



STRATEGY-MAKING IN COMPLEX SETTINGS

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Abstract

It is argued that, in complex and unstable contexts, the traditional mode of “think-first” deliberate strategies which set “thinking” apart from “doing” is becoming increasingly ineffective. The unpredictability of complex contexts in which we operate, leave us with no choice but to be markedly adaptive rather than attempt to be overly prepared. Complex Adaptive Systems (CAS) are the order of the day, and the organization’s Standing (desired future state) and Steps have to emerge in action, rather than be pre-determined, in the development of strategy. However, this emergence of strategy, ought to be predicated on a Stand (strategic perspective or position), and a set of Shared values, without which emergent strategies may well lead to chaos. The principal role of the leader in a CAS is not to increasingly exercise tighter controls and formalize action, but conversely, to set in motion a complex responsive system, in which the agile organization can swiftly adapt to emerging, rather than pre-determined situations and yet make the most of them.

1. Introduction

Strategy is variously defined. Each definition emphasizes a particular aspect of strategy at the expense of another, and as Mintzberg *et al* (1998) posit, the individual definitions fail to capture the “strategy beast” in its entirety. They add that, “we are the blind people and strategy formation is our elephant. Since no one has had the vision of the entire beast, everyone has grabbed hold of some part or other and is utterly ignorant of the rest”. Importantly, the “strategy beast” is more than its parts. We do not get an elephant by adding up its parts. Yet to comprehend the whole, we need to understand the parts, and go beyond the parts.

Strategy making is reckoned to be the high point of managerial activity. But the process of strategy making is often confused and obfuscated by fads and fixes. Consequently, many managers fail to grasp the quintessence of strategy, its essential content and vital processes. Mintzberg *et al* (2007) refer to the 5 P’s of Strategy or five distinct ways of thinking about the essential characteristics of strategic management. They are (i) Strategy as a *Plan* – a guide for a course of action, a path from a current state to a desired future and state. (ii) Strategy as a *Pattern* – a consistency of behavior, over time (iii) Strategy as *Position* – the location of particular products in particular markets with a particular proposition, (iv) Strategy as *Perspective*, the overarching business ideology which influences organizational actions, and (v) Strategy as *Ploy* - specific maneuvers designed to outwit competitors.



2. What is *not* Strategy?

The core elements of strategy must be clearly grasped by the manager. First, (s)he must dismiss that which is not strategy *per se*.

The intent of strategy is mistakenly reckoned to be an attempt to be the *best* in-class. This misconception, as Porter (2008) points out, makes actions predicated on it, fundamentally flawed.

Seeing strategy as *action* is also flawed. “Our strategy is to merge ...”, and “... to double our research and development expenditure” are commonplace expressions which tend to pass-off as strategy.

Seeing strategy as *vision*, as in the projection of a desired future state, is another misconception that dominates the thinking of many organizations and acts as a bar to deep-going strategic thinking. “Our strategy is to be number 1”, and “... to provide superior returns to shareholders” are expressions of equating strategy with vision.

Seeing strategy as *mission* or a way forward to attain a desired state is the fourth error of strategic thinking. “Our strategy is to provide superior products that will...”, and “... to advance technology for the larger benefit of mankind”, are manifest expressions of treating strategy in terms of a mission.

Seeing strategy as *operational efficiency* is the fifth error. Doing the same things faster and cheaper may give you an edge over your competitor, for a while. But as Porter (1996) argues, this is not strategy.

Seeing strategy as *operational effectiveness* is the sixth error. Doing better (not different) things in relation to competitors is not strategy either.

Strategy is none of these. Treating strategy as vision, mission and operations makes the fundamental mistake of taking *association* for essence and *substance*. Surely, social responsibility is associated with social well-being, but social responsibility is not the same as social well-being!!

3. Strategy as Stand

In essence, strategy is *not* about setting aspirations of a desired *standing*. Strategy is neither about plans that delineate a series of sequential *steps* that need to be taken to reach the desired standing. Clearly, strategy is not about the two oft-cited questions, “where do you want to be”, and “how do you get there?” They are typically planning-questions which should not be confused with vital strategy-questions.

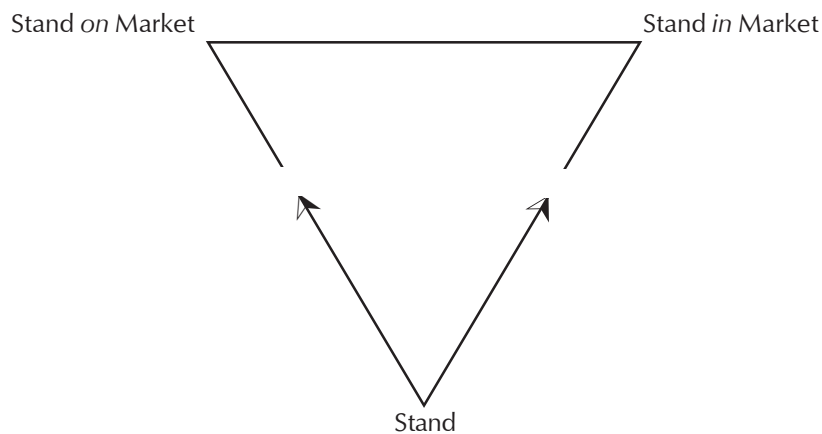
Strategy is not about the *standing* of an organization, nor is it about the *steps* it should take. Clearly, strategy is about the *stand*, the position the organization should take in moving forward.



Taking a strategic position, a stand will then help the organization to reach the desired standing by following a series of steps leading to it.

The *stand* that should be taken is about the position taken by an organization *on* and *in* an industry/market. That is to say, the selection of a market or a segment of it as the organization's operating space, indeed battlefield, as it were, is the first *stand* that must be taken. This should be followed by the stand that is taken by the organization *in* the selected market space. The key questions here with regard to taking a stand are; "who/where are you?" and "what do you stand for?" .

Figure 01: Twin Facets of the Stand



Importantly, these twin questions should be asked first and foremost, and then, only then should one ask the oft-asked "where do you want to go," and "how do you get there" questions. Putting the planning *cart* before the strategic *horse* is a blunder that bedevils many an organization in its attempt to hone strategic action (Liyanage, 2008).

The search for a strategic position or stand for Sri Lanka Tourism illustrates the centrality of finding the *stand*, first and foremost.

SL Tourism

As a case in point, Sri Lanka Tourism (SLT) has, from time to time, articulated its desired *standing* of being a leading tourist destination in Asia, and attracting a million tourists per year. In order to reach this desired standing, SLT has developed country-specific *steps*. For example, "we will develop program X for the U.K. market, program Y for the Indian market and program Z for ...," and so on. These programs of action, indeed steps, it is expected, will lead to achieving the desired standing.



Now, the pivotal strategy-question has yet to be asked. Standing and steps are in place. Indeed, what about the *stand* SLT ought to take. In an attempt to develop a stand that should by definition be unique, SLT articulated its position as, “Land like no other”. As was said, the strategic position or stand that an organization should first take is about the operating space or battlefield. “Land like no other” does not entail a position taken *on* the market, to begin with. What is the particular context in which the stand is taken? Consequently, the declared stand does not spell the position SLT has taken *in* the selected operating space either.

The question that needs to be asked first about “Land like no other” is “*where* is this land, and then *what* makes it unique? Perhaps, *Asia* or *Island* provide the requisite contexts. Then, what does this “Land like no other” provide? *What* does it stand for? Is it to *have* (e.g. shopping), to *do* (e.g. activity) to *relate* (e.g. MICE offerings); to *see* (e.g. nature and artifacts) or to *be* (e.g. sun and sand, and wellness)?

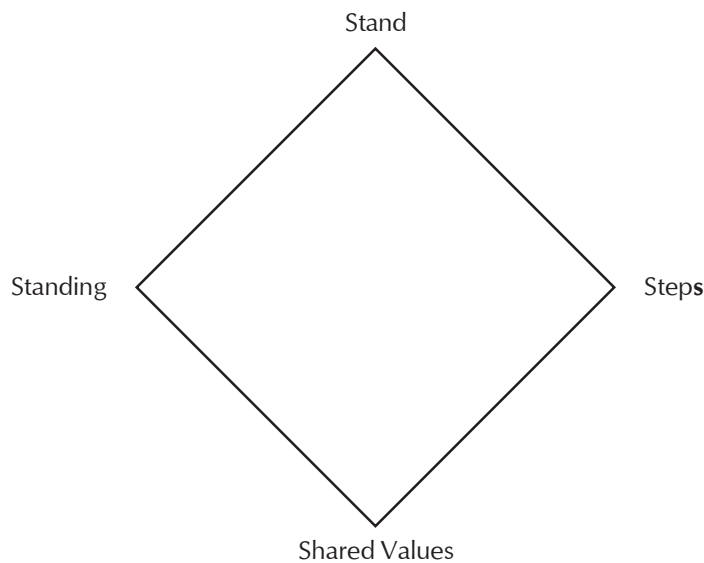
Taking a stand requires the examination of the opportunities that exist in each of the above domains, and the *natural* comparative advantage and the *designed* competitive advantage Sri Lanka can and could enjoy in relation to its direct competitors. A close examination of the possible value propositions for SLT suggests that a unique combination of *being and seeing* that is located in a narrow geographical space may well provide a robust stand for SLT. An additional attribute of *authenticity* that is increasingly valued by target markets may well enrich the proposition. The six key words of “*Asia’s authentic being-seeing compact island*” clearly posit the strategic position, the *stand* of SLT. “*Asia and compact island*” relates to the stand *on* the market. And “*authentic being – seeing*” relates to stand *in* the market. It can now, indeed only now, look at the desired *standing*, and of course the *steps* that ought to be taken to attain the standing of its choice.

The standing and the steps of an organization are not strategy *per se*. They are *about* strategy. Indeed, strategy-making is inextricably associated with a *standing* and a series of *steps*, and also importantly, with a set of *Shared Values* (i.e. core assumption, beliefs and normative behaviours). The shared values of the organization must be instrumental in nature. They must aid the organization to take the requisite steps in order to reach the desired standing. Indeed, the shared values must reflect the unique stand of the organization. For example, the *3M* company *stands* for innovative, breakthrough products in given markets. It has set itself an ambitious *standing* to achieve a high, pre-determined level of profitability from its new products. It delineates the innovative *steps* that need to be taken. And *3M* champions “bootlegging” as a *shared value* to encourage employees to experiment with new product formats.



We can now illustrate the *Strategy Quadrant*, while being cognizant of the *stand* as the centerpiece of strategy.

Figure 02: Liyanage Strategy Quadrant



4. Strategy in Context

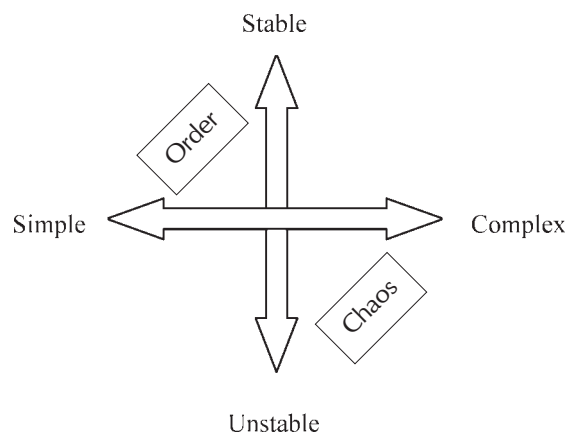
The accent on a particular strategy making process (Strategy Triangle) and the relative emphasis on individual elements of the strategy content (Strategy Quadrant) will, in large measure, depend on the strategy context. Studies have explored executive decision-making processes in contexts of rapid and discontinuous change - so called "high-velocity" environments (Bourgeois and Eisenhardt, 1988). The executives operating in such environments follow a different logic than is described in traditional decision-making research. (Miller and Cardinal, 1994). In stable and predictable environments, the Design and Planning Schools of strategy development tend to hold sway. The setting of a distinct vision and objectives at the outset, followed by internal/external analysis (SWOT), leading to listing and selecting strategic options, and their sequential implementation are characteristic of the traditional strategy making and implementation process. The self-same process is not tenable in environments that are less stable and more unpredictable. Envisioning desired future states with clarity and exactitude and the clear-cut separation of planning and implementation, one following the other, are not possible in environments that are discontinuous and unstable.



The *stability* of an environment, the operating context, is one variable. It relates to the direction, degree and speed of changeability of the environment. The other variable is *complexity*. The number of elements or agents in a given context and the number, speed and linearity of their interactions within the context and between the focal context (sub-system) and its larger context (super-system) will determine the measure of complexity. The greater the number, speed and non-linearity of the interactions greater the complexity. For example, the complexity of the industry in which a firm is located and the larger macro environment in which the industry is located would typify the smaller, immediate context and the larger, distant context respectively. It should be noted that greater the instability and complexity of the environment, the greater would be the *uncertainty* and *unpredictability* of that environment.

We could now map the *Strategy (context) Duality*.

Figure 03 : Strategy-Context Duality



How can an organization formulate strategy in a world that is fast-changing (unstable) and complex, therefore uncertain and largely unpredictable? Indeed, how can managers implement strategies required for organizational success? In essence, how and where should the “traditional approach” to strategy making, grounded largely in stable and simple environments, change?

Clearly, the dichotomy of “thinking” and “doing”, both in time and through sequencing of activities in space, and the functional/structural separation of planning and operations are at the heart of the “traditional approach”. In times of instability and complexity, as those that are increasingly encountered by organizations today, such a “think-act” duality may not be feasible, nor possible.

Henry Mintzberg (1987) made the vital distinction between *Deliberate* and *Emergent* strategies. The former is linear, sequential, and moves from thought out, “envisaged” steps” to clearly executed “enacted steps”. The ability to predict the future and, therefore, control one’s

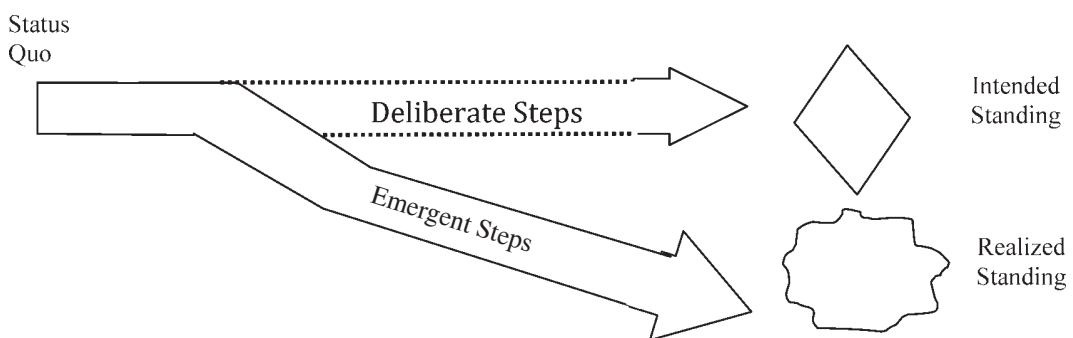


movement towards it underpins the deliberate strategy making process. The emergent process, on the other hand, enjoys the freedom, though not the control, to evolve strategy, as it unfolds, over time.

The metaphor of the potter who has a mental picture of the shape and form of the object he intends to fashion is apt in this regard. In reality, the potter makes a number of moves and strokes, which eventually shapes the object. The possible disparity between the “envisaged” and the “enacted” end states may well be distinct and significant. Indeed, the interaction of the *mind* and *hands* in the potter’s attempt to carve out an object of clay typifies the inter-play between planning and implementing, between thinking and doing.

It is not difficult to discern that deliberate strategies may work better in stable/simple environments that are relatively more certain and predictable. Emergent strategies, conversely, will be more appropriate in unstable/complex settings.

Figure 04 : Deliberate vs. Emergent Steps



Source : Adapted from Mitizberg and Westley (2001)

5. Strategy in Complex Contexts

What strategy is, and how strategies are developed in disparate ways and the manner in which particular contexts affect the strategy-making process have been examined so far in this paper. Now, the current global and local contexts which are characterized, like never before, by financial and economic crises, should be brought into focus in our discussion on strategy-making.

Why is it that the recent unprecedented rise and fall of crude oil prices in the world come as a total surprise, not just to the “man in the street,” as it were, but to economists and market actors who, one could argue, ought to have known better? Indeed, why is it that the financial crisis, followed by the broad-ranging economic crisis was not predicted early enough by those whose job it is to track and forecast trends, both financial and economic?



Is there a deep-going flaw in our thinking and analysis of situations, like the ones referred to above, which make us “wonder what happened”, after the event, whereas traditional strategic planning models are all about “making it happen”, and the traditional forecasting models are supposed to tell us, “what’s likely to happen with a probability of X”?

In our attempt to comprehend the complexity of the multiple crises we encounter, our traditional mental models of “seeing and thinking about the world” must be examined first, so that strategy making may become a meaningful exercise in the current context.

Influenced by Newtonian physics and Cartesian philosophy, the predominant metaphors in use in organizations over the years, and even today, are those of a *machine* and a *military* operation. If an organization is a machine, then we just need to specify the parts well, and make sure that each part plays its role. Understanding the machine is about knowing the parts and how they work separately and together. If the machine becomes dysfunctional, then the challenge is to isolate part(s) which is dysfunctional and correct it, so that the whole machine, once again, begins to tick normally. The machine metaphor has dominated managerial thinking for too long (Capra, 1993). It has made us believe that the machine’s behaviour is, by and large, predictable, and the accuracy with which one is able to predict its future behaviour is largely dependent on the amount of accurate information at hand. The bemoaning of the failure to predict the dramatic rise and fall of oil prices and the unprecedented financial cum economic crises, referred to earlier are perhaps due to the dominance of the machine metaphor that has shaped our world view and dictated our thinking processes.

The second metaphor which has influenced managerial thought is the *military* operation. If an organization is a kind of military operation, then command, control and communication need to be hierarchical; survival is key; and sacrificial heroes are desired. Centralized decision making and the separation between strategic thinking and operations is distinct. Power distance between the strategists and the operatives is significant. Authority, reward and punishment are the central mechanisms of motivation and control of performance.

The machine and military metaphors, as they characterize our world views and mental models, have failed to help us to comprehend the turbulence and complexity that increasingly define our operating context.

Complex Adaptive Systems:

The machine metaphor of the traditional approach entails three basic assumptions:

- Every observed effect has an observable cause.
- Every complicated phenomenon can be understood through analysis, that is, the whole can be understood by taking it apart and studying the pieces.



- Sufficient analysis of the past events can create the capacity to predict future events.

These assumptions have often proven to be potent in developing our understanding of the physical world, by and large. They have served us less well, however, in explaining how communities of humans interact and behave. The limitations of this post-enlightenment or modern analytics have now become clear. The complexity principle dominates post-modern thought, and the centrality of Complex Adaptive Systems (CAS) in understanding phenomena, is an important development of human thought and action.

CAS are special cases of complex systems. They are *complex* in that they are diverse and made up of multiple interconnected elements, and *adaptive* in that they have the capacity to change and learn from experience. The term CAS was coined at the interdisciplinary Santa Fe Institute. A CAS is different to a Multi-Agent System (MAS), which is merely composed of multiple, interacting agents. In a CAS, the agents as well as the system is self-similar/organized and *adaptive*. Such systems are characterized by a high degree of adaptive capacity, giving them resilience in the face of perturbation (Wikipedia, 2009).

There are *determined* and *adaptive* systems. If the inputs and outputs of a system are exactly and reproducibly connected, then such a system is determined. The aircraft is a determined system. Every time the pilot pushes the yoke forward, the airplane should descend. The pilot assumes this will be true; the passengers assume it will be true as well. To produce this collective system response, numerous components and elements of the airplane must work in fully determined ways. The other vital feature of determined systems is that the relationship between inputs and outputs is linear, that is to say, small inputs create small outputs, and large inputs create large outputs. When the pilot pushes on the yoke a little bit, the plane descends slowly. It would be very disconcerting if this linear input-output relationship is not *predictable* (Jones W, 2007).

Adaptive systems behave very differently. Systems such as ant colonies, beehives and the human immune system, on the one hand, and the global economic system and stock markets, on the other, are not only adaptive systems, but are also complex, because of the number of actors or agents in the system and their multiple interactive behaviours. In complex systems, the connections among the agents are critical, but not so much the individual agents themselves. Simple rules result in complex responses – they are not predictable. Each of the agents has a choice of responses within the confines of the rules. Thus, their individual behavior is not determined exactly, as in determined systems.

Plsek (1997) defines a CAS as “a system of individual agents which have the freedom to act in ways that are not totally predictable, and whose actions are interconnected, such that one agent’s action changes the context of other agents” .

The contrasting collective actions of a *marching band* and a *jazz ensemble* will illustrate the nature of a CAS *vis a vis* a determined system. The marching band - a human system - behaves very much like a linear, determined system. In joining this system, individual players voluntarily surrender their right to the local freedom of action. The band has a single leader who dictates all activity.



The range of allowable local improvisation is extremely limited. Viewers may well marvel at the machine-like precision of these bands. In fact, a part of our fascination comes from the almost unnatural look and feel of such groups.

A very different musical group is the *jazz ensemble*. There is no hierarchical, linear direction and no mechanical loyalty to a set of prescribed actions. Instead, members agree to subscribe only to a few general rules and are free to improvise widely. Similar to a flock of birds, the general characteristics of the music can be anticipated but each rendering will be different and often surprising. Such results are not created or directed by individual players, but are *emergent* responses of the whole system. (Jones W. 2007).

The *Stock Market* is a good illustration of a CAS. Buyers, sellers, companies and regulators have their own mental models or schemata and are free to take many different actions. The specific actions of each agent are somewhat unpredictable, and can often be construed as illogical by other agents observing the action. Each action changes the environment that others within the system face. Others take their own actions, which in turn further changes the environment. The detailed movement of the system (whether the market is going to be up or down next Monday and by how much) is fundamentally *unpredictable*. Furthermore, relatively small events like the off-hand remarks of the head of the Stock Exchange can have a large impact on the market (i.e. the “butterfly effect” and the *non-linearity* in the system). However, despite what seems to be total chaos, there is an underlying order that allows us to make generally valid statements about the system. Finally, no one “controls” the stock market. It “happens” – the principle of *emergence* (Plsek, 1997). Indeed, if one were to take any large town and add up all the food in the shops and divide by the number of people in the town, there could be nearly two to three weeks supply of food, but there are no planners at work. The system is continuously *self-organizing*, through a process of emergence and feedback. Hence, the key principles of CAS - unpredictability, non-linearity, emergence (no particular points of control), and self-organization - are to be noted.

Complexity and CAS effects are comprehensively summarized by Stacey (1996)

- Analysis loses its primacy.
- Linearity (cause and effect) loses its meaning.
- Long-term planning becomes impossible.
- Concrete visions become illusions.
- Statistical relationships become dubious.
- Consensus and strong cultures become dangerous.

The critical point is an organization, rather than trying to consolidate, stabilize and reach states of equilibrium, should aim to position itself in a region of “*bounded instability*” at the “*edge of chaos*”. In CAS, total equilibrium engenders dysfunctional behaviour; creative energies are released when it operates at the edge of chaos, between order and chaos.

Plsek (1997) states that studies on CAS suggests that creative self-organization occurs when



there is just enough information flow, diversity, connectivity, power differential, and anxiety among the agents of CAS. Too much of any of these can lead to chaotic system behavior. Too little, and the system remains stuck in a particular pattern of behaviour (i.e. strong organization culture).

Olson and Eoyang (2001) neatly summarize the key differences between the Traditional Organization Model and the CAS Organization Model.

Table 01 : Traditional vs CAS Organization Models

Traditional Organizational Model	Complex Adaptive System Organizational Model
The whole is equal to the sum of its parts.	The whole is different than the sum of its parts.
Direction is determined by design and the formal authority structure.	Direction is determined by emergence and the participation of many.
Individual or system behavior is knowable, predictable and controllable.	System behavior is unknowable, unpredictable and uncontrollable.
Causality is linear: effects can be traced to specific causes.	Causality is mutual; every cause is also an effect, and effects are also causes.
Efficiency and reliability are measures of value.	Responsiveness to the environment is the measure of value.
Decisions are based on facts and data.	Decisions are based on tensions and patterns.

Source: Olson and Eoyang (2001)

Plsek (1997) lists eleven key principles of complexity and CAS, as they apply to organizations.

1. View your system through the lens of complexity (rather than the metaphor of a machine or military organization).
2. Build a good enough perspective (rather than trying to plan out every little detail.)
3. Lead from the edge, with “clock ware” and “swarm ware” in tandem (balance data and intuition).
4. Tune your place to the “edge of chaos” (move away from states of seeming equilibrium and resultant complacency).
5. Welcome paradoxes (rather than seek certitude).
6. Go for multiple actions at the fringes , let directions arise (rather than believing that you must be “sure” before you proceed).



7. Create value through generative relations (you can never tell what will happen when agents come together).
8. Listen to the “Shadow System” (realize value of informal systems, the grapevine which shape agents’ mental models).
9. Grow complex systems of “chunking” (Allow complete systems to emerge out of the links among simple systems that work well and are capable of operating independently).
10. Nice, forgiving, tough and clear guys finish first (balance corporation and competition).
11. Build a space for the community to create and learn together (rather than being a lone ranger).

6. CAS and Strategy Making

It is not difficult to discern that ordered, deliberate strategies, as described earlier, are not tenable in a CAS. Emergent strategies are more consonant with CAS. Hence, we reach the important conclusion that, in today’s complex and turbulent environments, the traditional models and approaches to strategy development may well be ineffective.

The development of Adaptive Complex Enterprises (ACE) is the challenge for organizational leaders who have to shed old ways of thinking and doing, and adopt complex responsive processes (CRP). Desai (2005) reiterates that operating in a CAS, it is clear that an organization has to be pliable, flexible, indeed, adaptable in responding to the environment, and shape emergent behaviours and results, as they unfold. However, if the organization is to do everything “on the run, and as it appears”, without a clear perspective (or position) to shape and inform its emergent actions, then the proverbial “ship without a rudder” will be the inevitable outcome. Again, an organization devoid of a system of shared values; a few simple rules (not a strong culture) of “this is how it works here” is likely to meander, operating in total disorder, indeed chaos. The standing and its associated steps, however, have to emerge in a CAS. This is the fundamental difference between a determined system and a CAS. Deliberate strategies which entail a clear standing and sequentially pre-determined steps will not happen nor work in complexity.

Figure 5 : Strategy Constants and Variables

Stand & Shared Values

		Change	No Change
Standing & Steps	Change	Chaos	Adapt
	No Change	Rigid	Order



No change of the Stand and Shared Values (during a period of time) and changes of Standing and Steps based on feed-back and emergence, point to an adaptive strategy-making process. Sticking to a particular plan when the strategic position (Stand/Shared Values) is no longer relevant and valid is a baseless plan, stuck in rigidity. A change of Standing may entail the (i) alteration of goals/objectives (ii) reordering and reprioritizing them within or across business units and/or (iii) rebalancing them, between long and short-term time horizons. A change of the Standing will be naturally followed by a change of the Steps taken.

7. Conclusion

The contextual imperatives of strategy-making should not be missed. The context dictates the strategy making process – the relative emphasis on “thinking before doing” or “seeing before doing”, or thinking while doing”. The more stable and simple the context, the traditional “think first” planning model, with a clear end and equally clear means makes sense in the development of strategy. In today’s turbulent and indeed, complex contexts, the validity and currency of deliberate strategy-making is increasingly becoming limited and suspect.

The importance of having a strategic perspective and/or a position which creates a framework for organizational action should be recognized. This does not, and should not, limit action, but help avoid incoherent and inconsistent forward movements. Within this framework, which itself may well evolve over time, the organization’s desired *end* and the requisite *means* to reach that end state, are typically emergent, in complex adaptive systems. The organizational structure, systems and style have to be adaptive and responsive in order to operate in complex environments. The metaphors of the machine and the military organization have to be replaced with those that signify greater dynamism, interaction and emergence. Adaptability, creativity, and responsiveness are key sources of competitive advantage, and not the ability of the organization to accurately predict a possible future and take action to attain it. Such a course of action becomes possible only in contexts in which the future is predicable and action towards it can be logically and sequentially taken without discontinuity and dislocation. That is a setting which the old world was familiar with, but a luxury we no longer enjoy, in today’s complex world of business.

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