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Evaluating the sustainable competitive advantage model for corporate real estate

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Abstract

Purpose – The paper aims to establish empirical connections between corporate real estate management (CREM) practices and organisations' sources of sustainable competitive advantage (SSCA). The alignment of CREM practices with modes of achieving competitiveness provides greater competitive advantage from CREM.

Design/methodology/approach – The model for sustainable competitive advantage for corporate real estate (CRE) theorising the connections between CREM practices and SSCAs was implemented in a survey of Australian CRE managers. Practices' competitive benefits are reported at the aggregated level of practice categories and illustrated with a selected category of individual practices.

Findings – The model was supported by the study's results by providing connections suggested in the model but not previously corroborated in the literature. The cost source of sustainable competitive advantage was a dominant empirical competitive mode for CREM, as it was in the model. Categories of technical CREM practices providing competitive advantage were shown to be practices for "location/site selection", "workplace styles" and "corporate finance for CRE".

Research limitations/implications – The research's relatively small sample of organisations meant that not all practices were evident. However, the study does establish the model's usefulness for evaluating CREM's alignment with organisations' modes of competition.

Practical implications – For CRE and its management to fully support a competitive organisation it is essential that CREM practices align with that organisation's competitive positioning. This research evaluated a framework for CRE managers to do this.

Originality/value – CRE, its management, and their connections to competitiveness have seldom been studied but are important as CRE is an organisations' second largest resource. This paper's model is a significant advance in frameworks linking CREM practices to organisational competitiveness for both practitioners and also further theoretical work in the area.

Keywords Australia, Competitive advantage, Real estate, Modelling

Paper type Research paper

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Introduction

Background to the research

There is a growing body of literature connecting corporate real estate (CRE) to organisational success as part of a trend in the field to be more strategic and relevant to achieving business outcomes. Manning and Roulac (2001) identified that, historically, the CRE literature concentrated on real estate's financial and technical aspects inside the organisation. Business dimensions external to the organisation are probably of more interest to senior and business unit managers but there was paucity of research reflecting the relationship of these dimensions to CRE, though recent developments are addressing this.

Competitiveness is a business-orientated way of considering organisational purposes and successes. It has been a feature of strategic management theory, for example, Porter (1980) is often cited but there are others, to the extent that there is now an organisational competitiveness literature (Callon, 1996; Esser *et al.*, 1993; Garelli, 1994; OECD, 1997; Phipps, 1995; Rimmer *et al.*, 1996).

Despite the possibilities presented by competitiveness, CRE's connection to it is rare in the CRE literature. Roulac (2001) considers space and place as seven sources of competitive advantage at a tactical rather than a strategic level. CRE's contribution to competitiveness may be from both the tangible, physical asset and also intangibly through support of workforce and organisational climate (Burns, 2002). Porter's (1980) three broad competitive strategies – cost, differentiation, and focus – have been used to analyse the tangible environments' competitive contribution (O'Mara, 1999, Singer *et al.*, 2007). Real estate has managed to respond to external competitive forces and can also facilitate competitiveness (O'Mara, 1999).

Whereas these authors focus mostly on competitiveness derived from the physical environment itself, corporate real estate management (CREM) practices may also be competitively valuable through the organisational capabilities they produce. Strategic management's business strategy, and its search for sustainable competitive advantage is implicit in conceiving the highest level of CREM practice as a business strategist (Joroff *et al.*, 1993). Evolutionary levels of CREM practices leading up to business strategist also implicitly connect these organisational routines to competitive advantage.

Where CRE and competitiveness have been connected the theory is focussed on the tangible, or physical, environment (the real estate) and not on the intangible resource of CREM management practices.

Research problem and aim

A model of sustainable competitive advantage for CRE has been developed to address the problem of how to demonstrate CREM's business credentials internally. The model directly links CREM techniques with strategic business outcomes – organisational competitiveness – and provides a framework allowing CRE managers to better align their practices with their organisational strategy (Heywood and Kenley, 2008).

This paper aims to evaluate this model of sustainable competitive advantage for CRE through evaluating it in an empirical study. While this validates the model's thesis that there is a connection between CREM practices and organisational competitiveness, the study also aims to:

- Identify how CREM practices support or retard organisational competitiveness through sources of sustainable competitive advantage (SSCA).

- Identify those categories of CREM practices which support or retard organisational competitiveness.
- Examine one sample cluster in detail to establish the connections for individual practices.
- Identify the strategic inter-functional coordination established by the model of sustainable competitive advantage for CRE using the same cluster of practices used above.

Consequential to the analysis necessary to meet these objectives is the establishment of CREM practices' empirical connections which are presently absent from in the theoretical framework.

A model of sustainable competitive advantage for CRE

A model for sustainable competitive advantage for CRE (Figure 1) has been proposed (Heywood and Kenley, 2008) which offers a framework for CRE to demonstrate the contribution its management practices make to competitiveness. The model was based

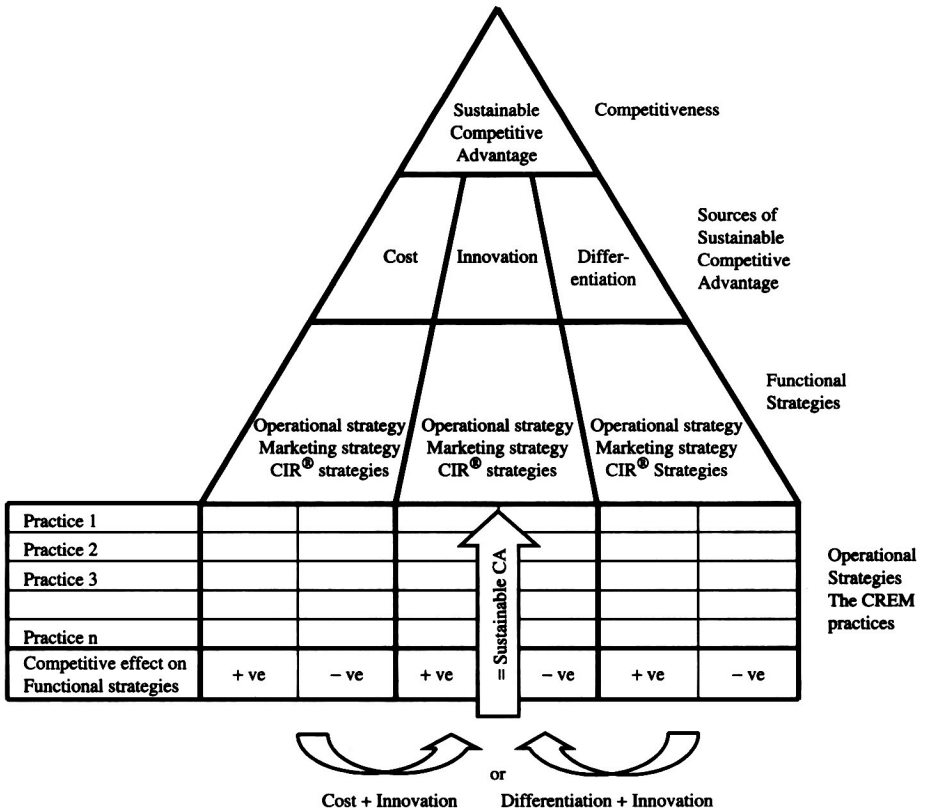

Figure 1.
Modelling CRE and organisational competitiveness

Source: From Heywood and Kenley (in press) where the model's development and underpinning theory are discussed

on the strategic management, organisational competitiveness, and CRE literatures but drew heavily on the concept of competitive advantage deriving from organisational capabilities and core competencies (Prahalad and Hamel, 1990). These capabilities may be resource-based, within a resource-based view of firms, or organisational routine-based (Lewis, 1993).

The resource-based view and organisational routine-based perspectives were integrated in the model as CREM practices offer strategically important organisational routines, and CRE is an organisational resource, the second largest resource, though this has been overlooked in the past (Joroff *et al.*, 1993).

This model connects CREM practices to competitiveness using two levels of strategic management. Sustainable competitive advantage (competitiveness) – the objective of business strategy (Thompson Jr and Strickland III, 2003) – is achieved at the model's first level of connection through one of the two sources of competitive advantage – cost and differentiation Porter (1980) as amended by Grant (1993) and Lewis (1993), in conjunction with innovation, as suggested by Daft (1998), Han *et al.* (1998) and Roberts (1999) to provide sustainable competitive advantage. The cost source of competitive advantage is based on cost leadership with efficiency, tight cost control and cost minimisation implemented across the entire competitive strategy. The Differentiation source of advantage derives from offering perceived industry-wide as unique that are based on brand, technology, customer service, and the like.

The model's second level of connection is through an organisation's functional strategies that create SSCA from the capabilities and competencies they produce. This conceptualises organisations as bundles of business functions that are required to achieve organisational objectives (Lewis, 1999; Thompson Jr and Strickland III, 2003). Operations (production) and marketing (selling) are treated as core functions with CRE incorporated, in this model, into a corporate infrastructure resource (CIR) concept (Materna and Parker, 1998) – more recently called the integrated resource infrastructure solution (IRIS) (Dunn *et al.*, 2004).

The functions positively or negatively impact on the SSCAs depending on the effect (positive or negative) of functional operational strategies – the strategically important activities and actions for operating the function. However, the strategic implications of CREM practices are complicated by CRE's impact on other organisational functions and their requisite strategies.

Fundamental to the competitive effect of CREM practices in the model is the concept of "strategic fit" (Porter, 1996) through:

- Simple consistency between activities and overall strategy.
- Functions' activities reinforcing each other through what has been framed as "inter-functional coordination" (Gatignon and Xuereb, 1997; Kaplan and Norton, 2006).
- Optimisation of activities.

The model for sustainable competitive advantage for CRE provides opportunities for all three forms of strategic fit. Identifying a practice's competitive effect and the organisational functional areas where it impacts are both consistency and inter-functional coordination fits. Identifying the connections between individual practices and competitiveness allows opportunities for explicitly optimising their competitive potential in ways that previously were only implied.

There are many possible CREM practices. Financial practices have been a significant focus of optimisation-type research (Redman and Tanner, 1991; Allen *et al.*, 1993; Nourse, 1994; Manning and Roulac, 1996; Seiler *et al.*, 2001; Benjamin *et al.*, 1998). CRE's inter-functional coordination is offered within the CIR-IRIS concept, and also seen in the Human Resources function as CRE impacting on occupant productivity (van der Voordt, 2004; Haynes, 2007; Appel-Meulenbroek and Feijts, 2007), and workforce attraction (Martin and Black, 2006).

A survey of the existing literature showed there were also substantial gaps in the documentation of the competitive effects of CREM practices. While the practices were present the specific identification of consequential competitive effects was absent.

The CREM practices in the model

CREM's diverse practices now encompass traditional property practices related to technical issues of managing the physical environment (real estate's place and space), the financial implications of CRE, as well as the more recently added business and strategic practices.

The model contained a total of 162 practices derived and defined from the management and CRE literature available at the time of the study. These were grouped into eleven thematically-linked clusters within two broad classifications – CRE unit practices and technical CREM practices (Table I). This paper focuses on the technical CREM practices that are the traditional foundation of CREM but gives them strategic and business dimensions from their direct connection with organisational strategy.

CRE unit practices	Technical CREM practices (operational strategies)
Strategic practices	Holding practices (seven practices)
Generic CRE strategies (nine practices)	CRE financing practices (27 practices in total)
People involved in CRE strategy formation (four practices)[a]	Corporate (four practices)
Information used in CRE strategy (two practices)	CRE to support for the organisation financially (nine practices)
Extent of application (four practices)	CRE instruments (14 practices)
Organisational practices (of the CRE function) (14 practices in total)	Accounting practices (nine practices in total)
CRE unit structure (eight practices)	Measuring CRE expenses (four practices)
CRE unit responsibilities (six practices)	CRE accounting (five practices)
CRE decision-making Practices (23 practices in total)	Location/site selection (nine practices)
Decision-making criteria (five practices)	Workplace styles (21 practices)
Decision-making information (18 practices)	Information systems (24 practices in total)
(47 CRE unit practices)	IT purposes (four practices)
	IT tools (20 practices)
	Metrics (12 practices)[b]
	Benchmarking (six practices)
	(115 technical CREM practices)

Table I.
Clusters of CREM practices

Notes: [a]Same as location/site selection cluster, therefore not counted here; [b]benchmarking not counted in this cluster as this is treated separately

Appendix – list of technical CREM practices for a listing all 115 technical CREM practices allocated among eight clusters.

We therefore conducted an empirical study into these 115 technical CREM practices. Several of the eight clusters listed in Table I had sub-clusters. When these were considered as stand alone entities this proved a total of twelve categories that were used in presenting the results below.

Methodology

Overview

A survey of 14 Australian CRE managers collected empirical data to evaluate the model's links between CREM practices and SSCA. The survey's extensive instrument had two parts – the first surveyed the organisational and the CRE unit practices and the second surveyed the technical CREM practices. In this second part, participants were asked to classify an individual practice's effect on their organisation as positive, negative or neutral. This identified both the existence of a competitiveness connection and its form. In addition, the second part of the survey asked participants to identify the functional area the practice operated for them.

Sampling

The survey's sampling had two phases in achieving the 14 participants. Phase 1 piloted the survey instrument with five senior CRE executives who had agreed to assist the researchers. The instrument was mailed to them and, some time later, a total of four responses were received. Given this reduced response from willing participants and the time taken in procuring the responses a different sampling and data collection method was adopted in Phase 2. Ten organisations were selected from the top 1,000 Australian and New Zealand companies, ranked by total assets reported on their balance sheets (Business Review Weekly, 1999). A sampling method was used whereby every tenth organisation on the list was identified as a possible participant. After applying the additional requirement of being Melbourne-based for ease of access, senior CRE executives were telephoned to secure participation. Forty telephone calls were required to fill the sample of ten. Data collection consisted of 1-h face-to-face meetings between the researchers and the CRE managers to complete the research instruments.

Most participants were commercial companies. Government-funded entities, semi-autonomous government business units, or former government business units were also included in the sample because their substantial, often property-based, asset bases ensured their presence in the list providing potential participants. As these Australian organisations were now operating in a more "commercial" fashion within paradigms of new public management (Aulich *et al.*, 2001), they were retained in the sample.

Results

Calculating the empirical study's competitive connections

This analytical method for this empirical study were the same as that used to calculate the competitive effects in the theoretical model of sustainable competitive advantage for CRE (Heywood and Kenley, 2008). Namely, the competitive effects in the SSCA for each category of technical CREM practices were calculated from the percentage of individual practices reported as having a positive or negative effect (Table II). Neutral effects were omitted as this indicates that a practice, while used, had no competitive effect.

$n = 14$	Sources of sustainable competitive advantage						Categories of practices Aggregates (average per centage of SSCAs)	
	Cost		Innovation		Differentiation			
Competitive effects from	+ ve (percent)	− ve (percent)	+ ve (percent)	− ve (percent)	+ ve (percent)	− ve (percent)	+ ve (percent)	− ve (percent)
Holding practices (seven practices)	18.4	7.1	5.1	1.0	4.1	3.1	9.2	3.7
CRE financing practices (27 practices in total)								
Corporate (four practices)	23.2	0.0	3.6	1.8	0.0	5.4	8.9	2.4
CRE instruments (14 practices)	5.7	1.4	2.4	0.0	2.9	0.5	3.7	0.6
CRE to support for the organisation financially (nine practices)	10.7	0.0	4.3	0.0	4.3	0.0	6.4	0.0
Accounting practices (nine practices in total)								
Measuring CRE expenses (four practices)	12.5	0.0	0.0	0.0	0.0	0.0	4.2	0.0
CRE Accounting (five practices)	8.6	0.0	5.7	0.0	2.9	1.4	5.7	0.5
Location/site selection (nine practices)	22.1	2.1	16.4	0.0	11.4	3.6	16.6	1.9
Workplace styles (21 practices)	20.4	0.3	17.0	0.3	6.8	1.4	14.7	0.7
Information systems (24 practices in total)								
IT purposes (four practices)	21.4	0.0	15.7	0.0	10.0	0.0	15.7	0.0
IT tools (20 practices)	12.2	1.4	4.1	0.0	4.8	2.4	7.0	1.3
Metrics (12 practices)[a]	13.3	0.0	5.7	0.0	3.3	0.0	7.4	0.0
Benchmarking (six practices)	13.3	0.0	6.1	0.0	6.1	1.0	8.5	0.3
Aggregated competitive effects	15.2	1.0	7.2	0.3	4.7	1.6		
SSCA total	16.2	7.5	6.3					

Note: [a]Benchmarking not counted in this cluster as this is treated separately

Table II.
Summary of the empirical data's competitive effects

This paper reports, most usually, at this level of whole categories. In part, this is a requirement to make the reporting tractable. However, a sample category's practices showed how these effects do operate for individual practices.

The summary of the empirical data's competitive effects (Table II) provides two ways to considering CREM's competitive effects:

(1) The overall competitive effect through the SSCAs that are an organisation's mode of competing.

(2) From the categories of CREM practices.

The competitive effect from the technical CREM practices was calculated by averaging the effect from all the categories of practices in that SSCA. The resultant single positive or negative figures identify which SSCA is most affected by technical CREM practices and how it is affected.

Competitive effects from the categories are now more evident due to the empirical data providing connections in all categories and SSCAs, unlike the theoretical model. This allows conclusions to be drawn as to which categories are more influential on organisational competitiveness' SSCA. This can be calculated by averaging each of the positive and negative percentages across the SSCAs to show the competitive effects for the category.

Empirical study's surveyed connections

This analysis provides numerical percentages from the empirical survey data for both the SSCA's and the categories of practices (Table II).

Taken as a whole, these results empirically confirm the model of sustainable competitive advantage for CRE's central thesis that there are connections between technical CREM practices and organisational competitiveness.

The relatively small percentages tabulated for each category can, largely, be attributed to the sample size. This meant that not all the practices in the model were used by the sample population. The clusters for CRE financing practices and accounting practices were affected by this, particularly accounting practices, even though the categories contained few practices. This can be evidence of a lack of thinking about CRE in this way despite the prevalence of cost and financial issues in the CRE literature. This also may be because many of the decisions about these things are outside CREM's control (Stoy and Kytzia, 2004).

Competitive effect in the SSCAs

The data shows connections between technical CREM practices and SSCAs across all the categories, unlike the previous literature-based theoretical connections which were far less uniform. The practices' competitive effects were predominantly assessed as positive for the SSCAs.

The overall competitive effects in the individual SSCAs from the technical CREM practices have ratios of percentages being approximately 11:5:4, the cost SSCA is where the most effect is felt. The differentiation and innovation effects are relatively even but less than half the effect in the cost advantage.

The positive competitive effect is skewed towards the cost SCA with ratios of percentages being 19:9:6 for the cost, innovation, and differentiation SSCAs, respectively. This indicates that technical CREM practices have a two to three times' greater

competitive benefit to cost than to the other SSCAs. That is, technical CREM practices are more useful for providing competitive advantage from overall, cost leadership through cost minimisation, tight cost control and efficiency from Porter (1985). This does reiterate a CREM orthodoxy that CREM is about CRE cost minimisation.

Negative competitive effects are smaller with approximate ratios of 3:1:5 for the three SSCAs. Here, differentiation is the largest effect. This suggests that the use of technical CREM practices, as a whole, retard competing through offering unique value for which a premium may be charged. Given the differentiation advantage derives from the impact of technology, customer service, and branding (Porter, 1985), this implies that CREM adversely affects organisations in these areas. However, given the size of the percentages relative to the positive effects, it is likely on this evidence, that this inhibition is quite mild.

Competitive effect in the categories

Considering the effects on competitiveness from the individual categories shows which ones have the most impact. This is important for practitioners deciding where to concentrate efforts in maximising the fit between CREM and organisational strategy. Similarly, this is important for academic studies into that strategic fit and for optimisation studies for categories of practices and individual practices.

As noted above, the empirical study provided more complete data which allows this to be studied, unlike the theoretical model, which was derived solely from the literature and which therefore lacked connections in a number of categories where the literature was silent about a practice's competitive effects.

Competitive effects from categories can be considered in two ways. The first is for the categories as a whole aggregated across the SSCAs (Table III). This shows which categories should receive more detailed study. Second, the effects in each of the SSCAs are useful in identifying which categories require attention to maximise the alignment of CREM competitive effects within the SSCAs (Table IV).

Category as a whole – aggregating the quantum across the SSCAs. Aggregating the competitive effect across all three SSCAs is the first step in examining a category's effect. This could be done in three ways:

(1) Its valenced effects where positive and negative effects are considered separately.

(2) Total quantum of effect, ignoring the presence of mathematical operators implied in positive and negative effects.

(3) The net effect from summing the effects taking into account the mathematical operators.

Table III.
Top five categories of practices impacting on the SSCA (aggregates)

Competitive effects	
Positive	Negative
Location/site selection	Holding practices
IT purposes	CRE finance – corporate
Workplace styles	Location/site selection
Holding practices	IT tools
CRE finance – corporate	Workplace styles

	Sources of sustainable competitive advantage					
	Cost		Innovation		Differentiation	
	+ ve	− ve	+ ve	− ve	+ ve	− ve
1	CRE finance – corporate	Holding practices	Workplace styles	Finance – corporate	Location/site selection	CRE finance – corporate
2	Location/site selection	Location/site selection	Location/site selection	Holding practices	IT purposes	Location/site selection
3	IT purposes	IT tools CRE financing – CRE instruments	IT purposes	Workplace styles	Workplace styles	Holding practices
4	Workplace styles		Benchmarking	NA	Benchmarking	IT tools
5	Holding practices	Workplace styles	Metrics CRE accounting	NA	IT tools	Workplace styles CRE accounting

Table IV.
Top five categories of practices impacting on the SSCA

The last two are not considered here. Rather, because the positive effects are so dominant in the empirical data it is sufficient to consider the positive effects as an indicator of overall quantum should this be necessary.

The "top five" categories of practices have been extracted from Table II as the most positively and negatively influential categories of practices (Table III).

While the positive effects dominated the quantum of effects there were also substantial negative effects reported. For example, practices in selection of locations or sites for doing business were identified as having the most positive competitive effect, but as the third ranked negative effect there is substantial capacity to retard competitiveness. This suggests that aligning the competitive effects of location decisions with organisational competitiveness are beneficial but costs in securing advantageous locations and the cost of misalignment also have substantial competitive effects. It also highlights the way the model can allow for both positive and negative effects to be possible from single practices.

The purpose for which IT was used for CRE management (IT purposes for information systems) is the second ranked category for positive effect. These are the objectives behind, or reasons for, investing in IT (Weill, 1992). It must be noted though that the related IT Tools category is ranked as the fourth most negative effect. Perhaps, this is due to the costs associated with these tools. This will be examined further below in the section about categories' effects in the SSCAs.

The use of alternative workplace styles also enhanced competitiveness even though this study took place when these practices were known but not as widely as they are now. Negative effects were also identified from these practices.

Holding practices – methods to gain access to property – provide positive competitive effects. However, they were also the highest ranked cluster for negative effects. These are discussed in detail below.

CRE finance (corporate) practices – those where corporate financial resources are used for funding CRE, as opposed to CRE contributing to its own funding, perhaps through sales and development – relate to issues of CRE's on-balance sheet/off-balance sheet financing modes which impacted positively on competitiveness. However, here too, the possible effects of these practice elevated them to the second rank in the negative effects.

Categories important for increasing the competitive effect through a SSCA. This is a detailed way of considering categories for the positive and negative competitive effects within each SSCA (Table IV).

The CRE finance – corporate category recognises that CRE is an organisational asset and therefore has access to organisation-wide, or corporate, funding sources such as equity or retained earnings. As a, possibly, lower cost financial source this could support the cost SSCA but the results suggest that these practices also inhibit competitiveness through the innovation and differentiation advantages.

The location/site selection category was discussed above with regard to the overall effects from the category. The results here indicate that a positive effect is achieved across all the SSCAs, but a negative effect is found in cost and differentiation. The presence here of both positive and negative differentiation effects is difficult to explain. Perhaps, the modest sample size means that any individual participant's answer makes a substantial difference to the calculations.

The purposes for which IT is used for managing CRE provide positive competitive effects across all three SSCAs with no negative effects noted for the category in any of the five top ranked negative categories.

The category of workplace styles, perversely, displays positive and negative competitive effects across all three SSCAs. These "alternative," or "integrated," workplace strategies (Becker and Joroff, 1995) have been developed to reduce the workspace space requirements with consequential CRE and business cost reductions that help the cost SSCA. The costs in establishing such workplaces through reconfiguration of space or providing enabling information technology can account for the retarding effect identified in the cost SSCA.

The innovation potential envisaged in these workplaces is reflected in the category's top ranking in the positive competitive effect in the innovation SSCA. However, the third ranking in the negative effects is difficult to explain at this category level of analysis, but may be more explicable at the level of individual practices.

These workplace styles potential for improved and greater customer service, either directly or via the technology infrastructure enabling these workplaces is borne out in the third ranking in the positive differentiation effects. How these practices retard differentiation is less clear. The contradictory effects evident in these empirical results point towards further exploration, either of the type used below for holding practices, or further research into the categories' and individual practices' competitive effects.

Holding practices' effects in the SSCAs are evident in the positive and negative cost SSCA, through a retarding effect is evident in innovation and differentiation.

The benchmarking category showed positive effects for innovation and differentiation SSCAs with no negative effects evident in this analysis. Similarly, metrics (measurement) practices showed positive Innovation effects. At the time of the survey both these categories had elevated profiles based on the benefits seen to be offered for driving innovation in the CRE organisation, and in providing greater value (differentiation).

CRE accounting practices – those practices relating to how business units pay, or are deemed to pay, for their use of corporate property – were seen as positive for innovation, but had negative effects on the capacity to provide differentiated value. The reasons for this are also unclear at this time.

The IT tools category had a negative cost competitive effect. This can most easily be attributed to the expenses involved in establishing and maintaining these tools. A positive effect in the differentiation advantage is explicable by the additional value to customers that can, ultimately, be created from these practices. However, the retarding effect here is difficult to explain.

The category of CRE financing – CRE instruments is for the property specific financial methods and practices based on property assets as tangible commodity assets. This tangibility provides the potential for both revenue streams and profit from the commodity through property related financial facilities such as forms of property trusts, lease mechanisms, or securitisation of property. The negative cost effect may be attributed to be expenses associated with creating these instruments. Though short-term benefit is derived by way of the funds released from these "locked-up" assets the long-term diversion of possible revenue away from CRE towards external holders of these assets may be the basis for this negative cost effect.

As noted already, some of these results are difficult to account for. It may be the case that more data is required to confirm or remove these anomalies. It is the case that any "anomalous" responses to questions were made prominent by there being relatively few survey respondents.

Competitive effects in a sample category – quantum of effect. The analysis of categories' effects thus far has been at the level of a category as a whole. Detailed examination of a category's practices shows the quantum of effect of individual practices and also shows where they were identified as having contradictory effects. The results for the holding practices category (Table V) are an example of the analysis process used for all categories. This category was also considered in the paper establishing the theoretical model (Heywood and Kenley, 2008).

Here can be seen the predominance of cost effects in the quantum with the innovation and differentiation effects being reported as "Nil" in many of the practices. There was some potential Innovation from lease forms which could be the case if the existing corporate tenure method was freehold tenure.

It is apparent that while there are positive and negative competitive effects, a dominant result is that participants report a "Nil" effect from a practice, particularly in the innovation and differentiation SSCAs. While this "Nil" effect has been ignored in the previous analysis of the data which looked at effects that enhance or retard competitiveness, it cannot be ignored in making sense of the competitive effect of individual practices.

When viewed as a whole, those practices with a dominant "0" effect have statements of fact about them of the following order – "The practice has no contribution to innovation or to providing unique value differentiation from one's competitors."

Many of the holding practices are long established methods of tenure. This meant that little innovation potential was seen in them. The fact that one's competitors employ the same practices provides no differentiation, or possibly the practices were seen as making no contributions to the use of technology, customer service, or (corporate) branding for an individual organisation's competitive activities. It is also possible that property, with regard to holding practices, can be construed as an undifferentiated commodity, that is, it is equivalent (or near equivalent) to all consumers of it (as a commodity). This idea somewhat belies the property orthodoxy of the primacy of location.

Competitive effects in a sample category – functional strategies affected. Further to considering the existence of practices' competitiveness connection and the quantum of the competitive effect, an important part of the model for sustainable competitive advantage for CRE is that it recognises that CRE's and CREM's effects impact on other

	Sources of sustainable competitive advantage											
	Cost				Innovation				Differentiation			
$n = 14$	+ ve	− ve	0	Total	+ ve	− ve	0	Total	+ ve	− ve	0	Total
Freehold	50.0	14.3	28.6	*92.9*	7.1	0.0	85.7	*92.9*	7.1	0.0	85.7	*92.9*
Leasehold long-term	28.6	7.1	21.4	*57.1*	14.3	7.1	35.7	*57.1*	14.3	7.1	35.7	*57.1*
Leasehold short-term	14.3	21.4	14.3	*50.0*	14.3	0.0	35.7	*50.0*	7.1	7.1	35.7	*50.0*
Capital lease	14.3	0.0	0.0	*14.3*	0.0	0.0	14.3	*14.3*	0.0	0.0	14.3	*14.3*
Operating lease	21.4	7.1	21.4	*50.0*	0.0	0.0	50.0	*50.0*	0.0	7.1	42.9	*50.0*
Synthetic lease	0.0	0.0	0.0	*0.0*	0.0	0.0	0.0	*0.0*	0.0	0.0	0.0	*0.0*
Bond net lease	0.0	0.0	7.1	*7.1*	0.0	0.0	7.1	*7.1*	0.0	0.0	7.1	*7.1*

Table V.
Quantum of competitive effect – holding practices

Note: Dominant effect is shown by numbers in italic

organisational functions and their strategies. Using the same category of practices, the competitive effects through other functions can be considered (Table VI).

The results show that competitive effects were identified across all functional areas. However, the greatest impacts were in the in CIR finance function (CF) and the operations function (O). The CF function is logical, as decisions about tenure modes are also decisions about how the corporation is financed and whether its CRE needs are financed as an owned asset on the balance sheet, or as an expense through leases. The impact on operations is perhaps most obvious, being that if you do not have access to the property by any means operations are not possible.

CREM's effects through functional strategies can be combined with previous valanced results to show how CREM's practices' contribution to competitiveness through these other organisational functions. The dominant competitive effects and corporate functions from previous analysis are used to illustrate this (Table VII).

As noted previously, there were many holding practices that were reported as making a "Nil" contribution to competitiveness in areas of the innovation and differentiation SSCAs. For those where an effect was noted, the results show that freehold, and long term, operating and capital leases make positive cost-based contributions to competitiveness through the O and the CF functions. Short-term leaseholds were assessed as retarding competitiveness through cost in the areas of O and the CF functions. This can be attributed to possible additional outlays for shorter term leases as well as the cost impact on operations through churn in business locations at the expiry of short leases.

Discussion

Competitiveness is a business-focussed measure of appraising, or understanding, a mode of organisations' operating in an environment. It is the default capitalist paradigm, be that at the level of the organisation or the nation (Porter, 1998, 1980). For organisations and their functions like CREM, understanding this is a fundamental recognition of how they orientate themselves in and relate to the world; as is the mode of competition – cost, innovation, or differentiation.

The CRE literature has rarely considered the specific concept of competitiveness, though it has 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

	Corporate functional strategies affected					
$n = 14$	CH (percent)	CF (percent)	CI (percent)	CT (percent)	O (percent)	M (percent)
Freehold	21.4	64.3	14.3	28.6	92.9	0.0
Leasehold long term	21.4	42.9	7.1	28.6	57.1	14.3
Leasehold short term	21.4	35.7	14.3	21.4	57.1	0.0
Capital lease	0.0	14.3	0.0	7.1	14.3	0.0
Operating lease	14.3	35.7	14.3	21.4	64.3	7.1
Synthetic lease	0.0	0.0	0.0	0.0	0.0	0.0
Bond net lease	0.0	7.1	0.0	0.0	0.0	0.0

Notes: Dominant effect: CH, CIR – human resources; CF, CIR – finance; CI, CIR – information; CT, CIR – technology; O, operations; M, marketing

Table VI. Functional strategies' competitive effect – holding practices

Competitive effect	Sources of sustainable competitive advantage: Cost: Dominant competitive effect	Cost: Dominant corporate functions	Innovation: Dominant competitive effect	Innovation: Dominant corporate function	Differentiation: Dominant competitive effect	Differentiation: Dominant corporate function
Freehold	+	O, CF,	0	O, CF	0	O, CF
Leasehold long-term	+	O, CF	0	O, CF	0	O, CF
Leasehold short-term	–	O, CF	0	O, CF	0	O, CF
Capital lease	+	O, CF	0	O, CF	0	O, CF
Operating lease	+/0	O, CF	0	O, CF	0	O, CF
Synthetic lease	ND	ND	ND	ND	ND	ND
Bond net lease	0	O, CF	0	O, CF	0	CF
Total number of practices recording effects	6		6		6	

Notes: CH, CIR – human resources; CF, CIR – finance; CC, CIR – corporate real estate; CI, CIR – information; CT, CIR – technology; O, operations; M, marketing; +, positive contribution; –, negative contribution; 0, no contribution; +/–, positive and negative contribution; ND, no data available from the study

Table VII.
Competitive effect and functional strategies – holding practices

described as becoming a business strategist (Joroff *et al.*, 1993), or a "trusted advisor" (Kadzis, 2008). Where competitiveness has been considered it has concentrated on the tangible, or physical, environment (the real estate) at a tactical level, and the firm's external environmental forces (when competitiveness theory has been considered).

It is also true that many of the technical CREM practices identifiable in the literature are not considered, or framed, with regard to their competitive effects – something this research addresses.

The model of sustainable competitive advantage for CRE was proposed to address these gaps by connecting CREM's practices directly to organisational strategic outcomes – competitiveness – based on sources of competitive advantage enabled by functional strategies. To create competitive advantage the positive effects from certain CREM practices should be maximised through their use, and through minimising the possible negative effects of other practices.

This paper reports on the evaluation of the model in an empirical study of CREM's technical practices' competitive effects in-use. At the most general level, the study's results validate the model's central thesis that there are connections between CREM practices and organisational competitiveness.

The model provides considerably more connections that were supported in the literature. This study shows that there is an empirical basis to those connections. Undoubtedly, there is further scope to empirically fill gaps in the matrix of connections with a larger data set. But, even with a partially complete matrix, the empirical study does validate the model.

As a result of this model there are considerable opportunities for detailed investigation of practices' competitive effects and connections to organisational competitiveness. Such work would surely enhance CREM's business and strategic credentials. These optimisation studies would be an important further step in validating this model.

In addition to evaluating the model of sustainable competitive advantage for CRE, the results make an important contribution to the gap noted in the CREM literature with regard to external, business (Strategy) dimensions (Manning and Roulac, 2001). The results do more than that by demonstrating that the model's theorised connections to CREM practices – Manning and Roulac's (2001) internal, real estate dimensions – do exist.

The confirmation of the model enhances the potential to align CREM practices with organisation's sources of competitive advantage (strategic fit). It is important to know the competitive effects of technical CREM practices as a whole, but knowing the effects for categories of practices and for individual practices is very useful for both practical management and development of CREM's theory as this is where strategic fit is actualised. The results presented above identify the categories that benefit competitiveness most through their positive competitive effects, and those that retard competitiveness through their negative effects – Table III and associated comments. Competitively consistent practices can therefore be adopted as a basis of further optimisation of those practices' effects, and the alignment of CREM's competitive effects with other organisational functions' strategies, as provided for in the model. This is important for strategic fit achieved through consistency of activities for competitive advantage. The top ranked positive categories of practices show the most effective way of increasing competitiveness. The top ranked negative categories are also important as minimising the retarding effect these have on SSCAs increases overall competitiveness.

At a more detailed level, the empirical results show that the cost-based mode of competition though that SSCA was most affected by technical CREM practices. CREM's practices effects in the model's other two Sources were predominantly positive. That is, they enhanced these modes of competition, but the quantum of effect was markedly lower. This shows, in another way, the prevalence of an underpinning CREM orthodoxy that it is, largely, about cost minimisation. These cost effects are reasonably distributed across all categories of practices, while the negative effects are more heterogeneously distributed. However, the emphasis on cost practices has a limited contribution to CREM practice as business strategy (Joroff *et al.*, 1993).

While the results' quantum of effect shows that more effect was felt in the cost SSCA the model also allows the possibility of CREM supporting organisations competitively through innovation and differentiation. This was particularly so in some categories of practices where their quantum of effect was highest – workplace styles, location/site selection, and IT purposes for information systems.

Given that the model is founded on SSCA as the basis of a competitiveness-based strategic alignment, then categories' effects on those SSCAs is most important in achieving that alignment. The results in Table IV show that most of the categories of technical CREM practices listed in Table I and Appendix have some impact on an SSCA. Only two – measuring CRE expenses and using CRE to support the organisation (financially) – do not appear in the table of top five categories. Many of these categories of practices reported having effects that corroborate the theorised effects where they existed. However, there were some puzzling results where contradictory effects for a category are reported in the same SSCA. Allowing for the possibility of practices having different effects depending on the operating context, this discrepancy requires further investigation, either at the level of considering individual practices effects (holding practices has been included here, but generally this has been omitted for space reasons in this paper), or through more research by way of additional data for this type of analysis, or with optimisation studies of categories' and practices' effects.

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.

By CREM adopting a competitiveness approach more is done than provide a form of strategic alignment. This action also enhances an organisation's core competencies and capabilities, something not usually associated with CREM which is more often considered non-core to the business. This means that organisations when focussing on core business or core competencies devalue CREM's contributions. This leads to decisions to push away from the organisation's core this "non-core" aspect, often translating to outsourcing forms.

The model's framework provides CREM-based enhancements to an organisation's core competencies and capabilities both through the management of a strategic resource (CRE) and through CREM practices offering strategically important organisational routines.

Limitations

Several limitations need to be taken into account when considering these results. First, the small sample size restricts the possibilities of all practices being employed by

the sample's participants. This reduces the overall quantum of effect in the calculated results. Second, the results indicate that practices may have contradictory effects. At the level of detail and aggregation reported here it is not possible to resolve this issue, though this possibility does exist in the model's individual practices. Third, the empirical study was conducted in Australia and so the results may not be universal. However, the counter-argument is that the practices to create the model were drawn from the global CRE literature and it is most likely that results will be applicable more universally that just Australia, especially given the operation of CRE in global corporations. Finally, the study used assessments made by CREM managers and so may not constitute empirical performance of an individual practice. Nonetheless, useful results are obtained in defining a model for sustainably competitive CREM.

Conclusions

The theoretical model of sustainable competitive advantage for CRE, previously introduced, was evaluated in an empirical study of Australian CRE managers. The model directly links CREM practices, as operational strategies, to business strategy, represented by competitiveness.

The research provides a significant theoretical advance in the area of CREM and competitiveness through demonstrating that such a theoretical model has an empirical basis. While not able to empirically complete all the connections in the model the study did provide empirical connections between the practices and competitiveness that were possible, but absent in the literature that contributed to the creation of the model.

The results showed that the cost SSCA was most supported by technical CREM practices but the model opens up possible strategically significant ways of competing other than only through cost.

As a result of this work, the model has been evaluated as a useful framework for CREM to implement better alignment of its practices with the organisational objectives to the organisation's greater competitive benefit. The model's usefulness to practitioners is that it shows which categories of practices maximise CREM's competitive effect as the basis of strategic fit from consistent alignment with sources of competitive advantage in an organisation. The study is also useful for showing where effort should be concentrated for studies optimising competitiveness from CREM. These would provide more complete empirical evidence of individual practices' connections.

Further research

While providing a comprehensive model for implementing competitive CREM, in many ways this research is only the beginning of research in this area of CREM. Further research is required with more participants to fill in the remaining gaps in the matrix of connections between practices and SSCAs. This work should include organisations outside Australia. Also required is further work into the operation of practices contained in the categories for both their optimisation and strategic consistency, and the model's inter-functional links need to be explored more to show how CREM interacts strategically with other organisational functions within a competitiveness orientation. Finally, the business-centric approach to CREM's contribution adopted by this research can also be applied to other business contexts by developing comparable frameworks that reflect those business' drivers.

References

Allen, M.T., Rutherford, R.C. and Springer, T.M. (1993), "The wealth effects of corporate real estate leasing", *The Journal of Real Estate Research*, Vol. 8, pp. 567-78.

Appel-Meulenbroek, R. and Feijts, B. (2007), "CRE effects on organizational performance: measurement tools for management", *Journal of Corporate Real Estate*, Vol. 9, pp. 218-38.

Aulich, C., Halligan, J. and Nutley, S. (2001), "Public sector management", in Aulich, C., Halligan, J. and Nutley, S. (Eds), *Australian Handbook of Public Sector Management*, Allen and Unwin, Sydney, pp. 11-19.

Becker, F. and Joroff, M. (1995), *Reinventing the Workplace*, IDRC, Atlanta, GA.

Benjamin, J.D., de la Torre, C. and Musumeci, J. (1998), "Rationales for real estate leasing versus owning", *The Journal of Real Estate Research*, Vol. 15, pp. 223-37.

Burns, C.M. (2002), "Analysing the contribution of corporate real estate to the strategic competitive advantage of organisations", available at: www.occupier.org

Business Review Weekly (1999), "Top 1000 Australian and New Zealand companies", available at: www.brw.com.au/top1000nov99/top1000f.htm

Callon, J.D. (1996), *Competitive Advantage Through Information Technology*, McGraw-Hill, New York, NY.

Daft, R.L. (1998), "Innovation and change", in Daft, R.L. (Ed.), *Organization Theory and Design*, South-Western College Publishing, Cincinnati, OH, pp. 283-320.

Dunn, D., Ellzey, K., Valenziano, S.F., Materna, R., Kurtz, T. and Zimmerman, C. (2004), *CoRE 2010 Integrated Resource & Infrastructure Solutions*, CoreNet Global, Atlanta, GA.

Esser, K., Hillebrand, W., Messner, D. and Stamer, J.M. (1993), *International Competitiveness in Latin America and East Asia*, Frank Cass, London.

Garelli, S. (1994), *The World Competitiveness Report 1994*, IMD and the World Economic Forum, Lausane and Geneva.

Gatignon, H. and Xuereb, J-M. (1997), "Strategic orientation of the firm and new product performance", *Journal of Marketing Research*, Vol. 34, pp. 77-90.

Grant, R.M. (1993), "Analysing resources and capabilities", in Lewis, G., Morkel, A. and Hubbard, G. (Eds), *Australian Strategic Management: Concepts, Context and Cases*, Prentice-Hall, New York, NY, pp. 153-79.

Han, J.K., Kim, N. and Srivastava, R.K. (1998), "Market orientation and organizational performance: is innovation a missing link?", *Journal of Marketing*, Vol. 62, pp. 30-45.

Haynes, B.P. (2007), "Office productivity: a theoretical framework", *Journal of Corporate Real Estate*, Vol. 9, pp. 97-110.

Heywood, C. and Kenley, R. (2008), "The sustainable competitive advantage model for corporate real estate", *Journal of Corporate Real Estate*, Vol. 10 No. 2, pp. 85-109.

Joroff, M., Lourgand, M. and Lambert, S. (1993), *Strategic Management of the Fifth Resource: Corporate Real Estate*, IDRC, Atlanta, GA.

Kadzis, R. (2008), "Performance metrics: attaining corporate real estate's holy grail", *The Leader*, Vol. 7, pp. 74-7.

Kaplan, R.S. and Norton, D.P. (2006), *Alignment: Using the Balanced Scorecard to Create Corporate Synergies*, Harvard Business School Press, Boston, MA.

Lewis, G. (1993), "Concepts in strategic management", in Lewis, G., Morkel, A. and Hubbard, G. (Eds), *Australian Strategic Management: Concepts, Context and Cases*, Prentice-Hall, New York, NY.

Lewis, G. (1999), "The fundamentals of strategic analysis", in Lewis, G., Morker, A. and Hubbard, G. (Eds), *Australian and New Zealand Strategic Management: Concepts, Context and Cases*, 2nd ed., Prentice-Hall, Sydney, pp. 57-80.

Manning, C.A. and Roulac, S.E. (1996), "Structuring the corporate real property function for greater 'bottom line' impact", *The Journal of Real Estate Research*, Vol. 12, pp. 383-96.

Manning, C. and Roulac, S.E. (2001), "Lessons from the past and future directions for corporate real estate research", *Journal of Real Estate Research*, Vol. 22, pp. 7-57.

Martin, P.L. and Black, R.T. (2006), "Corporate real estate as a human resource management tool", *Journal of Corporate Real Estate*, Vol. 8, pp. 52-61.

Materna, R. and Parker, J.R. (1998), *Corporate Infrastructure Resource Management: An Emerging Source of Competitive Advantage*, IDRC, Atlanta, GA.

Nourse, H.O. (1994), "Measuring business real property performance", *The Journal of Real Estate Research*, Vol. 9, pp. 431-44.

OECD (1997), *Industrial Competitiveness: Benchmarking Business Environments in the Global Economy*, Organisation for Economic Co-operation and Development, Paris.

O'Mara, M.A. (1999), *Strategy and Place: Managing Corporate Real Estate and Facilities for Competitive Advantage*, The Free Press, New York, NY.

Phipps, P.A. (1995), "Firm productivity and competitiveness", *Monthly Labour Review*, Vol. 118, p. 64.

Porter, M.E. (1980), *Competitive Strategy: Techniques for Analysing Industries and Competitors*, Free Press, New York, NY.

Porter, M.E. (1985), *Competitive Advantage*, Free Press, New York, NY.

Porter, M.E. (1996), "What is strategy?", *Harvard Business Review*, November/December, pp. 61-78.

Porter, M.E. (1998), "The competitive advantage of nations", in Porter, M.E. (Ed.), *On Competition*, Harvard Business School Publishing, Boston, MA, pp. 155-95.

Prahalad, C.K. and Hamel, G. (1990), "The core competence of the corporation", *Harvard Business Review*, Vol. 68, pp. 79-91.

Redman, A.L. and Tanner, J.R. (1991), "The financing of corporate real estate: a survey", *The Journal of Real Estate Research*, Vol. 6, pp. 217-40.

Rimmer, M., Macneil, J., Chenhall, R., Langfield-Smith, K. and Watts, L. (1996), *Reinventing Competitiveness: Achieving Best Practice in Australia*, Pitman Publishing, Melbourne.

Roberts, P.W. (1999), "Product innovation, product-market competition and persistent profitability in the US pharmaceutical industry", *Strategic Management Journal*, Vol. 20, pp. 655-70.

Roulac, S.E. (2001), "Corporate property strategy is integral to corporate business strategy", *Journal of Real Estate Research*, Vol. 22, pp. 129-51.

Seiler, M.J., Chatrath, A. and Webb, J.R. (2001), "Real estate ownership and the risk and return to stockholders", *Journal of Real Estate Research*, Vol. 22, pp. 199-212.

Singer, B.P., Bossink, B.A.G. and Vande Putte, H.J.M. (2007), "Corporate real estate and competitive strategy", *Journal of Corporate Real Estate*, Vol. 9, pp. 25-38.

Stoy, C. and Kytzia, S. (2004), "Strategies of corporate real estate management: strategic dimensions and participants", *Journal of Corporate Real Estate*, Vol. 6, pp. 353-70.

Thompson, A.A. Jr and Strickland, A.J. III (2003), *Strategic Management: Concepts and Cases*, McGraw Hill Irwin, Boston, MA.

van der Voordt, T.J.M. (2004), "Productivity and employee satisfaction in flexible workplaces", *Journal of Corporate Real Estate*, Vol. 6, pp. 133-48.

Weill, P. (1992), *Managing the IT Investment Pyramid for Competitive Advantage*, Graduate School of Management, The University of Melbourne, Melbourne.

Appendix. Listing the technical CREM practices

This Appendix lists the individual practices within the categories of technical CREM practices used in this paper. They are the specific CRE or property management practices of a CRE portfolio and that constitute the traditional core of CREM (Tables AI-AVIII).

Table AI.
Holding practices cluster (and category)

Holding practices	
Freehold	Operating lease
Leasehold long term	Synthetic lease
Leasehold short term	Bond net lease
Capital lease	

Table AII.
CRE financing cluster

Financing – corporate category	
Corporate retained earnings	
Cashflow from corporate operations	
Corporate debt	
Corporate equities	
Financing – CRE instruments category	
Mortgage REITS	Joint venture with financial institutions
Use of short-term leases	Joint venture with developers
Use of long-term leases	CRE securitisation
Use of sale and leaseback	Hybrid REITs
Issue of equity security (CRE unitisation)	Property trusts
Equity REITs	Real estate operating company
CRE syndication	
Spin-off into MLP	
CRE to support the organisation category	
Managing CRE to obtain desirable financial ratios	
Take advantage of cyclical movements to increase returns on real estate	
Create tax shelter	
Use CRE as security to obtain corporate debt	
Active management of CRE to leverage corporate returns	
Securitisation of CRE	
Sale and leaseback	
Equity participation lease	
Standby lease	

Table AIII.
Accounting cluster

Measuring CRE expenses category	CRE accounting category
Accounting cost	Absorbed as corporate overhead
Value adding	Business units pay depreciation
Real estate market pricing	Business units justify their use by preparing business case
Capital market pricing	Business units pay opportunity cost of capital
	Business units pay market rents

Location/site selection	
1.	Cost minimisation
2.	Flexibility
3.	Facilitate human resources objectives
4.	Facilitate production, operations and service delivery
5.	Facilitate managerial processes
6.	Facilitate marketing objectives
7.	Promote sales and selling
8.	Capture real estate value of the business
9.	Capture financial creation value of business from Real Estate

Table AIV.
Location/site selection cluster (and category)

Workplace styles	
Caves/cubes	Teleworking
Common	Home working
Team space	Work at home
Group address	Telework centres
Project team environment	Executive office suites
Collaborative team environment	Remote telecentres
Activities settings	Neighbourhood offices
Hotelling	Touchdown offices
Hot-desking	Guesting
Just-in-time space	Virtual offices
Universal plan office	

Table AV.
Workplace styles cluster (and category)

IT purposes category	
Strategic	
Transactional	
Decision-making and controlling	
Infrastructure investment (cross-functional enabling technology)	
IT tools category	
Graphic	*Web enabled technologies*
GIS	Property web interface
CAD	Web based property management
	Web based property help desk
Databases	Procurement
Simple form databases	Supply chain management software
Relational databases	Purchasing system
Organisational relational databases	
Distributed databases	
IT infrastructure	
Intranet	
Internet	
Asset or resource management	
Property management software	
Property management information software	
Asset management software	
Facilities management software	
Property inventory database	
Cross functional resource management software	

Table AVI.
Information systems cluster

Table AVII.
Metrics cluster (and category)

Metrics	
Lease vs own model	Benchmarking[a]
Acquisition vs disposal model	Best practice
Staff model	Economic value added
Space model	Return on RE investment
Scenario model	Rate of RE as a cost on corporate revenue
Balanced scorecard	Customer satisfaction indicators
Service balanced scorecard	

Note: [a]Benchmarking not counted in this cluster as this is tr vspace="1pt"eated separately

Table AVIII.
Benchmarking practices cluster (and category)

Benchmarking	
Internal benchmarking	Strategy benchmarking
External benchmarking	Key performance outcomes
Process benchmarking	Key performance drivers

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Review

CRE critique and expert interpretation

A review of *Journal of Corporate Real Estate*, Vol. 10 No. 3, 2008

This review is written by a small team from the Center for People and Buildings, The Netherlands, (Wim Pullen (WP) and Pieter Le Roux (PLR)).

This issue of the *JCRE* contains a number of articles that are very much connected. They all report about the growing body of knowledge on the connection between corporate real estate to organizational strategy and performance. The combination of articles invite especially researchers to refine methods and models both for better description of empirical data, for unambiguous interpretation of data and for predicting business impacts of different CRE strategies. We know that all knowledge is provisional, yet a better understanding of possible causalities will help CRE professionals to manage the connection between customers and real estate more carefully. Buildings can be seen as embedded energy (natural resources) and people working in them are the scarce human "resources". Both demand care based valid evidence.

Christopher Heywood and Russell Kenley (2008), "Evaluating the sustainable competitive advantage model for corporate real estate", *Journal of Corporate Real Estate*, Vol. 10 No. 3

Heywood and Kenley elaborate on their previous published work in *JCRE* Vol. 10, No 2. It is a pleasure to find out that colleagues are trying to connect CRE practices to business management models. It is even more promising that apparently Real Estate is taught at a school of entrepreneurship. The field of CRE needs to benefit from theoretical reflections by tapping into other scientific disciplines, otherwise it remains a field of study where architects, planners and real estate managers discuss their issues. The value of this paper to us is that the authors try to *explicitly* connect organizational routines to competitive advantage. They are well aware of the limitations of their results although methodological critiques on research methods for the resource-based perspective could have been stressed more. The in-depth analysis of ambiguous results ("practices that have contradictory effects") will lead the authors in the relationship between contexts, tangible and intangible assets and organizational capabilities. Referring to the cited work of Porter (1996) I would be very interested in the analysis of trade-offs in the field of CRE. According to Porte the sustainable strategic position requires trade-offs! (WP).

John McDonagh (2008), "The development of corporate real estate asset management in New Zealand ", *Journal of Corporate Real Estate*, Vol. 10 No. 3

It is always a pleasure to read studies with an intertemporal component. They challenge the reader to ask questions about effects and their causes. Obviously changes in the CRE practice in New Zealand occurred in the years since 1992. The authors describe them. The level of analysis might have gone deeper for the reader. Two observations have to be made. CRE businesses in New Zealand seem to have a real estate focus. The first is that authors conclude that "some organizations are 'stuck' in the lower levels of (CRE) evolution" and in the mean time the fact that senior managers

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