

# Strategizing needs Systems Thinking

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## **Abstract**

*The paper identifies strategizing as a core process of strategic management. It contends that strategizing should be more than strategic planning and therefore needs strategic thinking which is systems thinking foremost. Four streams of influence on strategic thinking are discussed based on insights from research on strategy. The paper then concentrates on two aspects of strategizing: strategic consensus and strategic learning. Empirical findings concerning the process of building consensus and the relationship between strategic consensus and organizational performance are reflected. The paper highlights the potential of computer simulations for supporting consensus building and strategic learning. It contends that the concept of strategy forum together with group model building may be an effective approach to build strong broad-based strategic-thinking capabilities. The paper identifies a need for more evaluative research and proposes action research in the organization.*

## **Strategizing as a core process of Strategic Management**

Strategic Management in its most common sense may be defined as an attempt to proactively direct the future development of an enterprise, respectively its business units, thereby maintaining and extending competitive advantages over rivals in an ever changing arena of competition (or coopeitition). According to the two most accepted views of strategy, competitive advantages result either from attractive positions of a company in an industry or from distinctive resources (competences, knowledge bases etc.) of that company. Both views should not be seen as conflicting, but more as complementary in the sense of two sides of a coin. Attractive market positions can only be occupied and maintained with distinctive resources, and these alone won't pay if no opportunities for their application can be identified. Because competition is basically a dynamic phenomenon, driven by sequences of action and reaction, competitive advantages will erode over time, if not cyclically renewed. In times of fast change and hypercompetition these cycles become very short. Here, the successful development of a company rests upon its ability to continuously create new sources for competitive advantages. In such a context corporate renewal turns out to be the main task of strategic management, and strategizing as a core process of strategic management becomes a critical exercise for sustained corporate success.

Traditionally strategizing has usually been an episodic exercise (either occurring in periodic cycles or initiated by repeated crises), often mainly done by experts in staff groups and/or by outside consultants. In such a context strategizing has a tendency to become monopolistic and to focus more on analysis than on synthesis. As a

consequence managers won't get an opportunity to develop a competence in strategic thinking. Whilst this interpretation of strategizing may be sufficient in a stable environment it will probably lead to failure in a turbulent environment. Here, strategies have to be changed more often. These changes, we contend, will have a better chance for success in companies that have democratized strategizing and thereby have made strategic thinking to a core managerial competence.

In times of rapid change strategies apparently become more dynamic and more complex too. The effectiveness of a chosen strategy will not only be determined by the content of this strategy, but also by the ability to its flexible adaptation according to anticipated actions and reactions of competitors as well as changing requirements of customers. Without a dynamic perspective of strategies managers run the risk to stick with strategies of the past, even if these have already proved as being unsuccessful (Day and Reibenstein 1997). Strategies have to take into account many aspects: issues inside and outside the firm, hard and soft facts etc. Once a new strategy is formulated it must be aligned with the company's resource-allocation process to make implementation possible. In order to evaluate its effectiveness a causal chain of performance measures, as included in the 'balanced score card' (Kaplan and Norton, 1996) should be established. Such a measurement system may support strategic learning, which is especially necessary in turbulent task environments. Here strategists are careless if they look at their business world just from one perspective. In doing so they will not be able to initiate real strategic change which „requires inventing new categories, not rearranging old ones“ (Mintzberg 1994; 109), and they will overlook opportunities for new 'profit patterns' (Slywatzky et.al. 1999). These arguments underline the need of systems thinking for strategizing which is strategic thinking at first.

### **Influences on strategic thinking**

Strategy is not about plans, but about insights (Campbell and Alexander 1997). One reason that successful strategies are rarely developed presumably results from the fact that strategic planning is often confused with strategic thinking. Both management activities are fundamentally different. Whereas strategic thinking is a process of discovering insights, strategic planning is the process of turning that insights into action. Strategic thinking is about synthesis and results in „an integrated perspective, a not-too-precisely articulated vision of direction“. Strategic planning, in contrast, is about analysis and programming, „the articulation and elaboration of strategies or visions, that already exist“ (Mintzberg 1994: 108, 107).

Strategic thinking is the most important input for strategizing. Therefore it shouldn't be outsourced, neither internally nor externally, but cultivated as a core competence. This requires that senior line managers need to engage in strategizing themselves and take „personal responsibility for developing the key strategic insights that will guide the company“ (Christensen 1997, p. 156). Strategic changes require new understanding by capturing knowledge from all sources - soft insights from experience as well as hard data from market research and the like. The crux is that once a company has found a successful strategy, it will keep it, not change it. This tendency leads to freeze what Bettis and Prahalad (1995) have called a 'dominant logic'. Therefore strategy changes usually require unfreezing such a dominant logic via

learning and unlearning. Another difficulty results from conflicting opinions in top management teams. Strategy changes usually necessitate a renewal of strategic consensus.

Before discussing how this processes of strategic learning and of consensus building may be supported by concepts of systems thinking we first will shortly outline this and other important spheres of influence on strategic thinking. They are illustrated in fig. 1 showing learning and understanding as the main aspects of strategic thinking and four streams that have an influence on it. The latter may be divided into a research hemisphere, and a hemisphere which represents more practical aspects.

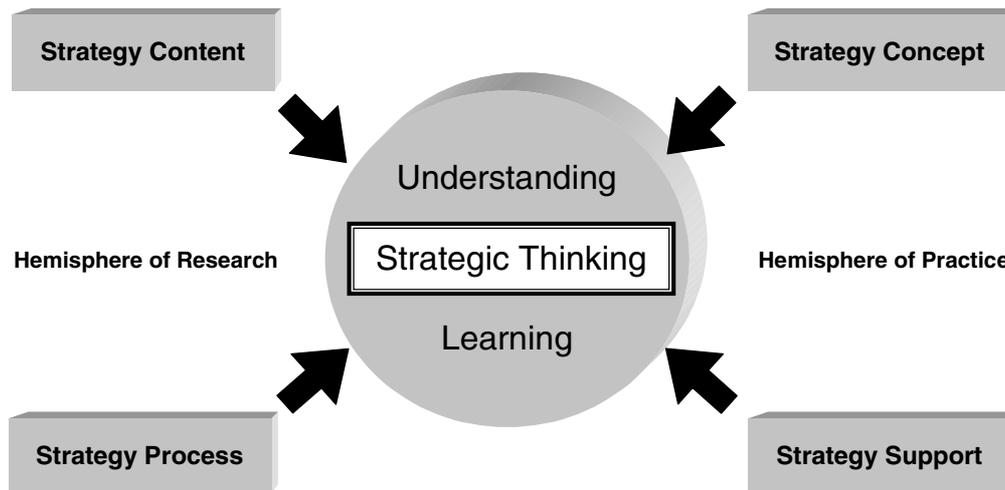


Fig. 1: Spheres of influence on strategic thinking

- **Strategy Content**

Research on strategy divides into two schools: content and process (Schendel 1992). The content-driven school represents the view of strategy which focuses on the development of competitive superiority. It is strongly influenced by concepts of equilibrium, stability and control developed in the field of economics. According to the assumptions of economic rationality companies are rent-seeking systems which aim to achieve a set of objectives, with profit maximization traditionally or share holder value maximization more recently foremost.

Within the content school one can distinguish two main streams of research. First there is the market-based view developed from the structure-conduct-performance paradigm (Bain, 1956) and strongly influenced by Porter's theories of position and market power (Porter, 1980 and 1985). The second stream of research is a counterpart, based on the resource-conduct-performance paradigm, which can be traced back to the work of Penrose (1959) and Selznick (1957) and has been developed by authors such as Barney (1986 and 1991) and Wernerfeldt (1984) into what has become termed the resource-based view. This stream of research has been popularized by the concept of core competencies (Prahalad and Hamel 1990).

In their original form both views of strategy are more or less static. In contrast, newer developments in the form of the conflict-based view and the knowledge-based view

adopt a more dynamic perspective. Especially the knowledge-based view (Grant 1996 and Spender 1996) pursues a dynamic view of strategy by combining elements of resource-based thinking (that primarily focuses on intangible resources such as tacit knowledge) and organizational learning (fig. 2). This movement which also draws on a more evolutionary view of economics (Nelson and Winter, 1982) is clearly towards a paradigm which will reintegrate process and content.

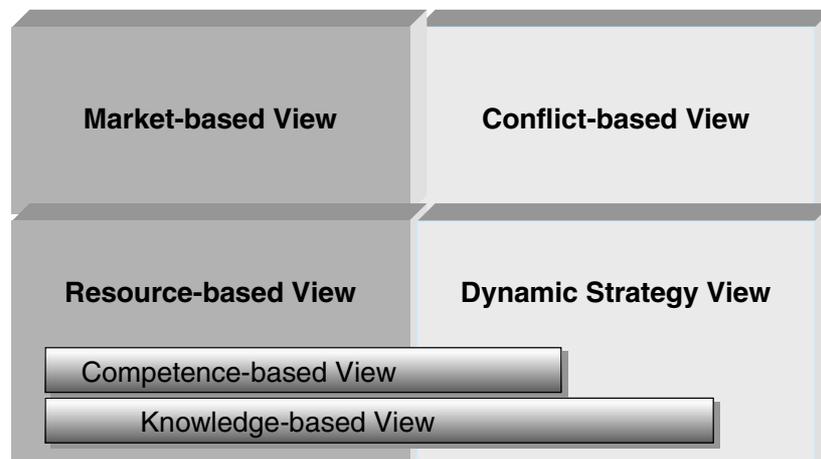


Fig. 2: Views of strategy from strategy content research

- **Strategy Process**

The process-driven school is more eclectic in its origins, with influences from evolutionary economics, complexity theory and concepts of systems thinking such as system dynamics among others. Similar as the content school the process school has two main streams of research. First there are researchers who focus on how cognitive and social phenomena such as bounded rationality, politics, chance, and even luck influence the way in which strategic decisions are made (see f.a. Mintzberg 1978, 1994; Quinn 1980). An output of this research is a bewildering array of competing or over-lapping conceptual models of strategy-making. For a critical summary see Hart (1992). The second stream of strategy process research is concentrated on organizational change, strategic innovation and corporate renewal (see f.a. Mintzberg and Westley, 1992; Pettigrew and Whipp 1991; Zahn, 1997 and 1998).

The content and process views of strategy are complementary. More recently there are clear signs that both schools of research may learn from each other. Such a mutually learning could progress towards a more complete theory of strategy which in turn would enhance the development of more context-specific strategy concepts and of better strategy-support tools.

- **Strategy Concepts**

These aspects are in the interest of strategic management and are therefore located in the practical hemisphere of influences on strategic thinking. By definition a strategy is a mechanism through which a company may differentiate itself in its competitive arena. Despite of this accepted interpretation there have always been efforts to develop strategy concepts which could be applied like receipts. This was especially the case

with the concept of `normative strategies` deduced from matrices as recommended by Boston Consulting Group or McKinsey. Because of their simplicity they attracted practitioners, but for the same reason had really no lasting influence on strategic thinking. In contrast Porter's (1980) concept of `generic strategies` had a strong and still has a significant impact on strategic thinking. It has been criticized for good reasons too (see f.e. Miller, 1992) and further developed into concepts such as `outpacing strategies` (Gilbert and Strebel, 1987) and `hybride strategies` (Reitsperger et.al., 1993). Recently a more sophisticated model has been developed at the Sloan School of Management called „The Delta Model“ (Hax and Wilde, 1999). This model addresses the complexity and uncertainty of current business environments. It expands the spectrum of static rationale and offers three potential options:

- best product (low cost or high value) where competition is based on product economics,
- customer solutions (reducing-customer costs or increasing profits) with competition based on customer economics, and
- system-lock-in (competitor-lock-in, competitor-lock-out, proprietary standard) which stresses competition based on system economics.

These options for strategic positioning distinguish themselves according to the characteristics of scope, scale, and bonding. They give different priorities to operational effectiveness (cost-driven), customer targeting (profit-driven), and innovation (renewal-driven) - identified as the main adaptive processes.

Today, many industries are confronted with high-velocity change. For companies in such industries managing change and renewal has become the main strategic challenge. Here traditional approaches to strategy fall short, because they overemphasize the possibilities of predicting and planning, but underemphasize the importance of creating and executing new strategies. In their book „Competing on the Edge: Strategies as structured chaos“ Brown and Eisenhardt (1998) offer a concept for managing the strategic challenge of change, which includes three levels for managing change (reacting, anticipating, and leading), and which consists of five key-building blocks: improvisation, coadaptation, regeneration, experimentation and time pacing (p. 5 and 23). Here, strategy is seen as an evolutionary phenomenon. It is the result of a firm's organizing to change „... constantly and letting a semicoherent strategic direction emerge from that organization“ (p. 7). This concept implies a dynamic view on strategy (fig. 2).

### • **Strategy Support**

There are several streams of activities concerning the development of strategy support tools as illustrated in fig. 3.

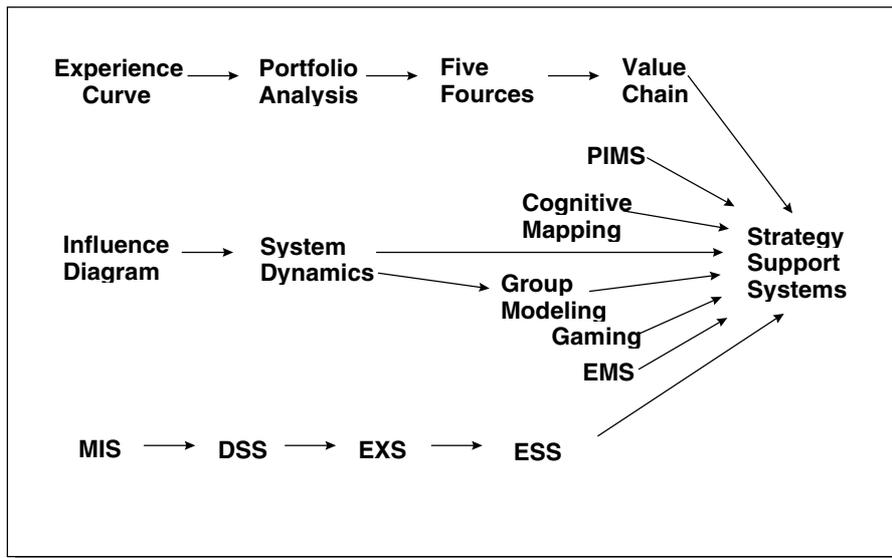


Fig. 3: Evolution of strategy support tools

Here we will only focus on system dynamics. At first Weil and Lyneis (1980) proclaimed the idea of using system dynamics as a conceptual knowledge base for strategic management. They offered a process approach including analysis, planning and control, and demonstrated that system dynamics work could deliver practical advice in all these sequential phases, especially for structuring the problem and testing the problem structure, for identification and evaluation of strategies, and for forecasting expected performance. In a paper presented at the 1998 SD-Conference Lyneis (1999) gave a number of reasons why models are seldom used for ongoing strategy management and offered a four-phased approach to strategy consulting. This approach which strikes a balance between `content` and `process` starts from a business structure analysis, then proceeds with the development of a small, insight-based model followed by the development of a detailed, calibrated model, and includes ongoing strategy management.

Lyneis' consulting approach is influenced by Morecroft's (1984, 1985, 1994) research on strategy process and strategy support models. According to Morecroft formal models can be used to enlighten and to improve the mental models of managers through an iterative exchange between both type of models when debating about strategy.

Significant progress in modeling for strategy support has come along with more recent work on group modeling (see Richardson and Andersen 1995; Vennix 1996). In a special issue of the SDR (1997) Vennix, Andersen and Richardson argue that „model building is now increasingly, seen as a method to structure debate and to create a learning environment in which assumptions and strategies can be surfaced and tested“ (p. 103), but at the same time they make clear „that building models with client groups is still more art than science“ (p. 103). Richmond (1997) has introduced the concept of Strategy Forum as a way to involve clients directly in model building and strategic analysis. He sees the Strategy Forum as an adequate „response to the need for a more effective process for ensuring the flexibility of a strategy“ (p. 133), and as an opportunity „to build a capacity for systems thinking“ (p. 133). Andersen and Richardson (1997) give practical advice for planning, realizing, and supporting a

group modeling conference. Despite a growing interest in group model-building as a way to support strategic decision-making still little is known about the effectiveness of group model-building projects in real organizations. Only a few explanatory studies are available so far (f.e. Akkermans and Vennix 1997; Cavaleri and Sterman 1997). Therefore more rigorous evaluative research with convincing proofs for increased organizational effectiveness will be needed before systems thinking and system dynamics may become more widely accepted in the business world.

### **Strategic consensus and organizational performance**

All the above mentioned aspects may become relevant in concrete processes of strategic decision making, depending on the extent to which they are included in the mental models of engaged managers and probably on the degree to which their individual mental models of strategy overlap.

Research on managerial decision making suggests that managers' mental models will influence the decisions they make and to a great extent will also determine the effectiveness of these decisions (Mintzberg, 1973). Similarly research has shown that mental models are related to strategies (Day and Lord, 1992), strategic actions, and performance (Thomas, Clark and Goia, 1993), and interpretations of and responses to strategic issues (Dutton and Dukerich, 1991).

Scholars have also argued that mental models exist on the group level and have used such terms as `shared mental model` (Senge, 1990) and `team mental model` (Klimoski and Mohammed, 1994). With respect to strategy Prahalad and Bettis (1984, p. 490) have introduced the construct of `dominant logic`, which is defined „as the way in which managers [in a firm] conceptualize the business and make critical resource allocation decisions ...“. Such a common construed reality is based on shared cognition and represents strategic consensus, which refers „to overlap among individual team members' mental models of strategy“ (Knight et.al., 1999, p. 447).

Whereas much of the normative literature in strategic management suggests that top management consensus in strategic decision making is crucial for organizational success (see f.e. Porter, 1980 and Quinn (1980)), the empirical literature shows considerable disagreement on the strategic consensus performance hypothesis (Dees, 1987, p. 261). The latter can partly be explained with methodological difficulties. But more important may be that no general relationship does exist. It seems to be that the importance of strategic consensus depends on the type of strategy and on the degree of market dynamics. Therefore increasing our knowledge about factors influencing consensus, and improving our understanding concerning the link between consensus and performance could help us to better support consensus building.

It seems to be obvious that capable top management teams with a proper blend of backgrounds, experiences, values, and personalities will have a strong impact upon the effectiveness of strategizing. Such diversity supposedly stimulates creativity, promotes the challenging of shared mental models of strategy, enhances strategy innovation, and thus leads to better performance. It is also plausible that strategic consensus correlates positively with firm performance (West and Schwenk, 1996).

Consensus building around strategic priorities, directions and issues is generally accepted as a prerequisite for successful strategy formation and implementation (e.g. Dees and Origer, 1987; Floyd and Wooldridge, 1992).

But how does diversity within a top management team influence strategic consensus? It has been postulated that the relationship will be negative (Priem, 1990). As other researchers Knight et.al. (1999) found general proof for this hypothesis. Besides, their results suggest that the group process variables `interpersonal conflict` and `agreement-seeking` moderate the overall relationship and thus improve the model for explanation. It seems that „group processes play an important role in shaping a manager´s mental model of his/her firm´s strategy“ (p. 459). This has practical consequences for leadership: strategic consensus could be improved by discouraging interpersonal conflict and by encouraging agreement seeking behavior (p. 460).

But there is no justification for a general recommendation. Building consensus not always leads to better performance. Achieving consensus requires investment particularly in senior management time, which may not always pay off. Results from most recent empirical research (Homburg et.al. 1999) indicate that consensus building leads to performance improvement in the case of a differentiation strategy but not in the case of a low-cost strategy, and when pursuing a differentiation strategy consensus building yields more in stable than in turbulent environments. The authors argue that in rapidly changing markets „the benefits of consensus are lower since the market may have changed by the time consensus is reached“ (p. 352).

Tools that effectively support consensus building by helping to make mental models explicit for reasons to identify interpersonal conflict and to improve agreement seeking and by speeding up the process of achieving consensus may decrease the costs and increase the benefits of consensus. There is evidence that group model-building is such a tool or may evolve towards it. For example Vennix et.al. (1995), report about a (qualitative) modeling project that was successful to establish consensus regarding a strategic problem situation.

### **Fostering strategic consensus and learning**

In periods of rapid change companies are challenged to demonstrate strategic flexibility. They must be able to quickly respond to changing demand and to adapt their competencies fast enough so that new market requirements can be met. Here the focus of strategic management has to be altered from continuity to change. Well established strategies based on broad consensus are in danger to lead in development traps. Instead strategic maneuvering and strategy innovations become important.

This is why conventional wisdom of strategy management as deeply embedded in traditional approaches to strategic planning falls short and why strategic thinking is urgently needed. Whereas the former assumes a predictable future, relies on financial measurement systems, is primarily analytic in nature and based on sequential programming, focuses on setting up a plan, and favours contralistic, bureaucratic leadership the latter assumes a future that can only be imagined and has to be invented, is purposive and relies on self-reference, stresses synthesis and avoids to

taylorize strategizing into sequential strategy formulation and implementation, is process-oriented, and favours decentralistic, democratic leadership.

In order to meet the challenges of today's chaotic business world, characterized by intensive, high-velocity change, advanced strategic thinking

- has to be systems thinking thereby integrating different types of knowledge,
- has to be thinking in time in order to link past, present, and future,
- has to leave room for intelligent opportunism,
- has to focus on strategic intent as a means for integrating and leveraging creativity and energy of individuals at all levels of the company, and
- has to become the base for experimental management where hypotheses about strategy will be creatively developed and rigorously tested.

To avoid the danger that such a demanding strategic thinking will be reduced to a rhetoric exercise it must be linked to a modernized strategic planning (fig. 4).

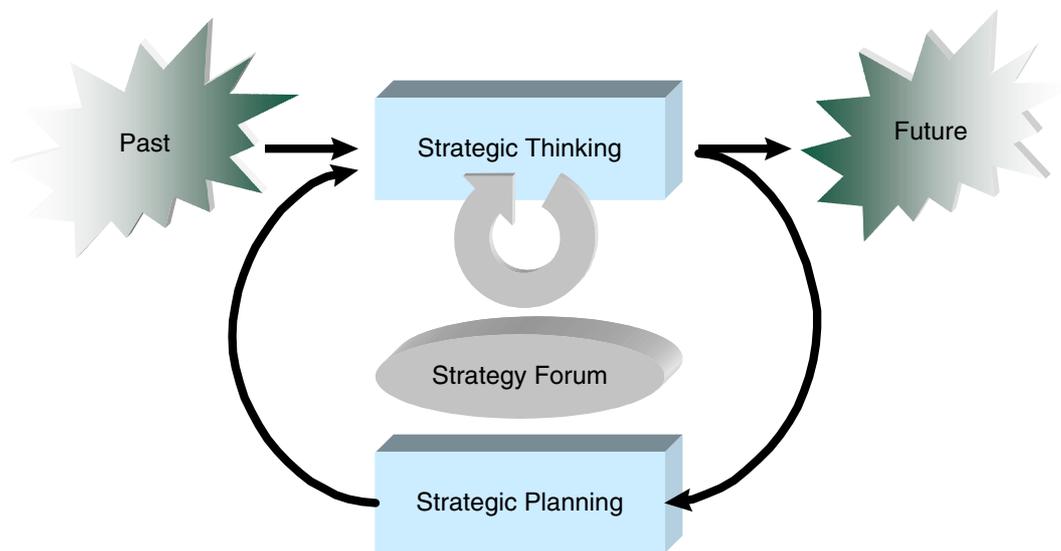


Fig. 4: Linking strategic thinking with strategic planning

The result will be a broadened view of strategy-making with „an ongoing process of creating and disrupting the alignment between an organization’s present and its future“ (Liedtka, 1998, p. 33). In this model strategic thinking and strategic planning are complementary. On the one side, strategic thinking disrupts alignment by „creating a gap in the minds of managers“ (p. 33) between the company’s current reality and its desired future, and uses this gap to create a new strategic intent to foster necessary change. Strategic planning on the other side establishes a new alignment and translates strategic intent into an action program. Re-alignment is necessary for committing operational managers to actions, needed to realize change and for controlling purposes. A strategy forum could play a major role in this process of creating and disrupting alignment. It could serve as a platform „to build a capacity for systems thinking“ (Richmond, 1997, p. 133). In this context systems thinking means making reliable inferences about strategy changes as a set of beliefs concerning possible business developments (scenarios) by developing an increasingly deep understanding of the interconnected aspects that form a strategy (Richmond, 1994). A strategy forum can

assemble the expertise, including skills for imagination and judgement, necessary for creatively developing and critically testing strategic logics or context-specific theories about a business (fig. 5). Through such a process building and challenging strategic consensus as well as strategic learning take place.

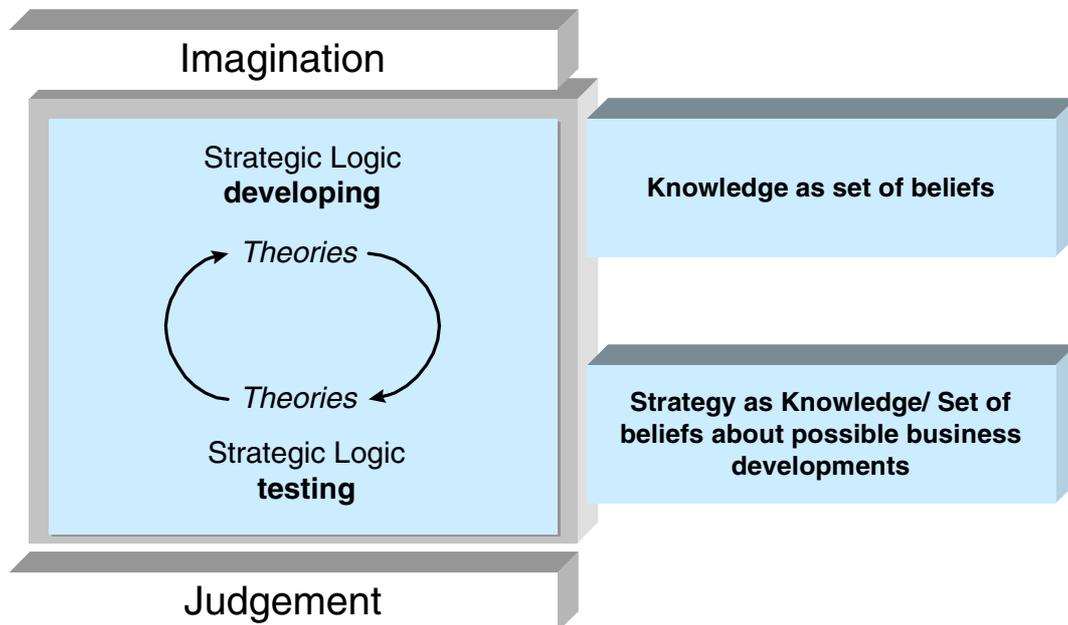


Fig. 5: Developing and testing theories about strategy

Strategic learning can be single-loop or double-loop learning (Agyris and Schön, 1978). In the first case the focus is on improving an existing strategic logic. Strategic thinking reveals no need to disrupt an alignment (fig. 4). The second case is typical when disrupting an alignment becomes necessary and a new strategic logic has to be developed in order to initiate and to direct corporate renewal (as illustrated by the small circle in fig. 4). This type of learning could stimulate `strategic pattern recognition` (Slywatzky et.al. 1999) and thereby f.e. reveal if a company can break old rules to its benefits.

Strategic learning involves continuous experimentation. This is not restricted to real worlds, but can efficiently and effectively take place in virtual worlds too - as war games or role plays or computer simulations. For a summary of benefits and pitfalls of virtual worlds in the form of computer simulations see Serman (1994). Computer simulations are especially helpful in processes of learning about strategy. Here managers are typically confronted with unknown problems in complex and dynamic situations, and costs of wrong decisions usually will be high. Computer simulations are like `preventive medicine`. They may be used to evaluate a companies` own strategies and that of competitors, to develop and to test new strategies to find out if a strategic maneuver or strategy innovation should be carried out, to understand how markets may develop etc. With the help of simulation strategizing can be transformed into an experiment of game playing.

Simulation models are essential for strategizing, because they help eliciting and mapping mental models, identifying strategic dissens and building strategic consens.

But even more important is that simulation offers the only practical way to test the dynamic consequences of strategic decisions.

The strategy forum has been identified as an adequate platform for the creation and diffusion of strategic thinking capabilities. It can democratize strategizing and thereby establish strategic thinking on the front line. This is an admirable objective, but requires investment which may not always be justified. Simulation models could help to reduce the costs of developing strong broad-based strategic-thinking capabilities. Another positive effect refers to speeding up the building of strategic consensus. This is a prerequisite that consensus pays off under conditions of rapid change.

### **Final remarks**

Systems thinking, especially based on group modeling projects with computer simulations, has a high potential for supporting strategizing. But establishing it on a broad base is not easy and not cheap. Efforts may not yield all expected results. Our own experience and that of others (Vennix et.al., 1996) give indications. Therefore further research is needed. Strategy competence is a source of sustainable competitive advantage located in the firm. Thus research investigating strategizing and systems thinking must be done not only on organizations but also in organizations.

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