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**CORPORATE REAL ESTATE MANAGEMENT AS A SOURCE OF
COMPETITIVE ADVANTAGE**

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Abstract: *Organisational competitive advantage is a recent general management literature theme. Corporate Real Estate (CRE) as an organisational resource capable of improving organisational competitiveness is under-recognised. For CRE and its management to fully support a competitive organisation it is thought to be essential that CRE practices align with the organisational competitive positioning and its sources of competitive advantage.*

This paper presents part of a study of competitive advantage and CRE management (CREM) practices as a step towards recognising CRE's competitive contribution. A model of sustainable competitive advantage is introduced that contains theorised connections between CREM practices and Sources of Competitive Advantage (SCAs). Three advantages – Cost, Differentiation and Innovation – were identified and modelled.

An empirical study of Australian CRE managers was then conducted to test the model and establish which competitive advantages were used. Of the three Sources of Competitive Advantage, Cost predominated, both in the model and the empirical data. The empirical study establishes the viability of the model as a useful device for CRE managers to evaluate their CRE practices and align their CREM with organisational modes of competition and competitive advantage.

Keywords: *Australia, Corporate Real Estate, competitive advantage, firm competitiveness, management practices,*

Introduction

Background to the research

Competitiveness in corporations is a recent theme in the general management literature. Porter is widely considered to be the landmark author in this field, explicitly introducing notions of ‘competitive strategy’ (Porter, 1980), ‘competitive forces’ and ‘competitive advantage’ (Porter, 1985). At least two conceptualisations of organisational competitiveness can be identified. The first is a market based position where a firm’s market position – its competitiveness – is determined by its ability to generate performance superior to other firms with similar value offerings to the market – its competitors (Gatignon and Xuereb, 1997; Hamel and Prahalad, 1994; Han et al., 1998). The second conceptualisation is that of competitiveness equating to a firm’s sustainable growth rate relative to its competitors. A firm that outperforms its competitors can be said to enjoy a *competitive advantage* over them and is superior in dealing with competitive forces (Bartol and Martin, 1994).

The connection between Corporate Real Estate (CRE) and organisational competitiveness is rarely considered in the literature (Roulac, 2001). For example, landmark strategic management texts by Kaplan and Norton (2006) and Porter (1985) argue for the alignment of disparate organisational business units and functions to provide a diversified enterprise with value over and above that created by the disparate parts. They both go on to analyse the strategic alignment of every organisational resources except CRE! However, a number of themes have emerged in the CRE literature that makes a similar connection between CRE and organisational success. These include:

- The alignment of CRE and organisational strategy (Englert, 2001; Nourse and Roulac, 1993; O'Mara, 1999a; Roulac, 2001);
- CRE’s value to the organisation (Lindholm and Gibler, 2006; Lindholm and Levainen, 2006; McDonagh, 2002);
- Management of relationships between CRE and organisations (McCarty et al., 2006); and
- That CRE is an under recognised resource (Joroff et al., 1993), and that integration of CRE and other organisational infrastructure resources will provide additional value to the organisation (Dunn et al., 2004; Materna and Parker, 1998).

Recognising resources as important for firm success adopts a *Resource-Based View* (RBV) of firm. This is an inside-out perspective of organisations where a firm’s internal environment – resources and capabilities – are used to account for success, or competitiveness relative to other firms in the same market (Rumelt, 1984; Teece, 1984). Analysing firm activities in terms of a *value chain* similarly adopts an internal perspective of the value-adding organisational activities (Porter, 1985). Outside-in perspectives include competitive forces (Porter, 1980), analysis of individual firm’s competitive positions (McAleese, 1989), and customer or competitor orientated market approaches (Bradmore, 1995; Day, 1997).

For the RBV, resources define the firm’s areas of strength and weakness relative to its competitors with profits the ultimate return for the resources owned or controlled by the firm (Grant, 1993). In addition, successful long-run strategies will be derived from the unique resources possessed by firms (Wernerfelt, 1984 & 1995). The durability, or sustainability, of a firm’s competitiveness is determined by the uniqueness, or imitability, of those resources. These resources could be tangible, such as raw materials for production, or intangible, such as knowledge or management processes uniquely held within the firm (Hall, 1993; Itami and Roehl, 1987; Michalisin et al., 1997).

CRE is an important organisational resource on, at least, two levels. Firstly, CRE is a tangible resource being the *place* (physical environment) where people and technology interact in the doing of business (O'Mara, 1999b, 2-3). This physical environment may be dimensionalised as location (*place*) and workplace (*space* of production) (Roulac, 2001), and is capable of influencing individual and organisational behaviour (O'Mara, 1999b, 17). Secondly, CRE management practices are intangible resources that, as part of a firm's capability, facilitate organisational strategy in achieving competitive advantage.

CREM practices are diverse, encompassing more than the physical environment practices noted above. The following eleven categories have been identified from a study of the literature:

CRE unit practices

- Organisational practices;
- Strategic practices;
- CRE decision-making practices;

CRE technical practices

- CRE Holding practices;
- CRE financing practices, which could be either practices in the financing of CRE, or using CRE to create financial benefit;
- Practices in accounting for CRE, which may be how CRE is priced to the organisation, or dealt with as an accounting requirement;
- Location/site selection practices;
- Workplace practices;
- CRE IT practices, which could be use practices or tools;
- Use of metrics; and
- Use of benchmarking (CREAM Research Group, 2000).¹

See *Appendix 1 – Glossary of categories of CREM practice and activities* for further explanation of the above categories.

Connecting CREM practice and competitiveness

Though rare in the CRE literature, there has been some consideration of CRE and organisational competitiveness. Roulac (2001) theorises contributions of *space* and *place* to the following seven sources of competitive advantage:

- Create and retain customers;
- Attract and retain outstanding people;
- Contribute to effective business processes;
- Promote enterprise values and culture;
- Stimulate innovation and learning;
- Impact core competency; and
- Enhance shareholder wealth.

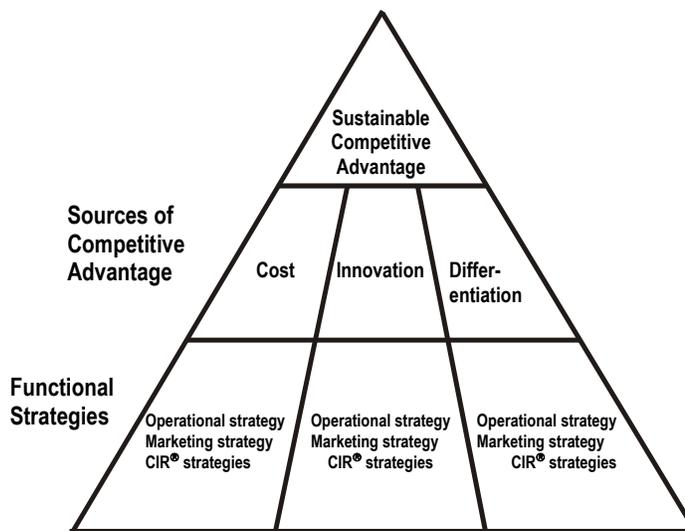
However, these are more tactical means of competitive advantage rather than strategic ones (within a Strategic, Tactical, and Operational conceptualisation of strategy). Burns (2002) hypothesises that CRE may contribute to competitiveness through value creation as both a tangible, physical asset and also as an intangible asset through support of workforce and organisational climate. O'Mara's (1999b) study of managing CRE for competitive advantage does so from the perspective of external competitive forces (Porter's 5 forces) and how real estate responses to the forces or facilitates competitiveness. She notes three broad competitive

¹ Kenley et al. (2000) contains a preliminary publication of this work, where the categories are slightly different.

strategies for organisations derived from Porter's work, and, consequentially, for organisations' CRE – *cost*, *differentiation*, and *focus* (O'Mara, 1999b). All these contributions to competitiveness, primarily, derive from the physical environment itself, though it has also been noted that CREM practices also provide value useful to an organisation in a competitive scenario (McDonagh, 2002).

The CRE-competitiveness literature is quite limited. Where it exists it rarely defines concepts of competitiveness and competitive advantage and uses a limited number of models of competitiveness. The resource-based view of firms, in use in the field, is not considered, nor is considered that CRE management provides an intangible organisational asset. To provide a more comprehensive examination of how to manage CRE for competitive purposes, the Corporate Real Estate and Asset Management (CREAM) Research Group at the University of Melbourne developed a theoretical model that depicts the relationship between CRE management practices and firm competitiveness (Figure 1)

Figure 1 Modelling CRE and organisational competitiveness



This model, developed from relevant business and management literature and the available CRE literature, provides for links to competitiveness through two levels of mechanisms. The first level is through corporate competitiveness modelled as deriving from three *Sources of Competitive Advantage* (SCAs), or ways of competing – *Cost*, *Differentiation* and *Innovation* (C/D/I). This level is indebted to Porter's competitive strategies, however, his *focus* and *differentiation* were thought to conceptualise the same dimension, while organisational innovation theory suggested innovation is a required competitive strategy to provide enduring competitiveness. The model suggests that this is achieved in concert with one of the other two SCAs. The second level mechanism is that of *Functional Strategies* that conceptualises organisations as bundles of business functions (such as Operations, Marketing, Financial, Human Resources, Information and Technology) that are required to achieve organisational objectives. By working through strategies for the functional area impacts are made on the SCAs. This model treats Operations (production) and Marketing (selling) functions as being core organisational functions and, drawing on the infrastructure resources model from

Materna and Parker (1998), the Corporate Infrastructure Resource[®] (CIR[®])² platform to account for the production and selling supporting functions as CRE as part of the CIR[®] function, depending on how it is used or managed, may have positive or negative impacts on organisational competitiveness. A full explanation of the mechanism is beyond the scope of this paper and is intended to be discussed more fulsomely in future.

CREM practices were grouped into eleven clusters of thematically linked practices within 2 broad classifications – see Appendix 1 for a full listing. There were a total of 179 practices clustered into similar types³. Clustering was used as it was unlikely that a single practice would have significant effects, whereas a cluster may. This also makes the analysis (more) tractable.

One broad classification is CRE Unit Practices being those relating to the organisation of CREM or belonging to the organisation as a whole. The second broad classification contains eight clusters of CRE Technical Practices, which are CRE, or property specific practices and constitute the core competency of CRE practice. Technical practices had also been subject to survey since 1996 ((Bon, 1996) was the first report, and (Gibson and Luck, 2006) the most recent), though not as exhaustively as here. Several clusters had sub-clusters which, when considered separately, provide the twelve categories used in the results tables, below. The hypothetical model connects between the CREM practices (through the business functional area strategies) to the SCAs. It is possible that a CREM practice connects to one or more of the functional areas and thence to the SCAs.

To support the model, definitions of specific practices were developed from the management and CRE literature (see (Kenley et al., 2000) for initial reporting of these definitions). Practices were broadly defined, for this study, as activities or methods of executing activities. They may be customary actions or established methods of proceeding (derived from *Oxford English Dictionary*).

Research problem and Aim

The CREAM Research Group's overarching study examined the contribution CRE, and its management, make to organisational competitiveness. That study investigated a number of aspects as the research instrument that was developed allowed analysis of strategic evolution of CREM (Heywood et al., 2003), competitive behaviour, analysis of individual practices, the aggregations within the clusters of practices considered here, and more.

This paper reports the competitive contribution from clusters of the Technical CREM practices by identifying those practices that align with or support organisational competition.⁴ Two sub-questions relate, firstly, to how that contribution occurs, as predicted by the model, and, secondly, in the empirical data. Comparing the two will allow conclusions about the validity of the model. Finally, the empirical data also allows the identification of the competitive advantages that predominate in Australian CRE management.

² Corporate Infrastructure Resource[®] and CIR[®] are registered to the International Development Research Council (IDRC).

³ A further seven were identified as a result of the empirical study and twelve more were identified from Bon and Luck (1998). Interestingly, one of these practices – benchmarking – constitutes a cluster of six practices in this study.

⁴ Implementation of strategic CREM would expand the core competencies to include aspects of strategic management.

Methodology

Overview

A survey of corporate property managers was conducted to collect empirical data on the links between the CRE practices and *Sources of Competitive Advantage*. The survey questionnaire was divided into two parts. The first part surveyed the organisational practices as relating to CREM and the second part surveyed the technical practices and the relationship to competitive advantages. This second part asked survey respondents to classify whether the benefit of an individual technical practice to their organisation was positive, negative or neutral. This identified both the existence of a connection between practices and the *Sources of Competitive Advantage* (SCA), and the form of that connection. A reported positive, or negative, connection between a practice and the *Cost/Innovation/Differentiation* SCAs is the assessed competitive effect of a particular practice. The effect may be either a benefit from a practice being the competitive advantage derived from the practice, or a 'dis-benefit' where it retards competitive advantage.

Sampling

Survey participants were selected in two ways. Firstly, there was a mail-out of the questionnaire to 5 no. selected organisations to pilot the research instrument. As the responses from this method were variable, a second phase based on 1-hour interviews to complete the questionnaire with 10 no. senior property executives sampled from *Business Review Weekly's* Top 1000 Australian and New Zealand companies November 1999 ranking, ranked by total assets (Business Review Weekly, 1999). To obtain the sample of ten organisations forty organisations were identified for contact before the sample was filled. Organisations with Melbourne head offices were selected for ease of access and the likelihood that the organisation's head office contained the corporate property management functions.

The majority of subjects in the sample are commercial companies. However, some were government-funded entities, were semi-autonomous government business units, or had their historical origins as government business units. The asset value sampling method drew in these organisations, in addition to commercial enterprises, because of their substantial asset bases. As these government-based organisations are now operating on a more commercially accountable footing than historically, it was decided to retain them in the sample for the purposes of the study.

The ten organisation final sample of is not large, which raises concerns about the validity of generalisations and statistics applied to the data. However, in the context of forty organisations from the sample's geographic area the sample constitutes 25% of that possible sample.

Results

The extensive research instrument used in the overall study allowed several analyses of CREM practices and competitiveness. This paper, as noted above, focuses on the contribution to competitive advantage from clusters of Technical CREM practices. The paper does this in two ways – firstly, through calculating the theoretical contribution suggested from the literature, and secondly, by applying the same calculation to empirical data of the assessments of the competitive impact of the CREM practices.

Calculating the competitive effect

This analysis was at the level of the aggregate effect of practices in the clusters and sub-clusters of Technical CREM practices on each of the SCAs. The net effect of practices in each SCA was calculated by a two-step process for both the positive effects and the negative effects.

The first step is that the positive and negative connections (competitive effects) were totalled for each cluster. In this analysis the crucial phenomenon was that there was an effect, which may be positive, negative, or neutral. The quantum, or magnitude, of any effect could be calculated, but, given the number of practices under examination, this may be intractable as a whole, or not significant from an individual practice. More research is required to establish the quantum of effect of single practices. Neutral effects were omitted as this indicates that a practice, while used, had no competitive effect. As there are a different number of practices in each cluster the clusters were placed on an equivalent basis by converting them to a percentage competitive effect for each cluster (Equation 1, below). This may be expressed as follows:

Equation (1)

$$SCA_{\text{effect/cluster}} = \Sigma \text{practice connections} / \text{Total possible connections in the cluster} * 100$$

The second step calculated the effect for each of the SCAs from all the practice clusters by calculating an average across all the twelve clusters and sub-clusters of Technical practices (Equation 2, below). This gives a single positive and negative figure of competitive effect for each SCA and identifies which of the SCAs is affected the most, positively or negatively, by the CREM practices. This may be expressed as follows:

Equation (2)

$$SCA_{O/A \text{ effect}} = \Sigma SCA_{\text{effect/cluster}} / \text{no. of clusters}$$

Where no connection is identifiable, as was prevalent in the Financing practices cluster, this reduced the percentages for that cluster. However, this is not considered important as the relativity of the percentages was maintained because this problem was common to all of the SCAs.

The modelled connections

The first stage in establishing connections between CREM practices and competitiveness was to calculate the effects of those practices as suggested by the literature reviewed (Table 1, below).

From this table it may be seen that for five of the clusters (and for most of a sixth) no connection was able to be identified despite an exhaustive search of the literature at the time. This indicates that there is no theory, as yet, or that it is of no importance. Given the emergent nature of the CRE discipline and its literature the former is more likely and the latter is arguable against on the basis of later empirical data. As the 'ND' cells were included in the calculation of the average this reduced the overall effect, even though some clusters reported very high competitive effects.

It can also be observed that the majority of the competitive effects were positive, though there were still substantial negative *Cost* competitive effects from many of the practice clusters. In the *Site selections* cluster – those about the basis of selecting CRE locations – the use of these practices retard the ability to compete on the basis of *Cost* and *Innovation* more than the benefits derived from them. This makes the selection of CRE locations important because of the negative effects on these SCAs, though *Differentiation* competitive advantage is provided.

The percentages of practices (as calculated) that have a positive competitive effect are reasonably evenly spread across the three SCAs, being 35:31:29% for *Cost/Differentiation/Innovation* respectively. This gives approximate ratios of 7:6:6 between the SCAs. On this basis, CRE management practices are modelled as have roughly equivalent positive benefit to the different modes of competition. There is a slight emphasis on cost, but never-the-less benefit is distributed across all the ways of competing.

Practices having a negative effect have quite a different distribution with 21:2:0% for *Cost/Differentiation/Innovation* respectively. This gives CRE practices a greater negative impact on Cost competitiveness than the other two SCAs. Therefore, CRE and its management retards *Cost* competitiveness more than the other two SCAs.

Table 1 – Connections in the CREAM model

	Cost		Diff.		Innov.	
	+	-	+	-	+	-
	%	%	%	%	%	%
Competitive effects from						
Holding practices 8 practices this cluster in the model	37	12.5	0	12.5	0	0
Financing						
Corporate 8 practices this cluster in the model	17	ND	ND	ND	ND	ND
CRE instruments 24 practices this cluster in the model	ND	ND	ND	ND	ND	ND
CRE to support organisation financially 9 practices this cluster in the model	ND	ND	ND	ND	ND	ND
Measuring (pricing) CRE expenses 5 practices this cluster in the model	ND	ND	ND	ND	ND	ND
CRE accounting 5 practices this cluster in the model	ND	ND	ND	ND	ND	ND
Site selection 7 practices this cluster in the model	43	71	71	14	14	71
Workplace 22 practices this cluster in the model	77	64	86	0	86	0
IT						
Uses 4 practices this cluster in the model	ND	ND	ND	ND	ND	ND
Tools 20 practices this cluster in the model	80	55	45	0	45	0
Metrics 14 practices this cluster in the model	64	50	64	0	43	0
Benchmarking 6 practices this cluster in the model	100	0	100	0	100	0
Average % of practices in clusters (rounded to whole numbers)	34.8 (35)	21.0 (21)	30.5 (31)	2.2 (2)	28.8 (29)	0 (0)

Legend

ND no data available in the sample

Empirical study's surveyed connections

For the second part of the analysis, the empirical survey data was analysed the same way. This allows comparison of the two data sets and validation, or otherwise, of the model as a whole.

The results of this analysis shows numerical percentages that are smaller than those for the modelled effects (Table 2, below). This may, primarily, be attributed to the sample size which meant that it was unlikely that all the practices contained in the research instrument would be used by the empirical study organisations. In particular, the Financing practices – CRE

instruments and CRE Accounting – were affected by a considerable number of practices not being used by the surveyed sample which depressed the average in these clusters.

The empirical data has evidence of connections identifiable across all the clusters of practices, unlike the data available for modelling from the literature. The competitive effects from the Technical CREM were mostly being assessed as positive to the *Sources of Competitive Advantage*.

The empirical data's positive competitive effect is skewed towards the Cost SCA with ratios of 15:5:7% for *Cost/Differentiation/Innovation* SCAs, respectively. This indicates that CREM practices are assessed as having a two to three times' greater competitive effect through the *Cost* SCA than the other SCAs.

Negative competitive effects are more even with 1:1.6:0.3% for the three SCAs – *Cost/Differentiation/Innovation* – respectively giving approximate ratios of 3:5:1. This is more even than the positive benefits, but, interestingly, here *Differentiation* is the largest effect. This leads to the statement that CRE management practices-in-use inhibit competition through *Differentiation*. However, given the size of the percentages and their relatively it is likely that this inhibition is quite mild.

Table 2 – Practice clusters' competitive benefits (empirical data)

Competitive effects from	Cost		Diff.		Innov.	
	+	-	+	-	+	-
	%	%	%	%	%	%
Holding practices	18.4	7.1	4.1	3.1	5.1	1.0
Financing						
Corporate	23.2	0.0	0.0	5.4	3.6	1.8
CRE instruments	5.7	1.4	2.9	0.5	2.4	0.0
CRE to support organisation financially	10.7	0.0	4.3	0.0	4.3	0.0
Measuring CRE expenses	12.5	0.0	0.0	0.0	0.0	0.0
CRE accounting	8.6	0.0	2.9	1.4	5.7	0.0
Site selection	22.1	2.1	11.4	3.6	16.4	0.0
Workplace	20.4	0.3	6.8	1.4	17.0	0.3
IT						
Uses	21.4	0.0	10.0	0.0	15.7	0.0
Tools	12.2	1.4	4.8	2.4	4.1	0.0
Metrics	13.3	0.0	3.3	0.0	5.7	0.0
Benchmarking	13.3	0.0	6.1	1.0	6.1	0.0
Average % of practices in clusters	15.2	1.0	4.7	1.6	7.2	0.3
(rounded to whole numbers)	(15)	(1)	(5)	(2)	(7)	(0)

Discussion

Competitiveness is a business-focussed measure of appraising, or understanding, a mode of firms operating in an environment. It is the default paradigm for operating in capitalistic endeavours, be that at the level of the firm, or the nation (Porter, 1980; Porter, 1998). For firms, understanding this is a fundamental recognition of how they orientate themselves in and relate to the world. Competition is, however, only one of five modes of interaction with others, the other four being:

- Collaboration;
- Coercion;
- Collusion; and

- Conflict.

Within the business competition theory there are a variety of perspectives on how *competitive advantage* is achieved, this being the basis of successful competition. These perspectives may be broadly classified as external, or internal to the firm and constitute a strategic mode of competition. It would be expected that for firms or organisational functions, such as CRE, understanding how they compete will better enable arrangement of their activities to align them with or to support that mode of competition. Also required is an understanding of the effect of those activities on competitiveness.

The CRE literature has rarely considered the specific concept of competitiveness, though it has frequently sought to establish CRE's value, or contribution, to the organisation. This has been driven by a desire for CRE to make a significant strategic difference, variously described as becoming a *Business Strategist* (Joroff et al., 1993), or, colloquially, as 'achieving a seat at the boardroom table.' Where competitiveness has been considered it has concentrated on the tangible, or physical, environment (the real estate) at a Tactical level, and on the firm's external environmental forces (when competitiveness theory has been considered). An alternative competitive model is to adopt an organisational internal perspective where *core competencies*, or *capabilities*, and controlled resources provide an explanation of *competitive advantage*. Both these concepts have some presence in the CRE literature, firstly through real estate's support of Operation's capabilities (Roulac, 2001), and secondly, as an under-recognised resource (Joroff et al., 1993).

The study reported in this paper makes a theoretical contribution to the CRE field through a comprehensive model (introduced here) linking CRE and its management to organisational competitiveness. It does this by conceptualising CRE and competitiveness from an internal perspective of a *resource-based view* of the firm, and with CREM practices providing an intangible organisational resource. The mechanism connecting CRE to competitiveness (as modelled in Figure 1) is in how *Functional Area* strategies support the various strategic modes of competition – the *Sources of Competitive Advantage* (SCA). Of these, the *Innovation* SCA is suggested as the key to sustainable *competitive advantage*.

The results presented above identify the competitive effects of clusters of Technical CREM practices on organisational strategic means of competing from surveys of the literature and of CRE practitioners. The effects were described in terms of practices' connections to the SCAs as being their competitive effect. From this, the contribution that Technical CREM practices make to organisation's strategic means of competing are identified.

Table 3 –Comparative competitive benefits (Model and survey data)

	Cost		Diff.		Innov.	
	+	-	+	-	+	-
	%	%	%	%	%	%
Modelled competitive effect	35	21	31	2	29	0
Empirical competitive effect	15	1	5	2	7	0

Comparing the modelled and empirical effects (Table 3, above) it can be seen from the resultant percentages that the model has greater number of practices with connections to the SCAs than the empirical results. Comparison of the modelled and empirical effects of Technical CREM practices show, in the first instance, that they make positive contributions to *Sources of Competitive Advantage*. In the second instance, while CREMs contribution is modelled as relatively even, the positive *Cost Advantage* is relatively much more pronounced in the empirical data than in the model. Contrastingly, the negative *Cost* effect is almost non-

existent in the survey data in comparison to the model. A reason is that in self-reporting, as here, a positivity bias may exist, where it is more likely for positive connections to be reported, rather than negative ones. Comparatively, the empirical results show *Differentiation* and *Innovation* being assessed having lesser positive effect from the practices than in the model. Perhaps, the concepts were not well understood in the survey population and the CRE field as a whole because this study is the first to conceptualise CRE this way.

Validating the model

From the results presented thus far in the paper the modelled and empirical results only imperfectly align. In part this is because of the discrepancy between the number of practices under consideration and the sample size. To adequately quantitatively test all the practices would require a very large population sample. However, at a qualitative level, consistent with the research approach, the total number of connections between practices and a SCA could be equated to the amount of effect of the CREM practices on competitiveness. If the positive and negative effects are combined an overall amount of effect may be calculated (Table 4, below).

Table 4 –Overall competitive effect

	Cost	Diff.	Innov.
	%	%	%
Modelled competitive effect	56	33	29
Empirical competitive effect	16	6	8

From this, it is clearly apparent that the *Cost* SCA is the dominant competitive effect in the modelled linkages and connections being almost twice the *Differentiation* and *Innovation* values. This reduces to very simple ratios of 2:1:1. The empirical survey data has overall competitive-effect ratios of 8:3:4, or approximating only a little further – ratios of 2:1:1. At this level of reduction the model and practice-in-use effects of Technical CREM practices coincide, with *Cost* SCA the predominant competitive advantage, being approximately twice as large as the other SCAs. This demonstrates that, from the data available, the modelled and empirical competitive effects align validating the viability of the model as a tool in assessing CRE and competitiveness.

The results of this analysis begins to allow CRE practitioners to review the effect of their CREM practices and adopt, or use, CREM practices that have a competitive effect consistent with their organisation's mode of competing, provided the latter has been identified. A more detailed reporting of analysis at the level of individual practices would be of further use.

Australian CREM competitiveness

The analysis that supports this paper's claims about competitiveness and CRE has at least two consequences. Firstly, and the main purpose, is to determine the competitive effects of CREM practices theoretically and by testing that model empirically, as discussed above. Incidentally, because the research instrument also gathers data on the practices in use it is possible to determine which competitive modes are employed in Australian (in this instance) CRE management. The empirical data (Table 2, above) clearly shows that CRE practices yielding *Cost* advantages are predominantly being used. Also, practices are used for positive cost benefit or not at all, and any negative effects are discounted, or overlooked.

Further, because of the experiential nature of the responses to the survey instrument those responses also contain a perceptual element of how respondents anticipate a practice will operate. Therefore, the aggregating process used also provides indications of the primary, or preferred, competitive advantages used. From this survey it can be said that Australian

property management predominantly see their management practices as contributing to competing through cost. This coincides with other Australian surveys that indicate that cost reduction and control are primary CRE objectives and achievements (for example (DEGW, 2006; Henry, 2006)).

Conclusions

Competitiveness and CRE is a nascent field of research and remains under-theorised. This paper reports part of a larger study that was an early, and to date, rare empirical study of CRE and competitiveness. That it is considered is evidence of a more business-centric way of regarding the effects of CRE and its management. Such an approach may be more persuasive to organisations' senior management levels in demonstrating CRE's contribution to firms than many CREM efforts to date.

The paper introduced a theoretical model, developed from the literature, which links CREM practices with organisational sustainable competitive advantage (SCA). A resource-based view of the organisation as a bundle of resources that contribute to organisational success underpinned the model. The model suggests that CRE is an organisational function within a suite of organisational infrastructure functions – called CIR in this paper. Strategies for these functions, together with those for core functions – operations and marketing – connect with an organisation's strategic means of competing – the SCAs.

This model was tested in an empirical study of Australian CRE managers, with this paper reporting on the Technical CREM practices. These practices were analysed as they are, historically, CREM's core competency and could be considered CREM's core contribution to the organisation's resources and capabilities.

The competitive effect (benefits and 'disbenefits') of the model and the empirical data were compared. At the general level of total competitive effect, the model and the empirical data coincide. At a more detailed level of individual positive and negative effects, the survey reveals more identification of positive cost benefits from CRE than the model suggests.

The data also reveals the choice of practices employed for competitiveness showing that Australian preferences for competing with CRE are cost-based. This is consistent with other surveys that indicate that CREM has a cost-constraining paradigm. Testing the model in other locations would reveal whether the Australian CREM preferences were generalisable to CREM practice as a whole. It is possible that other competitive modes are emphasised elsewhere.

Testing the theoretical model shows there are connections between CREM practice and organisational competitiveness. This demonstrates the model's utility as a device in understanding CRE and its management as a source of organisational competitive advantage.

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Appendices

Appendix 1 – Glossary of categories of CREM practice and activities

This Appendix provides definitions of the clusters of practices that underpin the analysis and results presented in this paper. The definitions and categorisations were an outcome of the Corporate Real Estate and Asset Management Research Group's research at the University of Melbourne. (Kenley et al., 2000) contains an earlier version of these definitions and categorisations. Both this and (Kenley et al., 2000) are not exhaustive and the categorisation warrants fuller treatment in a future paper.

CRE unit practices

Organisational practices (of the CRE function)

The CRE function may be organised in one of several ways as options for provision of CRE service to the organisation. These include arrangements from in-house to outsourcing, and organisational structures such as profit or cost centres, or as forms of property company, such as in a subsidiary or spin-offs (Kenley et al., 2000). The relationship of CRE to other organisational resources through integrated resource management mechanisms such as Corporate Infrastructure Resource[®] (CIR) management is also now part of CRE's action as an organisational function (Materna and Parker, 1998). The second sub-cluster here was the CRE function's responsibilities and activities.

Strategic practices

This cluster of practices includes sub-clusters for:

- The use of generic CRE strategies from (Nourse and Roulac, 1993) as generic approaches to how property serves an organisation. This is separate from the application of these strategies when making a specific property decision (see Location/Site selection, below);
- People involved and information used in strategic CREM; and
- How extensively it is applied to the property portfolio.

CRE decision-making practices

These are the practices employed in making CRE decisions and the information used in doing so. Examples of these could include Value management and Life-cycle costing practices.

Technical CREM practices

Holding practices

These are practices for CRE tenure and include freehold and leasehold options. Leasehold forms of tenure may have a range of forms depending on acquisition mode, and accounting treatment (Kenley et al., 2000).

CRE financing

There are three sub-clusters of practices pertaining to financing CRE. Firstly, these include obvious organisational methods, such as debt or equity, but also include, secondly, property specific methods such as sale-and-leaseback and contemporary hybrid forms using property's income generating capacity, for instance, securitisation and unitisation of CRE such as described by (Ooi and Kim-Hiang, 2002). Thirdly, there are practices, derived from CRE as a financial asset and commodity, which use property to financially support the organisation, an example of which is the potential for cash or profit creation from existing CRE assets.

Accounting

This cluster of practices includes 2 sub-clusters. Firstly, the practices of how CRE is accounted for, or priced against operational purposes, for instance whether property costs are absorbed as a corporate overhead, or whether business units are charged market rents (Kenley et al., 2000). Secondly, there are practices for measuring CRE expenses.

Location/site selection

These are the practices used when selecting locations to do business. This is the application of (Nourse and Roulac, 1993) CRE strategies at the level of deciding about a specific site.

Workplace

These practices include a range of alternative and flexible workplace practices that differ from traditional workplace models (Kenley et al., 2000).

Information systems

There are two sub-clusters of information system practices. The first is the purposes the information is used for, such as strategic or transactional purposes. The second sub-cluster is a listing of IT tools that may be used in CRE, including graphical, database, and network CRE information systems. Automating processes is using IT to automatically do tasks done otherwise done manually. Informating is turning those automatic processes into data for use in managing (Kenley et al., 2000).

Metrics

This category of practices is those used to create and apply various performance indicators (metrics) to CRE (Kenley et al., 2000). Considered an emerging strategic management discipline (Frost, 1999).

Benchmarking

This particular cluster of CREM practices focuses on comparative performance that may be, for example, internally, externally, or process orientated.