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***Radical versus Incremental Change: The Role of
Capabilities, Competition, and Leaders***

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The Role of Capabilities, Competition, and Leaders**

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Abstract

Much has been written about organizational change generally, yet we know relatively little about how and why radical change is pursued rather than incremental change, given similar exogenous factors. 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. This analysis suggests three features of organizations that affect the type of organizational change undertaken in response to major environmental change; the firm's resources and capabilities, the competitive environment in which the firm operates, and the leadership available during the change. The difference between firms pursuing radical change and those pursuing incremental change is explained, in part, by the way in which top managers interpret and enact both their firms' capabilities and resources and their firms' competitive environment.

Radical Versus Incremental Change: The Role of Capabilities, Competition, and Leaders

The end of Soviet-dominated Communist governments in central Europe heralded a period of unprecedented economic, political, and social change. 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 grew.

Firms in central Europe faced unprecedented pressure to change. State-owned enterprises had been aligned tightly with the social, political, and economic institutions of central planning. Their structures, capabilities, and resources 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. Moreover, companies 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.

I examine the course of organizational change in formerly state-owned enterprises in central Europe to increase our understanding of the factors that determine the type of change undertaken. While much has been written about organizational change generally, little is known about how and why radical change is pursued rather than incremental change, given the same exogenous stimulus. 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 capabilities (Romanelli & Tushman 1994; 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 similar external circumstances.

Radical change is triggered by a change in the competitive environment, a change in leadership, or a decline in organizational performance (Tushman & Romanelli, 1985). Surely, the change in the

competitive environment in central and eastern Europe following the fall of Communism was the sort of environmental jolt that was capable of triggering radical change. New leadership was also a near-universal phenomenon in the Czech Republic. Most managing directors in the Czech Republic were replaced after the Revolution, if for no other reason than symbolically to rid the firms of their communist leaders. Finally, the vast majority of firms in the Czech Republic experienced poor financial performance within two years after economic liberalization began in earnest in 1992. Many companies experienced losses in 1993 or 1994 as the effects of privatization, high interest rates, and competition began to be felt. The conditions were ripe for radical organizational change in Czech companies.

The Research

This analysis draws on case data from an investigation of organizational change in the emerging market economies of central and eastern Europe (Newman & Nollen, forthcoming). We used a case-based methodology because we were asking exploratory questions concerning how and why radical rather than incremental change took place under conditions of extraordinary and unprecedented institutional change. Case-based research captures the richness of unfolding, uncontrollable events and is an appropriate methodology for theory-building.

I use data from five Czech company cases developed between 1991 and 1997. Data sources included 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. All firms in the study are manufacturing firms, all were state-owned before the Velvet Revolution¹, and all were formally 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. Characteristics of the companies and the data sources from each are shown in Figures 1 and 2. The stories of change are rich and varied. They are summarized in the next section.

¹ The change of government was termed the Velvet Revolution because no lives were lost. Student demonstrations in Prague and a general strike precipitated the resignation of the Communist leaders and the quick succession of Václav Havel, the political dissident and playwright.

Figures 1 & 2 about here

The Companies

Aero Vodochody

Aero Vodochody (Ā'-rō Vō'-dō-hō-dē) was the monopoly manufacturer of military jet trainers and light attack aircraft for the Soviet Union and its allies. The company was founded in 1919 as an airplane and automobile maker, but its modern era dated from its post World War II build-up by the communist government. Aero Vodochody had revenue of CZK 1,750 million (about USD 50 million at the early 1998 exchange rate) and employed 3,600 people in 1990. It was the largest manufacturer of jet trainers in the world.

The company had two similar products, the simpler and cheaper L-39 airplane that dated from 1971, and the higher-performance new L-59. Either airplane could be outfitted with armaments and converted from a jet trainer to an air-to-ground light attack airplane. The airplanes were designed and assembled at Aero's plant north of Prague. Components such as engines, wings, landing gear, avionics, and seats were purchased from other companies in the Czech aircraft industry or from other COMECON countries. According to the CEO, Adam Straňák, design engineers were "the gold of our company." Over 90 percent of Aero Vodochody's revenue was obtained from its exports of these airplanes to the Soviet Bloc before the Revolution.

The privatization of Aero Vodochody was a struggle that lasted for six years. Aero Vodochody was one of 10 companies in the Czech aircraft industry, both military and civilian, that were wholly owned by Aero Holding. Aero Holding was privatized via vouchers in 1992 with the National Property Fund retaining a 64 percent stake². Aero Vodochody and the other nine daughter companies remained 100

² Much of large-scale privatization in the Czech Republic was done via voucher privatization. All adults were given the opportunity to buy vouchers for a nominal sum that could be used to purchase shares in companies that were being privatized. The National Property Fund was created to facilitate privatization in the Czech Republic. It held unsold shares of companies being privatized, usually according to a privatization plan that had been approved by the government before shares of the company were offered for sale.

percent owned by Aero Holding until 1994 when a complicated debt-equity swap was made. Some of the debt of the daughter companies owed to big Czech banks (it was mainly the debt of the companies in the civilian sector) was exchanged for shares in the four military sector daughter companies. Aero Vodochody became 53 percent owned by three big Czech banks and 47 percent owned by Aero Holding as a result of the debt-equity swap. One manager said, "The assets of the healthy military companies were used to pay the debts of the unhealthy civilian companies. It is immoral."

Aero Vodochody did not stay healthy for long. All of Aero's Soviet business was lost after 1990. Revenue fell in nominal terms. Profits turned to large losses, up to CZK 2,700 million in 1996, twice Aero's revenue that year. Bank debt mounted and exceeded CZK 5,000 in 1996 (nearly the same as the value of all of its assets and three times its revenue in 1989).

Aero Vodochody's managers had attempted to replace the lost Soviet business. A deal made with Nigeria before the Velvet Revolution came to nothing when Nigeria did not pay for the first deliveries. Airplanes for Tunisia were delayed due to Aero's lack of working capital and the customer's changing specifications. A large potential sale to India on which Aero bid was won by British Aerospace instead. A bid for Australian business failed.

There were two successes. Aero Vodochody's new managing director in 1990, Zdeněk Chalupník, had been with a Czech export trading company, had business contacts in the Middle East, and succeeded in concluding a sizable contract in 1992 to supply 48 airplanes to Egypt. Even this success was marred by production delays caused by Aero Vodochody's financial distress. The second sale was to for 36 aircraft to Thailand, also arranged by Chalupník through his foreign contacts. There were no new orders after the Thai order.

Aside from finding new customers for the existing airplanes, Aero Vodochody realized that it needed new products as well. The centerpiece was the L-159, derived from the L-59 but with an engine from the U.S. manufacturer Garrett and avionics integration from Rockwell. The NATO-compatible L-159 was to be Aero's main product for the next 20 years. Its claimed advantage in the market would be equal performance at lower life cycle cost. Aero Vodochody was counting on the Czech government to buy this airplane as it joined NATO and upgraded its military equipment. However, the contract for 72

airplanes, first suggested in 1995, was not signed until May 1997. Even so, the government order represented less than half the volume needed for break-even. Other customers had to be found.

By mid-1996, Aero Vodochody was technically bankrupt. Chalupník, the managing director, had resigned under fire and been replaced by Adam Straňák. Straňák was a life-long, young (about 40 years old in 1996) Aero Vodochody employee whose background was design engineering. He had some American business education in 1993, had traveled to the U.S. several times after the Revolution, and spoke English fluently. He was a pragmatic problem-solver with good relationships with key government officials. However, when asked about change within Aero Vodochody, Straňák acknowledged that relatively little had taken place while the firm waited for a new owner.

Straňák and the Czech government put a final privatization plan into operation in 1996. The government restructured the company financially, writing off some of its debt owed to commercial banks, (which were still government-owned) and swapping the rest of it for more equity held by one of the banks. The original plan was to sell one-third of Aero Vodochody to a new private owner that would be granted management control while the government retained two-thirds of the shares, via a bank and the National Property Fund. A public tender offer was announced in early 1997 at the same time that the Czech government was considering its acquisition of western fighter airplanes as part of its new NATO obligations. The bidding was won by a 90-10 joint venture between Boeing and ČSA³. The Boeing-ČSA joint venture bought 34-40 percent of Aero and agreed to invest nearly CZK 1 billion in Aero Vodochody. After a year of tough negotiations that included rescheduling CZK 3 billion in Aero debt and substantial government loan guarantees for development of the L-159, Boeing made its investment and assumed management control of Aero Vodochody. After over six years of ownership uncertainty and near failure, Aero Vodochody's future looked better in 1998.

Královopolská

Královopolská (Krah'-lō-vō-pōl-skah) was a medium-sized 100-year old manufacturer of

³ Boeing had purchased Rockwell's avionics business earlier - - the company that integrated avionics for Aero's L-159. Boeing also had purchased McDonnell Douglas which made jet fighters that were competing for new business in the region among new NATO members. Aero reported to McDonnell Douglas in St. Louis on a day-to-day basis after the strategic alliance was negotiated.

industrial equipment located in Brno, the second largest city in the Czech Republic. It made tanks and pipes and other metal parts for chemical plants, water treatment plants, and nuclear power plants, and it made cranes, bridges, and other steel structures. It had a small turnkey water treatment plant business but did not have its own R & D. The company had revenue of CZK 1,745 million in 1990 (about USD 50 million at the early 1998 exchange rate) and employed 5,500 people.

Královopolská's products were regarded as serviceable and relatively low in cost. Three-quarters of the company's revenue came from exports; half came from exports to the Soviet Union and COMECON countries, where there were few if any competitors. A single trading company handled half of Královopolská's exports while the other half was exported indirectly through the engineering firms that constructed the plants. Královopolská had very little first-hand knowledge of western business. In the domestic market, Královopolská was a monopoly supplier.

Královopolská was privatized in May 1992 in the first wave of privatization. Thirty percent of its shares were sold via voucher privatization, and the National Property Fund owned the remaining shares. In March 1995 a partnership among seven company managers called KENAP won a competition to complete Královopolská's privatization. The partnership agreed to buy a 51 percent stake in Královopolská from the National Property Fund over the next few years and was granted management control of the company immediately. The KENAP purchase was to be completed with revenues from Královopolská's operations.

After the Velvet Revolution, Královopolská lost most of its export business, except that Russia continued to buy one product that was essential for its oil production and paid U.S. dollars for it. Domestic sales to the chemical and nuclear power industries also fell as those industries weakened, but Královopolská's water treatment plant equipment sales benefitted from the new government's support for environmental clean-up.

Královopolská's management reorganized the company from a functional structure to product divisions in 1991 in order to decentralize profit responsibility and place focus on customers. New top managers were appointed in 1992 at the time of privatization. The general director was Zdeněk Pánek, who was 37 years old, educated in economics, and who came out of the turnkey business where he had

been a field representative. He undertook a competitiveness analysis of Královopolská's products benchmarked against European firms in 1993, he created subsidiaries to conduct trade with Russia and other eastern European countries, and he initiated forays into new, unrelated businesses. He created a strategy department and a marketing department. He developed a merit pay system and achieved ISO 9000 certification in 1994. The average age of top managers was 43. Pánek encouraged his employees to learn English though he was not an English-speaker himself. He had little experience with the West and did not trust western consultants.

Královopolská's technology was out of date because no new investment had been received during the last 20 years of central planning. For the long term the company wanted to build its own R & D capability, but for the short term new technology had to be purchased by licenses or obtained from alliances with foreign partners. However, no such agreements were concluded as of early 1998. Pánek discovered that it was difficult to break into western markets where relationships between suppliers and customers were long-established.

As many Czech companies discovered, changing the corporate culture was slow and difficult. Production had been king; but now customer focus, quality, and initiative needed to be developed. During the transition years, Královopolská posted better financial results than many other Czech companies. Although revenue decreased in 1990 and 1991, it increased after that. Yet the future of the company was not secure. The big water treatment plant business that benefitted Královopolská, peaked in 1996. New turnkey chemical plant business was being developed in the Middle East and Kazakstan, but these were unstable regions and new businesses for Královopolská. No new chemical plant orders had been received through 1997.

Pánek wanted to make Královopolská into a full-service engineering company, not just a tanks and pipes supplier. He wanted turnkey business to account for 70 percent of revenue by 1997, and by 1995 it had already passed 50 percent of revenue and accounted for all of Královopolská's profit. In 1995 Královopolská was recognized as one of the best third of all Czech companies. In 1996 it was the ninth largest heavy manufacturing company in the Czech Republic, by gross revenue. However, as the demand for new water treatment plants declined, developing new business became crucial. KENAP's

debt burden placed a premium on cash flow. Pánek initiated at least two forays into new, unrelated products, in search of cash. The first was an attempt to make brake shoes for the Škoda-Volkswagen joint venture and the other was an attempt to manufacture city busses. Neither venture succeeded and both cost the company time and money. There was no cash available for new investment.

In the fall of 1997 Pánek was briefly jailed while under investigation for "tunneling," a practice whereby assets from one firm (Královopolská) were moved to other firms (allegedly other KENAP-controlled entities or firms controlled by Pánek's family or friends) to the detriment of other shareholders of Královopolská. KENAP missed a payment to the National Property Fund for Královopolská shares in late 1997 and the Minister of Finance directed the Fund to reposes Královopolská. By 1998 Královopolská was back in government hands and Pánek was no longer managing the company.

PBS

První Brněnská Strojárna (Prv'-nee Br-nyěň'-ska Stroy-ír'-na), or PBS, was a manufacturer of boilers and turbines for power plants, located in Brno. The company also built complete power and heating plants on a turnkey basis, serviced old plants, and made a variety of other small industrial components. PBS employed more than 9,600 people and had revenue of CZK 2,050 million in 1990 (about USD 59 million at the early 1998 exchange rate).

Boilers and turbines made by PBS were well-engineered and long-lasting. With 140 years of history, PBS was regarded as a "family silver" company in the Czech Republic. PBS had its own research and development capability and its turnkey power plant business was a significant part of the company. In the early years of central planning PBS was a leader in the power generation equipment industry, but by the time of the Velvet Revolution the company's plant and equipment were out of date and product quality did not match western standards. Although labor wages were low compared to western companies, productivity also was low, so PBS did not have a unit cost advantage. Exports accounted for a quarter of PBS sales as of 1990, and 80 percent of all exports were made to the Soviet Union and COMECON countries through two trading companies.

Top managers at PBS after the Velvet Revolution were mostly technically educated. The

managing director, Richard Kuba, was 47 years old when he was appointed to this position in 1990. He had graduate education in engineering management, was acquainted with foreign customers, having been promoted out of the turnkey division, and was a fluent English speaker. His job before becoming managing director was to direct the "commissioning" of turnkey power plants.

PBS was privatized in 1992. Individuals and investment funds bought 36 percent of the shares and the National Property Fund held the remaining shares. Kuba believed that the company's final privatization would require some type of relationship with a foreign company. He thought it would take PBS too long to catch up technologically, and that new investment was needed from the West because finance was not available in the Czech Republic. Kuba discovered that PBS was not known to foreign customers, though one of its export trading companies was. Four big multinational companies dominated the world market. Kuba believed that PBS had to have a partner if it was going to thrive.

In 1992, Kuba sought advice from the International Finance Corporation (IFC). The IFC recommended separating the core boilers, turbines, and turnkey businesses from the rest of the company, and it helped secure proposals from foreign companies that were interested in PBS. The leading bidder was ABB, the Swiss-Swedish engineering and industrial giant. Kuba wanted to keep PBS whole and not become just a factory for a foreign owner, and he wanted new capital investment, technology transfer, and management know-how from a foreign partner. ABB wanted to increase its presence in eastern and central Europe and was attracted to the combination of boiler and turbine production that PBS had in the same plant as well as to PBS's large installed capacity for future servicing and its technical capability to build plants that burned brown coal relatively cleanly. A joint venture called ABB PBS began business in April 1993 with a 67 percent stake held by ABB. About 80 percent of PBS's revenue and just over half its employees went into the joint venture. Kuba was the managing director of the joint venture.

Business was good for the joint venture in its first two years. Orders and revenues increased and the company was profitable in 1994 and 1995. ABB PBS completed the bulk of its physical capital restructuring in 1995, including factory renovation, improvements in engineering facilities, and award of ISO 9000 certificates. Labor productivity increased markedly.

However, a variety of problems became evident in 1996. The technology role envisioned for ABB PBS in burning brown coal was slow to develop. ABB PBS did not have enough engineers, and was occupied with its domestic power plant boiler and turbine business. The domestic service business, which had been created as a separate profit center, was disappointing as new small competitors entered the market. The coal-fired steam boiler business in which ABB PBS had technological capabilities was becoming strictly a rehabilitation business; there were no new orders.

Relationships with ABB sister companies also were difficult. The Czech managers at ABB PBS had to learn how to simultaneously cooperate and compete with their sister companies that were already established in export markets. One project in Germany went badly for PBS and a new management information system was slow to come on line. Rather than running the old and new systems in parallel, the new system replaced the old, yet did not work. One manager said, "We lost control of the company for almost a year. We did not know any financial results while the new system was being installed." The company made losses in 1996 and 1997.

Human capital restructuring was more difficult than anticipated as well. To get employees to take responsibility, show initiative, and confront adversity were all challenges. ABB, the parent company, tried to help, but believed that local Czech managers and not expatriates would have to bring about the mentality changes.

In February 1997, ABB bought out PBS's one-third share and converted the joint venture into a wholly owned subsidiary, called ABB Energetické Systémy (ENS). The nature of the company's business changed. It no longer tried to compete in western markets. Instead the subsidiary focused on the former COMECON countries, the Middle East, and North Africa. Service and retrofitting were still in demand, but orders for new plants were scarce. Kuba was replaced by a younger engineer, Dan Ťok, who had headed the boiler division. The ABB country manager transferred to Norway. The future for ENS was quite as Kuba had hoped in 1992, even though ENS was the second largest heavy manufacturing company in the Czech Republic in 1997.

Veba (Vě'-bah) was a century-old maker of cotton textiles located in the small town of Broumov in northeastern Bohemia. With Poland on three sides and a mountain range on the fourth, Broumov was isolated from the rest of the Czech Republic. Veba's two main product lines were damask yard goods and terry products, principally towels and robes. The company's revenue in 1990 was CZK 650 million (about USD 19 million at the early 1998 exchange rate), and it employed 3,200 people.

The production process began with raw cotton imported by a state trading company, Centrotex. Veba did the spinning, weaving, finishing, and sewing. Product sales also were handled by Centrotex. Nearly half of Veba's products were exported, mostly high quality damask products to western Europe (much of which was re-exported to Africa). Less than 10 percent of Veba's revenue depended on the Soviet Union or COMECON countries. Most of the terry products, which were of standard quality, were sold domestically.

Veba was privatized in 1992 via voucher privatization; it was two-thirds owned by investment funds and one-third owned by individuals. No shares were held by the National Property Fund after 1994. In 1996, Centrotex bought two-thirds of Veba's shares from investment funds. Veba managers welcomed the Centrotex purchase because they were uneasy about being owned by investment funds that did not have expertise in the textile business or by a new majority owner that might shut down the mills to eliminate competition. Centrotex had helped Veba avoid one such hostile takeover in 1995.

A new general director, Josef Novák, was appointed in 1993. He was age 38, had an economics master's degree, was head of the sales function at the time of the Velvet Revolution, and had considerable experience with the high quality damask product in western export markets. He had traveled extensively during the communist era to the west and was a fluent English speaker. Veba had a tradition of strong management and little government ministry interference, partly because the textile industry was not considered to be important strategically during the central planning era. In addition, Veba's geographic isolation contributed to a sense of resilience and independence.

After privatization, Veba's managers developed new marketing and product strategies after conducting a strengths-weaknesses-opportunities-threats analysis. Novák concluded that Veba's main competitive advantage was product quality and that its main threat was low-cost, middle-quality Asian

producers. Veba accordingly sought to increase its business in the rich markets of western Europe and North America and to produce more high quality, high margin finished products. Initially, Veba extended its damask product line by adding king size bedding, finished tablecloths, and jacquard shirting, borrowing from Czech and German banks in 1993 to do so. Veba also entered a new market by selling complete sets of bedding, towels, and robes to luxury hotels in Europe.

Veba benefitted from the advice of a Dutch husband and wife consulting team. With their help, Veba installed an activity-based cost analysis system so that prices could be set correctly. The Dutch consultants, who had experience in Czechoslovakia and knew the Czech mind-set, were quietly influential in helping Veba managers improve a range of skills from communication to marketing to finance to logistics. Novák was willing to learn from them.

Business results for Veba were reasonably good throughout the transition. Revenue decreased in 1992 and 1993 as the Czech economy went into a steep decline, but the company was profitable in every year except 1993. Exports grew as a share of total revenue to 71 percent by 1995. Receivables that threatened to become a problem during the liquidity crisis in these years were managed vigorously and were kept small relative to revenue. Employment was steadily reduced as production volume recovered from its 1993 low. Real wage rates also decreased over the period. A long-term bank financing agreement was established in 1996 with Komerční Banka, the Czech Republic's largest commercial bank.

Novák had developed three strategic plans by 1997. The first was product and market expansion for the period 1993 - 1996. The second was consolidation for the period 1995 - 1999. During this period, physical facilities were rationalized and consolidated, logistics were improved, and costs were cut. The third strategy would take Veba into the twenty-first century with expanded production to the east where labor was less expensive. Novák said, "We are on our third vision. Those without their first will be our victims."

Novák faced the same challenges as other firms with changing the mind set of employees. He took a two-tiered approach to change. Concerning rank and file employees, he said, "We don't try to change everything at once. It is too much. It would block our employees. We change one thing at a

time, step-by-step." However, concerning his managers, he took a different approach. He said, "If you treat them like managers, they will behave like managers." His top managers were given company cars, cell phones, credit cards, laptop computers, and mortgage loan guarantees. In return they were expected to take initiative and responsibility and help lead the company under Novák's firm guidance.

For the long run, Novák managers knew that some Czech textile firms would not survive because the industry was over-built and the technology was low-level. He believed the future required Veba to develop export markets in North America ("our emerging market," said Novák). Veba achieved its first large contract for damask products in the U.S. in 1997.

Zetor

Zetor (Zě'-tōr) was a monopoly manufacturer of medium-sized farm tractors located in Brno. It was the biggest enterprise in Brno with 10,000 employees, annual output of 27,700 tractors, and revenues of CZK 4,000 million at the time of the Velvet Revolution (about USD 115 million at the early 1998 exchange rate). Zetor also had two small businesses making spherical roller bearings, and castings and forgings, of which only a few of the latter were used in tractor manufacture.

The Zetor tractor was a low-specification machine that was sturdy, easy to repair, simple, yet technologically up-to-date. It was low in price and represented good value for money. It had a reputation as the best of the communist tractors before 1989. Zetor tractors were assembled at the Brno plant from key parts -- engines, tires, cabs -- purchased from sole suppliers as well as parts made by Zetor. The company also had its own research and development facility.

Over three-quarters of Zetor's output was exported at the time of the Velvet Revolution. Nearly one-third of all its tractors went to the Soviet Union and COMECON markets and another 25 percent was exported to countries in western Europe and North America. Zetor's single largest customer was the government of Iraq which accounted for another quarter of its sales in 1989. Export sales were handled entirely by Motokov, a state export trading company. Domestic sales were handled by Agrozet, another state trading company. Zetor designed and manufactured tractors. It did not sell, finance, or service tractors.

Zetor was privatized in July 1993, a year later than most companies like it, through a merger with its already-privatized engine supplier, Brno Diesel. The bearings business and the non-productive assets were privatized separately. The National Property Fund owned 71 percent of shares. In October 1994, Zetor was recapitalized in a debt-equity swap, and the Konsolidační Banka (a government bank created to facilitate privatization) acquired 79 percent of Zetor's shares.

Business conditions facing Zetor in the early years of the transition were poor. Tractor exports to the former Soviet Union and COMECON markets dropped more than half, and exports to Iraq disappeared completely because of the Gulf War embargo. Trade credit and bank finance were almost impossible to obtain, and Zetor's receivables were almost two-thirds of revenue in the 1992-94 period. Zetor lost money every year between 1994 and 1997 and was expected to lose money through 1999.

Zetor's first post-Revolution managing director, was Jan Otoupalík, a "68er." He had been the deputy director for the commercial function in 1968 when he was demoted to the factory floor during the reprisals following the Prague Spring. Otoupalík said his primary goal after the Revolution was to keep the factory operating.

Otoupalík tried to broaden Zetor's product line and use idle plant capacity by producing small tractors for an Italian tractor company in 1992, but the agreement lasted less than a year because Zetor was unable to meet the Italian customer's demand for a dramatically lower price. Zetor was also defrauded by an unscrupulous agent in a deal to sell 14,000 tractors to Libya. Zetor built its own domestic dealer network out of the former Agrozet dealers, but sales continued to fall. It began to build a foreign dealer network in countries where Motokov was not represented and to deal with Motokov dealers abroad directly where they were strong in an attempt to establish distribution capabilities. Zetor's relationship with the Motokov parent company was rocky, in part because Motokov held Zetor's largest receivable in the amount of CZK 1 billion in 1991.

Otoupalík believed Zetor needed a foreign partner to help it sell tractors and to invest in the factory. He negotiated with John Deere, with which he was acquainted from the 1960s. (Otoupalík had visited the U.S. in the 1960s and was fluent in English and German). Zetor and Deere reached an agreement in 1993 under which Deere would buy tractors from Zetor for sale as Deere machines through

Deere's network, especially in Mexico and other Latin American countries. In 1994 Deere accounted for one-third of Zetor's sales. Deere located five of its employees in Brno to help Zetor improve its manufacturing, quality, parts distribution, and marketing. Deere was motivated to cooperate with Zetor because most growth in the industry was in developing countries where Deere-made tractors were too expensive. Deere needed a low-cost, good quality supplier and Zetor needed new customers.

A new managing director in his 40s, Miroslav Poláček, took over Zetor in July 1993 as a condition of the Zetor-Deere selling agreement. Poláček had been head of production at Brno Diesel, the engine company. In 1993 Poláček had very little experience in the West and was not an English-speaker. He made technical improvements and design modifications in Zetor's tractors in 1994 and again in 1996 and 1997. In 1997 Zetor began making some key parts such as front axles and cabs in-house but continued to purchase most other parts from sole suppliers. He undertook some rationalization and modernization of the plant beginning in 1995, financed with new borrowing, but was unable to complete it. Bank loans increased to half of Zetor's total assets by 1995.

Zetor made progress in export marketing. A joint venture with Motokov to assemble tractors in Poland started in late 1995 and showed early sales success. A similar joint venture in Brazil started in 1998. A new marketing director was brought in from Motokov in 1996.

Despite some progress, Zetor's performance was unsatisfactory. Output only inched up from its 1992 low point, and revenue decreased in real terms. Big losses were suffered each year. Labor productivity appeared to go down as employment decreased less than output after the Revolution. Poláček noted that employee attitudes had not changed yet; they lacked motivation and initiative. The world tractor industry was dominated by four large producers. The industry was over-built and going through a shake-out.

Perhaps the most important event of 1996 was the decision of the Konsolidační Banka to sell its shares in Zetor, and the surprising decision of John Deere not to buy Zetor. Deere had actually reduced its purchases of Zetor tractors after 1994 because of dissatisfaction with Zetor's quality and delivery timeliness. Zetor was disappointed not to get any investment from Deere. Deere and Zetor continued their marketing agreement, though Deere orders for early 1998 were only a small fraction of previous

orders. Deere was looking for a new low-cost supplier and Zetor was looking for new customers. Poláček believed that Zetor could not survive without a strategic partner, just as Otoupalík had.

Point of Departure: Theories of Radical Organizational Change

The conceptual starting place for the analysis is the punctuated equilibrium model of organizational change (Tushman & Romanelli, 1985; Gersick, 1991). Punctuated equilibrium theory suggests that firms experience two distinctly different types of change. The first is incremental change, characterized as convergent change with the goal of improving the alignment of the firm internally and with respect to its competitive environment. Incremental change is fine tuning. It is an extrapolation of the status quo. Radical change, in contrast, is discontinuous and fundamental. Radical change involves new strategies, structures, and capabilities. Radical change is divergent, not an extrapolation or an alignment.

Radical change is qualitatively different from incremental change (Gersick, 1991) and is triggered by major shifts in the competitive environment or a change in leadership, or both (Romanelli & Tushman, 1994). However, not all firms faced with a major shift in their competitive environment undertake radical change. Nor do all firms with new leaders. This research suggests three variables that might account for the occurrence of radical versus incremental change, given a macro-level shift in the competitive environment. These are firms' starting capabilities and resources, the competitive environment within which they operated, and the type of leadership available to them during the decade after the Velvet Revolution. I will argue that leadership interacts with starting resources and capabilities and competitive conditions to produce change.

Starting Resources and Capabilities

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.

Resources and capabilities can be a source of organizational inertia because they represent solutions to past problems, they are embedded deeply in routine behavior, and they often embody the core values of firms that are the most resistant to change (Burgelman 1994; Nelson & Winter 1982). 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 but not under market conditions. Adapting existing resources and capabilities and acquiring new appropriate resources and capabilities were central features of organizational change in the Czech Republic. As summarized in Figure 3, three existing resources and capabilities seemed particularly important for these firms; direct experience with customers and competition, having more than one core product, and organizational completeness - - being more than just a manufacturing enterprise.

Experience with Customers and Competition

Perhaps the most important capabilities that facilitated radical change were those developed from contact with competitive markets and demanding customers⁴. 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. Aero Vodochody was perhaps the most isolated from competition, its sales resulting from government-to-government negotiations among Soviet Bloc and non-aligned countries. Aero Vodochody employees had no direct experience with competitive bidding and the vagaries of changing customer demands. Zetor's experience with competition was muted by the role of Motokov. Though Zetor sold its tractors in competitive markets, managers had little knowledge of customers and competition because Motokov did the selling and absorbed most of the know-how associated with competitive conditions. PBS and Královopolská had experience with customers but not with competition, based on their turnkey operations. Veba, the textile company, never stopped selling its products in Germany and Austria after the rise of communism and its damask sales manager traveled to

⁴ The same may be said for firms in the West experiencing deregulation or new competition. AT&T is a case in point. More than ten years after divestiture, AT&T was struggling to find its place in a competitive environment. Declining market share, unsuccessful acquisitions, unsuccessful forays into new businesses, and lethargic stock performance were among the indicators of AT&T's difficulty adjusting to its new competitive conditions.

the West so that competitive know-how did not reside solely in Centrotex. The firm's experience with competition and with demanding customers enabled its transformation because it already had the capability to compete at the highest quality levels.

More than One Core Product

Firms with more than one core product were better-able to adapt because their resources and capabilities were less focused in one area. This is an example of the benefits of generalism versus specialism. 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, 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. PBS similarly benefitted from having both turbine and boiler businesses, in addition to its plant design and construction business. Veba made two different types of cloth at different quality levels for different uses and different markets.

Specialist companies had more difficulty changing. Zetor made only small to medium size tractors. Its tractors had about 60 percent interchangeable parts. All were built to the same quality standard and sold to similar customers in the same markets. 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.

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 new product development, finance, marketing, and sales they are able to create favorable competitive conditions for themselves in the market. Firms with strong research and development operations may invent new products and gain first mover advantage. Firms with sophisticated finance operations are able to secure adequate financial resources to compete effectively. Firms with well-developed marketing and sales functions are able to create demand and persuade customers to purchase their product. Absent these capabilities, firms facing turbulence are unlikely to know how to be proactive or what to look for, how to understand it, and what to do about it if the competitive environment changes.

Czechoslovak firms had few boundary spanning capabilities within their structures. Most were manufacturing firms with 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). None had its own export department. Many did not have their own R & D. Královopolská was typical. It was part of a larger industrial "koncern" in which R & D was centralized and separate.

PBS had some boundary spanning capabilities because of its turnkey business and because it was responsible for the R & D that went into power plant design and construction. Managers at PBS understood the importance of satisfying customers' needs and making quality products better than managers in firms with no customer contact. Aero Vodochody and Zetor had their own R & D but did none of their own marketing or selling. Královopolská had a small turnkey business but no R & D. Novák from Veba had traveled abroad to meet damask customers and, as a result, developed a keen understanding of Veba's customers. Though Centrotex handled sales formally, Novák was experienced in the function and developed a personal capability to market and sell his firm's products.

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 and if these resources and capabilities are leveraged by top management. To the extent that firms have existing capabilities and resources that are appropriate for or adaptable to the new competitive circumstances, and to the extent that leaders recognize and develop these capabilities, the chances of radical change are increased. Absent adaptable resources and capabilities and leaders who recognize them, firms are likely to rely on old, inappropriate capabilities and attempt only incremental change even though a shift in competitive conditions clearly calls for radical change.

Competitive Environment

Change does not occur in a competitive vacuum. Firms compete in industries that are more or less open to new competitors and growth. Three related characteristics of the firm's competitive environment are particularly noteworthy; competition in the firm's industry, munificent market niches, and new tangible resources (Figure 4).

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.

All of the firms in this study 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 kept the pressure high for radical change yet the odds of success low. 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. Others adapted on their own.

PBS, with its joint venture with ABB, went from being one of many small firms in the industry with no name recognition outside the region to part of one of the four or five major competitors in the global power generation industry. The alliance with ABB allowed PBS to modernize more quickly than its 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 Boeing that began formally in 1998. Aero Vodochody had not undertaken significant change before the Boeing alliance. The Czech government protected it from bankruptcy throughout the period. With the Boeing strategic alliance, Aero Vodochody became viable, gained credibility, and gained access to markets that would not have been accessible otherwise. As with PBS, Aero Vodochody's affiliation with an industry giant positioned the firm more advantageously than would otherwise have been the case.

Veba's competitive environment was different from the others. Though also over-built, the textile industry was not at all concentrated. There were some 400 textile firms in the Czech Republic. Veba was Centrotex's largest house yet Veba accounted for only about five percent of Centrotex's sales. The same structure characterized the global industry. Veba had a defendable niche in this industry in 1989 (damask) and developed another during the 1990s (luxury terry cloth). Veba's partnership with Centrotex did not change Veba's position in its industry significantly.

Zetor's commercial agreement with Deere, though laden with potential for both firms, did not result in a better competitive position for Zetor. The tractor industry was highly concentrated and over-capacity, yet growth was occurring in the developing world, precisely the markets in which Zetor tractors were competitive. Unfortunately, the two firms could not agree on conditions and the hoped-for sale of Zetor to Deere fell through. By early 1998 their commercial relationship was in danger as well.

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 entered a new related niche in which their existing resources and

capabilities were relevant were more likely to change than other firms (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 king size damask bedding. While there were many terry producers in the world, Veba was able to adapt its damask quality capability to produce the highest quality terry at a competitive price. Veba also entered the North American bedding market with its high quality, low price damask sheets. Importantly, Veba did not choose to compete on price against lower-quality Asian producers.

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 between 1991 and 1996. When government priorities shifted, so did Královopolská's fortunes. PBS benefitted from the government's emphasis on clean air. It's retrofitting business was a major source of revenue during the period. Aero Vodochody survived, in part, because the Czech Republic began the process of gaining NATO membership. Zetor, on the other hand, suffered domestically because of the Czech government's agricultural policy and in its export markets because of the Gulf War. Nevertheless, Zetor's joint ventures in Poland and Brazil were examples of seeking new, munificent niches for existing products.

New Tangible Resources

The shortage of tangible resources for firms in the Czech Republic after the Revolution was a major obstacle to transformation. Unless a firm had been important to the Soviet Union, it probably had not received capital investment funds for a decade or more and its technology was probably a generation or more out of date. After the Velvet Revolution, a clear distinction developed between firms that were able to increase their tangible resources quickly and substantially and firms that were not able to find new tangible resources.

PBS's future was all but guaranteed 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

was happy enough with the relationship that it purchased the remaining 1/3 of the joint venture in early 1997. Aero Vodochody, after near bankruptcy, was joined by Boeing in a strategic alliance. This agreement allowed the firm to develop, market, produce, and finance the sale of its new jet, the L-159s, to countries other than the Czech Republic, a key ingredient of Aero Vodochody's future survival. Part of the Boeing negotiation involved the government's restructuring of Aero's debt and making loan guarantees, both of which represented new tangible resources for Aero (in addition to Boeing's promised capital investment).

Veba was able to secure debt financing rather than equity capital to facilitate its transformation (the Centrotex purchase involved no new capital). Veba made a sizable investment in new equipment in 1993, which was financed largely by a six-year loan 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 after the Revolution. Veba's aggressive debt financing in 1993 allowed it to produce high quality king size sheets at a low price by 1995, thus enabling its entry into North American markets. 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 with no new capital. Two years after the purchase, Královopolská was struggling to produce enough cash to pay for KENAP's shares. KENAP finally defaulted and the National Property Fund repossessed Královopolská in early 1998. During the two years KENAP "owned" Královopolská there was not enough cash to invest in new management information systems, technology, and research and development. Zetor similarly floundered with no new capital, despite three instances of debt restructuring supported by the government. When the much-anticipated Deere purchase fell through, Zetor's prospects for radical change diminished.

Figure 4 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 did not bode well for profitable operation for any firm, let alone these firms. For firms without a defensible niche, the strategies that produced the most change included an alliance with a stronger partner and entry into new munificent markets. Most firms also found that new financial resources were necessary for modernization and new product development. Without the requisite leadership to recognize and exploit these opportunities, the potential benefits from alliances and new markets were not realized.

Executive Leadership

Leaders interpret, energize, and enable change (Tushman & Romanelli, 1985; Pearce & Branyiczki, 1993; Allmendinger & Hackman, 1996). Top managers understand, interpret, and mobilize a firm's resources and capabilities in the competitive environment consistent with their own background and experience (Weick, 1993). Leaders define the problems their companies face in terms of their own experience (Dearborn & Simon, 1958) and therefore enact solutions that are familiar and within their range of competence (Jervis, 1976). Leaders emphasize some capabilities more than others, depending upon their background and seek different competitive solutions, also depending upon their background. Prior to the Revolution, managers had little discretion and therefore played only a small role in the success or failure of their firms. After the Revolution the latitude for action was much greater, so the choices that managers made had the potential to affect company outcomes more significantly.

Leaders in the Czech Republic understood their firms' resources and capabilities differently, depending upon their experience. They apprehended their firm's competitive environment in terms of their experience before and after the Velvet Revolution as well. Some managers learned new role behaviors, developed new skills, and took on new tasks to lead their firms successfully. Others relied on old routines and were less successful. The way in which top managers in these companies interpreted and enacted the world around them depended primarily upon their functional background and experience, but also on the role models and advisors available to them after the Revolution, and their self-efficacy (Figure 5).

Functional Background and Experience

The managing directors in these companies were trained in either engineering (Otoupalík, Poláček, Straňák, and Kuba) or economics (Novák and Pánek). Some had experience in production (Poláček) while others were experienced in design engineering (Straňák), plant engineering (Kuba) or "commercial" activities (Otoupalík, Novák, and Pánek). Straňák and Poláček had rather little experience with customers and markets, while Pánek and Kuba had customer contact through their turnkey operations, Novák had customer contact through his travels, and Otoupalík had some experience with Deere. Some, such as Poláček, had only production experience while others, such as Novák had both production and commercial experience.

After the Revolution, companies needed top managers with an outward focus who understood customers and markets. This was most likely to come from commercial experience. Commercial experience, though different under central planning than competition, was relevant for post-Revolution management because it involved attention to distribution and sales. It was the one function that was outward-looking under central planning. Otoupalík rekindled Zetor's long-dormant relationship with Deere. Novák expanded the firm's highest quality capability based on market demand in western Europe and North America.

Managers developed strategies that were consistent with their backgrounds. Pánek tried to turn Královopolská into an engineering company that designed and built the water treatment and chemical plants with which he was familiar. Straňák tried to make Aero Vodochody attractive to Boeing on the basis of its design engineering capability. Poláček modified and improved his existing products and tried to rationalize the production process. Zouhar, his marketing manager, created Zetor's domestic sales, service, and financing subsidiary as well as the parts subsidiary, building on his background as the UK country manager for Motokov.

The more aggressive leaders after the Revolution, Novák, Pánek, and Kuba, had more varied experiences in their firms than others. Kuba knew all about power plants, not just boilers or turbines, because he was the field representative who commissioned the plant, took care of on-site trouble shooting, and solved start-up problems. Pánek fulfilled a similar function at Královopolská before the

Revolution, though on a smaller scale. Novák began his career at Veba in sales and assumed responsibility for production later in his career. His travels to the West before the Revolution helped him understand how his products compared to western-made products.

These managers with more general backgrounds were able to perceive more of their firms' interdependencies and capabilities and were able to enact more comprehensive changes than managers with more narrow backgrounds (Weick, 1993). Their experience with customers was extremely relevant, as was their broader perspective in understanding their firms and the competitive climate. Their solutions to problems were appropriate for market conditions. Novák in particular (and Pánek to some extent) focused on customers, quality, and new markets. Less outwardly-focused leaders paid attention to number of units produced or plant utilization with less concern for what customers wanted. All managers were building on old routines, but some old routines inhibited radical change while others facilitated it.

Role Models and Advisors

Veba's Josef Novák and PBS's Kuba benefitted from good post-Revolution advisors. Novák benefitted from a very fruitful relationship with a Dutch consulting team. This husband and wife pair worked side-by-side with Novák and his managers on matters large and small, ranging from strategic planning to MIS to activity-based costing. The relationship worked well because the consultants understood Czech history and culture and worked with Novák to derive practical solutions to pressing problems in a way that took into account the business realities of the day. They did not write reports that sat on the shelf. As a result, the consultants earned the trust and respect of Veba management which, in turn, made it easier for Novák and his top managers to learn from the consultants.

Pánek, in contrast, had the opposite experience with and view of consultants. He had one bad experience with a German firm soon after the Revolution and was opposed to consultants from that point forward. Pánek's view of business partners was that they should either join the company as an employee or join the company as an equity partner. Consultants were neither as role models nor teachers for Pánek.

Kuba at PBS benefitted from a strategic business partnership with one of the world's most respected companies, ABB. Apart from technology transfer, he and his managers learned management

know-how from ABB. He said,

The best thing about ABB is being able to learn new management techniques from ABB sister companies. We can benchmark ourselves, identify our weaknesses, and improve... The most learning comes from bi-monthly business-area meetings. We do presentations and they ask really tough questions. *THIS* is management know-how transfer (his emphasis).

Learning from ABB was not easy. Both Kuba and his ABB country manager agreed that transfer of management know-how had taken longer than expected and was more difficult than either anticipated. The cultural differences between the two were far greater and far more consequential than either predicted.

Self-Efficacy

Leaders must be available, mobilized, decisive, and willing to take the reasonable risks. Managers who perceive they have greater discretion initiate more change (Huber, Sutcliffe, Miller, & Glick, 1993). Those with greater self-efficacy are more likely to perceive they have greater discretion, whether or not they do, and they are likely to make more consequential changes (Bandura & Wood, 1989). 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 early 1998. While both of these firms were legitimately hamstrung by their unsettled ownership, neither showed the kind of proactivity observed at Veba, Královopolská, and PBS.

Pánek at Královopolská and Novák at Veba made bold decisions as early as 1992, Pánek to pursue turnkey projects and Novák to borrow extensively for product expansion. In retrospect these were obvious decisions, but at the time they were risky and the managers who made them were taking far more initiative than had been permitted prior to the Revolution. Novák and Pánek, perhaps because of their relative youth (both in their late 30s) or because of their experience with competitive markets on the one hand and turnkey products on the other, believed they had the discretion to make change and did so,

even though neither company's ownership future was settled. Both were self-confident men. If the allegations of Pánek's illegal activity were true, he was perhaps too self-confident.

Figure 5 about here

This discussion of leadership suggests that leader characteristics interact with company and industry characteristics to produce change. Leaders interpret and enact that with which they are familiar and competent. Pánek tried to transform Královopolská from a supplier of tanks and pipes to a designer, manufacturer, and builder of water treatment and petrochemical plants. These strategic choices were informed by his experience as a field sales representative in the small pre-Revolution turnkey water treatment plant business. The post-Revolution government obliged his aspirations, in the short run, with funding for new water treatment facilities. However, when the funding was gone, Královopolská found itself without the capabilities it needed to build petrochemical plants domestically (in an already over-capacity market) and without new export markets. Královopolská's competitive conditions, combined with its lack of financial resources and Pánek's dislike of consultants, led to cash flow problems in 1997 that resulted in KENAP's default, Pánek's separation from Královopolská, and Královopolská's return to the National Property Fund.

Novák, too, developed a strategy that was informed by his experience. Unlike Pánek, however, he built the company's future on long-term entry into munificent markets in North America rather than short-term exploitation of the government's domestic policy (and entry into an already over-crowded market). Novák could use Veba's cost advantage in North America. Pánek had no cost advantage in the Czech Republic. Novák also differed from Pánek in his willingness to learn from western advisors. Novák built on his experience to incorporate state-of-the-art western management practices.

Discussion and Conclusions

Radical change in these five companies depended upon the firms' starting resources and capabilities, the competitive environment in which they operated, and their leadership. Most importantly,

the efficacy of leadership in the change process was a function of leaders' interpretation of their situation - - what was needed in the new competitive conditions. Leaders' interpretation and enactment of the change requirements depended upon the firm's resources and capabilities and its competitive environment, but also on the leaders' experience, their functional backgrounds, their advisors and role models, and their self-efficacy. Those whose experience matched the demands of competition and their company's adaptable capabilities undertook radical change. Those whose experience was either irrelevant in the new conditions or who tried to use old, obsolete capabilities, did not. Only Pánek tried and failed to undertake radical change. Novák and Kuba, with different degrees of success, did undertake radical change while Straňák and Poláček did not.

The analysis is summarized in Figure 6. I suggest that each of the three factors has an independent effect on change, but that they interact as well to produce the radical change called for by the change in governments. Firms with more adaptable resources and capabilities were more likely to change (1), and change was greater when the competitive environment was tolerable (2) and if top management interpreted and enacted the firm's capabilities and resources appropriately (3). Firms that operated in tolerable competitive environments were more likely to change (4), especially if they had leaders who understood and enacted the competitive environment successfully (5). Finally, firms with leaders who had the requisite experience, advice, and self-efficacy were more likely to change (6).

Veba illustrates successful radical change quite well. 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. Novak's background that included training in economics, experience in sales, travel to competitive markets, excellent advisors, and considerable self-efficacy combined with his firm's top quality capability and the availability of relatively munificent niches to produce changes that took the company forward successfully into the future. He built on Veba's top quality capability, not its low cost. He looked for new market niches (bedding in North America) and pursued them aggressively with adequate resources. He articulated and enabled a positive, realistic future for Veba. He displayed relentless optimism and implemented aggressive incentives for managers to change. He recognized that highest quality was the basis for

Veba's future success, not low cost (as other top executives assumed), though he sought to determine, control, and reduce costs more aggressively than other managers, with the help of his consultants. He was aggressive with his managers, using rewards rather than punishment to change behavior. 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 leader for the times.

Figure 6 about here

This research carries with it the usual assets and liabilities of case research. The data are qualitatively rich, true to the unfolding events in central Europe, and a firm foundation for new theory. At the same time, the results are generalizable to theory but not to other firms. The research contributes to punctuated equilibrium theory by identifying key factors that produce radical rather than incremental change, and a process by which change might take place. Romanelli & Tushman (1994) found that radical change was triggered by a major change in the competitive environment or a CEO succession or both. However, they did not investigate why some firms undertook radical change, given the same change in the competitive environment, and others did not (apart from CEO succession).

This analysis suggests that the likelihood of radical change can be predicted better if we include consideration of the firm's firm's adaptable capabilities and resources at the outset (consistent with Haveman, 1992), the competitive climate that allows an opportunity to compete, and the interaction of leadership background with each of these. Absent adaptable capabilities and resources or in extraordinarily inhospitable competitive environments, incremental change is more likely than radical change. Absent leadership that can apprehend and enact appropriate new strategy, given the firm's capabilities and competition, incremental change is more likely than radical change. Only when leaders have relevant background and experience, useful advisors, and high self-efficacy to combine with their firm's capabilities and competitive situation is radical change likely.

References

- Allmendinger, J. & Hackman, J.R. 1996. Organizations in changing environments: The case of East German symphony orchestras. *Administrative Science Quarterly*, 41: 337-369.
- Bandura, A. & Wood, R.E. 1989. Effect of perceived controllability and performance standards on self-regulation of complex decision-making. *Journal of Personality and Social Psychology*, 56: 805-814.
- Burgelman, R.A. 1994. Fading memories: A process theory of strategic business exit in dynamic environments. *Administrative Science Quarterly*, 39: 24-56.
- Dearborn, D.C. & Simon, H.A. 1958. Selective perception: A note on the departmental identification of executives. *Sociometry*, 21: 140-144.
- 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.
- Jervis, R. 1976. *Perception and misperception in international politics*. Princeton, NJ: Princeton University Press.
- 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.

Nelson, R.R. & Winter, S.G. 1982. *An evolutionary theory of economic change*. Cambridge, MA: Belknap.

Newman, K.L. & Nollen, S.D. forthcoming. *Managing radical organizational change: Company transformation in emerging market economies*. Thousand Oaks, CA: Sage Publications.

Pearce, J. and Branyiczki, I. 1993. Revolutionizing bureaucracies: Managing change in Hungarian state-owned enterprises. *Journal of Change Management*, 6: 53-64.

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.

Weick, K.E. 1993. Organizational redesign as improvisation. In G.P. Huber & W.H. Glick (eds) *Organizational change and redesign*. New York: Oxford University Press, pp. 346-379.

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, 11/97	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 (Including joint venture partner and owner as of 2/97 ABB)	Richard Kuba	Boilers and turbines for power generating plants. Turnkey power plants.	7/95, 7/96, 4/97, 11/97	Company documents, press releases, ABB personnel
Veba (including Centrotex, owner as of 4/96)	Josef Novák	Textiles -- damask and terry cloth	7/95, 7/96, 4/97, 11/97	Company documents, Centrotex personnel (trading company and owner as of 7/96) CMC # 93-008 and 94-022 by J. Matesová
Zetor (including John Deere, commercial partner)	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, 11/97	Company documents, media reports, John Deere employees, former employees, banks

Figure 2: Company Characteristics

Company	Revenue 1990/1996 (CZK million)	Profits before Taxes 1990/1996	Employment 1990/1996	Exports (% of revenue) 1989/1995	Dependence on Soviet Bloc ^a (% of 1989 revenue)	Average Receivables 1992-1994 % of revenue/ ratio to payables
Aero Vodochody	1,750	125	3,600	95	> 90	33
	1,340	(2,688)	2,300	100		1.1
Královopolská	1,745	120	5,500	75	50	31
	3,000	49	2,800	na		0.8
PBS	2,050	224	9,600	24	20	38 ^c
	10,960	(820)	3,200	28		2.0 ^c
Veba	650	111	3,200	46	<10	16
	1,100	9	1,800	71		1.4
Zetor	4,000 ^b	424	10,000	75	50	66 ^c
	4,570	(1,600)	5,500	92		1.4 ^c

^a COMECON + domestic defense sales. Includes sales to Iraq for Zetor.

^b Author's estimate

^c Excludes 1993

Figure 3: Companies' Resources and Capabilities

Company	Experience with Competition and Customers	More than One Core Product or Market		Organizational Completeness	
		Products	Markets	Customer Contact	Research & Development
Aero Vodochody	No pre-Revolution sales in West	One	USSR and allies	Only as advisors	Yes
Královopolská	No pre-Revolution sales in West	Three, two related	Only East Bloc	Small turnkey business	No
PBS	<20% pre-Revolution sales in West	Three, related	Primarily East Bloc	Large turnkey business	Yes
Veba	50% pre-Revolution sales in West	Two, but different basis of competition	Western Europe, West Africa, CZ	Informally, through GM's travels	Not applicable
Zetor	25% pre-Revolution sales in West	One (plus bearings)	Primarily Iraq, Western Europe, CZ	Very little	Yes

Figure 4: Competitive Structure of Industries

Company	Industry	Barriers to Entry	Threat of Substitutes	Industry Rivalry		Power of Buyers	Power of Suppliers
				Concentration	Capacity		
Aero Vodochody	Aircraft	High	Low	Very high Political considerations	Global overcapacity and consolidation	High Governments	Low
Královopolská	Chemical equipment	High	Low	Low	Overcapacity	High Municipalities & large companies	Low
PBS	Power generation	High	Low	High Four dominant companies. Tens of others.	Global overcapacity. Growing demand in CEE	High Municipalities & large companies	Low
Veba	Textiles	High	Moderate	Very low	Global overcapacity. Asian low cost producers	Low	Cotton is a commodity
Zetor	Tractors	High	Low	High Four dominant competitors. Zetor high in second tier.	Overcapacity and declining demand in West. Growth in 3rd world	High Concentration of dealer networks	Low in theory. Not so for Zetor

Figure 5: Leadership for Change

Leader	Function/ Education	Experience with Customers	Experience with Markets	Advisors and Relationships	What did Leader Enact?	What did the Market Want?
Straňák (Aero Vodochody)	Design Engineering Engineering	no	no	Boeing in the future	government bailout strategic alliance for resources	strategic alliance for resources
Pánek (Královopolská)	Field Sales Economics	yes	no	none	water treatment and chemical engineering company from within	strategic alliance for engineering capabilities and resources
Kuba (PBS)	Plant Commissioning Engineering	yes	no	ABB	strategic alliance for markets and resources	strategic alliance for markets and resources
Novák (Veba)	Sales Economics	yes	yes	Dutch consultants	quality	quality
Otoupalík (Zetor)	Commercial Engineering	Deere	Deere	none	Deere relationship quantity	quality and service
Poláček (Zetor)	Production Engineering	no	no	Deere, but not very constructive	quantity and product modifications	quality, service, and good value

Figure 6: Enacting Radical Organizational Change