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**Business Transformation: The Key to
Long Term Survival and Success**

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I. Introduction

The formula has always been simple. Provide a product or service that meets a need and can be sold at a profit and you can win in the marketplace. The difficulty is that over time, products and services must respond to changing needs, and all three are impacted by changing organizational and environmental conditions. This complex series of interactions causes products, services and needs to affect each other in ways that are often difficult to predict. Consequently, businesses often focus on and better meet the needs of their customers in the short run.

Marketplace success over long time periods, years or decades is a more challenging goal. The old adage that you can't rest on your laurels (read successful products or services) applies. Businesses that survive and succeed over the long run appear to redefine themselves and their relationships to their suppliers and customers over and over again. Ideas like "if it ain't broke, break it," "mass customization," "lean production," and "learning organization" all speak to the dynamics and imperatives of change in the marketplace. Today's business leaders are challenged to both recognize the need for change and successfully manage business transformations.

Kanter, et. al.¹, provide a kind of force field characterization of the dynamics of organizational change, that pits "direction setting" leaders of a firm against three clusters of forces that "create motions" in and around the organization. These forces, outside the control of management, often intensify over time and if left unattended may lead to abrupt crises followed by radical change. The first cluster is environmental, an all-encompassing set of external forces, that includes competitive, economic, political, social and physical dimensions. The second cluster is "organic" and relates to how an organization grows and sooner or later declines. The third cluster is political and is characterized by power struggles within and across the borders of an organization.

Environmental forces lay beyond the walls of the organization. As businesses interact with their environments, they both undergo change. Porter² characterizes a firm's competitive environment in terms of five forces: "the entry of new competitors, the threat of substitutes, the bargaining power of buyers, the bargaining power of suppliers and the rivalry among the existing competitors." He believes that the success or failure of any business depends on "competitive advantage," which in his view takes the form of either cost leadership or product differentiation that commands a premium price. He maintains that managerial tools, such as value-chain analysis, allow an organization to beat back the environmental forces and create and sustain superior performance.

Kaufman³, on the other hand, believes that management's role in assuring the continued success of an enterprise is limited at best. He sees the environment as something akin to a fisherman's net continuously sweeping through the sea of organizational entities. Even more invidious, the net's openings change their shapes and sizes constantly. Organizations try to avoid getting caught by changing themselves to metaphorically fit through the holes. Sometimes they succeed because of their actions; other times they succeed in spite of them. Sometimes they face holes so small that nothing they do will save them. In the end, Kaufman concludes, "the survival of some organizations for great lengths of time is largely a matter of luck...such longevity comes about through the workings of chance."⁴

If a business, through skill and/or luck, escapes the environmental net, it must still deal with internal forces that can threaten its survival. Small startups may have decent balance sheets, but succumb to the absence of cash flow. Mature firms may no longer be flexible enough to make needed changes. In addition to the challenges of the environment, business leaders must successfully manage the difficulties inherent in organizational growth and aging. Decisions about what to preserve and what to change in terms of products and services, human resources, business processes, policies and procedures, values and culture are critical to long term survival. But, as Kaufman⁵ observes, such decisions are subject to contradictory judgments, ineffective decision making and imperfect implementation. The ability of a firm's executives to deal successfully with these handicaps appears to diminish as an organization ages. Such organic difficulties may slow a business' ability to see either the opportunity or need for change. Young firms may die of lack of fluids, particularly cash; older firms may be toppled by blindness or other severe functional rigidities and disabilities. The existence of such organic forces gives support to the idea that organizations have "life-cycles."

In addition to environmental and life-cycle forces, political forces within an organization can also affect longevity. Political models characterize business activity in terms of the interplay of interests between groups of individuals who are or desire to be organizational stakeholders. Businesses are seldom run as democracies where votes count equally. They are organized hierarchically and directed by dominant individuals or coalitions. From time to time the organizational leadership is subject to political challenge and the resulting power struggle sometimes make business page headlines. Political battles may also occur between organizational groups vying for limited resources, between labor and management or between suppliers or customers competing for the attention of the corporation. Powerful interest groups within or related to the business may support or oppose the course charted by current leaders. Consequently, power struggles, regardless of source or location, may enhance or detract from a firm's ability to deal with environmental or organic threats to its future.

II. A Model of Business Transformation

The central task of management is to contend with these three clusters of forces. In doing so, a firm's leaders are faced from time to time with the challenge of making non-incremental changes in the way they do business. Such changes may involve the development and introductions of new products or services and the phasing out of old ones, a global expansion of market territory, a merger with a former competitor, or, more generally, any large scale change required to meet a major environmental shift. The central character of such changes is that they are perceived to be needed to maintain the growth curve of the organization. If such changes are made successfully, sales and profits will continue to increase at satisfactory rates or a downturn will be reversed. When such changes fail to achieve their objectives, a firm's prospects dim. We shall refer to changes of this magnitude as **business transformations**.

The complexities of a business transformation are great and the stakes are extremely high. Success comes to the minority of companies that proceed correctly and confidently, learn

effectively as they go, and make the necessary mid-course corrections. Failure can be the result of a misbegotten strategy or hesitation and lack of commitment. Business history is clear on this point. Very few major corporations successfully “reinvent” themselves. Most either never see the need or can’t pull it off.

Several leading companies in the financial services, telecommunications, aerospace, and energy industries have used new planning approaches that stimulate systematic consideration of the requirements for transforming their current business and the process by which such fundamental changes can be achieved. Their planning combines the use of scenarios and simulation modeling. Scenario development is recognized as an effective means for anticipating shifts in competitive, market, technological, economic, political, and social factors. Simulation modeling can make major contributions to strategy formulation, analysis of complex markets, risk assessment, and contingency planning. The synergy between the two methodologies is very powerful, not only in analytical terms but more importantly in impacting the thinking of executives involved in the process.

The formal process of scenario development and use is closely associated with the Shell group⁶. The motivation came from a study of businesses that survived and prospered over very long periods of time. The common denominator of their longevity was an unusual ability to adapt, quite often in radical ways, to major changes in their environments. Effective organizational learning was the key to their ability to adapt. Looking to the future, Arie de Geus (then Planning Coordinator at Shell) concluded: “The ability to learn faster than your competitors may be the only sustainable competitive advantage.”⁷

Porter⁸ defined a ten-step process for developing and using scenarios. It is very significant that the first three steps involve a systematic micro-economic analysis of the industry in question. What is its structure? How does it function? What are the major uncertainties that might affect the industry? What are the sources of these uncertainties? To address these questions, managers must rely on some type of model. A later step requires managers to project the competitive situation under each scenario. How are they to do this? Again, some type of model is needed. And the final step—monitoring key factors to anticipate changes in the industry—depends on an ability to identify valid “leading indicators,” to interpret their movements correctly, and to know when to act. Here, too, managers inevitably employ some type of model.

Most managers rely on their professional knowledge and experience, organized as informal, qualitative, “mental models.” These models should not be denigrated. They can be sophisticated and remarkably insightful. Important business decisions are based on such models every day. Nonetheless, mental models have serious weaknesses. They become increasingly deficient as problems grow more complex, as the environment changes more rapidly, and as more people participate in key decisions. The alternative is to use some type of formal model. System dynamics models of the type described by Forrester⁹, Roberts¹⁰, Lyneis¹¹, Sterman¹², and Weil¹³ are well-suited for dealing with the issues of business transformation.

Such models can be used to:

- Identify particularly significant sources of uncertainty and risk in the business environment;
- Quantify the effect on the company’s business performance of scenarios involving changes in these factors;
- Test the consequences of alternative competitive strategies (including quite radical departures from “business as usual”) under various scenarios;
- Define major requirements for transforming the business and the window of opportunity for achieving these changes;

- Evaluate alternative strategies for achieving business transformation objectives;
- Establish realistic performance targets for both the current core business and the new business;
- Communicate the reasons for transforming the business, what to expect, and what is at stake to employees, shareholders, and government officials;
- Develop “leading indicators” of major changes in a company’s business environment; and
- Assess progress in the transformation process and the need for mid-course corrections.

Scenarios consider multiple futures and force unconventional thinking. They can cause a team of senior managers to be more creative about important aspects of the business. And in so doing, they can change the mentality of those managers. Scenario building requires managers to take a more coherent view of their business and the environment outside the company. The simulation model can help them to acquire this view.

Take, for example, the important question of how fundamental changes in the delivery and financing of health care in the U.S. might impact a major provider of health insurance. Unlike many other countries, in the U.S. large amounts of health services are paid for by private employer-sponsored plans which are sold and administered by large insurance companies. There is general agreement that “managed care” is the wave of the future, i.e., a substantially different relationship among insurers, health care providers (physicians, hospitals, diagnostic laboratories, drug companies, etc.), employers, and individual consumers, aimed at controlling costs.

But far more specifically, how fast is the managed care sector likely to grow? And therefore how quickly will the traditional health insurance business decline? As it covers a larger fraction of the population, how will the costs and profitability of managed care change? What will happen to the costs and profitability of the traditional business? How quickly does a player in the managed care business have to build market share to achieve economies of scale, a competitive cost structure, and an appropriate return of the huge investments required to get into this game? What are the implications of moving too slowly? Is it possible to move too quickly? And most basically, how can a dominant company in the traditional health insurance business emerge as a leader in a radically different business?

A simulation model along the lines shown in Figures 1 and 2 was developed by the authors to assist a major U.S. health insurance company with these issues of business transformation. It was developed using system dynamics in close collaboration with a team of managers responsible for the company’s business strategy. The model represents the determinants of markets shares and profits in both the traditional business and managed care. Especially important parts of the model are:

- The components of product attractiveness, i.e., prices, service quality, and access to health care providers;
- Customers and their characteristics, retention or loss, and consumption of health services;
- Investments in service quality, cost efficiency, and building networks of health care providers; and
- The revenues and expenses associated with both businesses.

The model incorporates information from a wide range of sources. Financial data were used to establish cost factors, initialize the model, and calibrate important parameters. Expert judgments from participating managers were used initially to quantify cause/effect relationships, e.g., the effects of product attractiveness on market shares. The calibration process then refined those estimates. And the model incorporates descriptions from senior executives of the company’s management policies in areas such as pricing, investment, and service standards. Key

inputs come from scenarios regarding competitive conditions in both markets, changing customer and employer attitudes, the behavior of health care providers, and government regulations.

Notice in Figures 1 and 2 the important flows and feedbacks that link the two businesses. In the simplest of terms, business transformation involves quite different but interdependent beings living together under the same corporate roof—the company’s traditional core business and the one(s) into which it is transitioning. As with parents and children, there are inevitable culture gaps, paradigm disconnects, friction, and frustrations. Thus there are many pressures to compartmentalize the business into the “old” and the “new,” and for the new parts to be seen as exciting and glamorous while the old parts stagnate.

In fact, the strategic imperatives are quite different. Successful transformation depends, more than anything else, on capturing synergy between the current business and the business of the future. Specifically, the new business must effectively exploit key assets of the current business rather than ignoring or, worse, destroying them. And the strategic role of the core business is to conserve those assets and at the appropriate time pass them on.

Most of the key assets for business transformation do not appear on the company’s balance sheet. They fall into several categories.

- **Market assets**—A substantial fraction of the current customer base should become customers for the new business. The alternative of building a new customer base is slower, more costly, and riskier. The same holds for reputation and image. Letting quality slide in the core business will be devastating for the transformation process. Current customers and other potential customers of the new business will extrapolate their dissatisfaction, and what might have been an asset becomes a major liability. An important element of a transformation strategy may well be a deliberate campaign to improve quality in the “old” business.
- **Financial assets**—For a long time the traditional core business will be the primary source of the company’s profits and cash flow. Indeed, it will bankroll the product and service developments, new facilities, market penetration, and start-up losses associated with the new business. Hence the structural profitability and cash generating power of the core business must be preserved for as long as possible. This may well mean substantial on-going investments in cost reduction and product improvements in the business the company intends to de-emphasize.
- **Human assets**—To the greatest extent possible, a company must carry its workforce with it through the process of business transformation. These critical assets embody all the experience, know-how, and competencies of the company. They represent an enormous investment. It is essential that the transformation process not inadvertently undermine staff morale and productivity, cause many of the best people to leave, de-skill the company, and work counter to drives for improved efficiency and quality.

These principles are illustrated with results from the model in the section which follows.

III. Strategies for Business Transformation

The computer simulation model described in the preceding section was used to test a range of strategies for business transformation. The ideas behind these tests and the key results are described below. First, however, it is necessary to establish a “Base Case,” i.e., the outlook for the company assuming a continuation of its current business strategy and management policies.

Figure 1
A Model of Business Transformation – The Flow of Customers

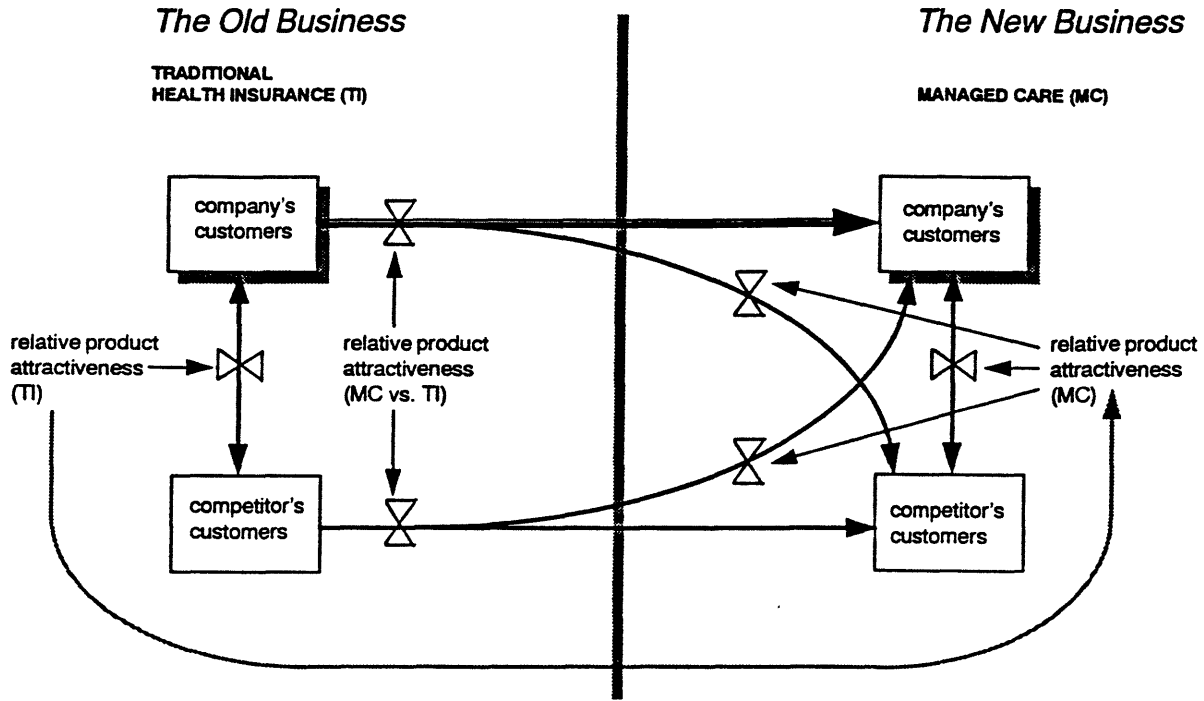
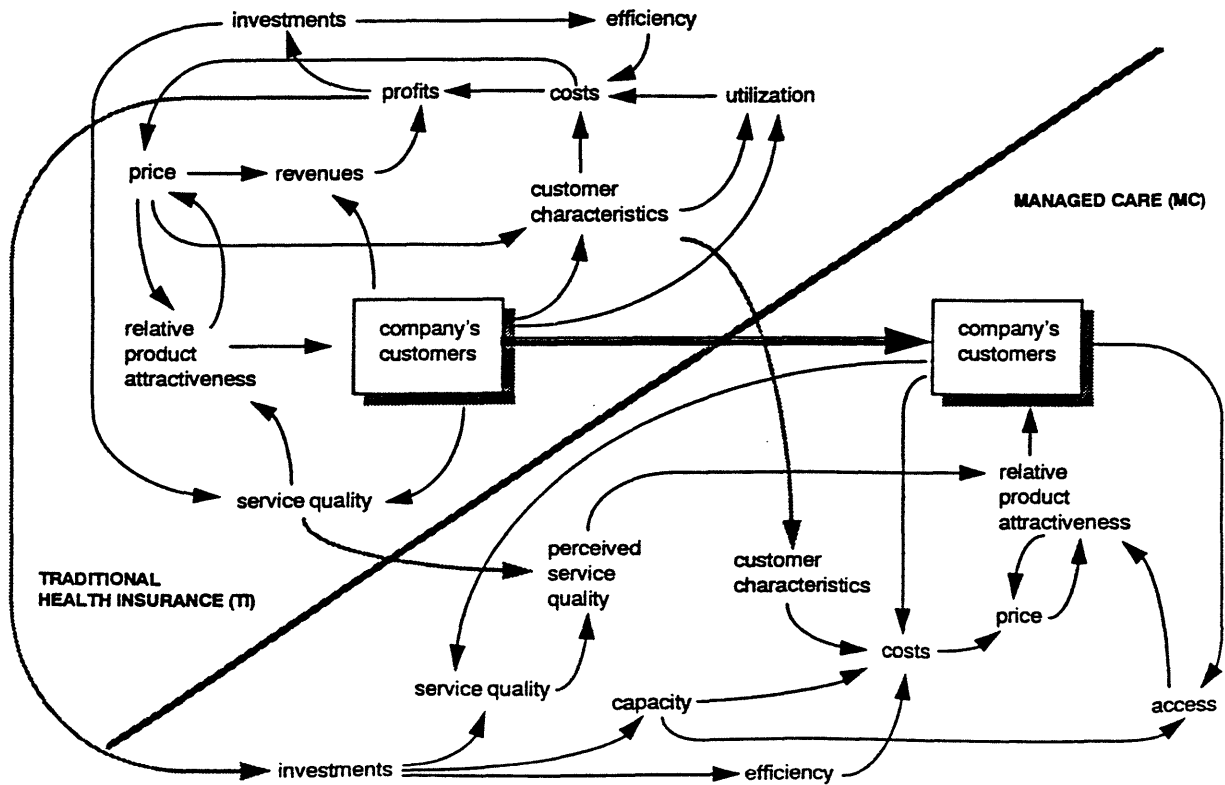
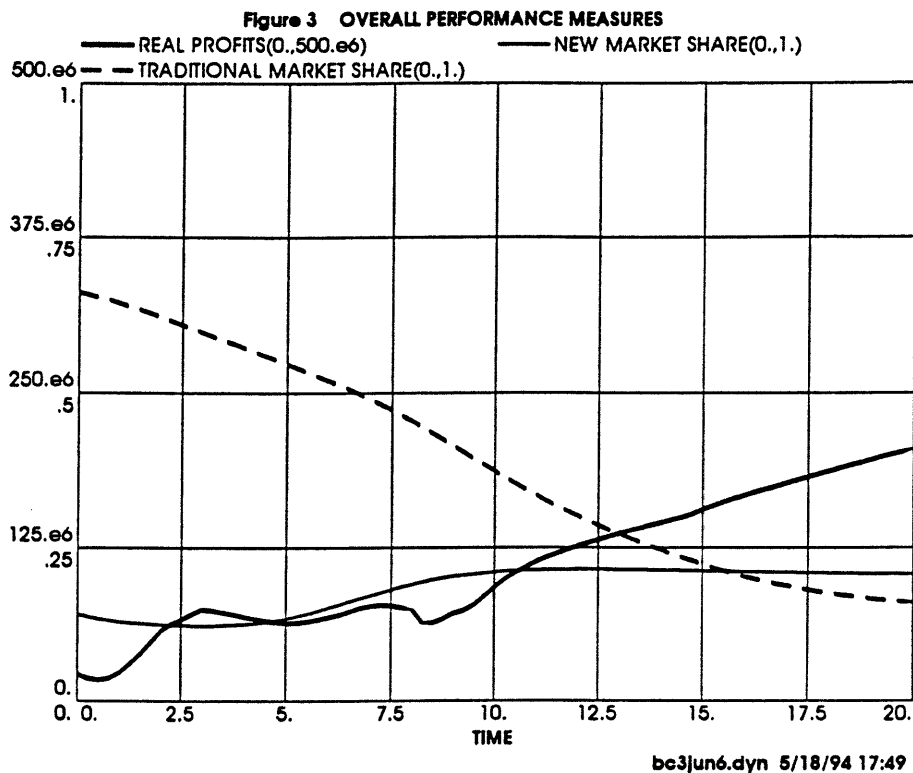


Figure 2
Key Links Between the Old and New Businesses



The Base Case

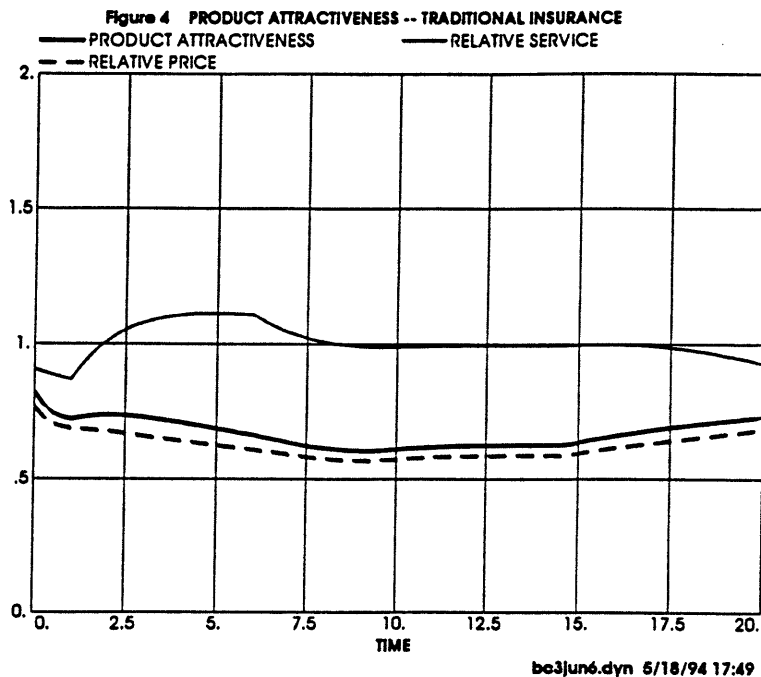
Figure 3 shows market shares in the traditional and new business areas. For the insurance company in question, these correspond to the traditional indemnity-type health plans (characterized by rather loose control of health care consumption and costs) and the managed care plans which are replacing them (a range of systems that all seek proactively to control the costs of health care). The company, once overwhelmingly dominant in the market, sees its “traditional” share decline from about 65% to less than 20% over a twenty year period. However, its “new” share never gets much above 20%. During this time, the traditional market shrinks to about one-fifth of what it was at the start of the simulation. While profits grow in



nominal terms, real (deflated) profitability is stagnant until the later years of the simulation. The company is in serious trouble. Its traditional market is shrinking steadily in size and profitability. And the company has only moderate success in the rapidly developing new business area.

The underlying problem is evident in Figures 4 and 5. Product attractiveness is an index that combines components of the company’s competitive position. In the traditional market, product attractiveness depends on relative price and service quality, with different weightings for various customer segments (e.g., young, healthy customers who do not expect to require non-routine care are quite price sensitive) and competitive situations (e.g., a large price differential will make relative service far less significant). The situation in the new business is more complex. Product attractiveness is a function of relative price and service, plus “access,” that is, the customer’s choice and convenience in obtaining health care (e.g., proximity of providers, waiting times, ability to use providers of choice). Figure 4 shows the company’s situation in its traditional market. Product attractiveness is below 1.0 during the entire period, causing continual loss of market share. Relative price obviously is a major problem. This is

partially off-set by a service quality advantage between years 2 and 7. Once the service advantage is lost, product attractiveness declines further and the loss of share accelerates. There is no practical way for the company to eliminate the price disadvantage, as it has by a large margin the highest cost structure and wherever it prices competitors can under-price.

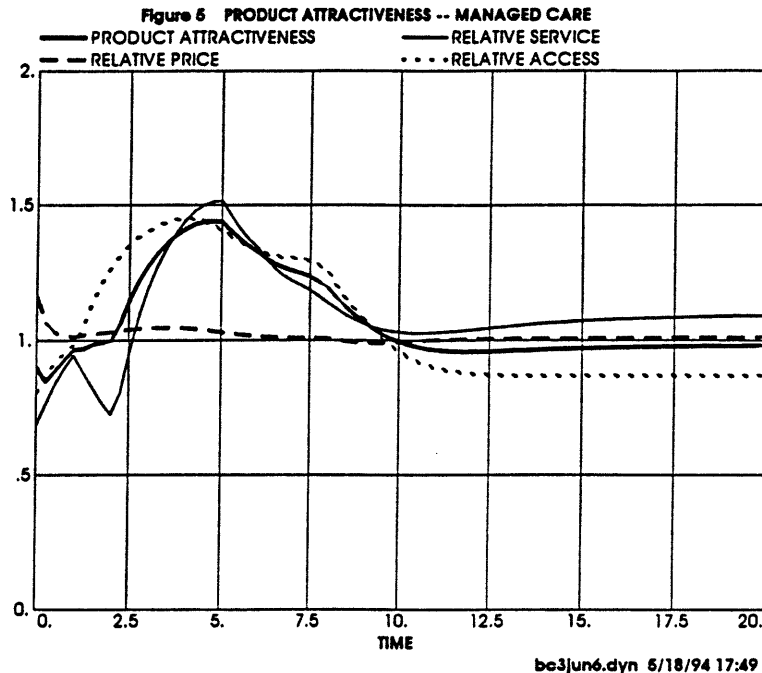


Turning now to Figure 5, the company's product attractiveness in the new market initially is great but erodes rapidly after year 5 and later stabilizes slightly below 1.0. Unlike the traditional market where the company has a price disadvantage, here relative price is about 1.0 (i.e., very close to competitors' prices). For a period of time, the company gains significant competitive advantage from both service quality and access. By year 10, however, the service advantage has nearly disappeared and access has become a problem. What is going wrong for the company?

Delving deeper into the details of the simulation reveals a complicated set of causes. To summarize, the company is falling victim to:

- **Excessive caution**—The company's growth objectives and investment plans for the new business seem ambitious, but actually translate into an assumed capture of only one out of three of their "traditional" customers who shift to the new market. After an initial roll-out of service and access capacity, the company's planning simply reacts to the growth in customers actually achieved.
- **Self-fulfilling forecasts**—The service and access capacity put in place by the company ends up determining how many customers it can handle before relative service quality and relative access slip below 1.0. At that point, growth of market share slows and then stops. In the absence of continued growth in customers, the company's very cautious investment policies hold capacity approximately constant. This causes market share in the new business to stabilize.
- **Prematurely writing-off the traditional business**—With the size and profitability of the traditional business steadily eroding, the company sees no reason to continue to invest in that area. The new business is growing in both size and profits; it commands the big

investments. This narrow view of priorities fails to recognize that the traditional business remains the predominate generator of cash flow for many years and the company's reputation for service quality in that area strongly affects its capture of customers for the new business.



Alternative Strategies

Diagnosis of the Base Case simulation suggested a number of potential improvements in the company's strategy. What if the company focused on increasing its product attractiveness in the traditional market and capturing most of its customers as they shifted to the new market? What if the company set more ambitious targets and invested more aggressively in building its new business area? What if the company did both simultaneously?

To investigate these questions, a wide range of simulation tests were performed. The tests which produced the most interesting results are listed below.

- Increase desired service quality in the traditional business substantially (e.g., by 50%) and do not deliberately phase down quality as market share and profits in this area decline. [Test 1]
- Plan capacity in the new business area based on projected loss of customers in the traditional market and a very aggressive target (e.g., 70%) for capturing them for the new business. [Test 2]
- Increased investment per projected new business customer (e.g., 25% more) in access capacity. [Test 3]
- Increased investment per projected new business customer in service capacity (e.g., 25% more) plus a long-term commitment to quality leadership in the new market (vs. a goal of service quality equal to the competitors'). [Test 4]
- Increased investment in cost reduction and productivity enhancement in the new business, with the objective of gaining price leadership in that market. [Test 5]

In addition, combinations of high-performing strategies were tested. [Test 6=Test1 + Test 2 and Test 7=Test6 + Test 3 + Test 4] Summary results are presented in Figure 6.

Figure 6

Summary of Strategy Test Results

TEST	Year 10-- Profits	Old Share	New Share	Year 15-- Profits	Old Share	New Share
1	\$ 59m	.40	.15	\$125	.29	.15
2	\$112m	.38	.28	\$202	.23	.29
3	\$120m	.37	.28	\$214	.22	.32
4	\$152m	.37	.35	\$314	.22	.45
5	\$ 60m	.38	.20	\$140	.23	.20
6	\$ 73m	.40	.21	\$169	.28	.23
7	\$116m	.39	.31	\$346	.27	.53
BASE	\$90	.37	.21	\$155m	.22	.21

Higher service quality in the traditional business slows the erosion of market share and improves longer-term profits in this area. It also enhances the company's ability to capture "traditional" customers for its new business. More aggressive, forward-looking capacity planning in the new business area, with an explicit goal of capturing two out of three of the company's traditional customers as they shift to the new market, breaks the constraints of overly conservative, self-fulfilling forecasts. Increased investment in access and service capacity per customer and higher service quality objectives for the new business substantially improve the company's product attractiveness in the mid-term. Hence, its "new" market share continues to grow rather than topping-out at about 20%. As seen in Figure 6, market shares in the 40-50% range seem attainable. Interestingly, pursuit of cost and price leadership in the new market produces mixed results. In the short-term, it stimulates more intense price competition and erodes all competitors' profitability. As a result, the company's longer-term ability to invest in access and service capacity is reduced.

IV. Conclusions

As noted, very few major corporations successfully "reinvent" themselves. Many do not understand the need. Others do not understand how. The strategic imperatives discussed in Section II are clearly illustrated by the simulation model: capturing the synergy between the current business and the business of the future; effectively exploiting key assets of the current business; and conserving those assets and passing them on to the new business.

The simulation results point to several conclusions that seem to have general applicability:

- Maintain product attractiveness in the core business, relying particularly on service quality rather than price competition;
- Aim to capture a large percentage of core business customers with the new business;
- Set market share targets for the new business consistent with an aggressive customer capture goal;

- Roll-out enough capacity to attract and generously satisfy expected demand;
- Build product attractiveness in the new business based on capacity and service quality, not price;
- Cost reduction and leadership are more important in the traditional core business, where margins are under greater pressure, than in the new business area;
- Substantial sacrifice of near-term profitability is required to launch the new business “properly,” because of the need for aggressive investment in anticipation of volume growth; and
- Delay and/or moderate price competition in the new business area for as long as possible, to slow “commoditization” and enhance returns on the large investments required for successful transformation.

It may be time for companies to consider supporting permanent business transformation activities such as we have described. The business transformation group could play a role similar to that of the loyal opposition in a political system. They would continually question the current attributes of corporate success. Their activity would be based on the premise that today’s products and services will not assure long term survival. Management would look to the business transformation group to challenge existing paradigms. The group could build scenarios and simulation models similar to those described above that raise the most difficult questions regarding current strategic thinking. They would engage the leadership in a continuing strategic dialogue aimed at anticipating and overcoming the destructive forces that would jeopardize the organization’s future. A small investment in such boat rocking activity could keep the corporate ship from sinking prematurely.

V. References

1. R. M. Kanter, B. A. Stein, T. D. Jick, *The Challenge of Organizational Change* (New York: The Free Press, 1992).
2. M. E. Porter, *Competitive Advantage*, (New York, The Free Press, 1985), p. 4.
3. H. Kaufman, *Time, Chance, and Organizations*, 2nd Edition, (Chatham, N.J.: Chatham House Publishers, 1991).
4. Kaufman (1991), p. 67.
5. Kaufman (1991).
6. P. Wack, “Scenarios: Uncharted Waters Ahead,” *Harvard Business Review*, September/October 1985, p.72.
P. Wack, “Scenarios: Shooting the Rapids,” *Harvard Business Review*, November/December 1985, p. 139.
A. P. de Geus, “Planning as Learning,” *Harvard Business Review*, March/April 1988, p. 70.
7. A. P. de Geus (1988), p. 71.
8. M. E. Porter (1985), p. 449.
9. J. Forrester, *Industrial Dynamics*, (Cambridge: M.I.T. Press, 1961).
10. E. B. Roberts, ed., *Managerial Applications of System Dynamics*, (Cambridge: M.I.T. Press, 1978).
11. J. M. Lyneis, *Corporate Planning and Policy Design: A System Dynamics Approach*, (Cambridge: The M.I.T. Press and Pugh-Roberts Associates, Inc., 1980).
12. J. D. Sterman, “Modeling Managerial Behavior: Misperceptions of Feedback in a Dynamic Decision Making Experiment,” *Management Science* 35 (1989), p. 321.
13. H. B. Weil and K. P. Veit, “Corporate Strategic Thinking: The Role of System Dynamics,” in P. M. Milling and E. O. K. Zahn, eds., *Computer-Based Management of Complex Systems*, (Berlin: Springer-Verlag, 1989).