the inter-organisational level, organisational level and individual level. Pavlou (2002) and Ratnasingam (2005) investigate how relational trust is built through B2B e-marketplaces through institutional structures and how these structures influence trust in the buyer supplier relationship. Mithas et al. (2008) propose that trust is an important non-contractible consideration for reverse auction participation and Zahedi, Bansal and Ische (2010) propose that trust plays an important role in the value creation relationship between vendors and e-marketplace provider. Chelariu and Sangtani (2009) examine three e-marketplace structures where functional integration and governance mechanisms are based on a continuum of trust and level of collaboration needed: a competitive relationship in independent exchanges, an interimistic relationship (i.e. “close, collaborative, fast developing, short lived exchange relationships”) in consortia, and a highly collaborative relationship in private exchanges. They propose that the level of trust needed for participation in each type of e-marketplace increases from low in an independent exchange, to medium in the consortia, to high in a private exchange where inter firm collaboration is expected to be greatest. They also propose governance processes for each type of e-marketplace structure in the areas of partner qualification, partner monitoring, and contract enforcement that differ for each e-marketplace structure but are based on goal congruence, values and technology. These studies focus on institutional or organisational level trust but do not consider trust at the individual level, the role it might play in e-marketplace participation, or the evolving nature of participation, the e-marketplace vendor and technology. Additionally, there are still unanswered questions on how the relational aspects of e-marketplaces participation are managed.

Research questions:

- What problems exist when trading via an e-marketplace?
- What is the impact of relation specific assets on e-marketplace adoption?
- What is the impact of e-marketplace participation on relational structures?
- How are relational issues managed?

## **2.6 GLOBALISATION**

Globalisation reflects the extent to which organisational strategy incorporates global trading for business value growth. The development of the Internet has enabled organisations to trade more easily at a global level by providing access to new suppliers and buyers and allowing real-time communication. International trade can be a significant part of an organisation's business strategy and the import and export of goods and services can be common practice. However, not all organisations have the necessary resources, capabilities or knowledge needed to implement international e-commerce (Hempel & Kwong, 2001). E-marketplaces have the functionality to facilitate international trade by connecting buyers and suppliers from all over the world through one web portal (C. Standing et al., 2007). The adoption of e-marketplace trading could be driven by a desire to expand operations to incorporate international partners but the extent of this motivation is unknown.

Research question:

- Is e-marketplace participation aligned with an organisational strategy of globalisation?

## **2.7 SUMMARY**

It is obvious from the literature review that the e-marketplace has been studied from many theoretical perspectives. Table 2.3 presents a summary of the theories used throughout this chapter in relation to e-marketplace participation, their level of environmental focus and strategic importance. The level of environmental focus ranges from internal to external and from large social systems to organisational resources. The strategic import of these theories takes into account the micro, meso and macro organisational levels.

Table 2.3: Theories and strategic importance

<b>THEORY</b>	<b>FOCUS</b>	<b>STRATEGIC IMPORT</b>
Resource Based View	Internal organisational resources	Usage and firm performance, organisational capabilities
Contingency View	Internal and external constraints	Context, structure, alignment
Competitive forces	External forces, industry structure	Power asymmetries, products, competitors
Institutional theory	External and internal pressures	Organisational structure, capabilities and legitimisation
Diffusion of innovations	Social systems	Implementation and routines
Relational theories	External and internal pressures	Relational structures
Efficient market theory	External environment	Efficiency and costs
Network theories	Market networks, business relationships	Relational and organisational structures

Although many theories have been used and different approaches have been taken when undertaking research on e-marketplaces there are no clear explanations of why organisations do, or do not use, e-marketplaces and why some use them successfully whilst others do not. Organisational structures, characteristics and individual perceptions change over time but there is little research on how e-marketplace participation affects or is affected by these changes. Economic theories of efficient markets and transaction cost economics alone are insufficient to understand the underlying causes of e-marketplace participation and its relationships with business value creation. On the other hand social theories do not fully explain why some organisations attribute business value to e-marketplace trading whilst others do not.

Strategies to increase business value can take a resource centred view or a contingency based view and require the allocation and use of specific resources and the alignment of organisational context, structure and strategies. A focus on resource allocation and

resource complementarity does not fully capture the business value created from firm performance whereas a contingency view considers the internal constraints of the organisation and external factors, such as government regulation, global trading and the extent of alignment with managerial strategies. Decisions taken in relation to e-marketplaces have to be considered at a macro-level to take into account the organisational implications and not be focused entirely at the operational level. However, the interrelations between the micro, meso and macro organisational levels as well as inter-organisational levels have to be considered.

E-marketplaces represent market structures that embody network trading relationships. How these relationships impact on e-marketplace trading and value creation has to be considered along with organisational governance mechanisms. Studies that use relational theories of markets and networks do not always consider the economic constraints that exist in business relationships. Economic realities have to be considered in business relationships at a micro and macro level in order to understand their influence.

The technological aspects of e-marketplace participation add another dimension to organisational value creation. Value through the use of the e-marketplace technology and the continuing contribution that it makes to the e-marketplace owner and participant organisations has to be considered. Changes over time, involving the e-marketplace technology and the vendor, participant, buyer, supplier relationships are necessary to understand the underlying causes of value creation from e-marketplace participation.

The philosophy of critical realism supports the research and enables social and economic concepts to be analysed at the real, actual and empirical levels to identify causes of participation and value creation. It allows the examination of the contextual causes of e-marketplace participation that incorporates an historical perspective. There are many methodological approaches used when undertaking a study based on critical realist assumptions. Ethnographic studies take a grounded theory approach which is assumed to take a theory neutral observational approach where the researcher has no prior knowledge of the phenomena being studied. This cannot be justified when there is a body of work which presents relevant theories (Sayer, 1992). Using existing theories

as a starting point for the research and an iterative theory evaluation method throughout the research study provides the opportunity to build mid-level theory (Pawson, 2006; Radulescu & Vessey, 2009). Case study research that asks open ended questions and allows the informants to tell their story can be analysed to uncover new ideas, corroborate or refute existing theories. One of the benefits of the study taking a critical realist perspective is that it allows economic, rational motivations and outcomes to be combined with subjective and difficult to perceive motivations and outcomes. It can examine the context in which the phenomenon exists by examining narratives that have evolved over time. This research will enhance understanding of the causes underlying e-marketplace participation decisions and the impact the decisions have on business value creation by considering the macro-micro interactions that can occur as a result of participation in an e-marketplace. The impact of critical realism on the study is discussed further in chapter three.

Certain research questions had to be asked in order to satisfactorily fulfil the obligations from the research funding criteria. However, the questions are relevant to the understanding of the causal relationships and their powers in the strategic adoption of e-marketplace trading.

### **2.7.1 Research Questions Identified from the Literature Review**

The preceding analysis of the strategic implications for e-marketplace trading has identified a number of significant issues and gaps in the literature. These are presented as the research questions of the study.

E-marketplace adoption and use impact upon organisational structures, processes and workflow practices and have characteristics of an inter-organisational information system. This has the potential to create a sustainable competitive advantage for the organisation. However, the alignment of organisational strategies and e-marketplace participation is not evident in the literature. The literature review shows that e-marketplace participation has been mainly viewed from a technology use and adoption viewpoint and provides some concepts for consideration in these areas. However, there is little research into the strategies that organisations employ for e-marketplace participation and the relationships with organisational structures. The concepts

identified from the IS perspective can be applied as a starting point from which to investigate the organisational impacts of e-marketplace trading and help to identify significant causal relations between e-marketplace participation, strategy and value creation.

Economic theories of efficient markets and hierarchies underpin the debate on the merits of the e-marketplace over other market structures. Governance structures are in place to mitigate the effects of opportunity and transaction costs and include assessments of the benefits, costs and risks associated with e-marketplace use. An understanding of these can identify how the evaluation metrics used in the organisation affect participation in an e-marketplace. It also links the macro and micro environments through strategies, participation and business value generation. However, human interpretation of economic conditions and their significance on e-marketplace decisions is missing from the literature. The effects of changing relationships through human interpretation, adaptation, interaction and modification need to be considered. This will provide insights into how and why e-marketplace participation is viewed as successful, or unsuccessful, within certain contexts. This aspect of research into the organisational benefits of e-marketplace participation is absent from current literature. In order to understand how, why and in what circumstances e-marketplaces add value to the organisation the concepts presented in the literature need to be considered. They represent a starting point from which to identify the significance of the causal relationships in e-marketplace participation that can produce certain outcomes and change organisational structures. This has led to the identification of the main research questions as being:

- What are the significant relationships that exist between e-marketplace participation, organisational strategy and business value creation?
- What is the impact of e-marketplace participation on organisational structures?

The following related research questions help to uncover the relationships, under what circumstances the relationships can exist, and their significance in producing valued organisational outcomes.

- Is e-marketplace adoption and participation part of an organisational strategy? Why or why not?
- Can the e-marketplace adoption decision be categorised as strategic or tactical?
- How does e-marketplace participation impact on organisational information systems?
- When are e-marketplaces more efficient for procurement than other methods of procurement used within the organisation?
- What effect does the type of products bought/sold via the e-marketplace have on e-marketplace participation?
- Where does the e-marketplace fit within the market v hierarchy theoretical frameworks?
- How does e-marketplace participation change market structures?
- What determines the extent or level of participation in trading via an e-marketplace?
- How does the functionality of the e-marketplace affect organisational relationships?
- What firm performance issues are considered when evaluating trading via an e-marketplace?
- Are the firm performance issues and the business value created from e-marketplace use subjective or financial?
- How well defined are business value measurement metrics for e-marketplace use?
- Does the extent of e-marketplace adoption and use reflect organisational strategy? Why or why not?
- What problems exist when trading via an e-marketplace?
- What is the impact of relation specific assets on e-marketplace adoption?
- What is the impact of e-marketplace participation on relational structures?
- How are relational issues managed?
- Is e-marketplace participation aligned with an organisational strategy of globalisation?

The following chapter discusses the research design and the rationale for taking critical realism as the philosophical approach for answering the preceding research questions.

# CHAPTER THREE: RESEARCH DESIGN

## 3.1 INTRODUCTION

This chapter provides an explanation of the research design approach used for the study. It includes a rationale for the choice of methodology and the underpinning philosophical perspective adopted. The explanation of critical realism is closely linked to the selection of a multiple-case study approach and the structured case protocol. The research questions are presented and related to the concepts from the theoretical model developed from the literature. The data collection and analysis methods are also described. The chapter closes with a discussion of the ethical considerations related to the data gathering.

## 3.2 OVERVIEW OF RESEARCH DESIGN

Figure 3.1 provides an overview of the research design approach that combines a critical realist philosophy and structured case study method to investigate the issues and answer the research questions. The existing literature provides the theories from which to begin an examination of the case data; the case data provides the context from which to conduct the data analysis and build theory. The structured case method was used as a data gathering protocol and a hermeneutic approach was taken to analyse the interviews and textual material in order to create meaning and re-contextualise the events described by the informants. The hermeneutic content analysis is used in conjunction with abductive reasoning to interpret the case data and redescribe it using different conceptual frameworks and theories about structures, events and relations. Several different theoretical interpretations and explanations can be used in this way and they are compared and integrated if possible. The retroductive analysis allows an examination of the different components identified to find answers to questions like:

What is the constitution of the structures and relations (X) highlighted by the abductive analysis? How is X possible? What properties must exist for X to be what it is? What causal mechanisms are related to X? The case data can be used to verify or refute the answers to these types of questions when they are found in existing literature.

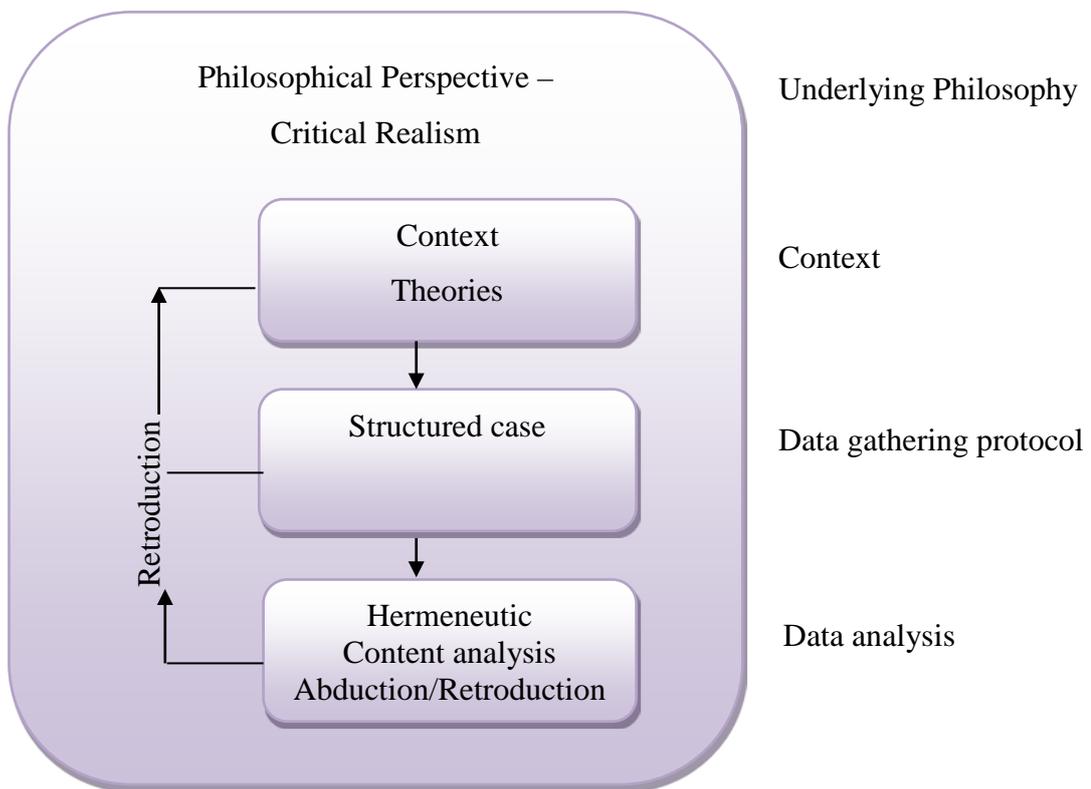


Figure 3.1: Overview of research design

The methodology section will restate the objectives of the research and explain why a case study method was chosen. Critical realism as the philosophical underpinning of the research will be discussed along with its relevance and relationship to the structured case method.

## **3.3 METHODOLOGY**

### **3.3.1 Objectives of the Research**

The objectives of the research are to discover why organisations use e-marketplaces, what strategies they employ for using the e-marketplace and the business value this creates. The unit of analysis is the organisation and the strategic use of e-marketplace adoption and use to create business value is the phenomenon of inquiry. A case study method has been chosen to conduct this research.

This research intends to discover why the organisation chooses to use an e-marketplace, how the e-marketplace is used and the causes of value creation from an information system perspective. The use of case studies is justified as they can draw attention to why decisions were taken, how they were implemented and with what results (Remenyi, Williams, Money, & Swartz, 1998; Yin, 2009). Case studies are suited to studying real life events over which the researcher has little or no control (Yin, 2009) such as organisational strategy. Additionally case data provides contextual insights which are difficult to obtain from survey or questionnaire data (Sayer, 2010) and it can uncover unknown information. A case study methodology reflects the exploratory and explanatory nature of the research that is being undertaken. A critical realist perspective is a meta-theory which guides the case study analysis (Easton, 2010; Fleetwood, 2005).

The following section introduces the critical realist perspective which is used as a philosophical lens for the research. How theory can be developed through the methodology is discussed along with an explanation of the structured case method for answering the research questions and the use of content analysis for the data analysis. The role of hermeneutics as a means of recreating meaning and cultural structure from language and textual material is also discussed as an important aspect of the data analysis.

### **3.3.2 Critical Realism - Beyond the Positivist and Interpretivist Case Study**

Organisations are complex systems in which many interactions exist. Maintaining continual alignment between organisational objectives and firm performance is

extremely desirable but very difficult. In environments where technological and business changes occur rapidly it is highly unlikely that sustainable alignment will occur (Oh & Pinsonneault, 2007). To address this problem an approach is required that considers the interrelationships between changing social and technological environments. The critical realist perspective regards social systems as open systems which are subject to continual change through relational interactions, and assumes “that social science studies are conducted in open systems, that reality consists of different strata with emergent powers, that it has ontological depth and that facts are theory-laden” (Danermark, Ekström, Jakobsen, & Karlsson, 2002, p. 150). A critical realist philosophy is appropriate when studying information systems to overcome some of the difficulties associated with social research (Dobson, 2001; Morton, 2006; Prieto & Easterby-Smith, 2006).

Orlikowski and Baroudi (1991) presented a review of research approaches in the information systems literature for the years 1983 to 1988 and found a predominance of the positivist perspective. This seems to have changed little and the information systems literature in the area of e-marketplaces is dominated by positivist and interpretive research (S. Standing et al., 2010). These two perspectives have fundamentally different ontological positions. A positivist view assumes that reality exists regardless of our perception of it and that reality can be logically deduced from observation (Orlikowski & Baroudi, 1991). An interpretive view assumes that reality is socially constructed and does not exist without interactions between people and the environment (Walsham, 1995). Critical realism can bridge the divide between these perspectives as it combines elements from both ontological perspectives, proposing that reality exists outside our cognition and that it is also socially constructed and represented at three stratified levels of reality; the empirical (direct or indirect experience), the actual (events either observed or unobserved) and the real (the mechanisms that produce the events) (Danermark et al., 2002). Causality is a predominant feature of critical realism and asks questions such as what is it about this event that has (or has not) led to this outcome (Blundel, 2007). E-marketplace participation and value creation are composed of many interactions which can be considered through the three strata (levels) of the empirical, the actual and the real to discover the underlying causes of e-marketplace participation and business value creation.

The role of theory is developed in this research by using existing literature to conceptualise and refine the research model, develop the research questions and help explain the phenomena. It is a starting point to understand the why, for whom and the circumstances in which the object of enquiry (e-marketplace participation) exists and examine the relations between objects, structures, context, events and outcomes. The use of theory before and during the data analysis acknowledges the theory laden nature of our perception of reality and the link between theory and data. Abstracting middle range theories from case data is a well established method in sociology (Merton, 1968; Raduescu & Vessey, 2009). The generation of middle range theories using a critical realist perspective and a small sample size of cases is demonstrated by Smith (2010). He examines theories and concepts related to his research question (trust and e-government in Chile) starting at the abstract theory, moving through middle range theories and onto case specific hypotheses to explain the phenomena. The application of theories from diverse areas can allow creative hypotheses to be made but careful consideration of theories has to be made to avoid explanations that are difficult to corroborate or test further (Raduescu & Vessey, 2009). Wade and Gimble (2010) illustrate how the use of retroductive analysis has been applied in evolutionary biology successfully and how it can be overly applied to produce theories that cannot be substantiated. They argue that the theory of natural selection and genetic characteristics of snail shells in different populations was a successful use of retroductive analysis because subsequent observations and empirical testing supported the propositions made about the differences in the snails' environments and types of predators present. However, they argue that linking intelligent design theory to theory of creation of the universe is difficult to believe because abstract theories from different fields are tenuously linked and the proposition cannot be verified. Therefore, the credibility of a theory, or verification, has to be built on further observation and testing which will corroborate or refute the theory being tested.

The difficulties of theory verification are addressed by Miller and Tsang (2011) who propose a four step method for the development and testing of management theories. The first and second steps involve the identification of theories which might explain the phenomena and the identification of causal mechanisms which might involve accepting

or refuting a theory or parts of a theory. Steps three and four are concerned with empirical testing to substantiate the propositions made and involve setting up experimental testing conditions and conducting correlation analysis.

Pawson (2006) proposes a realist methodology for undertaking policy reviews which draws upon critical realist notions of causality and generative mechanisms using theory to generate questions and test empirical data. He attempts to move away from the ideology of the “critical” realist perspective stating that, “the exacting understanding of the mechanics of scientific explanation produced by the pioneers of realism has evaporated into doctrinaire idealism” (p. 19). His methodology for uncovering the underlying causal relationships begins by using existing studies and theories as the starting point for analysis. Although he recognises that a meta-analysis can result in artificial or misleading results simple questions can be developed from here. The next stage involves collecting case data, analysing it and using it to corroborate or refute theories and further develop theory. This study aims to expand on this approach as a means to develop middle range theory from the identification of underlying causal relationships of e-marketplace participation and business value creation.

### **3.3.2.1 METHODOLOGY RATIONALE**

Initial consideration of the methodology to study the phenomena was that an interpretive case study would be appropriate. Initial consideration was given to the structured case methodology proposed by Carroll and Swatman (2000) as a way to conceptualise the data to be collected and to build theory from the data. Although this is possible it was also clear that interpretive case studies have inherent limitations associated with their ontological position (section 3.3.2). However, the structured case method seems compatible with the critical realist explanatory research method outlined by Danermark et al. (2002) but it lacks reference to the types of inferences needed to conduct the analysis. The following section explains how a critical realist philosophy with abductive and retroductive analytical inferences can be used in the methodology to underpin a structured case method of data analysis.

Yin (2009) suggests that qualitative case studies can be used to define the complexities of social systems and that generalizations can be made from the findings. The view is of

a closed social system, conditions can be controlled for and causal relations can be isolated. This is an explanatory method that proposes “all things being equal” or “*ceteris paribus*” as a defining component of the propositions made. In consequence the observations from these studies are used as predictors of events and outcomes in other situations, *ceteris paribus*. This type of generalisation is achieved mainly through a process of deductive inferences that dismiss outlying variables or assume they are insignificant. This might ignore some of the underlying causal relations within the system or the ones that cannot be directly demonstrated or observed. A critical realist perspective allows the researcher to incorporate irregularities and unexpected events into the data analysis. Generalisation is possible from theories developed (Tsang & Kwan, 1999) but it is not a predictive measure because causalities are not empirical regularities and they occur in complex multi-level systems which change over time (Danermark et al., 2002; Sayer, 2010, pp. 88-93).

Interpretive research methods have limitations because subjective bias will always be present. In the study of business value, objective reality can be demonstrated through such things as firm performance and efficiency metrics but subjective bias is more difficult to discover and it has an impact on the interpretation of data. From the researcher perspective, theory and conceptualisation of the research problem influence the bias of the questions and the interpretation of the results. From the informant’s perspective their interpretations are influenced by their understanding of the questions, organisational knowledge, experience and other social interactions.

The structured case method is used as a protocol for data collection and analysis but expanded to represent a critical realist perspective of analytical thinking. Although the structured case protocol is an interpretive case study method it also has positivist ideals. This is apparent in the idea that the number of cases examined should continue until saturation occurs where no new ideas or theories are being generated. This is along the lines of the positivist multiple case method suggested by Yin (2009) based upon assumptions of closed systems and generalisable theories: multiple cases are chosen to illustrate the replication of findings and theories can be used as predictive measures. This is inconsistent with the critical realist perspective which seeks to explain the

phenomena and develop theory by re-examining theories and data but is less concerned with testing theories under positivist assumptions of saturation and predictive outcomes.

Case data is used in the research as the primary source of information. It is particularly useful in answering fundamental questions of how, what and why the phenomena exists. The adoption of an intensive style of research design allows a view of e-marketplace use to be formed from a small number of case studies. An intensive research design investigates how a causal process works in a limited number of cases, whereas an extensive research design attempts to discover “common properties and general patterns of a population as a whole” (Sayer, 1992, p. 242). The differences between empirical procedures for intensive and extensive research methods are summarised by Sayer (2010) and reproduced in table 3.1.

Table 3.1: Intensive and extensive research: a summary (Sayer, 2010, p. 163)

Sayer, A. (2010). Method in social science: Revised 2nd edition. p163. Retrieved from <http://ECU.ebib.com.au/patron/FullRecord.aspx?p=488040>

This research adopts an intensive style of research which depends upon critical realist assumptions of causality, open systems and the stratification of reality to enable a focus on the underlying generative mechanisms i.e. what causes organisations to participate in e-marketplace trading?

The critical realist perspective views social systems as open and changing where structures, mechanisms and events can influence each other (or not) at different times, to varying degrees. Reality is stratified into three domains: the empirical, where events can be experienced; the actual, where events happen; and the real, which contains the underlying mechanisms that cause the events. The conjunction of structures, mechanisms, and events constitute the reality of the moment but the relationships continually change as perceptions and realities change (Blundel, 2007). The underlying question which a critical realist perspective poses is: what is it *about* the structure, mechanisms and events within a social system that makes the object behave as it does? This employs analytical inferences termed “retroduction” (Danermark et al., 2002) which is not found in a positivist methodology where induction and deduction are the

reasoning strategies used for analysing the case data. Critical realism does not preclude these types of analysis (Sayer, 2010) but, it emphasises abductive and retroductive analysis of the data as ways to uncover the fundamental causes of the phenomena.

Deduction, induction, abduction and retroduction are methods of inference that can be applied to understanding social structures (Danermark et al., 2002). From a critical realist perspective the ability to use abduction and retroduction as ways of thinking about social structures are paramount. The terms abduction and retroduction are often used interchangeably but they rely less on formal logic than deduction or induction and they can generate creative and abstract solutions to the social phenomena being studied (Danermark et al., 2002, p. 81). Sayer (2010, p. 72) describes retroduction as “a way to explain events by proposing and identifying the mechanisms that cause them”. Danermark et al. (2002) make a distinction between abduction and retroduction. They propose abduction as the theoretical redescription or recontextualisation of the data and retroduction as a way to uncover the fundamental causal explanations, which may, however, be the same as those discovered using abductive reasoning. The case data is examined in this way in order to identify the relationships of the connections between structures, objects and events, where inferences made about the relations result in the identification of relations that are causal, structural and substantial (Sayer 1992). Although the context would be different in each case, abductive and retroductive inferences involve working from the data and formulating hypothesis in the following way (Radulescu & Vessey, 2009):

Phenomena P is observed

If hypothesis H were true, H would explain why P would be expected

Therefore, there is reason to suspect H may be true.

The following example illustrates one way in which a critical realist perspective and the application of retroductive analysis can extend the observations made from an interpretive case study and draw upon existing theories.

An interpretive case study conducted by Jap (2002) found that suppliers involved in some e-marketplace auctions believed that the buyers were using the auction as a price

finding tool, had no intention of awarding the contract to a bidding supplier, and were trying to manipulate the price by bidding in the auction themselves.

Phenomena P is observed (negative perception of auctions)

Jap (2002) concludes that although the suppliers' suspicions were untrue the buyers were unable to convince the suppliers of it. This illustrates the observational nature and limited requirement to uncover the fundamental causes of the phenomena which can be a limitation of an interpretive case study. One possible explanation for the situation here is that the suppliers were worried by the power of the buyer and there was little that the buyer could do to diminish this perception: this links to theories of power asymmetries and psychology of control. Taking a retroductive, analytical approach, based on power structure it could be stated as:

The supplier's lack of power (H) being true would explain an expectation of why the supplier holds negative perceptions about e-marketplace auctions (P).

Therefore, there is reason to suspect that a supplier's lack of power may be true.

Critical realism provides the opportunity to ask what is it about the structures, mechanisms and events in the situation that caused the perception about the auctions, and give insights into how and why the conjuncture of these elements produced the outcome at that time. A hypothesis, which could be empirically tested, is that the use of electronic auctions changes buyer supplier relationships. However, it is not the auction, the buyer or the supplier alone that produces the outcome but the underlying relationships between them all. The e-marketplace provides a mechanism and opportunities for connecting the buyer and supplier which are only activated by participation. Unless the underlying causal relationships between actors and outcomes are understood the success of the e-marketplace, and the buyer supplier relationship could be jeopardised.

Context plays a role in causation and it cannot be omitted from a study which seeks to understand generative mechanisms and outcomes. A retroductive analysis would seek to explain why relationships between the buyer and supplier change when an auction system is employed using theories and case data. For example, theories which could link to this relational change and affect the structures, mechanisms, events and

outcomes in the above scenario could relate to trust, power asymmetries, and control. Different outcomes from the use of the auction system exist in the context of the buyer supplier relationship. Changing these relationships might require an increase of trust between buyer and supplier, a decrease in the perception about the buyer's power, an increase in the supplier's power or cooperation between the two parties. These changes can occur at an individual, an organisational or other societal level. As the relationships change, the use of the auction system could also change. The changes in structures and agency over time is termed morphogenesis (Archer, 1995) and is discussed further in section 3.6.1.

### **3.3.3 Data Collection and Analysis Methods**

This section will explain how the structured case research method is linked with a critical realist approach as a means to collect and analyse data in explanatory research.

The research involves a series of case studies by means of a structured-case research method (Carroll & Swatman, 2000) which positions theory and theory building as key elements in the research cycle. Although this method presents a positivist ideal of theory saturation and predictive generalisability, by introducing a critical realist perspective, especially in the way inferences are made, it is compatible with the method outlined by Danermark et al. (2002) for explanatory research. The critical realist perspective enables the structured case method to be used as a data gathering protocol without a reliance on its positivist underpinnings.

Case data illustrates the complex interactions between people, processes, organisations and context. Taking a small number of cases enables each case to be examined in terms of history and context, taking into account specific experiences regarding the situation, processes, activities, relations and episodes of events (Sayer, 1992). By using the structured-case research method it is possible to develop middle range theory from the data which is consistent with an aim of a critical realist perspective. Structured-case has three main elements: the conceptual framework, the research cycle and the literature-based scrutiny of theory built. The conceptual framework is the starting point in the research and consists of the key concepts and relationships to be investigated. The

research cycle involves planning the investigation of the research themes, collecting data, analysing the data and, reflecting and critically analysing the interpretations. Critical analysis of the interpretations produces a higher level of abstraction and informs the next research cycle. The research cycle is used to expand, enrich, validate and revise the developed conceptual frameworks. The constant iteration of data, findings, concepts and theories by means of critical reflection throughout the research project will record linkages and provide rigor in the investigation. In the final stage of the structured-case methodology a wide range of literature is scrutinised to find theories that support or contradict the final conceptual frameworks and theory that has been built. Further critical analysis may lead to more abstraction and an extension of theory or reconciliation with any conflicting literature (Carroll & Swatman, 2000).

Danermark et al. (2002, pp. 109-110) propose six stages as a method to conduct explanatory research:

1. Description – existing theories and empirical case data are used to describe the situation. This involves the interpretations of those involved and how they view the situation.
2. Analytical resolution – the analysis of the components, aspects and dimensions of the phenomena and identification of the components to be studied.
3. Abduction/theoretical redescription – the interpretation and redescription of the components from hypothetical concepts and theories about structures and mechanisms. The initial ideas are developed by being placed in different contexts. Different theoretical interpretations and explanations are presented and compared.
4. Retroduction – The strategies in 3 are employed to discover the fundamental reasons for the existence of the components identified. Stages 3 and 4 are closely linked.
5. Comparison between different theories and abstractions – the elaboration and explanatory power of the structures and mechanisms identified in 3 and 4.
6. Concretization and contextualization – Examines how different structures and mechanisms manifest themselves in concrete situations. This stresses the manner in which the mechanisms interact at different levels under specific conditions.

There has to be a distinction between structural conditions and accidental circumstances.

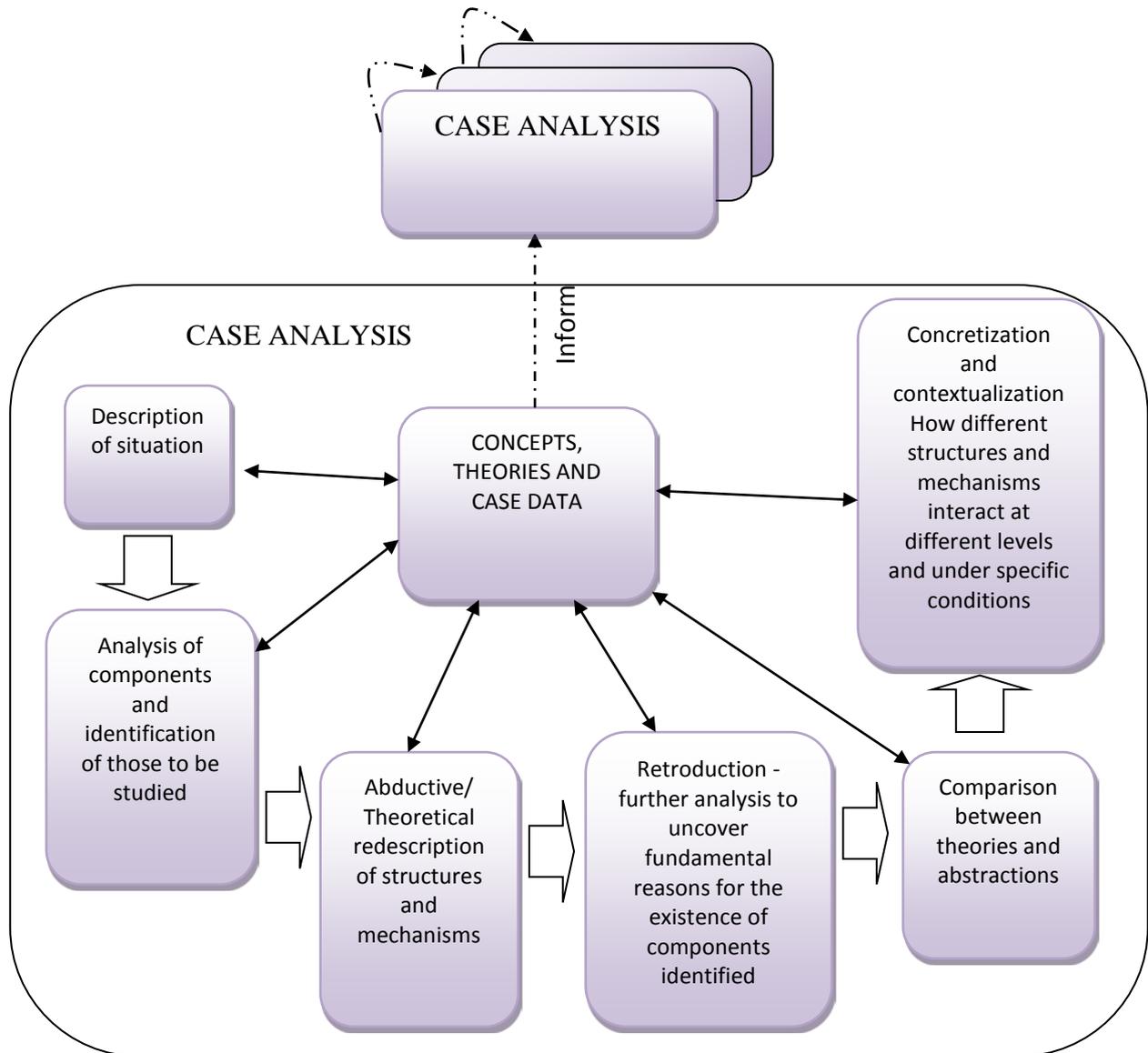


Figure 3.2: Research method (adapted from Danermark et al. 2002, Carroll & Swatman, 2000)

Although Danermark et al. (2002) suggest that the research steps do not need to follow in sequence and can be combined, the steps were followed as outlined in figure 3.2 for each case. The process is iterative as continual description, resolution, redescription, retroduction, comparisons and concretization and contextualization occur. This allows the research to move between description and abstract analysis of the phenomena to a reconstruction of the basic enabling conditions. It involves working at the abstract and

concrete levels concurrently and at different organisational levels, from external to internal, organisation to sub-group (Blundel, 2007, p. 55).

Existing concepts and the case data are central to the analysis. Existing theories are the starting point to examine the context and concepts that may be associated with the object of the study. These theories were found in the literature which was thought to be relevant to the objectives of this study and were associated with strategic management, e-marketplace participation, supply chain management and information technology. The theories and concepts found in the literature were used to develop a general outline of the areas which might impact on e-marketplace participation and to help guide the interviews. The analysis of the data followed the structured case method with critical realism underpinning the abstraction between theories and case data. Cases were examined individually and in sequence according to the order in which the data was collected. After the analysis of each case if any additional relevant theories or concepts were discovered they were incorporated in the analysis of the next case. Unexpected events or surprising results were also used to identify any possible theories or explanations in the existing literature. In an attempt to explain the phenomena beyond the individual case data there was a final scrutiny of the literature for theories which could further support or contradict the findings.

### **3.4 RESEARCH QUESTIONS**

The main research questions are:

- What are the significant relationships that exist between e-marketplace participation, organisational strategy and business value creation?
- What is the impact of e-marketplace participation on organisational structures?

Table 3.2 presents the research questions associated with the concepts gathered through the literature review, (shown in figure 2.1), which are intended to uncover the circumstances under which e-marketplace participation occurs in support of the main research questions. Table 3.3 shows the connection between the concepts and the

interview questions. There is some overlap in the research questions and the interview questions were applicable to more than one research question.

Table 3.2: Research questions and concepts for development of the interview questions

RESEARCH QUESTION	RELATED RESEARCH QUESTION	RELATED CONCEPT
Is e-marketplace trading and participation part of an organisational strategy? Why or why not?	What strategies are required by firms to leverage e-marketplace participation?	Strategy
	Can the e-marketplace adoption decision be categorised as strategic or tactical?	Competitive advantage
	Is e-marketplace participation aligned with an organisational strategy of globalisation?	Globalisation
	Does the extent of e-marketplace adoption and use reflect organisational strategy? Why or why not?	Efficiency
Where does the e-marketplace fit within the market v hierarchy theoretical frameworks?	How does e-marketplace participation change market structures?	Relationships
	What is the impact of relation specific assets on e-marketplace adoption?	Business value
	What is the impact of e-marketplace trading on relational structures?	Strategy
	How does the functionality of the e-marketplace affect organisational structures?	Firm performance
What determines the extent or level of participation in trading via an e-marketplace?	When are e-marketplaces more efficient for procurement than other methods of procurement used within the organisation?	E-marketplace characteristics and use
	How does e-marketplace participation impact on organisational information	Efficiency

RESEARCH QUESTION	RELATED RESEARCH QUESTION	RELATED CONCEPT
	systems?	Business value
	What problems exist when adopting or trading via an e-marketplace?	Relationships
	How are relational issues managed?	Quality improvement
	What effect does the type of products bought/sold via the e-marketplace have on e-marketplace participation?	Firm Performance measures
	How well defined are business value measurement metrics for e-marketplace use?	Costs and cost reductions
	What firm performance issues are considered when evaluating trading via an e-marketplace?	Revenue growth
	Are the firm performance issues and the business value created from e-marketplace use subjective or financial?	

Table 3.3: Concepts from literature review and related interview questions

CONCEPT	INTERVIEW QUESTIONS
E-MARKETPLACE CHARACTERISTICS AND USE	<ol style="list-style-type: none"> <li>1. How long has the organisation been using an e-marketplace?</li> <li>2. Which e-marketplace(s) is(are) presently used?</li> <li>3. What categories of goods and services are traded through the e-marketplace?</li> <li>4. Have the categories of products/services you trade through the e-marketplace changed over the time you have been using the e-marketplace?</li> <li>5. Features/functionalities of the e-marketplace - Buying and selling, auction, other value-add services of e-marketplace?</li> <li>6. Which features of the e-marketplace do you use?</li> </ol>
STRATEGY	<ol style="list-style-type: none"> <li>1. What initiative instigated the adoption of the e-marketplace?</li> <li>2. Is the use of the e-marketplace part of an</li> </ol>

CONCEPT	INTERVIEW QUESTIONS
	<p>organisational or business unit strategy?</p> <p>a. e.g. Is there an IT strategy for the use of e-marketplaces?</p> <p>b. Is there a procurement strategy for the use of e-marketplaces?</p> <p>3. What effect does the perceptions of management and other stakeholders have on the adoption and use of the e-marketplace?</p>
BUSINESS VALUE	<p>1. What benefits does using the e-marketplace provide for the organisation?</p> <p>2. What are the risks of using the e-marketplace?</p> <p>3. Are there any other problems associated with participation in the e-marketplace?</p>
<b>FIRM PERFORMANCE</b>	
Costs and cost reductions	<p>1. What are the costs associated with using the e-marketplace?</p> <p>2. Have cost reductions been realised from participation in the e-marketplace?</p> <p>a. What types of cost reductions have been obtained?</p> <p>b. Is there scope for further cost reductions?</p> <p>3. How are the benefits, costs and risks of the e-marketplace initiative assessed?</p>
Efficiency	<p>1. Was efficiency in the procurement process part of the decision to use the e-marketplace?</p> <p>2. Have efficiencies been realised?</p> <p>a. How have efficiencies been realised?</p> <p>b. Is there scope for further realisation of efficiencies?</p> <p>3. What is the extent of integration of the e-marketplace system with other information systems in the organisation?</p>
Globalisation	<p>1. Do you use the e-marketplace to trade internationally?</p> <p>2. Was this a consideration when you began using the e-marketplace?</p>
Relationships	<p>1. Has using the e-marketplace affected your relationships with trading partners or competitors?</p> <p>2. Have you developed additional relationships,</p>

CONCEPT	INTERVIEW QUESTIONS
	<p>maintained or improved relationships as a result of trading via the e-marketplace, or expanded your market?</p> <p>3. How have competitors reacted to your use of an e-marketplace?</p>
Revenue growth	<p>1. Has revenue increased due to the use of the e-marketplace?</p> <p>2. Has your use of the e-marketplace expanded your market share?</p>
Competitive advantage	<p>1. Has using the e-marketplace provided you with a competitive advantage over other organisations in the industry?</p> <p>a. Companies that use the e-marketplace?</p> <p>b. Those that do not use the e-marketplace?</p>
Quality improvement	<p>1. Has the use of the e-marketplace affected the quality of the goods/services traded through the e-marketplace?</p> <p>2. Is this as expected?</p> <p>3. Have products been developed through contacts made via the e-marketplace?</p>
Firm performance measures	<p>1. What measures of firm performance are considered when evaluating trading via an e-marketplace?</p> <p>2. How well defined are business value measurement metrics for e-marketplace use?</p> <p>3. How do you measure the effect of using the e-marketplace on the creation of business value?</p> <p>4. What impact does e-marketplace trading have on firm performance overall?</p> <p>5. What potential do you envisage for the future use of the e-marketplace?</p>

### 3.5 DATA GATHERING

This section of the chapter will explain how the organisations were chosen, give a brief overview of the organisations selected and the interview protocol.

### **3.5.1 Selection of Cases**

E-marketplaces were initially identified through the database of [emarketservices.com](http://emarketservices.com) which maintains a list of international e-marketplaces that are trading successfully in the business-to-business or business-to-government area. The e-marketplaces represented in this database covered diverse industries and the e-marketplaces varied in the types of services offered to participants. E-marketplaces that were operating in Australia were selected as potential participants in the research for accessibility reasons. Additional Australian e-marketplaces were identified through Internet searches. [emarketservices.com](http://emarketservices.com) lists 34 e-marketplaces operating in the Oceania region and the types of industries they represent under the headings of: agriculture, automotive, aviation, building and construction, energy and fuels, food and beverage, forestry and wood, government and public sector, healthcare and pharmaceutical, hospitality and leisure, industrial machinery and equipment, IT products and services, metal and mining, multiple industry e-marketplaces, other industries, packaging, pre-owned goods, real estate, services, transportation and logistics. Some e-marketplaces appear in more than one category and five of the eight in the services listing belong to the same parent organisation.

Buying organisations were identified through the e-marketplace web site and potential participants were selected. In many instances the e-marketplace web site was a supplier directory and it was not possible to identify buying organisations. It was therefore felt appropriate to include e-marketplace providers as participants in the research. E-marketplace providers were selected for their knowledge of e-marketplace implementation and understanding of stakeholder requirements and experiences.

The selected organisations were initially contacted via email addressed to the senior procurement person or director of the organisation explaining the study and asking if the organisation would be willing to participate. If no reply was received within two weeks follow up emails were sent. Eight of the organisations contacted responded positively to the participation request or asked for further information. Seven organisations were found who were willing to participate in the research.

When an organisation responded positively to the participation request email contact was made with the person who would be involved in the study and an appointment arranged to conduct the interview. The initial contact person was not always an informant in the study. The email was sometimes passed on to someone else within the organisation or other contact names were supplied. Interview questions were emailed to the participant prior to the interview.

To provide sufficient evidence for the research seven cases are investigated (table 3.4 and 3.5). Due to the time limitations, the sequential nature of the research and the limitations associated with finding eligible buying organisations in Australia it was not possible to have a larger sample. However, this is an adequate number for intensive research methods where one or two cases will provide enough information for generating explanatory propositions (Sayer, 2010). The organisations chosen represent e-marketplace participants (buyers) and e-marketplace providers as well as e-marketplace trading in the Australian private and public sector. The number of cases in each participant category will generate sufficient evidence to answer the research questions and satisfy the criteria for generating explanatory propositions. The cases are large organisations that use an e-marketplace to procure goods or services or are e-marketplace providers. Organisations with large procurement budgets are more likely to use an e-marketplace (Hackney, Jones & Losch, 2007) and e-marketplace providers can provide insights into their organisation and the participants in the e-marketplace. Representatives from the organisation were selected based on a high level of managerial experience and knowledge of the procurement process and e-marketplace participation. The informants held positions within the organisation with job titles such as Director Australasia, Regional Vice President, Procurement Manager, Chief Procurement Officer, General Manager E-Business Solutions, Associate Director Procurement Systems and Supply Chain Manager. These informants were chosen because the purpose of the study is to understand and to explain the business value resulting from procurement via an e-marketplace and it is considered that people holding these positions will have a sound knowledge of business value, the information system and procurement operations. The number of informants depended upon the size of the organisation and the number of departments involved with strategic procurement decisions. Two people were interviewed from each organisation. Data triangulation and

validation was done by accessing secondary data such as web sites and company reports. Information from the web sites of the case study organisations, which included, case studies and testimonials from organisational customers, was also used for validation of interview data. Interviews with informants were conducted by appointment at the site of business during normal working hours and lasted an average of one hour.

The final seven participant organisations were three from the resources sector, one e-marketplace provider specialising in mining and related industries, one e-marketplace provider with reverse auction specialisation and two Australian state government e-marketplaces.

Table 3.4: E-marketplace providers

<b>Organisation</b>	<b>E-Marketplace Ownership Structure</b>	<b>Trading Functions</b>	<b>Region of Operations</b>	<b>Goods Traded</b>	<b>Types of Users</b>
RevNet	Independent, Public	Reverse auction, RFQ, Tender	Australia, UK	Variety of goods and services	Variety of buyers and sellers
EM Consortium	Consortium	Online order, RFQ, Proposals, Bids, Catalogues	Global	Oil, gas, core mining processes and construction	Mining, metals and processing companies and their suppliers
Smartbuy	State government (Australia) Public	Online order, RFQ, Tender, Catalogues, Bids	Australia	Variety of goods and services	Government agencies and their suppliers
GEM	State government (Australia) Public	Online order, RFQ, Tender, Catalogues, Bids	Australia	Variety of goods and services for	Government agencies and their suppliers

Table 3.5: Organisational buyer and e-marketplace trading

<b>Organisation</b>	<b>Type of organisation</b>	<b>Industry</b>	<b>Trading operations</b>	<b>Goods traded through e-marketplace</b>
Energy Pool	Private company	Gas and oil exploration and extraction	Global operations	Commodities
International Mining	Private company	Aluminium products	Global operations	Goods and services
Grand Metals	Private company	Mineral exploration, extraction and refining	Global operations	Goods and services
State government departments (Australia)	Public sector	Agencies operating state services, e.g. hospitals, prisons, schools, public works, construction.	State wide operations.	Goods and services

The first case involved a private e-marketplace provider who had knowledge of suppliers, buyers and e-marketplace issues. The interview with the first informant posed broad open ended questions to gather the informant's views and provide a basis for the analysis of the phenomena and the identification of components to be studied further. The areas discussed were characteristics of the e-marketplace, goods traded, types of participants, benefits for the participants, support provided, future development of the e-marketplace and e-marketplaces in general and organisational sentiment towards e-marketplace trading. Consistent with an abductive/retroductive analysis (Danermark et al., 2002) the components of the analysis were linked to hypothetical concepts about structures, events and mechanisms and the reasons for the existence of the phenomena. The structures and mechanisms that were identified were examined to determine the difference between structural conditions and accidental circumstances in order to understand how well they explained the phenomena at different levels. Subsequent interviews were adapted as a result of prior interview information and analysis which highlighted areas of additional interest or differences from the concepts and theories already identified.

Some questions were not applicable to all the organisations in the study and were changed to reflect the structure of the organisation involved. The questions involving competitive advantage were not relevant for government organisations and were

changed to questions regarding co-operation amongst government agencies and between state governments. For e-marketplace providers competitive advantage questions were related to how the informant perceived the competitive advantage of the e-marketplace for the participants. E-marketplace providers were asked how long the marketplace had been operating and what features it provided rather than how long they had been using an e-marketplace. Questions regarding revenue growth were not applicable to e-marketplace providers but they were asked their opinions based upon their knowledge of participants' experiences.

### **3.5.2 Interview Protocol**

Data was gathered via semi-structured interviews with participants from each organisation. The use of semi-structured interviews allowed the informants to put forward their views on a range of matters connected with e-marketplace adoption and use. Informants had the opportunity to discuss any factors that they identified as impacting upon the success or failure of using an e-marketplace from an organisational perspective. The questions were designed to stimulate discussion on the anticipated and the realised benefits, costs and risks associated with e-marketplace adoption and use and link to the strategies used and business value created.

The interviews were recorded and notes were taken during the interview of significant behaviour or emphasis, after obtaining the participants' consent. Each interview lasted between forty five minutes and one hour. There were a few minutes at the beginning of each interview for introductions and general discussion to put the informant at ease and build a rapport. At the end of the interview the informant was invited to ask any additional questions and chat generally to conclude the session on a positive note. Informants were also reminded that the information would be available to them and to contact us if they had any concerns or further comments. Interview transcripts were compiled and forwarded to the informants by email to ensure accuracy and completeness. Informants responded by email and accepted the transcripts as a true representation of the interview.

The discussion questions were based upon the factors identified in the literature review to uncover how e-marketplace strategies have been implemented and any difficulties or

successes encountered. The methods used to evaluate benefits, costs and risks of e-marketplace participation were also discussed. Although the questions were focussed there was considerable scope for the informant to expand their answers and to provide additional information, raise concerns or highlight issues.

Each informant was provided with the discussion questions one week prior to the interview to give them time to formulate their views. Prior knowledge of the discussion questions was intended to make the informant feel more at ease, lead to considered responses and reduce recall bias. Additionally, it should have stimulated thoughts on how strategies had been implemented for the use and adoption of the e-marketplace and the effects at the organisational, operational and tactical levels before the interview was conducted. Prior knowledge of the questions which reflected the concrete measures of business performance, such as revenue, profit and loss related to the use and adoption of the e-marketplace, provided an opportunity for the informant to substantiate their view with evidence. Any misunderstanding or ambiguity that the informant felt was present in the questions was discussed at the interview.

Data was triangulated by crosschecking the existence of phenomena and the veracity of the individual accounts by gathering data through a variety of channels such as company documentation, financial reports, other published documents and websites. As the organisations chosen are well established they have extensive information on their trading operations readily available through publically accessible sources, such as their websites. Case studies and links to other informative web sites are also routinely available at an organisation's web site. Although these usually have a positive bias towards the organisation they are nevertheless useful sources of information and can reveal how the organisation wishes to be perceived.

### **3.6 DATA ANALYSIS**

A hermeneutic approach was taken to analyse the data gathered for this research. Content analysis was used to identify themes present in the case data and to code and

categorise them. The following section explains the applicability of the hermeneutic ontology and the categorisation of the themes.

A hermeneutic philosophy is founded on the belief that phenomenology is ontology. Language, art, literature, beliefs and culture are examples of lived experiences produced within a system of meaning (see Crotty, 1998, pp. 87-111). In order to understand the system of meaning the products of lived experiences have to be placed in their historical and cultural context. This involves the interpreter moving between organisational texts (in this research), the historical context and cultural situation to try and recreate the world in which the text came into being. In order to do this there has to be constant comparative analysis between the interpretation of the situation, the text, context and cultural situation. Incorporating organisational discourse into an organisational study highlights the relationships between organisational structures and social process. This is consistent with critical realism and a dialectical-relational ontology (Fairclough, 2005) involving an iterative process of analysis: moving from the concrete to the abstract and abstract to the concrete to discover the past and present situation and how change occurred.

Interviews and the transcripts were the primary source of data used for analysis. Supplementary data were company web sites, company reports and emails. Data for analysis was imported into the NVivo 8 software package which is specially designed to aid in the coding and comparison of the themes generated from qualitative data analysis. Abstraction from the data allowed a coding system to be developed to organise the data according to conceptual themes. Retroductive analyses of the themes resulted in conceptual abstractions which could help explain the reason for the existence of the themes.

The data from the interview transcripts were initially coded to the themes identified in the literature review (described earlier). Themes represent conceptual objects and these were set up as nodes, broad rules for inclusion were formulated and data from the transcripts were coded to a parent node. Ideas or themes not captured by those previously identified were coded to free nodes. Subsequent analysis of the parent node, led to the coding of child nodes and the development of rules for inclusion. The child

nodes were given descriptive titles and reflected subthemes within the node. Where information was relevant to more than one theme it was coded to all the appropriate nodes. Nodes were also collapsed or deleted if they were extraneous or duplicated other nodes. This occurred continually throughout the analysis phase of the research as the data was revisited, comparisons made, and literature analysed. These abstractions allowed the themes and the rules for data inclusion to become more refined and strengthened the links between data and themes. Free nodes were incorporated into the hierarchy if they reflected the rules generated during subsequent data analysis or they remained free nodes to explain other phenomena. Themed nodes are conceptual objects that use a critical realist philosophy to represent structures, mechanisms and outcomes consistent with the classification taken from Danermark et al. (2002); they exist in a contextual and empirically stratified domain.

E-marketplace participation is the main object of this study and it consists of internal and external relations and their associated emergent powers or liabilities. Critical realist philosophy proposes the stratification of reality into three domains: the empirical, the actual and the real. These domains are separate but interact; they contain experiences, data, theory, objects, structures, events and mechanisms which can be observed directly, indirectly or not at all. The empirical dimension contains direct and indirect experience which produces data associated with theory; the actual dimension is where events happen but these may or may not be experienced; the real dimension is where the generative mechanisms occur that are capable of producing events in the world (Danermark et al., 2002, pp. 20-24; Prieto & Easterby-Smith, 2006). Separating the object of study into these domains will help to uncover underlying causal relationships and their powers. Stratification also occurs within objects where causation can be generated from another level within an object resulting in emergent powers or liabilities (Prieto & Easterby-Smith, 2006). Although e-marketplace participation is the main object of the study, strategy, firm performance and business value are also focus objects and this creates a structure of necessary and possible relationships between the objects, as shown in figure 3.3.

Contributing to the business value of the organisation should be the aim of any business process and this research aims to show under what conditions e-marketplaces affect this through investigating related strategies, e-marketplace participation and concepts of

firm performance (figure 3.3). Separating reality into the three domains allows the causal mechanisms to be separated from the actual and empirical domain and can show the potential of the e-marketplace from the e-marketplace provider's perspective and the participants' perspective even though they operate under different value creating business models. Measures of the business value created by using the e-marketplace are mainly subjective because of the difficulty in correlating traditional business value metrics, such as rates of return and profit/loss calculations, with the use of an information system within a business unit. However, business units are evaluated through key performance indicators, such as cost reduction and efficiency, and the use of an e-marketplace is judged by the contribution it delivers towards achieving these targets. Firm performance metrics based on e-marketplace participation show the outcome of events at an empirical level. Strategy is a prescribed action that is designed to achieve goals set at an organisational, business unit or individual level, it represents a structure operating at all levels of the organisation. Firm performance evaluations indicate how each part of the organisation is contributing to the overall business value of the firm. The Possible relation between strategy and firm performance when creating business value Necessary relation to find if there is a link between strategy, e-marketplace participation and firm performance by explaining how and in what circumstance the case organisations use the e-marketplace.

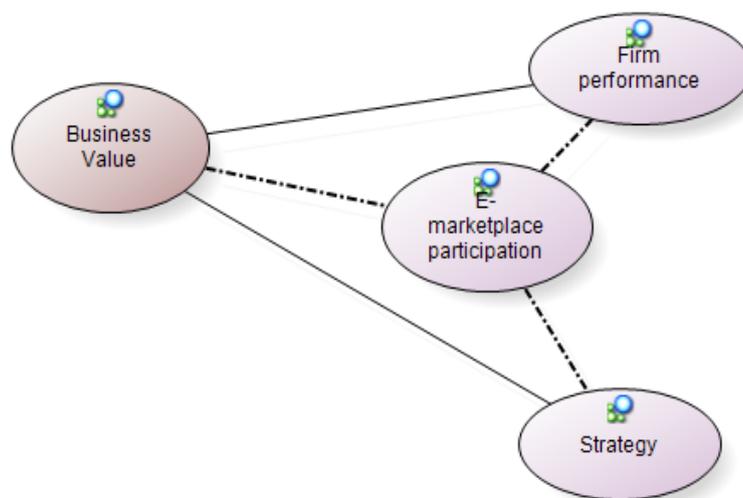


Figure 3.3: Primary research themes and relations for e-marketplace participation

There are difficulties labelling conceptual themes with critical realist terms because the concept associated with a theme can change when viewed from a different organisational level or when the object of focus changes. This is because objects have their own internal relations, emergent powers and liabilities which in turn are affected by other objects, relations, emergent powers and liabilities. For example, firm performance can be viewed at an empirical level as an outcome (i.e. result of events) of e-marketplace participation, or at the real level as a structure consisting of internally related objects which possess causal powers or liabilities, when considering the relationships between firm performance objects such as business processes, benefits, costs and risks. Likewise at the actual level (the event happens whether it is experienced or not) e-marketplace participation can be conceptualised as an observable event, or as an e-marketplace structure where generative mechanisms occur, incorporating objects, mechanisms, events and relations: the e-marketplace as a web based platform is also a technological artefact and any interplay between the social and technological aspects of the e-marketplace have to be considered. Figure 3.3 shows e-marketplace participation as an object and the possible relations between the objects of business value, firm performance and strategy. This represents a macro level view where each object contains structures and relationships with causal powers or liabilities that may, or may not, be activated and which may, or may not, interact with the other objects.

Table 3.6: Themes attributed to case study organisation

THEME	CASE ORGANISATIONS						
	1	2	3	4	5	6	7
<b>Business value</b>	✓	✓	✓	✓	✓	✓	✓
<b>Firm performance</b>	✓	✓	✓	✓	✓	✓	✓
<b>Relationships</b>	✓	✓	✓	✓	✓	✓	✓
<b>Competitive advantage</b>			✓			✓	✓
<b>Costs</b>	✓	✓	✓	✓	✓	✓	✓
<i>Cost evaluation</i>		✓	✓			✓	✓
<b>Efficiency</b>	✓	✓	✓		✓	✓	✓

THEME	CASE ORGANISATIONS						
	1	2	3	4	5	6	7
Quality improvements			✓			✓	
Benefits	✓	✓	✓	✓	✓	✓	✓
Risks	✓	✓	✓	✓	✓	✓	✓
Revenue growth				✓			
E-Marketplace participation	✓	✓	✓	✓			✓
Adoption	✓	✓	✓	✓		✓	✓
Support	✓	✓	✓	✓	✓	✓	✓
Competitive advantage		✓	✓				
<i>Industry norm</i>			✓				✓
<i>Trading base</i>		✓				✓	
Functionality	✓	✓	✓	✓			✓
Peer pressure		✓	✓			✓	✓
Efficiency	✓		✓		✓	✓	✓
Use	✓	✓	✓			✓	✓
Workflow practices		✓	✓			✓	✓
Functionality	✓	✓	✓	✓		✓	✓
<i>System integration</i>			✓		✓	✓	✓
Products traded		✓	✓	✓		✓	✓
<i>Product development</i>			✓			✓	
System compatibility	✓	✓				✓	✓
Support	✓		✓	✓		✓	✓
<i>Team</i>		✓	✓	✓			✓
<i>Management</i>		✓	✓	✓			✓
Capabilities		✓	✓	✓	✓		✓
<i>IT capabilities</i>		✓	✓	✓	✓		✓
<i>Learning</i>		✓	✓	✓		✓	

THEME	CASE ORGANISATIONS						
	1	2	3	4	5	6	7
<b>Organisational strategy</b>	✓		✓	✓		✓	✓
<b>Information technology strategy</b>			✓				
<b>Relational strategy</b>		✓	✓	✓		✓	
Buyers			✓			✓	
Suppliers		✓	✓			✓	
Management			✓				
Others							
<b>Procurement strategy</b>	✓	✓	✓	✓		✓	✓
Business opportunity		✓	✓				
Cost saving	✓	✓	✓	✓			✓
Efficiency	✓	✓					✓
<b>Policy</b>		✓			✓	✓	
<b>Political environment</b>	✓	✓				✓	
<b>Organisational characteristics</b>		✓	✓	✓			✓
<b>Perceptions of e-marketplaces</b>		✓	✓	✓	✓	✓	✓
<b>Market conditions</b>		✓	✓	✓			✓
<b>Country characteristics</b>		✓	✓			✓	
<b>Industry sector</b>		✓	✓	✓		✓	✓
<b>Trading partner attributes</b>			✓	✓		✓	✓
<b>Globalisation</b>			✓	✓			✓
Global trading			✓	✓	✓	✓	✓
<b>Definition of e-marketplace</b>			✓	✓	✓	✓	✓
Auctions							✓
E-marketplace			✓				✓
<b>Market knowledge</b>			✓				✓
<b>Problems with use</b>				✓		✓	

THEME	CASE ORGANISATIONS						
	1	2	3	4	5	6	7
<b>Procurement perspective</b>			✓	✓		✓	✓
<b>Skills required</b>			✓	✓			

The themes discussed in the literature relating to various areas connected to e-marketplace participation, strategy and firm performance are shown in table 3.6. These conceptual themes were abstracted from the e-marketplace literature and from the case data. The initial coding allowed the evaluation of the case data in terms of the themes taken from the literature. Information supplied by the informant was coded to an appropriately themed node. Additional information from company documentation was also coded here if it concerned participation or non-participation in the e-marketplace. The case data added context to the study which was further analysed to support or reject themes in the literature and identify the structures, mechanisms, their powers or liabilities, events, and outcomes in each case. The informants in the study had knowledge of e-marketplaces and the case organisations were involved with e-marketplaces at different levels of participation ranging from those with little or no involvement in e-marketplaces, those trading frequently through them and providers of an e-marketplace. Separating e-marketplace participation into adoption and use acknowledges the temporal element of e-marketplace trading. The adoption of additional functionalities from the e-marketplace and their use or non-adoption of additional functionalities can also be considered.

Strategy was conceptualised from areas identified in the literature which could impact upon e-marketplace participation. Information technology is essential for the use of the e-marketplace; relational concerns are thought to influence corporate strategy and reflect the attitudes of various organisational stakeholders; procurement strategy is an important element to incorporate when considering e-marketplace trading. Strategy and policy are both intended to achieve goals, but policy is especially relevant to government where policy guides what has to be achieved and the government agencies initiate procedures and protocols to implement the policy.

Not all of the themes were evident in every case and additional areas that could affect e-marketplace participation were uncovered. The findings section will discuss the themes that emerged on a case by case basis and incorporate temporal and contextual elements which are lacking here.

### **3.6.1 Morphogenetic Approach: Technology, Organisational Structures and Agency**

A morphogenetic approach to social structures acknowledges that linkages between people and social structures are inseparable. This analytical dualism is represented by the interactions that occur through social structures, cultural structures and agents at different levels (Archer, 1995). Structures and agents have emergent properties (causal mechanisms) which interact with each other to produce non-predictable, although explicable, changes over time (Archer, 1995). Context is extremely important for analysing structure and agency as it provides a means to distinguish pre-existing conditions from present activities. It provides a way to identify the structures, agents and causal mechanisms that have shaped the current situation. Context, structures and agents change over time and time is incorporated in a morphogenetic cycle as a central theme, requiring three phases of analysis:

1. Structural conditioning - founded on past actions, elaborated over time to form a given structure that conditions, but does not determine, social interaction;
2. Social interaction - influenced by structural conditioning and the orientation of the current agent;
3. Structural elaboration or modification where changes in the relationships between the parts occurs (i.e. morphogenesis): the opposite, morphostasis, occurs where the current situation is reproduced without change or modification (Archer, 1995).

Change does not follow in a linear progression from structural conditioning, to social interaction, and then to structural elaboration because there is continual interplay between the parts. Structural elaboration possesses emergent properties (mechanisms with powers/liabilities) which includes a large subclass of unintended, unforeseen or even unwanted outcomes. Changes in structural properties and the introduction of new ones caused by compromise and group conflict produce unanticipated outcomes which

form part of the structural conditioning in the next morphogenetic cycle (Archer, 1995, pp. 90-91). Emergent properties, both expected and unexpected, are connected to events (Merton, 1968) produced from the activation of the powers or liabilities of causal mechanisms (Archer, 1995). Structural conditioning is linked to social interaction through vested interests and the different situational logics of agents; social interaction and structural elaboration are linked by both exchange transactions and power relations (Archer, 1995, pp. 295-344). Morphogenesis is expected to occur most dramatically when the emergent properties of structure, culture and agent are aligned.

Applying the idea of morphogenesis and critical realism in terms of ICT is an attempt to separate the use of the technology into the components of structures, agents, and events and to determine the relationships between them (Mutch, 2010). This entails identifying the material properties of the software and hardware, uncovering the relationships that exist because of the use of the technology, and identifying the relationships between structures and agents and their powers or liabilities. It is particularly appropriate in the case of e-marketplace participation which is enabled by ICT and involves inseparable relationships between organisational structures, agents, and technological structures which change over time. In order to apply this aspect of the methodology, after the themes were abstracted from the data and coded to the relevant nodes further analysis identified the possible relationships between strategy as a macro organisational structure and participation in the e-marketplace at a micro level.

The terms macro and micro are relational terms that apply to the emergent properties of a structure, culture and the agent at different strata, where macro level structures possess emergent properties that are capable of reacting back on the micro level (Archer, 1995). Over time the micro level can impact on the macro level through causal mechanisms changing structures, culture and agents. Strategy was identified as an organisational, macro level structure in this research because it has been contextually developed, has many possible relationships with other objects in the study and can react back on the micro level. The level of organisational e-marketplace participation is an event that occurs at the micro level and has a relationship with strategy and other objects through the e-marketplace technology. In this instance the e-marketplace is a representation of

technology as an enabler and, therefore, a mechanism rather than as the efficient market structure illustrated in chapter two (figure 2.2).

A conceptual model for the structures of causal explanation and events is described by Sayer (1992, p. 109) as existing “where Object  $X$ , having structure  $S$ .... necessarily possessing causal powers ( $p$ ) and liabilities ( $l$ ).... under specific conditions ( $c$ )....will: ( $c_1$ ) not be activated, hence producing no change –  $e_1$ ; ( $c_2$ ) produce change of type  $e_2$ ; ( $c_3$ ) produce change of type  $e_3$ ” etc. Archer (1995) builds upon this by considering the activation or non-activation of causal mechanisms as social interaction which can produce either morphogenesis (structural change) or morphostasis (reproduction of existing structures). Causal mechanisms are activated under certain conditions and have the power to produce a certain outcome given those conditions. However, causal mechanisms also possess liabilities which are activated in certain conditions and the liabilities can reduce the causal power of mechanisms.

Figure 3.4 applies these concepts to illustrate how structural change could occur through possible interactions suggested in the literature between strategy, at a macro level, and the level of e-marketplace participation, at a micro level. At time 1 ( $T^1$ ) organisational strategy (object  $X$ ) exists which represents structural conditioning as a result of previous social interactions. Organisational strategy (which corresponds to structure “ $S$ ” from Sayer’s (1992) model) might involve an e-commerce or e-marketplace component at the organisational or departmental level. Conversely there may be no e-commerce or e-marketplace strategy in evidence. At time two ( $T^2$ ) and time three ( $T^3$ ) social interaction between agents, technology and organisational strategy is observable in the implementation and operationalisation of strategic initiatives (or non-implementation). E-marketplace adoption does not have to arise from a strategic initiative: the transformational cycle incorporates this situation in the conflux of mechanisms and social interaction which can be activated to produce outcomes at any time in the cycle. However, e-marketplace technology is a necessary mechanism in this study, which requires activation or non-activation, to achieve an e-marketplace trading outcome. The value of participation in the e-marketplace can be assessed by agents in terms of perceived utility or more formal cost and benefit analysis methods. Social interaction is of the utmost importance in the evaluation of e-marketplace technology and its

organisational value. Structural elaboration occurs through the activation (or non-activation) of mechanisms to produce events and can be observed at time four ( $T^4$ ). At  $T^4$ , there will have been a level of e-marketplace participation (event), even if it is none, and this will reproduce existing conditions ( $c_1$ ) or produce change ( $c_2$ ) of a certain type ( $e_1, e_2, e_3$  etc).

Archer (1995, p. 161) suggests that work should be done to discover how structural influences are transmitted to particular agents, in determinant positions, and the strategic combinations that result in morphogenesis rather than morphostasis. This study aims to contribute to this area of knowledge through an investigation of e-marketplace trading and identify the fundamental causal mechanisms, their powers and liabilities and the specific conditions under which e-marketplace trading contributes to creating organisational value.

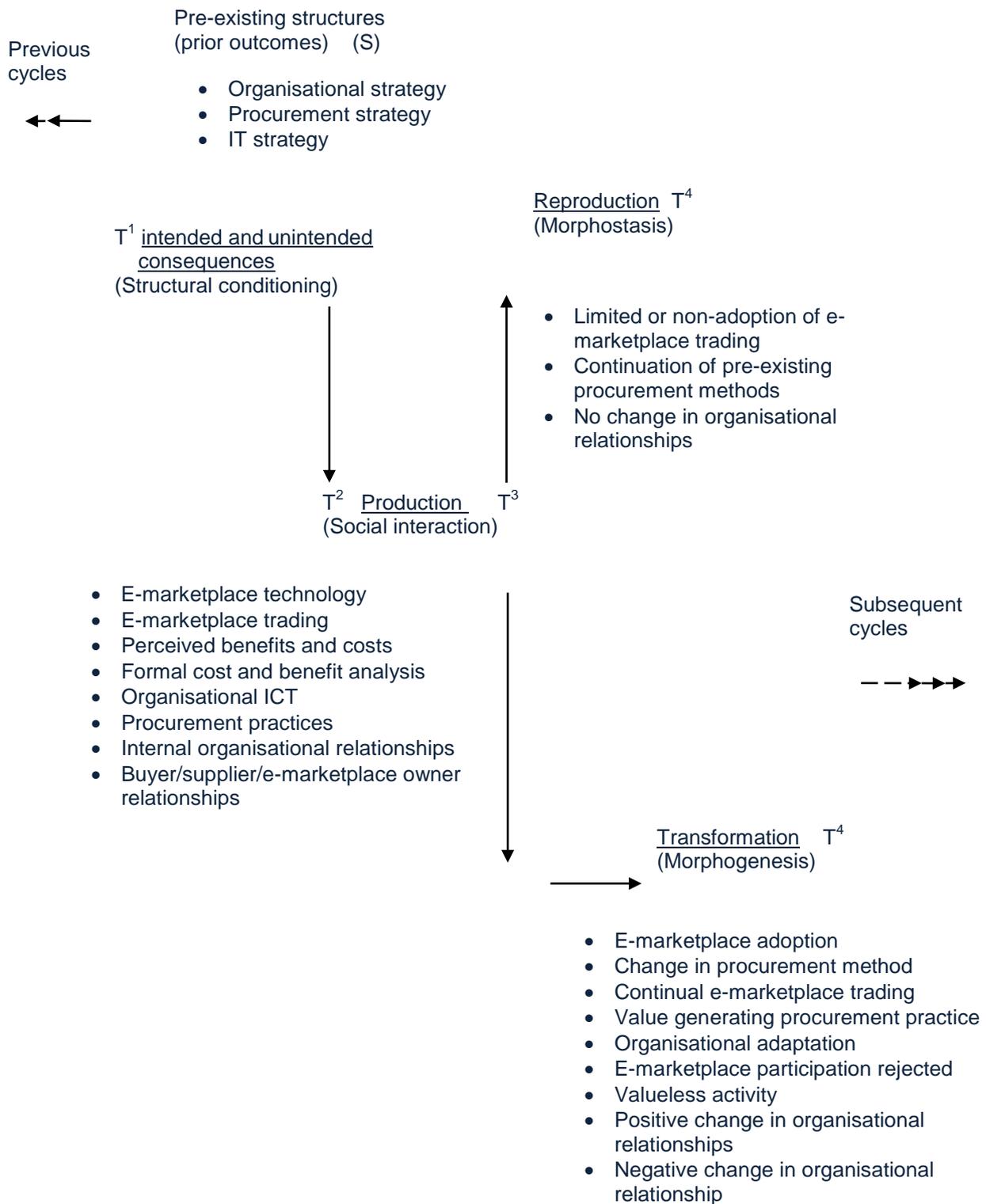


Figure 3.4: Combined model of transformational social action and the morphogenetic/static cycle (Archer, 1995, p. 158), causal explanation (Sayer, 1992) and e-marketplace trading

### 3.7 LIMITATIONS

The structured-case methodology requires that the research cycle reaches the point where incremental learning diminishes, and theory saturation occurs. The three year time limit of this study means that this may not be fully realised. However, future research can commence where this study finishes.

The number of case studies is small and they represent several types of participants in an e-marketplace. However, for intensive research methods one or two cases is sufficient (Sayer, 2010). Future research could focus on one industry or government. Theory is used to explain the phenomena and develop propositions for the existence of the phenomena. Retroductive analysis involves working from the data to provide possible explanations but requires empirical testing to provide stronger evidential links (Radulescu & Vessey, 2009). Further testing of the propositions was not possible in this research and verification of the propositions will require further analysis. This could involve the empirical methods outlined by Miller and Tsang (2006) requiring setting up experimental laboratory designs and conducting correlation analysis between the factors identified.

Theories from existing literature were used to frame the research questions, search for meaning in the data and build relationships between concepts. This can impose an over reliance on established theories leaving areas of significance or new areas to go undiscovered. However, the use of the critical realist philosophy and retroductive analysis of the data allows additional theories to be incorporated into the study.

The critical realist philosophy involves the identification of structures, mechanisms and outcomes and an examination of organisational context. The analytical dualism entailed in this type of study where there are many interactions between structures and agents can produce differences in the identification of the fundamental causal mechanisms. This is partly dependent on organisational context and the stratification of reality into the real, empirical and actual domains. The strength of the mechanisms' powers and liabilities also determines how observable it is. Identification of the structures and mechanisms are subject to interpretation and may not consider all of the relevant objects

that pertain to the generation of certain outcomes. There is also some vagueness about the term “mechanism” which was identified as being given 24 different definitions by 21 authors (Astbury & Leeuw, 2010; Mahoney, 2001). Astbury and Leeuw (2010, p. 368) conclude that mechanisms are “underlying entities, processes, or structures which operate in particular contexts to generate outcomes of interest”. They consolidate the descriptions into three key attributes of a mechanism:

1. Mechanisms are usually hidden; (ie they are only observed through outcomes)
2. Mechanisms are sensitive to variations in context; and
3. Mechanisms generate outcomes.

Mahoney’s (2001) comparison between correlation variables and causal mechanisms describes a causal mechanism as “an unobserved entity that when activated-generates an outcome of interest” (p. 580). Viewing mechanisms as “ways of acting” (Bhaskar, 1978; Sayer, 1992, p. 105) to produce an outcome invests a mechanism with causal powers or liabilities. Causal powers and liabilities of mechanisms are the “dispositions, capacities, and potentials to do certain things, but not others” (Fleetwood, 2004, p. 46) and arise from the essential nature of the entities themselves (Wynn & Williams, 2012). In this study mechanisms are regarded as underlying entities with ways of acting, in a certain context to produce an outcome.

Coding data into themes requires a conceptual analysis. The stratification of reality adds complexity to coding themes: a theme can be associated with different concepts and have an impact at more than one level of reality. Each theme could have several conceptual descriptions attached to it which is dependent on the object being studied and its role within the object’s structure. It is therefore difficult to attach a label of structure, mechanism or outcome to a theme. Coding and identifying themes is also affected by the researcher’s interpretation and it is liable to researcher bias.

The presence of bias in research is inevitable. Interpretations made by the researcher and informant introduce bias into the research and it is present throughout the research process. Existing literature reflects the author’s interpretations of events and this is interpreted by the reader. The choice of literature for the literature review and the formation of research questions reflect the bias of the researchers; the interpretation of the questions by the informant and their interpretation of the situation are subject to

their biases. These biases may not always be apparent but an awareness of their potential to influence the findings is acknowledged. An additional complication is created by the existence of the object of study in an open system. The changing context and organisational interactions with e-marketplace technology or knowledge adds richness to the study but requires an understanding of informant bias and how they can adjust their views of a past situation.

This work has been partly funded by the Australian Research Council and certain requirements have to be fulfilled regarding the research questions and the achievement of certain outcomes. This does not detract from the study but adds extra dimensions that might have been omitted if a grounded theory approach had been taken and the economic realities or consequences of organisational decisions were not included.

### **3.8 ETHICAL CONSIDERATIONS**

An individual's privacy and the confidentiality of answers are of concern to the informant and the researcher. Following ethical guidelines will help to build the informant's trust and confidence in the research process. This is essential to allow the informant to state their true opinions even if they are contentious. Ethical considerations are enacted by following the principles as stated in the Australian Code for the Responsible Conduct of Research ("National Statement on Ethical Conduct in Human Research," 2007) and the National Statement on Ethical Conduct in Human Research ("National Statement on Ethical Conduct in Human Research," 2007). Informed consent was sought from individuals participating in the study. Participation was voluntary and informants could refuse to participate at any time. To protect the identity and privacy of the informant and the organisation, at the request of the participant, real names were not used. If the participant required anonymity the organisation and individual informant were assigned a code which was used during the research. Answers were kept confidential. The State Government departments involved in this research did not require anonymity but the identity of the individual informants has not been revealed. Anonymity has also been provided for secondary sources of information where data was collected from publically available sources which could be used to trace the case study

organisation, such as information from organisational web sites, Any hard copies of the data, codes and notes are stored in a locked filing cabinet; soft copies are stored on password protected hard drives. The case study data will only be used for the purposes of the research as specified to the participants at the beginning of the study. If a change in the way the informant's data is to be used arises the informant will be contacted to ascertain their consent for the use of the data.

### **3.9 SUMMARY**

This chapter has presented the research design for the investigation of organisational strategies in creating business value from e-marketplace use. It takes a critical realist perspective because of its causal explanatory powers. This is integrated with a structured case approach and multi case analysis, to allow for comparison between cases and a stronger foundation from which to build middle range theory. The data gathering and analysis protocol is explained and in particular how it links to the key factors from the literature. A model of structural transformation based upon Archer (1995) and Sayer (1992) is used to demonstrate how concepts from the literature on e-marketplace trading can produce change or reproduce existing organisational structures. This highlights the usefulness of applying a critical realist philosophy to an area of study where causal explanations are lacking. The research design is focussed on uncovering the underlying causal mechanisms, their powers and liabilities, and the conditions under which they are activated to produce organisational value through e-marketplace trading. Additionally changes in organisational and market structures resulting from e-marketplace trading can be identified.

The following chapter presents the detailed findings from the cases along with some discussion of the case data and theoretical implications identified from the organisational context.

# CHAPTER FOUR: CASE STUDY ORGANISATIONS

This section will present the findings from each case study organisation. The context, structures, mechanisms outcomes and events associated with e-marketplace participation will be identified. For each case study a summary of the context, outcomes and mechanisms identified will be given. A short discussion of the implications for theory will be briefly discussed at the end of each case study.

## **4.1 CASE STUDY 1: REVNET**

RevNet was founded in the UK in 2000 by two experienced procurement and buying managers. The Asia Pacific branch is based in Sydney, New South Wales and has been operating in Australia also since 2000. It is headed by an experienced IT, marketing and business manager. The organisation provides an online tender and quotation system with fixed monthly fees and reverse auction services with a fixed fee per auction.

The services to allow buyer organisations to set up and run reverse auctions over the Internet produces a private, hierarchical electronic marketplace between the buyer and sellers for the duration of the auction. The suppliers are the active participants in the auction, posting the prices they are willing to accept to gain the contract. RevNet acts as the third party to the transactions providing the software, reverse auction expertise and knowledge. They maintain a database of suppliers and buyers who use their services, or are interested in participating and this is being constantly updated as new participant organisations are identified. They are able to suggest potential suppliers for the buyer or help them discover new ones. This has the potential to expand the buyer's supply base and increase the number of customers for the supplier. Participant suppliers in the reverse auction usually undergo a prequalification process by the buyer.

RevNet guides the buying organisation through the process of conducting a reverse auction. Reverse auctions require the buyer to put a contract forward for auction and for

the suppliers to cost the contract and bid in the auction. The supplier places an initial bid for the contract and can then put in subsequent bids that decrease the price offered to the buyer as the auction continues and other suppliers join the bidding. RevNet can help the buyer with the development of contract specifications, prequalification of suppliers and the awarding of the contract. Instructions for using the auction software are provided for both the buying and supplying organisations.

A wide variety of goods and services have been auctioned using the system for a range of clients. These include clients from the healthcare sector, local authorities, food manufacturers and the hospitality sector. The goods and services auctioned include such things as electric beds, food labels, stationery, grocery products, IT products, insurance, printing, warehousing, telecom services, courier services and waste management. A fixed fee is charged for the auction services irrespective of the final contract price.

The online tender and quotation systems allow buyers to post requests for information and quotations and allow suppliers to respond to the requests and submit electronic tenders. This can lead to further negotiation or a contract being awarded and at the very least it increases the number of potential suppliers or customer base for the participants. This system constitutes an e-marketplace where RevNet acts as the intermediary.

#### **4.1.2 Respondents**

RevNet was the first organisation involved in the research. Key interviews were conducted with the Director of the Asia Pacific region and senior auction manager who have a wealth of knowledge and experience from working in this organisation and from other senior management and business advisory positions held prior to joining RevNet. They have worked in the organisation for almost five years and have visited many organisations throughout the Asia Pacific region talking to procurement staff, promoting the business and gaining an understanding of the needs of the customers. Case study material found on the Internet and testimonials from users of the system were used to validate interview data.

### **4.1.3 Morphogenetic Approach**

Using a morphogenetic approach for analysis of the case data requires that material aspects of the e-marketplace technology and their relationship and interactions with social structures are identified (Mutch, 2010). In this case the reverse auction software is the main component of the technology for the buyers and suppliers and no other specialised hardware or software is required. The reverse auction is run using standard organisational computing hardware with Internet access. RevNet owns and manages the auction software and establishes the e-marketplace in which the auction will occur. The software provides some transparency in the bidding process and allows for extensions of the auction time frame. The suppliers have control over the bids they place including the pricing and timing of the bids, although this has to occur within the auction time limits. This is usually around 30 minutes but it is extended if a bid is received within the final few minutes to enable other suppliers to respond. The software gives the buyer and supplier information on where the bids are placed relative to all other bids and it charts the bids over the period of the auction. The suppliers' names are only available to the buyer. At the close of the auction the buyer is in a position to choose which bid to accept and the suppliers know where their bid is positioned relative to the other suppliers. The system assures anonymity amongst the suppliers but in a small, specialised or limited market a supplier will have some knowledge of their competitors.

The social aspects of the auctions are more complex and difficult to identify as these can occur at many levels before, during and after the auction. Social aspects have an influence on all the themes identified and impact upon the adoption, use and value judgements regarding reverse auctions. Prior to an auction RevNet and the buyer will have built up a relationship; this is formed by RevNet promoting reverse auctions to the buyer and building the buyer's trust in the service offered and the supporting technology in order for the buyer to adopt this method of procurement. On the buyer/supplier side, the buyer might have a pre existing relationship with a supplier invited to participate in the auction or there may be no previous relationship. At an empirical level of reality the relationship could be a direct relationship, based on personal experience, or be more indirect and based on organisational knowledge. The supplier may or may not have a pre-existing relationship with RevNet. The relationships between the parties might be the result of individual contact or constitute a macro relational structure which has been

formed over time and could be embedded in organisational culture. Changing relationships that are embedded in organisational culture is difficult and requires re-defining relationships that might have worked well in the past.

The influence relationships have on the reverse auction process makes the relational context of each auction unique and contributes to the outcomes. There are implications for existing and future relations between the buyers and suppliers, with RevNet and in the perceptions of reverse auctions generally.

Perceptions of reverse auctions can be attributed to the actual level of reality where events (the reverse auction in this case) happen but might not be experienced. A belief structure contains many perceptions about events or phenomena and they can become generative mechanisms that are capable of producing events in the real domain. The negative perception of an organisation or individual about reverse auctions has the power to create resistance to participation in the e-marketplace. Changing these negative associations is one of the major challenges identified by RevNet. Positive or negative relationships between participants can be a consideration before, during and after the auction. On the buyer side, prior to the auction relationships with the incumbent suppliers, other suppliers, the choice of participant suppliers and the awarding of the contract can be influenced by prior relationships or experiences. The relationship between the buyer and participating suppliers can also be affected by the decision to use a reverse auction although this is not perceived in a negative way but as a way to compete for a contract on "*a level playing field*," (Manager A). After the contract is awarded, fulfilment of the contract and interaction between the organisations will form new organisational relationships. On the supplier side, a buyer's decision to instigate a reverse auction can influence supplier sentiment about the buyer, the decision to participate and the pricing of the bids. After the auction attitudes to the process and the participating organisations can change which in turn can impact upon future decisions relating to auctions and the organisations involved in the process.

#### 4.1.4 Business Value: Strategy, Participation, Firm Performance

The following table (table 4.1) represents the themes conceptualised from the literature (see table 3.6) and the case data, and shows the relationships that have been identified between the theme and the case data from a critical realist perspective. The following analysis of the case data will illustrate how the critical realist terms apply and describe the way these structures, mechanisms and events interact to produce certain outcomes in the context of this case.

Table 4.1: Critical realist coding of case data themes for case one

CASE ONE	
THEME	CR CONCEPT
<b>Business value</b>	Outcome
<b>Firm performance</b>	Mechanism
<b>Relationships</b>	Structure
<b>Costs</b> <i>Power to control costs</i>	Structure Mechanism
<b>Efficiency</b>	Outcome
<b>Benefits</b> <i>Power to realise benefits</i>	Structure/Object Mechanism
<b>Risks</b> <i>Liability to incur risk</i>	Structure Mechanism
<b>E-Marketplace participation</b>	Event
<b>Adoption</b>	Event
Support	Mechanism
Functionality	Mechanism
Efficiency ( <i>Power to achieve</i> )	Mechanism
<b>Use</b>	Event
System compatibility	Mechanism
Support	Mechanism
<b>Organisational strategy</b>	Structure
<b>Procurement strategy</b>	Structure
Cost saving ( <i>Power to achieve</i> )	Mechanism
Efficiency ( <i>Power to achieve</i> )	Mechanism
<b>Political environment</b>	Context

Business value is an empirical outcome and is generated through the mechanism ‘firm performance’ which in turn is activated by interactions with other objects, structures (e.g. cost structure, benefit structure), entities and mechanisms (e.g. cost reduction,

benefit maximisation). E-marketplace participation, adoption and use are events which can occur when mechanisms are activated. Relational and organisational structures are pre-existing conditions that will change over time with influences from context, events and mechanisms.

#### **4.1.4.1 STRATEGY**

The strategic concept reflects the way in which RevNet views the participants' use of reverse auctions and their own strategy to persuade organisations to adopt its reverse auction service. The business value of reverse auctions is promoted by the organisation from the perspective of the buyer and the seller. On the buyer side, the use of reverse auctions is primarily aimed at achieving cost savings on procurement and expansion or consolidation of the supplier base. On the supplier side, the business value of participation in the auction is aimed at increasing the number of potential buyers and therefore increasing sales. These outcomes can be achieved by using the auction software in the short-term, but it is the interpretation of the experience and the decisions taken based upon this information that can produce longer term, value adding outcomes.

RevNet advocates the use of the reverse auction as part of the procurement process where the auction takes over the price negotiation aspect of awarding the contract. It is promoted as a tool to be used in conjunction with other procurement practices not as a standalone process. This is partly in response to negative perceptions of reverse auctions in the marketplace. These exist for both buyers and sellers where reverse auctions are seen as a means to beat down prices to the lowest unit cost without regard to any other criteria. RevNet works to overcome these perceptions by offering organisations a chance to participate in a reverse auction for limited cost and with full support.

*“There’s the quick way to do reverse auctions and the potential damage and then the professional approach which integrates and maintains all of those key elements of professional procurement that you want to maintain.”* Director A

Although the use of the reverse auction is regarded by RevNet as a tactical decision by the majority of participating organisations, it acknowledges that it can be part of a strategic initiative. *“The choice of whether you use reverse auctions or not is a tactical decision within a strategic procurement.”* Director A. Initial adoption of reverse

auctions is usually undertaken based on an ad hoc decision, as a “*toe in the water*” (Manager A) trial. This can develop into increased usage of e-marketplaces and the adoption of different functionalities from the e-marketplace which could become a strategic initiative.

“*Ultimately they can turn into an International Mining who understand where and when they can and can’t use them even in the strategic area*” (Director A).

Table 4.2: Possible morphogenesis/morphostasis from reverse auction participation

Object X, having structure: T <sub>1</sub>	necessarily possessing causal powers and liabilities	under specific conditions (other objects with powers and liabilities) T <sub>2</sub> , T <sub>3</sub>	Will not be activated, hence producing no change T <sub>4</sub>	Will produce change T <sub>4</sub>
<p><b>Reverse Auction Participation (X)</b></p> <p>RevNet’s reverse auction software</p> <p>Buyer procurement practices</p> <p>Supplier contracting practices</p> <p>Buyer/supplier relationship</p> <p>RevNet as e-marketplace vendor</p>	<ul style="list-style-type: none"> <li>• Timely auction process</li> <li>• Transparency of process</li> <li>• Price setting mechanism</li> <li>• Negotiation mechanism</li> <li>• Reduce negotiation cost</li> <li>• Reduce contract cost</li> <li>• Efficient auction mechanism</li> <li>• Build or destroy relationships (direct and indirect)</li> <li>• Remove or create bias</li> </ul>	<ul style="list-style-type: none"> <li>• Participation in RA</li> <li>• Resistance to RA</li> <li>• Acceptance of RA</li> <li>• RevNet promotes RA</li> <li>• Buyer instigated auction</li> <li>• Evaluation of RA</li> </ul>	<ul style="list-style-type: none"> <li>• No use of RA</li> <li>• Ad hoc use of RA</li> <li>• Continuation of pre-existing buyer/supplier relationship</li> <li>• Continuation of procurement and contracting practices</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness of RA</li> <li>• Changes in procurement practice</li> <li>• Changes in supplier contracting</li> <li>• Continual use of RA</li> <li>• Strategic adoption of RA</li> <li>• Changes in buyer/supplier relationship</li> <li>• Damage to pre-existing relationships</li> <li>• Changed relationship between RevNet, buyer and supplier</li> </ul>

RA = reverse auction: T= Time

Table 4.2 shows how an initial tactical decision to use reverse auctions might develop to become a strategic initiative. This would involve a change in the strategic structure caused by the interaction between the electronic marketplace as a technological system, the buyer and seller adopting reverse auctions and possible changes to the functionality of the e-marketplace adopted by the participants. The changes that might occur are linked to e-marketplace participation and firm performance and are explained in more detail in the following sections.

#### 4.1.4.2 E-MARKETPLACE PARTICIPATION AND USE

The themes identified from the case data relating to e-marketplace participation represent material aspects of the software in functionality and system compatibility as well as social attributes. Support for e-marketplace participation is built upon relational ties and acts as a mechanism in the adoption and use of the e-marketplace. RevNet and the reverse auction technology represent structures/entities that have the power to support (mechanism) the procurement strategy (structure) of buyers and sales strategy (structure) of suppliers. Efficiency is thought to be a prime motivation for the use of an e-marketplace and it is both socially constructed and representative of economic realities. System compatibility is concerned with how the reverse auction software integrates with the existing systems of the buyer and supplier and this will partly determine use and adoption. Likewise, functionality considers the attributes of the technology and the performance of the software needed to implement successful reverse auctions for the participating organisation. The functionality of the software and compatibility with organisational systems will influence the use and adoption of the e-marketplace. The software functionality and compatibility may change over time as new systems are implemented, different needs are identified or additional interpretations of the output are made. This should have a greater influence as more knowledge is acquired and applied through repeated use of the e-marketplace. E-marketplace participation represents ongoing decisions by the participant organisations to strengthen business value propositions

The initial use of the RevNet platform for reverse auctions is often a “*toe in the water*” approach by participating organisations. The products traded through the platform cover a variety of goods and services which are primarily low risk commodity type products. However, RevNet believes that any product can be traded through the platform when the contract specification is detailed enough. It assists participating buyers with specifications and the selection of suppliers if required.

During an auction positional bids are seen by the buyer and the supplier. Positional bids show the bids in order of 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> etc. and a supplier can change their bid and their position if they wish. At the end of the auction the buyer evaluates the bids and their

criteria to determine who will receive the contract. This is not always the supplier who was in 1<sup>st</sup> position which indicates that price is not the sole determinant of awarding the contract.

*“you leave flexibility with the buying organisation to make the decision on some of those less objective criteria that they can’t define wholly”* Manager A

The trial of reverse auctions enables first hand experiences to be gained by the participants and the opportunity to work through any negative perceptions associated with the use of reverse auctions. RevNet is actively engaged in trying to overcome negative perceptions of reverse auctions and to promote their business.

*“Our biggest challenge right now is getting into organisations to explain how reverse organisations work because they already know, ‘how reverse auctions work’ and they don’t, because it’s price hammer and all that. When we go in we come out of that organisation they’re saying, ‘right we are going to give it a try we’ll see how it will work and integrate.’ So the big challenge is talking to every procurement team in every organisation around Australia.”* Manager A

#### **4.1.4.3 FIRM PERFORMANCE**

The firm performance themes are reflective of organisational satisfaction and are often built upon economic measures or rational value judgements. These represent the realities upon which the business value of e-marketplaces is assessed. One of the advantages of using the system that RevNet advocates is the ability of buyers and suppliers to benchmark prices.

*“one of the tools that is used is to set an expectation a prior expectation, which is not based on the previous contract price but is based on whatever market intelligence you can acquire immediately at the time of the auction. That way you set a benchmark.”*  
Manager A

Bids placed in the auction are the prices that suppliers are willing to accept to fulfil the contract. At the end of the auction most of the bids will have clustered around a similar

pricing point. This clustering is an indication of realistic market prices for both buyers and suppliers and provides a means to compare pricing and suppliers. If a supplier is outside the cluster it can indicate problems: the supplier may not be willing to reduce their margins, they may be under pricing, or it could be an indication of organisational inefficiencies. For the supplier the clustering of bids can lead them to question their costing structures and consider any inefficiency in manufacturing or processing. On the buyer side it reveals which suppliers are the most competitive as well as setting a realistic market price for the contract.

The benefits of using reverse auctions are promoted as delivering cost savings and efficiencies. These occur because the auction compresses the negotiation time and allows larger numbers of suppliers to participate in the negotiation. Cost savings can be achieved for the buyer through obtaining lower unit costs. Although these cost savings can be made, RevNet realises that “*these savings are probably not beyond what a good negotiator could achieve*” (Director A) and expects that question from buyers. Its answer focuses on the time involved negotiating with several suppliers, the resources involved and the opportunity costs. A typical negotiation cycle with one supplier might involve three negotiations before the supplier or buyer accepts or declines a contract. This is costly in terms of time and resources. The procurement teams do not have sufficient time or resources to negotiate every contract individually and this can lead to inefficiencies and higher than necessary supplier margins. “*They (the procurement team) have to make choices, pragmatic choices on every contract they deal with*” (Director A). The reverse auction acts as the negotiator between the buyer and supplier and more suppliers can participate simultaneously, placing many bids in a short period of time. By carefully choosing which contracts to take to auction the procurement teams can focus on other aspects of their work.

Cost savings, transparency and efficiency are cited as benefits of using reverse auctions by RevNet and organisations that have used reverse auctions.

*“Not only were we able to confirm the value of the process by achieving better than expected savings, we also received an unexpected (but in hindsight logical) bonus of added transparency and high level of probity.”\**

Table 4.3: Relational structures and reverse auction participation

<b>Object X, having structure: T<sub>1</sub></b>	<b>necessarily possessing causal powers and liabilities of perceptions and knowledge</b>	<b>under specific conditions (other objects with powers and liabilities) T<sub>2</sub>, T<sub>3</sub></b>	<b>Will not be activated, hence producing no change T<sub>4</sub></b>	<b>Will produce change T<sub>4</sub></b>
<p><b>Beliefs about RA (X)</b></p> <ul style="list-style-type: none"> <li>• Buyer/supplier relationship</li> <li>• RevNet relationship</li> <li>• Experiences and knowledge of RA and TI</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of explicit or tacit knowledge at an individual or organisational level about RA and/or RN (liability)</li> <li>• Negative perception at individual and organisational level about RA and/or RN (liability) - Resistance to RA adoption</li> <li>• Positive perception at individual or organisational level of RA and/or RN (power)</li> </ul>	<ul style="list-style-type: none"> <li>• RN promote RA and e-marketplace</li> <li>• Buyer/supplier/ RN relationship established – strong, weak, neutral</li> <li>• Buyer and RN relationship established – strong, weak, neutral</li> <li>• Supplier and RN relationship established – strong, weak, neutral</li> <li>• Evaluation of RA as a procurement method</li> </ul>	<ul style="list-style-type: none"> <li>• Non-participation</li> <li>• RA beliefs remain unchanged</li> <li>• Relationships remain unchanged</li> <li>• Knowledge/experience remains unchanged</li> </ul>	<ul style="list-style-type: none"> <li>• Change in beliefs about RA</li> <li>• Participation in RA</li> <li>• Value generating procurement method</li> <li>• Change in relational structures</li> </ul>

RA = reverse auction: T = time: RN = RevNet

RevNet has found there can be an aversion to using reverse auctions. Changing the negative perceptions towards reverse auctions is a major challenge for RevNet. Perceptions are part of a belief structure, based on past experiences or understandings and are formed through many interactions; they form part of the structural conditioning in which the notion of e-marketplace trading exists. The relationships between individuals, inside and outside an organisation, the organisational buyer/supplier relationships and the relationship with the e-marketplace provider can change with organisational adoption of e-marketplace trading. RevNet is actively involved in

\* Reference omitted to preserve anonymity: information from case organisation’s web site

promoting the benefits of reverse auctions and e-marketplace trading. This involves building relationships with organisations and individuals through personal contact, getting its message heard and encouraging organisations to use its e-marketplace services. It is adding its personnel and organisation into the buyer/supplier relationship. RevNet promotes the benefits of cost saving and efficiency as well as the value added benefits that can be gained from using the auction mechanism such as added transparency and probity. Changes made in relational structures through this type of social interaction can lead to changes in beliefs, through experience, learning, evaluation and building positive perceptions about the organisational value of e-marketplace trading (table 4.3).

#### 4.4.3.1 Risk

There are risks for procurement managers when implementing a new procurement method. These are business related risks and personal risks. Business risk involves the supplier and fulfilment of the contract; personal risk primarily involves the individual's status within the organisation but could also affect relationships with suppliers. The combination of the risks associated with adopting reverse auctions could outweigh any firm performance benefits that could be achieved.

Risk is associated with the negative perceptions of reverse auctions and could be mitigated by overcoming the “*price hammer*” perception. Although the initial decision to use a reverse auction has to be supported by the procurement manager, a system that gives the buyer control over awarding the contract is advantageous. This allows the buyer to control some of the risks associated with accepting a bid based on lowest price alone allowing them the final choice of supplier at the end of the auction.

*“You never live award, or very rarely live award so that you remove the risk in terms of, I guess, a bid that is too low and is unsustainable”* Director A.

Relationships can be strained between the buyer and supplier when reverse auctions are used. This can be because the incumbent supplier has become accustomed to a roll-over of the contract without competing against other suppliers.

*“The incumbent has been there for a long time they become very angry when you start to introduce reverse auctions because of the level playing field thing.”* Director A

Personal risk for the procurement manager or team member involves justifying its use to other organisational stakeholders. Each stakeholder will have their own views about reverse auctions which could be unrealistic expectations or negative perceptions.

*“Me as a procurement person would say this could damage my career it’s risky. Then in terms of the outcome of the reverse auction, the risk is the exposure to their credibility, for, again the procurement person and that is, we go through the reverse auction if I push it and we don’t make a good saving again I am exposed, I am at risk.”* Director A.

Table 4.4: Risk, relationships and analysis of e-marketplace participation

<b>Object X, having structure: T<sub>1</sub></b>	<b>necessarily possessing causal powers and liabilities of risk</b>	<b>under specific conditions (other objects with powers and liabilities) T<sub>2</sub>, T<sub>3</sub></b>	<b>Will not be activated, hence producing no change T<sub>4</sub></b>	<b>Will produce change T<sub>4</sub></b>
<b>E-marketplace participation (X)</b> <ul style="list-style-type: none"> <li>• Stakeholder relationships</li> <li>• Perceived individual/business risk</li> <li>• Organisational structure</li> </ul>	<ul style="list-style-type: none"> <li>• Liability to create resistance at individual/business levels if risk averse or</li> <li>• The power to ‘take a chance’ if not risk averse</li> </ul>	<ul style="list-style-type: none"> <li>• Analysis of e-marketplace participation</li> <li>• Procurement as a value generating activity</li> <li>• Conservative organisation</li> <li>• Innovative organisation</li> </ul>	<ul style="list-style-type: none"> <li>• Level of e-marketplace participation remains the same</li> <li>• Organisational structure remains</li> <li>• Risk involved at the individual and organisational level is not changed</li> </ul>	<ul style="list-style-type: none"> <li>• Changes in perceived levels of risk associated with e-marketplace participation</li> <li>• Organisational change</li> <li>• Innovative practices</li> <li>• Relational change at individual and organisational levels</li> <li>• Procurement staff actively involved in organisational change</li> </ul>

T= Time

Although the procurement manager might be willing to use a reverse auction mechanism to gain cost savings or efficiencies the benefits of using the system will have to outweigh the perceived personal and business risks associated with its use. This would involve an initial analysis of the benefits and problems or risks of using the e-marketplace; if the decision is made to participate in the e-marketplace an analysis of

the event will be compared to the initial analysis. Over time the results of e-marketplace participation evidenced through the analysis of cost savings or efficiency gains can change the level of risk for the procurement manager and the relationships between procurement and their internal and external contacts (table 4.4). Continued e-marketplace use and analysis of organisational benefits could develop evaluation methods and participation criteria. In turn this could influence procurement decisions and result in changes in procurement strategies. If participation does not occur eventually perceived risks and relationships will change which could result in e-marketplace participation. For instance, stakeholders may be more supportive of e-marketplace use or the procurement staff could be less risk averse. Participation can also become non-participation as risk and relationships change.

#### **4.1.5 Political Influences**

Political influence reflects a contextual influence to the growth of e-marketplaces and reverse auctions. Government legislation and legislation applicable to overseas suppliers is a potential risk for organisations and it has an impact on the decision to trade via e-marketplaces and to include overseas' suppliers in an auction. However, some state governments in Australia are leading the way in the use of reverse auctions. Although its use has been slow compared to Europe and North America more public sector agencies are trialling reverse auctions.

*“So I think we’ll see, following WA’s lead a fairly rapid take off in public sector and by fairly rapid I’d say 3 to 5 years something like that.”* Director A

The uptake of reverse auctions in the Australian private sector might depend on the success it has in the public sector. The lack of knowledge about reverse auctions and electronic marketplaces in the Australian private sector are seen as inhibiting their use. Use by governments will spread the use of e-marketplaces to encompass large and small organisations and help educate the private sector.

*“it will be adopted within the public sector actually, I think, more quickly than the private sector because within the private sector each company virtually has to be educated.”*Director A

“if you look overseas the private sector took it on first, they didn’t have any restrictions around legislation that existed elsewhere and so they adopted it very quickly and then the public sector took it on. It could be that the situation in Australia reverses.”

Director A.

#### 4.1.6 Summary of Case Data

Table 4.5 summarises the context in which RevNet operates; possible causal mechanisms and the outcomes from RevNet’s involvement as a reverse auction provider identified in the preceding analysis. It presents possible context, mechanism outcome patterns from reverse auction participation. One of the main points to make is that there will be bias in the information from RevNet executives as they are trying to promote the benefits of reverse auctions. One of their goals is to push their message into the marketplace and build the reputation of reverse auctions as a viable procurement tool. These are powerful mechanisms in the creation of business value and support for the strategic initiatives of the organisation.

Table 4.5: Context, mechanism and outcome patterns identified from case one

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
An e-marketplace vendor providing reverse auction technology	<p>“Toe-in-water” or learning mechanism.</p> <p>Promotion/marketing mechanism to <i>push</i> the reverse auction message and to <i>increase customer base</i> of provider.</p>	<p>Increased awareness of reverse auctions as a procurement method.</p> <p>Increased business value of RevNet</p>
Global operations offering international and local trading opportunities	Buyer’s control of auction process.	Increased knowledge of reverse auction procedure and possible benefits.
<p>Establishes a private e-marketplace between buyer and suppliers for reverse auctions.</p> <p>Auctioning goods and services for participants</p>	<p>Buyer’s choice in awarding contract.</p> <p>Supplier’s control over posting auction prices.</p> <p>Transparency of auction</p>	<p>RN/buyer/supplier relationship established.</p> <p>Reverse auctions established as a temporary market structure.</p>

<b>CONTEXT</b>	<b>MECHANISM (Power/Liability)</b>	<b>OUTCOME</b>
across a variety of industries.	bidding.  Electronic negotiation mechanism between buyer and supplier.	Awareness of market prices.  Reverse auctions adopted as a procurement tool.
In the Australian context, some state governments supportive of reverse auction use.	“Bandwagon” mechanism where public or government sector leadS the way for the private sector	An initial tactical use of reverse auction in private sector.
A buyer uses reverse auction to procure.	Power to: reduce costs, save time, realise benefits, create efficiencies, and to increase or decrease supply base.	Analysis of e-marketplace trading.  Evaluation of reverse auction and organisational value.  Strategic use of reverse auction.  Increased efficiency in the auction process.  Establishes a buyer/supplier/e-marketplace vendor relationship
A buyer with existing buyer/supplier relationships uses reverse auction to procure.	Liability of perceived “price hammer” effect of RA.	Change in buyer/supplier relationship
Organisational/individual beliefs about reverse auctions, the adoption of new technology and changing work practices.	Perceptions of risk: Liability to create resistance at individual/business levels if risk averse  Power to embrace RA if not risk averse	Little or non-use of reverse auction.  Adoption of reverse auction

#### **4.1.7 Practical and Theoretical Implications**

The findings from this case study indicate that strategy does not play an important part in the use of reverse auctions for the majority of organisations that RevNet have

dealings with. Reverse auctions are often used in a tactical manner, on an ad hoc basis and without any formal directive from upper management. RevNet uses a strategy to support this type of use by promoting reverse auctions as “*a tool in the procurement tool box*,” (Manger A). This might be attributed to a negative attitude that procurement and other organisational stakeholders hold about reverse auctions. Additionally, the creation of a temporary e-marketplace for reverse auctions might engender an ad hoc approach to the event or exacerbate the concept of reverse auctions as a price only procurement tool. It could also promote the concept of non-enduring relationships between the buyer and the suppliers involved in reverse auctions.

The auction software provides the necessary interface to run the electronic reverse auction but prior expectations, prejudices and relationships influence the auction. The functionality of the auction software impacts on its use and the details that participating organisations see whilst taking part and at the close of the auction. The results available through the software are interpreted by the participants. The interpretation of the results will be influenced by prior expectations and relationships. This could involve a change from a negative to a more positive attitude towards reverse auctions. A more dramatic change on the supplier side could involve changing manufacturing processes to increase efficiency and reduce costs.

Organisational perceptions of an e-marketplace, how they influence trading through the e-marketplace, and change organisational structures are not addressed in the themes identified from the literature but they represent a significant mechanism underlying e-marketplace participation. The Australian private sector is lagging behind the public sector in the adoption of reverse auctions and the perceptions derived from governments’ e-marketplace use could influence adoption in the private sector.

The findings from this case were used to further develop the questions for the interviews with the next organisation. Specifically questions regarding the respondents’ perceptions of e-marketplace trading; how and when the e-marketplace is used; how this relates to organisational strategy and assessments of e-marketplace participation; and how it impacts on firm performance and the creation of business value.

## 4.2 CASE STUDY 2: EM CONSORTIUM

EM Consortium is an e-marketplace that has been operating since 2001 when 20 leading mining and mineral companies agreed to join together to develop electronic trading systems between themselves and their suppliers. The products and services traded through the e-marketplace primarily support industries involved in all areas of mining and extraction, exploration, blasting, smelting and hydrometallurgical and electromagnetic processes. There are over 60,000 suppliers and 1,500 buyers trading more than USD \$20 billion worth of goods and services through the e-marketplace (emarketservices.com, 2010). The e-marketplace operates globally with headquarters in Amsterdam and offices throughout the world. The services offered through the e-marketplace include catalogues, directories, and requests for quotes, proposals and bids. These services are provided to registered users on a fee basis.

The primary respondent for the interviews was the regional Vice President for Australasia (VPA). He has been working for the organisation for four years and held a similar position in an international corporation for over eight years before joining EM Consortium. He has a wealth of knowledge on business management and strategies, supply chain management, procurement, electronic trading, system integration and IT as well as a strong understanding of local and international issues that could impact on the mining industry and their suppliers.

There are large, mid sized and small organisations buying and supplying through the EM Consortium e-marketplace. EM Consortium views participation in electronic commerce as business as normal for large and mid sized organisations but more difficult for smaller organisations. The majority of organisations using the e-marketplace belong to the mining community or supply associated goods and services. This is worth highlighting because the VPA pointed out that *“there is something about supply communities to the mining industry that could still be quite unique to mining”*.

Table 4.6 represents the themes that were identified from the interviews and the critical realist terms that apply to them in this case. The discussion following on from this will

explain how the themes represent structures, outcomes, mechanisms and their relationship with the e-marketplace participation event.

Table 4.6: Themes and CR concepts identified from case two

CASE TWO	
THEME	CR CONCEPT
<b>Business value</b>	Outcome
<b>Business value creation</b>	Mechanism
<b>Firm performance</b>	Mechanism
<b>Relationships</b>	Structure
<b>Costs</b>	Structure
<i>Cost analysis</i>	Outcome/Event
<i>Power to recognise cost</i>	Mechanism
<b>Efficiency</b>	Outcome
<i>Power to create efficiency</i>	Mechanism
<b>Benefits</b>	Structure
<i>Power to realise benefits</i>	Mechanism
<b>Risks</b>	Structure
<i>Power/liability to incur</i>	Mechanism
<b>E-Marketplace participation</b>	Event
<b>Adoption</b>	Event
Support	Mechanism
Competitive advantage	Outcome
<i>Trading base connectivity or expansion</i>	Mechanism
Functionality	Mechanism
Peer pressure	Mechanism
<b>Use</b>	Event
Workflow practices	Outcome/Structure
Functionality	Mechanism
Products traded	Structure/object
System compatibility	Mechanism
Support	Mechanism
<i>Team</i>	Structure
<i>Management</i>	Structure
Capabilities	Structure
<i>IT skills development opportunity</i>	Mechanism
<i>Learning opportunity</i>	Mechanism
<b>Organisational strategy</b>	Structure
<b>Relational strategy</b>	Structure
Suppliers	Structure/Object
<b>Procurement strategy</b>	Structure

CASE TWO	
THEME	CR CONCEPT
Business opportunity	Mechanism
Power to generate cost saving	Mechanism
Power to deliver efficiency	Mechanism
<b>Policy</b>	Structure
<b>Political environment</b>	Context
<b>Organisational characteristics</b>	Context
<b>Perceptions of e-marketplaces</b>	Mechanism
<b>Market conditions</b>	Context
<b>Country characteristics</b>	Context
<b>Industry sector</b>	Context

#### **4.2.1 Business Value and the Business Value Creation Mechanism**

The focus of the study is on the B2B transactions through the e-marketplace, the relationship of the e-marketplace in those transactions and the creation of business value. Business value can be seen from the point of view of the e-marketplace owner and the participating buyer and supplier organisations. EM Consortium, as the owner of the e-marketplace, has a different perspective on creating business value from the e-marketplace than the trading organisations (also applicable to the previous case). However, business value creation can be seen as a mechanism with powers and liabilities that can change the relationships between the e-marketplace stakeholders: the relationships can be formed, maintained, enhanced or discontinued as a result of the business value mechanism and the outcomes when the mechanism is activated. EM Consortium's business value creation is linked to the provision of optimal services to its clients. Business value creation as a mechanism for the clients can cause adoption or rejection of the e-marketplace and is linked with other mechanisms and outcomes such as efficiency and cost savings. Business value creation as a mechanism underlies the outcomes from using the EM Consortium e-marketplace for all the stakeholders. It is unlikely that dissatisfied clients would continue to use the e-marketplace and EM Consortium would lose clients if they did not achieve positive outcomes for them. Therefore, although stakeholders' business value assessments are different they are congruent. Business value is also an outcome which is achieved by the activation or non-activation of the e-marketplace technology and its functionality.

In setting up the e-marketplace the founding members worked with the consultants to achieve the best solution for implementing complete procurement-to-pay procedures through the e-marketplace. *“They listened to their consultants who said the way we implement e-procurement is to do it by the book, and therefore to execute a full P2P cycle takes up to 14 different electronic document types. What they required us to do as a service provider was create solutions for the supply community which is the supplier portal that 95% of our 60,000 plus suppliers use.”* (VPA).

This approach utilised the material aspects of the technology to establish the e-marketplace and implement the document processing technology. Additionally, the establishment of the e-marketplace involved the social relationships between the founding member organisations and consultants and between the e-marketplace providers and the suppliers.

EM Consortium was founded with a desire to develop more efficient trading through supply chain integration. The decision to instigate trading through the e-marketplace was a strategic decision for the organisations involved which persisted through the dot com crash and the general disillusionment that was felt with electronic trading at that time. This clearly demonstrates the long term commitment that these organisations have to the implementation and development of electronic trading and the significance that they attribute to it. *“Plugging the supply base in is something that we can all benefit from, and it was not a source of competitive advantage that said we want to hold it away from each other”*. Vice President A

The success of EM Consortium has been built upon the commitment from leading mining and mineral organisations to electronic trading and their desire to use the system with all their suppliers. These large organisations already had sophisticated electronic systems in place though their Enterprise Resource Planning (ERP) systems such as SAP and Oracle and had a positive, strategic attitude to electronic trading. EM Consortium provided the platform for participants’ system connections through the e-marketplace. They are still *“bridging that technology gap with solutions”* (VPA) to provide integration between buyer and supplier systems. EM Consortium regards itself as *“a vendor of solutions”* and a *“service provider of the source-to-settlement process”*

(VPA) without having any influence over prices paid or the contract specifications negotiated through the e-marketplace. EM Consortium is expanding its client base beyond the mining and mineral industries into other private sector industries and into the public sector.

The Vice President describes the role of the e-marketplace as “*an aggregation of need not demands of the buyer*”. This implies that the buyers and suppliers have equality in the e-marketplace and that it represents a free market. The creation of the e-marketplace was not intended to promote competition amongst the participants but to include all buyers and sellers on an equal footing and facilitate more efficient trading interactions.

Access to lists of existing suppliers provided a significant benefit for EM Consortium in setting up the buyer/supplier network. The “*aggressive supplier on-boarding programme*” that some organisations took (VPA) could have pushed some suppliers into the e-marketplace. It is not clear if they would have joined the e-marketplace, waited until a later date or if some suppliers left because they felt pressured to join. However, the supplier lists provided the foundation for EM Consortium to establish an extensive unified network of electronically enabled suppliers. Even though some suppliers might have been pushed into the system the inclusive nature of the e-marketplace allows both large and small organisations to participate from the local sandwich bar to large international organisations.

#### **4.2.1.1 FIRM PERFORMANCE**

The advantages of using a technology or system can be translated into business value for the organisation. This is achieved through measures of firm performance which are based on a departmental or strategic initiative. The effect of e-marketplace trading on firm performance will be assessed through the procurement department for buying organisations. The evaluation of this trading will be affected by the performance measures and how readily they can be identified and this will vary from organisation to organisation. Some organisations take a formal view towards the evaluation of e-marketplace participation. However, even organisations with well defined measures for cost benefit analysis, for example, can have difficulty directly attaching the contribution of e-marketplace trading to the macro level of business value creation. The contribution e-marketplace trading makes can easily be cannibalised by other areas in the

organisation. This can lead to a backwards evaluation of the procurement initiative based on initial benchmarked expectations. *“the best organisations have base lined it and then go and measure it afterwards, because the difficulty for procurement often in the organisation is they may not be in complete control of the value chain all the way through to the P and L, so it is possible for another part of the business to literally waste the savings of procurement.”*(VPA).

#### **4.2.2 Strategy**

Trading through the e-marketplace connects suppliers into the buyer’s supply chain and delivers efficiencies and cost savings. EM Consortium aims to enable its clients to conduct all of its business transactions electronically. Most of the companies involved in EM Consortium are *“sitting somewhere between 45 and 80% with a determination to get to 100”* (VPA). Organisation X\* chose EM Consortium to enable them to increase control over buyer orders and manage high volume transactions as well as deliver shorter transaction and delivery times\*. Once an organisation is transacting a significant percentage of work electronically and has lowered transactions costs or met other initial procurement objectives, procurement and sourcing strategy should be re-evaluated to deliver efficiencies in other procurement and sourcing areas. This could involve asking *“what type of category management options do you now have, because if you look at procurement thinking for the last 20 or 30 years, leading procurement thinking prior to e-procurement has always talked about consolidation of the supply base, the reason being because of the transactional costs associated with having 4,500 suppliers when the job can be done by 2,000.”* (VPA). When transaction costs are not an issue having 4,500 suppliers could be preferable to having 2,000 suppliers. Especially when security of supply is essential as it is in this sector when downtime can cost millions of dollars each day.

---

\*Reference omitted for anonymity: Information from Organisation X available on case organisation’s web site.

### 4.2.3 E-Marketplace Participation: Functionality and Social Implications

The technology EM Consortium uses to connect suppliers and buyers is web based and each client chooses what is required from the solutions that EM Consortium offer. These are integrated systems that cover a range of options from sourcing and spend management, procure-to-pay and data management solutions. The ability to integrate various systems and documentation processes through the e-marketplace to, from and within client organisations is the essence of EM Consortium's service: *"for us integrated is what the name suggests, machine to machine communication across the entire document suite"* (VPA). This delivers a one view data integration across departments in real-time with consistency and accuracy of reporting. *"We have accurate and transparent visibility of our buyer's true needs along with requirements in real-time and the ability to issue a clean invoice first time, every time."* National Admin Manager, Organisation X\* .

The decision to participate in the e-marketplace results from the needs of the buyer or supplier. Adoption of a service provided by EM Consortium is based upon the perceived functionality of the service to meet those needs. However, use is influenced by assessing operational functionality or the discovery of other value added attributes. Clients choose the service(s) to meet their needs: spend intelligence software is used for the analysis of organisational spending; procure-to-pay integration involves all the documents needed to request quotes, raise purchase orders, issue invoices, reconcile orders, track fulfilment and make payments; e-catalogues can be created and updated quickly and easily in real time; requests for quotes and bid analysis software are available and electronic auctions can be conducted through the e-marketplace; price and availability of goods and services for high volume trades can be sourced quickly. EM Consortium believe that B2B electronic trading has the support of suppliers but not all functions of the e-marketplace are viewed positively or as necessary.

Organisation Y\* , the world's largest iron ore and pellet manufacturer has signed a five year agreement with EM Consortium, building on their previous relationship, to

---

\*Reference omitted for anonymity: Information from Organisation X available on case organisation's web site.

continue to automate and improve areas in their supply chain management practices. These include logistics, financial settlement, ERP level integration and vendor data synchronization. They believe that this will keep them at the fore front of the market and enhance electronic connectivity within the sector.

Although buyers might be keen to use e-marketplace technology and services there can be a conflict with the suppliers. The suppliers might be willing to accept the buyer's decision and use the e-marketplace but their acquiescence is not guaranteed. The introduction of a different way of doing business generates "*normal type reticence*" (VPA) with suppliers.

#### **4.2.3.1 FUNCTIONALITY**

Separating the material aspects of e-marketplace functionality and the social aspects illustrates a distinction between the perceptions of electronic auctions and other B2B transactions through the e-marketplace. Electronic auctions are a function that the e-marketplace provides but it is not seen as a positive business function. "*Buyers are not interested in getting the lowest price by beating the supplier up on cost*" (VPA). This view of electronic auctions represents the VPA's interpretation of buyer sentiment and his attitude that places electronic auctions as "*out of vogue*" in the e-marketplace. A slightly positive slant is given for electronic auctions when "*suppliers regard them at best as a fair process. Electronic B2B trading, on the other hand, does have the support of suppliers*" (VPA).

Other functions offered by the system for B2B trading provide benefits for the buyer and supplier. Organisation T\* adopted EM Consortium's spend analysis solution because they wanted to combine data from different ERP systems. Their ERP data reporting systems had limited functionality and were difficult to customise. "*EM Consortium's Spend Intelligence Application (QSI) has given Thiess the ability to combine spend data from multiple sources and produce a comprehensive snapshot of our global business. In fact, I don't know how we lived without it before.*"\* As a result of using EM Consortium's system Organisation T is able to enhance the functionality of

---

\* Reference omitted for anonymity: Information on Organisation T available on case organisation's web site

QSI to fulfil other organisational requirements by adding indexes, creating hierarchies and adding their own measures and content\* .

Organisation NF\* started using EM Consortium's order management system in 2003 which offers an automated method to fulfil sales requests. The organisation is South Africa's largest supplier of powdered food to the catering industry, has a network of branches throughout South Africa and is also involved in the export market. They joined EM Consortium because their mining customers were using EM Consortium as their e-commerce platform and they required consistent business procedures. The system eliminated the manual processes which were in place, reduced transaction costs and improved order tracking\* . This directly links to workflow practices.

Organisation M\* was a foundation supplier with EM Consortium. It has over 200 branches, mainly supplying the Asia Pacific mining industry, and annually exchange over 35,000 procure-to-pay documents electronically. Using the EM Consortium system minimised resource and technology development costs allowing it to change over from a paper based system to a fully integrated electronic system. The procure-to-pay process enabled Organisation M to streamline its business and extend its market advantage into customers' supply chains. The development of an e-catalogue is a result of the longstanding relationship with EM Consortium. The e-catalogue uses the content management services offered by EM Consortium and supports the needs of Organisation M customers by listing high volume MRO supplies. These can be sourced quickly by buyers and ordered directly. The reductions in administrative errors and duplication, time savings, shortened transaction and delivery cycles all add to the organisational efficiencies that are achieved through system use.

Buyers in the e-marketplace can have full electronic integration with the suppliers throughout the procurement-to-pay process *“your supply base electronically enabled for all of their, up to 14 different electronic documents it takes to complete a full P2P cycle through, from requisition through to remittance advice.”* (VPA). This is also advantageous for the suppliers. Organisation X found that the functionality of the

---

\* Reference omitted to maintain anonymity: Organisation NF, Organisation M and Organisation X information available on case study organisational web site

system allowed them to achieve anticipated outcomes but realised additional benefits were gained from using the system, “*EM Consortium allows us to extend our market advantage deep into our customers supply chains*”\*. Further integration with downstream suppliers through the e-marketplace could transfer efficiencies throughout all the organisational supply chains and lead to end-to-end electronic sourcing and procurement.

These examples illustrate that the use of the e-marketplace was initially instigated with a desire to achieve a specific outcome and that additional benefits can be obtained from use of the e-marketplace. The functionality of the system allows the user to customise the system to meet other needs within the organisation and create additional efficiencies that had not been previously identified. The relationships built between the system (technological artefact) and the users (social and technological) can lead to organisational adoption of additional functions offered by the e-marketplace. Although the latent consequences of adopting e-marketplace trading can sustain continued use of the e-marketplace, the emergent consequences can determine future participation, adoption and use.

#### **4.2.3.2 SOCIAL IMPLICATIONS**

Although the use of the e-marketplace technology may produce efficiencies in procurement there are social issues that impact upon the adoption and use of the e-marketplace. Obtaining the support of management and bringing suppliers on board are challenges buyers in the e-marketplace face. The VPA identified differences in the supplier base and their willingness to transact via the e-marketplace as existing at the cultural, geographic, and institutional level.

As a global trading entity EM Consortium transacts business in a variety of countries where buyers and suppliers have different characteristics and market power: “*In different jurisdictions we have different buyers who wield a stick. There’s a stick and carrot when you get a balanced market*” (VPA). One of the largest Brazilian mining organisations has achieved 100% implementation of electronic trading from sourcing to

---

\* Reference omitted to maintain anonymity: information available on organisation’s web site

settlement through the e-marketplace. *"How they got to 100% in Brazil is they took a stick to the issue, they said 'If you want to trade with us you trade this way' they tip their cap and they do what they are told."* (VPA). Communities which rely on the mining organisation for their existence have to follow the procurement initiatives of the buyer if they are to survive.

Market conditions in Australia represent a balanced market for EM Consortium but market conditions and business phases can change this by switching market power to the buyer or supplier. Buyers in the Australian market are wary of mandating the use of the e-marketplace which they see as a possible breach of Australian Competition and Consumer Commission (ACCC) rules in relation to third line forcing. Third line forcing is defined by the ACCC as a specific form of exclusive dealing which “involves the supply of goods or services on condition that the purchaser buys goods or services from a particular third party, or a refusal to supply because the purchaser will not agree to that condition” (“Exclusive dealing and third line forcing (s47),” 2011). Restrictions on freedom of choice are common between buyers and suppliers (“Exclusive dealing and third line forcing (s47),” 2011). Suppliers in Australia are more likely to resist the push from buyers to transact via an e-marketplace and this is even more prevalent with smaller suppliers. Other influences in the Australian supplier market are the number of suppliers, and the size of the country where logistics and supply base are important considerations for the buyer, contributing to supplier power in the relationship. Additionally Australian suppliers are *“less tech savvy, and technologically orientated than our North American supply communities”* and are *“slightly cynical”* (VPA) which makes the *“Australian supplier community one of the most difficult for us to deal with”* (VPA).

Many mining organisations are situated in remote areas. The on-site managers have responsibility for the day-to-day running of operations but receive centre lead directives from head offices. In remote areas where communities grow up around a mine site the managers will know the local businesses and suppliers may not see any advantage in using the e-marketplace. *“So if the site manager doesn’t support the centre lead communication to the letter, they see it as a chink in the armour and say ‘We really don’t need to do all of this do I, you are not really not going to accept my sandwiches*

*next week', or 'I know you need the particular part that goes on that drill bit that's going to cost you a million dollars if you don't have it.' So it is only when you have said it 3 or 4 or 5 times that they'll come onboard."*

To overcome *"the same change reluctance that any business goes through,"* (VPA), when asked to change a business practice, EM Consortium explains the benefits of using its procure-to-pay services to suppliers: essentially more timely payments and order accuracy. It finds that once a supplier has used the system they are satisfied with the outcomes. This can lead to more positive perceptions about e-marketplace trading and the buyer. *"If we can get a positive experience with a few of them we can actually get a word of mouth programme saying, 'actually it's not that bad, yeah do it, it's an easier way of doing business.'"* (VPA).

Suppliers can also become more positive about the e-marketplace when they realise that they have the opportunity to expand their customer base, *"when we bring a second or third, or fourth or fifth or sixth buyer on board that we actually get live feedback from the suppliers. Then actually once they experience it the cynicism drops away."* (VPA).

#### **4.2.4 Summary of Case Data**

The context, mechanisms and outcomes abstracted from this case that have been discussed in the previous sections are presented in table 4.7 as possible context, mechanism and outcome patterns.

Table 4.7: Context, mechanism and outcome patterns identified from case two data

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
Mining industries form a consortia e-marketplace	E-marketplace vendor <i>promotes</i> use to existing suppliers and industry	Adoption of e-marketplace by buyers and suppliers.  Buyer equality.
Suppliers' relationships with EM Consortium and buyer organisation.	Bias-inducing power.  <i>Economic supplier dependence on buyer pressure to participate in e-marketplace.</i>	Supplier negativity towards buyer.  Buyer conflict with suppliers.  Complacency of suppliers/buyers to e-marketplace trading (not using EM Consortium to its full potential to maximise business value).
Suppliers' relationships with EM Consortium and buyer organisation.	<i>Promotion</i> of services by EM Consortium to highlight <i>impartiality</i> and <i>arm's length trading potential</i> .	Adoption of e-marketplace by suppliers.  Increased awareness of e-marketplace trading.
Australian political environment and government regulation.	Relational power of suppliers (they cannot be forced to join EM Consortium).	Buyer/supplier equality.
Perceptions of e-marketplace vendor  Perceptions of possible benefits  Perceptions of risk involved	Bias-inducing power.  <i>Positive perceptions</i> have the power to <i>support adoption</i> of e-marketplace trading through EM Consortium.  <i>Negative perceptions</i> liability in <i>adoption</i> of e-marketplace trading through EM Consortium.  <i>Promotion</i> of its services by EM Consortium to <i>reinforce</i> positive perceptions or <i>counteract</i> negative perceptions.  <i>Peer pressure</i> of participants	Increased awareness of e-marketplace trading.  Efficiency gained in the procure-to-pay cycle.  Evaluation of e-marketplace trading.  Electronic transactions.  Integration of systems and processes.  Supply chain integration.  Increased control over orders.

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
	already on board <i>to accept e-marketplace</i> adoption through EM Consortium.	Shorter delivery and payment times.  Security of supply.  High volumes of transactions easily processed.
Strategic attitude of buyers and suppliers.	Organisational <i>commitment to business value creation</i> through electronic procurement.  Positive perception of <i>functionality of system</i> to achieve organisational benefits.	Increased awareness of e-marketplace trading  Efficiency gained in the procure-to-pay cycle.  Evaluation of e-marketplace trading.  Electronic procurement transactions.  Integration of systems and processes.  Supply chain integration.  Increased control over orders.  Shorter delivery and payment times.  Security of supply.  High volumes of transactions easily processed.
Geographic location of mine sites, trading partners and potential partners and existing relationships with suppliers.	Supplier and buyer <i>choice</i> to adopt/reject e-marketplace trading through EM Consortium.  <i>Promotion</i> of its services by EM Consortium highlighting <i>time-saving, efficiency generating and error reduction</i> mechanisms	Increased awareness of e-marketplace trading.  Efficiency gained in the procure-to-pay cycle.  Evaluation of e-marketplace trading.  Electronic transactions.

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
	Positive perception of <i>functionality of system</i> to achieve organisational benefits.	Integration of systems and processes. Supply chain integration. Increased control over orders. Shorter delivery and payment times. Security of supply. High volumes of transactions easily processed.

#### 4.2.5 Theoretical Implications

The development of EM Consortium from the strategic initiative of several large organisations resulted in the formation of a strategic organisation. This provided EM Consortium with a substantial market presence and established a strong political and economic structure within the industry sector. This is in contrast to RevNet which lacks the political and economic structure to influence organisations to take the risks inherent in changing procurement practices.

The creation of the e-marketplace produced an entity which was a community of major buyers in the mining sector. The e-marketplace was not conceived as a way to deliver a competitive advantage for the shareholder organisations involved over other buyers but as an open marketplace that would deliver equal value for all the participant buyers. The business value was seen as the efficiencies which could be gained in the supply chain by the integration of electronic trading channels.

The e-marketplace community represents a powerful force in the marketplace with considerable economic and political influence. The power asymmetry between the buying community and the suppliers can force change or compliance on the supplier base changing the norms and behaviours within and between organisations (Oliver,

1991). The participation of suppliers in the e-marketplace was expected if they were to continue trading within this community.

The main drivers for the establishment and participation in the e-marketplace were transactional efficiencies and cost reductions and the development of electronic trading capability. This follows a resource based perspective because it emphasises the capabilities and knowledge within the organisation. The capabilities and knowledge of the procurement personnel and the system resources were used to implement the strategic directives of cost reductions and efficiencies on a regular basis and develop the electronic capability of the organisation.

Using the e-marketplace as an intermediary can affect the relational ties between the buyers and suppliers by supporting arm's length relationships. This takes away some of the relational strain from the buyer/supplier relationship which could exist when the buyer changes procurement methods. The transactional risks associated with procurement are still present when trading through the e-marketplace and these remain with the buyer/supplier. However, the personal credibility of procurement staff is an issue in the decision to use an e-marketplace. The inclusion of the individual's role introduces an extra consideration for achieving an efficient market. It also has implications for institutional theory, by demonstrating the role of legitimacy at an individual level and its impact on organisational structures. Legitimacy can heighten or inculcate a negative perception of the risks associated with trading via an e-marketplace and affect participation events.

Table 4.8: The business value object and possible morphogenesis/morphostasis caused through economic, political and market power.

<b>Object X, having structure: T<sub>1</sub></b>	<b>necessarily possessing causal powers and liabilities</b>	<b>under specific conditions (other objects with powers and liabilities) T<sub>2</sub>, T<sub>3</sub></b>	<b>Will not be activated, hence producing no change T<sub>4</sub></b>	<b>Will produce change T<sub>4</sub></b>
<b>Business value(X)</b>  <b>Relational structure</b>  <b>Technological structure</b>	Economic power  Political power  Market power  Relational risk  Reduce/Increase technological risk	<ul style="list-style-type: none"> <li>• Strategic attitude</li> <li>• Enabling technology</li> <li>• Perception of e-marketplace trading</li> <li>• Perceived functionality of e-marketplace</li> <li>• Promotion of e-marketplace</li> <li>• Organisational commitment</li> </ul>	<ul style="list-style-type: none"> <li>• Level of e-marketplace participation remains the same</li> <li>• Buyer/supplier/e-marketplace vendor relationship remains unchanged</li> </ul>	<ul style="list-style-type: none"> <li>• Efficient trading mechanism developed</li> <li>• Innovative practices</li> <li>• Integrated supply chain</li> <li>• Relational changes at network levels between buyer/supplier and e-marketplace vendor</li> <li>• Conflict with suppliers</li> <li>• Increased knowledge of e-marketplace trading in an industry sector</li> </ul>

T = time

Table 4.8 shows the morphogenesis/morphostasis that can occur in the business value object where economic, political and market power and relational and technological risk are underlying the e-marketplace participation event. The more power the e-marketplace vendor possesses the more likely it will be that suppliers will adopt trading through the e-marketplace and it can lead to more widespread knowledge of e-marketplace trading in an industry sector.

### 4.3 CASE STUDY 3: INTERNATIONAL MINING

International Mining is one of the largest producers of aluminium in the world. The main operational headquarters are located in Pittsburgh, Pennsylvania employing approximately 87,000 people in operations in 44 countries. In Australia International Mining's main operations are bauxite mines, alumina refineries, aluminium smelters, and rolling mills, where over 7000 people are employed. Alumina production in Australia accounts for 11% of world demand. Other operations in Australia are the distribution of aluminium truck wheels and the manufacturing and distribution of specialist fasteners.

The company, in Australia, has been using e-marketplaces for over 12 years. It is part of the group of companies who formed a consortium e-marketplace to trade goods and services specifically for the mining industries. They use several different platforms to trade electronically with the two main platforms for electronic marketplace trading being provided by EM Consortium and Ariba. EM Consortium provides the platform for procurement-to-pay services between International Mining and their trading partners. Every purchase order from International Mining is sent out through EM Consortium and all suppliers are required to use the system. The e-marketplace serves as the inter-organisational link between the systems of International Mining and their suppliers. This forms a private, hierarchical relationship between International Mining and the suppliers with EM Consortium as an independent third party. "*EM Consortium is about B2B and everything else is e-commerce*" (Manager A). Other electronic marketplace transactions are facilitated by the platform supplied by Ariba. Although this is supplied by Ariba, International Mining manages the system choosing which services to use and which functionalities to adopt. Ariba has little input into how the company uses their e-marketplace but they do provide potential suppliers for International Mining. The difference between procurement through the two electronic marketplace platforms is explained as "*Ariba as the tendering part of it and consider B2B as the awarding part of it and the transactional that comes out of that award, post award*" (Manager A). A wide variety of goods and services are traded through these platforms involving local and international suppliers and large and small organisations.

The distinction between B2B and electronic commerce illustrates the high level of procurement that occurs via electronic channels and the integration of electronic marketplaces within procurement at International Mining. EM Consortium is used for standardised purchases but other electronic marketplaces are also used for e-sourcing and tendering. There is a strong commitment to electronic commerce and trading through electronic marketplaces and the procurement managers believe that “*there is nothing you can’t take to e-sourcing, there is nothing you can’t take to bid or an RFI. Essentially there is nothing*” (Manager A). 30 to 60 percent of the total spend for goods and services goes through these platforms at present but the intention is to put 90% of their procurement spend through them.

Table 4.9 shows how the information that was obtained from the interviews fits into the categories identified from the literature review and the critical realist terms that can be applied to them.

Table 4.9: Themes and CR concepts applicable to case three

<b>CASE THREE</b>	
<b>THEME</b>	<b>CR CONCEPT</b>
<b>Business value</b>	Outcome/Structure
<b>Firm performance</b>	Outcome/Structure
<b>Relationships</b>	Structure
<b>Competitive advantage</b>	Outcome
<b>Costs</b>	Structure
<i>Cost evaluation</i>	Event
<i>Power to recognise cost</i>	Mechanism
<i>Power to measure cost</i>	Mechanism
<b>Efficiency</b>	Outcome
<i>Power to create efficiency</i>	Mechanism
<b>Quality improvements</b>	Structure/Event
<b>Benefits</b>	Structure
<i>Power to generate benefits</i>	Mechanism
<b>Risks</b>	Structure
<i>Power to control risk</i>	Mechanism
<i>Risk reducing evaluation</i>	Mechanism
<b>Revenue growth</b>	Outcome
<b>E-Marketplace participation</b>	Event
<b>Adoption</b>	Event
Support	Mechanism

CASE THREE	
THEME	CR CONCEPT
Competitive advantage	Outcome
<i>Industry norm</i>	Structure
<i>Trading base</i>	Context
Functionality	Mechanism
Peer pressure	Mechanism
Efficiency	Outcome
<b>Use</b>	Event
Workflow practices	Structure/Outcome
Functionality	Mechanism
<i>System integration</i>	Outcome
Products traded	Structure/Object
<i>Product development</i>	Outcome
Support	Mechanism
<i>Team</i>	Structure
<i>Management</i>	Structure
Capabilities	Structure
<i>IT skills development opportunity</i>	Mechanism
<i>Learning opportunity</i>	Mechanism
<i>Power to take a proactive approach</i>	Mechanism
<i>Power to solve problems</i>	Mechanism
Information sharing	Mechanism
Benchmarking	Mechanism
<b>Organisational Strategy</b>	Structure
<b>Information technology strategy</b>	Structure
<b>Relational strategy</b>	Structure
Buyers	Structure/Object
Suppliers	Structure/Object
Management	Structure/Object
<b>Procurement strategy</b>	Structure
Business opportunity	Context
<i>Power to create a business opportunity</i>	Mechanism
Cost saving	Outcome/Event
<i>Power to generate cost saving</i>	Mechanism
<b>Organisational characteristics</b>	Structure
<b>Perceptions of e-marketplaces</b>	Mechanism
<b>Market conditions</b>	Context/Structure
<b>Country characteristics</b>	Structure
<b>Industry sector</b>	Structure

CASE THREE	
THEME	CR CONCEPT
<b>Trading partner attributes</b>	Structure
<b>Globalisation</b> <i>Opportunity to trade internationally</i>	Outcome Mechanism
Global trading	Event
<b>Definition of e-marketplace</b>	Context
E-marketplace	Structure
<b>Market knowledge</b> <i>Opportunity to apply knowledge</i>	Structure Mechanism
<b>Procurement perspective</b>	Mechanism
<b>Skills required</b>	Mechanism

The following section will discuss the analysis of the data themes and illustrate how structures, mechanisms, events, outcomes and context are related in this case and a summary in terms of context, mechanism and outcome patterns will be presented. Finally a short section on the theoretical implications of the case will be presented.

### 4.3.1 Business Value

Globalisation is an outcome from organisational trading and is related to the nature of the business, international operations and organisational size. International Mining has a strong commitment to electronic commerce and was a leader in adopting e-marketplace trading in Australia. The e-marketplace platforms form part of the e-commerce systems that International Mining uses. The value of e-commerce and e-marketplace trading lies in the intra-organisational and inter-organisational integration of systems. For procurement this translates directly into the delivery of efficiencies in the supply chain and global sharing of procurement knowledge and expertise.

International Mining considers its electronic capabilities to be advanced as a result of past commitment and lessons that have been learnt from using electronic commerce. The company is still at the forefront of electronic trading and continues to look for new or innovative ways to improve the procurement function and add value to the organisation.

Procurement managers have instigated a change of focus for procurement making it a

customer focused service department: *“we are a service department no matter what anyone else says,”* (M2) and *“we have turned around in the last 5 or 6 years to be more customer focused than supplier focused.”* (M1). The change in focus from supplier to customer could be reflective of broader organisational priorities and the internal structuring of departmental performance measurement. *“If you look from a business perspective they have got a business plan with what they need to achieve in the next twelve months, then down from that cascading you’ve got well how does procurement fit into that, what do they need to do to achieve these savings at this level. So it is very strategic”* (M1).

#### **4.3.1.1 FIRM PERFORMANCE**

The procurement department is measured on performance and is expected to achieve cost savings. This was the initial driver for adopting e-marketplace trading. All B2B transactions are now required to be made through the e-marketplace. *“It is a cost driven initiative to take transactional cost from us and give it to someone else.”* (M1). These types of performance measures are more concerned with the bottom line than how they were achieved but they encourage the procurement team to seek cost saving solutions and implement them. In the case of International Mining this has generated a proactive approach to procurement.

The main benefits of initially using the e-marketplace were cost savings and the ability to establish market prices. Initial cost savings between 20-30 per cent were seen as a result of e-marketplace trading allowing International Mining to establish market prices. Continued savings at this level are not sustainable once market prices are established because costs are market driven. The evaluation of cost savings from e-marketplace participation has evolved from a price based analysis to encompass qualitative information *“we look at total cost, we look at what the customer wants and we use the evaluation matrix to actually capture that”* (M1). The evaluation matrix is used for most of the purchases whether it is through e-sourcing or traditional tendering. Adjustments can be made to the matrix depending on procurement criteria or objectives when required. These are *“what’s called transformation factors, so in other words we can go to tender and put some transformation factors in there; suppliers don’t know they are in there”* (M2). The development of cost analysis has established well defined processes and procedures for the use of the e-marketplace: *“it has been a learning curve*

*but it has been a benefit to us going forward as well” (M1).* This represents a modification of the e-marketplace system by the buyer to meet its needs: the buyer develops e-marketplace experience, responds to different market conditions and, over time, incorporates the knowledge into its procurement practice.

Cost savings are still a major factor in the choice of procurement method but the skills and knowledge of the procurement managers ensure e-marketplace trading is used effectively. The procurement team have built up a wealth of knowledge about electronic trading and have a strong understanding of the industry, locally and globally, and the economic market conditions that have an impact on the organisation and procurement objectives.

### **4.3.2 Strategy**

Strategy is a strong driver of e-marketplace participation and is integral to the success of procurement at International Mining. E-marketplace trading, as part of International Mining’s strategic procurement, has well defined procedures for deciding in which circumstances to use the e-marketplace and which functions of the e-marketplace to use. *“Initially it was to get cost savings but we developed fairly quickly to be a good business strategy, but it has always been seen as a tool in our toolbox” (M1).* When online bidding was initially used suppliers were told they had to use the system if they wanted to trade with International Mining. The continued evaluation of participation and organisational needs has resulted in the development of well defined processes and procedures for e-marketplace use and strategies to maximise the potential of the e-marketplace.

Although e-marketplace trading has developed as a procurement strategy its use depends on the size of purchase and market conditions. *“The strategy could drive you to an e-bid, could drive you to using the e-platform, could drive you to using an offline scenario. One of our key things that we have developed over the years is that we need to develop strategies for large purchases; it is not linked with e-commerce at all it is standalone. Work your strategy out and then we will see which platform we want to use to do that” (M1).* Deciding on which platform to use is dependent upon the procurement team member, their knowledge and capabilities. *“The individual has to have the skills to*

*understand whether it's worth taking to the market or not and there is a lot of pre work to be done" (M1). This demonstrates interactions between micro and macro organisational objects and their power to influence structures of organisational knowledge, capabilities and strategy.*

Information technology (IT) is incorporated into procurement and enables the use of the systems needed for e-commerce. Technology represents a structure which can also be seen as a mediator (Mutch, 2010) between structures. The mediation of structural influences to people occurs in the way they shape the situation in which people find themselves (Archer, 1995). The use of the IT systems in procurement is driven by procurement strategy and is influenced by the IT structures resulting from past IT strategies: *"But we do have an IT strategy in that we use the platform that we have"* (M2). Although the main procurement initiative to develop e-marketplace trading was cost savings, additional business opportunities were foreseen from the development of e-commerce capabilities. These capabilities, including expanding e-commerce processes, implementing procedures, developing greater knowledge and experiences of e-commerce are influenced by organisational IT systems.

### **4.3.3 E-Marketplace Participation: Functionality and Social Implications**

E-marketplace participation occurs in the context of prevailing economic market conditions. Market conditions can affect the choice of procurement method used by the procurement team: whether the e-marketplace will be used and which e-marketplace function is employed, or if another procurement method will be more successful. Participation in the e-marketplace is evaluated through an analysis of the benefits that are achieved, or can be achieved in the prevailing economic market. The functionality offered by the e-marketplace is assessed on the basis of delivering procurement objectives in this context. The evaluations and choices depend upon the capabilities of the procurement staff, their knowledge of the organisation, suppliers, market influences and e-marketplace functionality. Matching organisational objectives and market conditions contributes to the success of e-marketplace trading.

The adoption of e-marketplace trading by International Mining involved learning a new way of doing business and establishing new relationships with suppliers, internal customers and management. The procurement team was committed to going forward with the implementation although the changes resulted in *“a turbulent couple of years”* (M1). The senior manager at the time was convinced that *“there is nothing you can’t take to e-sourcing as long as you can specify it”* (M1) and the procurement team was supportive of this direction. They put considerable effort into explaining the system and its benefits to stakeholders. The positive attitude and confidence in e-sourcing is still evident *“he (an external contact) said there was no way you could take services to the market via a bidding platform and I just sat and looked at him and said we have been doing it for 3 or 4 years”* (M2). International Mining has developed organisational capabilities through the procurement team’s ability to learn when and how to use the e-marketplace functionality to effectively implement procurement and organisational strategies.

Initially International Mining were focussed on gaining cost savings and efficiencies from e-marketplace participation and were keen to bring suppliers into the e-marketplace using an *“enforced online bidding platform”* (M1). International Mining went to their suppliers to explain the system and its functionality to help them accept and use the system. The relationships with suppliers were tested: in some instances suppliers were willing to use the e-marketplace; others were resistant to the change but accepted it, whilst some were not willing to use the e-marketplace at all. *“One of my main jobs on the team when we rolled this out was actually to go sit with suppliers and explain the system to them, how it worked and the philosophy behind it. Suppliers, usually you could talk around but some blatantly refused”* (M1). Although some suppliers were lost additional suppliers were found: *“we have actually got some good suppliers on board because it was easier to go to the market with them, and we brought on some new suppliers through the platform”* (M2). This represents an expansion of the buyer’s supply base through the e-marketplace, the supplier’s acceptance of electronic trading and the supplier’s ability to use the system.

Supplier agreement to the possible use of the e-marketplace is now routinely included in supplier contracts. However, some supplier resistance to using the e-marketplace still

exists: *“our traditional suppliers, understand how we do business but there are a lot of suppliers who are not interested”* (M2). Supplier scepticism over e-marketplace trading can be overcome in time but *“it can take a while for them to see a win-win situation rather than win-lose”* (M1).

Market conditions also affect supplier resistance to e-marketplace trading. When suppliers have sufficient work they can be more reluctant to use the e-marketplace if it involves a change in their processes. At times when market demand is weak they are more willing to participate in e-marketplace trading. *“At one stage there 12 months ago the market wasn’t right for e-sourcing because everyone said ‘just go away, we haven’t got time for e-sourcing, we have plenty of work elsewhere’”* (M1). Procurement personnel have to be aware of market conditions and how this affects suppliers attitude to e-marketplace trading in order to use the e-marketplace advantageously: *“we had to use all of the market intelligence, all of the resources, talking to the customers to know exactly when to go to the market and when not to go to the market. We are very aware of what is happening out there and we have to be”* (M1).

Reluctance from internal customers and management to use the system was a problem that International Mining had to overcome.

*“It took quite a while from the management perspective as well, if you are going to do something like this you have to go and sell it, which procurement did but there was still a bit of reluctance.”* (M2).

*“So our [internal] customers were in this comfort zone, and you know what it’s like as soon as you try to push people out of the comfort zone, and some suppliers for that matter were taken aback because by using e-sourcing we challenged that comfort zone for them”* (M1).

As with supplier on-boarding, procurement had to explain the system and its benefits to management and other internal customers. The pro-active approach that was taken by the procurement team ensured the successful implementation of their e-trading initiatives within the organisation.

Changing market conditions, the e-marketplace technology and organisational capabilities can indicate which functionalities of the system should be adopted. *“six or*

seven years ago it was online bidding, OK. Now today and the new platform we introduced, about a year 18 months ago, it is actually e-sourcing. There is a shift. E-sourcing has functionality for online bids and a lot of other functionality that we are actually adopting more so than the bidding” (M1). Some functions of the e-marketplaces are not utilised by International Mining but their potential is acknowledged. Efficiency is an important consideration for the use of the e-marketplace and assessing the functionality of the platform and organisational capabilities will lead to future efficiency gains. “We haven’t used all the functionality in the platform yet and I believe there is much more scope to get efficiency out of it. Have we utilised efficiencies to date? Yes we have.” (M1).

Table 4.10: Market conditions and organisational change

<b>Object X, having structure: T<sub>1</sub></b>	<b>necessarily possessing causal powers and liabilities</b>	<b>under specific conditions (other objects with powers and liabilities) T<sub>2</sub>, T<sub>3</sub></b>	<b>Will not be activated, hence producing no change T<sub>4</sub></b>	<b>Will produce change T<sub>4</sub></b>
<b>Organisations’ market structure (X)</b>  <b>Business value</b>  <b>E-marketplace participation strategy</b>  <b>Relational structure</b>  <b>Political/Regulatory structure</b>	Liabilities and powers associated with buyer’s, supplier’s and e-marketplace vendor’s economic conditions	<ul style="list-style-type: none"> <li>• Strength of product demand</li> <li>• Strength of product supply</li> <li>• Strength of service demand</li> <li>• Functionality of technology</li> <li>• Organisational capabilities</li> <li>• Performance measurement</li> </ul>	<ul style="list-style-type: none"> <li>• Level of e-marketplace participation remains the same</li> <li>• Organisational capabilities remain unchanged</li> </ul>	<ul style="list-style-type: none"> <li>• Strategic use of e-marketplace</li> <li>• Empowerment of employees</li> <li>• Increased knowledge of effective e-marketplace trading</li> <li>• Conflict with employees</li> </ul>

T = time

The conditions that constitute an organisation’s market structure and can effect e-marketplace participation strategy are shown in table 4.10. Market conditions represent a contextual element in which organisations operate to acquire business value which is largely evaluated in economic terms in the public sector (demonstrated in financial markets by share prices of publicly traded companies, for example). Business value changes as a result of interactions between the organisations operating in this context and interaction with other contextual structures such as the political or regulatory

structure. The relationships between market context and organisational strategy changes organisational relationships when strategy is developed in response to market conditions. When considering strategy, an organisation's market acts as a structure which contains objects and mechanisms with emergent powers/liabilities that can change strategic and relational structures by increasing or reducing the relational powers of the buyer, supplier and e-marketplace vendor. E-marketplace strategy contains organisational capabilities such as human resources, market knowledge, IT infrastructure and e-marketplace functionality which are also mechanisms involved in the e-marketplace event.

The e-marketplace platform provides an accessible, private database for participant organisations which can be used to increase procurement efficiency. Participating in an e-marketplace provides procurement staff with the ability to share information globally. One of the main advantages of the established system is that it allows information to be used for benchmarking suppliers from a global perspective. International Mining recognises that the database function of the e-marketplace has much more potential and it is working towards establishing a system that can take advantage of this functionality. *“That’s what we are trying to get to. That’s basically about being able to use the platform as a database for history, good reports can come out of that and everyone has access to that globally”* (M1). However, the implementation of e-marketplace functionality throughout a large organisation is difficult and time consuming. *“There is a huge amount of functionality in there but when you have an organisation of 6 or 7 thousand people that are accessing this database, to roll out that functionality is more difficult, it has to happen over time”* (M1). The size of the organisation and number of employees, therefore, are structures possessing causal powers and liabilities for participation and value creation related to e-marketplace trading.

#### **4.3.4 Summary of Case Three Data**

The case data in terms of context, mechanisms and outcomes is summarised in table 4.11. Some of the mechanisms and outcomes have been noted in the previous case studies, especially in relation to the ability of the e-marketplace to deliver efficiencies and cost savings. However, the number of stakeholders accessing the information

created by the use of the e-marketplace limits its potential until further integration or development of organisational systems and the e-marketplace system is established.

The promotion of e-marketplace trading by the vendor and the procurement staff are significant mechanisms with power to influence e-marketplace trading. Firm performance measures have mechanisms that can lead to the empowerment of the employees at a micro level to achieve set objectives and work independently which can change organisational structures and strategic directions at a macro level. Continued use of the e-marketplace produces increased organisational capabilities, technological and system adaptation when the strategic attitude and commitment to e-commerce mechanisms are strong.

Table 4.11: Context, mechanism, outcome patterns identified in case three

<b>CONTEXT</b>	<b>MECHANISMS (Power/Liability)</b>	<b>OUTCOMES</b>
Global operations, with significant ICT infrastructure, purchasing from international and local suppliers.	<p>Technology provided by e-marketplace vendor has the ability to <i>connect different buyer/supplier</i> systems.</p> <p>Evaluation of e-marketplace functionality to demonstrate effectiveness in creating value and to discover potential value.</p>	<p>Integration of systems.</p> <p>Expanded capability and functionality of internal systems.</p> <p>Evaluation criteria for successful e-marketplace participation established.</p> <p>Global database of suppliers, supplies, and procurement history.</p>
<p>A leader in e-marketplace trading.</p> <p>Strategic attitude of procurement.</p> <p>Perceptions of organisational value and risk.</p>	<p><i>Commitment</i> to adoption and implementation of e-commerce by procurement team.</p> <p>Strategic attitude and positive organisational perception of the procurement function value has the power to reduce <i>risk aversion</i> and generate a <i>proactive approach</i> to procurement practice.</p> <p>Strategic attitude <i>develops</i></p>	<p>Integration of systems and expanded capabilities of systems.</p> <p>E-marketplace trading and evaluation embedded in procurement methods.</p> <p>Enhanced IT skills and learning capabilities.</p> <p>Strategic use of e-marketplace trading.</p> <p>Procurement as a value-</p>

CONTEXT	MECHANISMS (Power/Liability)	OUTCOMES
	<p>technological and human resources.</p> <p><i>Positive perceptions of e-marketplace trading and satisfaction of supply</i> increase use of e-marketplace for procurement.</p>	<p>generating organisational function.</p> <p>Continual evaluation of strategic outcomes and adaptation of organisational strategies (e.g. change in procurement focus from the supplier to the client).</p>
<p>Purchases a wide range of goods and services from suppliers connected through the e-marketplace platform.</p> <p>Market conditions.</p>	<p><i>Commitment</i> to e-marketplace trading.</p> <p>Liability to limit the number of suppliers to those willing to connect to the e-marketplace.</p> <p><i>Positive perceptions of e-marketplace trading and satisfaction of supply</i> increase use of e-marketplace by procurement</p> <p>E-marketplace <i>promoted</i> by the e-marketplace vendor and the buyer within the organisation and the industry sector.</p> <p>Qualitative measures like <i>risk reduction</i> have the power to affect e-marketplace trading</p>	<p>Increased knowledge of e-marketplace trading.</p> <p>Establishment of inter-organisational and arms' length relationships with prequalified suppliers and e-marketplace vendor.</p> <p>Expansion in type of product sourced through the e-platform.</p>
<p>Economic market conditions where there are few buyers and electronic trading is a requirement of the buyer's terms of trade.</p>	<p><i>Pressure</i> on supplier to connect to the e-marketplace from buyer and e-marketplace vendor has the <i>power to force change and deliver benefits</i> to both buyer and supplier,</p> <p>Supply contracts negotiated and settled electronically create processing efficiencies, cost savings and negotiation time</p>	<p>Establishment of inter-organisational and arms' length relationships with prequalified suppliers and e-marketplace vendor.</p> <p>Increased efficiency in procurement process and integrated procurement systems.</p> <p>Procurement staff has more opportunity to focus on</p>

CONTEXT	MECHANISMS (Power/Liability)	OUTCOMES
	<p>savings.</p> <p>Buyer <i>choice</i> over adoption of e-marketplace services and functionality of the system has the power to <i>create buyer efficiencies and cost savings and establish relationships with suppliers and e-marketplace vendor.</i></p> <p>Supplier's participation <i>choice</i> to accept trading terms: <i>power to support</i> buyer initiative</p>	<p>strategic areas of procurement and organisational relationships.</p> <p>Establishment of compliant suppliers in supply base.</p> <p>Development of buyer's and suppliers' e-commerce capabilities.</p> <p>Increased acceptance of e-marketplace trading as part of everyday business.</p> <p>Creation or reinforcement of a positive perception of e-marketplace trading.</p>
<p>Economic market conditions where there are few buyers and electronic trading is a requirement of the buyer's terms of trade.</p>	<p><i>Pressure</i> on supplier to connect to the e-marketplace from buyer and e-marketplace vendor creates the <i>liability</i> to <i>damage supplier relationships</i>, and <i>create or reinforce suppliers' negative perception</i> of e-marketplace trading.</p> <p>Supplier's participation <i>choice</i> to reject trading terms: <i>liability to undermine</i> buyer initiative.</p>	<p>Buyer establishes new relationships with existing suppliers or creates relationships with alternate suppliers.</p> <p>Negative supplier perceptions of buyer, e-marketplace vendor and e-marketplace trading.</p>
<p>Organisation has large number of employees, widely dispersed IT infrastructure and different IS systems in locations worldwide.</p>	<p>E-marketplace technology has the power to allow global information sharing, price benchmarking, and transparency in the procurement process.</p>	<p>Global database of supplies, suppliers and procurement history.</p>
<p>Organisation has large number of employees, widely dispersed IT infrastructure and different IS systems in locations worldwide.</p>	<p><i>Wide scale implementation of system integration:</i> liability to <i>connect all procurement systems</i> and <i>deliver consistent information.</i></p>	<p>Limited creative use of e-marketplace system and adoption of additional e-marketplace functionalities once initial system is in place.</p>

CONTEXT	MECHANISMS (Power/Liability)	OUTCOMES
	Liability to <i>introduce innovation or implement rapid system changes</i> .  Liability of <i>increased costs</i> when implementing system changes.	

### 4.3.5 Implications for Theory

An organisation operates in a context containing the market conditions in which the organisation operates. Organisational context plays a vital role in the strategic use of the e-marketplace. Organisations that use e-marketplaces strategically are more likely to gain advantages than those that take an ad hoc approach to e-marketplace participation. The need to have well defined strategies and evaluation mechanisms for the e-marketplace vendor, e-marketplace functionality, and e-marketplace participation are essential for the creation of sustainable business value. Without clear and well defined strategies for e-marketplace trading the liabilities attached to the related causal mechanisms (e.g. the power to destroy established relationships) can cancel or outweigh their positive power (e.g. the power to create efficiencies).

The development of e-procurement requires enabling technology and staff acceptance but creative and innovative ways to use the system in the organisation are underpinned by the capabilities of the staff. When procurement (either as individual team members or the whole department) see themselves as a vital part of the organisation contributing to the creation of organisational value they are willing to develop procurement practices to increase that contribution. This could make them less risk averse and more likely to develop innovative ways to meet organisational, departmental or individual goals. Development of the system or the technology can stimulate further creativity in its use. However, functionalities of the e-marketplace system, organisational ICT and the size of the organisation have the power to constrain e-marketplace participation and affect the timing of implementing system functionalities.

IT strategy does not directly affect e-marketplace participation in large organisations. IT has responsibilities for the provision of IT services but IT infrastructure costs are not

attributed directly to the cost of e-marketplace participation. This could be different in small organisations where IT is not a separate function or where it consumes a large portion of organisational resources. IT could have an impact on small, potential suppliers and their IT strategies because of a lack of investment capacity and IT resources. Procurement strategy in large organisations separates organisational IT into the components which directly affect procurement operations and can be clearly identified. The fees charged by the e-marketplace to provide its system are direct costs to procurement. The role of IT strategy and e-marketplace participation in small organisations needs further investigation.

E-marketplace trading generates organisational knowledge and capabilities which are encompassed in a resource based view of the organisation. Additionally, when the knowledge generated through e-marketplace trading is seen as valuable, the functionality of the e-marketplace can be developed as a knowledge management tool. Supplier and procurement information can be shared globally within the organisation and contribute to procurement efficiency. This information can be utilised in procurement decisions and supports a strategic implementation of e-marketplace trading.

The move to e-sourcing away from online bidding reflects a change in the role of the e-marketplace provider from a facilitator to an intermediary. It also reflects a continuation in the attempts of the buyer to reduce their transactional costs and relational risk by passing them to the e-marketplace provider and supplier. The shift in organisational requirements and the e-marketplace vendors' attempts to meet customer demands forms new economic and network relationships between the agents: creating equality or power asymmetries and redefining perceptions of relational power involving buyer, supplier and e-marketplace vendor.

#### **4.3.5.1 E-MARKETPLACES AS FACILITATORS AND INTERMEDIARIES**

Early definitions of e-marketplaces regarded them as facilitators of market transactions. The e-marketplace connected the buyer and supplier by providing the platform for their interaction and enabling transactions to be made, there is no other interaction between buyer, supplier and facilitator. Intermediaries are third parties that provide a platform to bring buyers and suppliers together and facilitate transactions but they also provide a

service where they are actively engaged in the transactions and facilitation of the transactions. They are able to manage all aspects of the transactions and interact with the buyer and supplier simultaneously. EM Consortium acts more like an intermediary, contacting buyers and suppliers to bring them on board, providing technical and personal support for clients and potential clients and managing the transactions through the e-marketplace. However, they are not involved in the negotiations between buyers and suppliers.

Ariba is used by International Mining as a platform for e-commerce transactions and it provides more freedom than EM Consortium to develop transactions through and outside the platform which would seem to make it a more “open” e-marketplace; closer to the early definition of bringing buyers and suppliers together to facilitate a transaction. EM Consortium has evolved from its e-marketplace role as facilitator to offer a wider service to its clients. EM Consortium is developing the relational ties with buyers and suppliers and implements these relationships by personal contact and through the e-marketplace which provides an arm’s length relationship between the buyer and supplier.

Ariba can act as a facilitator or an intermediary as the participant chooses the level of service they require. The system is large and therefore, standardisation for every organisational user across each segment of the system is unlikely to occur. However, standardising transactions in a section of the system for a particular participant changes the relationship between Ariba and the participant: Ariba becomes a service provider rather than a facilitator.

#### 4.4 CASE STUDY 4: ENERGY POOL

Energy Pool is a Western Australian, gas and oil exploration and production company who has been operating since 1954. Today it is a world leader in the production of liquefied natural gas and also produces natural gas, liquefied petroleum gas, condensate and oil. Currently the largest fields of gas are located off the north west coast of Australia and represent an investment of over AUD \$27 billion. Various project partnerships have been formed for the exploration and production of sites with global producers such as Shell, BHP Billiton and Chevron. Energy Pool has exploration and production titles in the Gulf of Mexico, Africa, Algeria, Brazil and Korea.

The North West Shelf project is a major site for Energy Pool and supplying the site requires a supply base of marine facilities and warehouses to provide logistical support, shipping, offshore drilling and production facilities. The offshore operations are supported by three 2000 tonne supply vessels carrying supplies and equipment. IT has a vital role in supporting the operations of the organisation.

The main respondents in this case are supply chain managers involved with corporate services, logistics and production contracts. Organisational technology is well established and it is used to facilitate procurement activities. However, e-marketplaces are not commonly used. The themes and the associated critical realist terms applicable to the data from this case are shown below and will be explained in the following case analysis.

Table 4.12: Case four themes identified and applicable CR concepts

<b>CASE FOUR</b>	
<b>THEME</b>	<b>CR CONCEPT</b>
<b>Business value</b>	Structure
<b>Firm performance</b>	Structure
<b>Relationships</b>	Structure
<b>Costs</b> <i>Power to reduce costs</i> <i>Liability to increase costs</i>	Structure Mechanism Mechanism
<b>Benefits</b> <i>Power to realise benefits</i>	Structure Mechanism

CASE FOUR	
THEME	CR CONCEPT
<b>Risks</b> <i>Power to increase risk</i>	Structure Mechanism
<b>E-Marketplace participation</b>	Event
<b>Adoption</b>	Event
Support	Mechanism
Functionality	Mechanism
<b>Use</b>	Event
Functionality	Mechanism
Products traded	Structure/Object
Support	Mechanism
Team	Structure
Management	Structure
Capabilities	Structure
<i>IT skills development opportunity</i>	Mechanism
<i>Learning opportunities</i>	Mechanism
<b>Organisational Strategy</b>	Structure
Relational Strategy <i>Power to instigate strategy implementation</i> <i>Power to damage relationship</i>	Structure Mechanism Mechanism
Procurement Strategy	Structure
<i>Power to create cost saving</i> <i>Power to disrupt procurement practice</i>	Mechanism Mechanism
<b>Organisational characteristics</b>	Structure
<b>Perceptions of e-marketplaces</b>	Mechanism
<b>Market conditions</b>	Context
<b>Industry sector</b>	Context
<b>Trading partner attributes</b>	Structure
<b>Globalisation</b>	Outcome
Global trading	Event
<b>Definition of e-marketplace</b>	Context
<b>Problems with use</b>	Mechanism
<b>Procurement perspective</b> <i>Power to implement procurement initiatives</i> <i>Liability to resist changes to procurement practice</i>	Structure Mechanism Mechanism
<b>Skills required</b> ( <i>liability of upgrading skills</i> )	Mechanism

#### 4.4.1 Business Value

Without a clear definition of an e-marketplace or the role of e-marketplaces within the organisation attributing business value to participation is difficult and confused. The

definition of an e-marketplace provides context for the e-marketplace trading decision and contains the power/liability to influence the e-marketplace trading event through e-marketplace perception mechanisms. If the definition of an e-marketplace is associated with a negative perception (liability), adoption of e-marketplace trading is less likely. On the other hand, if the e-marketplace definition is associated with positive perceptions (power) of e-marketplace trading, participation is more likely. To clarify the context of the study the basic definition of an e-marketplace as “a platform that matches and connects buyers and suppliers in order to facilitate a transaction” is used. The use of ICT is ubiquitous throughout the organisation and procurement via electronic communication methods is a normal part of business procedures: “*pretty well everything could be considered electronic so it depends on what you want to call a marketplace*” (M1). Energy Pool has access to a web based e-marketplace (Emptoris) through their connection with Shell but mainly rely on their SAP system to connect with suppliers for B2B transactions. Purchases are also made from electronic catalogues through electronic platforms maintained by other organisations, such as Corporate Express. These represent e-marketplaces in terms of the definition given above but are not seen as e-marketplaces by the organisation.

Procurement fits within the organisational structure as a service department and is not perceived as a central part of the organisation: “*we are an engineering company, so we are not seen as a core activity*” (M2). E-marketplace participation is not regarded as being valuable within the organisation because it does not directly contribute to the core business function of oil and gas extraction and exploration. Additionally it does not contribute to the practicalities of these activities which are developed through associations with other large organisations in the industry who have similar problems. “*Can you help us getting barges through Somalia without being hijacked? Can you help us build a new platform, a new gas plant?’ The answer is always ‘No’. The only way you can get help is through the others in the game the Chevrons or whatever*” (M1). A reliance on larger organisations or alliance partners could restrict the globalisation of the company.

Contract management, and supply chain management have been identified as areas within procurement where significant benefits of cost savings and efficiencies can be

achieved. However, e-marketplaces are not a focus of these changes and it seems unlikely they will be seriously considered by the procurement teams as providing solutions to organisational goals in the short term,: *"I am saying that the type of things that money can be saved on is not the sorts of things that those systems can help with"* (M1).

#### **4.4.2 Strategy**

In this case e-marketplace participation is strongly influenced by personal perceptions and experiences. There are no strategies in place for the use of e-marketplaces or online bids, *"so even with the previous boss who put it in our performance agreements there was no strategy about using it for these purposes or not using it"* (M1).

Attempts to mandate the use of e-marketplaces constrained e-marketplace use to online bids which did not positively influence the underlying perceptions of e-marketplace trading: *"in my performance agreement it said I would do x amount of bids per year, which to be honest drove me round the bend, because online bids in my view are for things that you can call commodities and a lot of what we do are not simple commodity stuff"* (M1). At this time procurement through an e-marketplace is sporadic and is at the discretion of the person responsible for the purchase. *"My new boss doesn't give a damn about online bids so we will use them or not use them depending on our previous experience and desires."* (M1). *"We had one guy who wanted to give it a go recently so I said, 'OK, go ahead' and he did it but it took a lot of time."*(M1). Participation resulted in the negotiation of a new contract and delivered cost savings but the manager was sceptical of the advantages of using the e-marketplace and thought that the same result could have been achieved through other procurement methods.

It is clear that the lack of an e-marketplace strategy with a focus on how, when, and the type of goods or service to purchase, combined with a view of e-marketplace functionality as only an online auction mechanism, restricted e-marketplace participation. At a micro level, personal attitudes and perceptions are mechanisms underlying e-marketplace participation with the ability to affect the level and type of e-marketplace participation.

### 4.4.3 Firm Performance

Cost reductions and increased efficiencies are considerations for the procurement department and they have identified ways to achieve these objectives. *"The view of my boss is that you should be able to do everything lean, so you don't need massive fancy systems or massive consultants or whatever, you can think your way into better solutions, and I think he may be right."* (M1). The use of e-marketplaces to achieve these objectives is not a main consideration at the moment. *"There is a very big cost focus in the organisation at the moment but there is [sic] so many other ways of pulling out costs that online bids has never been a consideration"* (M1). However, there is a possibility that e-marketplace trading could be used in the future after immediate cost and efficiency targets are met. *"our maintenance and technical integrity is utmost so what we are trying to prove is that we can get our planning right so that when we do do maintenance campaigns the supply chain has delivered everything that they need. I think once we start doing that we'll start to look for the extra value."* (M2).

An e-marketplace can enable e-tendering processes and there is an expectation at Energy Pool that a contract will go to tender if it is worth over one million dollars. However, this limit does not guarantee that the tendering process will go ahead as it is at the discretion of the procurement staff. Energy Pool has tender documents and templates on their system which are emailed to suppliers when required *"so at the moment it is a very home grown environment"* (M1). Using an e-marketplace for tendering is unlikely because the changes needed in present work practices and the time it would take to implement a new system are viewed as delivering little or no benefit. Additionally using an e-marketplace could be perceived as an automatic tendering process which takes the choice of whether to go to tender from the procurement staff.

Contract specification and negotiations are time consuming activities. When using the e-marketplace detailed pre bid specifications have to be written. The contracts that have been taken through the online bidding process involved time consuming and detailed contract specification and there seems to be ambivalence about the outcome. *"We probably could have got a reasonably good outcome without all of that. So it definitely got a good price, we don't know yet whether we specified it properly, we did our best to specify it properly"*. (M1). If the contractor delivers the specified service the attitude

towards online bidding might improve and increase the use of the system. However, if the contract was wrongly specified or the contractor does not deliver the contracted service a more negative attitude could be generated towards online bidding. Additionally organisational capability can be developed by the use of the e-marketplace and the knowledge gained could reduce the time needed to construct pre bid specifications. However, there is a high staff turnover rate in procurement and those who have been actively involved in e-marketplace trading have moved on. The movement of staff and an ad hoc or tactical approach to e-marketplace trading at the micro level have restricted the growth of organisational capabilities in this area and prevents consideration of the potential of e-marketplace trading at a strategic, macro level.

The use of the e-marketplace has negatively affected firm performance in some instances but this could also be related to organisational capabilities and a non-strategic use of the e-marketplace. Mistakes made in the selection and awarding of a large contract to a certain supplier resulted in the contract being retendered. *"It might not have been the online bid it might have been the specification or the person whatever, but there is no one here who owns online bids or the strategy or whatever except one of my team members owns it in terms of being the person who knows how to use it."* (M1). The contracted supplier, sourced through an online bidding platform, was unable to fulfil a subsequent contract because the negotiated price was unsustainable. In this instance reliance was placed on the contract price without further investigation into the supplier or knowledge of previous supply outcomes. The supplier played a role in creating a negative opinion of e-marketplace trading by using the online bidding process to gain customers without considering price sustainability and the effect it would have on the longer term buyer/supplier relationship. Energy Pool was forced to negotiate a contract with another supplier after expending considerable time and effort chasing the contracted supplier. These events illustrate the causal liabilities of e-marketplace participation that can produce negative outcomes on firm performance, buyer/supplier relationships and produce negative perceptions of e-marketplace trading.

#### 4.4.4 E-Marketplace Participation: Functionality and Social Implications

The main area where e-marketplaces have been used at Energy Pool is in the purchase of commodity type goods using the online auction function of the e-marketplace. The auctions have met with varying degrees of success and have affected the attitudes of procurement staff and suppliers to e-marketplace trading.

A view of e-marketplaces as a bidding platform limited the perceived usefulness of the e-marketplace for the organisation and the types of goods and services that were acquired through it. *"My team has probably had more experience of it and would be more inclined to look at it for commodity based stuff than the rest of the business"* (M1). Although only the auction function of the e-marketplace was used there was an expectation that the e-marketplace system should enable other functionality. *"We do re-negotiate our contracts and I couldn't do that through those systems"* (M1).

Using an e-marketplace is also believed to have negatively affected relationships with suppliers and customers when online auctions are viewed as a tool to obtain the lowest prices from suppliers. *"The problem with it is that you start to alienate the real players, because you are saying we are position based, we are going to take a price"* (M2). Both the buyer and suppliers are reluctant to use the bidding function of the e-marketplace when a buyer/supplier relationship is already established: *"we'll still get companies who say if you do an e-bid we are not bidding, and they won't"*. (M1). Relationships with the unsuccessful suppliers could become strained as a result and there was an opinion that these suppliers might become vindictive in subsequent transactions *"Those vendors that were in on that bid that weren't successful, I think psychologically, are going to make sure that they get extra out of you for the fact that they got burnt the first time."* (M2). Not only would current relationships suffer but the supplier market would form a negative opinion of the buying organisation and this is particularly relevant where the supplier base is small or concentrated. *"I think what happens is that it prejudices the rest of the market because they then perceive that you are only going to deal with one because that's the way you've handled it and secondly if you do have to go crawling back to them you are going to pay more for it, and we find that a lot, a lot."* (M2).

Having Energy Pool as a customer is attractive to some suppliers and this will entice them into using the e-marketplace in order to gain a share of their business. *"A lot of companies want Energy Pool's business either as an entrée or whatever, and that gives you a lot of power that other companies might not have."* (M1). However, the perception is that large or international suppliers do not have the same incentives to participate in online bidding: *"International? It's not worth our while, we market based on a value package and it's not going to show on that, so forget it, we might as well as not waste the tender money."* (M1).

Relationships between procurement and the operational divisions have been strained in the past which has negatively affected operations and the status of procurement within the organisation. Improved communication is helping to build these relationships and promote the role procurement plays in the organisation. *"When I joined which was just over a year ago the relationships between the supply chain functions, call it the procurement function if you like, and the operations business was really poor. ....I think it's fair to say that in the last year we have done a lot of work improving those relationships and it's got a lot better, so our results are better because we are starting to get that interaction with them."* (M2). When established practices are threatened there is resistance to change. An e-marketplace system can provide transparency to transactions but the decisions regarding input and outcomes are at the user's discretion and can be manipulated. *"Well, certainly we have plenty of instances of business where someone is using someone because they are a mate, or an ex Energy Pooler or whatever, you absolutely have to push them to look broader in the marketplace, but I don't think an e-marketplace would make any difference; if they are going to be narrow they will be narrow. If you are forcing them to change it doesn't matter what mechanism you use."* (M1). Improved internal relationships should make it easier for the teams to work together when considering changes to work practices. However, sustainable relationships have to be developed and staff turnover will impact on this: *"there is a lot of staff turnover in places like this so you don't get much history."* (M1).

The use of online auctions can produce less job satisfaction than traditional one-on-one negotiations depending on the characteristics of the procurement personnel and their perception of online auctions. *"When you are doing it (online bid) that way you don't*

*have the opportunity to talk and I think in many respects you are signalling that price is it." (M2). It can also engender feelings of disempowerment and loss of control over the buying procedure. "I would, perhaps it is my style, I don't know, but I would rather sit around the table individually and say, 'Right, what does this actually mean?'" (M2).*

Past experiences of electronic markets will bias an individual's perception of current e-marketplaces even if the bias is acknowledged. A prior negative experience will lead to a more cautious approach in adopting e-marketplace trading. *"I've worked with EDI and hated it, hated it with a passion but that was 10 years ago, more. Didn't like it at all and I think we got sold, it was still in the early stages for that part of the world and you don't want to presuppose your thinking on an experience you had when you know it was in its infancy. I think if it is done right it is very valuable."* (M2).

The role of procurement within the organisation limits the potential of e-marketplace use. It is underpinned by weak internal relationships between procurement and customers, negative perceptions of online bidding and the low strategic profile procurement occupies in the organisation. Implementing alternative ways of procurement involves an acceptance of the benefits of change, a substantial investment of time and a willingness to learn and adapt. Although Energy Pool has a large ERP system and conduct business electronically on a daily basis it is at an early stage of electronic procurement and are in the process of refining or streamline existing procurement practices in the effort to gain efficiencies and cost savings. High staff turnover could contribute to the lack of strong affiliations and the level of embedded knowledge which is built from a history of procurement initiatives.

#### **4.4.5 Summary of Case Data**

The data is summarised in table 4.13 in terms of the context, mechanisms and outcomes that have been discussed in this case. Although many of the mechanisms are common to the four case studies already discussed this case illustrates the liabilities of the causal mechanisms and the outcomes. If the liability is strong it can counteract the positive power of the mechanism causing morphostasis or go beyond that to produce an aversion to change.

Table 4.13: Context, mechanism, outcome patterns identified in case four

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
<p>Australian based company having established partnerships with larger international organisations from the gas and oil industry.</p> <p>Organisational perspective of partner organisations.</p> <p>Established ERP systems connecting organisational functions.</p>	<p>Perspective that partner possesses more resources and knowledge enhances “<i>small fish in a big pond</i>” attitude and liability to <i>rely on partner resources</i>.</p> <p>Attitude that ERP system provides <i>sufficient functionality</i> for organisational requirements - liability in the adoption of e-marketplace system from a third-party vendor.</p> <p>Implementation of e-marketplace system - liability of <i>time</i> to learn, set-up, and implement.</p>	<p>Lags behind industry leaders in e-procurement methods.</p> <p>Resistance to change and conservative procurement practices.</p> <p>Procurement systems developed “in house”.</p> <p>Small, incremental changes in procurement systems.</p> <p>Limited vision of e-marketplace contribution to organisational value creation.</p>
<p>Perception of e-marketplace trading.</p> <p>Buyer control of procurement method.</p> <p>Perception of risk.</p>	<p>Negative perception of e-marketplace trading as a “price hammer” <i>restricts e-marketplace adoption</i>.</p> <p>Liability of risk through perceived <i>loss of control</i> in the negotiation and contract awarding process.</p> <p>Liability of <i>perceived disempowerment</i> of individual’s’ role in procurement function.</p>	<p>IT skills and learning capabilities not enhanced through e-marketplace trading.</p> <p>Restricted use of e-marketplace functionality.</p> <p>Resistance to e-marketplace participation.</p> <p>Risk aversion.</p>
<p>A procurement perspective that the core business of the organisation is engineering.</p>	<p>Liability to <i>downplay the importance</i> of the procurement functions in the creation of business value.</p>	<p>Limited strategic attitude towards organisational business value creation.</p> <p>Risk aversion.</p>
<p>High staff turnover in procurement where client relationships are beginning to be established (internal customers) and there are established buyer/supplier relationships.</p>	<p>Liability to <i>restrict the development</i> of organisational and individual relationships.</p> <p>Liability to <i>lose accumulated</i> expertise and knowledge.</p>	<p>Weak organisational relationships and continuation of the pre-existing conditions.</p> <p>Risk aversion.</p> <p>Small, incremental changes</p>

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
	Liability to <i>resist changes</i> to work practice.	in procurement systems.  Limited vision of e-marketplace contribution to organisational value creation.
Client relationships (internal customers).  Buyer/supplier relationships where there are few buyers and few but competitive suppliers.	Negative supplier “price hammer” perspective liability mechanism in procurement negotiations and liability mechanism <i>to damage future</i> buyer/supplier relationships.  Supplier liability to <i>quote unsustainable prices</i> .  Liability of <i>failed e-marketplace contract</i> to increase suppliers’ negotiation power.  Liability of <i>unfulfilled client requirements</i> to damage internal relationship.	Change in buyer/supplier relationship.  Change in client relationship.  Negative attitude towards e-marketplace participation.
Organisation has e-commerce systems, e-procurement experience and limited e-marketplace experience with some contracts negotiated through the e-marketplace.  Firm performance measures and procurement objectives.	Liability of <i>commitment of time</i> to establish e-marketplace contract specifications.  Existence of <i>pre-negotiated contracts</i> creates liability for <i>evaluation</i> of contract details and <i>evaluation</i> of contract fulfilment.  Liability of the negative e-marketplace participation perception that “ <i>it can be done in another way</i> ” and cause less <i>disruption</i> to work practices.  Liabilities of <i>limited e-marketplace experience</i> to <i>increase costs, damage existing relationships, disrupt work practices and inculcate bias</i> .	Negative or complacent attitude towards e-marketplace participation.  Small, incremental changes in procurement systems.  Limited vision of organisational value creation from e-marketplace participation.  Damage to relationships and increased costs.  Rationalisation of e-marketplace participation through firm performance indicators.

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
<p>Organisation has e-commerce systems, e-procurement experience and limited e-marketplace experience with some contracts negotiated through the e-marketplace.</p> <p>Firm performance measures and procurement objectives.</p>	<p>E-marketplace <i>functionality</i> has powers to provide <i>transparency</i> in procurement process, <i>establish market prices</i>, <i>cut costs</i> and <i>realise procurement objectives</i>.</p>	<p>Rationalisation of e-marketplace participation through firm performance indicators.</p> <p>E-marketplace participation a value generating activity.</p>

#### 4.4.5 Implications for Theory

The reasons for non-use of the e-marketplace are as important as reasons for participation. Perceptions of e-marketplaces can have a significant influence on participation levels and these are based on emotional responses which are rationalised using selective knowledge or experiences. Negative perceptions or experiences of the individual and e-marketplace participation lead to a more cautious participation approach, if participation is considered at all. Criticisms of e-marketplace participation from suppliers reinforces the emotional negativity in the decision making process.

The buying organisation is often portrayed as having sufficient market power to push suppliers into using the system when competition amongst suppliers is strong. Disempowerment is usually attributed to the supplier at the organisational (meso) level as a result (Zhao et al., 2009). However, the buyer can also feel disempowered by the e-marketplace system at the individual (micro) level by the challenges it poses to their existing work practices and their autonomy or authority. Organisational adoption of an e-marketplace system in the buyer organisation is therefore restricted by mechanisms underlying structures of work practice and authority at the micro level. At an organisational, or meso level, the mechanisms that cause negative buyer perceptions of the e-marketplace can empower the supplier and limit the buyer's market power. Large suppliers can also constrain the buyers' use and perceptions of e-marketplace trading with their refusal to participate.

Embedding relationships in the organisation builds trust and organisational knowledge providing the foundations for a learning culture. Maintaining relational ties within the organisation and with external contacts are important to establish trust between organisations (Zahedi et al., 2010) at a personal and institutional level. Raising awareness of procurement as a vital organisational function which contributes to organisational value should empower procurement staff to take a proactive role in that contribution. Particularly important for effective customer service is the forging of links within the organisation between procurement and other functional areas. Low staff turnover should allow time for relationships to be forged and an element of trust to be established between individuals, departments and institutions. An environment of trust will allow procurement staff to instigate changes and develop organisational capabilities.

## **4.5 CASE STUDY 5: DEPARTMENT OF TREASURY AND FINANCE**

The Western Australia Department of Treasury and Finance (DTF) was formed in 2001 when the Treasury and State Revenue departments merged. The DTF consists of five main areas:

1. State Treasury - manages the allocation of resources to State Government agencies;
2. Office of State Revenue - collects monies from various state taxes and duties;
3. State Government Procurement - supports a central contracting and tendering role for the state's agencies, and provides a number of online and telecommunication services aimed at making procurement more efficient and cost effective;
4. Shared Services - develop and administer the human resource and financial transaction services for state agencies such as recruitment, payroll, invoice processing and related services;
5. Building Management and Works - responsible for the state's non-residential building programs and contracting.

The DTF split into two agencies on July 1, 2011 and government procurement resides within the Department of Finance (DF). The DF's vision takes a whole of government approach to providing shared services and centralising procurement activities. The possible gains in efficiency, probity, risk management and value for money through the use of electronic channels has influenced the vision of a single entry point for related government/community interaction. The respondents in this case were DF senior directors of procurement systems and procurement standards.

The themes and concepts abstracted from the case data are shown in table 4.14 and will be discussed in the following case analysis.

Table 4.14: Themes and CR concepts identified from case five data

CASE FIVE	
THEME	CR CONCEPT
<b>Business value</b>	Structure
<b>Firm performance</b>	Structure
<b>Relationships</b>	Structure
<b>Costs</b> <i>Power to reduce costs</i>	Structure Mechanism
<b>Efficiency</b> <i>Power to create efficiency</i>	Outcome Mechanism
<b>Benefits</b> <i>Power to realise benefits</i>	Structure Mechanism
<b>Risks</b> <i>Liability to increase risk</i>	Structure Mechanism
<b>E-Marketplace participation</b>	Event
<b>Adoption</b> Support <i>Team management</i> Efficiency ( <i>Power to achieve</i> )	Event Mechanism Structure Structure Mechanism
<b>Use</b> <i>Functionality (power to provide)</i> <i>Information sharing</i> <i>Problems with system</i> Usability Integrated systems Interfaced systems Workflow practices	Event Mechanism Mechanism Mechanism Outcome Outcome Outcome Structure
<b>Capabilities</b> <i>IT skills development opportunity</i> <i>Learning opportunity</i>	Structure Mechanism Mechanism
<b>Policy</b> <i>Power to mandate change</i> <i>Power to allocate funding</i>	Structure Mechanism Mechanism
<b>Procurement strategy</b> <i>Power to centralise procurement processes</i> <i>Liability to disrupt current work practices</i>	Structure Mechanism Mechanism
<b>Organisational characteristics</b> <i>Power to create risk aversion</i>	Structure Mechanism
<b>Perceptions of e-marketplaces</b>	Mechanism
Global trading	Event
<b>Definition of e-marketplace</b>	Context

### 4.5.1 Political Influence and Business Value

Although business value in the government context is not associated with generating profits it can be viewed as an object or structure which has causal powers and liabilities and government policy, regulation and accountability (firm performance) represent related structures with interacting causal powers and liabilities. A major driver for the adoption of the various systems that fall under the term of *e-marketplace* is adherence to policy. At the same time, the systems have to be efficient and effective as the DF is accountable to the tax payers for the state's financial management. The different systems in the e-marketplace serve the objectives that stem from the diverse client groups. Two of the main systems used in the e-marketplace are electronic tendering (e-tendering) and electronic contracts (e-contracts). They are designed to serve state government policies requiring state agencies to go to a public tender and for goods and services to be acquired through established Common Use Arrangements (CUAs) where possible. Guidelines and processes have been developed by the DF to outline the use of these procurement methods. However, each government agency has some control over implementation of the policy and their procurement practices.

The Government E-Marketplace (GEM - now Tenders WA and Contracts WA) was originally set up by the Department of Industry and Transport, in 2000, as a portal to effectively manage state government procurement and encourage Western Australian organisations to adopt e-commerce. In this respect the State Government was taking on an innovative role in order to make a social and economic impact in the state. The objectives and benefits of the system listed on the Department of Industry and Transport Web site at that time were:

- Saving taxpayers money through the introduction of more efficient procurement practices.
- Increasing the accountability and transparency of government purchasing.
- Increasing the levels of compliance with State Supply Commission procurement and purchasing policy (including buy-local and common-usage contract policies).
- Demonstrating leadership in the implementation of the Australian Procurement and Construction Council guidelines and standards for e-procurement.
- Helping West Australian industry enter the world of e-commerce in a safe and secure environment. (C. Standing et al., 2009).

These objectives are still valid and supported by much of what the DF is trying to accomplish.

State government's policies and continued support of electronic commerce through the e-procurement systems have influenced their development and adoption. Government resolve and the necessary financial resources are the foundations from which the DF operates and efficiency continues to be a high priority outcome from the adoption and use of technology: *"Six years ago a whole procurement reform program was initiated which was divided into various streams. One of the streams was technology to improve efficiency and we have developed it from there. Reverse auctions are a more recent approach that we have piloted but with the aim of improving efficiency."* (D2). The future of the e-marketplace system development is constrained by funding and government policy: *"we don't have a huge system budget; the whole of government push is the Oracle system and the whole ERP and gaining improvements through introducing that into agencies. So I would imagine that would continue, and what we do in here would be smaller changes to what we already have."* (D1).

#### **4.5.2 Strategy**

The DF takes a strategic position towards the centralisation of government procurement and takes a leadership role in implementing government policy: *"If you ask this department, since we are the centralised body that leads and puts a lot of these policies and centralised guidelines and systems in place, of course we think it's strategic and important."* (D1). However, other agencies do not always regard it in the same way: *"I think if you went into some agencies across government, there's a hundred odd agencies, and asked them the importance of procurement they wouldn't see the importance of it."* (D1).

The DF strategy for e-procurement is to offer a range of options in a portfolio of systems to enable effectiveness and increase efficiency. Its aim is to service the needs of the various agency groups and provide the products and services that they require. The challenge is to establish relationships with the government agencies and buyers, provide relevant information and resources *"to actually reach into those buyers and educate*

*them, that is quite difficult, so some of these tools help guide them down the right paths, and some of the reporting function back to some of the management levels in agencies, that leads to improved education as well.”* (D2). The procurement strategy also considers fairness and equity from the supplier side reflecting the social and economic responsibility of state government.

State government procurement strategy relies significantly on the innovative use of information and communication technology to deliver efficiency improvements that translate to cost reductions. *“I think we have been open to try new things, see what works and then if it does - we tend to pilot everything and then adopt it.”* (D1). This consideration of ICT’s potential has been in evidence since 2000 when WA was one of the first states in Australia to introduce an e-marketplace. This innovative approach has continued with various rounds of technology efficiency improvements. One of the most recent changes, involving the functionality of the e-procurement systems, has been the piloting of electronic auctions which resulted in their subsequent adoption and represents a potential for change in e-procurement practice.

### **4.5.3 E-Marketplace Participation: Functionality and Social Implications**

Compliance with state government policies is a major force underpinning DF strategies and it can be facilitated by embedding policies, rules and guidelines within the e-procurement systems. Compliance is continually monitored and actively encouraged to induce adherence to policy at the state level. Increasing the usability of the e-procurement systems and providing one access point for buyers and suppliers are priorities for the DF. The e-marketplace supports government buyers and suppliers by providing a variety of functionality and information. Training can also be provided by the DF in the use of the systems. Participation is encouraged by DF personnel who visit the agencies, discuss requirements, monitor participation and evaluate outcomes.

#### **4.5.3.1 FUNCTIONALITY**

DF provides a web based portal which can be accessed by agency buyers and suppliers. It consists of a suite of e-procurement products including an e-tendering and contract management system. Information on tenders, contracts, buyers, suppliers, goods and

services is accessed through the portal. E-books are also available to help customers use the systems. Suppliers go through established processes to submit an e-tender, to be accepted as a government supplier or to establish a CUA. Buyers access the e-tenders (Tenders WA), CUAs (Contracts WA) and product catalogues through the portal. The diverse range of users and requirements make usability of the various systems a DF priority. *“We focus on trying to make the CUAs user friendly, part of that is delivery through the IT strategies, hence Contracts WA.”*(D2).

The e-marketplace is primarily a catalogue based system, allowing the matching of buyers and suppliers, which is supported by a decision tool to help in the product search and selection process. A full range of products is traded through the portal such as groceries, agricultural products, chemicals, information technology, human resource services and telecommunications services. It has provided the means to access supplier and procurement information, monitor compliance with government policy and deliver cost reductions:

*“if we didn’t have these systems in place the use of our Common Use Arrangements would be much lower, possibly much more sporadic”*(D1).

*“we have measured cost reductions at a cross sectional agency level, even down to the agency level. The large agencies we can report on. You know are they getting the best price.”*(D1).

Usability of the e-marketplace system is an outcome related to cost reductions and efficiency; modifications to the e-procurement systems have occurred over time to increase its usability.

*“the easier we make it for people to use our Common Use Arrangements the more savings we get but also we use the data we collect to work out what other Common Use Arrangements we can have as well. That’s identifying those as well or how well they are working, in some cases they might not be working well, so it might be something as simple as we look at the products that are being sold by our suppliers and say perhaps we should have that product on our Common Use Arrangement, something as simple as that, so we can then negotiate to bring that in. It can be really simple.”* (D2).

Evaluations of system use at a micro level (product traded) can produce a change in functionality and affect outcomes at a meso organisational level where Common Use Arrangements form part of the government's procurement structure.

The development of the e-decision tools has produced set guidelines and methods for procuring goods and services. The types of goods and services the government procures have not changed but the system has been adapted to suit the type of product required: *"for example we will have a service type e-decision aid so any product that we are selling that fits into the model of a service we will configure it in that way. But products can also fit in there so we tend to adapt the system to the product we are selling"* (D2). Adapting the system to the products traded reinforces the rules and procedures governing procurement but constrains the adoption of innovative procurement methods and could lock out new suppliers.

Electronic reverse auctions have been successfully trialled as a procurement mechanism and have been added to the procurement suite. Although this is not directly accessible through the DF portal it provides added functionality to the e-procurement systems. The e-marketplace system facilitates the auction which is conducted between the buyer and invited suppliers but it is promoted to the agencies by the department. *"We have a staff member internally who deals with those and goes out and talks to the agencies, gauges their interest and sets it up for them and we run it."* (D1).

Integration of the various systems for information interchange is high on the DF's agenda. There are major difficulties when trying to implement one system across the diverse systems used in the state's government departments and agencies. *"To merge all of it into one, I think that wouldn't work, our target audience and the users of these systems are so completely diverse and that would be incredibly complex"* (D1). To overcome some of these problems the DF focuses on interfacing the systems rather than integrating them which has increased the level of technical expertise. *"Integration between things like an Oracle product and a purpose written product or another third party product is very difficult, obviously, and is costly and not always possible with the technology, we're probably getting better at that, so we tend to have more interfacing than integration. But we do still have purpose written integration."* (D2). The interface

will retrieve the required information from the data stores of the various systems. It is anticipated that this will reduce data redundancy and provide current and consistent information across the whole government sector. Integrating procurement information across the public sector can provide the basis for better assessment and management of the procurement spend as well as help monitor compliance with policies and guidelines. *“Under the surface of our e-marketplace we have our procurement data warehouse and that’s where we’ll get a lot of our benefit”*. (D1). The intention to extend e-marketplace functionality into a database of procurement information, accessible to the whole organisation, was also seen in case study three and demonstrates the strategic attitude of the procurement staff to e-marketplace trading.

Although there is a vision for a complete purchase-to-pay system through the e-marketplace it is seen as having technically and practical difficulties *“getting that full flow, through something like Contracts WA is difficult, not just from a technical point of view but other problems of collection of funds on behalf of the supplier or something. I think with GEM we did try that type of scenario where we had partner suppliers and that sort of thing but it really just didn’t get the take-up. So part of it is the risk that you develop something that will get the take-up, but we are getting better.”* (D2).

#### **4.5.3.2 SOCIAL IMPLICATIONS**

As a government entity and one of the state’s major buyers the DF also has a social role in the community. In the early days of GEM suppliers’ adoption of electronic commerce and the benefits to them were highlighted (C. Standing et al., 2009). Although this is still evident the emphasis has shifted towards creating more efficient and effective electronic commerce. An increase of technological knowledge and computing experience in the community could have contributed to a change in emphasis from encouraging suppliers’ use of the systems to developing systems which better suit user requirements. *“I think it’s important that they (systems) are efficient and easy to use from the suppliers’ point of view as well”*. (D1). *“Suppliers have become more familiar with the electronic commerce arena and their expectations have changed from 6 or 7 years ago.”* (D2).

Decisions regarding the applicability of an ICT and its adoption into the state government’s electronic commerce domain reside with senior management in the State

Procurement department. Following the decision to adopt the technology its use is promoted to senior managers across the various government agencies. Management support is seen as a vital part of successful adoption within agencies. *"Adoption is really probably, well, this central agency we decide what we adopt really, if it is then used in the agencies that is part of Bob's team's job, and other parts of this unit, is to make sure it is used and promoted but the perceptions of management has a huge impact. If management is not interested it is not going to work."* (D2). The promotion of the technology is an essential part of the department's brief and is implemented by building relationships with other agencies and demonstrating the benefits of using the e-procurement technology. By building relationships and using the e-marketplace technology to meet user needs procurement staff are building knowledge and awareness of the e-marketplace throughout the government sector. However, an aversion to risk has the power to limit e-marketplace participation especially in the adoption of unproven functionalities of the e-marketplace: *"I guess government can sometimes be a bit conservative so I think there is a tendency to fall back to what we know."*(D1).

Suppliers can be affected by the efficiency of the e-marketplace and force system changes. *"One of the drivers for replacing the GEM tendering system with Tenders WA was that it wasn't operating efficiently. So they (suppliers) do have an impact on what we do with our e-marketplace systems"* (D2). However, policies that require incumbent suppliers to retender are not driven by the e-marketplace system even though they can be a relational challenge.

There is a collaborative element present in the State Government Procurement department which can influence adoption of a technology in other Australian states. Systems or technologies adopted from other states are modified for local use and can undergo further modifications to systems or processes as required. WA DF has a number of systems that other Australian and New Zealand States are interested in adopting. The e-tendering system used in WA originated in South Australia and was modified for use in WA. These enhancements will be adopted by the Queensland and Victoria state government procurement departments and will possibly undergo further modification or enhancement. Collaboration between state procurement departments can help build better outcomes for each state and the country as a whole.

#### **4.5.4 State Procurement Department Performance**

Regulatory power and compliance monitoring have significant influence where community members are stakeholders in the allocation of government resources. Although state government may not have the same performance objectives as a private entity it is still concerned with managing its finances and resources in an effective way. The State Procurement department has a clear objective: *"The whole purpose of this government procurement unit is to drive this good procurement practice across the public sector."* (D1). The department's regulatory role ensures clear guidelines are developed for procurement *"we have such a strong contracting area that dictates, approves policies and practices around what is procured"* (D2). In order to demonstrate departmental effectiveness the compliance of agencies with procurement policies and processes are monitored. Monitoring also enables the department to focus on specific agencies or areas of spend where compliance could improve effectiveness or produce cost savings. *"Extracting the information from the agencies so we can tell them how they are tracking and look for improvements and look for areas to make savings and improve practice."* (D1). Compliance monitoring and procurement analysis are carried out at regular intervals and reports are made to the State Supply Commission and the Auditor General.

#### **4.5.5 Case Data Summary**

The case data is summarised in table 4.15 in terms of context, mechanisms and outcomes. Mechanisms which are most dominant on the outcomes related to e-marketplace participation are: the regulatory power of the DF; clarity of procurement policies; organisational relationships and allocation of funding (commitment) to e-commerce initiatives. The strategic and innovative attitudes of the DF staff have enabled them to envisage the potential of e-marketplace trading and develop procurement policies to support government policy. Compliance monitoring enables demonstrations of the benefits of different e-procurement methods. If the DF takes a proactive, strategic approach to e-procurement, the evaluations will cause refinements to the e-marketplace technology, procurement processes and the procurement information available to meet stakeholder requirements.

Table 4.15: Context, mechanism, outcome patterns abstracted from case five

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
<p>Political environment and social welfare</p>	<p><i>Requirement to evaluate expenditure and outcomes.</i></p> <p><i>Collaborative attitude between state governments with similar strategic objectives.</i></p> <p><i>“Bandwagon” mechanism where public or government sector lead the way for the private sector</i></p>	<p>Rationalisation of government policy.</p> <p>Accountability for expenditure.</p> <p>National sharing of IT and e-procurement knowledge and skills.</p> <p>Supplier equality in accessing government buyers.</p> <p>Increased awareness of e-commerce in community.</p>
<p>The State Government department is required to implement a government policy to introduce e-procurement into large state government agencies and create a centralised e-procurement system.</p> <p>Centralised e-procurement system with standardised procurement contracts, e-tendering procedures and established prices for some goods/services</p>	<p>Department <i>promotes</i> use of e-marketplace to suppliers and government agencies through <i>personal relationships, education and evaluation mechanisms.</i></p> <p>Regulatory power to <i>implement change in procurement and monitor compliance.</i></p> <p><i>Functionality</i> of system has the power to <i>provide access between all potential suppliers and all government agencies</i> and to <i>provide transparency</i> in procurement contracts.</p> <p><i>Functionality</i> has the power to act as an <i>interface between the many, various government systems.</i></p> <p>Cost savings though <i>pre-established prices</i> for goods/services and <i>time saved in searching and negotiating contracts.</i></p>	<p>Increased awareness of e-marketplace trading in supplier base and across agencies.</p> <p>Adoption of e-marketplace by supplier/agency.</p> <p>System integration.</p> <p>Development of IT skills and knowledge creation in DF.</p> <p>Customised interfaces for agencies.</p> <p>Accessible data stores of all the state government’s procurement information.</p> <p>Accountability for procurement spending.</p> <p>System usability developed and process improvements made.</p> <p>Increased efficiency in procurement process.</p>

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
	<i>Proactive management support from agencies for e-marketplace participation.</i>	Security of supply and consistent prices across state government.  Supplier equality in access to government buyers.
Relationships with suppliers are established through implementation of e-marketplace systems.	Promotion of a <i>supplier equality ideal</i> .  State government seen by the supplier as a <i>desirable customer</i> .  <i>DF's education and training mechanisms</i> used to increase the power of the supplier's <i>IT skills and learning mechanisms</i> .  <i>Proactive approach</i> by DF to address <i>suppliers' concerns</i> .	Adoption of e-marketplace by supplier.  Increased awareness of e-marketplace trading in supplier base.  Increased use of technology in the supplier community.  System usability developed and process improvements made.  Increased efficiency.  Supply base restricted to those with necessary resources.

#### 4.5.5 Theoretical implications

Efficiency, accountability and compliance are three pillars of the WA State Government's procurement approach. Procurement practices are continually being improved with the use of ICT and this is an overt strategy not only at a regional level but also nationally. The influences of these three mechanisms and use of technology for e-procurement have the power to change government structures and policies and contribute to the growth of a knowledgeable ICT community (table 4.16).

Collaboration between state governments builds a communal culture of knowledge sharing and innovation. It demonstrates the effective leveraging of resources to gain desirable outcomes and meet strategic objectives. The diffusion of the technology

through leveraging procurement resources illustrates an association between the RBV and the diffusion of innovations theory (Rogers, 2003).

Table 4.16: Possible morphogenesis and morphostasis associated with Government policy and e-procurement strategy

<b>Object X, having structure: T<sub>1</sub></b>	<b>necessarily possessing causal powers and liabilities</b>	<b>under specific conditions (other objects with powers and liabilities) T<sub>2</sub>, T<sub>3</sub></b>	<b>Will not be activated, hence producing no change T<sub>4</sub></b>	<b>Will produce change T<sub>4</sub></b>
Government policy (X)  E-procurement strategy	Efficiency  Accountability  Compliance	<ul style="list-style-type: none"> <li>• Enabling technology</li> <li>• Promotion of e-marketplace trading</li> <li>• Perceptions of e-marketplace participation</li> <li>• Collaborative attitude</li> <li>• Monitoring and evaluation tools</li> <li>• Stakeholder ICT experience</li> </ul>	<ul style="list-style-type: none"> <li>• Organisational structures remain unchanged</li> <li>• Procurement methods remain unchanged</li> </ul>	<ul style="list-style-type: none"> <li>• Changes in perceived levels of e-marketplace participation risk</li> <li>• Strategic change</li> <li>• Policy change</li> <li>• Enriched community knowledge and experience</li> <li>• Innovative use of technology</li> </ul>

## 4.6 CASE STUDY 6: SMARTBUY

The New South Wales (NSW) Department of Commerce has developed a number of electronic trading initiatives for government procurement. As part of the electronic trading policy an e-marketplace (Smartbuy) was developed. This was initially set up in 2002 by the Department of Public Works and Services. Today it is managed by the NSW Department of Services, Technology and Administration (DSTA) which is continuing to develop the functionality of the platform in order to manage the various procurement functions required by state government. The government procurement portal provides access to state contracts, electronic tendering, some human resource management services and training opportunities. Guidelines and frameworks developed for government procurement and for suppliers are easily accessible. A wide variety of goods and services is traded through the e-marketplace. Smartbuy supports electronic catalogues for goods and services as well as electronic requests for quotes; electronic tenders are also submitted through the government portal.

Table 4.17: Themes and CR concepts identified from case six

CASE SIX	
THEME	CR CONCEPT
<b>Business value</b>	Structure
<b>Firm performance</b>	Structure
<b>Relationships</b>	Structure
<b>Costs</b>	Structure
<i>Cost evaluation</i>	Mechanism
<i>Power to reduce costs</i>	Mechanism
<b>Efficiency</b>	Outcome
<i>Power to create efficiency</i>	Mechanism
<b>Quality improvement</b>	Outcome
<b>Benefits</b>	Structure
<i>Power to realise benefits</i>	Mechanism
<b>Risks</b>	Structure
<i>Power to control risk</i>	Mechanism
<b>E-Marketplace participation</b>	Event
<b>Adoption</b>	Event
Support	Mechanism
<i>Management</i>	Structure
Competitive advantage	Outcome
Trading base	Context
Peer pressure	Mechanism

<b>CASE SIX</b>	
<b>THEME</b>	<b>CR CONCEPT</b>
Efficiency ( <i>power to achieve</i> )	Mechanism
<b>Use</b>	Event
Workflow practices	Structure
Functionality	Mechanism
System integration	Mechanism
Products traded	Object
Product development	Outcome
System compatibility	Mechanism
Support	Mechanism
Capabilities	Structure
Learning opportunity	Mechanism
<b>Organisational Strategy</b>	Structure
<b>Relational strategy</b>	Structure
Buyers	Structure/Object
Suppliers	Structure/Object
<b>Procurement strategy</b>	Structure
<b>Government policy</b>	Structure
Political environment	Context
Perceptions of e-marketplaces	Mechanism
Country characteristics	Context
Industry sector	Context
Trading partner attributes	Mechanism
Global trading	Event
<i>Opportunity to trade internationally</i>	Mechanism
Definition of e-marketplace	Context
<i>Liability of problems with use</i>	Mechanism
Procurement perspective	Mechanism

The main respondent in the case was the general manager (GM) of e-business solutions. Government documents and websites also provided referential and validation material. Themes that were present in the data and how they are conceptualised as critical realist themes are shown in table 4.17. The following analysis will demonstrate the application of the concepts to the data.

#### 4.6.1 Political Influence and Business Value

In common with organisations in the private sector, business value for a government department can be created through the activation of cost and efficiency mechanisms. However, ideological mechanisms concerned with ethics and social welfare are evident. The general manager defined the original 1999 state government's e-procurement policy as having: *"The intention to introduce efficiencies in procurement across the government, it was also to increase competition across different sectors, it was also to increase access to government procurement on the supply side for regional and small to medium enterprise, it sought to, in the e-marketplace particularly, it sought to leverage the volume of government expenditure to improve the procurement outcome in terms of value for money."* (GM). Social responsibility is a mechanism related to government policy and is reflected in the state procurement policy where: *"The primary objective of the Procurement Policy is to ensure government procurement activities achieve value for money in support of government service delivery, whilst being fair, ethical and transparent."* ("New South Wales Procurement Information," 2004).

As with the preceding government case study, the creation of the e-marketplace was driven by state government policy with an agenda to implement electronic trading throughout the state's agencies. *"That policy came out in 1999 and it took a couple of years to formulate the strategy in support of that policy, by the time 2002 rolled around the NSW Department of Public Works and Services, as it was then, was in a position to launch the first piece of what is now the smartbuy suite of tools."* (GM). The main drivers of the policy were the anticipated gains in efficiency and greater transparency in the procurement function.

Government policies which encompass mechanisms of efficiency and probity are related to accountability mechanisms and are activated in certain conditions to produce various outcomes. *"We do have to justify the recurrent costs of ourselves back to government and we do that on a fairly regular basis."* (GM). The evaluation mechanisms create relationships between the structures of organisational capabilities and other social and political structures. In an e-marketplace evaluation event, the costs and benefits of e-marketplace participation have powers and liabilities to produce an efficiency outcome. Over time the evaluation event, social and political structures have

changed. *“When Smartbuy was originally launched, someone made the unfortunate decision to capitalise all the labour that went into the implementation, which gave it a very big ticket price of \$65,000,000, and that kind of ticket price on any system attracts media attention and consequently a bit of political pressure comes to bear I guess. But gradually as the savings have rolled in that’s been far easier to justify”.* (GM).

The regulatory power of state government policy influences the adoption and use of the government e-marketplace and changing government and agency structures has affected the implementation of electronic trading policies causing friction between the government and some agencies. *“Some have been very willing and have recognised the benefits in their own contexts very quickly, others have been less enthusiastic, because they have had particular circumstance, often coinciding with possible implementation of our system, they have been working on major reform, say in their own ERPs”* (GM). Procurement reform became a low priority on these agencies' agendas. To increase uptake of the e-marketplace a mandate was issued in 2006 requiring large agencies (turnover greater than \$400,000,000) to adopt some form of e-procurement. However, compliance is an on-going issue: *“it did have an impact but there are still a couple of agencies that would fall into that category of being large agencies that have yet to adopt e-procurement.”* (GM).

#### **4.6.2 Strategy**

The initial strategies for procurement through the e-marketplace were developed from the policy of 1999. An interpretation of policy is vital to develop appropriate strategies and procedures to achieve the required outcomes. The general manager has a clear understanding of government procurement policy and future directions for the e-marketplace to support policy objectives.

Strategies related to the functionalities of the e-marketplace have developed to meet the requirements of buyers and suppliers. The e-marketplace has been developed in four main stages: *“the first three being the e-procurement buying platform, the content management platform and the messaging platform, the fourth item was a reporting capability known as Smartbuy Report.”* (GM). Current strategy is based around the optimisation of the e-marketplace. One of the strategies for communication optimisation

involves the integration of the different messaging hubs used by suppliers. As suppliers joined the e-marketplace it became clear that there were several messaging hubs being used in the system, representing extra maintenance and cost to the supplier. Optimisation will enable suppliers to maintain a single messaging system with government buyers, effectively removing a technological and financial obstacle to e-marketplace participation. Future strategies are linked to the necessity to leverage the aggregate spend across government *“Spend analysis and our strategies to make the most of particular areas of spends it’s one of those case by case things.”* (GM). The e-marketplace system can be accessed to gather procurement intelligence and information on market demand and conduct spend analysis.

### **4.6.3 Relationships**

Government procurement tries to maintain relationships with suppliers and help them navigate through the e-tendering system and participate in the e-marketplace. Building relationships with suppliers and familiarising them with the e-marketplace technology and functionality has been costly but these costs are expected to decrease commensurate with increased technological experience: *“the maturity of the market since those early days, the maturity of the e-procurement base, and suppliers in that space, we are expecting that some of our recurrent costs should diminish”*. (GM). The DSTA believes it is having success in the supplier relational area and that suppliers have a positive attitude towards the support they receive: *“we try to work together so generally the relationships on that regard are quite good.”* (GM). Continuation of the positive attitudes could change if a focus on supplier needs is not maintained

State government policy is responsible for the introduction of e-procurement into the state government sector but to be successful the system has to be adopted and used by the government agencies and suppliers. Mechanisms that can create liabilities in the adoption of e-marketplace trading in agencies are related to existing workloads and the prioritisation of work in a structure of established work practices. Management support from the agencies for e-marketplace implementation, the power of a senior supporter and commitment to implementation are seen as critical mechanisms for successful implementation of e-procurement as it involves changing work practice structures at the organisational level and implementing procedures to support the changes. *“What I really*

*want to say is that there is an organisational adjustment that's necessary almost in all cases and to varying amounts of difficulty and it is usually a function of seniority of the sponsor in the implementing agencies, that influences that greatly, and the amount of rigour that they undertake in adopting and use of the system and transition to it."* (GM). The sponsor must engender trust from the agency personnel, at a personal, technological and participatory level in order to implement the necessary changes in established work practices.

The DSTA is endeavouring to build relationships between suppliers and buyers to improve the uptake of the e-marketplace which involves analysing agencies' procurement, supplier contracts and implementing system changes.

*"supplier side, we are trying to get a better understanding of what it is that they are invoicing our agencies for, so we know where the spend's going and we can improve our category management, so the contracts are better tailored, I guess, to suit the market; on the buyer side I mentioned the mandate in 2006 we're not using all stick but we're also trying to use carrot there, and that has involved ongoing enhancements to the systems to suit the needs of agencies and helping them to understand what some of the benefits might be and helping them with their business cases internally and that sort of thing."* (GM).

In order to support suppliers to access the government market there are ongoing efforts to encourage agencies to use the listed suppliers *"I think suppliers generally appreciate that effort and we try to work together."* (GM).

Centralisation of the government procurement function is reflective of current government policy. However, some agencies oppose this and would prefer to buy from local or known suppliers rather than the suppliers mandated at a central level. The local relationships are seen as important in building a community ethos and as a valuable support to government services. *"They would like to think that they could retain control of who it is they buy from because it delivers other benefits."* (GM). The buyer's control is a mechanism affecting participation in the e-marketplace and represents a micro/macro conflict and it is especially significant for government whose main stakeholders are local community members. *"one principal made the point, that he believed, he liked the idea of going and knocking on the door of local shopkeepers and*

saying, 'Would you like to contribute something to our school raffle this year?' Their ability to do that is diminished, or their confidence in getting a positive result when they do that, is diminished when they stop using local suppliers". (GM).

#### **4.6.4 Functionality**

Workflow practices within government procurement have changed over time from manual systems where documents were collected from disparate systems and collated, to one which allows e-tendering and e-procurement. The e-marketplace provides a level of transparency in procurement practices by providing a centralised access point to procurement information. Tender documents, catalogues and other relevant information are standardised and available in electronic format through the state government's portal. State Government regulation requires that contracts between the private sector and government worth over \$150,000 have to be disclosed. The data generated through e-marketplace transactions can be accessed, evaluation of government agencies' procurement spend can be made and assessments of agency and supplier needs can also be carried out. Further streamlining of the electronic tendering process is possible and it is envisaged that this would enhance efficiencies in data collection and distribution.

Suppliers have to successfully complete an electronic tendering process to be accepted onto the list of government suppliers but the functionality of the system can be frustrating. Navigating through the system and completing the tendering process is often time consuming and can seem complicated. Many of the government suppliers are small sized companies who may not possess the personnel or the necessary level of technical ability to participate efficiently in the electronic tendering process. When a supplier is accepted, managing sales through the e-marketplace is another issue and it can prove more difficult when technical disparity exists (communication integration as mentioned in section 4.6.2 is a strategic initiative).

Once products have been catalogued through the e-marketplace the suppliers lose control over the prices and products. *"I guess some of the freedoms they had with their content is diminished." "marketing capability and commercial control they have to give that up."* (GM). The loss of flexibility in the purchase decision can be a positive or a negative: the buyer is more certain of receiving the goods they order at the price quoted

and the supplier cannot substitute products, adjust for price fluctuations, stock levels etc., or easily renegotiate the contract which could be beneficial for both buyer and supplier.

The differentiation of products by bundling services with goods makes trading these types of items through the e-marketplace more complex for the buyer and the seller. The buyer has to be certain of its requirements and the supplier also has to clearly specify the product and service it is offering. This can be particularly challenging where the e-marketplace is catalogue based. *"One of our key findings has been goods and services, goods are particularly well suited and services to an extent are well suited to the e-marketplace but beyond that there are limitations. Mobile phones are a great example of another area because people don't typically buy a mobile phone they buy a mobile phone and the associated services. That specialised industry is better at providing a web interface for picking and choosing the combination of goods and services that people buy."* (GM). An e-marketplace that can offer functionality for the selection of combined goods/services and effective negotiation capabilities might gain a competitive advantage over those offering more basic options.

The evolution of the e-marketplace in design and functionality has been possible because of the abilities of the electronic commerce personnel, their ability to analyse the system, understand user, and government needs, and adapt the system to meet their needs. They have listened to users of the system and endeavoured to solve apparent issues as well as implement changes that enhance the efficiency or increase the functionality of the system. Through this process they are building relationships with government agencies and their suppliers whilst continuing to learn about the system and electronic procurement and look for new ways to enhance the e-marketplace. This indicates the existence of a service orientated department which is embedding relationships and building learning capabilities.

The different requirements of agencies' procurement activities presents the possibility that e-procurement practice is unlikely to be standardised across all agencies and that many e-procurement methods and procedures will continue to exist.

#### 4.6.5 Firm Performance

For the government, firm performance benefits, through e-marketplace trading are primarily regarded as being in the area of cost saving and efficiency. Other benefits related to e-marketplace participation are:

- The consolidation of dispersed supplier bases into a central electronic portal which can be accessed by all agencies and suppliers;
- Pre-negotiated contracts with reputable suppliers;
- Price advantage from consolidation of orders;
- Time savings;
- Product assurance - the supplier contracts provide product specification and assurances of costs, quality and quantity of supply.
- Process improvements – standardised processes and procedures for ordering;
- Reliable budgeting forecasts and costing based on contract prices;
- Real time negotiation eliminates some inefficiencies in the supply chain;
- Availability of procurement data to assist with future procurement decisions.

The risks of implementing e-marketplace trading, in this case, are seen as residing primarily with the government and being related to the expense of establishing and maintaining the e-marketplace and the time lag between establishment and widespread adoption. Initial costing of the system and its implementation included a capitalisation of all the labour costs resulting in a large cost being attached to the project. This attracted political pressure and ensured that justification was made for the investment: *“gradually as the savings have rolled in that’s been far easier to justify”*. (GM). The risks can be outweighed or balanced by the *“positive risk in terms of probity; positive risk, in terms of, inherent to process and control of delegation.”* (GM). The recurrent costs of the department are analysed on a regular basis. Substantial savings have been achieved by the department: a cost of \$13,000,000 per annum to the government compared with an estimate of \$332,000,000 in procedural savings.

#### 4.6.6 Case Data Summary

The following table summarises the data from this case in terms of possible context, mechanism and outcome patterns. There are many similarities with case five as both

organisations were Australian state government procurement departments with responsibilities for the implementation of a centralised e-procurement system across all government agencies in the state.

Table 4.18: Context, mechanism, outcome patterns identified from case six

<b>CONTEXT</b>	<b>MECHANISM (Power/Liability)</b>	<b>OUTCOME</b>
Political environment and social responsibility concerns of state government.	<p><i>Regulatory pressure</i> on department and requirement to <i>evaluate expenditure and outcomes</i>.</p> <p><i>Opportunity to collaborate</i> between state governments with similar <i>strategic objectives</i>.</p> <p><i>“Bandwagon” mechanism</i> where public or government sector lead the way for the private sector.</p>	<p>Rationalisation of government policy.</p> <p>Accountability for expenditure.</p> <p>National sharing of IT and e-procurement knowledge and skills.</p> <p>Supplier equality in accessing government buyers.</p> <p>Increased awareness of e-commerce in community.</p>
The State Government department is required to implement a government policy to introduce e-procurement into large state government agencies and create a centralised e-procurement system.	DF <i>promotes</i> use of e-marketplace to suppliers and government agencies through <i>personal relationships, education and evaluation mechanisms</i> .	<p>Increased awareness of e-marketplace trading in supplier base and across agencies.</p> <p>Development of IT skills and knowledge creation in DF.</p>
The State Government department is required to implement a government policy to introduce e-procurement into large state government agencies and create a centralised e-procurement system.	<p><i>Proactive management support from agencies</i> for e-marketplace participation.</p> <p><i>Commitment</i> of agency management to e-marketplace trading</p>	<p>Adoption of e-marketplace by agency.</p> <p>Development of IT skills and knowledge creation in agencies.</p> <p>Adherence to government policy by agencies.</p>

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
<p>The State Government department is required to implement a government policy to introduce e-procurement into large state government agencies and create a centralised e-procurement system.</p>	<p>Liability of <i>negative management perceptions of e-marketplace trading</i>.</p> <p><i>Loss of buyer's choice of supplier liability for adoption of e-marketplace.</i></p>	<p>Little or no adoption of e-marketplace trading.</p> <p>Resistance to e-marketplace trading in agencies and individual institutions.</p> <p>Restricted supply base.</p>
<p>The State Government department is required to implement a government policy to introduce e-procurement into large state government agencies and create a centralised e-procurement system.</p>	<p>Regulatory power of DF to <i>implement change in procurement and monitor compliance</i>.</p> <p><i>Functionality of system has the power to provide access between all potential suppliers and all government agencies and to provide transparency in procurement contracts.</i></p> <p><i>Functionality has the power to act as an interface between the many, various government systems.</i></p> <p>Power to save costs though <i>pre-established prices for goods/services and save time in searching and negotiating contracts.</i></p>	<p>Adoption of e-marketplace by supplier/agency.</p> <p>System integration and centralised procurement functions.</p> <p>Development of IT skills and knowledge creation in DF.</p> <p>Customised interfaces for agencies.</p> <p>Accessible data stores of all the state government's procurement information.</p> <p>Accountability for procurement spending.</p> <p>System usability developed and process improvements made.</p> <p>Increased efficiency in procurement process, data collection and information distribution.</p> <p>Security of supply and consistent prices across state government.</p> <p>Supplier equality in accessing government buyers.</p>

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
Community relationships exist between local suppliers and local government institution.	<i>Perceptions of risk associated with alienating the local community and a reliance on voluntary support from the local community have the power to prevent a centralised procurement initiative.</i>	Resistance to procurement policy in individual institutions.  Resentment from local suppliers.
Large variety of goods and services purchased by state government.	E-marketplace trading provides an opportunity to create <i>specifiable products that combine goods and the associated service.</i>	Increased usability of e-marketplace trading.
Relationships with suppliers are established through implementation of e-marketplace systems.	Promotion of a <i>supplier equality ideal.</i>  State government seen by the supplier as a <i>desirable customer.</i>  <i>DF's education and training mechanisms used to increase the power of the supplier's IT skills and learning mechanisms.</i>  <i>Proactive approach by DF to address suppliers' concerns.</i>	Adoption of e-marketplace by supplier.  Increased awareness of e-marketplace trading in supplier base.  Increased use of technology in the supplier community.  System usability developed and process improvements made.  Increased efficiency.  Supply base restricted to those with necessary resources.

#### 4.6.6.1 COMPARATIVE CASE EXAMPLE

NSW procurement has a clear idea of the policy it has to implement and has spent time developing strategies, capabilities, technology and processes to meet the policy requirements. Likewise the Department of Treasury and Finance (Case Five) is committed to implementing government policy and using e-marketplaces effectively throughout State government. It is a way to improve small business's access to the government market and increase procurement efficiency within government. However, having a mandated policy does not always evolve into a successful implementation. The Energy Pool case study illustrates the conflict between mandated use of an e-

marketplace and resistance to change. There were no clear strategies or even guidelines provided for the use of the e-marketplace which resulted in conflict between the procurement personnel and the manager and a lack of commitment to the e-marketplace strategy. It is likely that the manager's experiences at his previous workplace, where e-marketplace trading was routine, gave him unrealistic expectations about the procurement staffs' ability to participate successfully in e-marketplace trading; they had little experience of e-marketplace participation, were unsure of the benefits and had some negative perceptions of it. It was relatively easy for the procurement personnel to side-step the issue and prevent any disruption to existing work practices. The situation was restored giving procurement staff complete freedom of choice again when a new manager took over who was ambivalent about e-marketplace use.

#### **4.6.7 Implications for Theory**

Political influence is a major force in the adoption of the e-marketplace. Economic responsibility and accountability are priorities for government practices and is evidenced by the leadership role state government has taken in the implementation of efficient and reliable processes.

Government policy affects agencies, managers, communities and community members and their relationships. The strategic conflict between these actors influences the perception of the value of the e-marketplace. Having clear objectives and developing strategies to implement e-marketplace trading and the allocation of sufficient resources is likely to lead to successful e-marketplace adoption. However, the conflict between macro and micro level structures can impinge on relationships at all levels.

The capabilities of the staff and how they are employed within the organisation is consistent with a resource based view of the firm and a dynamic capabilities perspective. Prieto and Easterby-Smith (2006) assert that the occurrence of dynamic capabilities and organisational knowledge can be at a resources or routine level and that there can be interactions between the two. Allocating the organisational resources needed to establish an e-procurement environment is a way to add value to the organisation by leveraging the existing infrastructure. Human resources are fundamental to the capabilities of the organisation and organisational knowledge. As such they are

key elements in building relationships to support the implementation of e-marketplace trading which can result in organisational change. In turn implementation (or attempted implementation) leads to increased knowledge which can increase the efficiency of organisational practices.

## 4.7 CASE STUDY 7: GRAND METALS

This organisation is a leader in the exploration, extraction and processing of mineral resources with operations spanning the globe. It maintains a strong presence in Australia and North America and has significant businesses in South America, Asia, Europe and southern Africa. The organisation's major products are aluminium, copper, diamonds, gold, coal, uranium, industrial minerals and iron ore. In 2000, as one of the first steps in an organisational e-commerce strategy, the organisation became one of the founding shareholders of an e-marketplace that would service the resources sector. Trade through this e-marketplace is a regular occurrence within procurement activities.

The respondents in this case were senior procurement managers who have the responsibility for developing, implementing and maintaining the procurement function throughout the organisation on a global scale.

EM Consortium is seen as "*the e-marketplace transaction model*" (GM1) and is used for B2B procurement transactions. Other systems used for e-procurement are Ariba and Fieldglass but these are not seen as e-marketplaces but as providers of software-as-a-service (SaaS). The systems needed for e-tendering, bidding and managing the contracts are supplied by Ariba and software provided by Fieldglass handles various service contracts for the organisation.

Table 4.19: Themes and CR concepts identified in case seven

<b>CASE SEVEN</b>	
<b>THEME</b>	<b>CR CONCEPT</b>
<b>Business value</b>	Structure
<b>Firm performance</b>	Structure
Relationships	Structure
<b>Costs</b>	Structure
<i>Cost evaluation</i>	Event
<i>Liability to increase cost</i>	Mechanism
<i>Power to reduce cost</i>	Mechanism
<b>Efficiency</b>	Outcome
<i>Power to create efficiency</i>	Mechanism
<i>Power to improve quality of information</i>	Mechanism
<b>Benefits</b>	Structure
<i>Power to realise benefits</i>	Mechanism

CASE SEVEN	
THEME	CR CONCEPT
<b>Risks</b> <i>Power to increase risk</i> <i>Power to increase cost</i>	Structure Mechanism Mechanism
<b>E-Marketplace participation</b>	Event
<b>Adoption</b>	Event
Support Management	Mechanism Structure
Industry norm	Context
Functionality	Mechanism
Peer pressure	Mechanism
Efficiency ( <i>power to achieve</i> )	Mechanism
<b>Use</b>	Event
Workflow practices	Structure
Functionality	Mechanism
System integration	Mechanism
Products traded	Object
System compatibility	Mechanism
Support Team Management	Mechanism Structure Structure
Capabilities	Structure
IT capability development opportunity	Mechanism
<b>Organisational strategy</b>	Structure
<b>Relational strategy</b>	Structure
<b>Procurement strategy</b>	Structure
<i>Power to achieve cost saving</i>	Mechanism
<i>Power to create efficiency</i>	Mechanism
<b>Policy</b>	Structure
Organisational characteristics	Context
Perceptions of e-marketplaces	Mechanism
Country characteristics	Context
Market conditions	Context
Trading partner attributes <i>Power to participate in e-marketplace</i>	Structure Mechanism
Global trading <i>Opportunity to trade internationally</i>	Event Mechanism
Definition of e-marketplace <i>Perception of electronic auctions</i>	Context Mechanism
Procurement perspective	Mechanism

Table 4.19 presents the themes identified from the interviews and the critical realist concepts that can be applied to them in this case that will be discussed in the remainder of section 4.7.

#### **4.7.1 Business Value and Organisational Strategy**

A long-term view of e-commerce has been taken by the organisation. Considerable resources have been committed to establish the infrastructure and to build and develop the resources required to run and maintain e-commerce objectives. An enterprise-wide commitment to e-commerce, the creation of an industry specific e-marketplace and the use of the e-marketplace are part of the e-commerce strategy which has provided efficiencies in procurement activities. As one of the founding shareholders in an e-marketplace it was an early adopter of the technology, demonstrating a belief in the benefits of e-trading through electronic connections to suppliers.

The main impetus for the decision to adopt e-procurement was the efficiencies that could be gained by reducing or eliminating the necessity of handling and managing hard copy documents when dealing with large numbers of orders and many suppliers. The automation of high volume transactions is one of the main reasons for the organisation's continuing use of the e-marketplace. Expanding the automation to include all the documents involved throughout the procurement cycle is part of the e-procurement strategy and something the organisation is working towards. Using the e-marketplace to achieve this is expected to deliver more efficiency along the whole supply chain and enable seamless electronic connections to be established with more of its suppliers.

#### **4.7.2 Firm Performance**

Using the e-marketplace delivers cost benefits and efficiencies for the organisation. These are primarily efficiency gains and savings through the automation of procure-to-pay documents with their high volume suppliers. *“So we are talking about transactions savings that are efficiency pieced” (GM1).*

*"on the benefits side you get all the electronic transactions, not so much sending P.O.s but rather receiving invoices, receiving advanced shipping notices when the*

*goods are shipped, receiving order responses – when a delivery date changes, that's on the buyer side, that's pretty easy." (GM1).*

A procure-to-pay ratio that measures the number of documents transacted per purchase order is used to evaluate these transactions and the success of the adoption of the e-marketplace: *"of those documents that's where you're going to get all the value, squeezed all that value out of the e-marketplace otherwise it's just a P.O. repository."* (GM1). The number of procure-to-pay documents that are automated through the e-marketplace is used to indicate the level of success achieved by e-marketplace use and the value that it contributes to the procurement function. Although this organisation was an early adopter of e-marketplace trading it has not reached the stage of full document automation in the procure-to-pay transactions process: *"the best buyers will use, probably use over 4-5 documents per purchase order. We're kind of average."* (GM2). Extending the automation of the documents in these transactions is anticipated and it is expected to deliver more efficiency in the procurement cycle.

The benefits of e-marketplace use are evaluated against the costs of using the system and are recognised as important realities for both the buyer and supplier. Costs act as blocking mechanisms with the power to reduce the benefits of the adoption of e-marketplace trading. *"Obviously there's the negatives: which are all the fees you have to pay to use it and the costs to keep the infrastructure going, we talk about support costs and technology and fees and all that."* (GM1). Beyond these are the costs of implementing process changes and improvements which can range between one quarter and one million dollars for the organisation *"every time you do a big project like new documents or to improve the functionality. But when you look at the volumes that go through it, billions of dollars, it's a fraction you know?"* (GM1). However, these costs will contribute significantly to the time frame for implementation: *"there is still no funding for it yet but it is something we would like to do in the near future."* (GM1). As these costs are borne by the procurement department there has to be careful consideration of the value that can be gained through the use of the e-marketplace. Almost half of the purchases made by Grand Metals come from integrated suppliers (those directly linked into the Grand Metals system via the e-marketplace) and represent around 3% of the total number of suppliers. The majority of suppliers transact with

Grand Metals through the e-marketplace web site using the e-marketplace's *Supply Centre* application.

The risks identified for using the e-marketplace are the security and the technical support within the organisation. *"Security? There's always ways to get around that. Supportability? How supportable is the marketplace? You've got to have the technical people to support the marketplace."* (GMI).

Reducing these risks is amongst the costs that the e-marketplace and participant organisations incur. The e-marketplace should continually improve and promote the security features of their sites and software to retain the trust of the participants; the participants should have their own security measures in place to safeguard organisational and client information. In this organisation existing capabilities include technical support and knowledge of security issues. However, other organisations may not possess the capabilities necessary for e-marketplace participation and would require a more significant investment to build these capabilities.

The e-marketplace does not deliver a direct competitive advantage over other organisations in the sector, nor has it affected the quality of goods and services acquired. However, there is a link between the value added advantage and improvements in the quality of procure-to-pay transactions as a result of the level of document automation. This is tied to the benefits and savings achieved from electronic transactions made through the e-marketplace: advantage from the e-marketplace is measured based on the level of transaction document automation (the higher the automation level the greater the advantage). Improvements in transaction quality occurs because of increased accuracy, increased speed of transactions and more reliable communication, but the quality of the goods and services acquired has not been affected by e-marketplace trading.

Organisational size and the nature of their operations provide the context for global trading. E-marketplace use occurs throughout the organisation and goods and services are procured internationally from a global supplier base. Operations are spread throughout the world, many sites are in remote or isolated area and specialist suppliers

are located in different countries. Trading at an international level was an established way of doing business before the adoption of an e-marketplace. Although the e-marketplace makes trading with these suppliers more efficient the merits of international trading were not considerations when adopting the e-marketplace.

### **4.7.3 Functionality of the E-marketplace**

The distinction between the e-marketplace and other e-procurement services highlights the development of e-marketplaces from the earlier definition which defined an e-marketplace as an electronic channel capable of bringing buyers and suppliers together in order to make a transaction and facilitate the transaction. An organisational definition of the e-marketplace provides the context for e-marketplace participation and in this case the e-marketplace is seen as an intermediary between the buyer and supplier that provides technology and personal support, in the use and operation of the e-marketplace, to both the buyer and supplier throughout the entire procurement cycle. Although the other e-procurement providers used by Grand Metals do connect the buyer and sellers online, where interaction can occur, they are not involved in supporting the participants' transactions beyond the provision of the e-marketplace platform. These types of organisations are defined as software providers not e-marketplaces.

*"We do use Ariba not as an e-marketplace but for negotiations and we post documents in there and the vendor reviews it in there, and legal reviews it there, so there is document exchange that's electronic through there but the e-marketplace transaction model that's all through EM Consortium." (GM1)*

Prior to joining an e-marketplace the organisation already had considerable ICT resources available to them. However, the e-marketplace provided the necessary connection between the organisation's SAP and the suppliers' systems; the e-marketplace technology continues to provide these connections to allow back-end integration in the procurement process.

The technology and support the e-marketplace provides to the participants are features that can impact on both the supplier and buyer. The participants do not have to concern themselves with the technology needed to facilitate e-trading or dedicate staff members

to deal with issues that arise from the use of the system. *“That’s another reason to use e-marketplaces, so you don’t have to worry about 1300 vendors and all the system’s problems and questions that come out of that.” (GM2).* Adopting e-marketplace trading passes some of the participants' technological requirements on to the e-marketplace provider and it can affect the resourcing structure of the participant organisation: *“So if we didn’t have an e-marketplace we’d have a bigger team just building connections with vendors.” (GM2).*

The e-marketplace provider is developing the software it offers to enable more suppliers to access the e-marketplace. This involves software that can integrate with a supplier's existing software such as MYOB, Intuit, Quickbooks etc., which many small organisations use, making it less costly for the supplier than full e-marketplace integration. It will be advantageous for small to medium sized enterprises that trade frequently with the buyer but lack some resources or are reluctant to incur the costs. *“It’s very costly to get an integrated system into EM Consortium. Usually vendors don’t know what they’re doing or they’re not technically capable.” (GM1).* This assists Grand Metals in their automation efforts by integrating more suppliers into their system which will deliver a further increase in procurement efficiency. In turn it will develop supplier capabilities and build awareness of e-marketplace transactions.

The e-marketplace has the ability to manage an organisation's master data which is advantageous to both buyers and suppliers. Organisational master data contains up-to-date information and the e-marketplace system has the ability to make relevant data available to participants. *“A feature of the e-marketplace is, when we talk about master data, that’s a massive one. Most businesses have hundreds and thousands if not millions of material masses, catalogue items, vendor records, tens of thousands of those” (GM2).* The system’s ability to host vendor catalogues is the most common way in which an e-marketplace facilitates the sharing of master data. Improvements in transaction efficiency can occur when data is available to be downloaded directly from one system to another. Using the e-marketplace system to connect the buyer and supplier systems allows transaction improvements which include: avoiding double keying, reducing data entry errors and avoiding processing documents based on outdated information. Improvements in transaction efficiency can be a huge value-add

where high volumes of transactions occur. The ability to share electronic catalogues also reduces the costs associated with producing and maintaining printed catalogues which can be significant if prices fluctuate.

A functionality of the e-marketplace that has not been fully utilised is the ability it can provide to create “*visibility in the supply chain*” (GM1). This is an important aspect in the supply chain to track supplies on route from the supplier to their destination. It is especially important when goods are required at remote sites and logistics are problematic.

#### **4.7.4 Relationships**

The adoption and participation in e-marketplace trading has an impact on the business relationships between the buyer, suppliers and other organisational stakeholders.

The increased speed of processing procurement documents and payment processes can establish a more efficient and effective business relationship between the buyer and supplier. Prior to Grand Metals’s adoption of the e-marketplace for high volume B2B transactions one supplier maintained a level of procurement efficiency by locating representatives in the buyer’s office to process all the necessary documentation. This was costly for both the supplier and the buyer in staff time and accommodation. The adoption of the e-marketplace eliminated almost all of the processing tasks carried out on site and staff members were free to undertake other tasks and relocate to the supplier’s site.

Not all suppliers are eager to adopt the e-marketplace but it is a condition of doing business with this organisation. The market power of the organisation makes them a desirable customer for many suppliers which overcomes their reluctance to use the e-marketplace and to incur the additional costs needed when using the e-marketplace. However, the support provided by the e-marketplace to the suppliers builds a relationship between the e-marketplace and the supplier, and mitigates some of the relational risk that would have been attributed to the buyer.

Other stakeholders in the business also play a critical role in the adoption and use of the e-marketplace. Without the full support of the unit managers, adoption is likely to fail.

“when you actually go to the individual business units it might not be a priority for them, they might not see the value, they might have had one bad experience with it and didn’t bother doing anything further.” (GMI).

Appointing a senior manager with the responsibility for implementing adoption and liaising with the unit managers is an essential role for an organisation wanting to implement enterprise-wide e-procurement: “we have one GM who was in charge of rolling it out and the volumes went up” (GMI). However, to deliver sustainable efficiencies accountability has to continue beyond the initial roll out and will require continual interaction between procurement and unit managers. “So it depends on how strong a business wants to do it, but in reality if you assign it as a global task and appoint someone to it, it will actually get done.” (GMI).

#### 4.7.5 Case Data Summary

The data from the case is summarised in terms of context, mechanism and outcome patterns in table 4.20.

Table 4.20: Context, mechanism, outcome patterns identified in case seven

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
International mining organisation carrying out global operations and procuring supplies from an international supply base.  Founding member of a consortia e-marketplace.	<i>Commitment to e-commerce from management, provision of funding and resources.</i>  Technology provided by e-marketplace vendor delivers <i>functionality</i> to connect buyer and supplier procurement systems.  <i>Strategic attitude</i> to e-marketplace participation.	Accountability for expenditure.  Efficiency in supply chain and procure-to-pay processes.  International sharing of IT and e-procurement knowledge and skills.  Increased awareness of e-marketplace trading in supplier community.
International mining organisation carrying out global operations and procuring supplies from an international supply base.	Grand Metals <i>promotes</i> use of e-marketplace to suppliers through <i>standardised supply agreements</i> .	Increased awareness of e-marketplace trading in supplier base and across industry sector.

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
Relationships with e-marketplace vendor and participant suppliers.	E-marketplace vendor <i>promotes participation to buyers and suppliers (marketing mechanism).</i>	Establishment of arm's length relationships with acquiescent suppliers.  Efficiency in procure-to-pay cycle with processing of associated documentation through e-marketplace system.
E-marketplace technology provided and developed by e-marketplace vendor.	<p>Functionality to <i>automate procurement procedures and process procure-to-pay documentation.</i></p> <p>Functionality to <i>integrate software packages: also a marketing mechanism of the e-marketplace vendor to gain additional customers.</i></p> <p><i>Security of information</i> mechanism to build trust in system and between network participants.</p> <p>Cost/benefit <i>evaluation of technology - cost control mechanism.</i></p> <p>Technological skill to <i>support e-marketplace participation.</i></p>	<p>Establishment of arm's length relationships between buyer and supplier.</p> <p>Increased potential size of buyer/supplier network.</p> <p>Integration of e-marketplace technology in buyer/supplier systems.</p> <p>Increased organisational value from e-marketplace trading for buyer and e-marketplace vendor.</p> <p>Inter-organisational network relationship between buyer/supplier/e-marketplace vendor.</p> <p>Large numbers of transactions easily handled.</p> <p>Cost savings, efficiency gains, and transparency in procurement processes.</p> <p>All procure-to-pay documentation processed through e-marketplace.</p> <p>Increased awareness of e-marketplace trading in supplier community.</p> <p>Increase in IT skills.</p>

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
<p>Organisation has large number of employees, widely dispersed IT infrastructure and different IS in locations worldwide.</p>	<p>Wide scale process change power to <i>increase costs</i> and <i>prevent rapid system changes</i>.</p> <p><i>Strategic attitude</i> of procurement managers has power to create <i>persistence in achieving goals</i>.</p> <p><i>Management support</i> and <i>commitment</i> to promote global adoption of e-marketplace trading.</p>	<p>Incremental change to e-procurement once initial system is in place.</p>
<p>E-procurement carried out through a variety of technology providers.</p> <p>E-marketplace vendor acts as an intermediary</p>	<p>Relational mechanisms of <i>support</i> for e-marketplace implementation, <i>user education and training</i>, <i>assumption of relational risk</i> from buyer/supplier relationship</p>	<p>E-marketplace vendor has relational ties with buyer and supplier at organisational, technical and personal levels.</p> <p>Interactive e-marketplace vendor/buyer/supplier network relationship created.</p>
<p>E-commerce platform provider perceived as software-as-a-service (SaaS) organisation.</p>	<p>Relational mechanism is the <i>provision of enabling technology</i>.</p>	<p>SaaS organisation has relational ties with buyer and supplier at organisational and technology levels.</p> <p>Arm's length relationship between buyer/supplier/e-marketplace vendor.</p>
<p>Management responsibility to implement e-marketplace initiatives.</p>	<p>Negative manager's experience of e-marketplace <i>risk aversion</i> mechanism.</p> <p><i>Perceptions of low priority</i> implementation and <i>low value generating</i> activity</p>	<p>Resistance to e-marketplace participation from manager.</p> <p>Non-participation in e-marketplace by business unit.</p>
<p>Management responsibility to implement e-marketplace initiatives.</p>	<p>Procurement manager's <i>accountability</i> for implementing global adoption.</p>	<p>Acceptance of e-marketplace participation across business units.</p>

CONTEXT	MECHANISM (Power/Liability)	OUTCOME
	<p><i>Attitude of unit managers supportive of strategic initiatives.</i></p> <p><i>Attitude of unit managers supportive of procurement manager.</i></p>	<p>Relational ties between business unit managers and procurement manager.</p>

#### 4.7.6 Implications for Theory

Without a strong organisational commitment and managerial accountability sustainable efficiencies from e-marketplace involvement are unlikely to occur. To achieve this, e-marketplace participation has to be part of an organisational strategy and accountability has to be assigned at a high managerial level with continual assessment.

The use of the e-marketplace as an intermediary involves a level of inter-relational trust transfer from the participants to the intermediary. The e-marketplace accepts some of the technological and relational risk from the buyer/supplier relationship and has to satisfy the expectations of the participants. This mitigates some of the tension which can occur between the participants when e-marketplace trading is introduced.

# CHAPTER FIVE: DISCUSSION

## 5.1 INTRODUCTION

This chapter discusses the implications of the research findings. It frames the implications in relation to the research questions that were presented earlier in the thesis. Academic research should make a contribution to theory and a section is included which examines the wider implications of the work both from an epistemological and methodological perspective. Information systems research has a practical basis and recommendations for practice are included in order to deliver improved insights and instigate possible change in organisations. Finally, the limitations of the work are discussed and suggestions for future lines of research discovery.

## 5.2 RESEARCH QUESTIONS REVISITED

The following section brings together the findings from the individual case analyses to answer the research questions: What significant relationships exist between e-marketplace participation, organisational strategy and business value creation; and what is the impact of e-marketplace participation on organisational structures? Table 3.2, showing the related research questions, is reproduced here for ease of reference.

Table 3.2 (reproduced): Research questions and concepts for development of the interview questions

RESEARCH QUESTION	RELATED RESEARCH QUESTION	RELATED CONCEPT
Is e-marketplace trading and participation part of an organisational strategy? Why or why not?	What strategies are required by firms to leverage e-marketplace participation?	Strategy
	Can the e-marketplace adoption decision be categorised as strategic or tactical?	Competitive advantage Globalisation

RESEARCH QUESTION	RELATED RESEARCH QUESTION	RELATED CONCEPT
	Is e-marketplace participation aligned with an organisational strategy of globalisation?	Efficiency
	Does the extent of e-marketplace adoption and use reflect organisational strategy? Why or why not?	
Where does the e-marketplace fit within the market v hierarchy theoretical frameworks?	How does e-marketplace participation change market structures?	Relationships  Business value  Strategy  Firm performance
	What is the impact of relation specific assets on e-marketplace adoption?	
	What is the impact of e-marketplace trading on relational structures?	
	How does the functionality of the e-marketplace affect organisational structures?	
What determines the extent or level of participation in trading via an e-marketplace?	When are e-marketplaces more efficient for procurement than other methods of procurement used within the organisation?	E-marketplace characteristics and use  Efficiency  Business value  Relationships  Quality improvement  Firm Performance measures  Costs and cost reductions  Revenue growth
	How does e-marketplace participation impact on organisational information systems?	
	What problems exist when adopting or trading via an e-marketplace?	
	How are relational issues managed?	
	What effect does the type of products bought/sold via the e-marketplace have on e-marketplace participation?	
	How well defined are business value measurement metrics for e-marketplace use?	
	What firm performance issues are considered when evaluating trading via an e-marketplace?	
	Are the firm performance issues and the business value created from e-marketplace use subjective or financial?	

### **5.2.1 Research Question 1: Is E-marketplace Trading Part of an Organisational Strategy? Why or Why Not?**

The findings of the research study highlight that organisations vary in the level of their strategic adoption of e-marketplace trading. It ranges from an organisationally integrated strategic adoption of e-marketplaces (e.g. case 3, International Mining and case 7, Grand Metals) to a rejection of e-marketplace trading (e.g. case 4, Energy Pool). The reasons for adoption decisions appear on one level to be a result of rational decision making, but in reality are produced by a variety of interactions between cultural and social structures such as organisational culture, level of cultural integration, the organisational role of procurement, managerial capability, level of innovativeness and risk aversion.

All organisations in the study were convinced, or at least gave a strong impression, that a considered rational decision had been made on e-marketplace adoption and use, since they had assessed the advantages, disadvantages, benefits and risks associated with adoption. On one level, therefore, it was seen as a rational decision. However, once the decision making process is uncovered and a broader view of the organisation is taken it became clear that the decisions were shaped by a host of organisational characteristics and in some cases key individuals. Hence, while the decisions appear logical and rational they are an outcome of the legitimating forces of organisational structures, culture and history.

#### *5.2.1.1. Organisational culture*

Organisational culture is concerned with the prevailing norms of behaviour and values which are overtly communicated or unwritten and is closely intertwined with IT and information flows (Leidner & Kayworth, 2006). Organisational culture impacts on decision making and the understanding of acceptable outcomes. A culture that possess emergent properties of open discussion, free flowing communication, high levels of aspiration in terms of standards and outcomes, and high levels of innovation (e.g. International Mining and Grand Metals) appear more likely to experiment with and trial technologies and systems such as e-marketplaces and rationalise the benefits. Those organisations that do not display these properties are more likely to demonstrate risk aversion as a blocking mechanism to participation and to rationalise why e-

marketplaces are not appropriate for them (e.g. Energy Pool). In other words, the organisational culture plays a major role in legitimating key decisions. In any given organisation, it is likely that similar processes and resulting outcomes have prevailed through time and so culture and history coalesce to either bring about change (morphogenesis) or to prevent change from taking place (morphostasis).

#### **5.2.1.2 WHAT STRATEGIES ARE REQUIRED BY FIRMS TO LEVERAGE E-MARKETPLACE PARTICIPATION?**

To leverage e-marketplace use organisations must develop a coherent, integrated strategy for adoption. E-marketplace adoption should be part of an overall integrated e-commerce strategy for the organisation where efficiencies are gained through digitized processes that handle high volume transactions. The savings from this approach can be significant but will not eventuate from a piece-meal e-marketplace adoption approach.

Organisations have to acquire knowledge and skills in e-marketplace trading and form a positive attitude to the benefits of participation. Managers have to be aware of possible conflicts between strategic initiatives and personal attitudes to e-marketplace participation which have the potential to derail strategic initiatives. Strategies should account for the current capabilities of procurement staff and business area managers, invest in developing capabilities and building a positive attitude towards e-marketplace participation. Specific knowledge needed to participate effectively in e-marketplace trading includes when to go to the e-marketplace, what goods and services can be procured efficiently via the e-marketplace, how to write rigorous tender specifications and how to manage relational risk. The development of e-marketplace participation knowledge and skills can be seen as building the dynamic capabilities of the organisation where greater knowledge can lead to the identification of further opportunities to add organisational value (Prieto and Easterby-Smith, 2006). Sufficient resources have to be allocated for implementing the e-marketplace strategy and for developing organisational dynamic capabilities. The main cost of implementing e-marketplace trading is not from acquiring the necessary ICT but in changing organisational processes and business structures and developing the necessary capabilities.

#### *5.2.1.2.1 The organisational role of procurement*

The organisational view of the procurement function is an important determinant of procurement's strategic role. The resource based view (RBV) considers the scope of IT resources and leveraging capabilities to achieve a competitive advantage; whereas the contingency based view (CBV) considers the importance of aligning functional areas to achieve strategic objectives. An organisation with a high degree of integration is evident when functional areas are working closely together and each business area has an understanding of other business units' functions. In this environment it is more likely that each functional area will appreciate the contribution of procurement to the organisation, and procurement will identify with a role as a strategic driver for innovating and creating organisational value (e.g. International Mining). In organisations where the role of procurement is not viewed as being strategic (e.g. Energy Pool) it is unlikely that procurement managers will act strategically, take risks in adopting new technologies, or radically change work practices, which are requirements when implementing a strategic plan for the adoption and use of an e-marketplace.

#### *5.2.1.2.2 Managerial capability*

The ability of managers to communicate a strategic vision and promote the departmental role within the organisation affects the level of assimilation and diffusion of new ideas and technologies. Skilled management should be looking to constantly improve organisational efficiency and effectiveness; in doing so they create a culture with emergent properties of continual improvement and evaluation. Managements that take this approach are more likely to experiment, innovate and thoroughly evaluate their procurement practices and outcomes. Effectively communicating the results of these evaluations throughout the organisation supports the strategic role of procurement and positions procurement as a value creating business function (e.g. case 3, International Mining; case 5, DF; case 6, Smartbuy; case 7, Grand Metals).

#### **5.2.1.3 CAN THE E-MARKETPLACE ADOPTION STRATEGY BE CATEGORISED?**

The case studies from the research can be used to categorise e-marketplace strategies into three main groups. The first, views procurement strategically, and hence e-marketplace use, as making a strategic contribution in the sense of improving efficiency and effectiveness of procurement both in direct cost savings and time savings. This strategic view relies upon an understanding of both tactical and operational matters and

how a strategy links with operational mechanisms (e.g. case 1, RevNet; case 2, EM Consortium; International Mining; DF; Smartbuy; Grand Metals). This integrated multi-levelled understanding is important within a procurement context.

The second approach is not strategic but takes a more tactical approach. The e-marketplace is used for certain commodity type goods and services. It is more operationally focused and the e-marketplace may be used only occasionally. The benefits are perceived as minor but nonetheless worthwhile (e.g. RevNet, EM Consortium). The decision to use e-marketplaces in this context is not seen as critical or strategic.

The third approach is a non-adoption stance. E-marketplaces are not seen as making a potential major organisational contribution and therefore there appears to be no compelling reason to adopt them. This seems to be the outcome where experimentation and organisational learning mechanisms, in terms of making a strategic organisational contribution, are not activated within the procurement function. The role of procurement in the non-adopter category is perceived as non-strategic and this may largely explain the lack of desire to experiment and innovate with procurement practices. Where risk aversion is an emergent property of the organisational culture individuals will be more likely to continue with existing practices (e.g. Energy Pool).

These three approaches illustrate how the RBV and the CBV are interrelated. The most successful adopters of e-marketplaces are looking to expand the scope for the use of the e-marketplace and work closely with other organisational business units to discover more effective and efficient ways to use the technology, or adopt additional functionalities of the e-marketplace. The non-adopters are less interested in developing their capabilities, limit the scope of IT innovations within their own area, and have less direct involvement with other business units.

#### **5.2.1.4 IS E-MARKETPLACE PARTICIPATION ALIGNED WITH AN ORGANISATIONAL STRATEGY OF GLOBALISATION?**

The organisations studied do not have a globalisation strategy that is integrated with procurement. The buyer organisations operate internationally and accessing global markets is part of their business model. Sourcing supplies from around the world is

necessary in the resources sector as specialised goods and services may only be available from a limited number of suppliers. For these organisations globalisation as an end in itself is not a driver of e-marketplace adoption.

#### **5.2.1.5 DOES THE EXTENT OF E-MARKETPLACE ADOPTION AND USE REFLECT ORGANISATIONAL STRATEGY?**

Although there may be an organisational or procurement strategy in place that stipulates participation in an e-marketplace, the extent of participation does not always reflect the strategy. As discussed above, this is caused by the emergent properties of structures at the organisational and cultural levels and activation of a constellation of mechanisms. An organisation with a culture that fosters implementation of strategic initiatives, development of organisational capabilities and blocks risk aversion where individuals have positive perceptions of e-marketplace trading is more likely to adopt e-marketplace trading. It is also more likely to adapt the strategy and the e-marketplace functionality to create additional organisational value.

Where there is no strategic initiative for the adoption of e-marketplace trading it is unlikely that it will be adopted extensively. However, there is some evidence that an ad-hoc, or trial approach, for the use an e-marketplace can evolve through the activation of learning mechanisms into a strategic initiative.

#### **5.2.2 Research Question 2: Where does the e-marketplace fit within the market v hierarchy theoretical frameworks?**

Economic market theories emphasise arms' length transactions, market transparency and price equilibrium as signs of a perfect market but in reality market distortions exist which prevent achieving this state. The e-marketplace does not provide perfect market conditions but it can establish arms' length relationships between buyers and suppliers, it allows suppliers and buyers to compete on contracts and it can provide transparency in procurement transactions. However, mechanisms preventing perfect market conditions in the e-marketplace are the supplier's ability to determine price quoted, the buyer's retention of choice of supplier and the buyer's and supplier's imperfect market knowledge. The e-marketplace can provide a mechanism to determine realistic market prices, but even when prices appear consistent between suppliers, this alone would not guarantee that a contract could be fulfilled.

### **5.2.2.1 HOW DOES E-MARKETPLACE PARTICIPATION CHANGE MARKET STRUCTURES?**

The e-marketplace can replicate an existing market structure (e.g. hierarchy, arm's length) between the buyer and supplier whilst creating inter organisational relationships that include the e-marketplace provider. Establishing relationships through the e-marketplace creates a potential network of participants who are able to join together and create organisational value for each active participant – buyer, supplier, e-marketplace vendor. Although organisational value might be acquired differently for each participant, they share the benefits of inter-organisational systems that allow electronic trading and create efficiency gains in transaction processing and inventory management. For example, the speed of transaction processing that resulted in the relocation and changed duties of procurement staff after e-marketplace trading was implemented (case 7), and the advantages to suppliers in being paid in a timely manner (case 2).

### **5.2.2.2 WHAT IS THE IMPACT OF RELATION SPECIFIC ASSETS ON E-MARKETPLACE ADOPTION?**

Relation specific assets are organisational relationships that create organisational value and they can be affected by the adoption of the e-marketplace. Relational assets include the relationships between organisational stakeholders, suppliers and the e-marketplace vendor. Conflict occurs when there is resistance to change in a relationship. E-marketplace adoption can cause conflict at personal and organisational levels involving staff, management and suppliers, and risk aversion in organisational relationships can cause reluctance to adopt e-marketplace trading.

The adoption of e-marketplace trading may involve dealing with existing suppliers who are more conversant with personal negotiation and procurement methods. There is often concern from these suppliers that they will be forced into a more competitive tendering process that will drive prices down. However, this is not the primary reason for buyer adoption of the e-marketplace. An e-marketplace is often used for recurring, high volume transactions where the main driver of adoption is the reduction of transaction costs and efficiency gains; reductions in unit prices are less of a consideration. Where these types of transactions occur buyers often have a pre-existing relationship with the supplier and maintaining a relationship can be driven by the supplier's financial dependence on the buyer. In these conditions the supplier might be reluctant to change its procurement practice but will adopt the method chosen by the buyer.

Using the e-marketplace for high volume transactions does not threaten relationships with strategic or specialist suppliers. The relationships with these suppliers are built on relational ties that require personal contact and negotiation and are maintained where the organisational value of the relationship is high. Procurement personnel are also willing to foster close relationships within the organisation when they perceive a potential personal or business advantage for doing so. However, where relational assets are community based, such as a school's relationship with a local store, using the e-marketplace for high volume transactions can damage the community relationship.

Creating a relationship with an e-marketplace vendor requires consideration of the vendor's ability to meet organisational objectives. The ability to meet organisational objectives is the basis from which the e-marketplace vendor can become a valuable relational asset. An inability of the vendor to meet expectations reduces the organisational value of e-marketplace adoption. Conversely the ability to exceed expectations in e-marketplace functionality, or create personal relationships with the buyer and supplier, will increase the value of the e-marketplace vendor as a relational asset and potentially increase use of the e-marketplace.

### **5.2.2.3 WHAT IS THE IMPACT OF E-MARKETPLACE TRADING ON RELATIONAL STRUCTURES?**

The e-marketplace connects potential trading partners and allows transactions to be processed between participant organisations, creating a network of inter organisational systems. The introduction of organisational e-marketplace trading has the potential to change pre-existing relational structures. However, the changes are not always positive and conflict can be created with suppliers, organisational stakeholders and clients.

By creating a relationship with the e-marketplace vendor some relational risk is transferred from the buyer/supplier to the e-marketplace vendor, creating more of an arms' length relationship between the buyer and supplier. When the e-marketplace acts as an intermediary, offering services and customisation of e-marketplace functionality for B2B transactions, it establishes closer ties with participants and builds a stronger network of participants. This illustrates the creation of a network incorporating a service dominant logic (Vargo & Lusch, 2008) where the ability to gain efficient trading outcomes is achieved by the e-marketplace's technical ability to allow the sharing of

organisational resources and co-create value from the use of the e-marketplace system, and the e-marketplace vendor's ability to develop relational ties. Co-creation of value occurs through use of the system rather than from the goods moving through the e-marketplace.

Subversion of e-marketplace adoption can occur through relational structures at individual and organisational levels. Procurement staff can be comfortable with personal negotiation methods, maintaining control of the procurement process and continuing existing relationships with suppliers. These mechanisms and an aversion to changing work practices can be activated to prevent the formation of relationships through the e-marketplace (as illustrated in case 4). Organisational clients can also resist changes in relationships or to work practices that the e-marketplace technology can deliver.

#### **5.2.2.4 HOW DOES THE FUNCTIONALITY OF THE E-MARKETPLACE AFFECT ORGANISATIONAL STRUCTURES?**

The functionality of an e-marketplace can change work practices and workflow and reduce organisational transactional processing demands. The e-marketplace technology takes some technology and processing risk from the buyer/supplier and maintains connections between disparate organisational systems. Efficiency and transparency in the procurement cycle is possible through the functionality of the e-marketplace technology. In addition, organisations can collect procurement information, monitor and assess spending.

In the study the e-marketplace typically had more functionality than the organisations were using. Organisations, like International Mining (case 3) and DF (case 5), that had a strategic attitude towards e-marketplace trading could identify areas where e-marketplace functionality could further improve procurement practices and procurement personnel were willing to implement changes.

Increases in efficiency and reduced transaction times achieved by e-marketplace participation allow managers to spend more time focusing on strategic or value-adding procurement areas rather than on operational issues and transaction processing. A focus on value-adding activities can lead to changes in procurement strategies and

organisational relationships by providing an opportunity for managers to raise the profile of procurement within the organisation and develop client relationships.

The e-marketplace can also provide information on realistic market prices and motivate organisational investigation of pricing and costing structures.

### **5.2.3 Research Question 3: What determines the extent or level of participation in trading via an e-marketplace?**

The three main states identified for e-marketplace participation as strategic adoption and use for organisational procurement, sporadic participation or non-use (section 5.2.1.3) are achieved in different contexts, through a variety of objects and the activation or non-activation of causal mechanisms. The main drivers, cited by the case organisations that implemented e-marketplace trading, are the abilities of the e-marketplace technology to provide efficiencies and transparency, in transaction processing and in the procure-to-pay cycle. Organisations with established e-marketplace trading strategies and policies had procurement personnel who evaluated participation and envisaged further uses for the technology (e.g. Mining International, DF, Smartbuy, Grand Metals). Organisations with sporadic participation were unsure of participation benefits, and negative perceptions of e-marketplace trading could counteract positive perceptions of e-marketplace trading and activate ambivalent or resistant mechanisms of e-marketplace trading and produce a non-adoption outcome (e.g. Energy Pool). However, organisations with well-established e-marketplace trading practices were restricted in implementing major changes by organisational size and the customisation requirements of many business units (e.g. DF, Smartbuy, Grand Metals).

#### **5.2.3.1 WHEN ARE E-MARKETPLACES MORE EFFICIENT THAN OTHER PROCUREMENT METHODS USED WITHIN THE ORGANISATION?**

E-marketplaces are seen as fulfilling a particular role in the procurement function. They are not regarded as the only method for procuring and are always seen as part of a procurement toolkit or portfolio. This is because their purpose has been to obtain certain types of products or services that tend to be associated with high volume trades and recurring transactions. However, other purchases are made through the e-marketplace. These can be specialised equipment, services or commodities where the main criteria

for satisfactory completion of the contract rely upon the detailed specification of the goods or services required. These are usually standalone purchases but the specifications can easily be used for repeat transactions.

The value of e-marketplace participation is in the efficient processing of transactions. The automation of documentation in the procurement cycle leads to more efficient order processing, tracking and payment. Functionalities of the e-marketplace allow request for quotes (RQFs) to be posted and registered suppliers can respond quickly reducing the turnaround time. Efficiencies in processing and the associated cost and time savings mean e-marketplaces are most efficient when suppliers are pre-qualified, master data are available from suppliers, products are purchased frequently and e-marketplace technology and support is reliable. Efficiency is compromised if personnel do not have the skills necessary to use the system.

#### **5.2.3.2 HOW DOES E-MARKETPLACE PARTICIPATION IMPACT ON ORGANISATIONAL INFORMATION SYSTEMS?**

The procurement managers in the case examples made the decisions on e-marketplace adoption and the applicability of the e-marketplace functionality is evaluated by procurement. This limits the extent of integration with other organisational information systems. However, the e-marketplace system could be linked to organisational ERP systems in other areas to gain additional functionality. The main area where e-marketplace systems integrated with organisational systems was in the establishment of a procurement data base. Data collected from the e-marketplace, and linked with the ERP system, provides opportunities for procurement to analyse the procurement spend across departments, and it could be used by other departments to investigate buyers, suppliers, procurement history and outcomes for example. Organisations, like International Mining and Grand Metals, with established e-marketplace procurement systems could envisage the advantages of using the system to provide data not only across the organisation and with suppliers but with the suppliers' suppliers to form an end-to-end supply chain. IT departments within the organisations did not have an IT strategy incorporating e-marketplaces. The role of the IT department was limited to implementing the strategic decisions of procurement, providing the technology infrastructure and support.

### **5.2.3.3 WHAT PROBLEMS EXIST WHEN ADOPTING OR TRADING VIA AN E-MARKETPLACE?**

The main challenges that organisations are likely to face when considering adopting e-marketplaces are resistance and concern from existing suppliers, and convincing staff internally that e-marketplaces can add organisational value. The mechanisms of supplier resistance and concern are frequently activated as blocking mechanisms or liabilities that can overcome the power to create positive perceptions about the value of e-marketplace participation.

An understanding of the history of e-marketplace use in organisations is helpful in explaining why e-marketplace trading had a stigma attached to it. In the early years of e-marketplace development organisations were perceived to use e-marketplaces as a way to obtain lower unit prices, especially through the e-auction and reverse auction functions of the e-marketplace. Relationships with suppliers were sometimes poor and often badly managed which reinforced negative perceptions about e-marketplaces. The concept of e-marketplaces being used as a “blunt instrument” or “price hammer” to drive prices down persisted and still seems to exist, to some extent, in the e-auction area (e.g. RevNet). The adoption of a supplier focus by the buyer and e-marketplace vendor, internal promotion of e-marketplace trading, changes in the functionalities of e-marketplaces and the way in which buyers use the e-marketplaces, combined with greater consumer acceptance of electronic commerce in general, have helped to reduce these negative perceptions.

### **5.2.3.4 HOW ARE RELATIONAL ISSUES MANAGED?**

The introduction of an e-marketplace system for procurement requires the same type of technology management as the introduction of any new system. However, relationships with procurement occur internally, with organisational stakeholders, and externally, with suppliers, adding more complexity to relationship management. Open communication with the supplier base and managers is important to inform them of impending changes in procurement methods and to promote the benefits of e-marketplace trading. The process needs to be managed on an on-going basis to address concerns from suppliers and managers using appropriate feedback and response, which demonstrates an understanding and commitment to resolving the problems. Through an open and transparent communication process distrust can be mitigated.

Suppliers (existing and potential) who have the capabilities and resources to trade via an e-marketplace fall into four main categories of e-marketplace use: refusal, reluctance, ambivalence, and keen acceptance. If the buyer occupies a strong market position suppliers can be pressured into adopting the system, even if they are reluctant to do so (e.g. International Mining). Conversely, pressure on suppliers to conform from a dominant market buyer can make suppliers more determined to resist (e.g. EM Consortium). The different outcomes are context related and represent emergent properties of cultural structures. However, mechanisms to overcome resistance to e-marketplace trading are promotion of the advantages of e-marketplace trading and learning about the system.

The existence of established relationships between the buyer and supplier can become strained by e-marketplace adoption but supplier resentment is not inevitable. Resentment can be diminished if suppliers are able to discover advantages of using the e-marketplace. The buyer and e-vendor have to maintain a supplier focus and recognise the abilities of the supplier to determine if they require coaching in using the system. After an acceptance to use the system, reluctance can be further diminished if suppliers can recognise advantages. Establishing feedback and communication with the suppliers can foster awareness of e-marketplace advantages and overcome reluctance to use the system. Many contracts are pre-negotiated and the relationships with these suppliers are not significantly changed when adopting the e-marketplace other than by the addition of the e-marketplace technology. Having a supplier focus and open communication is also important here to identify any problems that might occur in system use.

Managers also have to be brought on board to use the e-marketplace system and, as with the suppliers, have to have access to information, open communication and a belief in the benefits of e-marketplace trading. The procurement staff have to build relationships with their clients by raising procurement visibility and promoting e-marketplace trading to clients and managers. The appointment of procurement liaison manager(s) with responsibility for promoting e-marketplace trading throughout the organisation and to suppliers would help establish communication and build a procurement profile.

### **5.2.3.5 WHAT EFFECT DOES THE TYPE OF PRODUCTS BOUGHT/SOLD VIA THE E-MARKETPLACE HAVE ON PARTICIPATION?**

The types of products traded through the e-marketplace seem to be clearly delineated at the early stages of e-marketplace adoption into what can or cannot be traded through the e-marketplace: these are considered to be commodity type products. Organisations with well-established e-marketplace trading knowledge can see benefits from trading everything through the e-marketplace. The ease with which the e-marketplace can connect buyers and suppliers enables the sharing of organisational resources between participants in the e-marketplace network.

E-marketplaces are frequently used for high volume purchases and recurring transactions because of the benefits obtained from the efficient processing of large quantities of procurement documentation. In this situation the type of product traded via the e-marketplace is less important than the operational efficiencies the e-marketplace provides in processing procurement transactions. This is advantageous for both buyers and suppliers. The procurement process is visible and on-line, providing easy access, transparency and real time information.

E-marketplaces are also used for more customised purchases such as specialised hospital beds or computer equipment. The amount of time required to detail specifications is a liability to using the e-marketplace for these types of products. These purchases can be undertaken as “toe in the water” or one-off e-marketplace trials. Although these may be one-off purchases, time spent in detailing the specifications can be diminished when the original specifications can be easily reused or modified. However, where procurement knowledge is lost these types of trials will not cause an expanded use of the e-marketplace.

There is a perception that services cannot be traded via an e-marketplace but organisations with well-established e-marketplace trading practices successfully obtain services via this channel. Procurement history is retained through procurement practices and systems that store information in organisational databases. Retention of procurement knowledge builds organisational capabilities and enables procurement personnel to use outcomes from past transactions to respond to current situations.

### **5.2.3.6 HOW WELL DEFINED ARE BUSINESS VALUE METRICS FOR E-MARKETPLACE USE?**

The business value metrics for e-marketplace participation represent a formal assessment of the associated benefits, costs and risks. All organisations studied had evaluated e-marketplace participation in some way. In organisations where e-marketplace adoption is not part of a strategic initiative the business value of e-marketplace trading is mainly based on loose evaluations and perception, rather than a rigorous organisational evaluation. In organisations where strategic procurement is observed the evaluation is more rigorous, but it can also be subjective. The intangible nature of some of the benefits, costs and risks associated with e-marketplace participation make them difficult to assess and therefore more subjective but nonetheless these belong to the empirical level of reality.

Risk is assessed by the buyer, typically at the outset. If the adoption of the e-marketplace is strategic, a greater level of evaluation occurs than if the adoption is for a one-off purchase. Risk is assessed in relation to the impact on supplier relationships, and dependability of supply. Knowledge of the suppliers reduces the risk of unfilled contracts. Organisations with pre-existing relationships and established ordering procedures can face less risk when transferring to the e-marketplace, especially when suppliers are aware of the advantages of e-marketplace trading for their organisation, and have the capabilities to implement and manage process change and technology adoption.

Overall, the organisations in this study believe there to be benefits from e-marketplace trading: often intangible where an exact level of benefit is difficult to quantify. For example, the efficiency of processing a high volume of documents (e.g. 750,000) in a year, through an e-marketplace, has many benefits over other processing methods, and soft savings such as reductions in employee's time processing documents, keying data, checking orders and payments etc.. The ability of the organisation to absorb these soft savings back into the value chain makes assessments even more difficult. The inability to ascribe definitive organisational value is further obscured when the e-marketplace has become an essential part of procurement practice. At this point, the level of efficiency and accuracy in transactions cannot be achieved any other way and there is no viable alternative to evaluate it against.

The strategic e-marketplace adopters have developed factors to consider when posting requests or accepting quotes via the e-marketplace. These can take the form of an evaluation matrix consisting of logistical factors and supplier information. However, additional knowledge of the market conditions conducive to e-marketplace trading and the use of an appropriate e-marketplace function are important considerations which cannot be measured.

#### **5.2.3.7 WHAT FIRM PERFORMANCE ISSUES ARE CONSIDERED WHEN EVALUATING TRADING VIA AN E-MARKETPLACE?**

The key aspects of firm performance that are considered when evaluating e-marketplace trading are efficiency, cost savings and relational risk. The organisations studied were not concerned with using e-marketplaces to obtain quality improvements in the goods/services traded, gain additional revenue, provide a competitive advantage, or trade globally. The firm performance issues can be evaluated in terms of time efficiency and cost savings from employing fewer transaction's processing staff, increased order and payment accuracy, reliable and timely information and the ability to track supplies from order to delivery.

The use of e-marketplaces typically occurs alongside a range of other procurement methods. In this way organisations take a portfolio approach to evaluating and making decisions on the appropriate method for acquiring particular goods and services. Gains in efficiency and transaction cost savings can be achieved by replicating an existing market structure through the e-marketplace. A benefit for the buyer when using the e-marketplace in this way is the transfer of some relational risk to the e-marketplace provider. This can take the buyer one step away from a more hierarchical market structure. However, many of the contracts are agreed upon before being submitted to the e-marketplace indicating that the relationship between buyer and supplier is still an important consideration.

#### **5.2.3.8 ARE THE MEASURES OF FIRM PERFORMANCE AND THE BUSINESS VALUE CREATED FROM E-MARKETPLACE USE SUBJECTIVE OR FINANCIAL?**

Measures of firm performance and the value from e-marketplace trading are assessed using both subjective and financial measures. Some efficiency measures, such as Pareto Analysis by Grand Metals, are used, especially when e-marketplace trading is seen as an

efficient mechanism for high volume, recurring transactions. Full evaluations of e-marketplace participation are rarely conducted and when they are, they contain a high proportion of subjective measures because of the difficulties quantifying savings. Although many of the costs/benefits are difficult to quantify, participation is based upon some type of assessment. These are short term projections. Once an organisation starts using e-marketplaces extensively the efficiencies they provide are subsumed in the business process and become difficult to isolate. Detailed financial measures about cost savings based on historical data are not meaningful for organisations that use e-marketplaces as part of their everyday trading activities. However, cost savings and efficiency gains are continual objectives for procurement departments and short term financial gains from implementing new functionalities of the e-marketplace and improving processes are assessed.

### **5.3 IMPLICATIONS FOR THEORY**

This study examines the adoption and use of e-marketplaces, in particular their strategic potential. The preceding sections of this chapter answered the research questions and this part of the chapter goes on to identify organising vision theory as an explanatory theory for e-marketplace participation. The retroductive analysis, involving continued revision of explanatory theories to explain the phenomena, led to the identification of organising vision theory as being particularly relevant in explaining differences between organisational e-marketplace participation.

The following section presents organising vision theory and its present concern with the macro level of IT innovation diffusion across organisational boundaries through community discourse. The use of a critical realist perspective, in the study of e-marketplace participation, extends the theory to encompass intra-organisational structures and relationships with a community discourse as well as boundary spanning structures, relationships and interactions and helps to explain the differences between organisations' level of e-marketplace participation or non-participation. Six types of community group that engage in discourse about e-marketplace trading and their effect on organising visions are identified.

### 5.3.1 Organising Vision Theory

The adoption of information and communication technologies (ICT) in organisations is a key research theme in information systems. It is important because information systems are often major investments having the potential to transform an organisation's productivity and it can be a source of competitive advantage. Research over a number of years has identified the importance of a group of related concepts such as fashion waves, fads, and organising visions in driving and facilitating the adoption of technologies (Wang & Ramiller, 2009). These concepts create a rationale for decision making in relation to technology adoption and often rely on an agglomeration of influences and perceptions that lead managers to hold a belief about a technology. These beliefs will ultimately influence whether a technology is, or is not, adopted organisationally.

The theoretical perspective that emerged during the course of the study is one that draws upon the interrelated concepts of organisational visions for IT (Swanson & Ramiller, 1997, 2004) and institutional theory (Scott, 2003). According to Swanson and Ramiller (2004, p. 556), an organising vision "is a construction in discourse that emerges from a heterogeneous collective consisting of such parties as technology vendors, consultants, industry pundits, prospective adopters, business and trade journalists, and academics." Organisational discourse is an ordering process that reflects and shapes organisational strategy, process change and technology adoption and the relationships between social and technical structures and information systems development (Doolin, 2003; McLeod & Doolin, 2012). An organising vision is a sense making process that an organisation establishes to enable it to make not only adoption decisions on a specific technology but to determine the role and organisational contribution of the technology. The development of theory related to the organising vision concept in the following discussion is focused on the latter point i.e. how an organising vision influences the role of technology adoption in an organisation. It also investigates if organising visions can be detrimental to the organisational contribution of an IT system.

Although there is a wealth of research in relation to technology adoption models generally, there is significantly less research to explain how technology diffusion occurs beyond the innovating organisation. Organising vision theory, and research on

management fashion, attempts to link community discourse and the diffusion of ideas to explain adoption of technologies. This area of research has focused on analysing literature to investigate links between technology diffusion and community discourse (Wang, 2009), but significant gaps exist in its understanding. Organising visions have substantially been viewed as phenomena that work to create a rationale for the adoption of a technology where a “diverse interorganizational community creates and employs an *organizing vision* of an IS innovation, that is central to its early, as well as later, diffusion” (Swanson & Ramiller, 1997, p. 458). Research on organisational fashion proposes that fashion occurs in a wave from innovation to institutionalisation and is influenced by community learning (Abrahamson & Fairchild, 1999; Baskerville & Myers, 2009; Gill & Bhattacharjee, 2009). A diverse range of actors can contribute to the community discourse surrounding a technology but the identification and influence of community groups has not been fully explored. The influence of IT consultants and their ability to act as organisational change agents has been investigated by Swanson (2010) who proposes that they can speed the adoption of a technology and act as supportive change agents for the organisation. However, the reasons management adopt certain technologies over others and the influences of different community groups on adoption have not been fully explored.

The organising vision concept is closely aligned to institutional theory. Institutional theory provides a way to view organisational attitudes towards IT (Orlikowski & Barley, 2001) which enables predictions for its organisational contribution. Institutional theory is relevant to this study because it explains technology decisions and outcomes (Zhang & Dhaliwal, 2009). It provides a way to view technology adoption and use by focusing on the norms and behaviours of organisations rather than by focusing on the rational, cost-benefit view of decision making. This is particularly relevant to this study as e-marketplace trading is influenced by the organisational view of procurement and community perceptions of e-marketplaces. Institutional theory considers how organisations respond to their environment through the structural interfaces that influence decision-making and action (Bowring, 2000). In particular, it focuses on the effect of habit, convention, and social behaviour of organisations. Legitimacy and authority result in organisational structure and define its activities. Organisations are likely to conform to institutional pressures even where there is little evidence to suggest

it will improve organisational efficiency (Orlikowski & Barley, 2001). Pressures can be exerted in organisations and also be exerted on them through prevailing practices in the business environment. This form of pressure has been termed mimetic behaviour. Isomorphism (companies becoming similar) results from mimetic pressure and this has been argued to be inefficient. The effect of succumbing to mimetic pressure, which by definition leads an organisation into a follower role, is unlikely to lead to an innovator or early adopter position that could create a competitive advantage.

Organising visions are instrumental in determining the role and impact of a technology. The organising vision concept recognises that community discourse occurs through various forms of media to which community members contribute and in the various ways IT is used to bring about organisational change (Swanson, 2010; Swanson & Ramiller, 1997). In particular, whether a technology is used in a strategic sense or more tactically within an organisation is informed by the views and past experiences of decision makers in an organisation, industry sector norms, consultants' opinions, industry vendors and trade and business journalists. Although much has been written about the strategic use of information technology, few have attempted to delineate the distinction between the strategic and tactical use of technology. Tactics and tactical planning are aligned and should support strategic initiatives and strategic planning. The literature on the key dimensions of strategy can be reduced to three factors: cost reduction, quality improvement and revenue growth (Oh & Pinsonneault, 2007) and within the supply chain, for example, strategies should be matched to the type of firm, its products and market conditions (Sebastiao & Golicic, 2008).

Recent developments in organising vision research have investigated how the communities influencing the organising vision learn and the discourse that takes place to enable learning (Wang & Ramiller, 2009). An approach, similar to that of organising visions for shaping organisational behaviour, is the idea that management follow fashions, created through various community discursive actions, in the pursuit of organisational progress (Abrahamson, 1996). Baskerville and Myers (2009) have noted that information systems research and practice have followed fashions or, as some term them, bandwagons. They define IS fashion as "a relatively transitory collective belief in IS research and practice, disseminated by fashion setters, that a technique or technology

leads to rational IS innovation” (p. 649). Within these fashion waves learning occurs but it is not all based upon perceptions and superstition (Wang & Ramiller, 2009) as distinctive discourses take place in fashion upswings and downswings that are based on rational evaluations that form a fashion lifecycle. An alternative view to a fashion wave of community discourse is that of an informing community discourse (Gill & Bhattacharjee, 2009). Nevertheless, waves have been evidenced through analysis of community discourse about certain phenomena. Standing, Standing and Love (2010) analysed e-marketplace literature from leading IS journals and waves in e-marketplace discourse topics from 1997-2008 are seen, which end on a general upward trend in 2008 on articles that discuss the organisational implications of e-marketplace trading.

The role that consultancies play in developing organising visions cannot be ignored. Consultants are generally involved whenever there is innovation with IT, and they often act as change agents (Swanson, 2010). According to Swanson (2010) consultants contribute to the innovation process in five broad areas: business strategy; technology assessment; business process improvement; systems integration; and business support services. Their prominent role in technology diffusion can sometimes be problematic for organisations since they may “contribute more to mindless, than to mindful innovation with IT” (Swanson, 2010, p. 25). One reason for this is that by promoting certain IT solutions across the sector they foster mimetic pressure rather than encouraging unique solutions that take into account an organisation’s characteristics and features. The consequence of this is that firms are unable to differentiate themselves from others within the sector and so, Swanson (2010) concludes, consultants may be best employed by firms looking to catch-up with other firms rather than by those aiming to be sector leaders. Another implication of employing consultants is that they are likely to suggest what will be well received or adopted by the recipient organisation, or in other words “give them what they want”. This would seem to prevent the consultant from suggesting more radical solutions or solutions that the client would find difficult to support. Consultants are, therefore, likely to go along with the perceived market vision for a technology providing support for the decision making rationale and creating organisational legitimation. However, the role that vendors and consultants play in influencing technology adoption through the community discourse has not been fully explored in the literature. The discussion considers the role of vendors and consultants

in contributing to an organising vision and the consequences for e-marketplace participation.

Integrating the concepts of fashion theory, institutional theory and organising vision theory potentially improves our understanding of why and how information technologies are adopted. The purpose of the following section is to contribute to the development of organising vision theory by specifically identifying the different responses organisations have to organising visions. Focus is provided by demonstrating how organisations react to organising visions and the implications for e-marketplace participation. In the following discussion e-marketplace vendors are considered to occupy a consultant's role where they promote the e-marketplace and the services offered.

### **5.3.2 Organising Vision Theory and E-Marketplaces**

This section aims to explain how organisations react to organising visions, what causes these reactions and identify the implications from an e-marketplace participation perspective. Organisations will react in different ways to an organising vision. The reaction is shaped by organisational context and characteristics that have been formed through the development of an organisational culture and the decision making processes over a long period of time. Community groups can be identified from the case studies which show how firms are responding to organising visions and how buyers, suppliers, vendors and consultants, as individuals and groups contribute to organisational and inter organisational reactions.

#### **5.3.2.1 ORGANISING PERSPECTIVE OF E-MARKETPLACE VENDORS AND HOW IT TRANSLATES TO THE BUYERS' PERSPECTIVE**

Many e-marketplace vendors can be viewed as consultants when they offer advice and make recommendations on which service to adopt and how to use the service provided. This is particularly relevant in the e-marketplace space where e-marketplace providers act as intermediaries and the system needs to be matched to an organisational context and procurement perspective. The services and technology provided by the e-marketplace vendor have to meet the customers' needs and require detailed discussions before any decision on using the functionalities of the e-marketplace is made.

The e-marketplace vendor has to be sensitive to the general organisational culture in terms of technology adoption to determine how well procurement staff can assimilate use of the e-marketplace into their procurement practices. So for example, a consultant may examine the technology adoption history of an organisation to determine if the firm has been a leader in its use of ICT and the level of risk it is prepared to take. Where this seems to be the case, the adoption of new technologies will be less of a challenge to staff and the organisation. On the other hand, if the firm is very cautious in its adoption of technology then the consultant's advice is likely to be circumscribed by the prevailing organisational vision in that industry sector or in the general community.

The economic, business value creation motivation of e-marketplace vendors can result in the e-marketplace vendor melding their view, or prevailing market knowledge, to create a better match to a particular organisational context in the desire to gain a customer (Swanson, 2010). This translates into the e-marketplace vendor playing a role in creating an organising vision by supporting or emphasising a particular view. This is illustrated in case study one where the e-marketplace vendor promotes a non-strategic role for e-marketplace participation because most organisations were circumspect about the benefits. Trying to change the organisational vision by going in with an "all guns blazing" approach touting the benefits of strategic e-marketplace participation would have little chance of success; the two views are so far apart it would require the buyer to make a large adjustment to its thinking, which requires an innovative attitude. Therefore, the consultant makes a judgment on the level of adoption the firm is prepared to make in order to increase the chance of acquiring some business. The reaction an e-marketplace vendor will get varies between organisations: organisations with a commitment to e-procurement will be prepared to adopt appropriate e-procurement practices and those who are ambivalent about e-marketplace use could be willing to conduct a trial transaction through the e-marketplace. The e-marketplace vendor becomes skilled in making a quick assessment of how to approach different organisational situations.

The variety of approaches used by the e-marketplace vendor illustrates the existence of separate community groups and reaffirms the organisation's reaction to an organising

vision; the consultant could advise an organisation positively predisposed to e-marketplace participation to adopt the technology strategically throughout the organisation and another organisation to adopt the technology in a more tactical or ad hoc fashion that would involve much less change. It seems unlikely that an e-marketplace vendor would suggest non-adoption of an aspect of the technology. However, the different approaches and levels of emphasis that e-marketplace vendors provide contribute to the variation in organisational reactions to organising visions and the development of segmented community groups.

### **5.3.2.2 HOW ORGANISING VISIONS CAN BE USED TO REJECT A TECHNOLOGY**

The literature on organising visions has mainly been concerned with adoption of technology but organising visions can also be focused on the rejection of a technology. Organising visions are multi-faceted and, paradoxically, they can be used to both accept and reject a technology. The case studies in the thesis highlight how management interpretations of the organising vision and perceptions of e-marketplace participation can cause different levels of e-marketplace adoption or non-adoption. For example, case study two highlights how an organising vision to implement e-commerce and achieve procurement efficiency is interpreted and acted upon by management and procurement staff in their commitment to strategic e-marketplace participation; case four highlights the conflict between agents, management and the selection of non-adoption aspects of the organising vision to reject e-marketplace participation. Regardless of adoption or rejection of e-marketplace trading there is a rationale developed around the organisational context and which aspects of the organising vision are employed at different levels within the organisation. Rejection of e-marketplace trading was exemplified by attitudes towards e-marketplace trading as “a lot of effort” and organisational context was described as “we’re not that type of company”. Even though cost savings can be made and e-marketplace use is supported by senior management, individual responses are important micro influences on the acceptance or rejection of the technology and in the creation or reinforcement of an organisational vision through the community discourse.

### **5.3.2.3 POLITICAL PRESSURE AND ORGANISING VISIONS**

Government and leading e-marketplace providers (such as EM Consortium) possess significant political influence in any given business space and they can be significant

contributors to the promotion of an organising vision. Their strong influence might seem to mandate participation and support the perception that these organisations have little regard for participants concerns. In interviews from case 2 there were statements illustrating that political or organisational pressure, especially in developing countries, can be very strong and firms that do not adopt the technology can be left behind. This implies that in some situations an organising vision can be dominated by political pressure.

#### **5.2.2.4 HOW LEADERS DEVELOP THEIR OWN VISION**

Organising visions are a form of mimetic pressure and this implies that they are unlikely to employ IT in innovative or unique ways to create an organisational competitive advantage. Although organising visions co-evolve along with the community discourse, by the time organisations are aware of an innovative organising vision the technology and the concepts it is supporting have become acceptable practice. Leaders in any sector have a major role in establishing and continuing to develop an organising vision before and after it becomes accepted practice. The leader organisations are continually innovating around the organising vision to stay ahead. The capability to do this requires a strong internal cohesion and strategies that lead to controlled risk taking but incorporate a level of innovation. This constitutes a mindful approach to IT adoption rather than a mindless one (Swanson & Ramiller, 2004). The leader organisations continually assess the organisational environment and try to discover new ways to use or improve their resources. In this way they develop dynamic capabilities and remain at the forefront of the industry.

#### **5.2.2.5 TYPES OF COMMUNITY GROUPS**

The findings from the case studies highlight the interactions that can shape the community discourse on e-marketplace trading. A feature of the organising vision landscape is the way in which fashion discourse illustrates organisational adaptation of an organising vision (Abrahamson & Fairchild, 1999; Baskerville & Myers, 2009). From the case studies six types of community groups that contribute to the community discourse on e-marketplace trading can be identified: shaper community, e-marketplace vendor community, follower community, ambivalent community and resistor community (table 5.1). An organisation can contain, and be influenced by, the discourse from multiple types of community groups.

Table 5.1: Fashion discourses and community groups involved in e-marketplace discourse, adapted from Baskerville and Myers (2009) and Abrahamson and Fairchild (1999).

DISCOURSE PHASE	DESCRIPTION	E-MARKETPLACE CONTEXT	COMMUNITY GROUP
Problem discourse	A fashion discourse proposing theories about the problem source motivating the fashion.	Reliance on small number of buyers and suppliers and expensive EDI connections limit management choice.	Shaper community E-marketplace vendor community
Solution discourse	A fashion upswing discourse describing the fashion with claims that it is all powerful in scope and impact.	Technology is provided by e-marketplace to connect disparate buyer and supplier systems and generate transaction cost savings.	Shaper community E-marketplace vendor community
Bandwagon discourse	A fashion upswing discourse relating stories about firms successfully adopting the fashion.	Australian State governments implement e-marketplace procurement to provide equity and e-marketplace consortia are formed.	Follower community Coerced community E-marketplace vendor community
Debunking discourse	A fashion downswing discourse advocating a complete rejection of the fashion.	E-marketplaces are used as a way for buyers to cut costs by reducing supplier rents –“price hammer”.	Resistor community
Surfing discourse	A fashion downswing discourse advocating a transition from one fashion to the next.	E-marketplace vendor offers added service to answer buyer/supplier concerns, and adoption of alternate e-marketplace functionality.	Ambivalent community Resistor community E-marketplace vendor community
Sustaining discourse	A fashion downswing discourse advocating the fashion despite failing interest.	Procurement takes a portfolio approach to e-marketplace participation.	Shaper community E-marketplace vendor community

### 1. Shaper community

The shaper community are early adopters of the technology and are prepared to take risks and demonstrate an experimental, or trial and error, approach to adopting new technology and business practices, such as the organisations in cases three and seven,

Mining International and Grand Metals. They are quick to interpret an organising vision and adapt it to fit their organisational context, and they will continue to extend and push the boundaries of how the technology is used. The adoption of new technology is aligned with an organisational culture of experimentation and strategic commitment to the development of organisational resources and capabilities. The shaper community can influence the organising vision at an early stage of the community discourse about a technology and contribute to the development of the discussion as leaders in the sector.

## 2. E-marketplace vendor community

Many e-marketplace vendors act as consultants (eg RevNet and EM Consortium) and can shape the organising vision towards a technology but also support the organising vision of the adopting organisation towards e-marketplace participation to gain customers. They are involved in all discourse phases except the debunking phase. As part of the problem discourse they can fast-track the adoption of a technology by promoting the benefits of the technology. In the other discourse phases they contribute to the discourse by supporting the organising vision of the client's organisation.

## 3. Resistor community

The resistor community perceives that the technology associated with an organising vision has weaknesses or disadvantages and these are used as rational for non-adoption (e.g. Energy Pool), particularly if the organisation has a culture of risk aversion. These companies may typically be laggards in technology adoption or be more concerned about the problems associated with adoption rather than the benefits. They would forego the potential benefits of a technology to concentrate on other aspects of the business that are perceived as less risky or more important. Overall, the desire to experiment with technology and concern with developing organisational capabilities is low.

## 4. Coerced community

A coerced community represents interactions with the technology because a more powerful entity mandates its use. The coerced community may have negative perceptions of the technology but economic reliance on the mandating party can overcome these concerns (illustrated by interviews from International Mining and Grand Metals). Activation of a coercion mechanism can lead to resentment and

damaged relationships unless the dependant has a culture of acquiescence, or the mandating party can build trust which involves the activation of open communication and learning mechanisms.

#### 5. Follower community

Organisations that accept an organising vision once it has become established within the industry form the follower community. Indications in interview data from International Mining, Grand Metals, EM Consortium suggest that suppliers adopting the technology because customers have adopted the technology can be part of this community. The follower community builds an organising vision that can legitimate adoption of the technology without a strategic vision. This is likely to result in operational benefits such as transaction cost savings but the technology is unlikely to make a strategic impact. Organising visions are a form of mimetic pressure and the adoption of the technology they legitimate is unlikely to lead to a unique combination of resources that has the power to create significant competitive advantage. Mimetic pressure is constraining because it can dismiss originality and innovation.

#### 6. Ambivalent community

This group is unsure of the benefits of e-marketplace participation but might be willing to use the technology (as happened at Energy Pool). This group uses negative perceptions or problematic implications to legitimate avoiding a long term commitment of resources to e-marketplace participation. As a result the e-marketplace technology can be used at a tactical level on a one-off trial basis, when it seems like a good option (this is promoted by RevNet to bring clients on board), or not at all. This group contributes to the surfing discourse with an attitude that something better will come along to replace the existing technology.

The extent of e-marketplace adoption in an organisation is influenced by the power of organisational stakeholders to interpret the community discourse and apply it to support their own organising vision. At the micro level an organisation contains individuals who hold different perceptions about e-marketplace participation which they are able to contribute to the community discourse. At a meso organisational level management can create and interpret the community discourse which can result in a strategic adoption of

a technology. At the macro organisational level, context and culture can condition the types of community discourse supported by the organisation, but the influence of a community group within the organisation has the power to cause or prevent e-marketplace participation. The ability of an organisation to contain agents who interpret, contribute to and act on the community discourse results in organisations, even within an industry sector, with different levels of e-marketplace participation.

From the case study examples different levels of e-marketplace participation are evident but the adoption of e-marketplace trading in Australia seems to be part of a macro organising vision that is heading towards legitimisation. In 2011 EM Consortium was acquired by a leading business commerce network (BCN) for \$150 USD million\* and a leading business management software organisation intends to acquire BCN in a \$4.3 USD billion deal in order to expand its cloud computing functionality\*. Although BCN and EM Consortium will operate independently in the e-marketplace sector, the purchase of successful e-marketplaces, and consolidation within the e-marketplace industry, demonstrates the value creating potential of e-marketplaces to provide networked business solutions. It also demonstrates a change in perceptions about e-marketplace trading from a fad or fashion when they were first introduced to a desirable and sustainable method of B2B procurement.

### **5.3.3 Methodological Implications**

Critical realism provides an ontological basis to examine experiences (real, actual, empirical domain), events (real, actual domain) and the structures (real domain) and the causal mechanisms that underlie them. Assessing the business value of a technology requires the examination of these tangible and intangible features and allows the examination of the necessary conditions needed to produce a specific outcome. Research in the IS discipline that uses critical realism as an underpinning philosophy is still evolving and there is no generally accepted methodology to adopt in these studies. This thesis has attempted to identify the causal mechanisms that result in the strategic adoption of e-marketplace trading and creation of organisational value. A difficulty with critical realism is the identification of structures and the separation of underlying causal

---

\* Reference omitted to preserve anonymity of case organisations

mechanisms and outcomes especially where structures have subsumed previous outcomes over a period of time that become part of an existing structure. The ability to study several organisations with different levels of e-marketplace trading made this process a little less difficult. It also allowed the identification of differences in contextual elements under which the structures and mechanisms interact to produce certain outcomes. Context, mechanism and outcome patterns have been presented in each case to illustrate relational interactions and outcomes.

The case examples of e-marketplace participation indicate that the causal relationships could create either effective or ineffective use of the e-marketplace. They also illustrate changes in organisational structures over time and how the influence of organisational culture can affect e-marketplace participation decisions. The prevailing perceptions of e-marketplace trading within the organisation and the development of the technology are major causal factors in the attribution of business value from e-marketplace trading. Community discourse around e-marketplace trading and the perceptions of e-marketplace trading influence attribution of value creation possibilities to e-marketplace trading at organisational and personal levels. Organisational learning and capabilities are necessary conditions for the successful implementation and continued participation in e-marketplace trading.

The critical realist ontology allowed each case to be analysed in the organisational context to determine organisational structures, the existence of relationships between them and the mechanisms that cause or prevent e-marketplace participation. Critical Realism with its emphasis on context provides a means to highlight the macro and micro factors that lead to differences in the use of a technology. This is particularly valuable in a multiple case analysis since this allows a comparison of contexts and therefore the opportunity to determine how context impacts on certain mechanisms and events to produce certain outcomes. Using multiple cases can highlight contextual differences and similarities which is not possible using a single case example.

Each case analysis allowed the development of a theoretical foundation for the analysis of the following cases. During the analysis the applicability of the organising vision theory to the phenomena of e-marketplace participation was identified. An explanatory

shortcoming in the organising vision theory is the literature analysis methodology predominantly used in this type of research: the critical realist philosophy has enabled the discovery of causal relationships between different community groups, organisational structures and technology diffusion, both within and across organisations, and so goes beyond the discourse to show how it can affect actions and organisational structures.

The relational structures that exist in organisations and between organisations contain vital mechanisms for the adoption of strategic e-marketplace trading initiatives managed by the procurement department. Disassociation between an organisational organising vision and the implementation of e-marketplace participation strategy is caused by the struggle between the conflicting e-marketplace perceptions of the community groups involved in interpreting, implementing, learning from and adding to the community discourse.

The e-marketplace vendor plays a vital role in creating a network of participants and sustaining organisational e-marketplace participation. The development of the e-marketplace is a continual process as the e-marketplace providers seek to meet customers' needs at a technology and service level. Likewise, organisational use of the e-marketplace should develop as functionalities offered by the e-marketplace are adapted to organisational needs and e-marketplace trading is incorporated into business processes.

E-marketplace trading establishes new relationships in the buyer/supplier relationship which involves changing existing relationships or instigating new ones. Pre-existing relationships between buyer and supplier can be subtly changed by the addition of the e-marketplace provider. Over time the relationships forged through the e-marketplace also change as the actors become familiar with the process. They can go on to develop their own systems and extend the use of e-marketplace functionalities offered to capture more value from trading via the e-marketplace. Internal customers are mainly affected when they have to change their buying processes. In some cases procurement has to build better relationships with managers throughout the organisation to achieve acceptance of e-marketplace trading and adoption of the initiative.

Relational structures are closely linked with structures of dynamic capabilities, especially organisational learning. Organisational learning develops through the community discourse that exists in each organisational context. The discourse involves organisational shareholders, the wider business community, and political and government agencies. Community discourse involves the interpretation of texts and meanings around a concept. Over time a definition of the concept can become fuzzy or change entirely as new ideas and experiences are disseminated and technological developments occur. The existence of a discourse community through the development of meaning or learning about a technology was illustrated in the case interviews by the need to define what was meant by an “e-marketplace” as each organisation had their own interpretation of what constituted an e-marketplace.

Organisations that adopt e-marketplace trading as a strategic initiative consider the creation of business value and firm performance goals from e-marketplace participation. Taking a strategic view of e-marketplace trading impacts significantly on the procurement processes involved. A change in work practices and processes is required to establish the integration of the e-marketplace system into the organisation. Once the system is integrated and has been used the users can adapt features of the system to better meet operational requirements. Evaluations of strategic initiatives are more likely to be carried out and analysis usually occurs at regular intervals and includes any operational changes that have been instigated. From these evaluations strategies can be updated and operational changes can be made. Additionally strategically orientated adopters and users of e-marketplaces perceive procurement as a high value resource and this empowers the members of the procurement team to challenge existing structures and proactively change them. This illustrates how macro strategic decisions impact on an operational level and how operational outcomes can influence strategic decisions.

The structures, mechanisms and events associated with e-marketplace trading that shape organisational structures through the community discourse are shown in figure 5.1. There is no strict order for the shaping of organisational structures through these elements but there is continual interaction amongst them. The interaction between the various elements leads to the development of segmented communities which can accept,

reject, or be uncommitted to the idea of e-marketplace participation. As experiences of e-marketplace trading, or non-trading, are added to the community discourse they can shape organisational capabilities through mechanisms which interpret, evaluate, implement and create learning about e-marketplace trading and e-marketplace technology. As more experiences are added to the discourse in each subsequent morphogenetic cycle, and organisations become more aware of e-marketplaces, legitimation grows stronger for either the acceptance or rejection of e-marketplace trading. If there is significant political or industry pressure that does not cause major disruption in organisational relationships, the legitimation of e-marketplace trading can be more quickly established, although evaluation and discourse will continue. Organisations are unlikely to be seeking a competitive advantage from e-marketplace trading when legitimation is established. Although organisational legitimation can occur at the macro level it does not guarantee universal acceptance of e-marketplace trading as there can be many competing community group views represented within an organisation. A strategic implementation of e-marketplace trading requires that an organising vision of e-marketplace trading is formed by a shaper community group, and the group is supported throughout the organisation. This requires an organisational culture that accepts some risk taking initiatives, can communicate an organising vision and has a high level of organisational capabilities. The existence of cohesive internal relationships and the ability to build inter organisational relationships, supportive of an organising vision for the strategic adoption of e-marketplace trading, facilitates internal acceptance of e-marketplace trading and inter organisational diffusion of the technology through the addition of experiences to the community discourse.

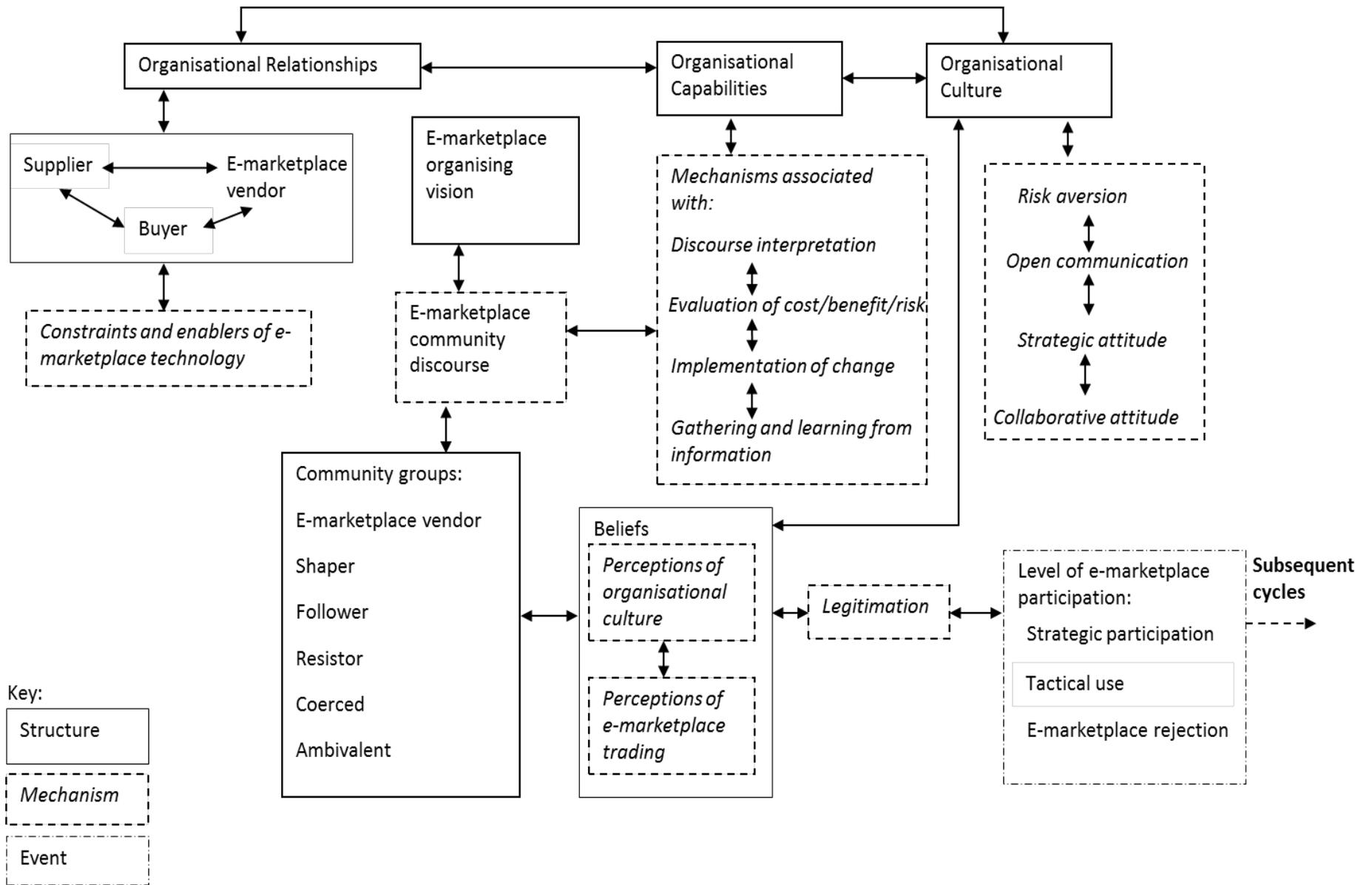


Figure 5.1: How organisational structures and organising visions shape community discourse and e-marketplace participation

### **5.3.3.1 CRITICAL REALISM AND THE USE OF THEORY**

Pre-existing research and theories related to e-marketplace trading were used as a starting point for the development of the research questions. The thesis has attempted to bring together institutional theories, network theories and economic theories. There is a sufficient quantity of such research to be able to formulate a strong theoretical foundation from which to examine the adoption and use of e-marketplaces in regards to organisational strategy and an efficient market hypothesis. By using the existing literature and comparing these results and theories with the empirical data I collected, it was possible to use critical realism as a way to uncover the circumstances that make e-marketplace trading a valuable organisational tool or a “waste” of resources. Additionally it has allowed me to extend the organising vision concept beyond an information technology diffusion concept to incorporate the RBV and dynamic capabilities at macro and micro levels within the organisation and across organisational boundaries. The existence of a strong domain-specific theory base and use of critical realism is examined by Raduescu and Vessey (2009) who suggest conducting a single case research following an approach similar to the one I have used. This involves identifying theory from the literature, collecting empirical data, identifying causal mechanisms, comparing theories and empirical derived mechanisms to determine the manifested causal mechanisms. However, this thesis has examined several case studies in this way. The advantages of using multiple cases are discussed below.

### **5.3.3.2 CRITICAL REALISM AND STRUCTURED CASE**

The use of the structured case and the critical realist approach allowed each case to be analysed individually and determine its fit with theories identified from the literature. The theories identified were initially from e-marketplace literature but this expanded to encompass theories from other fields. It was through this process that the applicability of organising vision theory to the e-marketplace trading phenomena was identified.

The multiple case approach allowed comparisons between different contexts to be made to determine the relevant structures, outcomes and mechanisms applicable to the phenomena that might not have been evident in a single case. Each case offered something unique to the investigation, just as each organisational context was unique, so were the respondents’ views on e-marketplace participation. The similarities between

the case data serve to reinforce the general findings and the differences highlight other important structures, mechanisms and outcomes. The differences in the cases highlighted where there was conflict in organisational structures and frictions between strategic, tactical and operational levels in the organisation that could prevent strategic e-marketplace participation and value creation.

### **5.3.4 Recommendations for Practice**

E-marketplaces can create efficiencies and free up time through automating transactions and in this way can make a strategic contribution to the organisation. These efficiencies can add further value by allowing the procurement team time and opportunities to think and act more strategically. Whenever a more strategic approach is adopted by procurement managers, changes to work processes and workflows are usually made. Implementing electronic procurement efficiencies can change the procurement focus from procedural matters to the management, analysis and evaluation of the procurement mechanisms, procedures and strategies. Instead of concentrating on minor process improvements management can start to take a higher-level view and focus more on managing and building relationships across the organisation and externally. As a procurement department improves its understanding of other functional areas within the organisation and what their needs are, it will be able to identify further uses for the e-marketplace.

The real efficiencies from e-marketplace trading come from an integrated e-commerce strategy where e-marketplace data and documentation are part of a fully digital approach. Without this perspective the benefits are not maximized and e-marketplace trading is seen as a piecemeal add-on rather than a element of an integrated strategy.

Some organisations are quick to dismiss the opportunities presented by e-marketplaces but they need to have a more open and flexible strategy and include experimentation as part of their procurement approach. Without developing some dynamic and learning capabilities, procurement will not progress beyond minor process improvements and refinements. Experimentation facilitates the development of skills and knowledge that in turn are able to identify new opportunities and innovations.

### **5.3.5 Limitations and Future Research**

This study is an exploratory study using a case study approach with a critical realist philosophical underpinning. The number of case studies was small but included major e-marketplace participants. The case studies have had a mining and resources emphasis partly because they have a strong foothold in the Western Australian economy and partly because they have the technical and human resources available to participate in e-marketplace trading. Including more buyer organisations and supplier organisations could confirm or refute the findings. This could be achieved by using a survey approach, across Australia at least, to gather more information from large organisations and SME buyers.

The critical realist underpinning and identification of structures, mechanisms and outcomes is context dependent and subject to interpretation and researcher bias. Other researchers could identify other structures and mechanisms or delve further into the context and structures to discover more mechanisms and possible outcomes. However, it has shown the applicability of the structured case methodology in supporting the critical realist philosophy.

The impact of e-marketplace trading on suppliers could be studied to identify supplier motivations for participation and the benefits that could be gained or the problems it could cause. At a micro level the role of personal attitudes to e-marketplace trading could be studied in more depth to determine how attitudes prevent or promote organisational e-marketplace adoption.

E-marketplaces such as eBay and Alibaba are used for many B2B transactions. The circumstances surrounding the strategic adoption of B2B e-marketplace trading through these e-marketplaces could be studied to gain an understanding of how the e-marketplace has developed and meets the needs of participant organisations.

### **5.3.6 Summary**

This chapter has brought together the answers to the research questions, applied organising vision theory to e-marketplace trading and shown how the critical realist

approach has added to the understanding of the phenomena. Through this process the thesis has developed the middle level theory of organising visions and added to knowledge on methodology, using a case study approach, underpinned by a critical realist philosophy.

# CHAPTER 6: CONCLUSION

In recent years e-marketplaces have become a feature of the procurement landscape. Despite the growth of research in the area there is still a lack of knowledge on the strategic adoption of e-marketplace trading. This thesis shows that technology adoption decisions are complex phenomena because of the many interrelationships that occur between internal and external structures, objects and outcomes. This complexity is highlighted by the multiplicity of e-marketplace adoption approaches, ranging from non-adoption to strategic implementation. The results of the adoption decisions are instrumental in forming outcomes that can shape future organizational structures. In this respect the thesis has gone beyond the debate on markets and transaction cost theories to encompass organizational networks and takes a systemic view that includes the technology, agents, organisations and environmental context. The critical realist philosophic underpinning has enabled a systemic approach to be taken in the search for underlying causal mechanisms.

Organising vision theory in the IS literature is a developing explanation of technology adoption that is capable of investigating boundary spanning technology diffusion. The thesis proposes that technology adoption is influenced by mechanisms related to the organisational decision making culture which can be more important than the functional capability of a technology. Realising the value of the technology is formed through interpretation of the community discourse and application to organizational and personal goals, which may not always be founded on rational decision making criteria. Although the functionality of the technology can impact on organizational practice how it is put to use within an organization and across B2B networks establishes organizational value.

The identification of e-marketplace community groups has relevance for practice. Procurement specialists can assess their own decision making using this framework to understand not only their e-marketplace position but also their general decision making capability in relation to new initiatives or innovations. They can also identify the position others take on e-marketplace participation within the organization and focus

efforts on overcoming any resistance or friction. It is important to realise that strategic adoption of a technology is not guaranteed by the presence of a “champion” at a senior management level but an alignment between organisational culture and community group perceptions has to be achieved for successful adoption of an initiative. This implies that technology adoption studies should include contextual and environmental issues and practitioners should examine how much their decision making is influenced by organisational and environmental features.

The implications of e-marketplace trading for organisations are contextually dependent and there are many organisations that do not participate in e-marketplace trading. However, most organisations have the necessary infrastructure to do so. The development of e-marketplace services and increasing community acceptance of electronic procurement, both organisational and personal, will contribute to the future role of e-marketplaces in organisational procurement. Consolidation of successful e-marketplaces gives the e-marketplace vendor more reach into the marketplace and the resources to promote e-marketplace services across a wider network of potential participants. It also means less e-marketplace vendor choice for participants which could induce more organisations to participate as it legitimates the procurement role of the e-marketplace.

Procurement can occupy a strategic role within the organisation by promoting its value generating capacity. The use of an e-marketplace reduces the necessity for an operational or transaction processing focus. Automation of these processes allows procurement to focus attention on more strategic initiatives which should involve building relationships within the organisation and with suppliers. Internal relationships can build organisational knowledge and lead to better procurement outcomes for clients. The reduction in process transaction time can be used to evaluate contract management procedures and develop supplier relationships. Positive relationships with suppliers support effective contract fulfilment, efficient order processing and reduce supplier distrust. Promoting procurement objectives and reporting results across departments and agencies will raise organisational awareness of procurement and ensure initiatives are considered worthwhile.

Organisational adoption of a technology can circumscribe the use of the technology and prevent it being used in new or innovative ways. Personal or micro influences on technology adoption and its use are weakened as outcomes and practice from previous decisions become institutionalised in organisational structures and procedures. The longer a technology has been appropriated into the organisation the more difficult it is to establish innovative or new ways to use it.

The study found that there are many influences on e-marketplace participation and formal cost/benefit analysis is one aspect of the participation decision. However, organisations did not associate competitive advantage, revenue growth or improved product quality in the evaluation of e-marketplace participation. This indifference, and the implementation of some cost/benefit analysis, illustrate that e-marketplace technology is established in organisational thinking as a procurement tool that can generate efficiency and reduce costs. Much of the evaluation of the benefits of e-marketplace trading is centred on perceptions and interpretations of the outcomes. Organising visions incorporate interpretations of the community discourse around phenomena, and perceptions of the phenomena are formed and re-formed through the community discourse.

E-marketplace vendors act as consultants to organisations adopting the e-marketplace technology and can tailor their service and the technology offered to meet organisational requirements. They form important links between buyers and suppliers by providing both technical and relational capability. This forms an outsourced, relational network between the buyer and supplier and the e-marketplace vendor, where each participant has a share in the value created by the relationship when they participate in an e-marketplace trading event. The e-marketplace vendor also contributes to the community discourse and the more political or economic power the participant organisations have the more influential they will be in promoting an organising vision of a technology or service.

The consolidation of large software and technology providers with e-marketplace vendors ensures the continuing growth of e-marketplace services in the B2B area. The evolution of community knowledge, experience of e-commerce and familiarity with

internet procurement will also continue to facilitate the evolution of the e-marketplace in B2B, B2C and C2C transactions.

# REFERENCES

- Abrahamson, E. (1996). Management fashion. *Academy of Management Review*, 21(1), 254 - 285.
- Abrahamson, E., & Fairchild, G. (1999). Management fashion lifecycles, triggers, and collective learning processes. *Administrative Science Quarterly*, 44(4), 708-740.
- Agrawal, M., Hariharan, G., Kishore, R., & Rao, H. R. (2005). Matching intermediaries for information goods in the presence of direct search: an examination of switching costs and obsolescence of information. *Decision Support Systems*, 41(1), 20-36.
- Amit, R., & Zott, C. (2001). Value creation in e-business. *Strategic Management Journal*, 22(6/7), 493-520.
- Anandalingam, G., Day, R. W., & Raghavan, S. (2005). The landscape of electronic market design. *Management Science*, 51(3), 316-327.
- Archer, M. S. (1995). *Realist social theory: the morphogenetic approach*. Cambridge: Cambridge University Press.
- Arend, R. J., & Lévesque, M. (2010). Is the resource-based view a practical organizational theory? *Organization Science*, 21(4), 913 - 930
- Armstrong, C. E., & Shimizu, K. (2007). A review of approaches to empirical research on the resource-based view of the firm. *Journal of Management*, 33( 6), 959-986.
- Astbury, B., & Leeuw, F. L. (2010). Unpacking black boxes: Mechanisms and theory building in evaluation. *American Journal of Evaluation* 31(3), 363.
- Bailey, J. P., & Bakos, Y. (1997). An exploratory study of the emerging role of electronic intermediaries. *International Journal of Electronic Commerce*, 1(3), 7-20.
- Bakos, Y. J. (1991). A strategic analysis of electronic marketplaces. *MIS Quarterly*, 15(3), 295-310.
- Bakos, Y. J. (1997). Reducing buyer search costs: implications for electronic marketplaces. *Management Science*, 43(12), 1676-1692.
- Bakos, Y. J. (1998). The emerging role of electronic marketplaces on the Internet. *Communications of the ACM*, 41(8), 35-42.
- Bandyopadhyay, S., Barron, J. M., & Chaturvedi, A. R. (2005). Competition among sellers in online exchanges. *Information Systems Research*, 16(1), 47-60.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Baskerville, R. L., & Myers, M. D. (2009). Fashion waves in information systems research and practice. *MIS Quarterly*, 33(4), 647-662.
- Bhaskar, R. (1978). *A realist theory of science*. Hemel Hempstead: Harvester Press.
- Bhatt, G. D., & Grover, V. (2005). Types of information technology capabilities and their role in competitive advantage: an empirical study. *Journal of Management Information Systems*, 22(2), 253-277.
- Blundel, R. (2007). Critical realism: a suitable vehicle for entrepreneurship research? In H. Neergaard & J. P. Ulhoi (Eds.), *Handbook of qualitative research methods in entrepreneurship* (pp. 49-74). Cheltenham: Edward Elgar Publishing Limited.
- Bowman, C., & Ambrosini, V. (2000). Value creation versus value capture: Towards a coherent definition of value in strategy. *British Journal of Management*, 11(1), 1-15.

- Brennan, R. (2006). Evolutionary economics and the markets-as-networks approach. *Industrial Marketing Management*, 35(7), 829-838.
- Brynjolfsson, E., & Hitt, L. M. (1998). Beyond the productivity paradox of information technology. *Communications of the ACM*, 41(8), 49-55.
- Carroll, J., & Swatman, P. A. (2000). Structured case: a methodological framework for building theory in information systems research. *European Journal of Information Systems*, 9(4), 235-242.
- Cazier, J. A., Shao, B. B., & St Louis, R. D. (2006). E-business differentiation through value-based trust. *Information and Management*, 43(6), 718-727.
- Chelariu, C., & Sangtani, V. (2009). Relational governance in B2B electronic market place: an updated typology. *Journal of Business and Industrial Marketing*, 24(2), 108-118.
- Chen, R. R., Roundy, R. O., Zhang, R. Q., & Janakiraman, G. (2005). Efficient auction mechanisms for supply chain procurement. *Management Science*, 51(3), 467-482.
- Choudhury, V., Hartzel, K. S., & Konsynski, B. R. (1998). Uses and consequences of electronic markets: an empirical investigation in the aircraft parts industry. *MIS Quarterly*, 22(4), 471.
- Christiaanse, E. (2005). Performance benefits through integration hubs. *Communications of the ACM*, 48(4), 95-100.
- Christiaanse, E., Van Diepen, T., & Damsgaard, J. (2004). Proprietary versus internet technologies and the adoption and impact of electronic marketplaces. *The Journal of Strategic Information Systems*, 13(2), 151-165.
- Clemons, E. K., Reddi, S. P., & Row, M. C. (1993). The impact of information technology on the organization of production: the "move to the middle" hypothesis. *Journal of Management Information Systems*, 10(2), 9-35.
- Clemons, E. K., & Row, M. C. (1993). Limits to interfirm coordination through information technology: results of a field study in consumer goods distribution. *Journal of Management Information Systems*, 10(1), 73-95.
- Cordella, A. (2006). Transaction costs and information systems: does IT add up? *Journal of Information Technology* 21(3), 195.
- Crotty, M. (1998). *The foundations of social research. Meaning and perspective in the research process*. Crows Nest: Allen & Unwin.
- Dai, Q., & Kauffman, R. J. (2006). To be or not to B2B: Evaluating managerial choices for e-procurement channel adoption. *Information Technology and Management*, 7, 109-130.
- Damsgaard, J. (1999). Global logistics system Asia Co., Ltd. *Journal of Information Technology*, 14(3), 303-314.
- Danermark, B., Ekström, M., Jakobsen, L., & Karlsson, J. C. (2002). *Explaining society. Critical realism in the social sciences*. London: Routledge.
- Day, R. W., & Raghavan, S. (2008). A combinatorial procurement auction featuring bundle price revelation without free-riding. *Decision Support Systems*, 44(3), 621-640.
- Devaraj, S., & Kohli, R. (2003). Performance impacts of information technology: Is actual usage the missing link? . *Management Science*, 49(3), 273-279.
- Dobson, P. J. (2001). The philosophy of critical realism - an opportunity for information systems research. *Information Systems Frontiers*, 3(2), 199-210.
- Doolin, B. (2003). Narratives of change: discourse, technology and organization. *Organization*, 10(4), 751-770.

- Doty, D., Glick, H., & Huber, P. (1993). Fit, equifinality, and organizational effectiveness: a test of two configurational theories. *Academy of Management Journal*, 36(6), 1196-1250.
- Driedonks, C., Gregor, S., Wassenaar, A., & van Heck, E. (2005). Economic and social analysis of the adoption of B2B electronic marketplaces: a case study in the Australian beef industry. *International Journal of Electronic Commerce*, 9(3), 49-72.
- Dyer, J. H., & Singh, H. (1998). The relational view: cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*, 23(4), 660-679.
- Easton, G. (2010). Critical realism in case study research. *Industrial Marketing Management*, 39, 118-128.
- Emarketservices. (2012). from [www.emarketservices.com](http://www.emarketservices.com)
- The European e-business report 2008. The impact of ICT and e-business on firms, sectors and the economy. (2008). *6th Synthesis Report of the Sectoral e-Business Watch*. Retrieved from [http://ec.europa.eu/enterprise/archives/e-business-watch/key\\_reports/documents/EBR08.pdf](http://ec.europa.eu/enterprise/archives/e-business-watch/key_reports/documents/EBR08.pdf)
- Exclusive dealing and third line forcing (s47). (2011). Retrieved from Australian Competition and Consumer Commission website: <http://www.accc.gov.au/content/index.phtml/itemId/816377>
- Fairclough, N. (2005). Discourse analysis in organization studies: The case for critical realism. *Organization Studies*, 26(6), 915-939.
- Fawcett, S. E., Magnan, G. M., & McCarter, M. W. (2008). Benefits, barriers, and bridges to effective supply chain management. *Supply Chain Management: An International Journal*, 13(1), 35-48.
- Fleetwood, S. (2004). An ontology for organization and management studies. In S. Fleetwood & S. Ackroyd (Eds.), *Critical realist applications in organization and management studies* (pp. 27-53). New York: Routledge.
- Fleetwood, S. (2005). Ontology in organization and management studies: A critical realist perspective. *Organization*, 12(2), 197-222.
- Gill, G., & Bhattacharjee, A. (2009). Fashion waves versus informing: response to Baskerville and Myers. *MIS Quarterly*, 33(4), 667-671.
- Glassberg, B. C., & Merhout, J. W. (2007). Electronic markets hypothesis redux: where are we now? *Communications of the ACM*, 50(2), 51-55.
- Grewal, R., Comer, J. M., & Mehta, R. (2001). An investigation into the antecedents of organizational participation in business electronic markets. *Journal of Marketing*, 65(3), 17-33.
- Grieger, M. (2004). An empirical study of business processes across internet-based electronic marketplaces: a supply-chain-management perspective. *Business Process Management Journal*, 10, 80-100.
- Grover, V., Lim, J., & Ayyagari, R. (2006). The dark side of information and market efficiency in e-markets. [empirical]. *Decision Sciences*, 37(3), 297.
- Grover, V., & Ramanlal, P. (1999). Six myths of information markets: information technology networks, electronic commerce, and the battle for consumer surplus. *MIS Quarterly*, 23(4), 465.
- Grover, V., Ramanlal, P., & Segars, A. H. (1999). Information exchange in electronic markets: implications for market structures. *International Journal of Electronic Commerce*, 3(4), 89.

- Hackney, R., Burn, J., & Salazar, A. (2004). Strategies for value creation in electronic markets: towards a framework for managing evolutionary change. *The Journal of Strategic Information Systems*, 13(2), 91-103.
- Hartley, J. L., Lane, M. D., & Hong, Y. (2004). An exploration of the adoption of E-auctions in supply management. *IEEE transactions on engineering management* 51(2), 153-161.
- Hempel, P. S., & Kwong, Y. K. (2001). B2B e-Commerce in emerging economies: i-metal.com's non-ferrous metals exchange in China. *The Journal of Strategic Information Systems*, 10(4), 335-355.
- Holland, C. P., & Lockett, A. G. (1997). Mixed mode network structures: the strategic use of electronic communication by organizations. *Organization Science*, 8(5), 475-488.
- Holttinen, H. (2010). Social practices as units of value creation: theoretical underpinnings and implications. *International Journal of Quality and Service Science*, 2(1), 95-112.
- Hubwoo. (2012). Financial Information for Q3 2012 Retrieved Nov 2012, from <http://www.hubwoo.com/news-posts/hubwoo-announces-financial-information-for-q3-2012-2/>
- Jap, S. D. (2002). Online reverse auctions: issues, themes and prospects for the future. *Academy of Marketing Science*, 30(4), 506-525.
- Jin, B. (2006). Performance implications of information technology implementation in an apparel supply chain. *Supply Chain Management: An International Journal*, 11(4), 309-316.
- Kaplan, S., & Sawhey, M. (2000). E-hubs: the new B2B marketplaces. *Harvard Business Review*, 78(3), 97-103.
- Kraaijenbrink, J., Spender, J.-C., & Groen, A. J. (2010). The resource-based view: a review and assessment of its critiques. *Journal of Management*, 36(1), 349-371.
- Leca, B., & Naccache, P. (2006). A critical realist approach to institutional entrepreneurship. *Organization*, 13(5), 627-651.
- Lee, H. L., So, K. C., & Tang, C. S. (2000). The value of information sharing in a two-level supply chain. *Management Science*, 46, 626-643.
- Leidner, D. E., & Kayworth, T. (2006). Review: A review of culture in information systems research: toward a theory of information technology culture conflict. *MIS Quarterly*, 30(2), 357-399.
- Loeffler, K. (Producer). (2012, Nov 2012). Intercontinental Exchange Management Discusses Q3 2012 Results - Earnings Call Transcript. [Transcript of speech] Retrieved from <http://seekingalpha.com/article/979291-intercontinentalexchange-management-discusses-q3-2012-results-earnings-call-transcript>
- Mahoney, J. (2001). Beyond correlational analysis: Recent innovations in theory and method social mechanisms: An analytical approach to social theory by Peter Hedström; Richard Swedberg; Fuzzy-Set social science by Charles C. Ragin. Review by: James Mahoney. *Sociological Forum*, 16(3), 575-593.
- Malone, T. W., Yates, J., & Benjamin, R. I. (1987). Electronic markets and electronic hierarchies. *Communications of the ACM*, 30(6), 484-497.
- McLeod, L., & Doolin, B. (2012). Information systems development as situated socio-technical change: a process approach. *European Journal of Information Systems*, 21(2), 176-191. doi: 10.1057/ejis.2011.43

- Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Information technology and organizational performance: an integrative model of IT business value. *MIS Quarterly*, 28(2), 283-322.
- Merton, R. K. (1968). *Social theory and social structure* (enl ed.). New York: Free Press.
- Miller, K. D., & Tsang, E. W. K. (2011). Testing management theories: critical realist philosophy and research methods. *Journal of Strategic Management*, 32(2), 139-158.
- Mithas, S., Jones, J. L., & Mitchell, W. (2008). Buyer intention to use internet-enabled reverse auctions: the role of asset specificity, product specialization and non-contractibility. *MIS Quarterly*, 32(4), 705-724.
- Morton, P. (2006). Using Critical Realism To Explain Strategic Information Systems Planning. *Journal of Information Technology Theory and Application (JITTA)*, 8(1), 1-20.
- Mukhopadhyay, T., & Kekre, S. (2002). Strategic and operational benefits of electronic integration in B2B procurement processes. *Management Science*, 48(10), 1301-1313.
- Mutch, A. (2010). Technology, organization and structure - A morphogenetic approach. *Organization Science*, 21(2), 507-520.
- National Statement on Ethical Conduct in Human Research. (2007). Retrieved from Australian Government. National Health and Research Council website: <http://www.nhmrc.gov.au/publications/synopses/e72syn.htm>
- NeRPA. (2006). Report on the Findings of the 2005-2006 Australian National E-Procurement Survey, 2008, from [http://ses.library.usyd.edu.au/bitstream/2123/1227/1/2005\\_NeRPASurveyReport.pdf](http://ses.library.usyd.edu.au/bitstream/2123/1227/1/2005_NeRPASurveyReport.pdf)
- New South Wales Procurement Information. (2004). Retrieved from NSW Procurepoint website: <http://www.procurepoint.nsw.gov.au/policies/nsw-government-procurement-information>
- Newbert, S. L. (2007). Empirical research on the resource-based view of the firm: an assesment and suggestions for future research. *Strategic Management Journal*, 28, 121-146.
- Oh, W., & Pinsonneault, A. (2007). On the assessment of the strategic value of information technologies: conceptual and analytical approaches. *MIS Quarterly*, 31(2), 239-266.
- Oliver, C. (1991). Strategic responses to institutional processes. *Academy of Management Review*, 16(1), 145-179.
- Orlikowski, W. J., & Barley, S. R. (2001). Technology and institutions: what can research on information technology and research on organizations learn from each other? *MIS Quarterly*, 25(2), 145-165.
- Orlikowski, W. J., & Baroudi, J. J. (1991). Studying information technology in organizations: research approaches and assumptions. *Information Systems Research*, 2(1), 1-28.
- Pagani, M. (2012). Digital business strategy and value creation: Framing the dynamic cycle of control points *MIS Quarterly*, 37(forthcoming).
- Parkes, D. C., & Kalaganam, J. (2005). Models for iterative multiattribute procurement auctions. *Management Science*, 51(3), 435-451.
- Pavlou, P. A. (2002). Institution-based trust in interorganizational exchange relationships: the role of online B2B marketplaces on trust formation. *The Journal of Strategic Information Systems*, 11(3-4), 215-243.

- Pavlou, P. A., & El Sawy, O. A. (2010). IT-enabled competitive advantage in turbulence through improvisational capabilities. *Information Systems Research*, 21(3), 443-471.
- Pawson, R. (2006). *Evidence-based policy. A realist perspective*. London: Sage.
- Pawson, R., & Tilley, N. (1997). *Realist evaluation*. London: Sage.
- Phan, D. D. (2003). E-business development for competitive advantages: a case study. *Information and Management*, 40(6), 581-590.
- Piccoli, G., & Ives, B. (2005). IT-dependent strategic initiatives and sustained competitive advantage: a review and synthesis of the literature. *MIS Quarterly*, 29(4), 747-776.
- Porter, M. E. (1980). *Competitive strategy. Techniques for analyzing industries and competitors*. New York: The Free Press.
- Porter, M. E. (2001). Strategy and the internet. *Harvard Business Review*, 79(3), 63-78.
- Porter, M. E. (2008). The five competitive forces that shape strategy. *Harvard Business Review*, 79(3), 79-93.
- Power, D. (2005). Determinants of business-to-business e-commerce implementation and performance: A structural model. *Supply Chain Management: An International Journal*, 12(2), 104-115.
- Premkumar, G. P. (2003). Perspectives of the E-Marketplace by multiple stakeholders. *Communications of the ACM*, 46(12), 279-288.
- Prieto, M. I., & Easterby-Smith, M. (2006). Dynamic capabilities and the role of organizational knowledge: an exploration. *European Journal of Information Systems*, 15(5), 500-510.
- Radescu, C., & Vessey, I. (2009). *Methodology in critical realist research: the mediating role of domain-specific theory*. Paper presented at the AMCIS 2009.
- Rai, A., Patnayakuni, R., & Seth, N. (2006). Firm performance impacts of digitally enabled supply chain integration capabilities. *MIS Quarterly*, 30(2), 225-246.
- Ratnasingham, P. (2005). Trust in inter-organizational exchanges: a case study in business to business electronic commerce. *Decision Support Systems*, 39(3), 525-544.
- Ravichandran, T., Pant, S., & Chatterjee, D. (2007). Impact of industry structure and product characteristics on the structure of B2B vertical hubs. *IEEE Transactions on Engineering Management*, 54(3), 506-521.
- Remenyi, D., Williams, B., Money, A., & Swartz, E. (1998). *Doing research in business and management. An introduction to process and method*. London: Sage Publications Inc.
- Rogers, E. M. (2003). *The diffusion of innovations* (5th ed.). New York: Free Press.
- Sayer, A. (1992). *Method in social science. A realist approach* (2nd ed.). London: Hutchinson.
- Sayer, A. (2010). Method in social science: Revised 2nd edition Retrieved from <http://ECU.ebib.com.au/patron/FullRecord.aspx?p=488040>
- Scott, W. R. (2003). *Organizations: rational, natural and open systems*. New Jersey: Pearson Hall.
- Sebastiao, H. J., & Golicic, S. (2008). Supply chain strategy for nascent firms in emerging technology markets. *Journal of Business Logistics*, 29(1), 75-91. doi: 10.1002/j.2158-1592.2008.tb00069.x
- ShipServ. (2012). Save time and money with TradeNet Retrieved Nov 2012, from <http://www.shipserv.com/info/save-time-and-money-with-tradenet/>

- Smith, M. L. (2010). Testable theory development for small-n studies: critical realism and middle-range theory. *International Journal of Information Technologies and Systems Approach*, 3(1), 41-56.
- Soh, C., Markus, L. M., & Goh, K. H. (2006). Electronic marketplaces and price transparency: strategy, information technology, and success. *MIS Quarterly*, 30(3), 705-723.
- Son, J.-Y., & Benbasat, I. (2007). Organizational buyers' adoption and use of B2B electronic marketplaces: Efficiency- and legitimacy-oriented perspectives *Journal of Management Information Systems*, 24(1), 55 - 99
- Standing, C., & Lin, C. (2007). Organizational evaluation of the benefits, constraints, and satisfaction of business-to-business electronic commerce. *International Journal of Electronic Commerce*, 11(3), 107.
- Standing, C., Love, P., E D, Stockdale, R., & Gengatharen, D. (2006). Examining the relationship between electronic marketplace strategy and structure. *IEEE Transactions on Engineering Management*, 53(2), 297-311.
- Standing, C., Sims, I., & Love, P. E. D. (2009). IT non-conformity in the institutional environments: E-marketplace adoption in the government sector. *Information and Management*, 46(2), 138-149.
- Standing, C., & Standing, S. (2009). The relationship between electronic marketplace strategy and structure. In C. Standing (Ed.), *Electronic markets: benefits, costs and risks* (pp. 133-159). Basingstoke: Palgrave MacMillan.
- Standing, C., Stockdale, R., & Love, P., E D. (2007). Leveraging global markets: lessons from Alcoa Alumina. *International Journal of Information Management*, 27(6), 432-437.
- Standing, S., Standing, C., & Love, P. E. D. (2010). A review of research on e-marketplaces 1997-2008. *Decision Support Systems*, 49(1), 41-51.
- Subramani, M. (2004). How do suppliers benefit from information technology use in supply chain relationships? *MIS Quarterly*, 28(1), 45-74.
- Swanson, E. B. (2010). Consultancies and Capabilities in Innovating with IT. *Journal of Strategic Information Systems*, 19(1), 17-27.
- Swanson, E. B., & Ramiller, N. C. (1997). The organizing vision in information systems innovation. *Organization Science*, 8( 5), 458-474.
- Swanson, E. B., & Ramiller, N. C. (2004). Innovating mindfully with information technology. *MIS Quarterly*, 28(4), 553-583.
- Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28, 1319-1350.
- Teece, D. J. (2009). *Dynamic capabilities and strategic management. Organizing for innovation and growth*. Oxford; New York: Oxford University Press.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533.
- Teo, T. S. H., Ang, J. S. K., & Pavri, F. N. (1997). The state of strategic IS planning practices in Singapore. *Information and Management*, 33, 13-23.
- Tsang, E. W. K., & Kwan, K.-M. (1999). Replication and theory development in organizational science: a critical realist perspective. *The Academy of Management Review*, 24(4), 759-780.
- Uzzi, B. (1997). Social structure and competition in interfirm networks: the paradox of embeddedness. *Administrative Science Quarterly*, 42(1), 35-67.

- Vargo, S. L., & Lusch, R. F. (2008). Service dominant-logic: continuing the evolution. *Journal of the Academy of Marketing Science*, 36(1), 1-10. doi: 10.1007/s11747-007-0069-6
- Wade, C., & Gimble, S. (2010). Retroductive analogy: how to and how not to make claims of good reasons to believe in evolutionary and anti-evolutionary hypotheses. *Argumentation*, 24(1), 71-84.
- Wade, M., & Hulland, J. (2004). The resource-based view and information systems research: review, extension, and suggestions for future research. *MIS Quarterly*, 28(1), 107-142.
- Walsham, G. (1995). Interpretive case studies in IS research: nature and method. *European Journal of Information Systems*, 4(2), 74-81.
- Wang, P. (2009). Popular concepts beyond organizations: exploring new dimensions of information technology innovations. *Journal of the Association for Information Systems*, 10(1), 1-30.
- Wang, P., & Ramiller, N. C. (2009). Community Learning in Information Technology Innovation. *MIS Quarterly* 33(4), 709-734.
- Wareham, J., Zheng, J. G., & Straub, D. (2005). Critical themes in electronic commerce research: a meta-analysis. *Journal of Information Technology*, 20(1), 1.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180.
- White, A., Daniel, E., Ward, J., & Wilson, H. (2007). The adoption of consortium B2B e-marketplaces: An exploratory study. *The Journal of Strategic Information Systems*, 16(1), 71-103.
- Williamson, O. E. (1975). *Markets and hierarchies, analysis and antitrust implications: a study in the economics of internal organisation*. New York: Free Press.
- Williamson, O. E. (1979). Transaction-cost economics: the governance of contractual relations. *Journal of Law and Economics*, 22(2), 233-261.
- Wynn, D., Jr, & Williams, C. K. (2012). Principles for conducting critical realist case study research in information systems. *MIS Quarterly*, 36(3), 787-810.
- Yin, R. K. (2009). *Case study research: design and methods* (4th ed.). Thousand Oaks: Sage Publications Ltd.
- Yu, C.-S. (2007). What drives enterprises to trading via B2B e-marketplaces? *Journal of Electronic Commerce Research*, 8(1), 84-100.
- Zahedi, F. M., Bansal, G., & Ische, J. (2010). Success factors in cooperative online marketplaces: trust as the social capital and value generator in vendors-exchange relationships. *Journal of Organizational Computing and Electronic Commerce*, 20(4), 295-327.
- Zhang, C., & Dhaliwal, J. (2009). An investigation of resource-based and institutional theoretic factors in technology adoption for supply chain management. *International Journal of Production Economics*, 120(1), 252-269.
- Zhao, K., Xia, M., Shaw, M. J., & Subramaniam, C. (2009). The sustainability of B2B e-marketplaces: Ownership structure, market competition, and prior buyer-seller connections. *Decision Support Systems*, 47(2), 105-114. doi: 10.1016/j.dss.2009.01.005
- Zhu, K. (2004). Information transparency of Business-to-business electronic markets: a game theoretic analysis. *Management Science*, 50(5), 670-685.
- Zhu, K., Kraemer, K. L., & Xu, S. (2006). The process of innovation assimilation by firms in different countries: a technology diffusion perspective on e-business. *Management Science*, 52(10), 1557-1576.