

2

CORPORATE REAL ESTATE MANAGEMENT MATURITY MODEL

Joroff et al. one step ahead

*Jaap Wijnja**, *Theo J.M. van der Voordt*
and Jan Gerard Hoendervanger

1 Background

In 1991, a team of the Industrial Development Research Foundation (IDRF) – the research arm of the International Development Research Council IDRC (now CoreNet Global) – started the Corporate Real Estate 2000 project, led by Michael Joroff. Its purpose was to understand how shifts in the business environment impact the need for service by corporate real estate professionals and their suppliers and partners in the industry, and to place contemporary experiences in a framework that would stimulate further learning, discussion, and change in the field. One of the main challenges was to make the value of corporate real estate management clear to higher levels of corporate management. Dewulf et al. (2000) incorporated added value as a key issue in their definition of corporate real estate management, i.e.

the management of a corporation's real estate portfolio by aligning the portfolio and services to the needs of the core business, in order to obtain maximum added value for the business and to contribute optimally to the overall performance of the corporation.

(p. 32)

In this definition, the real estate portfolio comprises all of a corporation's buildings and physical workplace(s), whereas 'management' refers to strategic, tactical, and operational management of all real estate assets and related facilities services. Hence, workplace management and facilities management (FM) are closely related to CREM.

The shift in thinking about the role that real estate plays for organisations was triggered by a sense of urgency, due to the crash of the real estate market in the early 1990s. Corporate executives, particularly financial officers, became aware that their enterprises had more real estate than their business required, and that many of these assets were designed for outdated purposes and processes and were in the wrong locations for the needs of the business. Calls for change

*corresponding author. j.g.wijnja@pl.hanze.nl

in particular came to the fore in the many corporations that had purchased real estate for its promised return on investment.

In 1993, the CRE 2000 Phase One Research Team presented its results, including a five-stage CREM maturity model (see Figure 2.1). Like earlier maturity models that were developed in the early 1970s for Total Quality Management and to organise and manage Information Technology (IT) in a better and more integrated way (Cusick, 2019), this model provides a framework for analysing, creating, and managing a strategy for change. Maturity refers to the ability of an organisation to continuously improve its effectiveness and efficiency. The model outlines a pathway for the evolution of CREM, considering corporate real estate as ‘a fifth resource of a firm’, in addition to capital, people, technology, and information (Joroff et al., 1993). As such, Joroff et al. would also like to contribute to corporate real estate managers’ awareness that their business is not real estate, but ‘the business of the business’.

Apart from the five-stage CRE evolutionary model, the IDRf report from 1993 also discusses alignment of corporate real estate with company goals and shareholder objectives in a more flexible and productive way, designing the CRE unit, empowering management with information, and integrated workplace strategies to convene the workforce and to support corporate objectives. Remarkably, many current issues such as activity-based working, teleworking, maintaining a sense of community, cost savings, productivity, flexibility, satisfaction, and the added value of CRE were already discussed in this report. As such, the IDRf report was really a frontrunner.

The CRE 2000 report contributed to a paradigm shift in how corporation leaders understand the concept of ‘workplace’ and perceive the ‘value’ of the real estate that they own or lease (Joroff & Becker, 2016). The mind-set about today’s workplace began already to be forged in the late 1980s, when people like Franklin Becker and Frank Duffy proactively examined where and how people worked. Their inquiry illuminated the critical role of alignment between the design and management of workplaces and how work gets done. This, in turn, led to an appreciation of workplace strategies and related management policies to support specific work practices defined by the nature of the task, who is involved, the tools used, and the culture of individual work groups as well as of the enterprise.

The CRE 2000 project announced a phase 2, inter alia to validate and adapt the five-stage model, to analyse the required skills, and to develop guidelines regarding how financial real

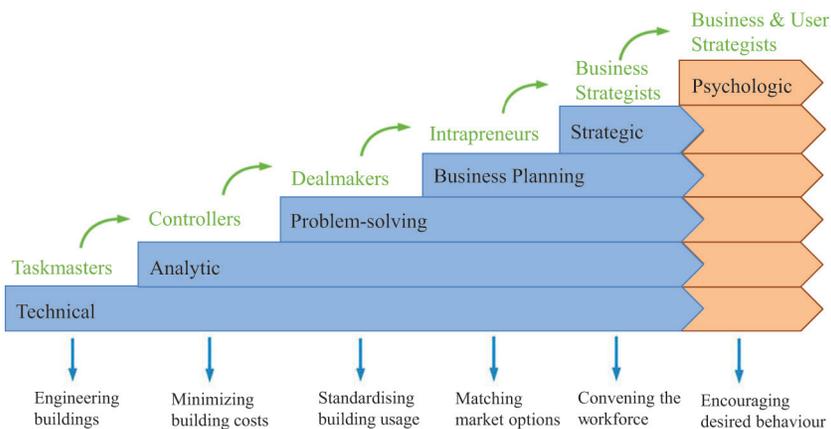


Figure 2.1 Five-stage real estate evolutionary model of Joroff et al. (1993), extended with a sixth stage by Hoendervanger et al. (2017a, 2017b)

estate strategies can better match the life-cycle position of business units. Instead, it was followed up by workplace studies and implementation of new insights in practice, focusing on data management, workplace, finance and service models, and just-in-time real estate management. Part of it was incorporated in the CRE 2010 project (Cornet Global, 2004). A key theme in this project and subsequent CoreNet Global research projects was the integration of CRE with IT, HR, and other support functions (CoreNet Global, 2004, 2012).

1.1 Main characteristics of the five stages

The IDRf report outlines an environment in which organisations are reshaping themselves into strategically linked business units, in which the bottom-line focus of every function is increasing and in which the skills of and the demands on corporate real estate professionals are expanding substantially. Michael Bell, one of the team members, identified twelve shifts in this change process: (1) from real estate orientation to a business focus; (2) from a transactional to a process orientation; (3) from control-oriented to service-oriented; (4) from reactive to proactive; (5) from decentralised to centralised; (6) from in-house expertise to collaboration; (7) from hiring experts to do a job to inviting service providers to become members of the team; (8) from automate to automation, i.e. using information technology; (9) from relationships built on personal contact to interactions supported by information flows; (10) from big to small; (11) from standardisation to customisation; and (12) from real estate skills to general management capability.

In line with these ideas, according to Joroff et al. (1993), the traditional role of a corporate real estate manager (Stage 1) as a *taskmaster* – providing physical space and technical maintenance by ad hoc interventions – has shifted towards a more strategic role, with a cumulative integration of minimising real estate costs and cost efficiency (Stage 2, *controller*), standardisation of building usage (Stage 3, *dealmaker*), matching real estate with business plans of the units and market options (Stage 4, *intrapreneur*) and a more integrated management approach, using performance indicators regarding costs and quality (Stage 5, *business strategist*); see Figure 2.1.

The fifth stage includes acting in a planned and proactive manner in cooperation with other disciplines, strategically aligning the accommodation with the vision, mission, and goals of the organisation and the external context and incorporating different stakeholders. The stages are cumulative: each subsequent stage builds on the preceding stages. The main characteristics of the five stages are summarised in Table 2.1.

Each more complicated stage adds a new role in the search for adding value through real estate. The first three stages occur principally through project-level work related to the internal needs of the corporation. Stage four addresses portfolio-wide needs, focusing outward to trends

Table 2.1 Main characteristics of the five stages according to Joroff et al. (1993)

1	Taskmaster	Supplies the corporation's need for physical space as requested
2	Controller	Satisfies senior management's need to better understand and minimise real estate costs
3	Dealmaker	Solves real estate problems in ways that create financial value for the business units
4	Intrapreneur	Operates like an internal real estate company, proposing real estate alternatives to the business units that match those of the firm's competitors
5	Business strategist	Anticipates business trends, monitors and measures their impacts, contributes to the values of the corporation as a whole by focusing on the company's mission rather than focusing only on real estate

Table 2.2 Cumulative increase of activities and services (Lambert et al., 1995)

1. <i>Taskmaster</i>	2. <i>Controller</i>	3. <i>Deal maker</i>	4. <i>Intrapreneur</i>	5. <i>Business strategist</i>
Renovation Planning and management of equipment	Maintenance of portfolio Space use Satisfaction	Acquisition space Lease contracts Lease negotiation Sale, subletting	Extension and intension Strategic CRE plan Market trends and prices	Joint BU meetings Participation in BUs and corporate strategy planning
Maintenance of indoor environment	Taxation of value of assets	Purchase Space standards Management of large projects	Sale and lease back contracts	Impact analysis of capital market
Maintenance schedules	Building cost analysis	Project management tools	Pricing methods Benchmark portfolio performance Benchmark CRE unit performance Operating as a profit centre	Impact analysis of changing legislation Impact analysis of economic and demographic trends
Building codes				City planning Masterplans Match BUs and providers

affecting the business units. Stage five focuses on company-wide competitiveness, involving a myriad of stakeholders outside the corporation's more traditional bounds. Furthermore, as the organisational stages evolve from taskmaster to strategist, the benefits obtained by stakeholders evolve from short to long term, with a growing user orientation and a need for continuous learning and change. Each next stage brings the real estate unit closer to the senior corporate management. All stages are focus driven, linked to a targeted mission, and closely intertwined with the real estate finance and information systems. The stages are increasingly driven by process and, therefore, by people. For an extensive discussion of all five stages, see Joroff et al. (1993).

Based on a survey among 82 CRE departments and their business units, Lambert et al. (1995, in Weatherhead, 1997, and Appel-Meulenbroek, 1999) found that each successive level incorporates new activities and services; see Table 2.2.

The transition from one stage to another is not always distinct. Besides, the five stages are not mutually exclusive. In an interview on May 6, 2020, Joroff argued that the five stages cannot be 1:1 linked to the shifts that were identified by Michael Bell but are very useful in a more narrative way in team discussions on how to manage CRE. In this sense, the five stages could incorporate similar themes but on a different level, so that characteristics may partly overlap between the different stages. In this interview, Joroff also argued that with the knowledge of today he would consider inserting a stage between deal maker and intrapreneur, called service aligner, and adding a stage called business driver, who not only supports adding value through real estate but also creates business value.

1.2 Ongoing shifts in corporate real estate management

Looking through today's eyes, Joroff and Becker (2016) argue that the evolution of corporate real estate reflects the following primary shifts in how corporate real estate and workplaces are viewed and how they can best be managed:

- 1 *From financial to business asset.* A mind-set that viewed corporate real estate as a passive financial asset with a high cost, changed into one that perceives the real estate portfolio as an asset integral to the conduct of the business. There is a growing focus on high use value and on proactively promoting new ways of working that, along with more flexible, informal, and open corporate management and culture and transformative information technologies, enhances business performance.
- 2 *Workplace as an integrated ecological system.* This system includes physical design and space, information technologies, workforce demographics, work processes, and organisational culture. The design and management of these interdependent factors aim to support different kinds of work, not only as a place that just houses people as they do assigned tasks, but also as a means of attracting and retaining the best and brightest employees and engaging and enabling their talent and energy. The 'workplace' is more and more recognised as a system of loosely linked spaces inside and outside the 'office' (the building), designed to support specific activities such as quiet work, informal communication, and client and group meetings, and that relies on cyberspace as well as physical space. For a further exploration of Joroff's ideas about how to create and manage appropriate workplaces see also Horgen et al. (1998a, 1998b), Joroff et al. (2001) and Joroff (2002).
- 3 *Needs vs. preferences.* Where once the modus operandi of the corporate real estate function was simply to take orders from business units for property according to what they *preferred*, and then deliver it on time and within budget, now the role is to proactively work with business units to anticipate their *needs* and to sharpen their understanding of how to best meet these needs (see Chapter 16 on user-centred design thinking) through real estate and workplace strategies.
- 4 *Power and opinion vs. data.* Decision-making about real estate and workplace investments is now more often underpinned by analytics and rigorous review of business context, along with data about real estate financial, individual, and team and department performance data, and how space is being used.
- 5 *From stable/static to agile portfolios.* At the time when the corporate real estate paradigm began to shift, enterprises were largely perceived as relatively stable, with a known culture and known tasks and processes. Corporations assumed that facilities and the processes they accommodate would have a relatively long life. However, this assumption began to disintegrate in the decades prior to the turn of the century, inter alia by the unprecedented new information technologies, mergers and acquisitions, the rise of new international powerhouses like China, and rapidly growing markets in developing countries. Today, everything is subject to change. This requires facilities and arrangements for corporate tenancy that are flexible, in which space can be rapidly acquired and just as rapidly abandoned almost anywhere in the world.

1.3 Extension with a sixth stage

Currently, organisations and their corporate real estate are going through further major changes. Workplace managers need to respond more emphatically to the needs and preferences of users, particularly knowledge workers, due to three simultaneous developments.

Firstly, predictions from the 1990s (e.g., Joroff et al., 1993; Duffy & Powel, 1997) with regard to IT-enabled time- and location-independent working now have become a daily reality for knowledge workers. As part of the shift towards workplaces as integrated ecological systems, cited previously from Joroff and Becker (2016), new work practices like blended working (Van Yperen & Wörtler, 2017) and activity-based working (Van Meel, 2019) rapidly seem to have

become the new normal worldwide. Workers are increasingly enabled and allowed or encouraged to use different locations (e.g. corporate offices, client or partner offices, home office, co-working spaces, on the go) and different work settings within the office (e.g. open and enclosed workstations, phone booths, lounge areas, project rooms). Along with the expanding range of choice, individual workers and teams are discovering and adopting their own preferred ways of working. The COVID-19 pandemic may work as a catalyst in this process (Kniffin et al., 2020).

Secondly, organisational behaviour has become more central in implementing corporate strategy. Particularly for knowledge-based organisations, desired outcomes are highly dependent upon behavioural patterns in the workplace (e.g. how workers collaborate, learn, concentrate, and recuperate). Hence, we see many corporate programs focusing on behavioural change, which is frequently linked to workplace change. For instance, the potential of ‘nudging’ desired behaviour through workspace design is gaining attention in practice and research (Thaler & Sunstein, 2008). An important topic is the promotion of healthy behaviours in the workplace (e.g. physical movement, relaxation, social contact, nutrition), which receives growing attention in relation to sick leave, burnout, and sustainable employability (Colenberg et al., 2020; Jensen and van der Voordt, 2020; Forooraghi et al., 2020). In practice, particularly health insurance companies like Medibank in Australia and VGZ in the Netherlands are frontrunners in implementing healthy workplaces and promoting healthy behaviour.

Thirdly, the global ‘war for talent’ (Beechler & Woodward, 2009) is empowering knowledge workers in expressing and following their preferences with regard to workplaces and work practices. In this context, employers can no longer force employees to work in unattractive environments or at unattractive locations (see also Chapter 11 on branding theory). ‘Convening the workforce’ (Joroff et al., 1993) has become a necessity rather than an ambition. This is reflected inter alia by the rapid growth of Leesman, who have now measured satisfaction with work environments of more than 550,000 workers in almost 4,000 buildings. Optimising the ‘workplace experience’ has become a key topic in CREM (Leesman, 2019). It should be noted that the user-centred approach seems to be shifting from a focus on optimising user satisfaction towards a more goal-oriented focus on specific user needs and behaviours that are important for organisational effectiveness. According to Van Eersel (interview on May 20, 2020), Google’s Real Estate and Workplace Services team changed its motto from “We create environments that make Googlers excel” into “We create environments that make Google excel”; and at Netflix, his team’s mission is “to deliver workplace experiences to move Netflix forward”.

Given these developments, Hoendervanger et al. (2017a, 2017b) introduced a sixth stage as an extension of the CREM maturity model; see Figure 2.1. Where the fifth stage is focused on creating added value in relation to corporate strategy, the sixth stage adds a user-centred approach. Being both a business & user strategist, a CRE manager creates work environments that support work practices and enhances behavioural change, in alignment with both corporate goals and employee needs and preferences. In addition to the skills that are needed in stage 1–5, psychological knowledge is required to analyse, facilitate, and stimulate workers’ differing and changing needs and behaviours. This is reflected in the adoption of a person–environment fit approach in workplace research (Appel–Meulenbroek et al., 2020).

The introduction of a sixth stage in CREM resonates with a recent shift in the related discipline of facility management (FM). Taking into account the needs of both the business and the end user is reflected in the current definition of FM as “an organisational function which integrates people, place and process within the built environment with the purpose of improving the quality of life of people and the productivity of the core business” (ISO 41011, 2017). Quality of life is people oriented, whereas the former EN15221–1 definition focused only on “services which support and improve the effectiveness of its primary activities” (CEN, 2006).

In an online interview on May 6, 2020, Joroff supported this extension of the original model, at the same time emphasising that a user-centred focus should be part of all previous stages as well. Workplace strategists who operate as work practice and business enhancers need to collaborate with business unit leaders and the workers themselves, to identify and co-develop effective work practices and then to design and maintain agile places and IT supports. In line with an earlier proposal to add Corporate Infrastructure Resource Management (CIRM) as a sixth stage to the CREM maturity model (Van Eldonk, 1998), it is expected that the collaboration between CREM, FM, HRM, and IT will be further extended in the sixth stage. This may lead to the involvement of other disciplines as well, such as labour psychologists, occupational health specialists, neurologists, data specialists, and artists.

2 Applicability to workplace studies

Although the CRE framework has mainly been developed with CRE portfolios in mind, the underlying ideas are also well applicable at the workplace level. The design and management of workplaces may range from a taskmaster's, i.e. caretaker's, perspective, responding to demand for space and technical maintenance, to a strategic approach. The latter incorporates the needs and preferences of all stakeholders and facilitates a flexible and smart workforce including new generations with changing work patterns and changing time-space preferences. A strategic approach also focuses on adding value to the organisation, customers and end users, and society as a whole (see also Chapter 9 about alignment theory, and Chapter 12 on value adding workplace management).

In order to enable health care organisations in using the five-stage framework to professionalise their CREM function, Moesker (2010) conducted additional literature research and expert interviews to further operationalise each stage regarding different levels of communication and information, competencies, governance, stakeholder involvement and added value; see Table 2.3. The sixth stage would add the use of sensors and other devices to collect and analyse workplace data (e.g. its occupancy rate), psychological knowledge and skills, shared responsibility of management and end users, end-user participation in design and management processes, and adding value by increased employee satisfaction, health and wellbeing, creativity and innovation, and productivity.

3 Limitations

The five-stage model has been developed over 25 years ago and may need an upgrade by testing it in practice. The report was based on insights of hundreds of people and steered by the experiences of a limited number of large firms that were on the innovative edge of practice. It is not clear what it means to small and medium enterprises and not-for-profit organisations. The report is also less clear about which phase is optimal and why, depending for instance on the maturity of the involved organisation, its mission, vision and scope, the economic context, and market circumstances. The report suggests that each next stage is on a higher level of professionalisation and integration and is more strategic. This may result in the risk that CRE staff strive for a higher stage than is either necessary or suitable in relation to the aforementioned contextual factors.

In the 1993 report, the five stages are not clearly operationalised in a tool that organisations can use to see where they stand and where they should go. In practice, it turns out that organisations find it difficult to allocate their CREM policy to one of the stages (Kerkhof et al., 2011). The researchers themselves positioned four out of ten assessed organisations in stage 5, three in stage 4–5, one in stage 4, one in stage 2–3, and one as a mix of stage 2 and stage 5 as defined

Table 2.3 Characteristics of the five stages according to Moesker (2010)

	1. <i>Taskmaster</i>	2. <i>Controller</i>	3. <i>Deal maker</i>	4. <i>Intrapreneur</i>	5. <i>Business strategist</i>
Communication and information	Information stored in different places; professionals directly approached for requests	Basic inventory and cost control structures in place; financial results communicated to top management	Benchmarking on cost and quality and performance measures in place	Insight in business unit plans and documented market information	Communication and information alliances with all business units; continuous improvement based on lessons learned
Competencies	Technical abilities, reactive approach	Analytical skills, reactive but structured approach	Negotiation and problem-solving capabilities, proactive approach	Real estate management skills, proactive approach	Strategic management skills, proactive approach
Governance	Laissez-faire response of top management	Decisions are financially driven and directed by top management	Incidentally direct attitude of top management, scope dictated by department itself	Business unit plans included in real estate strategy	Real estate is responsibility of top management and integral aspect of organisational policy
Stakeholder involvement	Low functional cooperation, meeting interests of technical managers	Focus on meeting interests of controller	Interests of users are met and measured by surveys	High functional cooperation; meeting interests of technical manager, controller, and users	Stakeholders in and outside the corporation become regular and trusted advisors and partners
Added value	Value neutral	Cost reduction, mapping of risks	Increasing value of real estate	Stimulation of innovation	CRE contribution to image and identity

by Joroff et al. (1993). According to Mattousch (2010), it should be more clear which activities should be incorporated in each stage. He also advocates a distinction between deepening knowledge within the same stage (*evolution*) and moving to a next stage by extending knowledge, skills, activities, and services (*revolution*).

So far, to the best of our knowledge, the model has not been empirically tested on its validity or adapted to new trends and developments. The sixth stage has been added recently and needs greater operationalisation and testing on validity as well, by desk research, interviews with practitioners, and case studies.

4 Theory relevance to practice

Notwithstanding the limitations mentioned previously, the six-stage CREM maturity model can be used as a tool for continuous improvement (from 'ist' to 'soll') of CREM and strategic alignment of CRE to organisational strategies and end users' needs and preferences. It enables qualitative assessment of people/culture, processes/structures, strategies, and required skills of involved staff. As such, it can be used as a guiding framework for step-by-step improvement and evaluation of the CRE function in a given organisation. The model can help to assess the current state of CREM, by comparing characteristics of the CRE function with the descriptions of the stages in the maturity model. Furthermore, the model can guide a discussion among CRE team members and with CRE stakeholders about the desired state of CREM and necessary steps to get there. The comprehensive nature of the model and its original description in the CRE 2000 report can make it difficult to assess which stage applies to the current or desired state. For this purpose, a further operationalisation of the model, like the matrix developed by Moesker (2010), can be helpful.

An example of application of the CREM maturity model in practice is Enexis Groep, a regional grid operator from the Netherlands. About three million customers are connected to their dynamic energy grid in order to receive electricity or gas and, increasingly, to feed renewable energy back into it. Enexis Groep also supports consumers, businesses and municipalities in how to make sustainable energy choices. They have been using the CREM maturity model since 2006, first to assess the current state of Enexis corporate real estate, and since then as inspiration while working on future plans such as Enexis' FM strategy plan 2025. Quite recently, the sixth step as described in Section 2 has been added. Their increased employee focus is reflected by the in-house development and implementation of 'personas', i.e. defining user needs in connection to different types of persons (e.g., extravert versus introvert, emotional versus rational, individualistic versus group oriented) and job characteristics.

In line with Mattousch (2010), Enexis uses the CREM maturity model in combination with the value propositions of Treacy and Wiersema (1993), linking operational excellence to the first three stages, customer intimacy to stages three and four, and product leadership from stage four on. Between 2009 and 2020, Enexis' real estate reduced from approximately 93,000 m² to about 72,500 m² rentable space across the Netherlands, a reduction of 22%, whereas the number of employees increased by 18% during the same period. By adopting a user-centred approach, the amount of rentable space needed per fulltime equivalent reduced by 37%.

Another example is the British Broadcasting Company (BBC), who used the model to develop a 'Framework for BBC Property' (Kane & Anastassiou, 2020). In 1998, the BBC announced its BBC 2020 property vision. This vision aimed to address significant shortcomings in its real estate and to prepare the BBC for a period of tumultuous change, driven by new

technology, increased competition, and budget constraints. Five key themes underpinned the 2020 vision (Kane, 2013):

- 1 *Flexibility*: the property must not restrict the BBC’s freedom to evolve its operations.
- 2 *Technology*: all BBC space must support future technological requirements without incurring costly reconstruction.
- 3 *Talent*: BBC buildings must be showcase sites of technology and innovation in order to attract and retain the best talent.
- 4 *Audience*: the BBC must demonstrate value by engaging local communities with opportunities to experience the BBC in action through live broadcasts and open access to buildings.
- 5 *Cost*: BBC Property’s role is to help the corporation save money rather than spend it.

To achieve these aims, the CREM maturity model was used as inspiration to look at the real estate/FM function and adapt it to incorporate BBC’s property vision; see Figure 2.2. This scheme visualises how the process of transition added value to the organisation and how the CRE department moved from ‘order taker’ to a much more strategic role (Kane, 2020). It was also imperative that old-fashioned organisational silos were broken down. Different professionals had to learn to think and work out of their particular specialist boxes. The manifesto of BBC’s Workplace team was to deliver business and public value in partnership with HR and IT at minimum cost and at maximum effectiveness (Kane, 2020).

Between 2004 and 2013, the BBC’s real estate reduced from over 500 properties and approximately 696,000 m² to about 207 properties and 571,000 m² of space across the UK. The Property/Workplace teams moved over 11,000 people to meet their objectives (Kane, 2013): 40% reduction in real estate footprint by 2017 (28% achieved in 2013); £47 million annual savings in property expenditure by 2016–17; and 60% of the estate refreshed.

Besides applications focusing on one specific organisation, the CRE maturity model may also be used as a framework for benchmark research. The CRE function of different organisations (e.g., similar firms across a specific industry) can be compared with regard to their

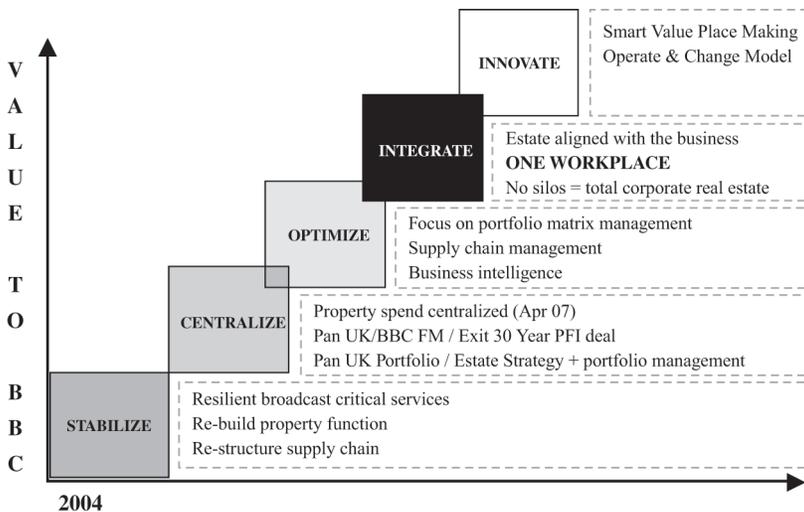


Figure 2.2 Framework for BBC Property 2004 (Kane & Anastassiou, 2020)

positions according to the model, and differences with regard to skills, tools, organisational position, and focus. An example is a CREM benchmark study that Suyker conducted across the international banking industry.

The CREM maturity model can also be useful for educational purposes. It can help students in corporate real estate and facilities management to understand how CREM can evolve in an organisation, and why CREM can be at different stages in different organisations. Furthermore, it shows which skills students should develop to prepare for a career in CREM.

Acknowledgements

The authors would like to thank Michael Joroff (Massachusetts Institute of Technology and independent consultant), Chris Kane (BBC Corporate Real Estate), Frans van Eersel (Netflix/Google), Geert Huisman and Hetty van der Pennen (Enexis), and John Suyker (independent consultant) for their valuable input to this chapter.

5 Further reading

- Hoendervanger, J. G., van der Voordt, D. J. M., & Wijnja, J. G. (2017). *Huisvestingsmanagement: van initiatief tot exploitatie*. Groningen: Noordhoff Uitgevers.
- Joroff, M., & Becker, F. (2016). Exploiting change and uncertainty to drive corporate value. In M. Arkesteijn, T. van der Voordt, H. Remøy & Y. Chen (Eds.), *Dear is Durable* (pp. 105–113). Delft: Delft University of Technology. TU Delft Open.
- Joroff, M., Louargand, M., Lambert, S., & Becker, F. (1993). *Strategic Management of the Fifth Resource: Corporate Real Estate*. Report 49. Atlanta, GA: Industrial Development Research Foundation.

6 References

- Appel-Meulenbroek, R. (1999). *CRE strategie en huisvestingsvraag: 2 complexe begrippen nader bezien* (MSc thesis). Eindhoven: Eindhoven University of Technology.
- Appel-Meulenbroek, R., Le Blanc, P., & De Kort, Y. (2020). Person–environment fit; optimising the physical work environment. In O. B. Ayoko & N. M. Ashkanasy (Eds.), *Organisational Behaviour and the Physical Environment* (pp. 251–267). London: Routledge.
- Beechler, S., & Woodward, I. C. (2009). The global ‘war for talent’. *Journal of International Management*, 15(3), 273–285. doi:10.1016/j.intman.2009.01.002
- CEN (2006). *Facility Management Part 1: Terms and definitions*. European Standard EN 15221–1. Brussels: European Committee for Standardization.
- Colenberg, S., Jylhä, T., & Arkesteijn, M. (2020). The relationship between interior office space and employee health and well-being – a literature review. *Building Research & Information*, 1–15. doi:10.1080/09613218.2019.1710098
- CoreNet Global. (2004). *Corporate Real Estate 2010; Integrated Resource & Infrastructure Solutions*. Atlanta, GA: CoreNet Global.
- CoreNet Global. (2012). *Corporate Real Estate 2020*. Final Report. Atlanta, GA: CoreNet Global.
- Cusick, J. J. (2019). *A Survey of Maturity Models from Nolan to DevOps and Their Applications in Process Improvement*. New York, NY: IEEE Computer Society.
- Dewulf, G., Krumm, P., & De Jonge, H. (2000). *Successful Corporate Real Estate Strategies*. Nieuwegein, NL: Arko Publishers.
- Duffy, F., & Powell, K. (1997). *The New Office*. London: Conran Octopus.
- Forooraghi, M., Miedema, E., Ryd, N., & Wallbaum, H. (2020). Scoping review of health in office design approaches. *Journal of Corporate Real Estate*, 22(2), 155–180. Special issue. doi:10.1108/JCRE-08-2019-0036
- Hoendervanger, J. G., van der Voordt, D. J. M., & Wijnja, J. G. (2017a). *Huisvestingsmanagement: van initiatief tot exploitatie*. Groningen: Noordhoff Uitgevers.

- Hoendervanger, J. G., van der Voordt, D. J. M., & Wijnja, J. G. (2017b). Organisatie- en mensgericht managen van smart workplaces. *Smart WorkPlace*, 1(1), 44–49.
- Horgen, T., Joroff, M., Porter, W., & Schon, D. (1998a). *Excellence by Design. Transforming Workplace and Work Practice*. Hoboken, NJ: Wiley.
- Horgen, T., Joroff, M., Porter, W., & Schon, D. (1998b). Process architecture: Transforming the workplace for effective work. *Employment Relations Today*, 25(3), 77–94. doi:10.1002/ert.3910250308
- International Organization for Standardization. (2017). *ISO 41011:2017(en), Facility Management Vocabulary*. Geneva, Switzerland: ISO.
- Jensen, P. A., & van der Voordt, T. (2020). Healthy workplaces: What we know and what we should know. *Journal of Corporate Real Estate*, 22(2), 95–112. Special issue. doi:10.1108/JCRE-11-2018-0045
- Joroff, M. L. (2002). Workplace mind shifts. *Journal of Corporate Real Estate*, 4(3), 266–274.
- Joroff, M. L., Porter, W. L., Feinberg, B., & Kukla, C. (2001). The agile workplace. In M. A. Bell & M. L. Joroff (Eds.), *The Agile Workplace: Supporting People and Their Work* (Chapter 3, pp. 20–33). Cambridge, MA: Gartner and Massachusetts Institute of Technology. (In short also published in *Journal of Corporate Real Estate*, 2003, 5(4), 293–311. doi:10.1108/14630010310812145.
- Joroff, M., Louargand, M., Lambert, S., & Becker, F. (1993). *Strategic Management of the Fifth Resource: Corporate Real Estate*. Report 49. Atlanta, GA: Industrial Development Research Foundation.
- Kane, C. (2013). Putting public value at the heart of cultural excellence: Exploring a transformational journey of workplace strategy at the BBC. *Corporate Real Estate Journal*, 2(4), 279–299.
- Kane, C., & Anastassiou, E. (2020). *Where Is My Office; Reimagining the Workplace for the 21st Century*. London: Bloomsbury Business.
- Kerkhof, L., Ramlal, V., Scholten, S., & Vegter, A. (2011). *CREM, belangrijk voor organisaties? Onderzoek naar de invulling van Corporate Real Estate Management binnen verschillende organisaties*. Students' Report. Groningen: Hanze University of Applied Sciences.
- Kniffin, K. M., Narayanan, J., Anseel, F., Antonakis, J., Ashford, S. P., Bakker, A. B., Bamberger, P., Bapuji, H., Bhawe, D. P., Choi, V. K., Creary, S. J., Demerouti, E., Flynn, F. J., Gelfand, M. J., Greer, L., Johns, G., Kesebir, S., Klein, P. G., Lee, S. Y., . . . Van Vugt, M. (2020). COVID-19 and the workplace: Implications, issues, and insights for future research and action. *American Psychologist*, 76(1), 63–77. doi:10.1037/amp0000716
- Lambert, S., Potete, J., & Waltch, A. (1995). *CRE 2000 Phase 2: Generating High-Performance Corporate Real Estate Services*. CRE 2000 Series Report No. 52. Atlanta, GA: Industrial Development Research Foundation.
- Leesman. (2019). *The Workplace Experience Revolution*. www.leesmanindex.com
- Mattousch, R. G. C. (2010). *Transformatiemodel voor vastgoedorganisaties van ondernemingen*. Amsterdam: PriceWaterhouseCoopers.
- Moesker, J. H. C. (2010). *Corporate Real Estate Maturity Model* (MSc thesis). Greenwich: University of Greenwich.
- Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving Decisions about Health, Wealth, and Happiness*. New Haven, CT: Yale University Press.
- Treacy, M., & Wiersema, F. (1993). Customer intimacy and other value disciplines. *Harvard Business Review*, 71(1), 84–93.
- Van Eldonk, A. (1998). *Corporate Real Estate in Europe: Sites, Buildings and Workplaces* (MSc thesis). Eindhoven: Eindhoven University of Technology.
- Van Meel, J. (2019). *Activity-Based Working; The Purenet Practice Guide*. Purenet. www.pure-net.org/images/Annual_Conference_2019/ABW_practice_guide_public.pdf
- Van Yperen, N., & Wörtler, B. (2017). Blended working. In G. Hertel, D. Stone, R. Johnson & J. Passmore (Eds.), *The Wiley-Blackwell Handbook of the Psychology of the Internet at Work* (pp. 157–174). Hoboken, NJ: Wiley-Blackwell.
- Weatherhead, M. (1997). *Real Estate in Corporate Strategy*. London: Palgrave Macmillan Limited.