Measuring the Added Value of Corporate Real Estate Management

by
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Abstract. *Corporate real estate management (CREM) performance needs to be measured and monitored so as to ensure the match between a company's business and real estate strategies. Performance measures used in CREM should be identified based on the company's core business goals instead of using traditional accounting measures focusing mainly on cost reductions or capital minimization. The aim of the paper is to use a multidisciplinary approach and empirical research results to develop a balanced set of key performance indicators to evaluate how corporate real estate directly and indirectly adds value to the company's bottom line financial results. The empirical results are based on interviews with corporate real estate executives and service providers. Based on a model developed in previous research and the results from interviews, we prepare a proposed set of key performance indicators tied to real estate strategies presented in the framework.*

Keywords: *Added Value, Core Business, Real Estate Strategy, Performance Measurement*

I. Introduction

Monitoring company performance has traditionally been associated with accounting, and the purpose has been to determine a company's financial success. Success has been judged via comparison to previous years' results and various key indicators, such as return on investment, turnover and net profit. This has also been the case in the context of corporate real estate management (CREM). Historically, corporate real estate managers have tended to measure performance from an operational efficiency perspective –factors such as operating costs, costs per square foot and maintenance cost (Arthur Anderson, 1993; Duckworth, 1993; Nourse, 1994; Bdeir, 2003).

A control system concentrating only on such indicators has shortcomings. Short-term goals lead to short-term actions, and a consequence of striving for short-term profits is cutbacks on activities that could lead to long-term profitability (Laitinen 1998, Olve *et al.* 1999). In addition, the financial data do not illuminate the potential of using real estate to create a competitive advantage for the business. Whilst these conventional measurements allow the corporate real estate managers to assess outlay against budget, and even to compare this with the industry norm, they do not make clear whether the organisation is spending the right amount for its needs, or whether it is maximizing its results (Hinks 2004).

However, in recent years the corporate real estate and facilities management industries have begun to shift their focus from proving their worth to the organisation by saving them money, to asserting that CREM actually adds value to organisations. There is a shift from perceiving corporate real estate as a purely tangible asset to one that may also provide benefit as an intangible asset. Lindholm *et al.* (forthcoming) have modelled the relationship between core and non-core business in the context of real estate management and facilities management. In this model both the traditional tangible, short-term effects and intangible long-term effects of real estate decisions are included and the direct and indirect paths to influencing corporate wealth are mapped. Still, just identifying the causal relationships is not sufficient. Measures that will allow testing the relationship between real estate decisions and the company's bottom line financial results must be developed. Developing such key indicators allows testing of the theoretical model and provides corporate real estate managers with the tools they need to identify and quantify their contribution to the wealth of the firm.

The objective of this paper is to use theory from finance and strategic management along with research on business performance, value measurement, and corporate real estate and facilities management to develop key performance measures to evaluate how corporate real estate directly and indirectly adds value to the core business. This paper presents an overview and evaluation of the performance measures used in CREM and also presents a framework for the selection of measures.

This work is based on previous theoretical models, empirical work on key performance measures in other functional areas, and interviews with real estate executives and service providers. Using previous theory as a basis, then working with corporate real estate staff will ensure that the results are theoretically sound as well as practical.

The following section outlines the motive for the study, presents the framework that we use as a basis when constructing the corporate real estate performance management model and presents the background literature that was reviewed. The research method, characteristics of the organizations participating in the research and the empirical research results are discussed in the third section. The following section provides an evaluation of the measures relative to standards and places measures into

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the context of provided model. The final section draws conclusions and makes recommendations for future research.

II. Previous Research

How Real Estate Adds Value and Contributes to Wealth Maximization of the Firm

Measuring the value of corporate real estate decisions is much more difficult than calculating the financial return on traditional "investment" real estate or for the corporate organization as a whole. In the latter two situations overall quantitative output measures such as internal rate of return, return on equity, and return on assets, or qualitative assessments, such as comparison to core business objectives or industry benchmarks are relatively easy to apply. In contrast, corporate real estate outputs are usually internal outputs to another part of an overall process, such as providing the optimal real estate assets to facilitate achievement of core organizational goals (McDonagh, 2002). For this reason, constructing a generic model of the added value of corporate real estate management has to begin with identifying the ultimate goal of the organisation.

According to shareholder value theory, the goal of the firm is the maximization of the wealth of the shareholders. A firm should strive to maximise the return to shareholders, as measured by the sum of capital gains and dividends, for a given level of risk or reduce the risk with the same level of income. According to Kaplan and Norton (1996, 2000, 2004) organizations have two basic approaches for increasing the shareholders' value: revenue growth and productivity. The former generally has two components: build the franchise with revenue from new markets, new products, and new customers; and increase value to existing customers by deepening relationships with them through expanded sales. The productivity strategy also usually has two parts: improve the company's cost structure by reducing direct and indirect expenses, and use assets more efficiently by reducing the working and fixed capital needed to support a given level of business.

Corporate real estate literature research has found that in line with Kaplan and Norton's framework, cost reduction and revenue growth are the key elements for global performance (Krumm and Vries, 2003). Also Burns (2002) comes to conclusion that the contribution of CREM to the organisation's value could be measured by adapting the BSC view, where organisations have two financial strategies for driving shareholder value: profitability and growth.

The choice of strategy for creating shareholder value is likely to be closely tied to the nature of the organization. As differently structured and focused organizations require different results from their real estate assets (for example: low cost, distribution efficiency, employee retention or proximity to markets or resources) there is no one easily identified "output" indicator of "good" performance (McDonagh, 2002). This creates a challenge for identifying the generic added value of CREM as performance is very difficult to measure across a range of differently structured and focused organizations. Because every organisation is individual in respect to the strategies for implementing its ultimate goals, a set of real estate strategies is necessary. A range of possible strategies means that managers can choose the most suitable strategy for their business environment and then make CREM decisions in line with the organizational overall goals, thereby adding value to the firm.

Based on shareholder value theory the model in Exhibit 1 visually captures how corporate real estate can add value to the firm in the modern business environment. The primary aim is maximizing the wealth of shareholders. A business strategy for achieving this goal is developed based on the firm's vision. The

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firm must develop strategies for the functional areas such as human resources, information technology, finance, and real estate that follow from and support the general business strategy. Within the corporate real estate area, strategies are implemented through asset management, property management, and facilities management. Staff makes operating decisions in each of these areas that can directly and indirectly affect the core business and the value of the firm, and thereby shareholder wealth. Key to this model are linking real estate strategies to overall business strategy, identifying how real estate decisions directly and indirectly affect the firm's financial success, and measuring those impacts on the firm.

Exhibit 1. CREM as a Part of the Firm's Strategic Framework (Lindholm et al. forthcoming)
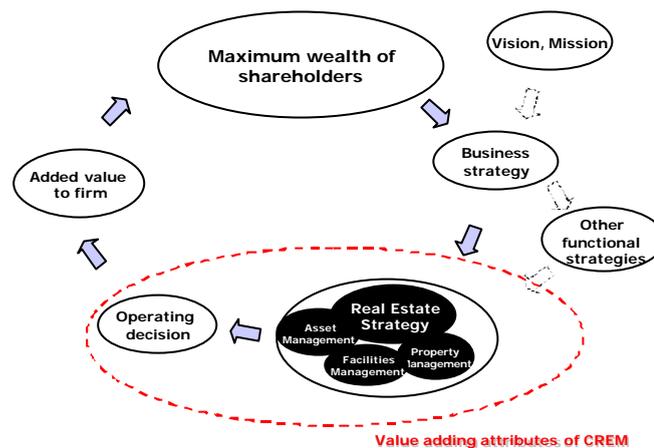

Using the Balanced Scorecard structure and research findings, the model presented in Exhibit 1 is expanded, showing that business strategy can be comprised of two basic approaches for increasing the shareholders' value: revenue growth and profitability. These corporate strategies must then be translated into supporting real estate strategies that guide operating decisions (as shown in Exhibit 2). The key idea in this model is to identify real estate strategies that can create added value to the core business, contributing to the wealth of the firm and shareholder's value. The proper combination of real estate strategies will vary depending on the corporation's strategic positioning within the market. The firm may want to emphasize revenue growth through building the franchise and/or increasing value to its customers. Alternatively, it may want to emphasize profitability through improved cost structure and more efficient use of assets. Corporate real estate strategies to support these core business strategies are organized into the seven alternatives shown in Exhibit 2: (1) increasing the value of assets, (2) promoting marketing and sales, (3) increasing innovation, (4) increasing employee satisfaction, (5) increasing productivity, (6) increasing flexibility, and (7) reducing costs (Lindholm *et al*, forthcoming). All the real estate strategies are dependent upon operating decisions. The added value of CREM can be quantified by identifying measures for the impact of each operating decision. By using these measures it would be possible to show how CREM creates added value for the core business of an organisation.

2. Performance Measurement

To determine whether a firm is achieving its strategic goals, as well as to evaluate, control and improve organizational processes, an organisation needs to compute relevant performance measures that should derive from the firm's strategy (Ghalayini and Noble 1996; Keegan *et al*. 1989). Performance

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Exhibit 2. Possible Tactical Real Estate Decisions in Support of Alternative Real Estate Strategies (Lindholm et al., forthcoming)
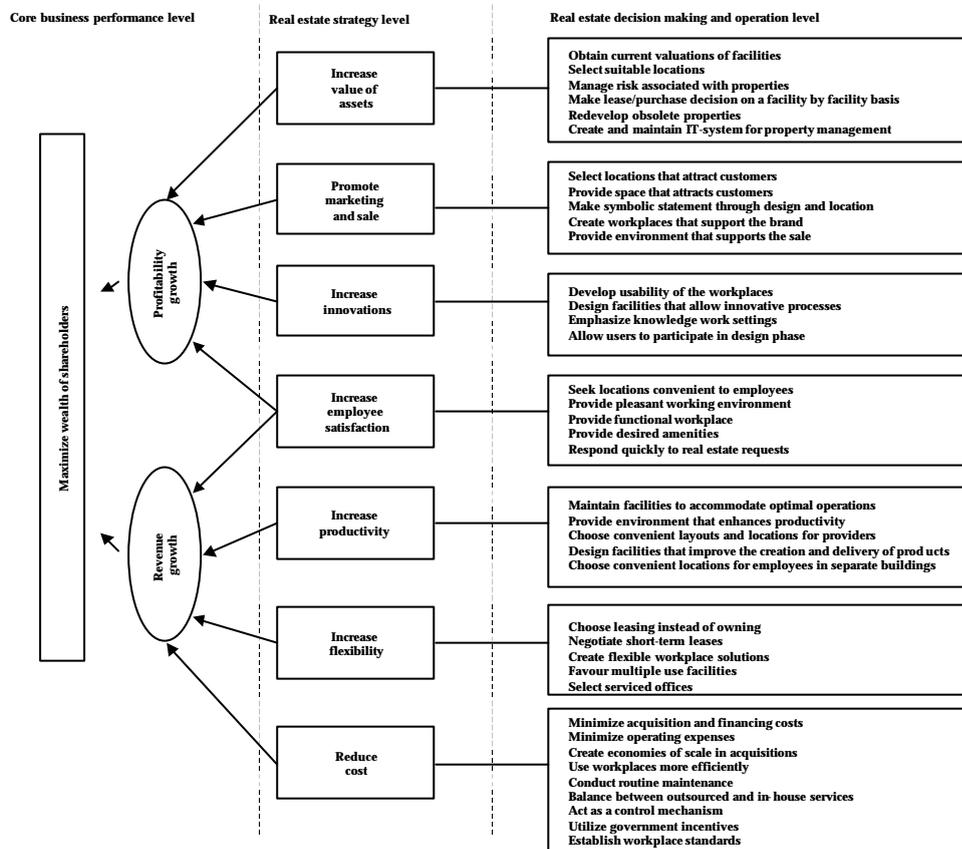
measurement is the process whereby the strategy of an organisation is translated into concrete objectives and achievement of those objectives is evaluated. Performance measurement focuses on communicating the objectives to employees; guiding and focusing employees' efforts towards achieving these objectives; controlling whether or not the strategic objectives are reached; using double-loop learning to challenge validity of the strategy itself, and visualising how efforts of individual employees contribute to the overall business objectives (see e.g. Neely, 1998; Simons, 2000 and Kaplan & Norton, 1996).

Neely *et al.* (1995) describe performance measurement as the process of quantifying action, where measurement is the process of quantification and action correlates with performance. They further propose that performance should be defined as the efficiency and effectiveness of action. A performance measure is defined as a metric used to quantify the efficiency and/or effectiveness of an action and a performance measurement system (PMS) as the set of metrics used to quantify the efficiency and effectiveness of action.

Performance measures are the means for determining the status of a success factor. A single success factor can be assessed using multiple measures. Terms such as indicators (key performance indicators, KPIs), metrics and measurements are often used as synonyms for the term measure. However, Ho *et al.* (2000) state that there is an essential difference between these terms. According to them, the major

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difference between measurements and indicators is that the former are direct representation of the scale of the organization (internal) whereas the latter are figures that are comparable between organizations (external). Performance measurements are direct measurable items such as total expenses or real estate particulars, such as occupancy costs, gross floor area, etc. and performance indicators are data obtained by measuring expenses of real estate particulars against certain metrics, such as occupancy cost per employee, occupancy cost per square feet, ratio of gross floor area, etc.

Researchers have suggested a variety of designs of appropriate performance measurement systems; however, most share some basic principles. Sink (1985), Emory (1985), Brown (1996), Thor (1998), Vokurka and Fledner (1995) and Kaplan and Norton (1996) have identified the characteristics of effective measurement systems (listed in the exhibit 3). These will be used as the guidelines for discussing performance measurement systems in the corporate real estate management context.

Exhibit 3. Characteristics of an effective performance measurement system

- Number of measures should be minimized (Brown, 1996; Thor, 1998)
- System should be based on a balanced set of measures (Kaplan and Norton, 1996, Brown 1996)
    - Measures should be a mix of past, present and future (Brown, 1996)
    - Measures should be a mix of financial and non-financial (Vokurka and Fledner, 1995)
    - Measures should be based around the need of customers, shareholders, and other key stakeholders (Brown, 1996)
- Measures should be unique or mutually exclusive (Sink, 1985)

Also an individual performance measure in the measurement system should have certain properties in order to be sound and effective. There are many criteria for sound performance measurement discussed in the literature (Sink, 1985; Emory, 1985; Judd *et al.*, 1986; Beamon, 1996; Brown, 1996; Kaplan and Norton, 1996; Thor 1998 and Hannula, 1999), as summarized in exhibit 4.

Exhibit 4. Criteria for individual measures in the measurement system

- Measures should be linked to the organization goals and factors needed for success, key business drivers (Brown, 1996; Thor, 1998, Kaplan and Norton, 1996; Beamon, 1996)
- Measures should start at the top and flow down to all levels of employees in the organization (Brown, 1996)
- Measures should be valid (a measure measures what it is intended to measure) (Sink, 1985; Emory, 1985)
- Measures should be reliable (measurement process and measures should provide consistently valid result over time and different situations) (Sink, 1985; Emory, 1985)
- Measures should be practical (they are economical, convenient and interpretable) (Emory, 1985; Sink 1985)
- Measures should be relevant (refers to value and usefulness of the measures for the users) (Hannula, 1999)

The first two criteria are to be applied when constructing a measurement system based on an organization's strategy. The criteria of validity, reliability, practicality and relevance are more difficult to assess on a general level because they are highly situation-specific and they are somewhat subjective. In this paper, individual corporate real estate performance measures are assessed against the general criteria of sound measures (validity, reliability, practicality and relevance).

According to Emory (1985) validity refers to how precisely a measure succeeds in measuring the object that it is intended to measure. *External validity* refers to the way measures can be used in different situations, i.e. how they can be generalized. *Internal validity* refers to the way a measurement instrument is

able to measure what it is assumed to measure. In other words, external validity refers to how one measure maintains its validity in different situations, while internal validity focuses on one measure's validity in a particular situation.

In addition to validity, reliability is an important property. According to Emory (1985), reliability refers to how accurate and precise results the measure provides. A reliable measure provides consistent results. Reliability consists of two characteristics: stability and equivalence. *Stability* of a measure means that measurement results are consistent over time for the same measurement object. *Equivalence* of a measure means that measurement results are consistent when different people are using the measure and when different samples are being measured

Practicality refers to the practical or operational properties of a measure. There are three characteristics for a practical measure: economy, convenience and interpretability. *Economy* of a measure refers to the cost of using the measure. *Convenience* of a measure refers to the ease of using the measure. *Interpretability* of a measure refers to how easy it is to understand the results of a measure (Emory, 1985).

According to Hannula (1999) *Relevance* refers to the value and usefulness of a measure for the users of the measure. If a measure is irrelevant for the users of the measurement results, it is not a very good measure.

3. Real Estate Measures

Corporate real estate performance measurement literature can be characterized into two categories. Research either presents the results of surveys of frequently used performance measures in different kinds of organisations (Arthur Andersen, 1993, Nourse, 1994; Bon *et al.*, 1994; Massheder and Finch 1998; Bdeir, 2003) or suggests specific performance measures for consideration and/or recommends qualities that the measure should possess (Duckworth, 1993; Kincaid 1994; Tranfield and Akhlaghi, 1995; Varcoe, 1996; Hinks and McNay, 1999; Amaratunga and Baldry, 2000; Ho *et al.*, 2000; Lubieniecki and Desrocher, 2003).

A review of the most commonly used measures reveals that organisations have utilized six different types of performance measures: 1) cost, 2) space efficiency, 3) satisfaction, 4) CREM unit efficiency, 5) financial performance and 6) portfolio return. The first two are the most common types of measures. Exhibit 5 summarizes the most commonly used corporate real estate performance measures identified by previous research.

Besides the currently used measures listed in the exhibit 5, researchers have suggested some innovative measures for evaluating corporate real estate performance. We have listed in exhibit 6 some measures suggested by various authors that we think expand and improve upon the range of currently popular measures, making them worthy of additional study. They can be grouped into 1) CRE unit efficiency, 2) productivity, 3) employee satisfaction, 4) marketing and sales, 5) financial performance, 6) portfolio return and 7) strategic involvement. These measures represent a range of impacts that real estate decisions can have on the firm's performance, both directly and indirectly. For example, choice of facility location and design can impact employee satisfaction, which in turn will influence productivity and turnover.

Some of these suggested innovative measures may be appropriate to add to the previously reported popular measures to create a performance measurement system. For such a system to have the desired

Exhibit 5. The most commonly used CREM performance measures

Cost	Occupancy cost per square foot/metre (Nourse 1994; Bon *et al* 1994; Massheder and Finch, 1998)
	Occupancy cost per employee (Arthur Andersen, 1993; Bon et al., 1994; Massheder and Finch, 1998; Bdeir, 2003)
	Occupancy cost per dollar or per unit of revenue (Nourse, 1994)
	Occupancy cost as a % of total operating expenses (Arthur Andersen, 1993)
	Occupancy cost as a % of operating revenue by building or business unit (Massheder and Finch, 1998)
	Occupancy cost per unit of production (Bon *et al.*, 1994)
	Occupancy cost as a % of total labour and overhead by business unit (Massheder and Finch, 1998)
	Occupancy cost by building size (Massheder and Finch, 1998)
	Occupancy cost by location and property type (Bdeir, 2003)
	Cost per square foot/metre (Bdeir, 2003; Arthur Andersen, 1993)
	Cost per employee (Bdeir, 2003)
	Cost per seat (Bdeir, 2003)
Space efficiency	Space per employee (Arthur Andersen, 1993; Nourse, 1994; Massheder and Finch, 1998; Bdeir, 2003)
	Space standards (Bdeir, 2003)
	Percent of space occupied (Nourse, 1994; Wilson *et al.*, 2003)
	Percent operational space versus non-operational space (Massheder and Finch, 1998)
	Total space (square feet or metres) (Nourse, 1994)
	Person per seat (Bdeir, 2003)
CRE unit efficiency	Cost per CRE employee (in-house and outsourced) (Bdeir, 2003)
	Number of CRE employees (Bdeir, 2003)
	Number transactions/projects/leases per FTE employee (Bdeir, 2003)
	Real estate spending as % of gross margin (Bdeir, 2003)
	Real estate spending as % of total operating expenses (Bdeir, 2003)
Employee/Internal client satisfaction	Customer satisfaction (Nourse, 1994; Bdeir, 2003)
	Employee satisfaction with work environment (Arthur Andersen, 1993; Nourse 1994; Bdeir, 2003)
Financial performance	Sales or revenue per square foot (metre) (Arthur Andersen, 1993)
	Space (square feet or metres) per unit (dollar) of revenue (Nourse, 1994)
	Lease vs. construction or ownership cost (Arthur Andersen, 1993; Bdeir, 2003)
	Market capital value versus book value by building (Massheder and Finch, 1998)
	Time to dispose of buildings versus programme (Massheder and Finch, 1998)
	Cost of disposal versus savings (Massheder and Finch, 1998)
	Time to clear buildings versus programme (Massheder and Finch, 1998)
Portfolio return	Cost of acquisitions versus returns/IRR (Massheder and Finch, 1998)
	Holding costs per year (Massheder and Finch, 1998)
	Return on investment (Arthur Andersen, 1993)
	Return on equity (Arthur Andersen, 1993)
	Business return on assets (Arthur Andersen, 1993; Nourse, 1994)

Exhibit 6. Examples of innovative performance measures

CRE unit efficiency and quality	Response time to requests (Tranfield, 1995; Kincaid, 1994; Varcoe, 1996)
	Employee/internal customer satisfaction with responsiveness (Amaratunga and Baldry, 2000; Lubieniecki and Desrocher, 2003; Hinks and McNay, 1999; Wilson, Hagarty and Gauthier, 2003)
	Range of services offered (Amaratunga and Baldry, 2000)
	Total operating expenditures versus budget (Hinks and Mcnay, 1999; Lubieniecki and Desrocher, 2003)
	Competence of staff (Hinks and McNay, 1999)
	Professional approach of staff (Hinks and McNay, 1999)
	Investment in training per employee (Wilson, Hagarty and Gauthier, 2003)
	Training hours per employee (Amaratunga and Baldry, 2004)
	Percent employees indicating strong understanding of how their jobs fit into attaining corporate objectives (Wilson, Hagarty & Gauthier, 2003)
	Employee qualifications (Amaratunga and Baldry, 2004)
	Employee turnover (Amaratunga and Baldry, 2004)
	Aging reports for leases (Bdeir, 2003)
	Number of steps for approval process (Bdeir, 2003)
Productivity	Distance employees commute (Duckworth, 1993)
	Distance to other sites and businesses (Duckworth, 1993)
	Services shared among business units (Amaratunga and Baldry, 2004)
Employee satisfaction	Quality of indoor environment (lightning, temperature, noise, safety) (Kincaid, 1994; Hinks and McNay, 1999)
	Location relative to employees, transportaion, and amenities (Duckworth 1993; Lubieniecki and Desrocher, 2003)
	Workspace (size, shape) (Kincaid, 1994; Lubieniecki and Desrocher, 2003)
	Provision of amenities (Bdeir, 2003)
Marketing and sales	Location relative to customers and transportation (Duckworth, 1993)
	Image and branding (Bdeir, 2003)
Financial performance	No loss of business due to service failure (Hinks and McNay, 1999)
	Reduction of working capital (Amaratunga and Baldry, 2004)
Portfolio return	Status of risk management activity (contaminated sites) (Wilson, Hagarty and Gauthier, 2003)
Strategic involmement	CRE involved corporate strategic planning (Lubieniecki and Desrocher, 2003)
	CRE integrated with other functional strategies (Lubieniecki and Desrocher, 2003)
	CRE activitely involved in firm-wide initiatives (Lubieniecki and Desrocher, 2003)
	Alignment with corporate culture (Bdeir, 2003)

benefits, the firm's top financial and strategic decision makers must understand how real estate strategies fit into the firm's core strategies. Then a set of performance measures are selected that meet the criteria of validity, reliability, practicality and relevance for the particular firm.

III. Empirical Research

The ultimate goal of this research is to devise a fr amework and key performance measures to evaluate how corporate real estate directly and indirectly adds value to the core business and wealth of the firm. To achieve this objective, in addition to synthesizing the previously developed model and empirical research conducted to date, we surveyed organisations' corporate real estate performance measurement practices in a variety of industries in four different countries. Our aim in the empirical research is to find additional potential measures for evaluating the contributions of real estate to the core business drivers and wealth of the firm and to determine how to integrate them into the structural framework presented in Exhibit 2.

1. Sample

We selected a convenience sample of 26 firms from a range of core businesses in Finland, the Netherlands, the UK, and the US. We gathered data on each of the organizations from their websites, annual reports, and case studies reports. We then selected corporate real estate executives within each firm to interview, accessing their knowledge based on being involved in the corporate real estate decisions and strategies in their organisations. The individual interviewees were chosen on the basis of their being active at the CREM field (participation in professional networks, seminars, workshops etc.) as well as professional contacts through CoreNet Global.

To illustrate the range of the interviewed organizations, Exhibit 7 presents the core business of each of the 26 organizations, the home country of each organization, number of people participating in the interviews, job titles of respondents, and some descriptive statistics of interviewed organization and their real estate portfolio. Such a wide range of industries, real estate portfolios and countries ensures access to a wide scope of experiences and operations.

2. Questionnaire

Based on the previous research and consultations with corporate real estate researchers we developed a structured questionnaire. The questionnaire was comprised of a mixed of closed ended and open ended questions. We pretested the questionnaire with two Finnish corporate real estate executives and revised the questionnaire after their comments.

The questionnaire covers several topics. First it is used to gather classification data on the respondents and their firms. In an effort to identify the current corporate real estate performance measurement practices, respondents were asked how they measure their performance (do they have a systemically constructed performance measurement system or just a collection of measures), what measures they currently use and what measures they are missing. In addition, we asked how they determine what to measure, and how their measures are utilized in their firm. At the end, to go further than the previously identified corporate real estate performance measures, we asked interviewees' opinion about what real estate units should measure or what measures should be developed in order to show the contribution of the real estate performance to the core business and the wealth of the firm.

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Exhibit 7. Interviewed organisations and respondents

Type of organisation	Core business	Country	Number of respondents	Titles of respondents	Total employees	CREM employees	Properties total (m²)	Owned properties
17 Private	Air transportation	US	1	CRE manager	60 000	57	430 000	43 %
	Alcohol industry	UK	2	Facilities manager	24 000	-	1 000 000	90 %
	Automotive systems	NL	1	CRE director	40 000		-	-
	Bakery industry	Finland	1	CRE director	3 900	1	180 000	
	Banking services	US	1	CRE transactions director	130 000	100	6 500 000	30 %
	Beverage industry	US	1	CRE director	70 000	11	4 000 000	88 %
	Broadcasting	US	2	CRE director VP of strategic planning (property)	8 000	250	285 000	54 %
	Broadcasting	Finland	1	CRE manager	3 700	60	270 000	70 %
	Building services consulting	Finland	1	Property manager	280	0,5	5800	1 %
	Business consulting services	UK	2	CRE director	9 000	20	-	-
	Data management	US	2	CRE director CRE manager	4 800	2	120 000	2 %
	Electronics	NL	1	CRE financial controller	165 000	450	8 500 000	67 %
	Energy providing	US	1*	CRE manager	25 000	91	1 600 000	40 %
	Energy providing	Finland	1	CRE director	14 000	55	320 000	30 %
	Home appliances manufacturing	US	1*	CRE director	68 000	8	4 600 000	68 %
	Telecommunication services	Finland	1	CRE director	6 500	15	500 000	40 %
	Transportation (railway)	Finland	2	CRE director Environment manager	14 400	140	-	-
9 public	Education & research	Finland	2	CRE director Project manager	3 000	28	230 000	0 %
	Education & research	US	2	FM director CRE manager	3 000	250	420 000	90 %
	Education & research	NL	1	CRE director	4 100	30	400 000	95 %
	Federal services	US	5	CRE director Portfolio management director FM director Property disposals director Planning and development director	1 000 000	500	3 600 000	44 %
	Municipal services	Finland	2	CRE director CRE manager	6 300	300	625 000	90 %
	Municipal services	Finland	1	Facilities manager	13 000	390	900 000	85 %
	Municipal services	Finland	2	CRE director Property manager	6 300	36	430 000	85 %
	Municipal services	NL	1	CRE director	1 700	12	47 764	100 %
	National central banking	Finland	1	CRE director	630	20	130 000	90 %
Total 26 organisations			**Total 39 respondents**					

Note: * Phone interview

- Data was not available

3. Data collection

The interviews with the corporate real estate managers were conducted between January and June 2004. Typically each interview lasted from one to two hours. At least two multilingual investigators participated in each interview, taking full notes. In the US, UK and Netherlands interviews were conducted in English and in Finland interviews were conducted in Finnish. Thus, respondents in the US, UK and Finland were interviewed in their native language and those in the Netherlands were interviewed in their second language.

In some of the organizations multiple members of the corporate real estate staff participated in the interviews to provide complete data on the organization's corporate real estate operations. When questions asked for opinions and definitions, the participants often brainstormed and provided a group answer that was used in the analysis.

In addition, we interviewed four leading corporate real estate consultants, one from each of the countries included in the study, to gain perspective through their knowledge and experience with dealing with these issues in different kinds of organisations and business environments. Consultants were selected based on having experience working with corporate real estate issues and strategic decision-making. In each country the selected consultant represents a major corporate real estate management service provider firm. The most common job title among interviewed consultants was director or managing director. Their comments helped us interpret and organize the results of our interviews with the corporate real estate executives.

4. Analysis

After each interview, notes and findings of both investigators were combined and compared. Subsequent to the interviews the notes were transcribed and the Finnish interview transcripts were translated in English by the researchers.

We analysed the survey data using open, inductive content analysis following Miles and Huberman's (1994) framework. Patterns and themes in the data were noted, links with previous literature drawn, and areas of notable contribution to existing knowledge identified. As is common with open-ended questions, respondents provided a variety of answers that require distillation and interpretation. A comparison of the content analysis between two of the researchers was made and inter-researcher differences were resolved through discussion and reference back to the interview transcripts, as suggested by Miles and Huberman (1994).

5. Results

Performance measurement system

Almost half (12, 46 %) of the corporate real estate organisations have some kind of systemically constructed performance measurement system in use. Eleven (42 %) of those systems are a part of the company wide performance measurement system. These company level systems in all organisations are based on a general performance measurement framework with Balanced Scorecard being the most popular (6 organisations, 23 %) and Six Sigma (3 organisations, 11 %) being the second most popular. Four (15 %) organisations have developed and use their own measurement system in addition to a company wide performance measurement system. Only one corporate real estate organisation uses solely a system that they have constructed on their own.

From the group of organisations (14, 54 %) that do not have a systemically constructed performance measurement system, two of them (8 %) are developing a system at the moment. Eleven of the organizations that do not have a formal system use individual measures or a collection of measures that has developed over the years. Only one of the organisations reports that they do not measure their performance at all in the real estate unit.

In addition to their own performance measurement system or collection of measures two (8 %) of the organisations have developed a system for measuring the performance of their key service provider (partner). In both cases, the system is based on Balanced Scorecard framework.

Utilization of measures

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Organisations use their performance measures for different and multiple purposes. Most (18, 70 %) organisations use performance measures for improving their own performance. Almost as many (17, 65 %) use measures for monitoring costs, 16 (61 %) for space planning, and 14 (54 %) for internal or external benchmarking. In addition to these common uses, interviewees reported that they use performance measures for rewarding employees (a bonus system tied up with performance measures), for creating standards or strategic analysis of the real estate portfolio.

Measures in use

The most commonly used measures in the studied organizations are presented in exhibit 8. As it shows, studied organisations tend to use similar measures to those reported in previous studies. Occupancy cost measures are the most common, with satisfaction and space efficiency measures also widely reported. CRE unit efficiency and portfolio efficiency measures were not common. Amongst the commonly used measures found in studied organisations, only physical conditions of facilities (58 % of organisations) and quality of facilities (35 % of organisations) are measures that were not reported as common in previous studies.

Exhibit 8. The most commonly used corporate real estate performance measures in studied organisations
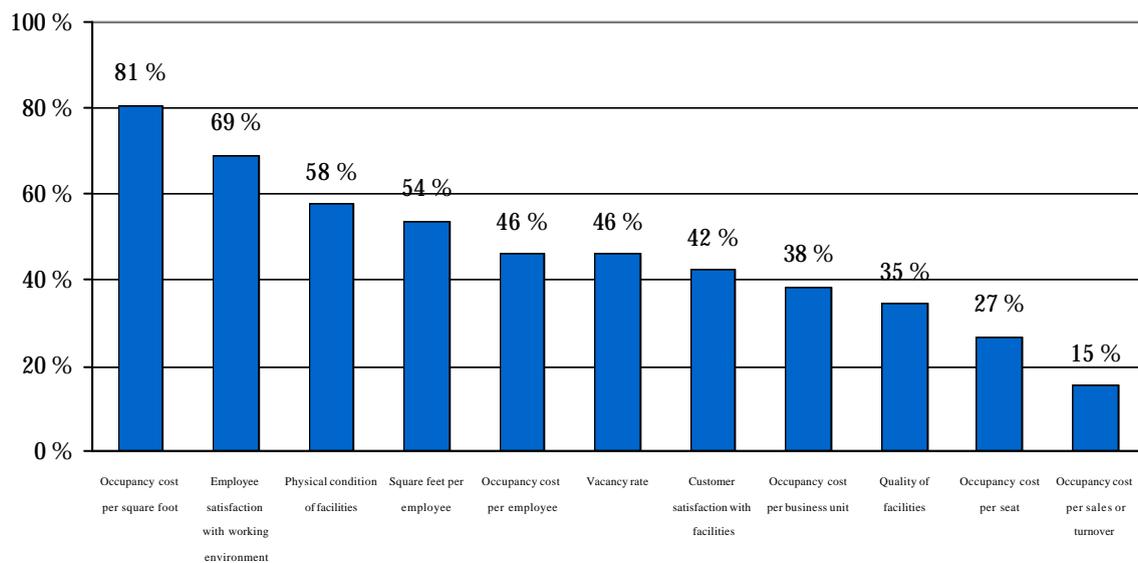
Based on the empirical research results it seems that more corporate real estate organisations are measuring their performance and contribution to the core business. The use of systemically constructed performance measurement system seems to be more common in organisations where the real estate system is part of the company wide measurement system. Even though the corporate real estate organisation uses a performance measurement system, which in theory should be based on core business critical success factors, the individual real estate measures in the measurement system are mostly the traditional finance or cost focused measures, which do not take account all aspects of value creation.

It also seems that the commonly used real estate measures are more like indicators, which according to Ho *et al.* (2000) are data obtained by measuring expenses of real estate particulars against certain metrics and are comparable between organizations (external). The wide use of this kind of indicators in corporate real estate organizations might be due to the active benchmarking activity at the field. As Hinks (2004)

has stated, these conventional measures allow the corporate real estate managers to compare their performance with the industry norm; they do not make clear whether the organization is spending the right amount for its needs or whether it is maximizing its results from the core business point of view.

Apart from the most common measures and indicators presented in Exhibit 8, some additional innovative measures were discovered. Some previously not reported measures found through the interviews are listed in the exhibit 9. They can be grouped into 1) cost, 2) CRE unit efficiency quality, 3) flexibility, 4) productivity, 5) innovation, 6) marketing and sales, 7) portfolio return, 8) risk management 9) strategic involvement, 10) strategy implementation, and 11) corporate social responsibility.

IV. Selection of Performance Measures to Develop a Performance Management System

The model in Exhibit 1 illustrates how corporate real estate can add value to the firm in the modern business environment. Good performance measures are needed to determine whether each real estate operating decision is supporting the firm's real estate strategies, which were established to further its core strategies (as shown in exhibit 2). From the results of the previous research and the interviews we have developed a list of known real estate performance measures and matched them to the framework of real estate strategies provided in Exhibit 2.

Each firm should develop its unique performance measurement system to match its goals and strategies. What may be a key element of one firm's portfolio strategy may be irrelevant to a firm that is emphasising another strategic vision. Data that may be easily available to one firm may be too expensive for another to gather. Thus, each firm should construct a personalised performance measurement system to suit its goals and constraints. To assist firms in selecting the appropriate measures for their performance measurement system we are preparing a questionnaire (Exhibit 10) to rate each of the performance measurements on the criteria used to identify sound measures: validity, reliability, practicality, and relevance. While overall measures of validity and reliability relate the measures themselves, practicality and relevance will vary by firm. We will ask participants in the next stage of the study to rate each measurement as adequate or inadequate on each criterion. The result of the rating will reveal the most suitable measures for each firm.

V. Conclusions

Historically, corporate real estate managers have tended to measure performance from an operational efficiency perspective. Such systems tend to emphasise short-term performance and direct financial costs, ignoring the many indirect ways real estate adds to the core value of the firm.

In recent years the corporate real estate and facilities management industries have recognised these shortcomings and are looking for ways to demonstrate how CREM actually adds value to organisations. There is a shift from perceiving corporate real estate as a purely tangible asset to one that may also provide benefit as an intangible asset. Lindholm *et al.* (forthcoming) have modelled the relationship between core and non-core business in the context of real estate management and facilities management. In this model both the traditional tangible, short-term effects and intangible long-term effects of real estate decisions are included and the direct and indirect paths to influencing corporate wealth are mapped. Still, just identifying the causal relationships is not sufficient. Measures that will allow testing the relationship between real estate decisions and the company's bottom line financial results must be developed. Developing such key indicators allows testing of the theoretical model and provides

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Exhibit 9. Examples of innovative performance measures found through interviews

Cost	Number of moves per year
	Cost of under utilized space
	Workplace standards in use
	Number of service providers
CRE unit efficiency and quality	Service level agreements (SLA's) in use with service providers
	BSC for partners in use
	Audits for service providers in use
	Time used in project versus time budgeted for the project
	Money spent on project versus money budgeted on the project
	Amount of advice given to other business units
	Employee satisfaction with professional skills
	Employee satisfaction with information sharing
Flexibility	Leased space relative to total space
	Length of lease terms
	Amount of distance work settings in use
Productivity	Employees' opinion on how well the workplace supports their productivity
	Time wasted with interruptions (due to open space layout)
	Distance to employees' homes
Innovation	Amount of teamwork space (information workers)
	Number of workstations per employee (information workers)
Marketing and sales	Distance to customers
	Use of company logos and colour in workplace design
Portfolio return	Percentage of surplus assets sold
	Number of development projects (obsolete properties)
Risk management	Number of building quality audits
Strategic involvement	Communication time with top executives
	Number of formal and informal meetings with top executives
Strategy implementation	Fulfillment of strategic aims
	Self evaluation of how well decisions support strategy
Corporate social responsibility	Energy consumption (conservation)
	Number of energy audits

corporate real estate managers with the tools they need to identify and quantify their contribution to the wealth of the firm.

Theory from finance and strategic management along with research on business performance, value measurement, and corporate real estate and facilities management can be used to develop key performance measures to evaluate how corporate real estate directly and indirectly adds value to the core business. This paper has presented an overview and the first steps of an evaluation of the performance measures used in CREM using a framework for the selection of good measures as part of an integrated performance measurement system.

Thus far we have found that only a limited number of performance measures are being used by CREM. Those measures being used are not necessarily the best measures to evaluate whether real estate strategies are being successfully implemented in that they are not all reliable, valid, practical, and relevant to individual firms. We are finding that the measures firms use are often either those that they have the data to calculate, those industry commonly benchmarks or those that a higher authority asks for. They are not tied to the specific strategies and operating decisions that drive the CREM operations. We are also finding that the set of measures firms are using is incomplete. The success (or lack thereof) of many real estate decisions in contributing to the core value of the firm is going unmeasured. Thus, corporate real estate executives using such measures will continue to have difficulty demonstrating how they add value to the firm.

We have identified a list of known real estate performance measures and matched them to the framework of real estate strategies. Firms can use this model in developing their unique performance measurement system to match its goals and strategies. To assist firms in selecting the appropriate measures for their performance measurement system we have presented a questionnaire, a practical tool, which can be used in identifying sound measures for each firm.

We will continue our research by completing the framework for evaluating the measures. After the framework is finished, we will field-test it by evaluating the full range of possible performance measures and suggesting how they might be integrated into a complete performance measurement system. We will use the results of the survey to assist in the evaluation of performance measures and develop a set of "best" measures for each real estate strategy. Firms can then choose from among these measures to develop a comprehensive performance measurement system that best fits that company's goals and resources.

Exhibit 10: Evaluation of performance measures

Real estate strategy	Potential measure	Adequacy on criterion			
		validity	reliability	praticality	relevance
Reduce cost	Occupancy cost per square foot/ metre				
	Occupancy cost per seat				
	Occupancy cost per employee				
	Occupancy cost per dollar/unit of revenue				
	Occupancy cost as a % of total operating expense				
	Occupancy cost as a % of operating revenue by business unit				
	Occupancy cost as a % of operating revenue by building				
	Occupancy cost per unit of production				
	Occupancy cost as a % of total labour and overhead by business unit				
	Occupancy cost by building				
	Space (Square feet or metres) per employee				
	Whether workplace standards are used				
	Percent of space occupied				
	Percent operational space versus non-operational space				
	Total owned and leased space (square feet/metres)				
	Persons per seat				
	Number of moves per year				
	Cost of under utilized space				
	Real estate cost per CRE employee				
	Total CREM operating expenditures versus budget				
Increase flexibility	Percent leased space relative to total space				
	Length of lease terms				
	Use of virtual and flexible workspaces				

Increase productivity	Employees' opinions on how well the workplace supports their productivity				
	Distance employees commute				
	Distance among company sites and businesses				
	Time wasted with interruptions (due to open space layout)				
	Percent shared services				
	No loss of business due to real estate service failure				
	Real estate spending as % of gross margin				
	Real estate spending as % of toal operating expenses				
	Time used on real estate projects versus time budgeted for projects				
	Money spent on real estate projects versus money budgeted for projects				
	Amount of real estate advice given to other business units				
	Number of service providers/service level agreements				
	Number of transactions/projects/leases per FTE employee				
	CRE employee qualifications				
	Employee turnover				
	Number of steps/time for real estate approval process				
	Use of audits for service providers				
Increase employee/internal client satisfaction	Distance to required transportation modes for employees				
	Employee satisfaction with work environment				
	Quality of indoor environment (lightning, temperature, noise)				
	Workspace (size, shape)				
	Amount of nearby amenities for employees				
	Range of services offered by CREM				
	Employee/internal customer satisfaction with responsiveness of CREM staff				
	Employee satisfaction with CREM staff professional skills				
	Employee satisfaction with CREM information sharing				
	CREM response time to requests				

	Competence of CREM staff				
	Investment in training per CREM employee				
Increase innovations	Number of teamwork settings				
	Number of workstations per employee				
Promote marketing and sales	Distance to required transportation modes for customers				
	Distance to customers				
	Use of company logos and colours in workplace design				
	Image rating based on building attributes				
	Energy consumption (conservation)				
	Number of energy audits				
	Environmental sustainability of buildings				
Increase value of assets	Real estate cost of acquisitions versus returns/IRR				
	Lease vs. construction or ownership cost comparisons				
	Aging reports for leases				
	Real estate holding costs per year				
	Number of building quality audits				
	Real estate return on investment				
	Real estate return on equity				
	Business return on real estate assets				
	Sales or revenue per square foot (metre)				
	Space (square feet or metres) per unit (dollar) of revenue				
	Market capital value versus book value by building				
	Percentage of surplus assets sold				
	Time to dispose of properties versus plan				
	Cost of disposal of property versus savings				

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	Time to clear buildings versus plan				
	Number of development projects for obsolete properties				
	Status of risk management activity (contaminated sites)				
Effectiveness in corporate strategic process	Percent CREM employees indicating strong understanding of how their jobs fit into attaining corporate objectives				
	CREM involved corporate strategic planning				
	CREM integrated with other functional strategies (HR, IT, etc.)				
	CREM activitely involved in firm-wide initiatives such as special asset use, consolidations, or shared services opportunities				
	Number of formal and informal CREM meetings with top executives				
	Fulfilment of CREM strategic aims				
	CREM communication time with top executives				
	Self evaluation of how well CREM decisions support strategy				

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