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Published in:
Journal of Corporate Real Estate

Link to article, DOI:
[10.1108/JCRE-09-2013-0026](https://doi.org/10.1108/JCRE-09-2013-0026)

Publication date:
2014

[Link back to DTU Orbit](#)

Citation (APA):
Shiem-shin, D. T., Tan, T., Santovito, R. F., & Jensen, P. A. (2014). Attributes of Alignment of Real Estate and Facilities Management to Business Needs – an international comparative analysis. *Journal of Corporate Real Estate*, 16(2), 80 - 96. DOI: 10.1108/JCRE-09-2013-0026

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Attributes of Alignment of Real Estate and Facilities Management to Business Needs – an international comparative analysis

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Purpose: The purpose of this paper is to present a model for consideration of real estate and facilities management (RE/FM) alignment to business needs, and to validate the model based on questionnaire surveys carried out in a number of countries around the world.

Design/methodology/approach: The model for RE/FM alignment is inspired by the work of the fathers of the Balanced Scorecard in their book called “Alignment” (Kaplan and Norton, 2006). The model includes a number of criteria for alignment between business needs, facility solutions, FM services and FM resources. Three multi-year questionnaire surveys were conducted using the same methodology: the surveys have been carried out in three rounds in different languages: English, Portuguese and Danish. The respondents were senior professionals in the area of FM and real estate/property, mostly working at strategic levels, and representing countries in Asia, Australia, Europe, North America, and South America. The results of the different surveys were combined and then analysed, using both discourse analysis and statistical tests to validate the results. Differences in the priorities of the alignment criteria in the different regions are described and analyzed

Findings: A main result of the surveys is that all of the alignment criteria were seen as relevant and useful in nearly all countries, but the priorities accorded to the different criteria varied significantly for some of the alignment variables in the different region. The highest degree of agreement was on ‘Capacity’, being the most important criteria for the alignment between supply and demand of facility solutions in relation to business needs. One of the main differences in agreement was between the importance of strategy versus cost in the alignment between ‘Facility solutions’ and ‘FM services’.

Research limitations/implications: The validity and value of the model was evaluated as positive in all countries, but by far most positive in North America and least positive in Europe. Although the survey results might be limited in terms of a broader generalization, this was not the main purpose of the research. The survey was aimed at testing the hypotheses about alignment criteria and their validation by professionals, thus enabling further developments of the framework.

Originality/value: Alignment of Real Estate/Facilities Management (RE/FM) to business needs is an essential management task and an important tool for RE/FM executives to create added value to their core business. Moreover, as companies become increasingly global, an international comparative study of their relative priorities becomes even more relevant. However, there has so far only been limited research into such an alignment concept applicable to FM and an implementation model.

Keywords: Real Estate; Facilities Management; Alignment; Core Business; International; Survey

Article classification: research paper

Introduction

A growing corporate awareness of the importance of workplace and its associated occupancy costs in recent years, has promoted the growth of facilities management in both the private and public sectors around the world. (Becker and Kelley, 2004; McGregor and Then, 2001; Carter, 1999) Over the same period, there have been rapid technological advances that have altered traditional views of real estate facilities and workplace provisions and procurement of facilities services. Improved communication has increased inter-country mobility and resulted in changes to traditional supply chains. These changes, nationally and

globally, have altered both the assessment and procurement of business support infrastructure including the provision and management of real estate and facilities services. In real estate and facilities management, there have been a greater awareness and realization of the need for integrated resources planning (i.e. people, real estate and technology) in order to derive optimal facilities solutions to meet emerging business challenges. (Robertson, 2000; Then, 1999, 2003; Nutt, 2000; CoreNet Global, 2004). A central theme of any optimization process is the concept of alignment of business resources to business needs (Kaplan & Norton, 2006; Green and Jack, 2004).

Alignment concept in business and its application in real estate and facilities management

The alignment concept is aptly summarised by the following quotations from the book title: "Alignment" by Kaplan & Norton (2006):

"When the enterprise aligns the activities of its disparate business units and its support units, it creates additional sources of value...". (pp.5)

"Corporations must continually search for ways to make the whole more valuable than the sum of its parts. Alignment is critical if enterprises are to achieve synergies throughout their business and support units. ..". (pp.26-27)

"Alignment is NOT a one-time event". (pp.245)

"By its very nature, alignment requires cooperation across organization boundaries, and therefore the process must be managed proactively" (pp.257)

In summary, alignment, in an active sense, implies moving in the same direction, supporting a common purpose, being synchronized in timing and direction, being appropriate for the purpose and in a passive sense, the absence of conflict.

All businesses need real estate facilities and support services to function – whether that business is a manufacturing company, a financial institution, a retail outlet, a hospital or a university. Matching appropriate real estate and facilities services to business needs is an obvious requirement in terms of resource utilization, whether for profit-driven or not-for-profit organizations. In the context of this research, real estate portfolio (RE) and facilities management expertise (FM) represent facets of business management which are often under-rated and often under-managed (RICS Research, 2012; Hinks, 2013) The scope of management of RE/FM reflects management functions that comprise decisions relating to the provision of real estate (i.e. space) to meet business objectives, as well as the servicing of functional spaces for business units, employees and customers. Together, they represent a suite of essential services necessary to manage real estate facilities as a business resource.

The dynamics of business environment, mobility of workforce and increasing scope for outsourcing of non-core functions which are increasingly integrated within a regional and even global context, have forced many executives with responsibilities of RE and FM to consider how to align their resources to meet strategic corporate direction and goals. In RE/FM, the need for alignment exists at different levels and is driven by a process of continuous matching of supply to demand, both in physical facilities, support services and intangibles such as management processes, leadership and competencies (Nutt, 2004; Osgood, 2004; Then and Tan, 2006).

Need for Alignment in RE/FM

Growing international recognition of the important role of real estate facilities as a business resource has led to a more prominent profile of real estate and facility management

(RE/FM) as a business function that can contribute to business success. Globalisation of markets and supply chains, rapid technological advances and shifting management priorities have altered traditional parameters that have governed both the provision and management of real estate facilities and support services. Competition has intensified, creating pressures to use limited resources more effectively.

The need for alignment between business needs and the organisation's real estate facilities infrastructure is at the heart of any strategy in supporting business success. To this end organizations have pursued various strategies aimed at better matching of demand and supply. The range of real estate and facilities services in any corporate setting is wide, impacting on a number of stakeholders whose expectations of facility and services performance are unlikely to be consistent. RE/FM performance are key variables to improving business performance since the focus of RE/FM is to enhance the capability of an organization's real estate and facility services to support the achievement of corporate goals (McGregor and Then, 2001). In recent years, strategies to improve FM services performance and ultimately business facilities' performance have been driven and influenced by:

- Widespread outsourcing of FM services to varying degrees and using a number of procurement models; (Barnhoorn, 1995; Frost, 1997; McBlaine, 2002; Young, 2004).
- An increased demand in exploiting technology and knowledge management applications in the design and management of modern facilities and workplaces. (McGregor and Then, 2001; Joroff, 2002; Ratcliffe and Saurin, 2008; IBM Institute of Business Value, 2010)
- An increased focus on real estate facilities as a business resource and methods for measuring facility performance that reflect business goals. (Varcoe, 2002; McDougall et al. 2002; Then, 2003; Valence, 2004)

The RE/FM function, by nature, must be responsive to changing client needs in a dynamic business environment in order to fulfil its increasingly critical role as custodian of the corporate workplace and workspace environment. The extent to which these responses are reactive or planned (as a service anticipating the needs of the client and responding in a timely and cost effective manner) varies from organisation to organisation. This variation is influenced by the nature of the business, corporate perception of the role of real estate facilities, the competence of the in-house management and/or external service provider(s), and other factors.

More recently, research and practice directed at understanding the role of facilities/real estate in enabling core business strategy is receiving attention (Nutt, 2004; Then, 2004; Osgood, 2004; McDonough and Nicols, 2009). In a recent longitudinal survey study of Fortune 1000 companies, Osgood (2009) noted obvious relationships between core business and facilities/real estate elements. However, the exact nature of these relationships is not well understood nor thoroughly researched. It is against the above background that the concept of alignment (Kaplan & Norton, 2006) is being applied to the role of RE/FM within an organisational context.

Then and Tan (2006) first explored the alignment of facilities management performance to business needs. They provided an exploratory model linking RE/FM performance to business performance. The initial model had gone through various iterations following a comprehensive literature review and various case studies. This paper represents the culmination of the model development with the commencement of a model validation via an international survey of experts in the field of real estate and facilities management. In the context of the proposed alignment model the proposition is that the synergies achieved through the alignment of the relevant parameters create a RE/FM function that is optimally synchronized with the needs of the enterprise – it is neither more nor less than what is

precisely required to support the business enterprise. Conversely, symptoms of misalignment would include situations within businesses in which there is mismatch between demand for and supply of appropriate space, services delivered within business facilities are inadequate to meet operational requirements, or where resources allocated to RE/FM function are inappropriate for efficient and effective business delivery and operate in conflict with organisational policies and culture.

Research Objectives

The central theme of this research is to better understand the variables underpinning alignment of RE/FM as an integral part of fulfilling business needs. The research started with a focus on an analysis of the dynamics between the role of facilities management and the role of supporting real estate facilities in meeting business needs.

The basic premise is the acknowledgement that business performance is dependent on having appropriate operational facilities and services to support its business delivery (Then, 2003, 2004). Hence, the focus of the RE/FM function is to minimize any potential mismatch between business performance and real estate facilities performance. Similarly, the quality of RE/FM practice is directly linked to the extent of knowledge and application of best known practices in that any mismatch between the two will lead to suboptimal solutions.

In terms of research outcomes, it is anticipated that the research will contribute to a better knowledge and understanding of the following:

- The concept of alignment and how it can assist in improving the appropriate provision of real estate facilities and FM practice as a strategic and supporting management function;
- The key parameters of real estate facilities and FM that need to be aligned and their relationships;
- The alignment variables between the above parameters and the criteria that further define each of the alignment variables; and
- A structured evaluation process or method that can be applied to evaluate the extent of alignment in any given business scenario.

Understanding of the extent of alignment (or misalignment) of real estate facilities and FM with business needs will assist in:

- Improving the positioning of real estate facilities and FM to be more effective in supporting the achievement of corporate objectives;
- Managing the dynamic nature of FM and its reactive and proactive responses in order to align with the nature of the business and other factors;
- Focusing RE/FM to have a better understanding of business needs and drive more effective utilisation of operational real estate facilities; and
- Aligning FM performance with real estate facilities performance criteria aimed at measuring the cost and value contribution of real estate facilities to business objectives.

Conceptual Development

Conceptual development of the model was guided by and based on a number of contextual propositions. They provide the link between the concept of alignment as a key to business success and its application to the realm of real estate facilities and FM.



Figure 1: Alignment of RE/FM to Business

The following propositions were used to develop the concept:

Proposition 1: RE/FM is a support function to the enterprise similar to HR, Finance and IT

Proposition 2: Support functions do not have a direct role in delivery of core business services but have a role in contributing to competitive advantage of the enterprise.

Proposition 3: Support functions contribute to competitive advantage by providing efficient and effective support infrastructure and services that align with enterprise strategies.

Proposition 4: An effective support function “understands its customers’ strategy and uses its functional expertise to create and deliver solutions that contribute to its customers’ success” (Kaplan and Norton, 2006, pp139).

Proposition 5: Alignment of RE/FM with enterprise strategies is critical to the efficient and effective provision of real estate facilities and services and providing facilities solutions that add value to the enterprise and enhance its competitive advantage.

Proposition 6: When alignment exists, the RE/FM function understands the business strategies of the enterprise including the component business units (internal customers of the RE/FM function) and develops its facilities strategies, service portfolio, resources and business processes to create and deliver facilities solutions that support its customers and stakeholders. Refer Figure 1 above.

Proposition 7: Based on Proposition 6, our concept of RE/FM alignment can be expressed in terms of four dimensions or variables of alignment:

- Variable 1: Supply and Demand Alignment
- Variable 2: FM Service Alignment
- Variable 3: RE/FM Resource Alignment
- Variable 4: Organizational Alignment

Each variable can be defined by a number of criteria that can be used to achieve or assess alignment. Proposition 7 is shown conceptually in Figure 2.



Figure 2: Business-RE/FM Alignment Model

Context of Business domain and RE/FM domain

Figure 2 conveniently delineates the context of the Business domain and that of the RE/FM domain. Taking a horizontal delineation, the top segment of the figure comprises of the business domain in which ‘Business Needs’ drive ‘Facility Solutions’ and the selection of ‘FM Resources’ through ‘FM Strategy’ shaped by the organisation’s core business strategies and competencies.

The bottom segment defines the RE/FM domain within which the appropriate ‘Facility Solutions’, ‘FM Resources’ and ‘FM Services’ are delivered to support the achievement of the organisation’s business strategies and objectives.

The quality of alignment between ‘Business Needs’ and ‘FM Services’ is determined by the appropriateness of ‘Facility Solutions’ since they define real estate facility requirements and the required services performance. Similarly, how ‘FM Resources’ are harnessed and managed (in alignment with ‘Business Needs’) will influence ‘FM Services’ organisational culture, innovation and quality of responses to current and future ‘Facility Solutions’.

Taking a vertical delineation, Figure 2 also highlights how business organisational culture, as reflected by how ‘FM Resources’ are organised and managed will impact on its capacity to innovate and continuously improve (LHS). Similarly, the quality of ‘Facility Solutions’ implemented is a product of appropriate strategy which, in turn, is a function of internal (and external) capability to define, assess and articulate how real estate resources and services can best meet planned business objectives (RHS).

Alignment Variables and Criteria

For the purpose of defining the alignment of RE/FM with business four (4) relationships have tentatively been identified. Each of these relationships represents an “alignment variable”. For each of the alignment variables a number of “alignment criteria” have been identified as being useful in assessing the degree of “fit” or “alignment” with a view to promoting continuous improvement. Figure 3 illustrates the alignment criteria corresponding to each of the alignment variables. The criteria are furthermore described in the Table 1 below.

Table 1: Alignment Variables and Criteria

Alignment Variable	Alignment Criteria	Alignment Criteria Description
<p>A</p> <p>Supply and Demand Alignment</p> <p>(Alignment between <i>Business Needs</i> and <i>Facilities Solutions</i>)</p>	Capacity	The capacity of the facilities in meeting business requirements in terms of space and other facility attributes that support the delivery of business services or products.
	Condition	The physical condition of the facilities which is appropriate to the functional purpose of the facilities.
	Service potential	This is the potential of the facilities to meet future business requirements and the sustainability of the facilities into the future.
	Risks	These are the risks associated with the facilities which may impact on business productivity and continuity.
	Financial	These are the financial attributes that determine how judgments and decisions will be made in regard to the financial viability of the facilities and include capital value, operating costs and depreciation.
	Social	These are attributes that relate to social responsibility aspects of the facilities such as heritage and ecological sustainability to which the enterprise is committed as part of responsible business.
<p>B</p> <p>FM Service Alignment</p> <p>(Alignment between <i>Facilities Solutions</i> and <i>FM Services</i>)</p>	FM service strategies	These refer to the service strategies developed for the facilities in order to ensure that the facilities are able to perform their intended role in supporting business. They include the service portfolio necessary to achieve the FM service strategy.
	FM service levels	The level of work volume and intensity of each of the FM services that is necessary to meet the requirements of the facility.
	FM service standards	The quality standards of the FM services provided that lead to customer satisfaction.
	FM service costs	The costs of FM services including procurement, management and transaction costs.
<p>C</p> <p>FM Resource Alignment</p> <p>(Alignment between <i>FM Services</i> and <i>FM Resources</i>)</p>	Resource capacity	The capacity of the resources to perform the desired functions to the required standard.
	Resource suitability	The suitability of the resources to enable the desired functions to be performed with optimum efficiency and effectiveness.
	Resource organization	The organization or configuration of the resources to enable the desired functions to be performed with optimum efficiency and effectiveness.
	Resource costs	The costs of the resources including procurement and management.
<p>D</p> <p>FM Organizational Alignment</p> <p>(Alignment between <i>FM Resources</i> and <i>Business Needs</i>)</p>	Business governance	The FM organization structure and the effectiveness of its positioning within the enterprise management and reporting levels.
	Procurement strategy	How FM is sourced as a support function and the extent of compliance with business policy and procurement strategy.
	Business policy	The extent to which the FM functions' operations and services comply with and support business policies.
	Organizational culture	The compatibility of the FM resources (people) with the business environment and culture.

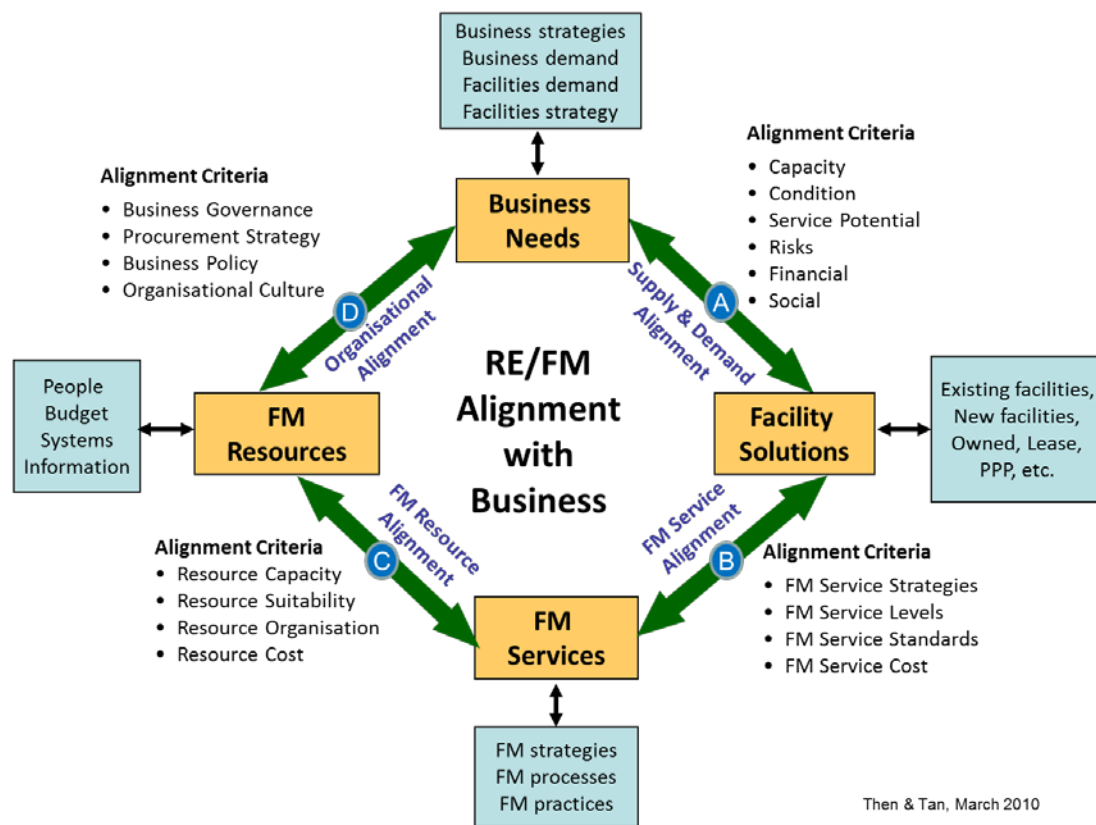


Figure 3: Alignment Variables and Criteria

A brief description of each of the alignment variables is given below.

(A) Supply and Demand Alignment (The alignment of *Business Needs* with *Facility Solutions*)

The principle that business needs must drive the procurement, ownership and/or leasing of facilities solutions (real estate) has been generally accepted. In this context the key variable is that of supply and demand management to ensure that facilities solutions meet business requirements effectively. The alignment of facilities solutions with business requirements is defined as the effective “fit” between demand and supply.

(B) FM Service Alignment (The alignment of *FM Services* with *Facility Solutions*)

Real estate facilities need to be provided with FM services to support and enable occupancy and use. The suitability of FM services for the type of facilities solutions (e.g. office space, hospitals, factories and schools) is critical in ensuring that the facilities operate effectively and efficiently.

(C) FM Resource Alignment (The alignment of *FM Resources* with *FM Services*)

Real estate facilities need to be provided with FM services to support and enable occupancy and use. These FM services in turn need to be adequately resourced (people, systems and budgets) in order for them to be effective and meet the needs of the facilities they serve.

(D) Organisational Alignment (The alignment of *FM Resources* with *Business Needs*)

The FM resources that enable the delivery of FM services need to operate within business parameters of policy, culture, corporate image and the requirements/expectations of its customers. This will apply whether the FM services are in-house or outsourced.

Validation of Alignment Model

Research Approach

The proposed conceptual model is a product of a combination of comprehensive literature review, expert focus group meetings and case studies reviews. A questionnaire survey was designed to validate the proposed RE/FM Alignment Model and Alignment Criteria for each arm of the Alignment Variables, as shown in Figure 3 above. The questionnaire comprises of two parts:

Part 1 concerns the validation of alignment criteria for each arm of the alignment variables. Respondents are requested to indicate the degree of relevance and usefulness of each of the alignment criteria on a 5-point Likert scale from Low (1) to High (5).

Part 2 concerns the validation of the overall FM Alignment Model (Figure 3) i.e. the four alignment components, their relationships and identified criteria. Respondents are requested to indicate the degree of validity in terms of relevance to the practice of RE/FM, completeness, robustness and soundness of concept, on a 5-point Likert scale from Low (1) to High (5).

The complexity of the proposed model dictates that respondents must have relevant management experience and knowledge to be considered as 'experts' in Real Estate and Facilities Management. In this respect only senior management personnel are selected as potential respondents. In addition, the scope of geographical coverage of the respondents would be international with respondents from Asia, Australia, North America, Brazil, Europe and Middle East. Potential respondents are identified through professional contacts of the researchers and professional institutions.

Survey Results

This paper reports on the findings from a current sample of 97 respondents from the countries mentioned above. (Figure 4)

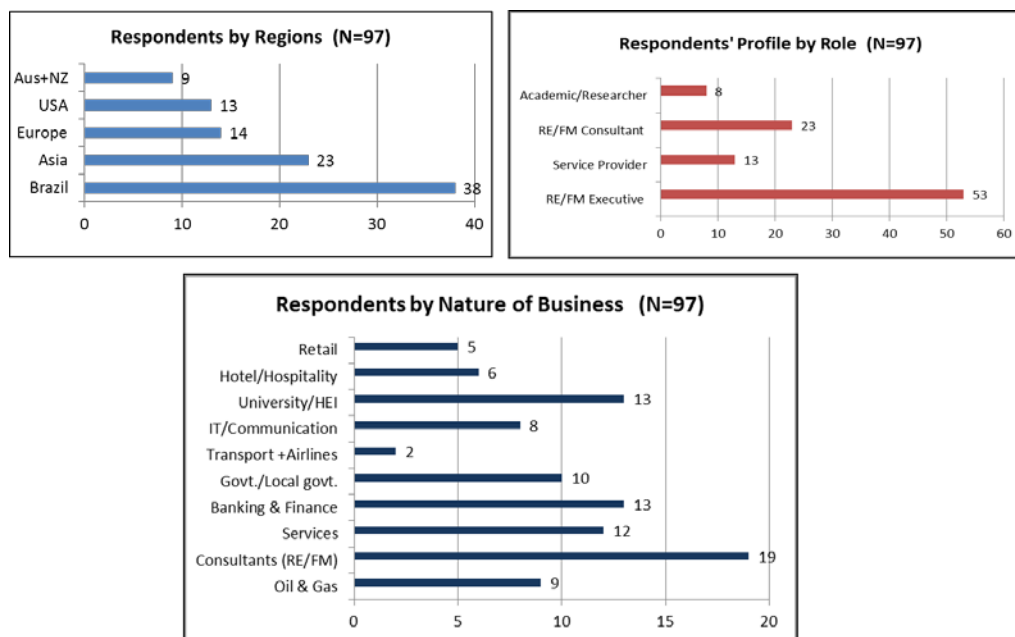


Figure 4: Survey Sample Attributes

Simple statistical analyses of the collected responses were performed to check the validity of the proposed models. Specifically, the mean values were computed for each alignment criterion and variable. The results of the validation of alignment criteria for each arm of the alignment variables were very encouraging with all four arms of the alignment model having an overall average score of above 4.0 out of a possible maximum of 5.0. The individual scores of each of the criteria within each arm range from a low of 3.48 to 4.53. (Figure 5)

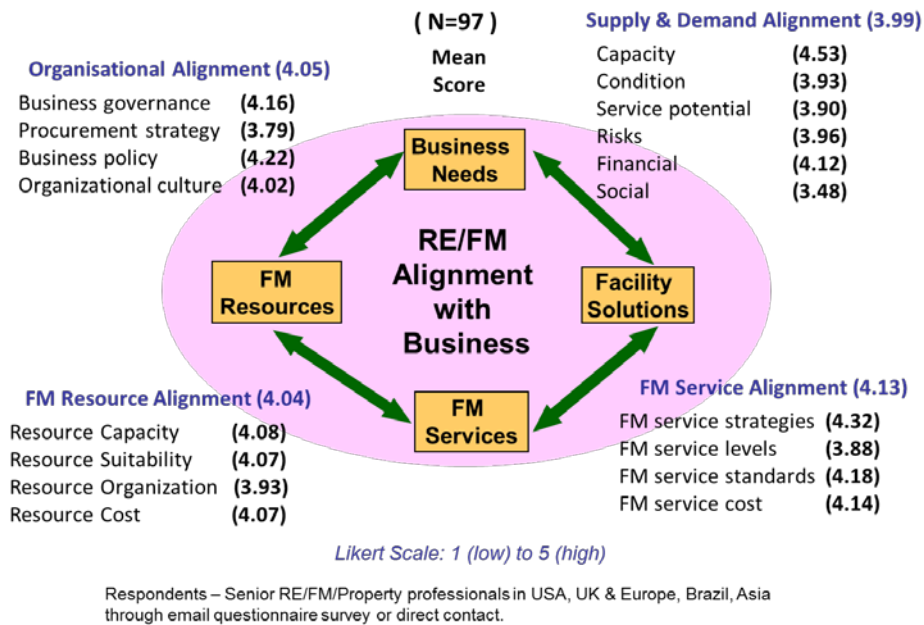


Figure 5: Mean Scores of Alignment Variables and Criteria

The results of Part 2 of the survey concerning the validation of the overall RE/FM Alignment Model i.e. the four alignment components, their relationships and identified criteria (i.e. Figure 3) were equally encouraging with both 'Validity' and 'Value' of the proposed model having an overall average score of 4.02 and 4.01 respectively, out of a possible maximum of 5.0. The individual scores of each of the criteria within the two variables range from a low of 3.82 to 4.32. (Figure 6)

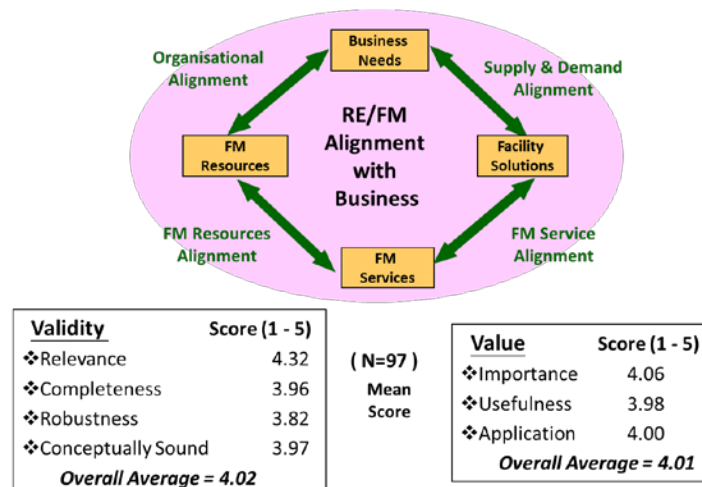


Figure 6: Mean Scores of 'Validity' and 'Value' of the Alignment Model

Regional Comparison

The overall results for the four alignment variables and the respective alignment criteria in Figure 5 are shown in detail for the 5 country groups in Table 2-5. The highest numbers for each country group are shown with bold and the lowest with italics.

Concerning *Supply and Demand Alignment* there is agreement between all country groups, that 'Capacity' is the most important criterion as shown in Table 2. In USA the 'Financial' criterion is evaluated nearly as high as 'Capacity'. 'Risk' is regarded as the second most important criterion in Australia, while it is evaluated lowest in USA. The 'Social' criterion is evaluated lowest in all country groups except for USA.

Table 2: Supply & Demand Alignment

Region	Capacity	Condition	Service potential	Risks	Financial	Social	All
Brazil	4.11	3.95	4.03	3.97	3.95	<i>3.87</i>	3.98
Asia	4.65	3.91	3.70	3.91	3.87	<i>3.17</i>	3.87
Europe	4.36	3.71	3.71	3.79	4.07	<i>3.29</i>	3.82
USA	4.77	4.31	4.15	<i>3.77</i>	4.62	3.85	4.24
Aus+NZ	4.78	3.78	3.89	4.33	4.11	<i>3.22</i>	4.02
Total	4.53	3.93	3.90	3.96	4.12	<i>3.48</i>	3.99
						$\chi^2 \cong$	1.00

Concerning *FM Service Alignment* the most important criterion is 'FM service strategies' in Asia, Europe and Australia as shown in Table 3. 'FM service standards' are evaluated as most important in USA closely followed by 'FM service cost'. Brazil evaluates 'FM service levels' as most important, but in all other countries they are evaluated among the least important.

Table 3: FM Service Alignment

Region	FM service strategies	FM service levels	FM service standards	FM service costs	All	
Brazil	4.16	4.26	4.21	<i>4.08</i>	4.18	
Asia	4.22	<i>3.74</i>	4.09	3.91	3.99	
Europe	4.36	<i>3.43</i>	3.86	3.93	3.89	
USA	4.31	4.31	4.54	4.46	4.40	
Aus+NZ	4.56	<i>3.67</i>	4.22	4.33	4.19	
Total	4.32	3.88	4.18	4.14	4.13	
					$\chi^2 \cong$	1.00

Concerning *FM Resource Alignment* the picture is quite varied between the countries as shown in Table 4. 'Resource cost' is evaluated highest in USA and Australia but lowest in Asia and Europe. 'Resource capacity' is evaluated as most important in Asia and Europe, but as the least important in Brazil and Australia.

Table 4: FM Resource Alignment

Region	Resource capacity	Resource suitability	Resource organization	Resource costs	All
Brazil	4.13	4.26	4.16	4.21	4.19
Asia	4.00	4.00	3.96	3.87	3.96
Europe	4.07	4.00	4.00	3.57	3.91
USA	4.54	4.31	4.08	4.69	4.40
Aus+NZ	3.67	3.78	3.44	4.00	3.72
Total	4.08	4.07	3.93	4.07	4.04
$\chi^2 \cong$					1,00

Concerning *Organisational Alignment* the picture is also quite varied between the countries as shown in Table 5. 'Business governance' is seen as most important in Brazil and Asia, while 'Business policy' is evaluated as most important in USA and Australia. Furthermore, 'Organisational culture' is evaluated as most important in Europe but least important in Asia and USA. For Brazil, Europe and Australia, 'Procurement strategy' is seen as least important.

Table 5: FM Organisational Alignment

Region	Business governance	Procurement strategy	Business Policy	Organisational culture	All
Brazil	4.16	3.89	4.08	4.13	4.07
Asia	4.09	3.91	4.00	3.74	3.93
Europe	4.14	3.57	3.93	4,21	3.96
USA	4.62	4.00	4.85	3.92	4.35
Aus+NZ	3.78	3.56	4.22	4.11	3.92
Total	4.16	3.79	4.22	4.02	4.05
$\chi^2 \cong$					1,00

On average for each of the four alignment variable the highest evaluations are given by USA and for most variables Brazil gives the next highest evaluations.

The overall results for 'Validity' and 'Value' in Figure 6 are similarly shown in detail for the five country groups in Table 6-7. The highest numbers for each country group are also here shown with bold and the lowest with italics.

For 'Validity' the most striking result as shown in Table 6 is that USA evaluates all criteria very high and for each higher than the other country groups, and that Europe contrarily evaluates most criteria lower than the others. The only exception is 'Relevance', which in Europe gets the highest score.

Table 6: Validity

Region	Relevance	Completeness	Robustness	Conceptually Sound	All
Brazil	4.16	4.13	4.26	3.79	4.09
Asia	4.13	4.13	3.70	4.17	4.03
Europe	4.21	3.07	2.86	3.00	3.29
USA	4.77	4.46	4.31	4.54	4.52
Aus+NZ	4.33	4.00	4.00	4.33	4.17
Total	4.32	3.96	3.82	3.97	4.02
$\chi^2 \cong$					1.00

An almost similar picture is shown for 'Value' in Table 7. USA also here evaluates all criteria very high and for each higher than the other country groups, and Europe contrarily evaluates all criteria low and for each lower than the other countries.

Table 7: Value

Region	Importance	Usefulness	Application	All
Brazil	3.97	4.26	4.16	4.13
Asia	4.30	4.13	4.04	4.16
Europe	3.71	3.29	3.14	3.38
USA	4.54	4.46	4.54	4.51
Aus+NZ	3.78	3.78	4.11	3.89
Total	4.06	3.98	4.00	4.01
			$\chi^2 \cong$	1,00

From the above regional comparison of respondents' results, although the overall mean score for both the alignment variables and criteria, and validity and value, are consistently between a low of 3.44 and high of 4.53, there are regional variations which may be due to maturity of the industry, organisational and cultural preferences of the clients.

Additionally, in order to verify the statistical validity of the results for regional comparisons (tables 02 to 07), a chi-square test was conducted for each comparison, considering the following null hypothesis: *there are no significant differences between regions, with respect to the values assigned to each attribute/criteria*. In addition to the semantic description, each item Likert scale was accompanied by a visual analogue scale, where the distances between levels were indicated. Thus, the values were considered as paired equidistant interval therefore the chi square test was applied without Yates' correction for continuity. The chi-square values were calculated to the six comparisons and all resulted $\chi^2 \cong 1.00$ at significance level 0.05, therefore indicating that the null hypothesis could not be rejected.

Conclusions

Developments in recent years have promoted a greater awareness of the need for effective management of real estate portfolio and facilities services within operational facilities for both the private and public sectors around the world. Globalisation of markets and supply chains, rapid technological advances and shifting management priorities have altered both previous assumptions governing the provision and management of building facilities and support services. In this respect, the need for alignment between business needs and the organisation's facilities infrastructure is at the heart of any strategy in supporting business success. The topic of alignment between available resources and business needs is a theme that has received increasing attention in recent years. In RE/FM, alignment between business needs and facility provision and facilities management as an objective or strategy has been increasingly mentioned (Hinks, 2013; RICS Research, 2012; Osgood, 2009; Nutt, 2004). This research is an attempt to unpack the concept and processes of alignment in the context of the practice of real estate and facilities management within an organizational setting.

This paper advocates that the alignment of RE/FM resources and actions to support the corporate business plan requires a critical evaluation of a number of alignment variables – Supply and Demand Alignment; FM Service Alignment; FM Resources Alignment; and

Organisational Alignment. Results from this international survey of experts in the field of real estate and facilities management largely support the propositions of the research.

A main result of the surveys is that all of the alignment criteria were seen as relevant and useful in nearly all countries, but the priorities accorded to the different criteria varied significantly for some of the alignment variables in the different countries. The highest degree of agreement was on 'capacity', being the most important criteria for the alignment between supply and demand of facility solutions in relation to business needs. One of the main differences in agreement was between the importance of strategy versus cost in the alignment between facility solutions and FM services. The validity and value of the model was evaluated as positive in all countries, but by far most positive in USA and least positive in Europe.

Although the survey results might be limited in terms of a broader generalization, this was not the main purpose of the research. The survey was aimed at testing the hypotheses about alignment criteria and their validation by professionals, thus enabling further developments of the framework. The results provide an encouraging basis for further development of the model/framework into a robust management tool that is universally applicable albeit in the context of regional and country emphasis on priorities.

Acknowledgments

The authors would like to acknowledge the research funding provided by the Hong Kong Polytechnic University and the efforts of the participants of the expert focus groups and survey respondents.

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