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**IS FORD 2000 THE RIGHT STRATEGY
FOR INNOVATION?
A MANAGEMENT THEORY PERSPECTIVE**

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Is Ford 2000 the right strategy for innovation? A management theory perspective

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Abstract:

In consolidating its North American and European product development into five Vehicle Program Centers (VPCs) to develop cars for all markets, integrating its manufacturing, supply, marketing and sales into a worldwide operation, Ford is moving from a so-called *multidomestic* strategy to a *global* one. The question is if this is the right strategy for an automobile company that wants to offer low cost and/or differentiated products to its customers worldwide. This paper argues that the strategic change is appropriate. To get the best out of the strategy, however, Ford must have the right organizational structure, systems/processes, and the right people in the right positions. Optimal performance requires a fit between strategy, structure, systems/processes and people.

(Key phrases: International, global, multidomestic, innovation, Ford 2000, information technology)

1. INTRODUCTION

On April 21, 1994, Ford Motor Company announced that effective January 1, 1995, it would merge its North American Automotive Operations, European Automotive Operations, and Automotive Components Group into a single operating unit called Ford Automotive Operations (FAO). Product development, previously undertaken independently by each operation, would be integrated into five Vehicle Program Centers (VPCs) with each having worldwide responsibility for the design, development, and engineering of any vehicle assigned to it. Manufacturing, production purchasing, marketing and sales operations would also be integrated worldwide. The firm was effectively moving from a *multidomestic* strategy in which each of its North American and European Operations independently developed products to serve its own market, to a *global*

strategy in which the company would have one operation that develops products for worldwide markets. The question is, will this strategic change allow Ford to better innovate—keep using new knowledge to offer low cost and/or differentiated cars that worldwide customers want? This paper argues that the new strategy should put Ford in a better position to offer low cost and/or differentiated products worldwide. But whether it pays dividends for Ford depends on how the company implements it. Optimal benefits from a strategic change only come with the appropriate changes in organizational structure, the systems/processes that support both the strategy and structure, and the people who must carry out the implementation.

The rest of the paper is organized as follows. Section 2 presents the theoretical background that will allow us to evaluate Ford's new strategy. Section 3 explores what Ford 2000 is all about. Section 4 provides an analysis of the strategy and its implementation. Section 5 offers some conclusions.

2. THEORETICAL BACKGROUND

In order to analyze Ford's new strategy, it is important to understand, first, what strategic options are available to a multinational for exploiting innovation worldwide and, second, what it takes to successfully implement these strategies.

2.1 Generic strategies for worldwide innovation

For a firm to keep making profits, it must keep offering low cost and/or differentiated products (Porter, 1991). To do so, it must innovate; it must use new knowledge to offer new products that customers want. In positioning itself to innovate for worldwide markets, a multinational would like two things. First, it would like to be close to customers in each country so as to better discern and respond to changes in customer tastes, preferences, expectations, government policies and other local idiosyncrasies. On the other hand, since some nations provide a more conducive environment for developing certain products than others (Thomas, 1989; Porter, 1990), a firm would also like to take advantage of such environments. For example,

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a firm may want to locate in the US's Silicon Valley if its makes microchips. Thus, the strategies that a firm can use to exploit innovation worldwide can be classified as a function of two contingencies: how close a firm has to be to customers in order to better respond to local needs, and the extent to which it has to update the technological knowledge that underpins the innovation—the need to be near a Silicon Valley or close to a home country's endowments. These classifications are shown in Figure 1 with the contingencies labeled "market information needs" and "technological information needs", respectively.

The *multidomestic* strategy is appropriate for innovations that depend a lot more on understanding local customer preferences, tastes, expectations, distribution channels, and local government regulations than they do on the technological knowledge on which they rest.¹ That is, as shown in Figure 1, this strategy is appropriate when the need for market information is high while that for technological information is low. Makers of packaged consumer goods (detergents and cereals) such as Unilever have pursued this strategy (Bartlett and Ghoshal, 1989). Firms that pursue the *multidomestic* strategy have self-sufficient units in each country to better discern local customer preferences and tastes. On the other hand, if technological information requirements are high relative to market information requirements, a firm may want to pursue a *global* strategy.² Firms can locate their facilities where the environment is most suitable for technological innovations or at home where they have home endowments that give them some advantage. From there, they develop products for world markets. For example, Intel has located its plants in the US (especially in the Silicon Valley) and served the world from there with some peripheral help from overseas units such as a design center in Israel. If both market and technological information demands are low, a firm can operate using the *international* arrangement. It can take advantage of whatever home capabilities it has to develop products for its home market. Once the products are successful at home, it can then transfer the capabilities and innovation to overseas.

¹The terminology of multidomestic, global, international and transnational are from Bartlett and Ghoshal (1989)

²The words *global* and *international* as used in this categorization of different strategies can be confusing given the normal everyday uses. Hence, these two words will be italicized whenever referring to a strategy.

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McDonald's has used this strategy very successfully, moving into Europe and China only after "perfecting" the hamburger at home. If both market and technological information needs are high, the *transnational* arrangements is best. In this mode, firms have access to the best sources of innovation, and the technological and market knowledge that underpins them, worldwide. Table 1 also summarizes the properties of each of these strategies.

Market information needs for innovation	High	Multidomestic Unilever	Transnational Caterpillar
	Low	International McDonald's	Global Intel
		Low	High
		Technological information needs for innovation	

Figure 1: Strategies for innovating worldwide

Organizational Characteristics	Multidomestic	Global	International	Transnational
Configuration of assets and capabilities	Decentralized and nationally self-sufficient	Centralized and globally scaled	Sources of core competencies centralized, others decentralized	Dispersed, interdependent, and specialized
Role of overseas operations	Sensing and exploiting local opportunities	Implementing parent company strategies	Adapting and leveraging parent company competencies	Differentiated contributions by national units to integrated worldwide operations
Development and diffusion of knowledge	Knowledge developed and retained within each unit	Knowledge developed and retained at the center	Knowledge developed at the center and transferred to overseas units	Knowledge developed jointly and shared worldwide

Table 1: Organizational Characteristics of Multinationals (Source: *Managing Across Borders* by Bartlett and Ghoshal. HBS Press, 1989)

2.3 Strategic choice—Balancing cost and innovation

Having outlined what generic strategic options are available to firms for worldwide innovation, the question becomes: what determines a firm's choice of these strategies. We will discuss just one of these factors: cost.

The costs of pursuing the different strategies vary considerably and must be balanced against the benefits of innovation. *Global* firms produce a standard product for the whole world and locate their R&D, manufacturing and marketing at the most favorable locations. As such, they can take advantage of economies of scale and learning. Since they also buy many standard parts, they can command very high bargaining power with suppliers. All of these give the *global* strategy the lowest costs. The most costly of the four is the *multidomestic*. Since each national market has its own value chain and designs with its own unique parts, the *multidomestic* is almost the opposite of the *global*. This duplication of facilities, effort and designs makes it very difficult for the *multidomestic* organization to profit from economies of scale or learning. They also have less bargaining power with suppliers, compared with the *global* firms. In the *international* strategy, a firm locates most of its key facilities at home but may also have marketing and manufacturing overseas. It also offers limited product customization. This puts its cost somewhere between that of the *global* and *multinational*. In the *transnational*, competences can be developed anywhere and flow to wherever they are needed. Its cost are somewhere above *international* cost but depend on the ease of flow of competences and information.

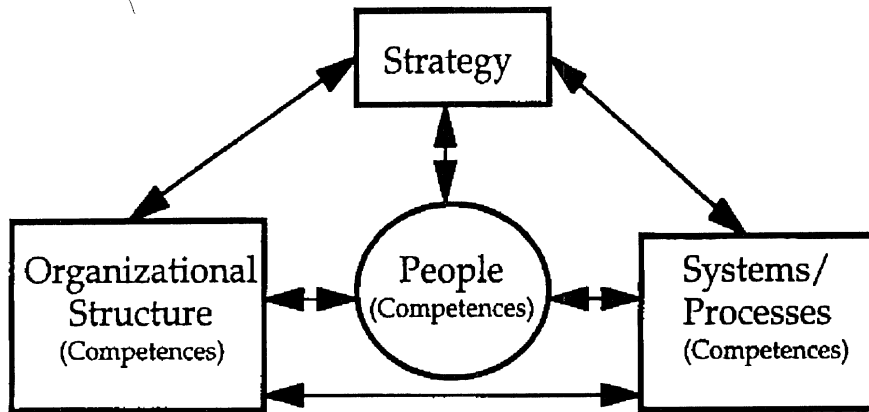


Figure 2: The Strategy-structure-process-people relationship

2.4 Implementation: The Strategy-Structure-Systems-People fit

The choice of global strategy is just the first step in exploiting innovation worldwide. The strategy must be implemented. In particular, the firm needs an organizational structure, systems and the people that all match the strategic change (Figure 2).

2.4.1 Structure

The structure of a firm tells us who is supposed to report to whom and who is responsible for what. In searching for the right structure, three questions must be explored. First, there is the question of *coordination*. How does a US firm make sure that its area managers in France and Japan do not outbid themselves for the same contract in south America? How do the area managers present themselves as one company in order to command bargaining power when dealing with suppliers? Second, there is the *differentiation and integration* problem. A firm's R&D and manufacturing groups are maintained as separate functions because each one necessarily has to specialize in what it does in order keep building the stock of knowledge that underpins innovation—each one has its own unique tasks and roles to play. This is differentiation. At the same time, most innovations require cross-functional interaction. That is,

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the differentiated activities of the different functions must be integrated for optimal innovation. Development of a car, for example, is more successful if designers, marketers, manufacturing, sales, component makers and suppliers all work together (Clark and Wheelwright, 1993), that is, if their activities are integrated. Finally, the structure must match the strategy as well as systems/processes and people. The most popular of these structures are functional, project and matrix (Allen, 1984; Hill and Jones, 1995)

2.4.2 Systems/Processes

An organizational structure tells us who does what, but says very little about how to keep people motivated as they carry out their assigned tasks and responsibilities (Hill and Jones, 1995, p352). Management must be able to monitor performance, reward and punish individuals, functions, divisions and organizations in some agreed upon and understood way. It must establish systems whereby information will flow in the shortest possible time to the right targets for decision-making. Organizational control systems/processes and information delivery systems do that. Control systems range anywhere from market control to organizational culture (Hill and Jones, 1995 p357). Market controls are measures such as stock prices, ROI and transfer pricing that reflect how a firm or division is performing in the market. The problem with market control measures is that they are normally the last step in a pipeline of activities that have been taking place in a firm and depending on them to take corrective action might not be a very good idea. Organizational culture attributes such as norms and values may be better measures. They can allow one to tell if there is trouble upstream well before it is reflected in market share. Between these two extreme controls are others such as the rules and procedures that firms follow.

Information delivery systems also have a huge impact on the way a strategy or an organizational structure is implemented. In the past, a proposal for a new product from an engineer deep down an organizational hierarchy could take months to get to the CEO—if it ever got to him/her—perhaps already distorted by middle level managers who might not have understood what the proposal was all about. Today, the CEO of Microsoft can see new product ideas from an engineer via electronic mail seconds after the engineer presses a button. An area

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manager for an American multinational who is resident in France does not have to go through loops to obtain information on a new product being developed in the US. All she has to do is go to the company's Web site in the company's intranet to get undistorted up-to-date information. A German driver should be able to test drive a car in a virtual reality site, in Stuttgart, Germany, and the results fed instantly to designers in Detroit, LA and Tokyo.

2.4.3 People

Establishing control and reward systems that motivate employees, and building information systems that provide them with the best information for decision making are one thing. Whether these people are motivated or not, or take the right decisions with the available information is another—it is a function of the type of people in the organization. It is a function of many questions: To what extent do employees share the same goals as their firm? Is the manager of the brake division of a car company interested in building a personal empire or doing the best he can to make sure that his company builds the best car possible in the shortest possible time with the best brake system that can be manufactured most efficiently? Does the manufacturing group see R&D as a "bunch of ivory tower, money-spending snobs" or colleagues with whom they can work to build the best cars in the shortest possible time at the lowest cost? To what extent do the employees have the knowledge that underpins the various activities of the firm's value chain? How much is such knowledge valued? What really is the core competence of the firm and where does it reside—in people or organizational routines and endowments of the firm? What does it take to motivate employees? Pay checks, job security, stock options, seeing their ideas implemented, being respected or being "seen" as a person? Does management see unions as the adversary or part of a team with shared goals but that is there as part of the checks and balances that are necessary to keep steering towards the firm's goals? Are managers leaders or systematic planners?

2.5 Exploiting opportunities and threats in strategic decisions

As shown in Figure 3, strategy, structure, systems and people do not interact in a vacuum. Industry deregulation/regulation, technological change, macroeconomic factors such as exchange and interest rates, and unique endowments of different countries all present opportunities and threats that a firm may exploit in formulating its strategy. In fact, the choice of strategy should be a function of a firm's competences and the opportunities and threats that its environment offers. For example, the proliferation of information and communications technologies (IT&C), as we now show, can play a critical role in a multinational's choice of strategy for innovation.

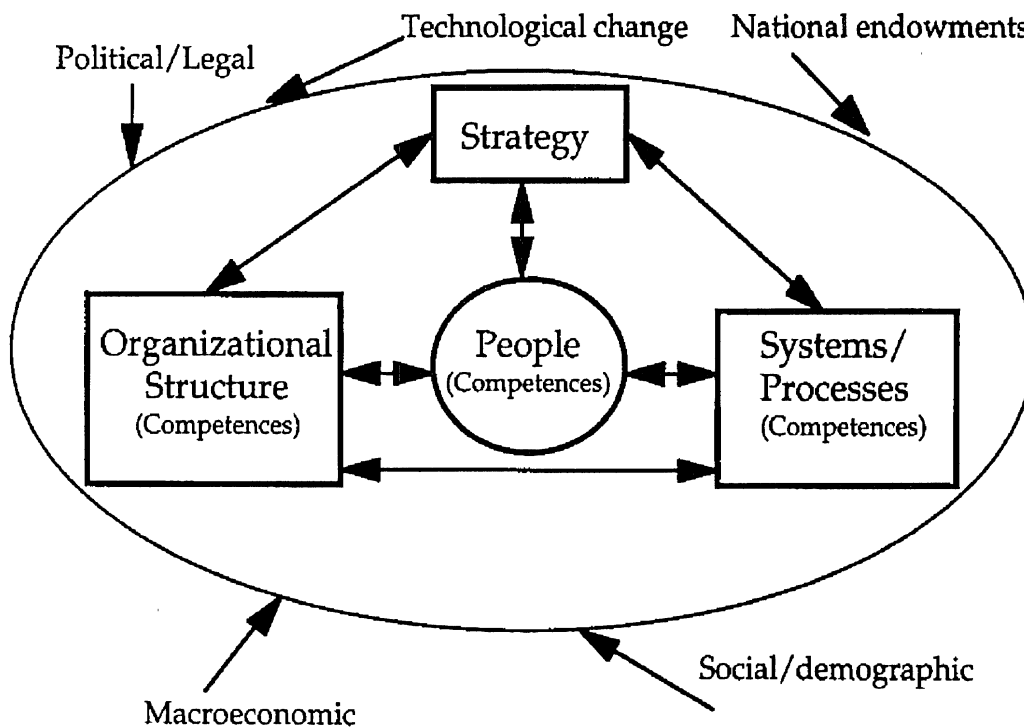


Figure 3: The role of the environment

Without IT&C, a multinational's strategic options would be as we saw earlier in Figure 1. With it, however, the range over which a firm can pursue a *global* strategy as against a *multidomestic* one increases. How? There are two ways this would happen. First, IT&C helps reduce the need to be physically present in a country in order to discern local customer needs and

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preferences. For example, marketers in Italy can look at the rotating image of a new car design, being developed in Detroit, on a computer workstation in Milan and suggest changes by marking up parts of the car. These suggestions are instantaneously received and evaluated in Detroit. Customers all over the world can give Ford feedback on a new car design by viewing 3-D images of the car on the Web or test-driving it via interactive virtual reality. Effectively, IT&C reduces the need to be physically present in a country to respond to local needs. As shown in Figure 4, this is tantamount to shifting the line AB upwards and increasing the area over which the *Global* and *International* strategies can be pursued. But the use of IT&C increases technological uncertainty since the firm now not only has to worry about the technological knowledge that underpins the product but also about IT&C. This is reflected in Figure 4 by a shift in CD leftwards. The shifts in CD and AB amount to increasing the area over which a firm can pursue a *global* strategy as against a *multidomestic* one. That is, the proper use of IT&C can allow a firm to take advantage of the cost benefits of a *global* strategy while not giving up local responsiveness.

The other way IT&C helps increase the range over which the *global* strategy can be pursued is by influencing worldwide consumer tastes. With worldwide TV networks such as CNN, the World Wide Web and networks of travelers, multinationals can influence customer tastes, preferences and needs worldwide through advertising via these media (Levitt, 1983). Teenagers in many developing countries already know about McDonald's and Nike brands. By influencing what customers want, a firm is reducing the need to collect market information. This is tantamount to shifting AB in Figure 4 upwards, increasing the area over which the *global* and *international* strategies can be pursued. Again, by adding information and communications technologies to the equation, the net effect is to increase technological uncertainty effectively shifting CD to the left. The net effect again is to increase the area over which the *global* strategy can be pursued.

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In summary, to innovate, a firm can choose from four strategic options: *Multidomestic*, *international*, *global*, and *transnational*. A firm's choice depends on its competence, the bureaucratic costs associated with the strategy, the type of products it wants to offer and its proximate environment. The use of information and communication technologies can allow a firm to take advantage of the cost effectiveness of the *global* strategy while not giving up the advantages of *multidomestic* strategy such as local responsiveness.

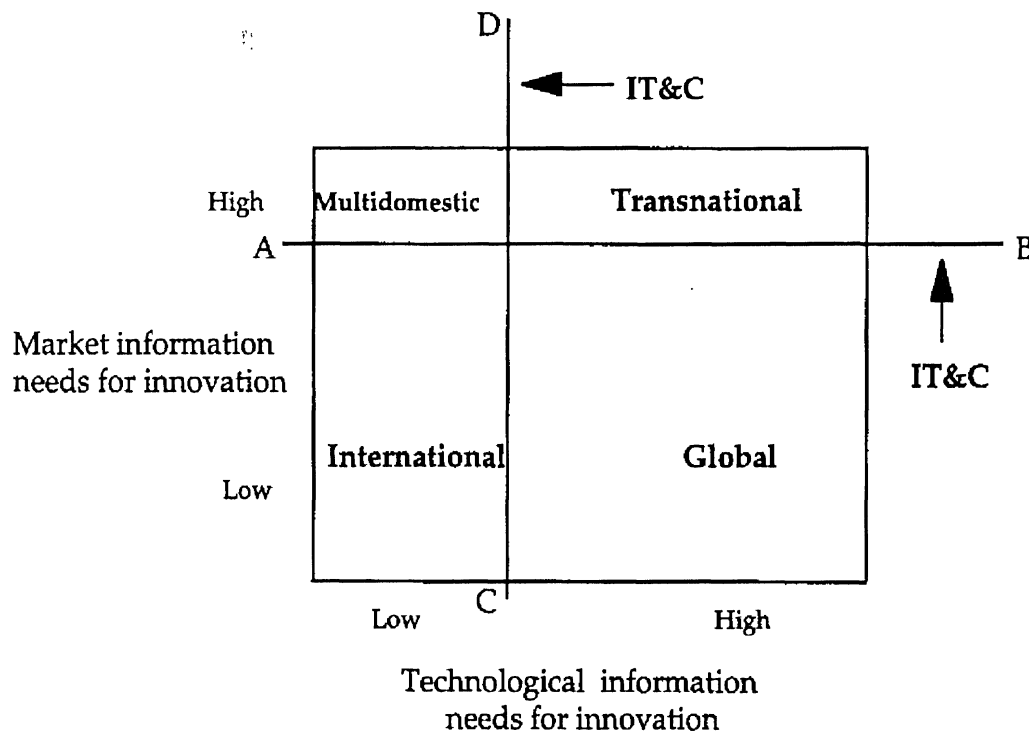


Figure 4: Exploiting external opportunities in making strategic decisions

3 FORD 2000

With the theoretical background now in place, we can proceed to analyze Ford 2000. We start with Ford's strategy before Ford 2000 and then briefly describe what we mean by Ford 2000. The analysis itself follows in Section 4.

3.1 Before Ford 2000

In 1994 when Ford 2000 was announced, Ford's financial position looked very strong. Its 1994 profits from its automotive operations were \$3.8 billion. There are, however, two things wrong with the rosy picture that the figure paints. In the first place, the firm's automotive operations had *lost* \$3.769 billion and \$1.775 billion in 1991 and 1992, respectively. As Figure 5 shows, the automobile industry was in the upswing of one of cycles and Chrysler was doing even better than Ford. Could this upswing in which everyone makes money be hiding Ford's poor strategy and management? Second and most important, market performance measures like profits, ROI and stock prices can hide problems that are brewing in a company just waiting to surface later. Ford had many of those. While Chrysler's pretax margins on automobiles were 11.6%, Ford's were 5.4%.³ While it took Ford five years to redesign its Taurus, its Japanese competitors took less than 2 years to introduce competing models. Toyota made 37 cars a year per worker while Ford only made 20.⁴ The company's recent model, called the Mondeo in Europe and the Contour/Mystique in North America had cost \$6 billion to develop and launch. This cost was four times that of competitors.

Since the introduction of its Taurus in 1985, its first home run since the Mustang and Thunderbird, there had been no other home runs, not even triples. The company's much touted quality programs may not have prevented it from becoming complacent following the Taurus. Ford's attempt to make its European-designed Escort a world car that used common parts but that could be assembled in different parts of the world failed. Each geographic region ended up redesigning the car, duplicating cost. In the United States, only six of the car's 5,000 parts remained in common with the European Escort's; one of the six was the radiator cap.⁵

³Teece, James B., Kerwin, Kathleen and Heidi Dawley (1995): Ford. Business Week April 3, 1995.

⁴The Economist (1996): The World that changed the machine. *The Economist* March 30, 1996.

⁵HBS case No. 9-390-083: Transformation at Ford. Pelofsky, Mark and Leonard Schleisinger. Revised Nov. 15, 1991.

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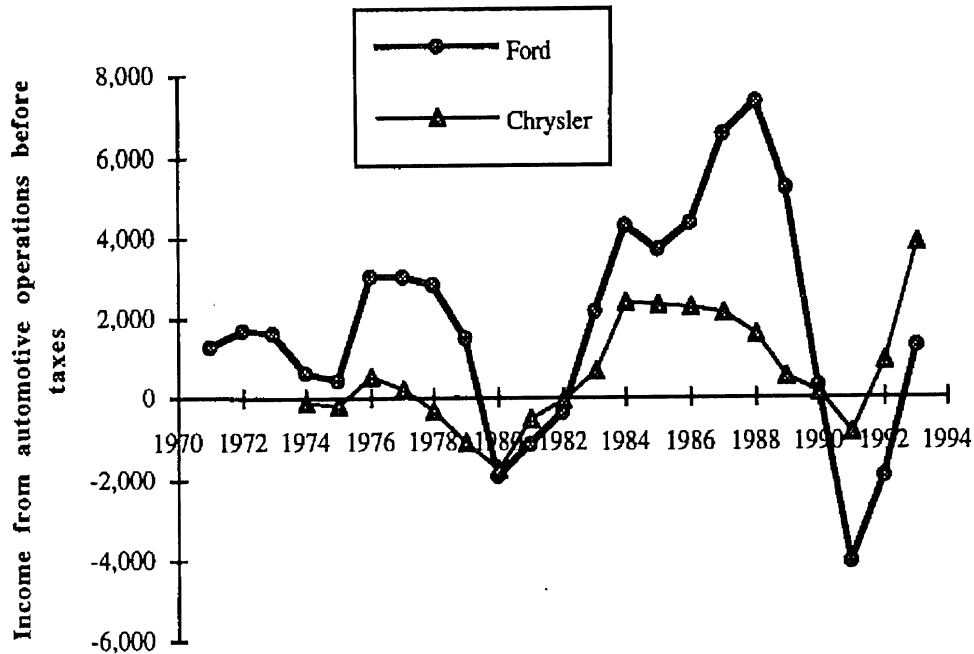


Figure 5: The Cyclic automobile industry: Automobile operating incomes for Ford and Chrysler from 1970 to 1993

Underlying these troubling signals was an innovation-stifling organization. Ford's operations in different parts of the world—Ford of Europe (FOE), North American Automotive Operations (NAAO), and Ford Asia Pacific Automotive Operations—all developed, manufactured, and sold their products independently. Although this focus on regions allowed Ford to, theoretically, be more responsive to local customer needs, it deprived the company of the bargaining power over suppliers that only combined worldwide operations could provide. Such bargaining power would not only give a manufacturer some price advantages, it would give it first access to critical component innovations.

Perhaps the most innovation-stifling were the hierarchical functional organizations within each regional operation that have been described as "chimneys" for their hierarchical depth. Despite abundance of evidence that product development and other innovative activities are best undertaken with a lot of cooperation and interaction between functional groups or using project teams, Ford's chimneys seemed designed to discourage any such cooperation. The organizational

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structure, incentives and systems/processed discouraged the kind of cooperation that innovation so deeply depends on. Each function had its own goals and perspective. Donald Peterson, Ford CEO from 19XX to 19XX, put it best:

" You dealt only with issues that the Statements of Authorities and Responsibilities said were yours. You learned real fast to stay inside your limits. . . . there was little or no interaction and no problem solving. What's more, the financial rewards were geared to results in managing your own chimney. Top management knew this was a problem, but there were historical barriers in the way. An entire layer of people at the chimney tops—the equivalent of divisional presidents—had come up through their respective chimneys and had enormous loyalty to their former colleagues. It was civil war at the top. The question was never, "Are we winning against the Japanese?" but rather, "Are we winning against each other?" You had to reach your objectives, even if they were in conflict with the other chimneys or in conflict with the broader objectives of the company " ⁶

Ford's Japanese competitors as well as Chrysler had already abandoned the functional structure in favor of the project one for product development.

3.2 What is Ford 2000—the strategy

With all of these problems hiding under an otherwise sound financial balance sheet, Ford's chairman and CEO, Alex Trotman, decided to pursue a different global strategy. He decided to integrate Ford's worldwide product development, manufacturing, supply, marketing and sales activities. The company's North American Automotive Operations, European Automotive Operations, and the Automotive Components Group have been merged into a single operating unit called Ford Automotive Operations (FAO). Product development, previously undertaken independently by each operation has been integrated into five Vehicle Program Centers (VPCs) with each VPC having worldwide responsibility for the design, development, and engineering new automobile models for a particular worldwide market segment. The VPCs include four in Detroit—large front wheel drive (FWD), rear wheel drive (RWD) cars, light

⁶HBS case No. 9-390-083: Transformation at Ford. Pelofsky, Mark and Leonard Schleisinger. Revised Nov. 15, 1991. Page 11

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trucks, and commercial trucks— and one in Europe split between the Ford Research and Engineering Centers in Dunton (UK) and Merkenich (Germany) for small/medium front wheel drive (FWD) cars. In time Ford Asia Pacific Automotive and other operations would follow the same consolidation. Manufacturing, supply, marketing and sales operations have also been integrated worldwide.

Each VPC is made up of members from different functions giving it a project structure. Manufacturing, supply, marketing and sales operations now have a matrix structure as against the hierarchical functional structures that hindered innovative efforts before.

4 ANALYSIS

Given the theoretical background of Section 2, the question now is if the change in strategy from *multidomestic* to *global*, and in organizational structure away from the functional chimneys will allow Ford to better innovate. We now explore these questions.

4.1 The strategic change

The change from *multidomestic* to *global* offers several benefits. First, by eliminating the duplication of value chain activities, the firm saves on cost. Secondly, by producing a standard product for the world that uses standard parts, the firm can enjoy economies of scale. In particular, it can command more bargaining power over suppliers than before. Such bargaining power allows Ford to not only lower its cost of components, but also have earlier access to supplier innovations than competitors with less power. The new strategy also allows Ford to reduce the number of suppliers and increase their participation in engineering design of cars. Such cooperation has been shown to not only reduce the cost of producing cars but also to increase the quality of the resulting cars (Clark, 1991). Ford estimates that it will be able to save as much as \$3 billion in cost per year by 2000 with \$11 billion between 1996 and 2000.⁷ With the automobile industry, like computers, depending more and more on supplier innovations,

⁷Naughton, Keith (1996): Trotman's trial. *Business Week*. April 8, 1996

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maintaining supplier relations that facilitate the flow of such innovations to manufacturers is critical. It is estimated that more than 50% of the content of cars will soon be electronics. Such dependence on components whose core concepts are fundamentally different from those that underpin the traditional internal combustion engine automobile underscore the importance of supplier relations and the need for a global approach.

Finally, by consolidating its R&D, Ford stands to benefit from the economies of scale that can come from larger scale R&D (Henderson and Cockburn, 1993).

The question is if such cost savings and the potential increase in supplier-generated innovations are enough to overcome the main disadvantage of the *global* strategy—not being close enough to customers. By locating the VPCs in Detroit, will Ford not be too far from worldwide customers to incorporate their preferences and expectations in its new cars? The answer rests in how well the firm is able to exploit complementary innovations such as information technology and CAD tools. As we saw in Section 2, the use of IT & C reduces the negative effects (on the ability to innovate) that would otherwise result from a firm moving from a *multidomesic* strategy to a *global* one. Ford can use IT&C in two ways. First, it can use CAD tools, intranets and the Web to obtain inputs from overseas sales and marketing offices and customer feedback on new car designs thus alleviating the need to locate locally. For example, as we suggested above, marketers in Italy can look at the rotating image of a new car design, being developed in Detroit, on a computer workstation in Milan and suggest changes by marking up parts of the car. Second, instead of (or in addition to) trying to capture customer preferences, Ford can influence them by advertising through the ever more popular media for advertising.

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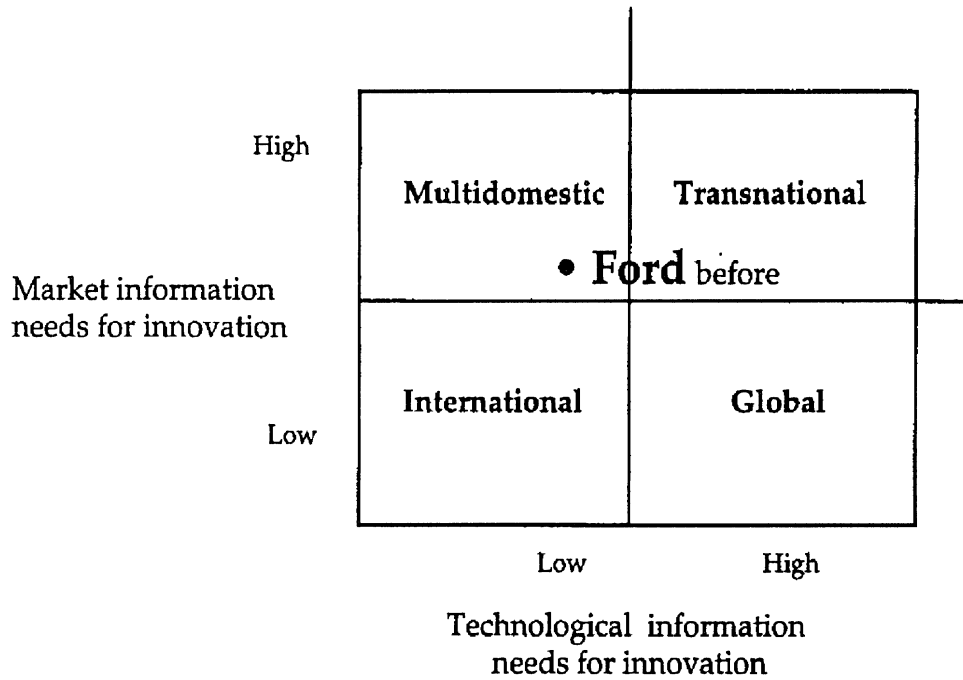


Figure 6: Ford before

The effect of using information technology to capture customer preferences and needs or advertising in the change from a *multidomestic* to *global* strategy is captured in Figures 6 & 7. In the multidomestic strategy, Ford was better able to respond to local customer needs (Figure 6). Figure 7 shows that the need to have a value chain each country in order to respond to local needs can be reduced by using IT&C. This is depicted by the line AB moving upwards. But the use of IT&C increases Ford's technological information needs as shown by the line CD shifting left. Effectively, then, Ford can, by using IT&C follow the global strategy without sacrificing local responsiveness.

Information technology and communications (IT&C) can also play another role. It can allow engineers in Japan, Germany and the US working on the same car, with each group handing over the job to the next group at the end of their work day, allowing work to be carried on almost round the clock, accelerating the time it takes to develop and launch a car.

Finally, suppose, using IT&C or otherwise, Ford were able to collect all the local market information it needs to offer just what customers want. The question still is how it would incorporate all of the information into a world car. Does the firm risk producing a McCar that

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customers all of the world do not want? Not necessarily. The firm can learn from what microchip makers have done so successfully in selling a type of chip called ASIC (applications specific integrated circuits). The core product is the same for all customers. But last minute changes tailor the product to specific needs of the customer. Ford can design cars that use the same standard components and features up to some level. Then through flexible manufacturing and improved design tools, customization can be achieved for each local country. The company can take it further; it can allow individuals to specify what they want in a car and Ford would build the car to the individual's taste.

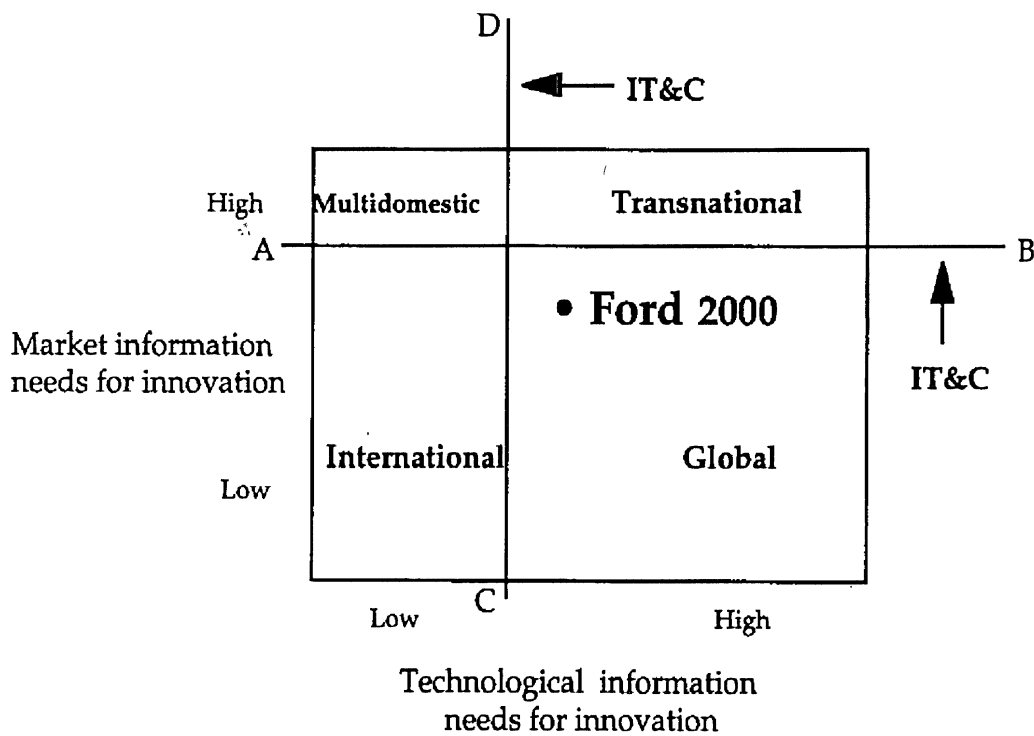


Figure 7: Information and communication technology allow Ford to have the benefits of a global strategy without sacrificing the benefits of a multidomestic strategy

4.2 Organizational structure and systems

To support its global strategy, Ford is effectively moving from its very hierarchical functional structure to two types of structures: a project structure for product development and a matrix structure for the manufacturing, sales, supply and production supply.

4.2.1 Functional to Project for Product Development

In the project structure of the Vehicle Program Centers (VPCs), engineers with functional skills in design, engineering, manufacturing and marketing are assigned permanently to a vehicle design center and report to the head of the vehicle center instead of the heads of their functional areas (Figure 8). The project structure allows for better interaction of team members, and has been shown to be most effective in product development (Clark and Wheelwright, 1993). This had been long overdue as Ford's competitors had been reaping the benefits of the project organization for years. With one executive responsible for concept, design, development, and engineering, the company effectively has a so-called heavyweight project manager. And having a heavyweight project manager in automobile development can reduce lead times, total engineering hours (and therefore cost, all else equal) and improved design quality (Clark and Fujimoto, 1991). At Ford, it used to take 22 meetings and over two months to get a new-car project approved. With 2000, it takes less than a month.

One disadvantage of the project structure is that by assigning employees from different functions to the project, their knowledge may become dated since they are not within their functional units where they are more likely to keep abreast of changes in the knowledge that underpins their functions. As shown in Figure 9, how dated a project member's knowledge becomes is a function of the project's duration and the rate of change of the knowledge that underpins the employee's area of expertise (Allen, 1984). Since the technological knowledge that underlies the internal combustion engine automobile does not change that much but customer's taste change and do so often, a project structure would be better for car development than would the functional structure that Ford has used for decades.

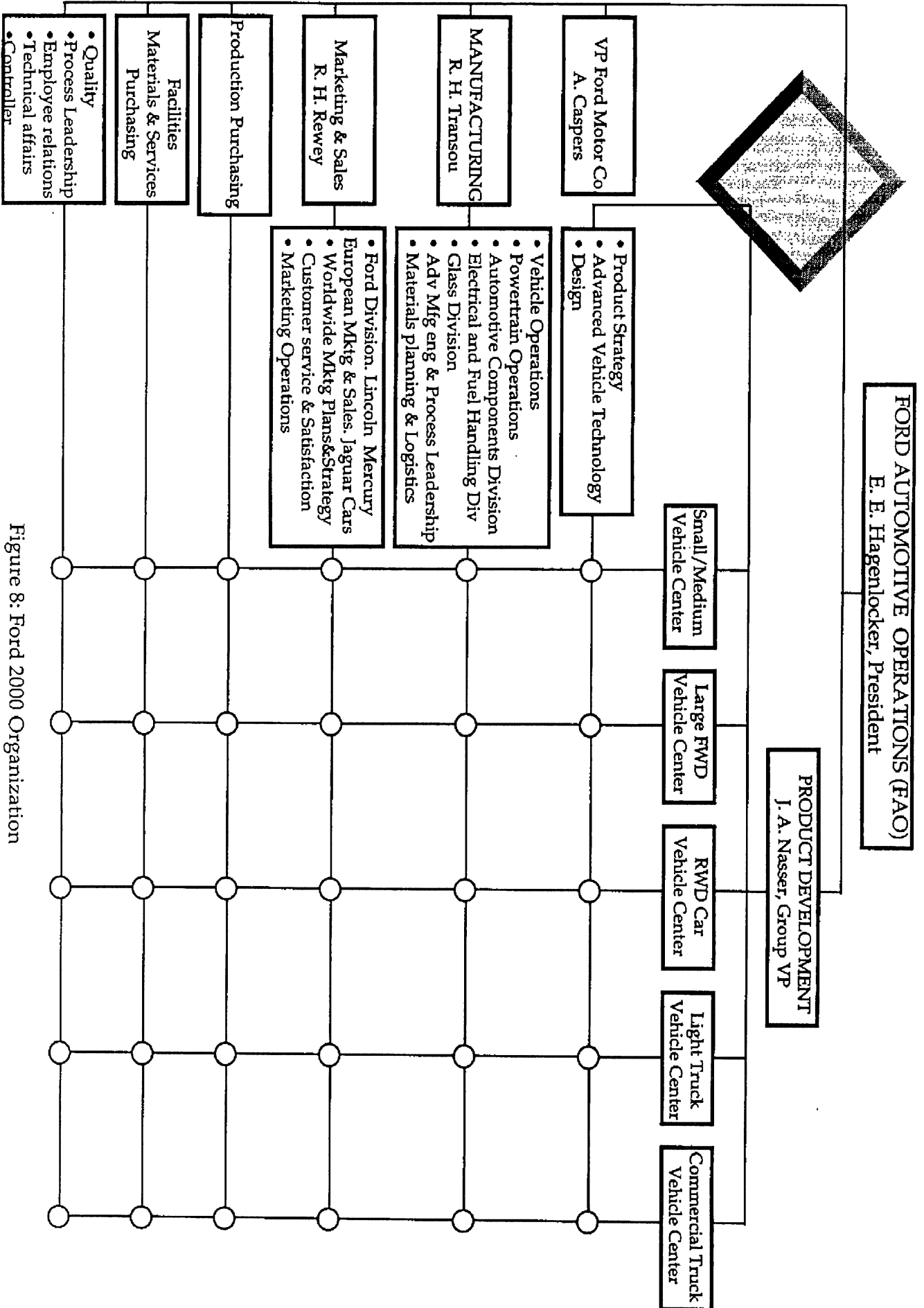


Figure 8: Ford 2000 Organization

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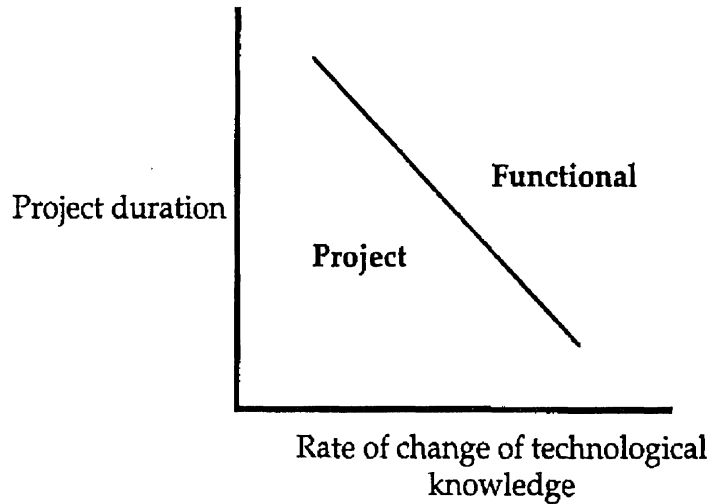


Figure 9: When to choose the project or functional structure

4.2.2 Functional to Matrix for Manufacturing, Marketing & Sales and Purchasing

Ford 2000 uses the matrix organizational structure for manufacturing, marketing & sales, and purchasing. In the matrix structure, managers have two bosses—one in a VPC and the other in a functional area (Figure 8). This structure has two primary advantages. The first is better skills upgradability. How? In innovative activities such as design, development, manufacturing and sale of automobiles, individuals need so-called T-skills⁸, that is, deep expertise in one discipline combined with broad enough knowledge in others to see the linkages between them. A matrix organization allows individuals to maintain these skills by staying in their functional areas while actively participating in product development or other project activity. The second is the sharing of expertise. The functional expertise of a particularly good individual can be used on more than one project. The drawback of the matrix organization is the dual boss phenomena. Not knowing who is responsible for evaluating and rewarding or punishing performance can be a problem especially when a firm's values and goals are not shared by all managers.

⁸Isansiti (1993)

4.3 People

For employees to successfully carry out a strategy, they must understand the rationale behind it and its potential. They must have the appropriate competences, be motivated and the strategic change must be in their self-interest. As outlined above, the rationale for and potential of Ford 2000 are well-founded. The question, though, is if Ford's employees understand them. A video of Ford's chairman and CEO, Alex Trotman, that espouses some of the reasons behind the strategic change has been seen by all of Ford's 320,000 employees.⁹ Understanding the rationale behind this change and its potential benefits is also a function of the employees themselves. In particular, it is a function of their managerial logic—a function of their experiences and beliefs about how the automobile industry operates, how firms make money in it, what Ford is all about and what their roles at Ford are (Prahalad and Bettis, 1986; Bettis and Prahalad, 1995). To some employees, Ford has always done well despite a few occasional dips during industry down cycles. The last time they had entertained any kind of a change had been after a crisis in 1980 when, following the oil crisis and the invasion of the US automobile market by imports, the company had lost \$1.543 billion—the largest loss of any corporation ever, then.¹⁰ It appeared Ford may actually cease to exist as a firm. In the face of that crisis, Ford's quality program was initiated then and a few 'chips' were made on the chimneys described earlier. But these chimneys, for the most part, remained the same—until Ford 2000. With record profits of \$3.8 billion from automotive operations in 1994 and \$2.3 billion in 1995, it may be difficult for some managers to see why the change in strategy. And even if they did, the changes may not be in their interest. Their political coalitions may be more important to them than the prosperity (and may be the very survival of Ford).

Finally, even if employees understood the rationale behind the new strategy and its benefits to Ford, and their self-interests were the same as Ford's, there is still the question of competences. Operating in the new organization requires T-skills (as against functional skills)

⁹The Economist (1996): The World that changed the machine. *The Economist* March 30, 1996.

¹⁰HBS case No. 9-390-083: Transformation at Ford. Pelofsky, Mark and Leonard Schleisinger. Revised Nov. 15, 1991.

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and whole new relationships with different organizations. Many activities may run into architectural innovation problems (Henderson and Clark, 1990) as individuals and groups may honestly not see any big changes in the way they ran things before and the way they should run them following the strategic change.

In taking advantage of its worldwide pool of talent, Ford has transferred people from different European countries to Detroit. Product development—perhaps the most critical group—is run by J. A. Nasser, an Australian. This means that many people with different backgrounds have to work together. In fact, having employees from designer, marketing, manufacturing, sales and purchasing work in the same team towards the same goals over extended times introduces "cultural" differences, irrespective of their national background. Designers may have to breakdown their prejudices against people from manufacturing, and vice versa. Ford has instituted diversity programs to address such problems.

5 SUMMARY, DISCUSSION AND ISSUES

5.1 Summary

The goal of this paper was to analyze, from a management theory perspective, whether Ford 2000 is the right strategy for Ford or not. That is, if in moving from a *multidomestic* to a *global* strategy, the company can better innovate—use new knowledge to offer low cost and/or differentiated products that customers want. The conclusion was that the strategy is indeed appropriate. The change reduces cost by eliminating the duplication of value chain activities that is characteristic of the *multidomestic* strategy. The *global* strategy allows Ford to increase its bargaining power with suppliers which can mean lower cost, shorter delivery times, first look at component innovations, and better supplier cooperation during product development; all of which are increasingly important, given the growing dependence of automakers on supplier innovations. Additionally, it allows a firm to locate critical functions like R&D in optimal locations. The only major drawback of the *multidomestic-to-global* change would be a reduced ability to respond to local (country) customer tastes, preferences, expectations and government or

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other local idiosyncrasies. But with vastly improved information and communications technologies (IT&C) Ford not only can monitor customer needs and expectations from remote sites, it can also influence those needs and preferences via advertising using the new IT&C.

Ford's project and matrix organizational structures as well as its use of a heavyweight project management can help reduce development costs, improve the attributes of resulting products, and reduce development times. The firm's efforts to spread the word on Ford 2000 can also help employees understand the rationale and potential of the new strategy. Its diversity program also helps teams focus on their tasks and not the negatives of their differences.

5.2 Discussion and Issues

While the strategy is fundamentally sound, there are a few issues that are worth pursuing.

5.2.1 Strategy—Leapfrog, not catch-up

In moving from *multidomestic* to *global*, Ford is still trying to get to where its competitors like Honda have been forever. While building cars with common platforms and peripheral local customization would be better than building an Escort whose European and American versions have completely different platforms, it would only amount to catching up to competitors. The question is, why stop at common platforms and local customization? Why end customization at the local level? Why not pursue individual customization? Rather than pre-customize cars for different regions, why not follow the semiconductor industry example and build cars up to some level (call it the platform) and then use the vastly available technology to customize cars according to individual customer tastes. A customer could place an order from her/his house and Ford would have the car ready in ten days? Such a system would also allow the company to collect useful information on customer tastes and preferences?

Whether Ford offers product customization at the individual or regional level, a critical component of the *multidomestic-to-global* change is the use of technology to better respond to local customer needs, harness intellectual capability and influence customer tastes and preferences. The assumption here is that Ford will be able to integrate these technologies with its other skills. This may prove to be a major hurdle in itself. And even if it were not, the firm may be using the technology deductively and not inductively (Hammer and Champy, 1993). That is, Ford is using new technology to solve old problems. Why not be more inductive about it and see IT&C as solutions looking for new problems to solve. Another look at the potential of IT&C may suggest a *transnational* strategy rather than *global*, or a completely different one. As rational and critical as the new strategy is, its implementation faces formidable barriers. We start with the change in organizational structure.

5.2.2 Organizational structure/processes

The change from functional to matrix poses several potential problems for Ford. Many employees will have two bosses whose goals and self-interests may be vastly different. Which of these two bosses would the employee satisfy? How quickly do the employees pick up the T-skills that they need to function in these capacities.

Finance and HR groups are not part of the matrix and the question is how innovation-stifling it can be. Given its history of "controlling" rather than facilitating, can Finance provide the kind of environment in which innovation can thrive? Controlling environments kill major innovation.

Ford has not said much about new performance appraisal and reward systems that reflect the new strategy and organizational structure. What new reward systems encourage the building of T-skills that are now critical to major firm activities such as product development and manufacturing? How do you measure the performance of an employee in a matrix organization who must satisfy two bosses and contribute to both a project and functional activities? What reward systems foster shared values as against empire-building?

5.2.3 People

Ford faces two key problems. The first is the dominant managerial logic of its employees. Before the announcement of the strategic change, management had certain beliefs (from experiences at Ford) about how best to run the company and what the automobile industry is all about. This logic affects how they collect and process information in implementing the change. It may blind them to the potential of the change and to properly implementing it. Unlearning all of the underlying knowledge that underpins these beliefs is extremely difficult (Hamel and Prahalad, 1995). Without this unlearning, it is difficult to understand the rationale behind the strategic change, its potential and how to implement it. The second is political power. It may not be in the interest of many managers to implement the *global* strategy even when it is in Ford's interest to do so.

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The firm's empowerment and diversity programs, like its new strategy, have been adopted by other companies for years. Wal-Mart has been practicing empowerment since the 1960s. If Ford really wants a competitive advantage, couldn't it pursue other organizational behavior innovations? Again, why try to catch up with empowerment and diversity training etc.

In general, there are still many questions to be asked? How will the political power be used? How can the firm keep getting the message to its employees? How does it deal with employee and union mental models of what it takes to thrive in the automobile business? Will it take another crisis such as those in 1972, 1980 and 1991 to rally everyone behind the new program? Might such a crisis not, in fact, be an excuse for people to want to revert to the old *multidomestic* strategy? How does one change 320,000 people from different national cultures? What would it take to motivate all these people? What kinds of performance measures and reward systems are appropriate?

How does one break down the mentality of the chimneys? How does the firm deal with architectural innovation problems? How does the firm integrate functional skills with the IT&C skills that must play such a critical role in the strategy? How does it sharpen its T-skills?

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