THE WILLIAM DAVIDSON INSTITUTE
AT THE UNIVERSITY OF MICHIGAN BUSINESS SCHOOL

Radical Organizational Change:
The Role of Starting Conditions, Competition, and Leaders

by Karen L. Newman

Working Paper Number 135
January 1998

Comments Welcome

Research for this paper was supported by the William Davidson Institute.

Radical Organizational Change:

The Role of Starting Conditions, Competition, and Leaders

Karen L. Newman

Georgetown University
School of Business
Washington, DC 20057

Tel: 202 687 3769
Fax: 202 687 4031

NEWMANK@GUNET.GEORGETOWN.EDU

January 1998

Presented at the 1998 Academy of Management meeting, San Diego, CA. This research is supported by the William Davidson Institute and Georgetown University. Stan Nollen contributed in ways large and small to this work.

Radical Organizational Change:

The Role of Starting Conditions, Competition, and Leaders

Abstract

I develop a theory of radical change using longitudinal cases from central Europe. Radical change is a process by which firms regain competitive advantage after it has been lost. Change depends upon the firm's resources and capabilities; its competition; and its leadership. New core values differentiate incremental and radical change.

Radical organizational change; emerging market economies

Radical Organizational Change:

The Role of Starting Conditions, Competition, and Leaders

The end of Soviet-dominated Communist governments in central Europe heralded a period of unprecedented economic, political, and social change. Almost overnight, the central planning systems of the former regimes were dismantled. New economic systems were introduced that relied more on market forces and less on central planning than in the past. Large-scale privatization began, prices were freed, borders opened, and trade and investment with the West became possible.

Firms in central Europe were thoroughly embedded in and tightly aligned with the social, political, and economic institutions of central planning. The structures, capabilities, resources, and core values that firms developed under central planning were rational, consistent, and self-reinforcing within the prevailing institutional context. However, because of the comprehensiveness of central planning and the vast difference between centrally-planned economies and more market-based economies, organizations in central Europe were unlikely to be well-suited to more market-driven conditions. Firms were unlikely to change readily precisely because of their adaptation to previous conditions (Radice, 1981; Granovetter, 1985; Hannan & Freeman, 1984; Greenwood & Hinings, 1996). Nevertheless, change was necessary.

While much has been written about organizational change generally, we know relatively little about how and why radical change is pursued rather than incremental change. Incremental change is convergent, meant to improve the fit between the organization and its environment, while radical change is divergent, meant to fundamentally change the firm's processes, systems, structures, strategies, and core values (Tushman & Romanelli, 1985; Gersick, 1991). We have models that account for the fact that some organizational change is incremental and some is radical but not much theory to explain why one occurs rather than the other, *given the same exogenous stimulus*. The purpose of this paper is to build a model of organizational change that contributes to our understanding of differential organizational response to similar change stimuli, drawing on the experience of firms in the Czech Republic.

The Research

This research is based on six longitudinal cases developed between 1991 and 1997. Data sources include face-to-face interviews with top company officials, work observation, archival data retrieval, and interviews with investment analysts, bankers, partner company officials, and government officials. Case research methodology is appropriate for research about complex phenomena in a rapidly-changing environment. Exogenous factors changed monthly, if not more frequently, during the period under consideration. I had no control over these events, yet I needed a method that would capture the flow of events over several years. Case research is a uniquely appropriate methodology for investigating unfolding events such as these (Yin, 1989).

All firms in the study are manufacturing firms, all were state-owned before the fall of communism and all were privatized between 1992 and 1993. Data collection began in Zetor, the pilot firm, in 1991. The other firms were added between 1993 and 1995 to test emerging conclusions from Zetor, to incorporate different industries and privatization patterns, and to explore different types of change. Initial data collection in all firms was the same. I interviewed the top management team, observed the production process, and collected all available company histories, annual reports, and product descriptions. After initial data were collected, each case developed in a more particularistic way and subsequent data collection followed the logic of unfolding events at the company rather than a uniform interview protocol. Characteristics of six companies and the data sources from each are shown in Figure 1.

Figure 1 about here

A Grounded Theory of Radical Organizational Change

The conceptual starting place for the research is with the punctuated equilibrium model of organizational change (Tushman and Romanelli, 1985; Gersick, 1991). Punctuated equilibrium theory suggests that radical change is triggered by a change in the competitive environment, a change in leadership, or a decline in organizational performance. Surely, the change in the competitive environment in central and eastern Europe following the fall of communism is the sort of environmental jolt that is capable of triggering radical change. New leadership was also a very common phenomenon in the region. Most Managing Directors were replaced after the change in government, if for no other reason than to symbolically rid the firms of their communist leaders. Finally, the vast majority of firms in the Czech Republic experienced a performance decline when economic liberalization began in earnest in 1991 and 1992. Though methods of measuring performance changed, almost no existing firm was immune to the general economic decline of the early 1990s. The conditions were ripe for radical organizational change in Czech companies, yet we found a great deal of variability among the six firms in this study and among other firms in the country. Some firms had begun what appeared to be a successful process of radical change by mid-1997 and others had not. These differences drive the analysis.

The model derived from the analysis is shown in Figure 2 and elaborated in the sections to follow. In brief, I view radical change as a process in which firms seek to regain their competitive advantage after it has been threatened or lost because of an exogenous change, in this case the change in political and economic systems. A firm's resources and capabilities are the basis of its competitive advantage (Grant, 1995). When exogenous change in the political and economic environment occurs, firms' existing resources and capabilities may no longer be the basis for competitive advantage. Thus part of radical change is the process by which old resources and capabilities are adapted to new conditions (or eliminated) and new resources and capabilities are acquired. Change does not occur in a competitive vacuum. Firms compete in industries that are more or less open to new competitors. Thus part of the process of radical change is finding new product and market niches in which successful competition is possible. Leadership is critical to the success of any change effort. All general managers were new after the Revolution. Yet some were apparently more successful than others under competitive conditions. Understanding the role of leadership and the factors predicting its success is also part of radical change. Finally, the emergence of new core values is the difference between incremental change that leads to low-performance iterations and radical change that leads to new competitive advantage and higher performance. New core values cannot emerge without the resources and capabilities that lead to competitive advantage, without a competitive environment in which the firm is able to compete, and without leadership that is effective under competitive conditions.

I elaborate this model in the sections to follow, drawing on evidence from the cases to support and illustrate the model.

Figure 2 about here

Starting Resources and Capabilities

Organizations in the Czech Republic had well-honed resources and capabilities at the time of the Velvet Revolution that were adaptive and effective under central planning conditions. Firms could produce to meet a plan. Producing to meet exact customer specifications was less important than producing something that would fill the customer's needs more or less well and that would satisfy central planners. These resources and capabilities were not so useful after the Revolution when quality and customer satisfaction mattered more.

Many firms lacked important resources and capabilities necessary in market economies and clung to outmoded capabilities for years after the Revolution. However, some firms did have nascent capabilities for competition at the time of the Revolution, owing to their experiences in the past. Some firms were able to adapt their existing capabilities and resources to the new conditions more readily than others. Important sources of adaptable capabilities include experience with competition; being a generalist firm; low embeddedness in the previous regime; and a more "complete" organization with boundary spanning functions.

Experience with Competition. Firms that had little or no experience in competitive markets before the Revolution were woefully unprepared for competition. They had to develop new capabilities or risk failure. Veba, the textile company, never stopped selling its products in Germany and Austria after the rise of communism. The firm's experience with competition enabled it to transform relatively quickly because it already had the capability to compete. Aero Vodochody, in contrast, was a monopoly producer of jet trainers, structured in its modern form after World War II. The firm's "sales" were the result of government-to-government negotiations among Soviet Bloc and non-aligned countries. Aero

Vodochody employees had no direct experience with competitive bidding and were hard-pressed to change after the Revolution.

Generalist versus Specialist. Generalist versus specialist is the extent to which firm's focus their capabilities and resources and compete with a very limited product range in a narrowly defined market niche rather than develop broader, more diverse capabilities and resources and compete with several different products or in several different markets (Hannan & Freeman, 1989). Generalist firms are more diversified than specialist firms, and are better equipped for radical change than specialist firms because generalists have more capabilities on which to draw and are less dependent on a particular product or market (Hannan & Freeman, 1989; Miller & Chen, 1994; Meyer, 1982). Generalist firms have less structural inertia than specialist firms because generalists "fit" less perfectly into any one niche. Firms with highly focused resources and capabilities may compete effectively in the environment to which they are matched when the environment is constant. However, if the environment changes significantly, those highly adapted firms can face failure.

Královopolská was relatively generalist as it had three different types of products. Its core business was the manufacture of tanks, pipes, and other equipment for the petrochemical industry, for water treatment plants, and for nuclear power plants. In addition, Královopolská had a small turnkey water treatment plant business. A third business was in steel construction cranes and steel structures. After the Revolution, the petrochemical industry in the Czech Republic went through a five-year slump, but the government's policy to clean up the water supply allowed Královopolská to shift its emphasis from manufacturing tanks and pipes to building municipal water treatment plants. The company's turnkey water treatment plant business which accounted for less than 25 percent of its revenue in 1991, produced more than 50 percent of its revenue and all of its profit by 1996.

Specialist companies had more difficulty changing. Zetor made only small to medium size tractors, its bearings business having been privatized separately. The firm was unable to add smaller or larger tractors to its product line, with which it might have leveraged its cost advantage in other parts of the market. Nor did Zetor extend its product line to implements and attachments for the tractors. These were made by another Czech firm and Zetor's management did not see any advantage in competing against the other Czech firm. Aero Vodochody only made jet trainers and light attack aircraft. With the fall of the Soviet Union and the end of the cold war, Aero Vodochody found that its products were not in demand in most of its old markets. Zetor and Aero Vodochody both made a small range of products, serving small market niches. When their markets diminished, both firms suffered.

Institutional Embeddedness. An organization's performance is affected positively by its relationship with larger institutions in society and its embeddedness in the economic system (DiMaggio & Powell, 1983; Carroll, Goodstein, & Gyenes, 1990). Firms are given legitimacy by these relationships which, in turn, enhances their survival and performance chances (Singh, Tucker, and House, 1986). Under conditions of institutional continuity, well-connected (legitimate) firms fare better than poorly-connected firms. But when the institutions themselves dissolve, embeddedness in the old system carries no particular advantage. Indeed, firms that were previously extremely embedded may fare worse under conditions of extraordinary institutional change because the very basis of their legitimacy disappeared.

Institutional embeddedness can be manifested in many ways. Some firms may be central to the goals of an economy, such as firms in the defense industry during the cold war. Others may embody deeply-held cultural values in a social system such as sports teams or cultural organizations. In Czechoslovakia before the change in governments, the most obvious way to be embedded deeply was to be important to the Soviet Union. Aero Vodochody clearly was embedded very deeply in the existing institutional framework at the time of the Velvet Revolution. Aero Vodochody was the largest producer of jet trainers in the world. The company thrived during the military buildup of the cold war. When the Soviet Union began to pursue its glasnost strategy in the late 1980s, Aero Vodochody experienced a downturn in its Soviet business. The collapse of the Soviet Union and the end of the cold war could have been catastrophic for Aero Vodochody. Had the Czech Republic not joined NATO, Aero Vodochody would have failed.

Veba was the opposite. According to officials from its foreign trading company, Centrotex, the entire textile industry was out of favor during the communist era, unable to receive money for capital investment between the Prague Spring of 1968 and the early 1980s. Moreover, Veba sold none of its output to the USSR or to other Soviet bloc countries. Its damask was exported to the West and to Africa and its terry cloth was for domestic consumption. Because the textile industry was peripheral in the centrally planned economy, Veba was relatively unaffected by the fall of the Soviet Union.

Another way to be embedded was to be a "family silver" company -- a company that embodied the country's history, traditions, and cultural pride. Ironically, many of these "family silver" companies -- breweries, distillers, and glass manufacturers -- were strategically unimportant to the communists. These companies, as a group, were adapting well to the new business environment, partly because they never were fully embedded in the central planning system.

Organizational Completeness. Firms protect their technical core from environmental turbulence by creating managerial and administrative capabilities that absorb the shocks coming from the environment (Thompson, 1967). To the extent that firms have well-articulated "boundary spanning" capabilities in marketing, sales, and finance, they are able to detect and react to turbulence. To the extent that firms have good sensing capabilities, they detect changes in the environment so that they may react appropriately. Absent these capabilities, firms facing turbulence are unlikely to know what to look for, how to understand it, or what to do about it.

Czechoslovak firms had few boundary spanning capabilities within their structures. They were manufacturing firms, by and large, and had no marketing, sales, or finance functions or capabilities. They did no strategic planning. Only those with final customer contact had any sense of customer needs and customer satisfaction (and the customer in these cases was often another company or a government entity).

PBS and Královopolská had some boundary spanning capabilities because of their turnkey businesses. Managers in these firms understood the importance of satisfying customers' needs and making quality products better than managers in firms with no customer contact. Aero Vodochody did none of its own marketing or selling. It filled contracts that resulted from government-to-government negotiations. Employees did, however, travel to customer sites for technical assistance and support. Veba's Managing Director had traveled abroad to meet damask customers and, as a result, developed a keen understanding of Veba's customers. Zetor, quite isolated from its customers, struggled (Figure 3).

Figure 3 about here

Starting resources and capabilities can facilitate radical change, but only if the seeds of future competitive success are found among existing resources and capabilities. If the exogenous change that theoretically triggers radical change produces a new competitive environment that is too dissimilar and for which the firm has insufficient adaptable capabilities and resources, the firm will perform poorly, not be able to change, and ultimately fail. Similarly, if the exogenous change produces a new competitive environment that is insufficiently different from the old, only incremental change will be necessary (Figure 4). In our group of companies, Aero Vodochody is in danger of the latter, while Poldi and perhaps Zetor suffer from the former.

Proposition 1: *There is a curvilinear relationship between the likelihood of radical change and the firm's existing resources and capabilities. If the firm's capabilities and resources are very close to those required by the competitive environment, radical change is not necessary and is unlikely. If the firm's capabilities and resources are not at all close to those required by the competitive environment, radical change is necessary but is unlikely to be undertaken.*

Figure 4 about here

Competitive Environment During Change

Organizational change does not take place in a vacuum. We know changes in the competitive environment for firms can trigger radical organizational change (Romanelli & Tushman, 1994) but it is also likely that the process of change itself is affected by the competitive environment within which the firm operates. Factors external to and largely outside the control of the firm affect what change is attempted, how it is attempted, and how successful it will be, independent of the change-precipitating factors. Three related characteristics of the firm's competitive environment are particularly noteworthy, the structure of competition in the firm's industry, the munificence of available market niches, and the availability of new tangible resources.

Competition and Industry Structure. The structure of industries in which firms compete, including their concentration, rivalry, barriers to entry, threats of substitutes, and power of buyers and suppliers, affect firms' ability to change and survive (Porter, 1980). In industries with high concentration, high rivalry, low barriers to entry, high threats of substitute products, and powerful buyers and suppliers, any firm will find profitability difficult to achieve (Grant, 1995). Even firms with the appropriate capabilities find the competition tough. Czech firms, without the appropriate capabilities for competition, found it very tough.

As shown in Figure 5, all of the firms faced unfriendly competitive climates. Though all were in high barriers-to-entry industries (as was true for much of Czech industry) all also were in over-built industries. These hostile competitive conditions keep the pressure high for radical change. The problem for firms was finding a way to survive under such adverse conditions. Two firms were able to change their position in their very competitive industries through strategic alliances, PBS and Aero Vodochody.

PBS, with a 140-year history, had a reputation as one of the "family silver" companies in the Czech Republic. Its existing resources and capabilities helped it attract several potential western partners. In mid-1993 it began a 2/3 - 1/3 joint venture with Asea Brown Boveri (ABB), the Swiss-Swedish multinational, to manufacture boilers, turbines, and complete power plants for distribution through the ABB network. PBS went from being one of many small firms with no name recognition outside the region to part of ABB, one of the four or five major competitors in the over-capacity, highly concentrated power generation industry. The alliance with ABB allowed PBS to modernize more quickly than its small competitors, gave PBS the positive halo and financial support of ABB, and gave PBS the opportunity to learn the capabilities necessary for competition from ABB sister companies.

Aero Vodochody agreed to a strategic alliance with a consortium of Boeing, McDonnell Douglas, and ČSA, the Czech national airline. Aero Vodochody had not undertaken significant change before the Boeing alliance. The Czech government protected it from bankruptcy throughout the period as a "strategic company." With the Boeing alliance, Aero Vodochody became viable, gained credibility, and gained access to markets that would not have been accessible previously. Yet it was still the only manufacturer of jet trainers in the region and was still protected by the government. As with PBS, Aero Vodochody's affiliation with an industry giant positioned the firm more advantageously than would otherwise have been the case.

Munificent Product and Market Niches. Some firms allied themselves with major firms in their industries as a way of coping with the competitive conditions. Another strategy was to seek out munificent niches in the industry in which the firm could compete. Firms that enter a new related niche in which their existing resources and capabilities are relevant are less likely to fail in the long run than firms that enter unrelated niches (Haveman, 1992; Swaminathan & Delacroix, 1991).

Veba identified two new, relatively munificent niches in addition to its existing damask yard-goods niche. The first was in highest quality terry and the second was in super-wide damask bedding. While there were many terry producers in the world, Veba was able to adapt its damask capability to produce the highest quality terry at a competitive price.

Just as new technologies can create new opportunities for growth (Tushman & Anderson, 1986), so too, central governments can create new opportunities for firms. At the extremes, public policy can create or destroy industries. Královopolská benefitted significantly from the Czech government's post-Revolution emphasis on clean water. PBS benefitted from the government's emphasis on clean air. Aero Vodochody survived, in part, because the Czech Republic was admitted to NATO.

New Tangible Resources. After the change in government, companies' resources and capabilities became differentiating factors in the transformation process. The clearest distinction was between those firms that were able to increase their tangible resources quickly and substantially and those that were not able to find new tangible resources.

PBS became a different competitor in its industry with the ABB joint venture. By 1996 ABB PBS was touted as one of the success stories of transformation, even though the joint venture lost money that year. ABB, however, was happy enough with the relationship and purchased the remaining 1/3 of the joint venture in early 1997.

Aero Vodochody, after near bankruptcy and a government bailout, was joined by Boeing in a strategic alliance. The tentative agreement was for Boeing to buy up to 40 percent of Aero Vodochody's shares for no less than $31.7 million (about CZK 1 billion). The Czech government had already recapitalized Aero Vodochody six months earlier with a CZK 2 billion debt-equity swap. This agreement, apart from the reputational gain for Aero Vodochody, allowed the firm to develop, market, produce, and finance the sale of its new jet trainer on which its future rested.

Veba was able to secure debt financing rather than equity capital to facilitate its transformation. Veba made a sizable investment in new equipment (CZK 143 million) in 1993, which was financed largely by a six-year loan of CZK 100 million from Komerční Banka. At the end of 1995, Veba completed a new seven-year financing agreement with Czech and German banks, one of the first Czech companies to do so. Veba's aggressive debt financing in 1993 allowed it to produce high quality super-wide sheeting materials at a low price by 1995, thus enabling its entry into the king-size markets in North America. Its 1995 long-term financing agreement secured its ability to build on the investments made two years earlier.

Královopolská was ultimately privatized as a management buy-out in early 1995, financed with a bank loan. Two years after the purchase, Královopolská's management owners missed a payment for shares and the company was in danger of being repossessed by the government.

Figure 5 about here

The competitive environment for firms in the region was not hospitable. These were harsh conditions under which to learn how to compete. Most firms in the Czech Republic faced over-capacity and high concentration in their industries, conditions that do not bode well for profitable operation for any firm, let alone firms without the necessary resources and capabilities. For firms without a defendable niche, the most successful strategy was an alliance with a stronger partner, one of the dominant firms in the industry. Alternatively, if new, munificent niches could be found or were created, effective operation was possible. Královopolská and PBS benefitted from government environmental policy and Aero

Vodochody eventually benefitted from the government's decision to join NATO. Veba, the only firm with a history of both top quality production and significant sales in the west, had a defendable niche with associated capabilities and was able to leverage those capabilities into new products in new niches. Most firms found that new financial resources were necessary for modernization and new product development. Veba accomplished its goals with bank loans. PBS and Aero Vodochody obtained investments from new partners. Zetor, Královopolská, and Poldi struggled with only short term loans at high interest rates. Poldi had failed by 1997, Královopolská's ownership was in doubt, and Zetor was technically insolvent but was kept afloat with government help.

This analysis suggests another inverted "U"-shaped relationship between the favorableness of the competitive environment and the firm's ability to adapt (Figure 6). In very harsh competitive environments or very munificent competitive environments, firms are not likely to change, in the former case because they cannot and in the latter because they need not. In the middle range the challenges presented by the competitive environment encourage radical change.

Proposition 2: *There is a curvilinear relationship between the likelihood of radical change and the harshness of the competitive environment. If the competitive environment is benign, radical change is unnecessary and unlikely to be undertaken. If the competitive environment is too harsh, radical change is needed but unlikely to succeed.*

Figure 6 about here

Executive Leadership

Top management plays a critical role in company management and change. Prior to the fall of communism, managers had little discretion and therefore played a small role in the success or failure of their firms. After the change, managers' latitude for action was much greater, so the choices that managers made had the potential to affect company outcomes more significantly.

Managers had to learn new role behaviors, develop new skills, and take on new tasks to lead their firms successfully. Most had spent their lives in production organizations or in the "commercial" function (what passed for sales). Followers had to become leaders and bureaucrats had to become decision-makers. New tasks were suddenly required, including strategic planning, controlling costs, and producing according to market demand rather than centrally-planned directives. Managers therefore had to become more proactive, more flexible, and more risk-willing. They had to understand their firms' resources and capabilities and potential competitive advantage. In essence, three important new abilities were necessary: strategic thinking; decisiveness and initiative; and attention to operational efficiency.

Strategic Thinking. By strategic thinking, we mean three things. The first is the ability to *understand the firm's resources and capabilities* and how they are relevant in the marketplace. Many managers were not able to step back from their day-to-day production responsibilities to assess what the firm did well or could do well. The ability to assess accurately the company's resources and capabilities was clouded by forty years of producing to a plan.

Veba's Josef Novák was an exception. He understood his firm's capabilities and resources quite well. He created new products that were closely related to what the firm had produced for the previous 40 years. He expanded Veba's highest quality capability to terry cloth and added products based on existing or related technology. He did not try to use excess plant capacity for unrelated production activities.

He was also able to *understand the market*, assess its characteristics, and adapt the firm appropriately. Before the change in government he traveled extensively in Europe and West Africa, visiting with customers. His market focus served him well after the fall of communism. He was able to determine that high labor costs in German and Austrian textile mills would drive them out of business, creating an opportunity for Veba. He also recognized an opportunity to manufacture king-size sheets even though they were popular in only part of Europe. Veba's cost advantage gave the firm a foothold in the familiar European market which, in turn, gave Veba the experience that enabled its entry into the North American market where king-size sheets were very popular.

The third aspect of strategic thinking that is important is the ability to *envision and plan for a new future,* based on an accurate assessment of the market and the firm's resources and capabilties. Because planning for the future had not been part of managers' jobs under central planning, they were not accustomed to imagining possible futures for the firm, other than those that were a direct extrapolation from the past.

Many managers articulated a "strategy" during the early 1990s, but these strategies were not grounded in market reality. The Královopolská 1992 Annual Report was indicative:

> Management intends to concentrate its efforts on the long-term development of the company, to increase productivity to a level that is five times its current status by 1997, to increase the value of the company by 30% every year, and to pay dividends to its shareholders starting in 1994.

The company lost money in 1993 and 1994 and experienced an operating losses in 1995 and 1996. The words came easily but the goals were unrealistic.

Novák, at Veba, again was a good example of a visionary leader. In 1997 he had already developed his third vision. His three visions were

1. *Product Extensions for Top Markets.* This was the first strategic vision for the period from 1992 to 1997. The objectives were to add related products in familiar markets: super-wide damask bedding fabric; finished damask tablecloths; jacquard shirting fabric; and highest quality terry cloth.

2. *Rationalization and Restructuring.* This plan was the focus for the period from 1995 to 1999. It included rationalizing the production plant to improve logistics and reduce costs; closing old, small outlying facilities; investing in new spinning mills; and consolidating inventory and inputs into one central warehouse.

3. *Go East.* The "go east" strategy began in 1997, extending to 2005. Some textile production would be moved progressively further east in east Europe and into the former Soviet Republics to follow expected lower-cost locations for production (the Czech Republic would become too costly for textile labor in the future) and to take advantage of expected growing markets for standard quality goods in eastern countries, including Russia.

Novák was unusual in his capacity for strategic thinking. He understood the firm's capabilities and resources. He identified related products for expansion. He focused on the markets he knew well and carefully expanded into related but new markets (North America). Most firms' top managers did not understand enough about the markets in which they operated to do the kind of analysis done by Novák and to take the steps he and his top managers took to pursue their vision. Managers who understood the ideas of business strategy and corporate strategy were more likely to be successful leaders during the transition years. The fact that these skills were in short supply because of two generations of central planning made them all the more important.

Decisiveness and Initiative. Leaders must be available, mobilized, decisive, and willing to take the reasonable risks. Managers who perceive they have greater discretion do, in fact, initiate more change (Huber, Sutcliffe, Miller, & Glick, 1993). Moreover, initiative can be learned in former Soviet Bloc countries with the right incentives (Frese, Kring, Soose, & Zempel, 1996). In the Czech Republic there was a clear difference between managers who were willing to make decisions and those who were not. Top managers at Aero Vodochody and Zetor were virtually paralyzed in 1995 and 1996, waiting for a new owner. Zetor was without a production director for most of 1997 and had not completed factory rationalization by mid-1997. While both of these firms were legitimately hamstrung by their unsettled ownership, neither showed the kind of proactivity observed at Veba.

Novák at Veba made bold decisions as early as 1992 to borrow extensively for product expansion. In retrospect this was an obvious decision, but at the time it was risky and Novák was taking far more initiative than had been permitted prior to 1989. Novák, perhaps because of his relative youth (under 40 at the time) or because of his experience with competitive markets, believed he had the discretion to make change and did so, even though Veba's ownership future was not settled until 1995.

Attention to Operational Efficiency. Finally, managers in the region had to learn to manage operations efficiently while also finding new sources of revenue (Allmendinger & Hackman, 1996). Firms in central Europe were in desperate shape. Their costs were too high, their equipment was out of date, and they employed many more people than necessary to do the job. Without attention to immediate matters of cost efficiency there would be no future. Under central planning, costs and prices were set by the State, not the market. Accounting systems produced information that was not useful to managers for decision making because managers had not been the decision makers. Therefore virtually every Czech firm needed new accounting, order tracking, inventory, and management information systems.

Veba was one of the first Czech firms to use activity-based costing. Veba managers installed a management information system in 1993 that allowed them to calculate variable costs separately from fixed costs, thus improving their ability to set prices and know their profitability. In 1997, managers from Zetor, Královopolská, PBS, and Aero Vodochody all voiced dissatisfaction with their old information systems and the very slow speed with which new systems were being developed.

Many Czech managers mistakenly assumed their firms had a cost advantage, compared to western competitors, because of the low wages paid to Czech employees. However, when the time required to produce the same product was factored into the equation, many managers discovered that their labor cost advantage disappeared. Kuba learned this quickly in the PBS joint venture with ABB when discovered that it took his firm four times longer to produce the same product as an ABB sister company. Strategic thinking, decisiveness, and attention to operational efficiency were three important managerial skills that were not nurtured during the central planning era, yet that were important for any enterprise whether in central Europe, Asia, or North America. These skills were in short supply after the fall of Communism. Yet, some managers either had the skills or learned them quickly. Two types of explanations for the relative success of some managers emerge from the cases. The first derives from their pre-Revolution experience, including turnkey business experience (PBS and Královopolská), direct customer contact (Veba, PBS, and Královopolská), and experience in competitive markets (Veba and Zetor to some extent). The second derives from their post-Revolution experience and includes access to relevant role models (Veba had an unusually helpful consultant) and partnerships with strategic investors.

Figure 7 about here

The leadership qualities necessary for new managers -- strategic thinking, willingness to make decisions and take initiative, and ability to manage costs -- are no different from top leadership qualities one might look for in the West, except that these qualities were in short supply in the Czech Republic. Nevertheless, these qualities could be found, at least in their nascent form. Evidence from these cases suggests, not surprisingly, that higher quality leadership facilitates more rapid change (Figure 8).

Proposition 3: *There is a linear relationship between the likelihood of radical change and the quality of leadership. Top managers with relevant skills for competition are more likely to undertake radical change when it is needed than top managers who lack relevant skills for competition.*

Figure 8 about here

New Core Values

The experiences of these companies suggest three key factors -- starting resources and capabilities, the competitive environment, and top leadership -- are determinants of the type of change that took place as well as the companies' apparent competitive success. I emphasize "apparent" success because organizational transformation in the Czech Republic was only beginning in 1997. Most firms had not begun the serious restructuring that ultimately would be required.

The three determinants of change appear to be necessary but not sufficient conditions for radical change. All three must be favorable for radical change to be undertaken. Firms missing one or more of the three are not likely to initiate radical change and are therefore at risk of low performance or even failure, assuming radical change is called for.

Veba is the one company in which all three determinants of radical change were favorable. The company's experience in competitive markets, its history of highest quality production, its viable niches in a very low-concentration industry, and its extraordinary executive leadership combined to produce radical change. Novák's change management behavior included his own articulation of a positive, realistic future for Veba, relentless optimism, and aggressive incentives for managers to change, including company cars, cell phones, laptop computers, and company credit cards.

Novák embodied the new core values he felt his company must have, among them focused competition in damask and terry cloth, highest quality production for western markets, and performance-based rewards. He recognized that it would be many years before rank and file employees accepted the last of these values, but he was aggressive with his managers, using rewards rather than punishment to change behavior. He said, "If you treat people as responsible managers they will start to behave that way." He built a top management team of six very different personalities. He reduced employment through attrition rather than layoffs and aggressively sought new revenues so that good employees could continue their employment with Veba. He faced adverse conditions with a problem-solving attitude. He found solutions and did not made excuses. Novák was able to differentiate between short term survival, medium term prosperity, and long term growth. He was a model manager.

The necessary *and* sufficient condition for radical change is new core values, the fundamental, implicit beliefs and norms about how business should be conducted. New core values derive from adapted resources and capabilities, a tough but tolerable competitive environment, and high quality executive leadership. Absent new core values, firms found themselves in a low performance cycle of incremental change. For some, the problems were with all three change factors. Zetor had few capabilities that were adaptable for competition. It relied on its reputation as the "best communist tractor" when the marketplace wanted better quality. Most of its top managers had not had the kind of experience necessary for managing in a competitive environment. For others such as PBS the difficulties were fewer and fixable.

This discussion leads to the last two propositions that emerge from the data.

Proposition 4: *Adaptable resources and capabilities, a manageable competitive environment, and top management with skills relevant for competition are all necessary but not sufficient conditions for radical change. All three must be favorable for radical change to be undertaken successfully.*

Proposition 5: *New core values appropriate for the competitive environment are a necessary and sufficient condition for radical change. New core values derive from adaptable resources and capabilities, a manageable competitive environment, and top management with skills relevant for competition.*

Summary and Conclusions

I have suggested inverted "U"-shaped relationships between two factors -- resources and capabilities and competitive environment -- and the likelihood of radical change. Both of these propositions are supported by these case data, but clearly need further exploration. The data concerning leadership are straightforward and lead to predictable conclusions. Moreover, these data suggest that all three determinants are necessary but not sufficient conditions for radical change. This conclusion, too, needs further exploration. In particular, it might be that these factors can compensate for each other in ways not illustrated by these six cases.

Finally, the role of core values in radical change needs much more research. Tushman and Romanelli (1985) and Gersick (1991) both assert that new core values or new deep structures are necessary for radical change, yet the proposition has not been tested systematically. Measuring core values is not an easy task. Their change may be slow and will vary by organizational function and level. Yet core values anchor the firm and form the foundation from which strategy is developed and business is conducted. I have asserted the strong case that new core values are a necessary and sufficient condition for radical change. More research that tests this proposition is clearly in order.

References

Allmendinger, J. & Hackman, J.R. 1996. Organizations in changing environments: The case of East German symphony orchestras. *Administrative Science Quarterly*, 41: 337-369.

Carroll, G.R., Goodstein, J. & Gyenes, A. 1990. Managing the institutional environment: Evidence from Hungarian agricultural cooperatives. *European Sociological Review*, 6:73-86.

DiMaggio, P.J. & Powell, W.W. 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48: 147-160.

Frese, M., W. Kring, A. Soose, & J. Zempel (1996). Personal initiative at work: Differences between east and west Germany. *Academy of Management Journal,* 39: 37-63.

Gersick, C.J.G. 1991. Revolutionary change theories: A multilevel exploration of the punctuated equilibrium paradigm. *Academy of Management Review,* 16: 10-36.

Granovetter, M. 1985. Economic action and social structure: The problem of embeddedness. *American Journal of Sociology,* 91: 481-510.

Grant, R.M. 1995. *Contemporary Strategy Analysis.,* 2nd edition. Cambridge, MA: Blackwell Publishers.

Greenwood, R. & Hinings, C.R. 1996. Understanding radical organizational change: Bringing together the old and the new institutionalism. *Academy of Management Review*, 21: 1022-1054.

Hannan, M.T. & Freeman, J. 1984. Structural inertia and organizational change. *American Sociological Review,* 49: 149-164.

Hannan, M.T. & Freeman, J. 1989. *Organizational ecology.* Cambridge, MA: Harvard University Press.

Haveman, H. A.1992. Between a rock and a hard place: Organizational change and performance under conditions of fundamental environmental transformation. *Administrative Science Quarterly*, 37: 48-75.

Huber, G.P., Sutcliffe, K.M., Miller, C.C. & Glick, W.H. 1993. Understanding and predicting organizational change. In Huber, G.P. & W.H. Glick (eds.) *Organizational change and Redesign.* New York: Oxford University Press, pp. 215-265.

Meyer, A.D. 1982. Adapting to environmental jolts. *Administrative Science Quarterly*, 27: 515-537.

Miller, D. & Chen, M. 1994. Sources and consequences of competitive inertia: A study of the U.S. airline industry. *Administrative Science Quarterly*, 39: 1-23.

Porter, M.E. 1980. *Competitive strategy*. New York: The Free Press.

Radice, H. 1981. The state enterprise in Hungary: Economic reform and socialist entrepreneurship. In I. Jeffreys (ed.), *The industrial enterprise in eastern Europe*: 23-40. NY: Praeger.

Romanelli, E. & Tushman, M.L. 1994. Organizational transformation as punctuated equilibrium: An empirical test. *Academy of Management Journal*, 37: 1141-1166.

Swaminathan, A. & Delacroix, J. 1991. Differentiation within an organizational population: Additional evidence from the wine industry. *Academy of Management Journal*, 34: 679-692.

Thompson, J.D. 1967. *Organizations in action*. NY: McGraw-Hill.

Tushman, M.L. & Anderson, 1986. Technological discontinuities and organizational environments. *Administrative Science Quarterly*, 31: 439-465.

Tushman, M.L. & Romanelli, E. 1985. Organizational evolution: a metamorphosis model of convergence and reorientation. In L.L. Cummings & M.M. Staw (eds.) *Research in organization behavior*, 7: 171-222.

Yin, R.K. 1989. *Case study research: Design and methods* (rev. ed.). Newbury Park: Sage.

Figure 1: **Longitudinal Cases Developed for this Research**

Company	Managing Director	Products	Data Collection Interviews at the Company	Other Data Sources
Aero Vodochody	Adam Straňák	Jet trainers and light attack jets. L-159 is new product.	5/94, 6/94, 7/95, 7/96,4/97	Company documents, analysts' reports, media reports
Královopolská	Zdeněk Pánek	Tanks and pipes for chemical & water treatment plants, turnkey water treatment plants, and steel structures and cranes	3/93, 12/93, 6/94, 12/94, 7/95, 7/96,4/97	Company documents, MBA Enterprise Corps report , consultant's report, analyst's report
PBS První Brněnská Strojírna - - "First Brno Machinery " Including joint venture partner and owner as of 2/97, Asea Brown Boveri (ABB)	Richard Kuba	Boilers and turbines for power generating plants. Turnkey power plants.	7/95, 7/96,4/97	Company documents, press releases, ABB personnel
Poldi	In bankruptcy	Steel	3/93, 6/93, 12/93, 6/94, 12/94, 7/96, 4/97	Company documents, media reports, consulting reports
Veba	Josef Novák	Textiles -- damask and terry cloth	7/95, 7/96, 4/97	Company documents, Centrotex personnel (trading company and owner as of 7/96) CMC # 93-008 and 94--022 by J. Matesová
Zetor	Miroslav Poláček	Tractors, bearings until 7/93	5/92, 3/93, 6/93, 12/93, 6/94, 12/94, 7/97, 7/96, 4/97	Company documents, media reports, John Deere employees, former employees, banks

Figure 2: Starting Model of Radical Organizational Change

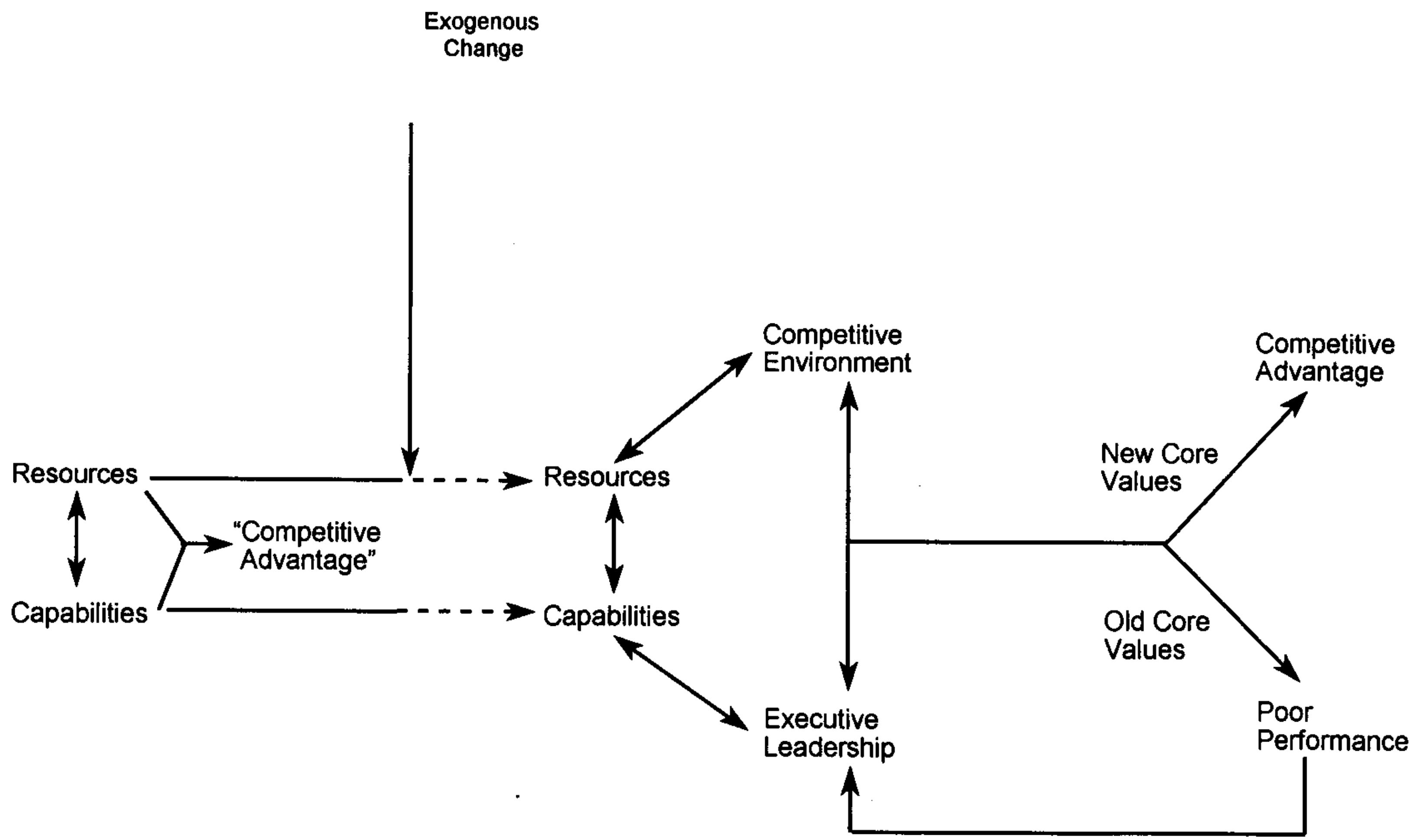

Figure 3: Summary of Companies' Resources and Capabilities

Company	Experience with Competition	Generalist-Specialist		Institutional Embeddedness		Organizational Completeness	
		Products	**Markets**	**Importance to Soviets**	**Family Silver**	**Boundary Spanners**	**Customer Contact**
Aero Vodochody	No pre-Revolution sales in West	One	USSR and allies	Very important	Largest jet trainer manufacturer in the world.	Yes, Mkting Dir.	Yes, as advisors
Královopolská	no pre-Revolution sales in West	Three, two related	Only East Bloc	Moderate -- petrochemical industry	No. "We were nothing special, a middle company."	Yes, GM	Yes, turnkey
PBS	<20% pre-Revolution sales in West	Three, related	Primarily East Bloc	Moderately	Yes. "We were a second tier company, behind the giant Skoda Plzen"	Yes, GM	Yes, turnkey
Poldi	< 20% pre-Revolution sales in West	One	USSR and allies, Germany	Not very	No. "Poldi should be privatized immediately, even if for one koruna."	No	No
Veba	50% pre-Revolution sales in West	Two, but different basis of competition	Western Europe, West Africa, CZ	Not at all	Centuries-old high quality textile production in CZ.	Yes, GM	Informally, through GM's travels
Zetor	25% pre-Revolution sales in West	One (plus bearings)	Primarily Iraq, Western Europe, CZ	Not very	Good brand name, but not strategically important	Yes, Mkting Dir.	No

Figure 4: **Relationship between Similarity of Company Resources and Capabilities to Those Demanded by New Conditions and Likelihood of Radical Change**

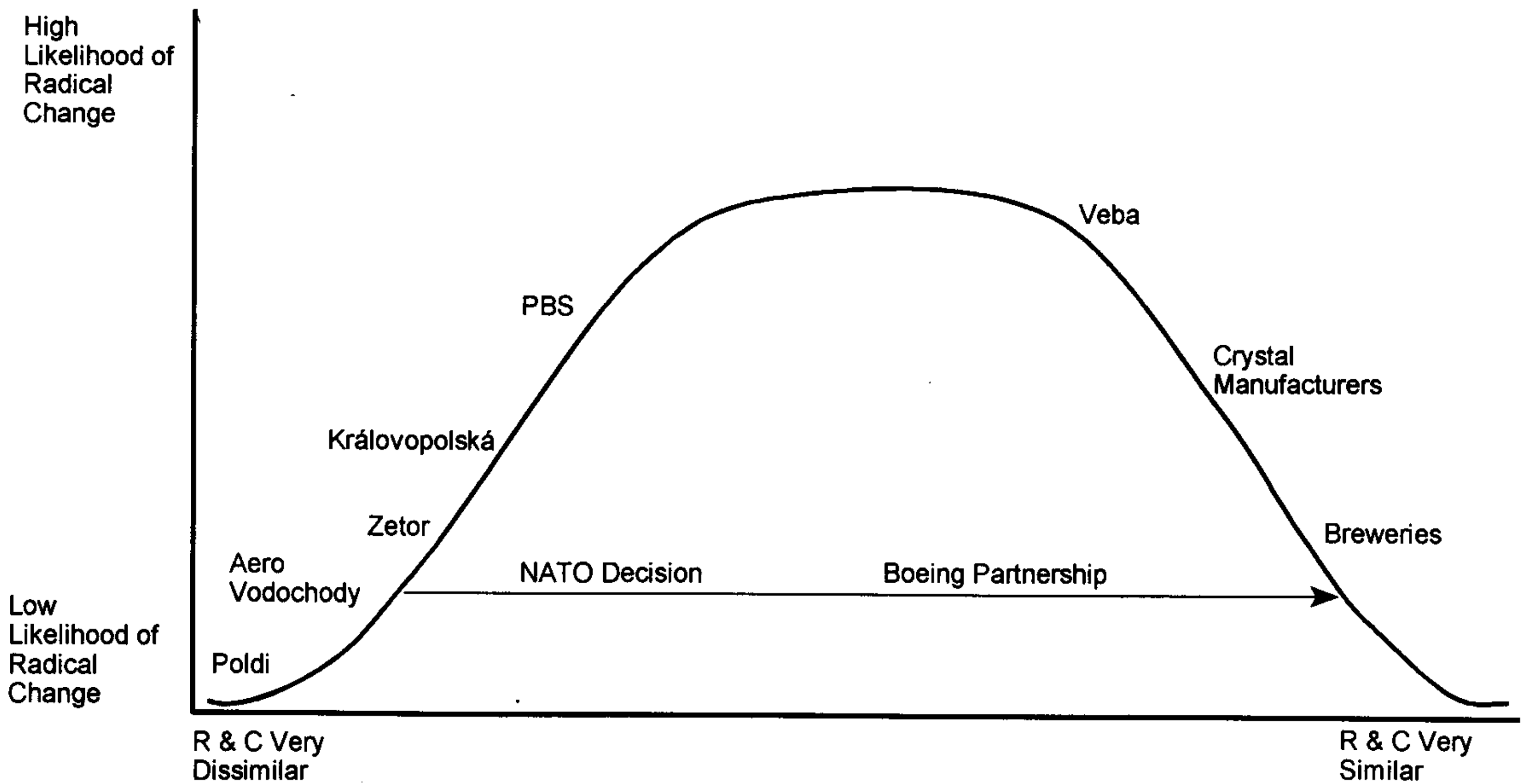

Figure 5: Competitive Structure of Industries

Company	Industry	Barriers to Entry	Industry Rivalry		Comments
			Concentration	Capacity	
Aero Vodochody	Aircraft	High	High. Very concentrated. Political considerations.	Global overcapacity and consolidation	Boeing alliance and CZ trainer purchase elevate to stronger competitor
Královopolská	Chemical equipment	High	Low.	Overcapacity	Looking for defendable niche
PBS	Power generation	High	High. Four dominant companies. Tens of others	Global overcapacity. Growing demand in CEE	ABB JV moved PBS from "one of tens" to part of big four
Poldi	Steel	High	Low. New mini-mills very competitive	Global overcapacity.	Not producing, 1996-1997. In bankruptcy.
Veba	Textiles	High	Very low.	Global overcapacity. Asian low cost producers	Defendable niche. Centrotex is good partner
Zetor	Tractors	High	High. Four dominant competitors. Zetor high in second tier.	Overcapacity and declining demand in West. Growth in 3rd world	Supplier relationship with Deere helps marginally

Figure 6: Relationship between Competitive Conditions and Company Adaptation

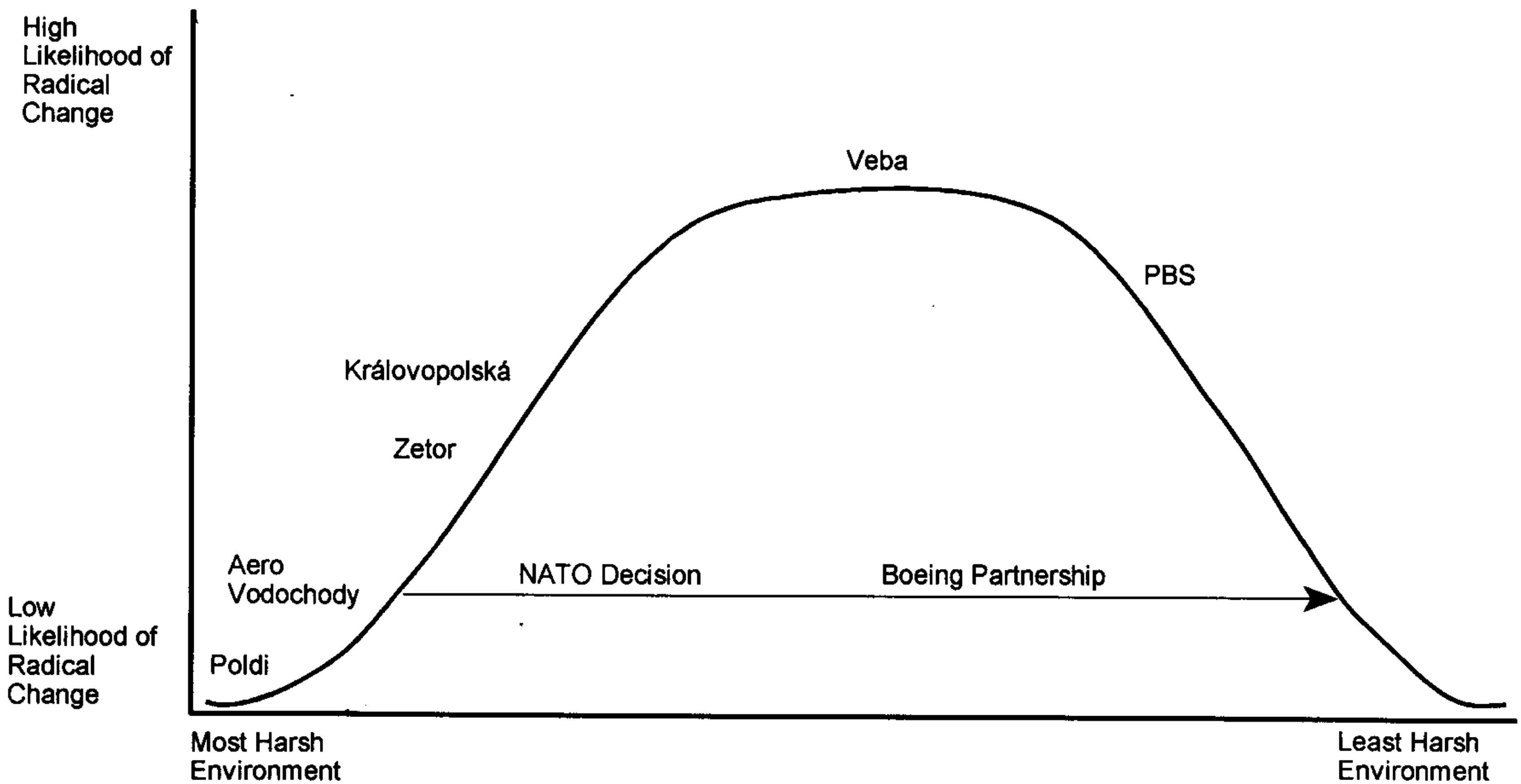

Figure 7: Leadership Qualities and Sources of Learning

Company	Leadership Skills			Sources of Learning from Before the Revolution			Sources of Learning After the Revolution	
	Strategic Thinking	Decisive-ness and Initiative	Cost Awareness	Customer Contact	Compe-tition	Turnkey Business	Role Models	Strategic Partners
Aero Vodochody	Straňák, "Engineers are gold"	Waiting for new owner	Not yet	No	No	Aircraft	No	Yes, Boeing
Královopolská	Confusion	Yes	Developing	Yes	No	Water treatment plants	No	No
PBS	Kuba's strategic assessment	ABB required it	Developing	Yes	No	Power plants	No	Yes, ABB
Poldi	No	na	na	No	No	No	No	No
Veba	Very strong	Very strong	Strong	Yes	Yes	No	Yes, Dutch consultants	No
Zetor	No	Waiting for new owner	Not yet	No	Yes, but through Motokov	No	Deere advisors to small degree	No, though Deere commercial agreement

Figure 8: **Leadership and Radical Change**