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Six "Commandments" for Successful Futures Studies for Corporate Planning

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Trappers study their prey and take advantage of the daily regularities in the selected victim's behavior. Corporate strategists, however, must be more astute than trappers; they must adjust their companies' strategies to changing circumstances in the corporate environment.

Coping with the company's changing internal and external environments is one of the major challenges of strategic management. Initial interest in this challenge was stimulated by a substantial increase in management's desire for competitive information. This interest was elucidated in two surveys, taken in 1959 and 1973, of *Harvard Business Review* readers [22]. The need for competitive intelligence resulted in the development of environmental scanning or strategic business intelligence systems [5, 10, 19]. These systems expanded the scope of interest to the broad socioeconomic environment and lengthened the time horizon of management's perspective.

As companies began to use such scanning systems, the problem of how to anchor futures studies in strategic management became apparent. Most of the recent essays discussing this problem attempt to address the following questions: What role do futures studies play in business strategic planning? How can the process of executing a futures study be characterized? What methodologies are available for futures studies [8, 13]?

But none of these questions emphasizes the logic or the philosophy of futures studies. The way a futures study is written depends highly on the author's attitudes toward the question, "How does the evolution of a social system work and what is the company's role in that evolution?"

This article proposes six "commandments" for successful futures studies that address this question and help to anchor futures research in strategic management. These commandments provide the futurist with a philosophical understanding of how social systems, such as the business environment, operate and suggest ways this knowledge can be implemented in corporate planning. The six commandments for successful futures studies are:

1. Consider your company as in coevolution with its environment.
2. Construct scenarios, not forecasts.
3. Define benchmarks.
4. Be aware of third variables.
5. Detect weak signals of change in the internal and external environments.
6. Illustrate dissensions.

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First Commandment: Consider Your Company as in Coevolution With Its Environment

Helpful for understanding an industry's evolution is the analogy to a stream of water flowing through a water spout. When we first turn the spout's tap, the stream of water appears smooth, absolutely round and transparent. As we turn the tap further, a greater flow of water is released and the picture changes: The stream appears to be in strands and is much more chaotic and discontinuous. This chaotic stream continues within a distinct range of the position of the tap until the next "threshold of instability" is reached.

Though the stream appears highly turbulent, this appearance is deceiving, for within the stream is a higher degree of order than in the original smooth stream. Whereas in the smooth stream the movement of a single water molecule follows a statistically random law, in the turbulent flow beyond the threshold of instability the molecules follow powerful separate streams within the main stream. Because of this, it is possible to increase the quantity of water flowing through a spout. The "limits of growth" (of the flow of water) have been overcome by the evolution of the structure (in which the water flows) and the new limits become the limits of a new structure of processes.

In using this example to understand the evolution of social systems, think of the present environment as a cross-cut through the stream of water. This cross-cut shows us the momentary condition and interrelation of the different dynamic processes that drive the industry's evolution—buyers' learning, product innovation, government policy change, and the like [18]. Each of the participants in this system—consumers, government policymakers, etc.—influences the other participants' strategic behavior and thereby the whole socioeconomic environment. In this respect, the company can be considered in "coevolution" with its environment [14]. Thus, actions of a single company can help drive the industry evolution over a new "threshold of instability," and an individual change in a process can change the whole structure of processes.

Many strategists believe that a company—like a biological organism—can flourish only if it adapts to environmental changes [21]. However, a narrowly defined view of biological evolution might be too restrictive and not apply directly to the evolution of social systems. For example, a corporate strategy incorporates the company's awareness of its internal and external environments. This permits more than only changes in response to altered external circumstances; it also allows the company to influence the system and in some cases to control it.

If the future business environment can be designed, in part, by the corporation [1:131], alternative futures also must be possible, with each future incorporating modified assumptions about the strategic behavior of each of the system members. The resulting unpredictability of the future suggests the second commandment for successful futures studies.

Second Commandment: Construct Scenarios, Not Forecasts

A system such as the business environment (or the socioeconomic field of an industry) is characterized by a permanent interchange of information that can have different impacts on the system. Information that becomes apparent for the first time can generate a new industry structure and thereby new knowledge. If information is completely in conformity with the existing process and structure of the system, no change will take place. However, if the new information is not compatible with the system, the system attempts to absorb the new information by producing a new structure within the old system order. (Prigogine [19] speaks of "order through fluctuation.")

The global steel industry is a good example of this kind of transformation. The Japanese introduced into this industry a new strategic key factor of success: the location of factories.[1] By building steel factories on the coast, they obtained a relative shipment cost advantage in the world trade. In response, the European steel industry has tried to maintain the industry order by using subsidies, while the American industry has undergone high losses. In time, the world steel industry will find a new structure in the same order.

Some information, however, cannot be absorbed into the old order. In this case, the system crosses an instability threshold to a new reality, and events cannot be predicted after that point. For example, if a group of Eastern Bloc and developing countries could not repay their outstanding debts, a collapse of the world finance system might result.

This unpredictability of the course of socioeconomic evolution is the principal reason for the demonstrable inadequacies of traditional long-term forecasting methods. In general, these methods are based on the belief that future events can be understood by extrapolation of past trends. Because no such predetermined future exists, other methodologies for future studies have been developed [22].

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[1] Another point is that the Japanese steelmakers committed themselves to a new production process requiring long lead times and enormous up-front investments in order to gain a massive and enduring cost advantage over their world competitors. See [6:30].

One of the most important of these methodologies is the scenario. Scenarios describe paths to possible alternative futures. They highlight areas about which companies should be particularly sensitive, and this heightened sensitivity provides a means of improving corporations' understanding of various possible long-term futures. Businesses have used scenarios for several years. For example, Shell International Petroleum Co. has refined their use extensively [24].

With the focus on alternative futures, it seems unreasonable to also be on the lookout for "the most likely scenarios." But if the probability of an alternative future is not a criteria, how can management select from a manageable number of alternatives? And how can futures studies help a company derive benefit from its coevolutionary role?

Third Commandment: Define Benchmarks

As mentioned previously, a corporation has the freedom to try to influence its environment. For example, a company has a choice of answers to the question, "Do we want to be a socially responsible enterprise?" To answer such a question, the company must define its purpose in terms of benchmarks for strategic decisions. Among the concepts related to the need to establish benchmarks are the "purposeful systems" and the "ideal-seeking systems" of Ackoff and Emery [2], as well as the "active organization" of Scholl and Kirsch [20]—which was stimulated by Etzioni's "active society":

> A society has *transformability* if it is able to set, in response to external challenges, in anticipation of them, or as a result of internal development, a new self-image which includes a new kind and level of homeostasis and ultra-stability and is able to change its parts and their combinations as well as its boundaries to create a new unit. . . . Social systems with the capability of self-transformation can (a) adapt successfully to more changes of the environment, (b) actively influence these changes, and (c) realize more [of its] own values [9].

This "self-image"—from the perspective of a company's purpose—is the benchmark for selecting desirable from undesirable alternative futures. The benchmark can also provide a means of assessing strategic behavior. General Mills has tried to anchor this benchmark in its "statement of beliefs" and its objectives. The next two commandments discuss how to implement knowledge about the evolution of social systems in futures studies methodology.

Fourth Commandment: Be Aware of "Third Variables"

Until recently, the business research community believed that the best way to understand the path of evolution was to substantiate correlations or "invariances" between relevant variables of the environment [11]:

> A prediction is a specification of an invariance, and an invariance is a generalization involving the future. Thus, we do not accept as predictions just any statement about the future. There has to be some explicit specificity about the conditions for tenability, if only to the effect that "this statement is valid under any and all conditions." "There will be a Third World War" is not a prediction, but if one adds "before Year 2000," it becomes one. An invariance is not necessarily a prediction, for it specifies only the conditions under which the proposition is valid, not the concrete circumstances, the where and when. Correspondingly, a generalization is not necessarily an invariance for it does not have to include the future (actually, time does not even have to be a free variable at all). To avoid claims on the future, it might be useful to preface that type of generalization by the clause: "So far, in the experience of mankind, X has always been related to Y according to formula P" [11:73].

Although identification of such correlations is a good idea, long-term assumptions about future environmental developments for a strategic plan must not be bound by such correlations. In periods of rapid change, such correlations more likely will be broken by "third variables" [11].

For example, the increasing oil prices in the early 1970s broke the invariance of the historically correlated truism "the higher the income, the longer the car."

Galtung [11:72] says that no iron laws exist in the social sciences. This comment suggests that single forecasts of the future are limiting. Each realized and even perhaps empirically proved invariance strives for its liberation the longer it exists. A correlation is just an interval of time with a special context. But this context, and the conditions of an invariance, are always affected as third variables gain in influence.

In general, there seem to be three methods to identify the third variable(s) with which it is possible to transcend a given "invariance" [11:90].

In the first case, the third variable has been part of the invariance but has simply passed without notice; then because of its own increasing influence, it develops its own empirical reality. In the second case, the invariance is empirically imperfect and those responsible for identifying third variables will search for weak signals of change that could suggest that such third variables exist.

Sometimes, however, the invariance is empirically perfect. In this case, there is no direct empirical basis for detecting the existence of a thrid variable and only a theory can lead to a correct way of transcending a given invariance. Here, a third variable can transform the consciousness of the social system of which it is a part and, in doing so, helps the system evolve into a new reality. Such creative acts happen only in the evolution of social systems. For example, the success of "the Greens," a new kind of political party in West Germany, has created a new political reality and has broken many established invariances.

McKinsey's "strategic gameboard" [6] reflects this concept for the topic of new businesses identification. By discovering factors that had never been regarded as competitively important, third variables defy the conventional wisdom of an industry and create a "new game." Identifying these third variables is, perhaps, the futurist's most difficult and important task. In doing so, the futurist gains time to prepare alternative responses to change, as well as the advantage that accrues to those who learn to play the new game first. But what can futurists do to detect the early signals of the third variables?

Fifth Commandment: Detect Weak Signals of Change in the Internal and External Environments

A decisive idea related to the problem of how to form "early-enlightening systems"[2] is stated by Ansoff:

> The . . . approach is to treat the problem before the fact, minimize the probability of strategic surprises: to prepare in such a way, that by the time it strikes, a strategic discontinuity has lost its suddenness, urgency, and unfamiliarity [3].

The assumption that strategic surprises are announced by weak signals is fundamental in Ansoff's idea. Contrary to the established practice of accepting only well-framed information, Ansoff requires consideration of weak signals also—even if they give rise only to presentiments of a change that would result in an opportunity or threat for the company. If the company is able to identify such weak signals, it will have more time to take advantage of opportunities or counteract threats.

The evaluation of the significance of weak signals on one's own business is an ill-structured problem. Experience suggests that "outsiders" are frequently better explorers or evaluators of a new idea or trend than "leading experts." This leads us to the sixth commandment.

Sixth Commandment: Illustrate Dissensions

As has been suggested, the evolution of social systems is not predictable. For this reason, different opinions about the probable development of the socioeconomic environment should exist. (Note that these opinions can affect the decisions of the predictor and, thereby, the coevolutionary process.)

Futurists should explore more than one opinion about the future, and they should not aggregate different opinions into one "average opinion." It is important to illustrate the spectrum of disagreement and initiate analyses of unconventional viewpoints. In short, one should avoid the attitude of a vice-president who said, "Our management has been selected so well we don't have any disagreement about how the future will evolve."

Reflecting the sixth commandment, Ansoff, Kirsch, and Roventa propose a concept for "dispersed positioning in portfolio analysis" [45]; Hedberg and Joensson recommend "semi-confusing information systems" [12]; and Checkland demonstrates a soft-system methodology for tracking unstructured problems [7]. In these approaches, the strategic information induces ambiguity, alarm, and uneasiness (rather than trying to create a picture of certainty).

Applying the Six "Commandments"

These six "commandments" of a philosophy for futures studies are relevant for environmental scanning systems, strategic intelligence systems, or early-enlightening systems because they are derived, in large part, from these procedures. A number of different approaches to the detection of early changes in the environment exist. Among them are QUEST, TEAM, SPIRE, the scanning activities of SRI International's Business Intelligence Program, and TAP [16, 17]. A few of these processes—such as TAP for the life insurance industry—involve a participatory process of identifying, analyzing, and sharing weak signals of change. The effectiveness of newly adopted procedures such as these can often be enhanced if those employing them understand the logic or philosophy upon which they are based.

[2] "Early-warning system," the term generally used for this kind of system, is misleading, because the system must identify both threats *and* opportunities.

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