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**APPROACHES TO ALIGNING CORPORATE REAL ESTATE AND
ORGANISATIONAL STRATEGY**

Dr Christopher Heywood

Faculty of Architecture, Building and Planning, University of Melbourne, Victoria
Australia

c.heywood@unimelb.edu.au

Abstract

Purpose: This paper investigates the alignment between Corporate Real Estate (CRE) and organisational strategy that is thought to be important for CRE to deliver value to the organisation. The CRE literature has a number of models but as evidence from practice indicates that these are not being used this suggests that how alignment occurs may not be completely clear. Furthermore, there is anecdotal evidence that simplistic, deterministic drivers of alignment are sought for, though the complex, multi-dimensional nature of CRE and its management suggests a more comprehensive understanding of the basis of alignment is necessary.

Design/Methodology/approach: As a basis for an empirical investigation, this paper, after investigating ten existing alignment models, sets out five possible theoretical approaches that could apply to CRE alignment – deterministic, algorithmic, heuristics, wicked problems and game theory. The empirical study investigates those approaches' applicability in practice.

Findings: A framework of fifteen possible components to existing alignment models are identified which are variously and incompletely deployed in those models. The empirical study's early results show evidence of the five approaches with game theory most evident.

Implications for research: The frameworks introduced here suggest a more comprehensive basis for alignment offering some ways forward in addressing the fragmented theory of CRE alignment. Future lines of enquiry are evident that can take place using an expanded theorisation of CRE strategic alignment.

Implications for practice: As practice imperfectly deploys existing alignment models it is thought that a more comprehensive framework to alignment would be benefit practice as it seeks to deliver and demonstrate the delivery of value to the organisation through aligning CRE and organisational strategy.

Keywords

Corporate Real Estate, management practices, strategic alignment, theoretical models,

Introduction

A long-standing issue for corporate real estate management (CREM) practitioners and theoreticians is the alignment of corporate real estate (CRE) strategy with organisational strategy, for example: Veale (1989), Carn et al. (1999), Roulac (2001), Wills (2005), McDonagh (2008), Heywood et al. (2009), Then and Tan (2010) and many others. Alignment of all an organisation's cost and value creation activities (including CREM) is important in achieving enterprise-wide value (Kaplan and Norton, 2006). This makes alignment a core technology in CREM. It is a problem, when considering CREM is a business process, that the business literature on alignment covers ever corporate support function except CREM, see for example, Kaplan and Norton (2006).

The CREM literature in attempting to address this imbalance and empower CRE professionals in advancing an alignment agenda suggests a number of approaches, but

evidence from practice indicates that these are not being employed, though CRE practitioners are consistently able to answer surveys on the positive state of their CRE alignment (Bon et al., 2002; DEGW, 2006; McDonagh, 2008).

There is anecdotal evidence from practice and also evident in the literature that simplistic, deterministic drivers of alignment are sought, for example Bouri et al. (2008), or that concentrating on single aspects of CRE – such as ‘alternative workplace strategies’ for a technologically-enabled, global workforce (Prasow and Sargent, 2009) – will be efficacious ways of being aligned¹. Notwithstanding the value of these drivers and approaches, the complex, multi-dimensional nature of CRE and its management suggests that a more comprehensive understanding of alignment would be useful for practice and a significant advance in the CREM theory. That multi-dimensionality is seen in the, at least, four dimensions of practice and performance suggested for CREM (Heywood et al., 2004; Valenziano and Kious, 2005). Then and Tan (2010) similarly propose four alignment criteria in their recent facility management model. All these dimensions or criteria require consideration in any alignment model

For the purposes of this paper, alignment is the bringing into harmony things that differ or could differ (for instance corporate strategy and real estate strategy) by making them consistent or in agreement with each other (based on *Shorter Oxford Dictionary* definitions). Making differing things consistent implies movement to remove the difference; it could be either the CRE or the organisational strategy. The literature presumes the former but hints the latter is possible or even desirable (Osgood Jr, 2004 & 2009; Weatherhead, 1997).

Project aims & paper’s aims

This paper explores the existing basis of CRE strategic alignment and also considers a number of other approaches that could apply as a means of creating a more comprehensive understanding of the alignment phenomenon. The study from which the paper is drawn represents the first systematic empirical investigation of how CRE alignment is actually done across this expanded range of possible approaches. A review of the existing CRE literature on alignment using those approaches is a preliminary aspect of an empirical study of those approaches in CREM practice. Preliminary results of the study are also reported.

Existing approaches to alignment (Solutions to date)

The CREM literature already suggests approaches to the alignment of CRE and organisational strategies. Wills (2005) provides a useful overview of work to that date, and while the CRE literature has expanded since 2005 the alignment aspect has not been explored much since then, despite alignment’s persistence as an issue for CREM (Heywood et al., 2009). Though Then and Tan (2010) and Appel-Meulenbroek et al. (2010) represent, perhaps, a new phase of alignment work.

The CREM’s literature’s approaches to alignment include:

- Single CRE factors, for example: location (Bouri et al., 2008; Roulac, 2001; Spee and Douw, 2003), workplace (Haynes, 2008; Prasow and Sargent, 2009; Roulac, 2001), CREM’s management forms (Acoba and Foster, 2003; Englert, 2001), property tenure (Crosby et al., 2006; Gibson and Lizieri, 2001), and capital finance (Pfnuer et al., 2004); and

¹ This is not to suggest that implementing an alternative workplace could be considered simple.

- Creating a model for an alignment process, for example: O'Mara (1999), Osgood Jr (2004 & 2009), Edwards and Ellison (2003), Then (2005), Then and Tan (2010), White (1998), Wills (2005), and Weatherhead (1997).

The bases of these alignment models will be examined in more detail below, but despite a proliferation they have not been taken up much in the literature, though Nourse and Roulac (1993) has had some recent application – see Scheffer et al. (2006), Ali et al. (2006), Freybote (2007) and Roulac's (2001) own later work – as has O'Mara (1999) – see Singer et al. (2007). Nor do these models seem to have made much traction in practice, or at least there is little empirical evidence of the models in practice.

What seems to have occurred is that each new author has created their own explanation (model or theory) for alignment without much reference to previous models. This is not inappropriate that an emergent discipline attempting to define its core technologies and theoretical base will pursue multiple efforts and perspectives until a dominant or consensus position emerges. At present, it could be said that Nourse and Roulac (1993) is prevailing. Also, given the relatively recent emergence of CREM as a distinct discipline² it is probable there has been limited opportunity to educate property professionals in these alignment theories.

Given the number of models that have emerged over the last twenty years or so, it is appropriate to review them in order to understand their features and possible strengths and weaknesses. This is especially relevant given the poor uptake of these models as it is possible that other bases or approaches to alignment may be as, or more, efficacious.

Analysis of the ten models shows that the fifteen following components are variously present:

- Strategic triggers – precipitating change in the organisation's environment;
- Corporate strategy (formation) (may also be styled as business planning);
- Business market data;
- External business factors (such as Porter (1980) 5-forces);
- Strategic drivers with known CRE consequences;
- Other (not CRE) strategic drivers, such as marketing-based ones;
- Audit of existing real estate (including performance evaluation either explicitly, or implicitly);
- Performance evaluation (either during or post-strategic action). This may also include gap analysis between existing and required statuses;
- Real estate market data/information (may be implied through reliance on CRE expert knowledge);
- CRE strategy formation;
- Strategy integration (the point of actual alignment);
- Integration with other corporate functions enacting something like Corporate Infrastructure Resources (CIR) (Materna and Parker, 1998)/Integrated Resource Infrastructure Solutions (IRIS) (Dunn et al., 2004);
- Real estate operating decisions (strategic implementation). These may also be called Strategic real estate options because of their strategic implications;
- Directionality – usually uni-directional from corporate to CRE though feedback's inclusion implies bi-directionality; and
- Feedback.

² It is arguable though that CREM practices have been required since the first business commenced.

It is rare for the models to include all components, though in some instances they are implied, or are clearly external to the actual model as either pre-cursor or parallel processes (Table I). Analysis shows that five (of ten) are near complete models having 12 or more components present or implied, three substantially complete models with between seven and twelve components present or implied, and two substantially incomplete models with seven or less components.

Table I. Analysis of existing CRE alignment models

Components	Alignment models									
	Nourse and Roulac (1993)	Weatherhead (1997, Ch. 4)	White (1998)	Englert (2001)	Edwards and Ellison (2003)	Osgood, Jr (2004 & 2009)	Wills (2005)	Then (2005)	Scheffer et al. (2006)	Then and Tan (2010)
Strategic triggers	■	■		■		■		■		
Corporate strategy (formation)	■	■	□	□	⊗	■	⊗	■	■	■
Business market data;	□	■	■	□	■	□	□	□	□	
External business factors	□	□	■	□	■	□		■	□	
Strategic drivers with CRE consequences	□	■	■	□		■		■		■
(Other – not CRE) strategic drivers;	■	■	■	■			□			⊗
Audit of existing real estate		■	■		■		■	□	□	□
Performance evaluation		□	■	■	■	■	■	■	■	□
Real estate market data/information	□	■			■			□		
CRE strategy formation	■	■		■	■	■	■	■		■
Strategy integration (alignment)	■	■		■		■	■	■	■	■
Integration with other corporate functions (CIR/IRIS)	■	■		■	□	■	□	□		□
Real estate operating decisions (strategic implementation)	■	■		□	■	■	■	■	■	■
Directionality	■	■			■	■	■	■		■
Feedback	■	□		■	■	■	■	■		■
No. of components present (n = 15)	13	15	7	12	10	12	10	14	7	10

Legend

- Included
- Implied
- ⊗ External to described model

Some of the models seem real estate-centric despite the desirability of a relationship to organisational strategic processes. This can be seen in the gaps and amount of implied components above the top broken line in the table. The relationship between organisational and CREM strategy is often evident as a uni-directional process in only dealing with the real estate consequences, though bi-directionality, that is, CRE strategy contributing to or influencing corporate strategy is implied in many instances via forms of feedback. Even the model that makes most of corporate strategy informed by real estate strategy (Weatherhead, 1997) appears strongly uni-directional; though the strategic integration component employed in this model does allow for cross-linking of CRE and organisational strategy at that point.

The sequencing of components also varies between different models. For instance, Weatherhead (1997) locates an audit of existing real estate as one of three first, parallel components. White (1998) has that component as the fifth element in his model, starting with a form of corporate strategy (as business planning), which is one of Weatherhead's three first, parallel components.

This variability between the models could have at least 3 origins:

1. The emergent discipline is yet to agree its core technology of strategic alignment;
2. The theories represented by the models are only general guidance or explanations. Practitioners, should they wish to apply that theory, must fill in the necessary details for their particular circumstances of application, as is usual in applying theory (Dainton and Zelle, 2005); and
3. CREM is a 'scientific' field where theoreticians are weakly bound – both functionally and strategically, that is they do not depend on each other for professional or scientific validity and advancement. As a result, they may pursue a variety of goals with a variety of scientific procedures. Consequently, there is little coordination of problems that are considered, or results that are produced. Such characteristics have been noted as common to management studies (Whitley, 2000), of which CREM is one. This paper's integrative analysis seeks to counteract, somewhat, the tendency towards disconnection and isolation evident in CREM theorisation.

This analysis of the components of existing alignment models suggests that any model or process of alignment needs to address all fifteen components listed above. The list also provides a basis for testing any such model or process for completeness. Further work is clearly needed as to optimal processes, though Englert's (2001) model could be useful in suggesting four possible entry points (strategic triggers) and consequential pathways through alignment.

Other possible approaches to alignment

It was noted at the outset of the previous section that two possible approaches to CRE and organisational alignment feature in the literature – single factors or models. Despite their prevalence, it is possible, given a single factor is inadequate for a multi-dimensional environment, and models have had limited take-up, that these existing approaches fail to fully capture aspects of the alignment phenomenon.

The single factors represent a *deterministic* response, in that a single factor determines the alignment. The models are a more complex approach representing an *algorithm*-based approach as a series of defined steps though variability in completeness (as shown above) may make application in practice difficult.

In surveys of CRE executives they are persistently able to respond as to whether they or their companies do, or do not, align corporate and real estate strategies (Bon et al., 2002; DEGW, 2006; McDonagh, 2008). This suggests that they may know alignment when they see it, meaning that *heuristics* may be at work (Tversky and Kahneman, 1974), though it is by no means certain that these judgements reflect actual alignment. These heuristics represent intuitive judgement which, while often accurate, can be subject to biases. In a professional context, like CREM, these judgements may be professional rules-of-thumb often arrived at through the trials-and-errors of practice as an overlay to, or an elaboration on, theories learnt in professional education. Schön (1983) notes the importance of reflective practice in developing knowledge from those trials-and-errors, and perhaps elevating that knowledge above that of an unconscious heuristic.

Alternatively, given the increasing speed of business cycles and turnover of senior management with resultant changes in organisational strategy perhaps it is not as important to get the alignment 'right' as this 'rightness' will be rendered obsolete by increasingly frequent organisational strategic changes. Perhaps the best that can be achieved is a series of 'steady states' (Then, 2005) interspersed within dynamic strategic circumstances.

While flexibility is suggested as a way of postponing such obsolescence for physical and financial CRE aspects (Allehaux and Tessier, 2002; Crosby et al., 2006), perhaps what is important for CRE organisations is that alignment is attempted, even if 'perfected' alignment is neither a realisable nor a durable phenomenon. This suggests that strategic alignment is a *wicked problem* (Conklin, 2005) where adopting a 'strategic mindset' (O'Mara, 1999) is more valuable than deriving a permanent alignment 'magic bullet'. Wicked problems are solvable but not readily so by rational means to achieve definitive answers. Their ten properties have been identified (Camillus, 2008) and include:

- The uniqueness of every wicked problem;
- There is no definitive formulation of the problem;
- Every problem is a symptom of another problem;
- It is difficult/impossible to define completely (exhaustively) all possible solutions;
- Every solution is a 'one-shot' in that the future is altered by the attempt which means that the solution is not exactly repeatable;
- There is no immediate test and no ultimate test of a solution;
- Solutions are good/bad, not true/false; and
- There is no stopping rule, that is, a final, definitive solution is never reached.

A fifth alternative is that the strategic process at an organisational level and, by extension, at the CREM level involves trade-offs (Brandenburger and Nalebuff, 1995; Nourse and Roulac, 1993). Such a line of enquiry was suggested in a recent review of the researcher's. This suggests that *game theory* might be a useful theoretical approach to understanding alignment of organisations and their corporate real estate management (Pullen (2008) reviewing Heywood and Kenley (2008)) as has been used in examining CREM's leasing transactions (Pfrang and Wittig, 2008).

In summary, this analysis suggests that there are five possible conceptual approaches to corporate real estate alignment:

- Single factor determinism;
- Algorithms (models);
- Heuristics;
- Wicked problems; and
- Game theory.

Another possible approach not considered here includes competitiveness alignment (Heywood and Kenley, 2008), which could be an algorithm.

Presence of the approaches in the literature on CRE and strategy

It has been noted that deterministic and algorithmic approaches prevail in the literature. The last three concepts listed above are not clearly apparent in the CREM alignment discourse but contain useful possibilities for CRE strategic alignment. Given the apparent lack of impact with the existing methods, it is worthwhile examining the discourse more carefully because the presence of the approaches would justify more detailed study of the application of these approaches in an empirical study of alignment practices.

Table II. Identifying the approaches in the literature on CRE and strategy

	Applicable approaches					Origins			Form of alignment					
	Single factor determinism	Algorithm	Heuristic	Wicked problem	Game theory	Other	Normative	Empirical	Distillation of reflective practice	Artefact (a plan)	Process	Behaviour	State	Other
Levy and Hook, Jr (1987a)	☐	■		☐	☐		Y		Y	■	☐			
(Levy and Hook, Jr (1987b)	☐	■					Y		Y		☐			
Nourse and Roulac (1993) ¹		■		☐	☐		Y		Y		■	☐	☐	
Weatherhead (1997, Ch. 4)		■			☐		Y	Y	Y		■	☐	☐	
White (1998)		☐		☐			Y		Y	☐	☐			
O'Mara (1999) ²	☐	■		☐	☐		Y	Y	Y		☐	☐	☐	
Englert (2001)		■	☐	☐				Y	Y		☐	☐	☐	
Roper (2001)	■	☐	☐				Y		Y	☐	☐			
Roulac (2001)	☐	■		☐	☐		Y		Y		☐		☐	
Acoba and Foster (2003) ³	☐	■	☐				Y	Y		☐	☐		☐	
Allard and Barber (2003)	■						Y	Y						
Edwards and Ellison (2003)		■			☐		Y		Y		☐		☐	
Osgood, Jr (2004 & 2009) ⁴		■		☐			Y	Y	Y	☐	☐		☐	
Pfner, et al. (2004)	■							Y	Y				☐	
Then (2005)		■		☐			Y	Y		☐	☐		☐	
Wills (2005)		☐					Y							
Lindholm and Levainen (2006)		■					Y	Y						
Scheffer, et al. (2006)		■					Y	Y			■		☐	
Singer, et al. (2007)		☐				☐ ⁵		Y			☐			
Bouri, et al. (2008)	■			☐			Y				☐		☐	
Haynes (2008)	☐		☐	☐				Y						☐ ⁶
Then and Tan (2010)		■	☐				Y	Y	Y	☐	☐		☐	

Legend

- Paper's sole concept
- ▣ Paper's principal concept
- ☐ Paper includes concept
- ☐ Paper implies concept
- ☐ Paper allows its inference

Notes

- 1 Implies a cause-effect process - identify factors in a mapping exercise which gives alignment.
- 2 Model is a high-level structuring process across 3 possibilities.
- 3 Only internal to the CRE Unit.
- 4 Seems reliant on this particular analyst.
- 5 Relies on models of O'Mara (1999) & Nourse & Roulac (1993).
- 6 The theoretical model incorporates 8 cascading levels of dimensions from business environment to people's psychology.

Analysis of the literature on alignment (Table II) shows the prevalence of the algorithmic approach. The single factor deterministic approach was also reasonably evident, though much of the literature containing single factors was not fully considered for this paper which concentrated more on models. Single factor alignment was considered and more extensively present in (Wills, 2005) review of the alignment literature.

The table shows that alignment as a process predominates though the implications that it is a state are also highly evident. Behaviour – as in having a strategic mindset³ – and producing an artefact (a plan that contained aligned strategies) are also well represented.

³ On a psychological basis, arguably, this should be cognitively-based not behaviourally-based.

Where the latter occurred it was often noted that this was an artefact mutable through changing business circumstances and needs, perhaps suggesting wickedness to alignment.

The other aspect that the table contains is reference to the origin of the article's alignment proposal. These were either a distillation of the author's reflection on alignment practice (often from their own experience) or originating from empirical studies; in some cases from both. Predominantly, the origins had a normative slant to them as attempts to create standards or provide prescriptions for practice. Given the algorithms' variability and incompleteness noted previously, it is hard to see how they could act as effective standards or prescriptions other than by relying a great deal on the expert knowledge of the applying CREM practitioner. Perhaps this is part of the explanation for the poor take-up in these models.

The three new approaches are hinted at or inferable from the literature. A strong hint, though not considered here because it was not an alignment article, is Roulac (2004) nineteenth way to avoid making CRE mistakes ('Perceiving what game you are playing and how the rules are applied') which explicitly identifies game theory's applicability to CREM as does Pfrang and Wittig (2008). That these new approaches can be inferred confirms that a more systematic investigation of them in CREM is warranted.

Early results from the empirical study

The empirical study is currently underway around a number of group interviews with industry professionals using case study scenarios to examine how they might do alignment in these cases. Two scenarios are planned for each group session. However, the first session saw only a single scenario considered as the participants had a great deal to say in their two-hour session. Rather than truncating that information flow in order to move on to the second scenario it was thought better to continue the in-depth discussion that was occurring.

A series of questions based on the possible approaches act as prompts for the discussion. These were intended to allow the approaches used in trying to do alignment to be extracted from the data rather than asking for participants' theory about the approaches.

Evidence from the early data analysis shows alignment to be a relatively straight-forward concept where it is meant that CREM ensures that real estate management activities are consistent with organisational strategies. This matches the dictionary-based definition above. That these activities are determined by organisational strategies suggest a uni-directional character to alignment which is consistent with the literature's models.

Alignment was clearly noted as a whole-of-organisation activity, though connections with individual business units was also important, particularly knowing their 'business' if an aligned real estate solution was to be created. Because of this whole-of-enterprise character single factor deterministic alignment might only be applicable to and possible in individual business units.

There was a lack of evidence of explicit theoretical alignment models being applied, though a substantial amount of theorising about CREM generally was evident at times despite the research being constructed to achieve the application of theory rather than reporting of participants' theory.

Game theory was evident through the presence of stakeholders and their behaviour in alignment activities through either acceptance of, or push-back to, CREM's alignment activity. CREM behaviour in alignment practice was also noted as being important. That there was considerable utility in trade-offs, for instance, a small CRE concession (like

servicing tearooms) to achieve a much bigger strategic gain, was clear evidence of a ‘game’ being employed; though it might not represent the mathematical-based games encountered in much of game theory.

‘Games’ is often a coded semantic reference to subterfuge. The early evidence here suggests that transparency is useful in achieving strategic CREM gains. This transparency could provide fairness to stakeholders that did not necessarily equate to blanket equality. It was possible, because of the transparency, to achieve organisation-wide CRE solutions that contained specific, customised solutions within it – like space allocations over the average – that were required by particular parts of the organisation for operational reasons. This achievement became possible from understanding the audience and dealing with them transparently rather than using opaque, ‘game-playing’ subterfuge.

This identification of both CREM and stakeholder behaviour, though consistent with game theory, is new to CRE alignment theory. Other aspects identifiable from early analysis are discernable in the alignment models discussed above. These include:

- The importance of CRE information or data;
- The requirement for an organisational strategy; and
- Having a CRE strategy.

A fourth element identified in the study – communication – is inferable in the above models’ integration with other corporate functions, though not specifically identified therein.

Discussion

For some time CREM has been challenged in addressing the aligning of CRE and organisational strategy though this activity is, arguably, a core technology in the management of CRE. A couple of approaches have been utilised in the past – single deterministic factors, or creating a model of an alignment process. Relying on a single factor seems inadequate in a multi-dimensional field such as CREM. The alignment models exhibit degrees of variability and completeness. As such, this would make them difficult to directly apply as a template for practice, which could account for their low take-up there. The theoretical discourse that generated the models has also been variable as a result of the different individual perspectives that have been brought to bear on the problem. This variability may be attributable to the emergent nature of the discipline, or a disconnection inherent in the discipline’s scientific basis. That disconnection itself may be attributable to the discipline’s emergent nature, or the inherent nature of science and knowledge creation in management studies. Without necessarily wishing to transform the entire character of knowledge production in management studies it is obvious that CREM studies can be more rigorous and systematic in its theory generation. Hopefully, some of the work in this paper suggests ways of doing this.

In part, this lack of system may be traced to the following antecedents:

- Much of CREM’s theorising has been done by CREM professionals seeking general explanations for and of their practice. This is an important and worthwhile feature of the discipline which also raises interesting questions about the theory of knowledge generation in emerging professional disciplines, such as: whether knowledge is professionally or academically derived; and what might be the role of each of those and their interconnections; and
- There are relatively few dedicated CREM researchers world-wide. A review of the CREM literature shows that many different property academics have from time-to-time addressed one or more CRE issue. However, a sustained stream of theoretical and empirical work from any individual or group is relatively rare; not

unknown, but rare. This last comment somewhat overlooks those in facility management that have and are making sustained contributions to that field. A follow-on question relates to the relationship between the two fields represented by the different nomenclatures. Varyingly, they could be counted as one-and-the-same, as being distinctly different, or as having permeable boundaries where researchers, concepts and theories flow from one to the other. Further detailed consideration of this last point is beyond the scope of this paper.

This paper's engagement with strategic alignment of CRE has both theoretical and practical motivations. A theoretical one has been dealt with in the discussion directly above. A second theoretical motivation more clearly connected to practice is based on an observation of some practitioners saying that they are struggling with doing alignment and have done so for quite some time, seemingly without great traction. Analysing various attempts at theorising shows a prevalence of two approaches. Given the low take-up of models and the conundrum of practitioners struggling and yet high numbers of them being able to report alignment suggests that different approaches are required for both practice and theory.

This paper suggested the three following possible additional approaches be considered:

- Heuristics, being judgements which emerge from and are applications within professional practice. this may be applied in assessing consistency as the basis of alignment definition;
- Considering strategy formation and consequential alignment as wicked problems, for which there are suggestions to that effect (Camillus, 2008); and
- Game theory, which is suggested as applying to CREM (Roulac, 2004), but not widely considered further in any systematic way.

There is some evidence of these approaches in the CREM alignment literature but they are mostly only inferable, rather than being explicitly evident.

Early results from the empirical study show alignment is conceptually straight-forward being consistency between the two strategies. How that consistency is achieved is the issue.

Of the possible approaches, single factor determinism was suggested as possible but only at a single business unit level, not at the whole-of-enterprise level where alignment theory identifies it as most important. Of the three new approaches, game theory was the most evident though this did not appear to be mathematically-based, like much game theory. The importance of stakeholder and CREM behaviour in alignment activities indicated potential significant new CREM alignment theory and something to be considered in further parts of this study.

While further analysis and research is required to conclude the study, the early results are encouraging in confirming the applicability of at least some of the additional approaches suggested in this paper.

The practical implications of this work are several-fold. First, if a greater range of approaches apply to CRE strategic alignment there will need to be a commensurate change in the types of practices employed in alignment. For example, explicitly considering and identifying stakeholder payoffs, the degree of competition or cooperation between stakeholders, and optimal points in trade-offs between payoffs – all aspects of game theory (Kelly, 2003). This could be extended across the domains of CREM practice identified in Heywood and Kenley (2008) such as location selection, workplace styles and particularly the processes of their implementation, CREM organisational styles, and more.

Second, should wicked problems be identified as important (though not thus far) then specific CREM practices to 'tame' them will be useful. These practices would include recognising and making explicit the many stakeholders and their values and priorities; the multiplicity and inter-connectedness that are inherent in the CRE alignment problem; recognising the irreversibility of any alignment and that every occurrence of alignment will be unique. Identifying all the relevant CREM practices here is limited by space availability and warrants further exploration.

Third, should heuristics be important then practices to make those rules-of-thumb and iterative learning explicit would prove useful to build the required judgement. Research is almost certainly required to establish appropriate bases to that judgement and it might also be necessary to develop algorithms that include judgement components.

Fourth, a more complex algorithm can be developed. This paper's analysis of alignment models suggests the components that any such algorithm should contain. As noted above, incorporating judgement points applying heuristics might also be included at specific places in the algorithm. Fifth, CREM will need to move beyond hoping that a single CRE factor will provide enterprise-wide alignment, though it may be useful at a business unit level. Sixth, it is apparent that requisite changes in education will be required to promote appropriate knowledge development, either during professional education or more likely through professional development programs. Finally, organisations are imperfect, human constructs that never operate precisely as theory suggests they may. Therefore, what may be most needed is informed, flexible adaptive practice to operate as a CREM professional in doing CRE strategic alignment.

Conclusion

This paper set out to explore the theoretical and practical bases of the alignment of CRE and organisational strategies with a view to enhancing both, and overcoming the difficulty practitioners report in doing alignment. Existing approaches to alignment have been identified and a detailed examination of the components of the prevalent one (models or algorithms) has been conducted. That analysis' list provides a comprehensive basis for constructing and evaluating such models.

In addition, because of the seeming intractability of the alignment problem to the application of previous approaches, three additional approaches are suggested. An examination of the CREM literature infers their presence. An empirical study, albeit at early stages in this reporting, confirms the utility of, at least, game theory to CREM alignment practice. The expanded set of approaches suggests lines of future enquiry for investigating CRE strategic alignment and, as a whole, provides an expanded and much richer theorisation for this core CREM technology.

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