Design Control to Achieve Strategic Advantage

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Introduction

In any diversified firm, the problem of strategic advantage can no longer be reduced just to reconfiguring activities within its existing units. Industry transformation means that the firm and its units need to address much more fundamental questions about the nature of the business environment in which they compete. To do this they need to recognise the logic of the way in which they configure people, knowledge and physical assets to achieve advantage: what we will refer to as design control. A concept of design control allows us to identify the appropriate relationship between the strategic processes at the centre of the organisation and those within the individual units.

The fact of widespread industry transformation and the fundamental issue this raises for traditional models of competitive advantage is now widely recognised.(Prahalad and Hamel 1994). Coyne and Subramaniam (1996) more recently emphasised the extent to which (what they called) co-dependent systems and privileged relationships created a need to rethink the nature of economic analysis. Such essentially external issues can also be framed in terms of the nature of the overall decision processes within the firm itself and the requirement to sustain strategic advantage.. However, to address the issues in this way requires us to consider explicitly the role of the Centre in any larger firm, consisting of a number of units or clusters, and in particular the nature of organisational design.

Design Control

Any commercial organisation can be viewed as a designed response to customer needs. We define *design control* as the business' response to the needs of its customers in terms of a particular configuration of people, knowledge and assets. The symbol Λ is a shorthand way of referring to this designed response, which we choose because of its resemblance to levels of hierarchy.

If a business is described in terms of the configuration of its activities crucial to maintaining the viability of its organisation, then *levels* can be identified whose relation is one of embedding the organisation of task in broader and broader contexts. Thus the exercising of design control is expressed in terms of *levels of organisational context,* within which the business's competencies and capabilities can be deployed effectively. These levels correspond to different kinds of explanation of the organisation of the business. Four levels can be identified. :

WHAT: business infrastructure (what the business actually consists of)

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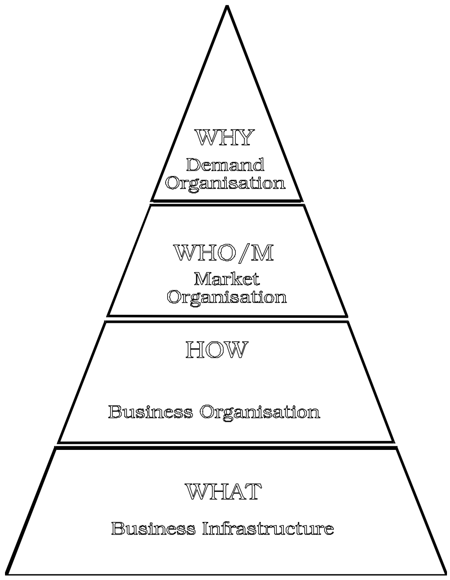
HOW: business organisation (how are the structures of the business organised)
WHO/M: market organisation ('who' is the business in relation to a 'whom' of customers/clients)
WHY: demand organisation (what is the framework of technologies organising the needs which are constitutive of the forms of demand which the supply-and-demand relations of the market organisation support).



Thus, the nature of the design response (Λ) can be formulated in terms of different levels of explanation concerning the what, how, for whom and why of the design: what does the business do (Λ_1), how is this organised (Λ_2), who organises it in relation to whom (which customers) (Λ_3), and what are the why's and wherefore's of the business and its customers in assuming these designs (Λ_4).

Strategy Ceilings

All these levels of explanation are always present in any organisation but they are not always explicated. The level to which they are explicated defines a *strategy ceiling*. This ceiling is the upper limit to the ways in which the organisation can explain to itself what it wants to do, and therefore this ceiling defines a limit on the nature of the strategic options that the business is able to articulate as being available to it. Issues which arise above the ceiling are either resolved explicitly by being reinterpreted below the ceiling in terms of lower levels, or remain implicit above the ceiling incorporated in the private and partial discussions, which arise between those who have the power to resolve them through their relations with each other. So, for instance, if the nature of market organisation is not problematised in a business unit structure it appears instead as if it was a problem of business unit reconfiguration against a stable market backcloth.

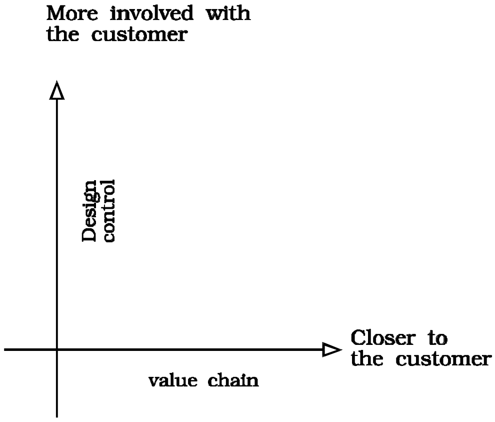
A strategy *process* raises the strategy ceiling for a business and enables it to *know* what its strategy is, and therefore enables its management to *commit* to it.. Being able to explicate all levels enables the business to describe itself in relation to the organisation of demand in the environment in which it is competing. This demand organisation (the 'why's and wherefore's) is expressed not only in terms of the organisation of supply in relation to demand, which is embedded in it (the 'who for whom'), but also in terms of the nature and complexity of the configurations of knowledge domains through which this organisation of supply is constituted.

Value Chains, Ladders and Constellations

In some industries the rate at which these forms of design control change is slow, and the strategic problems facing the industry can be formulated in terms of assets as they have been configured rather than in terms of the forms of design control themselves. The industry under these circumstances can be described in terms of *value chains,* reflecting the particular way in which the assets have been configured. In Porter's terms (1985), the value chain for a firm is the particular design configuration of activities within the firm that are constitutive of its capacity to create margin. Industry structure is therefore described in terms of how these value chains link together. This description in terms of value chains has the advantage of enabling strategy process to operate at a lower level (below Λ_4), in terms of strategies where the forms of competitive advantage can be *positional*. Under these circumstances, a universal demand organisation can be defined, reflected in the particular form of the value chain, and reflecting the fact that the industry as a whole is formed under common why's and wherefore's (Λ_4). Advantage therefore comes from the nature of the (Λ_3) positions which can be taken up within this (Λ_4) context. This universality was first clearly recognised in the academic domain by Spender (1989) with his articulation of 'industry recipes': common assumptions within the industry as to its nature.

In high technology and high service industries, however, different businesses are competing on the basis of different perceptions of demand organisation. Here, where being able to exercise design control is central to establishing competitive advantage, there is a requirement to rethink the unit of analysis for competitiveness (Prahalad and Hamel 1994). The particular dimensions along which design control is being established by the business are relative to demand organisation. The forms of competitive advantage are *relational* not positional. The pursuit of advantage becomes even more clearly the pursuit of market inefficiencies since markets can only be at their most efficient when whole sectors are operating under a common Λ_4. Differentiated Λ_4s also create market 'inefficiencies', which, of course, enable individual firms to achieve above average profitability. Under these circumstances, where individual businesses are employing different design responses, we speak of *value ladders.*

A value ladder is a description of the degree to which design control can be exercised above the specific value chain. Thus the higher up the value ladder an individual business is competing, the more it is able to engage with the specifics of individual customer/client requirements and the dynamics of its industry structure. We can represent this as the distinction between going 'downstream' which means getting 'closer', whilst going 'up the ladder' means getting more 'involved' with the customer/client's business.



Thus a fast-food counter or a bank teller might be very close to the customer, but not at all involved; whereas a barrister or a researcher might be very involved but not at all close: being in close physical proximity does not necessarily involve sharing meanings and concerns. We can also represent these distinctions by recognising that involvement is more akin to the concept of ‘customisation’, in contrast to being close *qua* proximity.

Customised	**integrated third tier supplier**	**Barrister**
Standardised	**Commodity Supplier**	**Bank Teller**
	Distant	**Close**

This is very similar to the idea of moving from value chain to value constellation as described by Normann and Ramfrez (1993):

> “ To win, a company must write the script, mobilise and train the players and make the customer the final arbiter of success and failure. To go on winning, a company must create a dialogue with its customers in order to repeat this performance over and over again and keep its offering competitive. Companies create value when they make not only their offerings more intelligent but their customers and suppliers more intelligent as well .. companies must continuously reassess and redesign”

Recent writing has begun to emphasise the importance of looking at businesses in terms other than the asset-based/economic ones. Prahalad and Hamel (1990) define core competencies for the organisation as a whole which can be applied to a number of different customer situations to add value. What unites these approaches is an emphasis on *design*. Design is being used here not in the narrow sense of 'designer' suits, but in a broad sense of the overall design configuration of people, know-how and resources - a systemic view of the organisation, which, for instance, informs Senge's (1990) approach to organisational learning. Particular configurations of assets associated with positions of competitive advantage are seen as the consequence of exercising *design control*. A value chain is therefore the result of de-composing an end-user’s 'design problem' into a series of subordinate problems, each one of which demands particular forms of design control.

‘Value Ladder’ complexity versus ‘value-chain’ complexity

Hence, in stable markets based on physical processes, this design approach is not strictly necessary - the value chain is taken as a 'given', and competitive strategy is organised around the nature of the specific positions along the value chain. However, as meeting customers' needs comes to depend increasingly on software instead of hardware, and technologies introduce more and more possibilities for alternative design approaches, so this design-based approach becomes more crucial if any sense is to be made of the 'market'. Nowhere is this truer than in the service and media industries. The competitive emphasis shifts from providing better versions of a product from a value chain, to one of developing value chains which are better able to provide products tailor-made to customers' needs. The value chain complexity therefore becomes subordinate to the 'value ladder' complexity - ie the design approach deployed opposite the customer's needs - and the level, on the value ladder, at which this is being addressed.

Examples can be found in a range of contexts. For instance in defence contracting, the ways in which the end-user requirement (the military) formulates its demands is affected by the ways in which their needs are mediated by available technologies. New technologies make possible new ways of formulating needs as demands. As a result of this, new value ladder design approaches can be developed which in their turn give rise to whole new value chain infrastructures. Another example would be the car manufacturers, who, through developing new design formulations of their products and services, re-structure the existing value chain infrastructure supporting them, and create new infrastructure. In the UK, for instance, in terms of arrangements for dealerships and their relationship with manufacturers, this has happened with Nissan and Daewoo. A third example would be in FMCG retailers, food retailing and financial services, where a trade-off has to be made between 'de-skilling' the front-line operation with compensating increases in the complexity of the supporting infrastructures (Dixons, MacDonalds, Lloyds).

Not <u>all</u> of the loss of complexity in the front-line operation is compensated for in this way however, so that shifts in the way such trade-offs are made may result in a significant increase in the amounts of shadow work (Illich 1981) left to the consumer of the service. Where the supplier has a local monopoly or strong market position, this is likely to go unnoticed, at least in the short-run. In other cases, in the name of customer flexibility, there is also an effective transfer of work to the customer from the supplier, such as, most obviously, in a number of self-service contexts. The irony of this is that it would appear that customers sometimes prefer this form of service because of the degree of autonomy and choice that is available. Finally, the whole problematic of pollution and environmental sustainability can be understood in these terms. The environmental effects of the business are considered to be part of the front-line complexity which the business is (or is not) including in its definition of its relationships with its environment[i]. In the recent Brent Spar incident, it became clearly apparent that Shell's relationship with its customers could not be neatly divorced from their response to the environmental impacts of some of its commercial decisions, even when they had apparently followed proper international legal procedures.

The consequences of this are that the identity of the business unit, however large or small it is, has to be capable of being called into question as new configurations of business unit activity have to be considered in response to new competitive conditions. Thus a relational approach to the market increases the need for 'horizontal' corporate strategy processes capable of creating value in new ways, and the need for ‘soft’ forms of organisation which can make this flexibility of response sustainable[ii].

Middle-out development of strategy

The current tendency to move decision making closer to those concerned with implementing decisions, in order to make use of their local market and customer knowledge, is timely. This tendency is reflected both in the shift away from broad strategic analysis and towards encouraging strategic thinking throughout the organisation; and in the emergence of more decentralised strategy development through Strategic Business Units (SBUs). This raises new questions over the role of the Centre, and its capacity to add value to individual business units.

For the unit manager-in-the-middle who has historically had the task of relating the broad corporate strategies to the detail of delivering products and services to the customer, this shift in emphasis creates new stresses. It is not possible to assume, even in the most established consumer goods companies, that the strategic development of such activities can be construed within the traditional marketing framework based on the marketing mix (McCarthy 1960). A framework is required to take into account the crucial interactions and dynamics going on within the market's infrastructure itself between customers, competition and channels (Boxer and Wensley 1986, Wensley 1995) to enable the issues of market and industry dynamics to be addressed.

If the unit managers-in-the-middle are then to be effective in responding to the increasingly complex responsibilities in relation to such markets, where the technologies and customer requirements are being re-formulated, they must also be given the ability to manage the micro-organisational context within which products and services are delivered. This micro-organisational context is crucial because it determines the quality of the relationship that can be sustained with the customer. When this 'micro-organisational context' itself becomes a marketing variable, the unit strategy becomes *relational*.

Passing such power to take strategic initiatives from top-down to the middle-out does not necessarily reduce the 'top management' to a kind of second-rate capital market and/or to the historical policing of business' performance. But it does require top management (the 'Centre') to develop a completely new role for itself. The prime concern becomes one of managing the development and deployment of new forms of knowledge through the ways in which unit managers are enabled to frame their business' activities.

Thus, rather than assuming that strategic wisdom can be located in one place, top management has to expect that it will be dispersed throughout the business. As such, rather than being the embodiment of wisdom, top management has to manage the development of this dispersed wisdom together with new ways of capitalising on it.

The role of the Centre

This brings us to the question of the role of 'The Centre'. The work Campbell and Goold did on 'Strategies and Styles' (1987) explored the role of the Corporate Centre in relation to its businesses. It made distinctions between three major styles in terms of two dimensions:

- the type of planning relationship
- the type of control exercised

The three major styles correspond to different balances between planning and control :**"strategic planning"**, being effectively 'hands-on' strategic development of the business, needs limited subsequent controls; while "**financial control**", in which the business is assumed to know more about its development needs than the Centre, leaves the business to manage itself within a controlling set of 'output' criteria; and "**strategic control**" then comes between these, where, in effect, a strategic framework is agreed with the businesses under which they are expected to manage, but it is left up to the business how it does this 'within the rules'.

In terms of design control and knowledge (Λ), we can interpret these as different (Idealised) forms of Corporate Process:

(i) "Strategic Control" at its best reflects a consensual approach to strategic development where both the Centre and the unit both know this Λ

(ii) "Strategic Planning" reflects a situation where the Centre is in a position of knowing 'best', or at least of embodying at the Centre the 'best' knowledge; and

(iii) "Financial Control" reflects the situation where the Centre works in relation to the unit's understanding of its Λ in a process of stretching and motivating the unit's performance in relation to that Λ. Where the capital markets know a unit's Λ well because of the established nature of the industry it is in and its approach to it, this financial control role of the Centre becomes of limited added value. The more obscure the Λ becomes, however, particularly, as we have discussed, in dynamic high technology and/or high service sectors, so the more useful becomes the mediating role of the Centre in relation to the market.

The most extreme examples of this phenomenon of 'mediation' are to found in situations in which the markets themselves are emerging or, in other words, where the nature of Λ_4 itself remains problematic or ill defined. For example, this was apparent in the way IBM mediated, not obviously in its own private interest, the emergence of the PC market. In other areas, this mediating role also raises questions of public good in the way the market operates. For instance with the NHS, a central strategic issue is the characterisation of the 'market' itself: the role of the Centre cannot be said to be just one of mediation, but one of design also. In the flurry of recent debates not only about NHS structures but also about privatised utilities and general issues of regulation, it has become very clear that the Λ_4 assumptions made about demand organisation have resulted in a Λ_3 market organisation that has very significant impacts on future outcomes for the ‘customer’.

Beyond Parenting: The Boundaries of Box 4

A matrix can be developed to characterise Centre-unit relations based on the original Campbell and Goold work:

In this matrix we have identified a critical domain in which there is a gap in their original analysis of the relationship: How does the Centre operate in this Box 4? This is the antithesis of strategic control, and the process is explicitly developmental. Existing formulations of design control/response are being called into question in a *critical process*

	SBU knows Λ	SBU doesn't know Λ
Centre knows Λ	Strategic control	Strategic planning
Centre doesn't know Λ	Financial control	'Box 4'

in which the limits of what both Centre and unit know are being 'pushed': the aim is (organisational) learning. If the other three forms of corporate process are concerned with adding value to existing positions or Λ's, then 'Box 4' is concerned with creating new formulations.

The move away from 'change programs' towards network-based forms of intervention therefore appear to characterise this 'Box 4' approach best. These are interventions that work through building networks of alliance and co-operation around particular tasks, and which depend on building common understandings and interests (Charan 1991). This is a characteristic of the best of Financial Control as well, however, except without the same agenda for change. The Centre's insistence that the unit delivers performance that is consistent with what it says is possible forces the ceiling to be raised in the unit's Λ.

In their more recent work, Campbell & Goold have been exploring the nature of the 'parenting' relationships between the Centre and businesses (Goold, Campbell and Alexander 1994), making a further distinction between:

> 'Vertical’ parenting, in which the Centre governs the strategic development of its businesses on the basis of its superior knowledge and understanding over that of the business; and

> 'Horizontal' parenting, which is paradoxical in the sense that the business 'knows' as much as or more than the Centre, so that the major sources of its strategic development lie elsewhere - through horizontal linkages.

In our terms, 'vertical' parenting is therefore based on relationships of *affiliation* with the Centre; and 'horizontal' parenting is based on relationships of *alliance* with other sources of knowledge and experience. In the move towards 'Box 4' critical processes, there appears therefore to be an important shift in the nature of the role of the Centre from the Centre knowing (vertical parenting) to one of not-knowing (horizontal parenting).

In practice horizontal parenting is easily confused with vertical parenting in which the definition of and relationships between units are re-formed in the likeness of the Centre's view of what Λ ought to be, which may, of course, be different from the existing *tacit* Λ. Consultants then are frequently used to support this kind of intervention, in which one tacit Λ is being over-written by another explicit Λ. The weakness of this approach (as with all top-down change programs) only arises when it encounters different views of what-is-going-on (or indeed what-ought-to-be-going-on) which are experienced as "resistance" or "blocks to implementation" (Scott-Morgan 1994).

Corporate Process to Support Strategic Development

Two kinds of process can, however, support an effective intervention to address questions of horizontal parenting and therefore in effect to shift the boundaries of Box 4. Firstly, an examination of the forms of demand organisation being addressed by different units to see how they relate to each other, and in the process how each suggests different ways of formulating the other units' competitive advantage. In effect this is a *macro-process* in which the diversity and variety of Λ's are being used as a basis for suggesting new positions and new ways of configuring units - it is the corollary of questioning the systems of control which go with exercising financial control. The role of information, and the way in which it is or is not used to support new forms of thinking, whether as a learning or a control process, becomes crucial at this stage.

Secondly, an examination of the fine grain of the way each unit exercises design control itself - exactly how is it a response to the customer's needs. This is in essence a *micro-process* which calls into question the Λ from 'underneath'/bottom-up. Of course these two processes inform each other. The macro-process is questioning the forms of knowledge and understanding of the Centre, and the micro-process that of the units - each approaches 'Box 4' by pushing the edges of 'what is known' by unit (micro-process) or Centre (macro-process).

Macro-process

A financial control regime is only effective if the businesses have internalised a capability for their own strategic control. The businesses will at least have a positional approach to their competitive advantage. Once the developmental dimension is opened up however, this positional approach must become relational, as the businesses develop new linkages and re-invent themselves in relation to new markets. *Enterprise Architecture* is a way of referring to the corporate context in which these processes take place. It is at least the corporate context in which the business is operating, but goes wider than that in describing the whole competitive context *as it relates to the business*. The shift from positional to relational strategies demands that this architecture shifts from a *specific* architecture - one in which unit strategy is 'hard-wired' into organisation - to a *general* architecture.

Why architecture? Because architecture can be designed and engineered, and still leave it open to the business how it 'lives' within that architecture. So a concern with architecture is a concern with creating the conditions in which it is possible to create new configurations [iii]. The macro-process is the principle of sponsorship that extends to creating this architecture within which businesses can develop.

Micro- process

The unit is itself a design configuration of business activities. As we have seen, fundamental to the concept of 'position' here is *design*. A position represents a particular way of configuring business activity in relation to competitors, customers and knowledge[iv].

There are obvious links between this view and much of what is implied in both Business Process Re-engineering and Quality Function Deployment. Both of these techniques require a functional definition of customer requirements, although in practice, they seem to be based on internal teams responding to a rather broad and generic categorisation of customer requirements. Even when these requirements are expressed in more refined terms such as order-qualifying and order-winning criteria (Hill 1985) , they tend to be formulated in terms which are more positional than relational. A true quality process at the micro-level requires recognition that customer's themselves are active participants in the relationship (Wensley 1990): that they too should exert a significant degree of design control.

The quality of the micro-process is therefore the key to Corporate Process. The only challenge the Corporate Process faces is in creating the conditions in which micro-process can achieve its effects.

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END NOTES

[i] For an interesting example of corporate response to environmental issues see the 3M example in Shrivastava (1995).

[ii] For some of the competitive challenges created by 'soft' organisation, see Chesbrough and Teece (1996).

[iii] Christopher Alexander goes so far as to suggest this is a key concern of the building architect:

" Each one of us wants to be able to bring a building or part of a town to life.. those of us who have been trained as architects have this desire perhaps at the very centre of our lives: that one day, somewhere, somehow, we shall build one building which is wonderful, beautiful, breathtaking, a place where people can walk and dream for centuries" (1979:9)

Architects argue the same specific:general distinction in terms of the relative emphasis given in a design to function and form.

[iv] The appropriate consulting interaction in this context, insofar as it is alliance based, approaches the business not in Ideal-based terms of knowing better, but as one approaches a design problem facing a design team... A "lets see how we can come up with a quality response to this together by pooling what we know". This is the approach implied by Porter's 1996 paper.