Dynamic re-alignment: Understanding organizational response to changing business contexts using a conceptual framework for strategic alignment

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ABSTRACT

Strategic alignment is sometimes used to provide the conceptual underpinnings of causal analyses of business performance, yet our understanding of the notion suffers, in large measure, from imprecise and unusable definitions that rely on vague geometric metaphors. This paper builds on and improves a conceptual framework for strategic alignment (Wang and Ghose, 2006). It applies the framework to explain a major exercise in organizational transformation at a large emerging-economy mining company.

Keywords: Strategy, Strategic Alignment
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INTRODUCTION

Strategy and competitive advantage have been widely discussed in both the management and economics literature. The discourse on strategy can be traced back to ancient India, Greece and China as early as 500 BC. More recently, scholars such as Drucker (1954), Chandler (1962), Andrews (1965, 1971), Ansoff (1965), Hofer and Schendel (1978), Mintzberg (1987), Rumelt (1991), Hamel and Prahalad (1989), Ohmae (1989), Porter (1985; 1996) among others, have made important contributions to our understanding of strategy and strategic decision-making. The notion of strategic alignment has assumed considerable importance in the discourse on business strategy. There is widespread acknowledgement of the importance of strategic alignment (Baets, 1996; Henderson and Venkatraman, 1993; MacDonald, 1991; Parker, et al, 1988; Powell, 1993). Discussions of alignment usually involve binary comparisons between corporate strategy on the one hand and an internal functional strategy, such as procurement strategy (Knudsen, 2003), human resource management strategy (Shih and Chiang, 2005), advertising strategy (Boudreau and Watson, 2006) or IT strategy (Baets, 1996; Henderson and Venkatraman, 1993; MacDonald, 1991; Parker et al, 1988; Powell, 1993; Sledgianowski and Luftman, 2005) on the other.
An important gap in the literature on strategic alignment is the absence of crisp, actionable definitions of alignment. Common dictionary definitions of the notion of alignment refer to “the position of something in relation to something else or to its correct position”. Despite the obvious significance of the notion of alignment, much of the discourse involves relatively vague geometric metaphors of “lining-up”, or notions such as “linkage”, “harmony”, “blend” etc. As a consequence, discussions on alignment are almost always ad hoc. We do not have the means to tell whether a given strategy is aligned with another. We do not have methodologies that might support strategy formulation in a manner that ensures that it is aligned with the over-arching corporate strategy. We do not have the conceptual tool-kit to help us understand how to maintain alignment in the face of constant change. There are no proposals on how strategies might be represented to support such analyses. Recent proposals such as strategy maps (Kaplan and Norton, 2003) provide powerful diagrammatic tools for visualizing strategies, but do not lend themselves to such analyses (although they provide a level of detail that can complement our framework).

This paper seeks to address this gap. It reports on a detailed deployment of a conceptual toolkit first developed in (Wang and Ghose, 2006) to analyse strategic alignment at a large mining company (which will remain unnamed). The case study led to a refinement of the conceptual framework to incorporate the notion of strategic objectives (in a precise mathematical sense) in describing and analysing strategies for alignment. The case study also led to the development of uniform means for representing strategies that we shall refer to as strategy description templates. The paper describes the original conceptual framework, as well as these refinements in detail. It then reports on the lessons accruing from the case study. The extended framework is found to be effective in providing a precise means for evaluating alignment, the extent of alignment, the reasons for misalignment, and in some cases pointers to “strategic fixes” that can help restore alignment. The case study is interesting in its own right and describes how a large state-owned mining company emerging economy responded and adapted to a fundamental shift in its business context. It turns out that this is ultimately a compelling account of strategic alignment, misalignment and eventual re-alignment.

STRATEGIC ALIGNMENT: A CONCEPTUAL TOOL-KIT
In this section, we review the conceptual framework for strategic alignment presented in (Wang and Ghose, 2006). Alignment is almost always viewed as a binary relation relating a strategy to another. In some instances, alignment is viewed as a relation between a strategy and firm’s resource base (although this is more commonly described as *fit*) and in some others, alignment is used to describe the relation between a strategy and a business context. The Wang and Ghose framework views alignment as a binary relation between two strategies, although the conceptual tool-kit can be easily retooled to support these alternative views of alignment.

A strategy can be viewed as a *resource allocation decision* (i.e., deployment of resources) or as a *plan of action*. The Wang and Ghose framework addresses the problem of strategy representation/description – on which little exists in the literature with the notable exception of (Kaplan and Norton, 2003). The framework identifies a set of common attributes of any strategy, independent of the domain, and independent of how the strategy might have been articulated that is central to analysing strategic alignment.

**Pre-requisites:** The pre-requisites of a strategy are the conditions that must hold for a strategy to be deployed. For instance, a pre-requisite for a high-risk strategy of introducing a new product with uncertain market response might be a position of market dominance for the firm, so that the potential of financial damage, as well as damage to its brand equity is minimized.

**Resource requirements:** Every strategy involves the commitment of resources. In some instances, the resource requirements for a strategy might be viewed as pre-requisites. In general, though, these are not pre-requisites since the required resources might not be available prior to the deployment of the strategy but might instead become available during the course of strategy execution.

**Effects:** The execution of a strategy leads to its (hopefully desired) effects. These effects might involve market positioning or the internal resource base of a firm.

The framework uses *scenario* as an over-arching term to describe the current state of a firm, both internal and external, including its business environment and its internal resources. Two different notions of alignment are defined: *basic alignment* and *full alignment*. These definitions rely on the notions of *contradiction*, *resource consistency* and *entailment* in a very precise sense. Contradiction
and entailment will be used in analyzing the pre-requisites and effects of strategies. A set of conditions will be described as *contradictory* if the conditions in question cannot co-exist in a given scenario. A set of conditions will be described as being *entailed* by another set of conditions if we can determine that in every scenario where the latter hold, the former also hold. *Resource consistency* is an attribute of a pair of strategies that can be concurrently deployed, given their resource requirements and resource availability in the current scenario. In some settings, this might mean that the sum of the resource requirements of the individual strategies does not exceed the available resources, but in general, the answer might require more subtle analysis. In some cases, the resource requirements for a strategy might be included in the resource requirements for another strategy it is related to, while in others the resource requirements for a pair of strategies might partially overlap. Resource consistency simply obliges us to analyze strategies from the perspective of their resource requirements, juxtaposed against available resources. *Basic alignment* between a pair strategies holds in situations where there are no impediments to the concurrent deployment of both strategies. A pair of strategies is said to be in basic alignment whenever:

- The pre-requisites of each strategy do not contradict the current scenario. This opens up the possibility for each strategy to be individually deployed in the current scenario (this is referred to as *scenario-prerequisite consistency*).

- The pre-requisites of each strategy do not contradict each other. This ensures that strategies with contradictory pre-requisites, and thus clearly not intended for deployment in the same scenario, are not concurrently deployed (this is referred to as *prerequisite consistency*).

- The strategy pair is resource consistent given the current scenario. This ensures that there are no resource impediments to the concurrent deployment of these strategies.

- The effects of each strategy do not contradict each other. This ensures that one of the strategies does not “undo” the effects of the other strategy (this is referred to as *effect consistency*).
The effects of the strategy do not contradict the pre-requisites of the sub-strategy and vice versa. This ensures that the effects of one of the strategies do not detract from the viability of the other strategy (this is referred to as prerequisite-effect consistency).

Figure 1 illustrates these conditions. Basic alignment establishes a relatively weak relationship between a pair of strategies by defining conditions under which they can validly co-exist or can be co-deployed. The notion of full alignment establishes a far stronger relationship between a pair of strategies by ensuring that the sub-strategy follows, in the sense of entailment discussed above, from the parent strategy. A strategy is viewed as fully aligned with another whenever:

- The current scenario entails the pre-requisites for each strategy (scenario-prerequisite entailment). This ensures that both strategies can be deployed in the current scenario (as opposed to merely allowing the possibility of such in the case of scenario-prerequisite consistency).

- The pre-requisites for the second strategy are entailed by the pre-requisites for the first strategy (prerequisite entailment). This ensures that whenever the first strategy is viable for deployment, so is the second strategy.

- The resource requirements for the second strategy are included in the resource requirements for the first strategy, in the sense that the second strategy does not require a distinct set of resources (resource entailment).

- The effects of the first strategy entail the effects of the second strategy (effect entailment). This ensures that the second strategy behaves as a component of the first – when the first strategy has been executed, the effects achieved include the effects of the second.

- The strategy pair satisfies the requirement of prerequisite-effect consistency as defined earlier.

Figure 2 illustrates the relationships involved in full alignment.

The notions of basic and full alignment represent points on a spectrum (see Figure 3). Strategy pairs that do not satisfy the requirements of basic alignment are misaligned. Yet, as our subsequent case
study shows, misaligned strategies can sometimes co-exist and lead to relatively positive outcomes. On the other extreme, it is difficult to conceive of a stronger notion of alignment than full alignment. The intermediate points in the spectrum are of particular interest. For instance, strategy pairs that violate the effect entailment requirements but satisfy all of the other requirements of full alignment would probably be deemed to be very closely aligned according to common-sense intuitions on alignment. Similarly, very closely aligned strategies might satisfy the condition of resource consistency as opposed to the stronger condition of resource entailment. Acronyms have been used for basic alignment (BA), full alignment (FA), scenario-prerequisite entailment (SPE), pre-requisite entailment (PE), resource entailment (RE), and effect entailment (EE) to define various points on this spectrum. These are intended only illustrate how such a spectrum might look like, and do not suggest a unique definition of the spectrum. For instance, Figure 3 suggests that a strategy pair satisfying basic alignment and resource entailment is closer to the full alignment end of the spectrum than a strategy pair satisfying basic alignment, scenario-prerequisite entailment and prerequisite entailment, but the converse could be equally strongly argued for. Ultimately, the value of this framework is in providing a principled vocabulary for discussing varying degrees of alignment in a domain-independent fashion.

Figure 4 illustrates the inter-relationships between some of these concepts. Each of the conditions above is represented by a set of strategy pairs satisfying the condition. Thus, for instance, the set \( FA \) is the set of all strategy pairs satisfying the conditions of full alignment. The figure uses Venn diagram notation for representing the relationships between these sets. It shows that any strategy pair that is fully aligned also satisfies the requirements of basic alignment. It also shows that the set \( FA \) is defined by the intersection of the sets \( SPE, PE, RE, EE \) and \( BA \). Figure 4 can be analyzed in considerably greater detail, but we omit this for brevity.

Some of the conditions used to define basic alignment – scenario-prerequisite consistency (SPC), pre-requisite consistency (PC), resource consistency (RC), effect consistency (EC) and prerequisite-effect consistency (PEC) – also provide a vocabulary for discussing “degrees of misalignment” for strategy pairs that are fundamentally misaligned.
A REFINED FRAMEWORK

The case study described in this paper led to a refinement of the conceptual framework for strategic alignment. We identified a key component in the description of a strategy that was absent in the earlier formulation – the notion of an objective. An objective might be articulated as a performance metric (order cycle time, customer satisfaction, revenue, profit) or as an optimisation objective function (minimize inventory levels, minimize production costs, maximize market share). It became apparent over the course of the case study, and over secondary analyses of several other cases (not described here), that an objective is often the central element in the description of many strategies. Indeed, strategies are sometimes articulated in terms of an objective alone.

An objective is clearly distinct from a pre-requisite or a resource in the prior formulation of strategy, but may be confused with the effects of a strategy. It is possible to conceive of a strategy whose intended effect is the maximization of market share. Yet there is a subtle but important distinction in the ontological status of these two notions. An effect is a condition (or set of conditions) that a strategy seeks to achieve. By associating an effect with a set of conditions, we are able to determine whether a condition has been achieved or not. On the other hand, an objective provides a yardstick for assessing improvement, but does not admit a Boolean notion of achievement. It is not clear if an organization can ever assert with any modicum of confidence that its costs have been minimized. The literature on operations management and operations research admits the notion of an optimal solution to an optimisation problem, but this involves the identification of a solution or a configuration that represents the best that can be done relative to a given objective function under a set of operational constraints. These constraints are by no mean immutable – indeed the intent of many strategies is to modify the set of operational constraints. In summary then, an objective is a means of assessing improvement on some dimensions, but does not admit a crisp notion of achievement. An effect, on the other hand is a set of conditions that a strategy seeks to make true.

It is useful to consider the underlying mathematical formulation of an objective. In the language of discrete mathematics, an objective is a preference relation, i.e., a set of assertions of the form “scenario1 is preferred to scenario2”, “scenario3 is preferred to scenario4” etc. Representing an
objective in this form is an *extensional definition*, while representing an objective in the form of something like “minimize production costs” is an *intensional definition*. The objective to minimize production costs induces an extensional definition in which we prefer scenarios where production costs are lower over those where production costs are higher. We can then define a notion of *objective consistency* – a pair of objectives is inconsistent if we can identify a pair of scenarios (scenario1 and scenario2) such that scenario1 is preferred over scenario2 by the first objective, but scenario2 is preferred over scenario1 by the second objective. The notion of objective consistency thus enables us to characterize pairs of objectives that do not “pull in opposite directions”. We can also define a notion of *objective entailment* – a given objective entails another if the extensional definition of the latter is a subset of the extensional definition of the former. If a given objective entails another, then we know that we will perform better according to the former yardstick whenever we do better according the latter yardstick.

This leads to a simple extension of the prior framework for strategic alignment. The notion of basic alignment is now extended to include *objective consistency*, as shown in Figure 5. The notion of full alignment is similarly extended to include *objective entailment*, as shown in Figure 6.

In the case study reported here, there was a clear need for a simple structured mechanism for describing/documenting strategies. We developed a *strategy description template*, shown in Table 1, for this purpose (note that effects are described as strategic outcomes). This turned out to be an extremely useful tool for engaging management in focused discussions to elicit strategies. It also appears to be a useful intra-organizational communication tool that ensures that strategies are articulated and communicated throughout the organization in a standardized format. Table 2 provides an example of a populated strategy description template.

**STRATEGIC ALIGNMENT: A CASE STUDY IN THE MINING SECTOR**

The conceptual framework for strategic alignment described above was used to analyse the case of a large mining company in a rapidly growing emerging economy. The organization in question was particularly well suited for evaluating the utility of this framework, for several reasons. First, the company in question was large enough to make a fairly detailed analysis of alignment at various
levels across the enterprise meaningful. Second, the company had to respond and adapt to a dramatic transformation in its business context over a relatively short period of time (approximately 10 years). The transformation affected the very core of the company’s business model, and its impact was felt in every aspect of its operations. Third, the company has been in the unique situation of having to align to a high-level strategy that was in part exogenously determined (as a state-owned company, it has to meet high-level objectives determined by the government). Finally, any strategic account of the company’s fortunes over the last three decades would meet the requirements of an alignment case study – an initially stable mode of operations, a crisis, followed by a resolution.

The mining company (henceforth referred to as MiningCorp – no relation to its actual name) is a state-owned enterprise in a country that underwent a dramatic transformation in the latter part of the 20th century from a centrally-planned, “command-and-control” economy to one with significant free market characteristics (although some elements of government control and regulation of the economy remain). MiningCorp flourished in the prior economic model. The national government (via the relevant ministries and central committees) determined the broad outlines of its corporate strategy. MiningCorp was primarily charged with meeting the mineral needs (the specific mineral in question remains unnamed) of the national economy. Revenue, profit, production costs or market share did not, in large measure, figure in its strategic vocabulary – MiningCorp was funded by a national government that did not impose an obligation to return profits. Other strategic imperatives took precedence, such as the provision of lifetime employment (with generous employee benefits) to a very large workforce, technological self-reliance (i.e., the use of indigenously-developed mining technologies) and an exclusive reliance on other state-owned enterprises for the sourcing of production/operating inputs, technologies and services. A dramatic transformation of the national economic model was affected in the latter part of the 20th century, leading to an economy that was free-market in part and that has grown (and continues to grow) at a rapid pace ever since. This transformation led to a re-conceptualisation of the role of state-owned enterprises by the national government. Progressively, over the course of a decade, the strategic imperatives of several state-owned enterprises (including MiningCorp) were adjusted, leading to a newly-imposed obligation to operate at a minimum on a revenue-neutral basis, and further, to generate profits as a means for
funding expansion. Some modicum of flexibility was permitted in its corporate social responsibility obligations, such as in the need to provide lifetime employment guarantees and generous benefits to a large workforce. Flexibility was also permitted in the sourcing of technology and services.

MiningCorp faced difficult challenges in reacting and adapting to this changed business context. The imperatives of this changed operating environment did not propagate fast enough through the organization (indeed, it would have been surprising if it had, given the size of MiningCorp). Matters came to a head when a division of MiningCorp was placed in what roughly translates to receivership – the problems with the operating model of that division were most acute, but versions of the same problem could be seen elsewhere within MiningCorp. Major changes were eventually instituted, which, coupled with several new initiatives, led to an eventual turn-around in the fortunes of MiningCorp. It currently operates in a relatively healthy mode, and the division that was most acutely affected has since come out of receivership.

It became increasingly obvious over a long series of interviews with senior management at MiningCorp that strategic alignment was fundamental to an understanding and analysis of this account. We documented the strategic landscape at MiningCorp using the strategy description templates discussed above. These were then analysed for strategic alignment using the conceptual framework described in this paper. What emerged was a fairly compelling account of dynamic strategic re-alignment. The strategic landscape at MiningCorp prior to the major transformation of the national economy was largely in a state of alignment – indeed in most cases, the requirements of full alignment discussed above were met. The altered economic context led to the imposition of an entirely new set of strategic objectives by the national government. This revised corporate strategy turned out to be badly misaligned with the rest of the strategic landscape, such as the pricing strategy, the technology strategy, the human resource strategy as well as more specific, lower-level strategies. The difficulties faced by MiningCorp in this period of change can be very clearly explained as direct (and in some instances, very specific) consequences of this strategic mis-alignment. The organizational changes that eventually led to a turn-around can also be clearly explained as exercises in the re-alignment of a set of specific organizational strategies with the over-arching corporate strategy. Due to space constraints, we will provide only a small handful of examples of how the new
vocabulary that accrues from this conceptual framework for strategic alignment provided a useful basis for this analysis. In some instances, the analyses revealed additional “strategic fixes” that MiningCorp might implement to address some continuing problems.

A key challenge for MiningCorp was its pricing strategy. In the old economic model, MiningCorp was obliged to sell all of its mineral production via a government-mandated administrative pricing mechanism. In other words, MiningCorp could not decide the price at which it would sell its products, and the government-imposed price was often artificially low. A binary analysis of this pricing strategy with the revised corporate strategy reveals the following: objective inconsistency (a revenue/profit maximization objective is inconsistent with the objective of maximization of demand satisfaction for MiningCorp’s production from the state sector at government-mandated prices intrinsic to the old pricing strategy). MiningCorp lobbied the government to obtain rights to sell at market-determined prices and was eventually permitted to sell a proportion of its production through the B2B e-auction mechanism. The remainder continued to be sold to state-sector firms via government-mandated prices. This represents the current pricing strategy, as represented in Table 2. While this revised pricing mitigates the objective inconsistency to some extent, the pre-requisites of the revised corporate strategy are inconsistent with the effects the revised pricing strategy. A prerequisite for the revised revenue/profit-oriented overall corporate strategy is the availability of greater decision-making flexibility in operational matters, including pricing, yet an effect of the current pricing strategy is that a significant proportion of MiningCorp’s production continues to be sold at government-determined prices. The current pricing strategy thus represents an improvement over the prior pricing strategy, but a degree of misalignment remains with the overall corporate strategy. MiningCorp continues to lobby the government for greater flexibility in pricing arrangements. This analysis also reveals a possible resolution to the problem. Given that an objective of the pricing strategy is to maximize demand satisfaction from core state-sector customers, while minimizing deviation from government-mandated pricing structures, these objectives could still be met by MiningCorp negotiating prices with state-sector customers within pricing bounds (as opposed specific prices) that would be government-mandated. Such a pricing strategy would further mitigate the objective inconsistency and pre-requisite-effect inconsistency discussed above.
A recent debate has ensued at MiningCorp over the competing strategies of additional mechanization on the one hand and expansion of the scope of mining operations on the other hand. The two strategies violate the property of resource consistency (amongst others), given that MiningCorp does not have deep enough pockets to fund both strategies concurrently. The rapid mechanization strategy has also hit the roadblock of scenario-prerequisite inconsistency in that the current political scenario does not permit large-scale workforce rationalization, which is a key prerequisite of this strategy. Note that scenario-prerequisite consistency stands out from the other constructs in the framework in being the only unary construct (that can be determined by examining a strategy in isolation relative to its operating context).

A similar debate has ensued over a strategy to invest in improving internal logistics capabilities versus a strategy of outsourcing logistics. This pair of strategies violates (amongst others) the property of effect consistency. A large number of other examples are available, but omitted for brevity.

While largely validating the utility of the conceptual framework for strategic alignment, the case study also highlighted a few challenges in deploying the framework. Eliciting strategies from interviews with management posed the biggest problem. The granularity at which a strategy might be articulated can vary, and managers have often tended to conflate what should otherwise be distinct strategies into a single strategy description. The strategic objectives and effects components of a strategy description template have often been confused and have required some amount of explanation of the subtle but important distinction between these two conceptual categories. The pre-requisites and resource requirements components have occasionally also been confused.

CONCLUSIONS

This paper extends a conceptual framework for strategic alignment and reports on lessons accruing from an actual deployment of this extended framework in analysing the strategic landscape at a large emerging economy mining company. The extended framework is found to be of considerable value, both in its ability to provide rich vocabulary for describing strategic alignment, misalignment and re-alignment, and in its ability to provide an analytical basis for obtaining potential “strategic fixes”. We
expect this framework to become part of the conceptual toolkit of both academics and practitioners in this space.

REFERENCES


Fig. 3: The Alignment Spectrum

Fig. 4: Inter-relationship between strategy
Fig.5: Extended Basic Alignment

Fig.6: Extended Full Alignment
Table 1: Strategy description template

**Strategic objectives:** Maximizing order fulfillment for core state-owned enterprises; minimizing deviation from government-determined pricing structures for state-sector clients; maximizing revenue

**Strategic pre-requisites:**
- Financial subsidies from the government
- Absence of significant competition
- Government-approved market-based pricing mechanisms

**Detailed strategy description:**
- Small proportion of mineral production sold via administered prices
- Portion of output sold via prices set by MiningCorp
- Portion of output sold via price discovery mechanism (B2B e-auctions)

**Resource requirements:**
- Government financial subsidies
- Detailed national economic plans
- Price determination and price discovery infrastructure

**Strategic outcomes:**
- Greater financial viability, including potential for generating profits
- Subsidization of the government-supported sectors of the economy

Table 2: MiningCorp. Pricing strategy