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The Environment which Gave Rise to High-Speed Management

We're in a world that is obsessed with speed. "Time" has won the race to become our most valued resource. . . . Time to market . . . that is, the elapsed time between product definition and availability . . . is becoming a highly competitive issue for U.S. companies, and in the 1990s it may be the single most critical factor for success across markets. . . . Speed to market creates opportunities in market shares, market leadership and profits.
(Vesey, 1991:23-26)

During the latter half of the 1980s three trends converged which gave rise to the emergence of high-speed management.

First, a series of technological breakthroughs have taken place which make possible the generation, processing, and instant delivery of information and communication throughout the world creating a revolution in organizational manufacturing, marketing, and management.

Second, this revolution is restructuring international and national economies in favor of regions with a large-core market, a strong scientific and technological workforce, and a private economic sector which can attract capital in order to provide the infrastructure necessary for increased growth and rapid technological change.

Third, this information and communication revolution and the economic restructuring it induces, create a business climate characterized by rapidly changing technology, quick market saturation, and unexpected

competition making succeeding in business very difficult. Let us briefly explore each of these trends in turn.

The Revolution in Information and Communication Technologies

The information and communications revolution began in the 1950s and has proceeded to change every aspect of corporate life. At the center of this revolution is a constellation of new management tools based on *computers* and *telecommunications* and classified as *new manufacturing, marketing, and management technologies*. Taken collectively, these tools provide a new way of thinking and acting in regard to all the problems which confront management in dealing with a rapidly changing economic environment.

New manufacturing technologies employ computer-aided and telecommunication linked engineering, manufacturing, and resource planning processes to create a sustainable competitive advantage. New manufacturing technologies allow for the development, production, sales, and service of customized new products at low cost, high quality, and easy service throughout the world. Allen-Bradley, Milwaukee manufacturer of industrial controls, recently opened one of the world's most modern computer-aided and telecommunication-linked manufacturing facilities. This facility can produce 1 of a product or 100,000 of the product at the same per unit cost. This plant can receive the specifications for an order one day and deliver the product at its destination the next, putting the average turn-around time on orders from four weeks to two days. Manufacturing costs decreased by 40 percent while profits increased by 32 percent and product quality control by 200 percent (Port, 1986:100-108).

New marketing information technologies employ computer-aided and telecommunication-linked environmental scanning, electronic test marketing, and real-time merchandising for speed in providing customers with world-class products when and where they want them in order to increase market shares. Campbell Soup Company, for example, can scan the environment to determine the need for a new soup; model its contents; simulate its production; calibrate its cost, price, profit, and sales potential; develop an artificial intelligence system to control the rate and quality of production; pretest

its name, taste, shelf placement, the type and content of its advertising; and determine its test markets—reducing a management decision process which used to take years to a matter of days. Management information technologies cut the cost of this process by 30 percent while increasing product success rates by 80 percent (Russell, Adams, and Boundy, 1986).

New management information technologies employ computer-aided and telecommunication-linked decision support, operational research, artificial intelligence, and group technology systems to integrate, coordinate, and control management processes in order to create competitive advantage. American Express recently implemented an artificial intelligence system which provides support for managers making authorization decisions on individual purchases from 400,000 shops and restaurants throughout the world. This expert system reduced by 20 percent the turn-around time per transaction, reduced by 50 percent the number of authorizations in trouble ninety days later, while providing annual savings of \$27 million (Feigenbaum, McCorduck, and Nii, 1988).

These then are the new information and communication tools which when taken collectively are creating a new way of thinking and acting in regard to all management problems, creating the need for a new high-speed management system.

The Restructuring of the International Economy

Driven by significant advances in information and communication technology, the global economy is currently undergoing rapid change. New market forces are emerging as the world's economic center of gravity continues moving westward toward Asia. The economies of most nations are becoming more open to international influence and their relative economic importance is shifting in favor of regions with large-core markets, a strong scientific and technological base, and a private economic sector which can attract capital to fuel the change.

Four trends effectively characterize these changes: (1) a rapid increase in international trade, (2) the emergence of regional core markets, (3) the emergence of a single model of economic development, and (4) a shift in global economic power toward the nations located on the Pacific Rim.

First, driven by information and communication technologies and the comparative advantage they create, world trade over the past four decades has grown much faster than the world's gross national product. International trade over the past three decades has grown three times faster than world gross domestic product. Therefore countries and firms involved in world trade have experienced growth compared with those who have not (The Wall Street Journal, August 11, 1992).

Second, this internationalization of world trade is leading to the emergence of three regional core markets. In 1994 the United States, Canada, and Mexico signed the North American Free Trade Agreement aimed at lowering trade barriers over ten years between the three nations forming a regional core market of 275 million people, with a gross national product of \$7.7 trillion, and 21.5 percent of world trade. By 1994, the European Community consisting of twelve nations—West Germany, France, Italy, Belgium, Luxembourg, The Netherlands, Britain, Ireland, Denmark, Greece, Portugal, and Spain—lowered trade barriers between these nations creating a regional core market of 320 million people, a gross national product of \$7.1 trillion, and 21.5 percent of world trade. In addition, twelve other European nations have applied for admission to the European Community. By early 1994, we witnessed the emergence of the East Asian development corridor consisting of Japan, China, Hong Kong, Taiwan, Korea, Thailand, Malaysia, Indonesia, and the Philippines into a loose regional market of over 2 billion people with a gross national product of \$8.3 trillion, and 42 percent of world trade (Martin, 1994).

Third, over the past decade a single model of economic development has merged which is influencing economic policies throughout the nations involved in the emerging global economy. The generalization of such a model does not imply all governments nor all economies are alike; it merely suggests broad central tendencies in the economic policies of most nations as they begin to participate in the global economy. This model includes seven general features.

1. Control of inflation through fiscal austerity and monetary restrictions.
2. Reduction of labor costs as percentage of product cost.
3. Increased productivity and profitability through use of information technology.

4. Restructuring of industrial and service sectors by disinvesting from low-profit areas and investing in high-growth, high-profit areas.
5. Privatization and deregulation of the economy by withdrawing from the ownership and control in favor of open market forces.
6. Relative control over the pricing of raw materials and energy assuring stability of pricing systems and exchange flows.
7. Opening up to world markets and increased internationalization of economies. (Castells, 1982)

Recently signs are surfacing that even such bastions of socialism as the former nations of the USSR, China, and the countries in Eastern Europe are positioning their economies via this model for entry into the global economic arena.

Fourth, by the late 1980s the economic center of gravity for the global economy began to shift away from the United States and the European Economic Community (EEC), toward the nations of the Pacific Rim. Japan, Australia, New Zealand, China, Hong Kong, Singapore, Taiwan, South Korea, Thailand, Malaysia, the Philippines, and Indonesia accounted for a higher share of world trade (42 percent) than the countries of Western Europe (21.5 percent). U.S. trade with the nations of the Pacific Rim had by 1981 exceeded its trade with Europe and doubled that of Europe by the early 1990s. The Pacific Rim nations represent a potential regional core market of 2 billion people and represent a \$4.3 trillion-a-year market growing at rate of \$3 billion a week.

In addition, the only double-digit economic growth rates in the world are predicted for China, Singapore, Taiwan, Thailand, Malaysia, and Indonesia in the next decade (*Facts on the Pacific*, 1992).

While the restructuring of the global economy has led to (1) a rapid increase in world trade, (2) the emergence of three regional core markets, and (3) a shift in the center of economic gravity toward the nations of the Pacific Rim, *each change has in turn increased the demand for more effective management systems.*

The Emergence of a New Business Climate

The volatile business climate engendered by the information technology revolution and the globalization of economic forces has led

to a significant realignment of national economic resources. The emergence of a volatile business climate also has significant implications for the realignment of the economic resources of individual corporations. In order to understand this corporate realignment we will (1) explore the unique problem this realignment creates for individual corporations, (2) outline the new corporate perspective for responding to this problem, and (3) examine the new management assumptions which are necessary to compete successfully in a volatile business climate.

Most of these environmental forces precipitating the need for rapid change in corporate operations arise from a single problem—namely the fact that firms are confronted by shrinking product life cycles. The product life cycle is the period of time available from the inception of an idea for a product until the market for that product is saturated or disappears due to new product development. A product life cycle normally involves several stages—product conceptualization, design, testing, refinement, mass production, marketing, shipping, selling, and servicing.

Dominique Hanssens, a professor in UCLA's Graduate School of Management, has studied the product life cycle in electrical appliances for years. He reports (Fraker, 1984) that years ago the product life cycle for refrigerators took over 30 years to mature, providing considerable time for each phase of the product life cycle to develop. However, all of this has changed. The market for microwave ovens has taken 10 years to mature; CB radios, 4 years; and computer games, 3 years, and so on (Fraker, 1984).

How can a company manage to avoid these unpleasanties and prosper? What new techniques and skills must managers master to respond to this challenge? Only recently have executives who have responded successfully to this challenge reported a consistent pattern of attack which shows promise of providing a foundation for a new corporate perspective on how to respond to rapid environmental change.

A New Corporate Perspective on Rapid Change

Fraker (1984) argues that rapidly changing technology, quick market saturation, and unexpected competition have led to the emergence of a new corporate perspective for coping with a volatile business climate.

- *First, companies must stay close to both their customers and their competitors.* Successful companies always know what the customer needs and attempt to provide it. When products and manufacturing processes change rapidly, it is crucial to keep up with the investment strategies and product costs of rival companies. In order to accomplish this, companies must develop and maintain a rapid and accurate intelligence system capable of preventing surprises.
- *Second, companies must think constantly about new products and then back that thinking with investment fast.* A good new product strategy requires a large, active, and focused research and development team with ready access to and the prudent use of large amounts of capital.
- *Third, rapid and effective delivery requires close coordination between design, manufacturing, testing, marketing, delivery, and servicing systems.* The interdependence of these systems combined with the short lead time in product delivery makes certain that any error within or between systems will delay product delivery endangering market penetration. Close cooperation between these systems requires strong, quick, and responsive integration, coordination, and control systems.
- *Fourth, product quality, user friendliness, ease of service, and competitive pricing are essential for market penetration.* In an environment where consumer and investor representatives compare, rate, and effectively communicate product differences, market penetration depends on quality, utility, and readily serviceable products. This in turn requires the active monitoring, testing, and checking the servicing of one's own and one's competitive products.
- *Fifth, companies which introduce new products must consider the processes and costs required to cannibalize their own products and to retrench the workers involved.* Companies faced with rapidly changing technology, quick market saturation, and unexpected competition must be prepared to change or withdraw their own products rather than let their reputation and market shares be eroded by a competitor. Corporate planning for new products must include contingencies for shifting, retraining, or retrenching large product sectors rapidly.

- *Sixth, a corporate culture must be developed which emphasizes change, allows for the assimilation of new units with alternative values and encourages members to learn from mistakes without reprisal.* Corporate cultures which cannot change rapidly will impede market adaptation. Corporations faced with stiff competition will often acquire other corporations with alternative values which will have to be integrated without delay into their corporate culture. Finally, a certain number of new initiatives are doomed to failure for all the reasons previously cited. Talented members of an organization must learn quickly from their failures and press on to new projects. A corporate culture's responsiveness to these issues will require a strong integration of labor and management interests, group and individual needs, and the values of consumers, investors, and the corporation.
- *Seventh, a corporate strategy must be developed which scans the globe for potential acquisitions, joint ventures, coalitions, value added partnerships, and tailored trade agreements which can give a corporation a technological edge, market access, market control, and/or rapid response capabilities.* Such a pooling of corporate resources is necessary for survival in a rapidly changing, highly competitive, international economic environment.

Each of these seven issues forms the basis for a new set of corporate assumptions and practices regarding how to effectively reorient an organization to a rapidly changing business climate. This change in corporate orientation has led to the emergence of a new high-speed management perspective aimed at capitalizing on rapid environmental change in order to increase market shares and make large profits.

Executives Must Employ Management Assumptions and Practices which Emphasize Rapid Organizational Change: A High-Speed Management Perspective

Rapid environmental change creates organizational problems, but also creates organizational opportunities. A high-speed management system is a set of theoretic and practical principles for responding to rapid environmental change. More specifically, high-speed

management functions to decrease the response time required to get a desired product, a service, or both to the customer ahead of one's competitors. It does so by employing three separate theories and sets of practices. *First*, it employs environmental scanning theory to locate the need for new products and/or services and one's competitors' response to that need. *Second*, it employs value chain theory to identify areas across and within firms where the information and communication processes involved in an organization's integration, coordination, and control system must be improved. *Third*, it employs a unique continuous improvement theory in order to reengineer an organization's integration, coordination, and control processes, thus increasing the speed to market of products, thereby generating a competitive advantage (Cushman and King, 1992).

Due to a shrinking product life cycle, today's new generation companies compete by decreasing the time required to bring a product to market. Such companies are innovative, adaptive, flexible, efficient, and rapid in response by concentrating on reducing if not eliminating delays and using this response advantage to obtain increased market shares. The organizational benefits which flow from a high-speed management system can be breathtaking.

What are the unique principles, strategies, and techniques of high-speed management for resolving organizations problems and capitalizing on the opportunities inherent in rapid change? What are the distinctive information and communication issues raised by rapid change? A theoretic and practical framework for resolving these issues and others will be developed in the next chapter followed by an overview of the principles, strategies, and techniques of high-speed management to be applied in the remaining chapters of the book.