THE FRONT-BACK HYBRID ORGANIZATION

CEO PUBLICATION
G 97-13 (325)

JAY GALBRAITH
IMD

October 1997

Center for Effective Organizations - Marshall School of Business
University of Southern California - Los Angeles, CA 90089-0871
(213) 740-9814 FAX (213) 740-4354
http://www.marshall.usc.edu/ceo

The Front - Back Hybrid Organization

A number of companies have been adopting a hybrid structure in order to respond to the simultaneous demands to be local and customer responsive and yet be global and capture scale economies. This hybrid organization is a combination of a customer focused front end structure and a global product focused back end structure. It is an attempt to be simultaneously global and local. However, its successful execution results from solving the management challenge to effectively link the customer front with the product back. This hybrid structure has arisen in many other contexts as well (see Galbraith, 1993; 1995; 1998).

The first section describes this type of hybrid organization and attempts to distinguish it from other forms of organization like the matrix. Next the forces that are causing companies to choose this form of organization are identified. And the final section addresses the key issues of how companies are managing to coordinate the front and back portions of the organization.

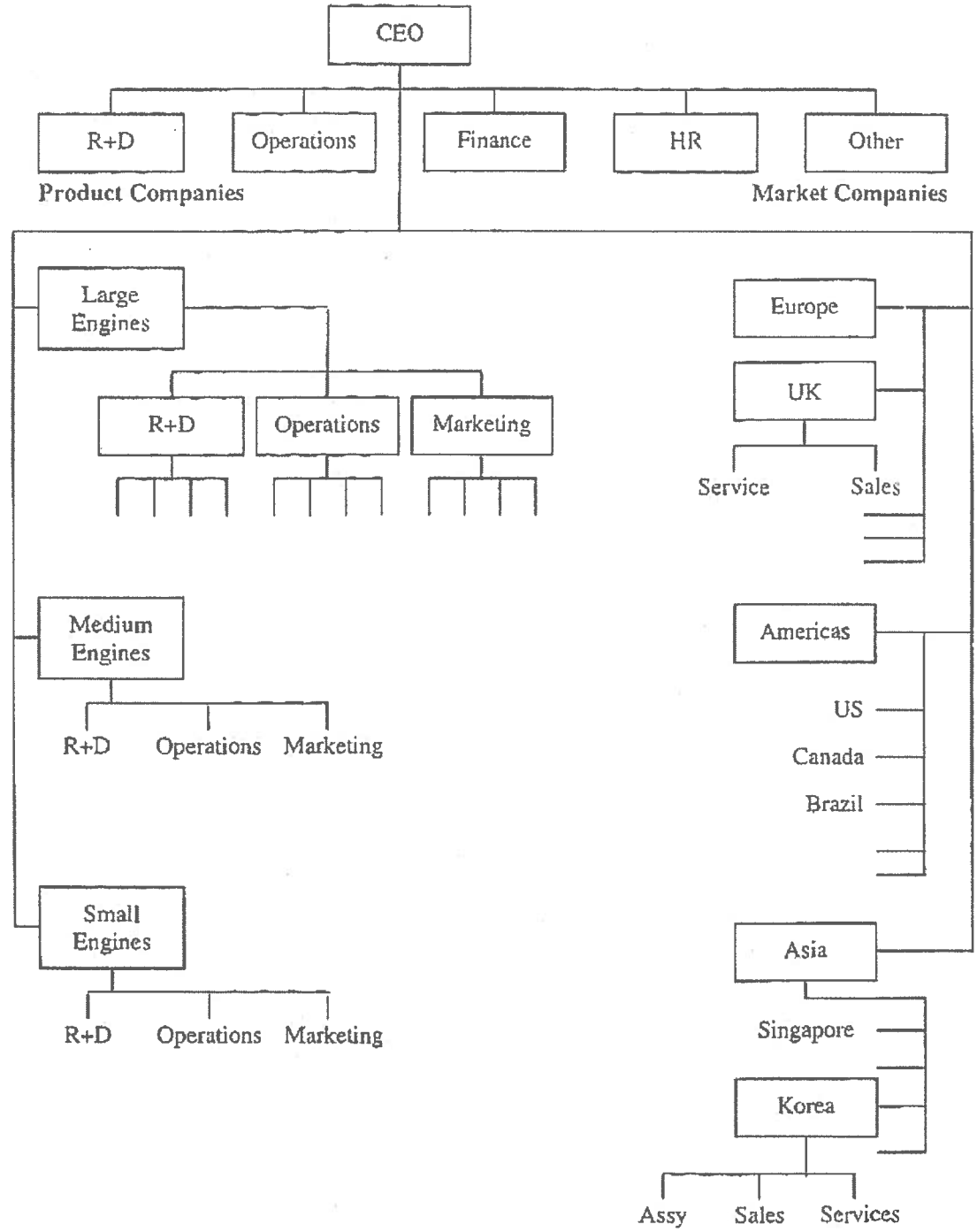
The Front/Back Structure

The front/back model is a type of dual structure in which both halves are multi-functional units (Abell, 1994). The front half is organized around the customer. This half can be a geographic or country structure or it can be focused on some market segmentation scheme like industries. The back half is usually organized around products or product lines. This part supplies all of the customer units and achieves global scale.

An example is a European designer and manufacturer of diesel engines for ships. The structure is shown in Figure one. The front end consists of country profit centers which they call Market Companies. They are primarily Sales and Service companies. However when serving the Korean shipbuilders, the Korean government asks for local added value which takes the form of some local assembly. The back end consists of product companies which are differentiated by the size of the engine. It consists of R+D, Operations (Purchasing, Components, Fabrication and Assembly) and Product Marketing. Each of these product companies supplies its product line to all of the market companies. Each product company is also a profit center. Each achieves global scale for its product line to meet the high fixed costs of product development and manufacturing.

Both the product and market companies are multi-functional profit centers. Each type of company has different functions. The front/back model separates the value chain for the business. It takes those functions closest to the customer and focuses and organizes them around the customer's needs. These are the front end functions. Those functions upstream from the customer are organized to achieve product excellence and scale. In this case, none of the functions are shared. They are separated. None of the functions have two bosses. So it is not a matrix organization like ABB. It is not a country organization either. In the UK, the UK or large engine Product Company is a separate profit center from the UK Market company. Product Companies are to serve all Market Companies equally. The serving of all market companies distinguishes the front/back from a worldwide business unit structure. Figure two contrasts the product

Figure 1
Front / Back Hybrid Structure



flow in the business units of General Electric (GE). GE's profit centers have dedicated Sales and Service functions for each business unit. The diesel engine supplier uses its Sales and Service functions to sell and service all products. The front-back model requires a much more complicated product flow. The complexity and difficulty of coordinating the front and back will be addressed in the last section.

So the front/back is a hybrid. It is not a country based structure, nor is it a worldwide business structure. It is a combination of the two. But it is not a matrix structure with shared units. Instead the model separates the units and structures one portion around the customers and the other one around the products.

Another version of the model can be found in businesses where the front end is configured around customer segments other than countries. When Citibank's commercial banking business focused its strategy on the cross border customer it adopted a front/back structure to implement that strategy. When serving the global customer, geography is less important. It is shown in Figure three. The front end is structured around industries and then by customer. A Global Relationship Manager is assigned to each targeted global account. Local relationship Managers for that account report to the Global Manager and not to the country manager at their location. Country managers have become site managers in the developed countries with no country profit and loss responsibility. So the front end is a cross country customer relationship structure. The relationship managers will sell all the products that the customer needs on a global basis.

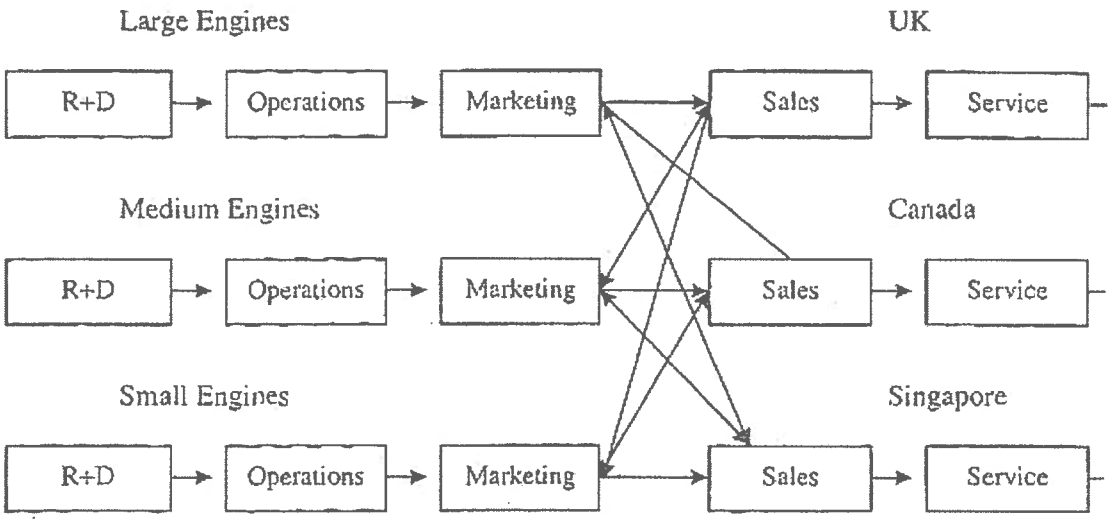
The back end is made up of profit centers which produce global products like cash management and foreign exchange. These are activities that require product expertise and scale in order to be effective. They are usually organized around a Product Management function that works with the Relationship Manager to sell their product. There is an Operations function that processes all transactions and a Technology activity to keep hardware and software up to date.

So Citibank has defined its strategy as serving the global customer with global products. In order to implement that strategy, it has divided its activities into relationship and product units. Each is then organized to best execute its unique mission. The different missions are best executed by a front/back structure.

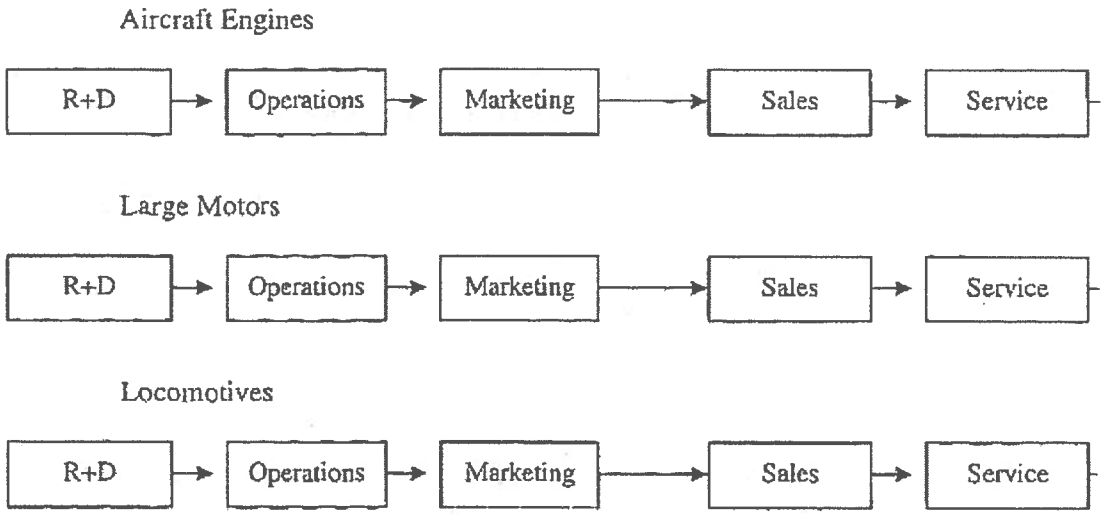
One more example can illustrate how matrix and front/back organizations are related. Usually some form of matrix is used to tie the front and the back together. The diesel engine supplier can illustrate the concept. In the 1980's Diesel engines began to be used to supply electric power. Some towns and factories found that they could use a power plant which was smaller than those supplied by the power generation companies like ABB. A company like the diesel engine supplier could more quickly get an engine running and delivering power. The diesel engine company that was used in the example in Figure one focused on this power market. They made product modifications so that its engines could more efficiently generate electricity. Today half the engine sales are marine engines that drive ships and half are to the power market.

Figure 2

Front / Back Compared to Business Units



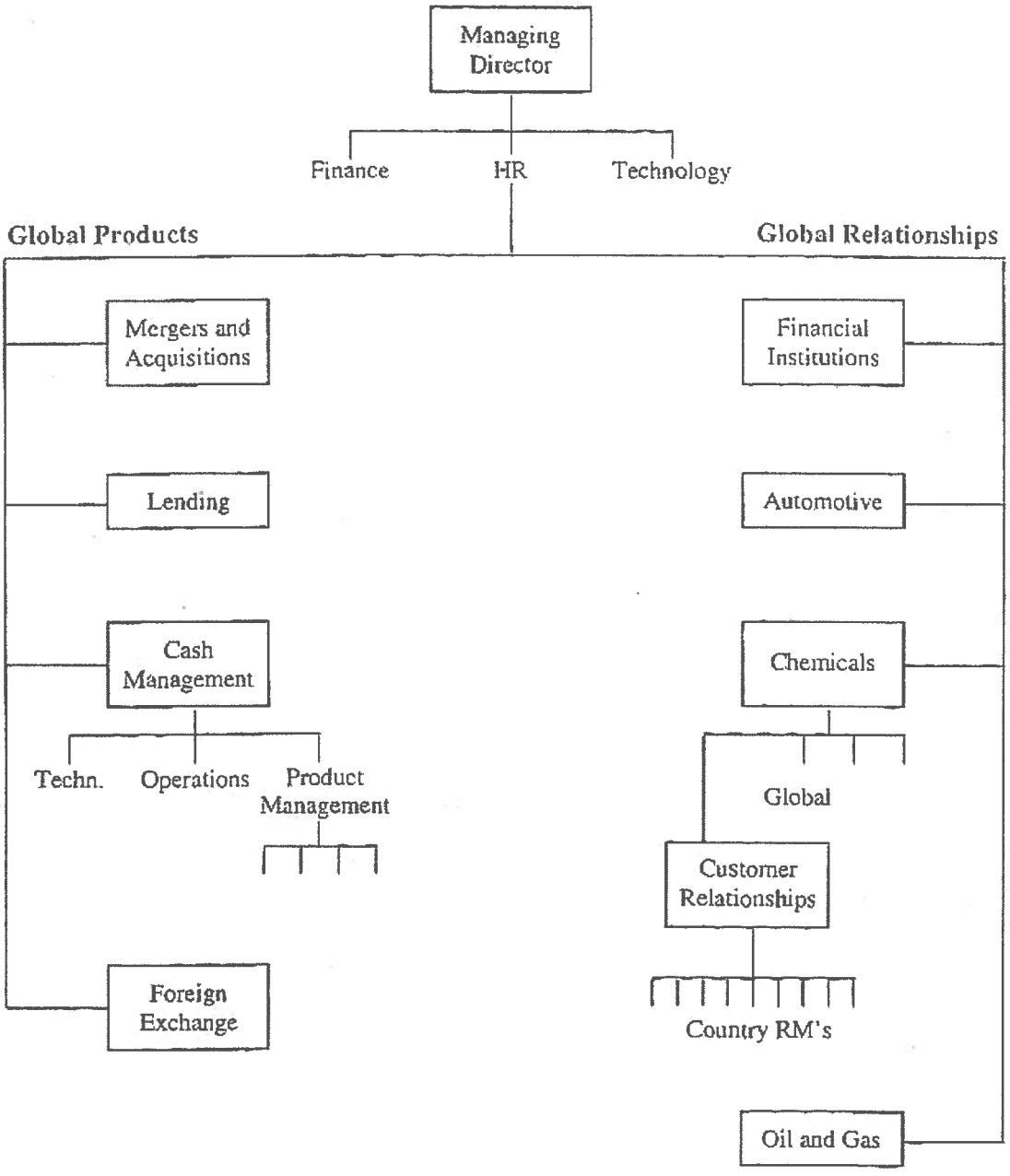
Engine Company Example



General Electric Example

Figure 3

Front / Back for a Global Bank



Since the purchasers of power engines only want electricity and not all the headaches of running a power plant, the engine supplier started a service business to keep all engines running and to operate the power plants for cities and factories. The resulting organization is shown in Figure four.

The diesel supplier has added two new businesses to what was a single marine engine business. These global businesses, marine, power and service, link the Product Companies and the Market Companies. They make the linkage through shared activities which form a matrix organization. For example in the Market Companies, Sales is now specialized and divided into the Marine market, the Power market and the Service market. The Marine Sales unit in a country is shared and reports to the Marine Business manager and to the country manager. In the Product Companies, R+D, some manufacturing and Product Marketing are now organized by Power, Service and Marine. There is sufficient volume to allow a Business specialization within the Product Companies. Some component manufacturing and purchasing remain separate and serve all businesses. The R+D and Manufacturing resources are shared resources. They are collected into businesses and the Business Manager within the Product Company reports to the Global Business Manager and to the head of the Product Company. The Businesses form a matrix structure across the Product and Market Companies. The Business resources are shared with Product Companies and Market Companies.

In summary the front/back organization is a hybrid organization. It separates the value chain into a downstream or front end piece which is closest to the customer and an upstream or back end piece which is farthest from the customer. Then each piece is oganized to best serve its separate purpose. The front is to serve and respond to the customer while the back is to integrate products across countries and achieve scale. Both the front and the back can be profit centers. It is a hybrid because it is both a untry or segment structure and a product structure without being a matrix. However matrix relations arise often when some activities are shared and link the front and the back.

In some industries this hybrid form has been around for some time. It simply was not labelled as front/back. The investment banking business has always had relationship management and product management components. But today, the front/back model is occuring in all types of businesses. What is happening that is making this organization form the structure of choice?

Forces Creating The Hybrid Structure

There are a number of forces pushing companies into the front/back structure but the dominant one is the customer. A major effect of global competition has been to shift the power to the buyer in the buyer-seller relationship. By now the buyer has learned how to use this power and is demanding more value and more responsiveness to their needs. The sellers in return are organizing their activities around customers and customer segments to better meet these new demands. However in many industries it is impossible to align and dedicate all functional activities to a customer segment and form a self contained business unit. The semi-conductor industry is an example. The

semi-conductor manufacturers are having to customize their products for their customers in the telecommunications, defense, computer and automotive industries. hese manufacturers have created Sales, Service, Application Engineering and Product Design units which are dedicated to customers in these industries.

However a semi-conductor fabrication factory now costs $1 billion or more. It is impossible to build a factory for each customer segment. Therefore product units are created for the factories, product engineering and supporting activities. These product units supply all customer segments. These product units achieve global scale while the customer units achieve focus and responsiveness. And this is the primary objective of the structure -- to simultaneously achieve customer focus and responsiveness and product excellence and scale. When the customer is a local customer with uniquely local needs, this structure permits the supplier to be simultaneously global and local.

Suppliers to the automotive industry provide a more detailed illustration. Let us follow the changes taking place at a supplier of braking systems. Up until the late 1980's, the supplier provided a relatively complete line of brake components to the auto assemblers like Chrysler and Fiat. The supplier manufactured disc brakes and drum brakes for the front and back wheels. It also designed and manufactured pumps and hydraulic actuation components for power brakes. And finally, it manufactured the friction materials for the brake pads. The supplier considered the brake unit to be a multi-product, single business. It was organized into Regions for Europe, North America and the rest of the world. The North American Region was a functional organization while Europe was organized as a functional country matrix structure. The organization is shown in Figure four.

The only activities that were dedicated to a customer are circled in Figure four. In addition to the usual Sales representatives, there are Liaison Engineers which rotate through the position every two to three years. They usually had an office at the customer facility. There was usually a Project Manager who was leading the design of the brakes for a new car model like a Chrysler minivan. Other people would have contacts with Chrysler but these were the only Chrysler dedicated people in the old geographic and functional structure.

The auto industry then began to make changes which required much greater cross function and cross border integration from their suppliers. First, the auto assemblers or original equipment manufacturers (OEM's) began to adopt the Toyota lean manufacturing system in all its dimensions (Womack, Jones and Roos, 1990). Chrysler and Fiat began selecting one brake supplier for each car or platform program. So there would be one supplier for Chrysler's Neon and one for Fiat's Punto. That supplier would be chosen for the life of the program, typically 8 to 10 years. The OEM's also asked the supplier to do more design and to manufacture braking systems not just components. The suppliers did more systems integration and acquired competencies in anti-lock braking systems (ABS). Fiat and Chrysler began using simultaneous engineering to reduce their product development time. They demanded the same of their suppliers. The OEM's also created much stronger platform program managers for the Neon and the Punto. These stronger managers were needed for greater cross functional and cross border coordination on new product platforms. Again they demanded the same changes from their suppliers. The OEM's began to operate on a

Figure 4

Combination Front / Back and Business Matrix

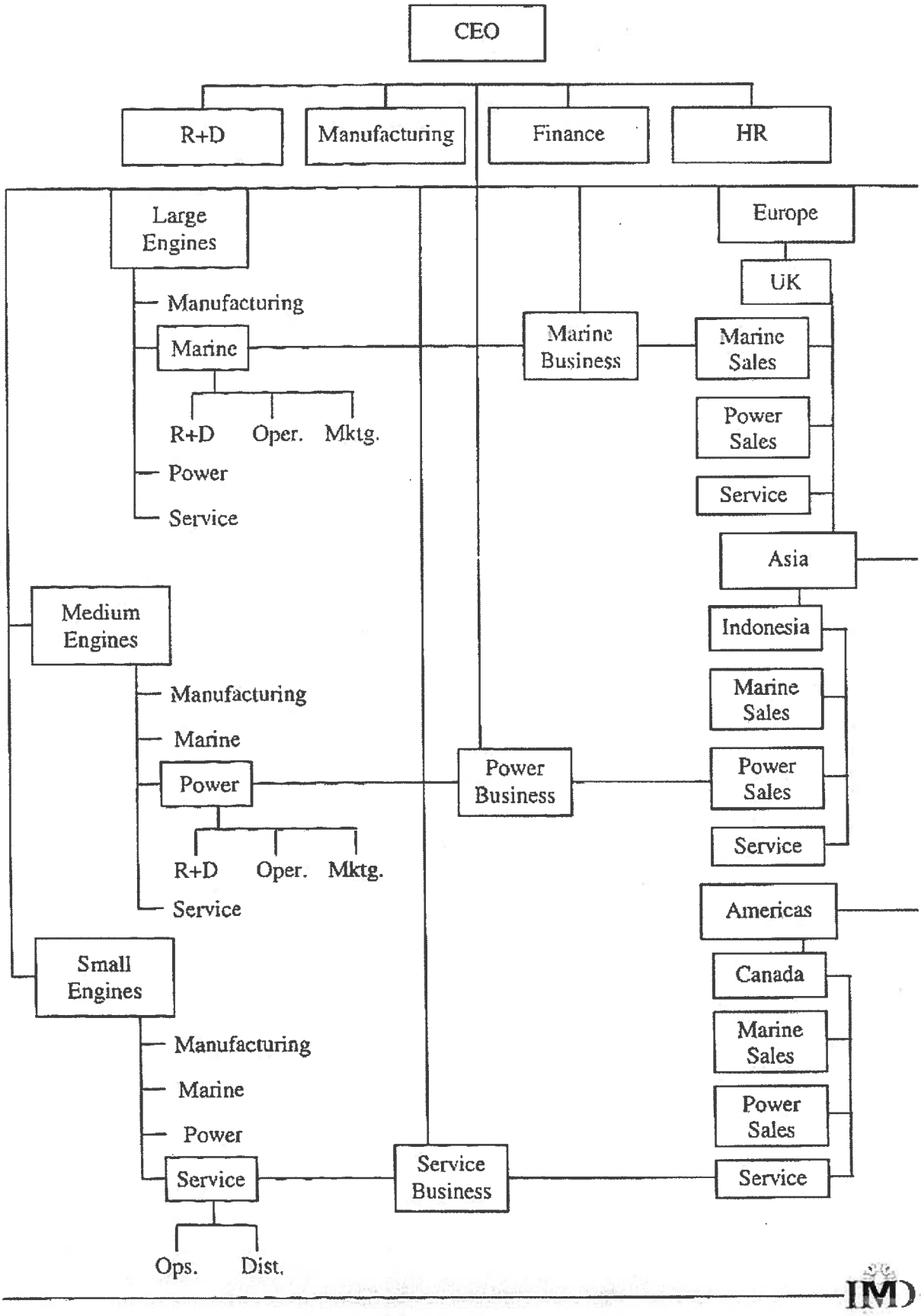
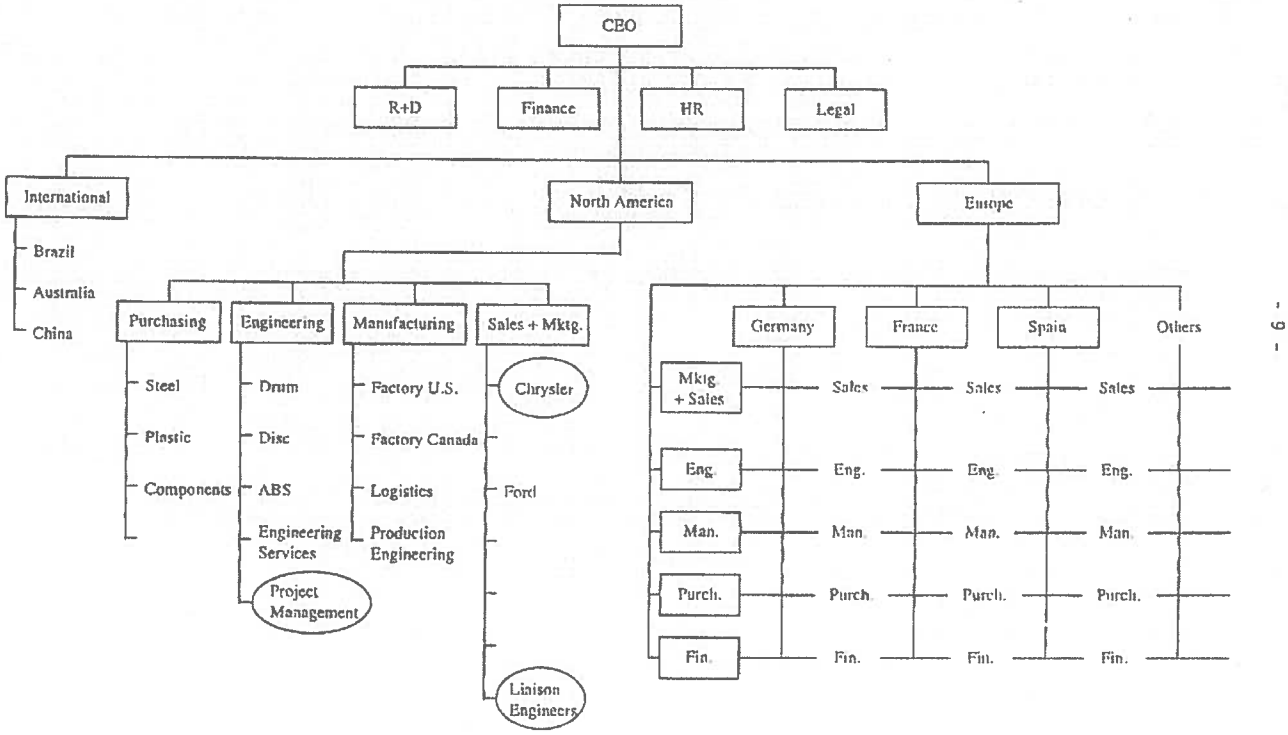


Figure 4a

Auto Supplier Functional - Geography Structure



just-in-time basis. They asked their chosen suppliers to set up satellite plants to supply their assembly line on a just-in-time basis as well. So when Fiat built a new plant in the south of Italy (Melfi) they asked their suppliers to come with them and occupy a portion of the new plant to achieve the supply relationship.

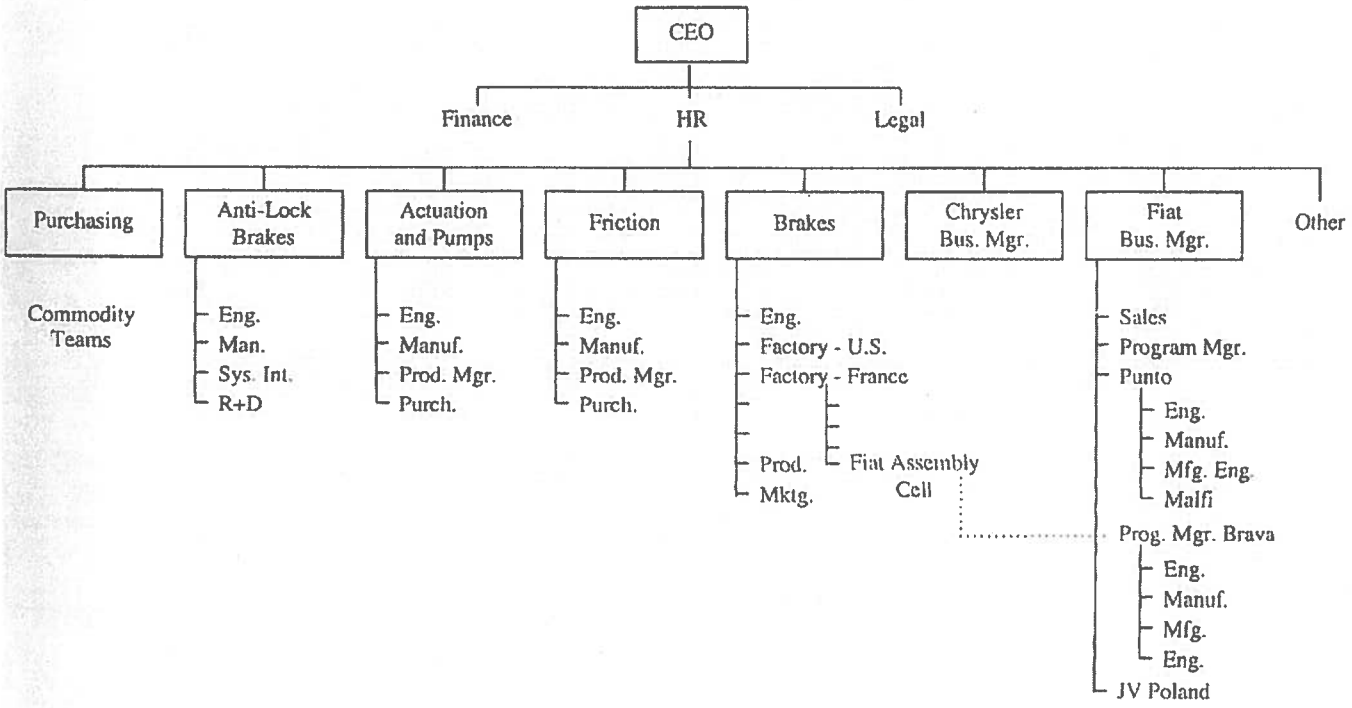
In addition the OEM's were integrating their operations across countries. The national champion structure had been breaking down in Europe. Volkswagen was integrating its operations in Germany, the Czech Republic, Spain, Mexico and Brazil. Ford was integrating its European and North American operations. Fiat was asking suppliers not only to accompany them to Melfi in the south of Italy but to Poland, Turkey, Argentina and Brazil as well. The OEM's began to select suppliers on the basis of their ability and willingness to invest in new countries. In addition, they chose suppliers who had the capability to integrate their own operations across countries.

The braking systems supplier adapted to these changes by making two major structural changes. These changes were the creation of a customer focused front end structure and a product focused back end structure. The old geographical and functional structure posed too many barriers to product development and customer responsiveness. The new front-back structure is shown in Figure five. Reporting to the CEO are global product units and global customer units. The product structure was formed by combining the North American and European activities to get large volumes for each product. Then the functional structure was no longer needed to achieve scale. Each product unit is a fully functional global profit center. Each product unit develops technologies, manufactures components and assembles them. The Anti-Lock Braking unit serves as the center for systems integration and R+D. A Central Purchasing function coordinates across product lines using commodity teams to pool purchases and secure quantity discounts. All of these activities are ones that require global scale. They also plan and position their products for the future and against those of competitors. They can also sell parts to other companies and to the "after market" distribution in order to achieve additional scale.

The second structural change was the creation of customer business units for those customers with whom the supplier established long term relationships. A Chrysler Business Manager and a Fiat Business Manager are shown in Figure five. The business unit is a profit center managed by a business person not a sales manager. The Chrysler unit is actually managed by a former Chrysler executive who came to the supplier when Chrysler outsourced its braking systems design and integration activity. The Fiat Business Unit is shown in more detail. It reflects the fact that all product development now takes place within the customer business units. Strong program managers lead the efforts for the Fiat Punto Program and the Brava Program. The Design Engineers, Manufacturing Planners and Manufacturing Engineers all report to the Program Manager. These people are assigned to the program by the product Engineering and Manufacturing functions in the product units. Some people remain with the program over its life time while others will return to the product unit or to another program when the two or three year design effort is completed. The functions within the product units are the "homes" for these mobile engineers.

Figure 5

A Global Product - Customer Structure



Also reporting to the Punto Program Manager is the Melfi satellite plant. The product units supply components to the Melfi satellite plant. There they are assembled on a just-in-time basis to feed the Fiat assembly line. For the Brava program, the components are assembled at the French factory. However the final assembly process takes place in cells which are dedicated to customers. The cell manufacturing manager works for the French Plant Manager and for the Brava Program Manager. This matrix reporting relationship is another linkage between the front and the back. Finally the manager of the supplier's joint venture in Poland which supplies Fiat's joint venture in Poland also reports the Fiat Business Manager. Thus all Fiat dedicated activities are placed in the Fiat Business Unit.

In this manner the customer relationship has been transformed from a sales relation managed by a sales person to a partnership managed by a business manager. All activities that can economically be dedicated to the customer are gathered together and placed in the customer's business unit. The structure permits strong integration across functions and across borders to reduce the product development time. The customer facilitates the process by granting global volume for a platform to a partner. The volume justifies the overheads that are necessary for the dedicated organizational units. The customer unit is very responsive to the unique needs of the particular customer. All activities needed to meet these unique needs report to a customer business manager. This manager is the single point of contact for Fiat top management. They can discuss the strategic decision of having the supplier invest in a new plant to supply Fiat in South America. The Fiat Platform Program Manager has an equivalent Program Manager at the supplier who has all functions reporting to him. This is an organization that is clearly designed to meet the standards of an increasingly demanding automotive customer.

On the other hand, not all activities can be placed in customer specific units. Scale manufacturing of components is shared across all customers. The R&D investment to develop the next generation braking systems is also placed in product specific units and shared across customers. The supplier has to continue to develop new technologies and maintain product excellence. The superiority of the product was one of the reasons the supplier was chosen by Fiat in the first place. If product excellence is not maintained, Fiat will be less interested in chosing the supplier for a future platform. Thus the structure is intended to maintain product excellence and advanced technologies in its product units while at the same time maintaining superior customer knowledge, relationships and responsiveness in the customer units.

So one of the forces creating these front-back structures is the pressure from the customer to be responsive to their unique needs. The structure permits responsiveness yet maintains global scale. In addition there are other factors, some of which were mentioned in the discussion above. The factors are listed below. These are forces that cause a multi-product company to choose the front-back structure.

1. Customers can buy all products
2. Customers want a single point of contact
3. Customers want a sourcing partnership
4. Customers want solutions and systems not components and products
5. There are opportunities for cross-selling and bundling
6. More value added is becoming customer specific
7. An advantage can be gained through superior knowledge about customers and customer segments.

The pressure for a market focus (and a separate structure) starts when customers buy--or can buy--all products. (If the products are all purchased by different customers in different countries, there will be no pressure for a separate customer structure). When customers are buying all products, the question arises whether or not each product group needs its own sales force (all of whom call on the same customer). Would it not be more economical to have one sales force sell all products to the customer? In part, the answer will depend on how the customer wants to do business. Some customers have different buyers purchasing different products from the same vendor. These companies may prefer to have separate product-knowledgeable sales people calling on separate product-knowledgeable buyers. Some products may be sold to the end-user within the customer and not to buyers from purchasing at all. But more customers are preferring to pool their purchases and negotiate a total single contract with multi-product vendors. These customers want a single point of contact in the vendor organization with whom they can communicate, negotiate and coordinate to lower their joint costs. These single interfaces are the beginning of the front end, customer structure.

An increasing number of customers are adopting sourcing policies like the auto industry example. That is, they prefer to have fewer, closer, and longer-term vendor relationships. They will choose one or two vendors for a product, and dedicate their entire volume to those vendors who become their partners. In return, the customer may prefer--and some will insist--that the vendor create a strong local manager or a dedicated organizational unit with whom it can conduct its business (Lewis, 1995). This unit becomes a front end customer unit.

Some customers want to buy systems rather than products. Wells Fargo Bank buys products when it orders 250 personal computers from IBM. But Wells Fargo may want to buy a consumer banking system. A system will consist of many products, like desk-top computers, teller terminals, automatic teller machines, high volume transaction processors, disc drive storage, and so on. All of these products are manufactured by different units at IBM. When buying a system, Wells Fargo does not want a collection of products, but a banking system that works. As a result, IBM will do the systems integration for customers like Wells Fargo who do not want to do it themselves. Vendors like IBM, therefore, need a systems integration capability, which also becomes a front end customer function.

On some occasions, there may be cross-selling opportunities for the vendor with customers who currently do not buy all the vendor's products. By packaging (or "bundling") products together for a single package price, the vendor may win a larger share of the customer's business. Software companies create "suites" of programs in this way for selected segments. Citibank relationship managers package foreign exchange and cash management for global customers. The cross-selling and bundling usually require a single unit in the front end to create and price the package for the customer.

The examples above illustrate that more value adding activities are being created which are best located in the front end local or customer structure. In the past, Sales was the activity that was organized around the customer. Today, more customer-specific software and services are being added. IBM and Hewlett-Packard used to have sales and after-sales equipment service in their front end customer organization. Today, they have added application software, customer education, consulting, systems integration, and will even run a customer's entire information technology function. PPG used to sell paint to the automobile manufacturers. Today, they sell paint, provide application software for choosing paints, and run the entire painting operation for General Motors.

As the economies of developed countries become service and information economies, companies will continue to add software and service as a source of growth. These services typically require customization for market segments and customers. As a result these services are being located in the front end local or customer structure.

Finally, many companies are recognizing that a local customer or customer segment structure allows them to create superior information and knowledge about customers, and to form, closer relationships with them. If the knowledge and relationships can be converted to superior products and services, the segment focus will become a competitive advantage.

In summary as customers continue to demand unique products and services and expect local responsiveness, the front-back structure should continue to increase in popularity. As the forces listed above continue to grow, so should the use of the global-local, front-back organizations. However the continued use of the hybrid structure is contingent upon learning how to implement it effectively. Implementation of the front-back hybrid will be one of the challenges facing management over the next decade.

Implementing The Front-Back Hybrid

The challenge of implementing the front-back organization is its contentiousness and its complexity. It is contentious because the two pieces of the business are separated and then designed to be different (Lawrence and Lorsch, 1967). Once they have been differentiated, then the front and back must work together and be integrated. It is this required coordination that causes the conflict. In working together the front and back managers discover that they have different priorities and see the world through different lenses. These differences are a natural result of the separation and different designs. The complexity results from having to manage the contention which is

inherent in the design. Managing conflict is never easy. Managing conflict across cultures, times and distances takes the challenge to another level. In addition just about every issue has the potential to be contentuos in the front-back model. So mastering the front-back means achieving coordination between the two pieces under circumstances which appear to prevent that coordination from ever happening.

There appear to be three approaches to managing the front-back integration. The first is to use management processes to confront the conflict and convert it into communication and coordination. In order to execute this approach the firm must deal with the following issues.

1. Which functions are placed in the front and which are in the back?
2. What is the balance of power between the front and back?
3. What management structures and processes are used to link the front and the back?

These issues are discussed in the next section along with some examples of companies who are pursuing this approach.

The second approach to linking the front and back is to put a market mechanism between them and rely on the invisible hand to help sort out the conflicts. Acer, the Taiwanese PC manufacturer, is using a model of creating local front ends and then selling to them. The Acer example will be contrasted with those who use management processes.

And finally the third option is to function only as a front or a back and partner with other companies to get the missing piece. Corning Glass could be conceived as a back end only company. Corning is a materials science company which creates opportunities through its R+D function and then partners with someone to create a joint venture which serves as its front end. Since the best front end varies with the nature of the material and is often unknown in advance, the partnering approach provides the necessary flexibility.

Integration Through Coordination Mechanisms

The majority of companies pursuing a front-back organization model try to coordinate the pieces themselves. Successful execution of the model requires mastering the issues listed above.

First, however, management must set the stage for dialogue in the contentious atmosphere. Management must legitimize the conflict. That is, any normal people coming from the front and back will probably disagree with each other initially. The differences are normal, natural and to be expected. The leadership should create the expectation that disagreements are to be expected and should provide the tools for resolving them. Indeed management will have a bigger problem if the conflict does not occur.

1. *Where do the functions go?*

The first contentious issue revolves around the basic structure design. What functions go in the front and which go in the back? Some functions are straight forward. Sales, after sales Service and Customer Services are front end functions. Usually R+D. Product Design, Procurement and Operations are back end functions. But Marketing is usually difficult. So are the occasions when Product Design and/or parts of Operations are suggested to go in the front end.

The question of whether to put Marketing in the customer or country unit or the product unit always arises. As it turns out, Marketing goes in both the front and the back. Segment, local or Customer Marketing goes in the front end, and focuses on the local market or segmenting the customer population. It concentrates on the bundling of products, unique services for segments, pricing, channel selection, and on supporting the sales force. Product Marketing goes in the product back end, and focuses on product positioning, product pricing, new product development, and product features. The two Marketing activities will also play key roles in linking the front and back as we will see later in the examples. So it is necessary to split Marketing and to understand its dual roles.

A debate also arises when traditional back end activities like Manufacturing are proposed as front end functions. Sometimes there is little choice. A local government may insist on local assembly in order to get the business in the first place. Similarly the Auto customer insists on dedicated product development resources and on locating them at the customer's site. After being forced to locate these traditional back end activities in the front end, companies often learn that they can respond better to the customer. If an activity is customer specific and the customer generates a volume greater than minimum efficient scale, a customer dedicated unit can be effectively located in the front end. For example, IBM's front end Financial Services unit also is responsible for the design and manufacture of automatic teller machines (ATM's) and teller terminals. These are products that are unique to this industry segment.

The trend is that more and more activities are moving to the front end. More services are being performed for the customer. And with partnering, the customer is granting global volumes to meet the scale requirements for customer specific activities. However in most cases, there will be a debate about where to locate some functions.

2. *What is the power balance between the front and the back?*

This issue always arises and is usually indelicately posed as "Who's got the P+L?" The leadership challenge is to convert this issue into a power balance rather than a power struggle. There are several approaches to the issues.

One half may be the profit center and the other a cost center. Some of the auto suppliers described earlier, have moved enough activities to the customer front end to make it the sole profit center. The back end consists of R+D, Procurement and component manufacturing which are cost centers supporting the customer units.

Figure 6

Product - Region Spread Sheet

	UK	France	Nordic	Germany
Large, High Speed Copiers		*Revenue Profit Market Share*		
Medium Range Copiers				
Printers and Fax				

Product Divisions

On other occasions both the front and the back will be profit centers but one of them is given priority. At Citibank the global customer relationships are profit measureable. The global product lines like Structured Finance and Foreign Exchange are also profit measureable. However as a result of its strategy work, Citibank has placed the priority on the Customer front end. Customers are first and products second. That is, product lines are to first support the targeted global customers and then sell outside to get scale and remain competitive. In order to achieve this balance, the product lines should be measured on their service and cooperation to the global relationships first and then on their profitability. These soft criteria can be measured by ratings from relationship managers and customer satisfaction. If the product lines see their performance as measured primarily on profit center earnings, priority disputes between the front and the back will result. These disputes consume time and energy which create no customer value. So the priority needs to be converted into an aligned set of goals.

Xerox is trying a more balanced approach. Historically Xerox made more money from sales of supplies and service than from hardware. The result was that the front end was dominant. Now there is a need for faster time to market, high investment in R+D and a shift to digital technology. The global product divisions are to become an equal partner. Xerox uses a dialogue between the front and back in order to agree on an aligned set of goals for products and regions.

The dialogue is facilitated by the use of a spread sheet shown in Figure six. In order to use the spread sheet, the company needs an information system which can account for profits on the basis of both products and regions. Then the sales and profits can be posted on the spread sheet displaying the various product results for each region. In this way revenues and profits are recorded once and assigned to both the product and the region. The spread sheet is completed during the planning process. The managers from the product divisions negotiate with managers from the regions to secure agreement about revenues and profits for each product line in each region. The process is facilitated by the leadership. The leaders will probably be more active during the first few cycles of the process.

The purpose of the process is not just to produce a plan. It is intended to be an educational process in which the regions inform the divisions about customers and market place trends. The divisions inform the regions about new products and trends in technology. The Japanese companies like Sony use this process in a six-month cycle. Sony Europe goes to Japan and negotiates over several days to reach agreement on the . next six-month targets. The process lasts about two weeks as all regions come to Japan and interact with the product divisions. This dialogue creates a six-month plan. But it is also a time for learning and social gatherings to build relationships.

The spread sheet is a useful tool for displaying the whole picture and individual relationships. When completed it results in a consistent set of targets that both sides try to accomplish. It resolves the differences between the two sides and establishes one target for which the front and back are both accountable. Their goals are aligned until the next cycle.

When both front and back are profit measureable, it is also necessary to define roles and responsibilities. The complexity of the front-back model derives from the fact that just about every issue is a source of contention if not resolved. Who sets the price? It is the front or the back? Who does the forecast? Who is responsible for the inventory? These roles need to be clarified so that managers can make the communications and decisions and spend less time arguing about who is responsible. A tool like a responsibility chart showing who is responsible for which decision and who should be consulted is very valuable (see Galbraith, 1995, p. 146). For complicated decisions like the pricing of cross selling, a process map showing roles at each step may be needed to get the necessary clarity.

In summary, the power relationships need to be clarified and aligned with strategy. These may shift as in the case of Xerox. A role of the leadership is the continuous balancing of power. This balancing can be accomplished through the assignment of top talent, role definitions, control of resources and how the leaders spend their own time.

3. *What are the linkages between the front and the back?*

Initially the front and back ends of the value chain are separated and independently optimized. Then they have to be re-combined in order to deliver the outputs of both halves to the customer. This linkage can be a challenge when there are a large number of countries or segments and products. It can be more challenging when the products must be generated and delivered on short time cycles. So the separately designed halves of the value chain should not lead to separate companies but to coordinated halves.

Most of the time, the linkage is directly between the product units and the local or customer units. Let us take the Citibank example shown in Figure three. The linkage is shown in detail in Figure seven. The front end customer segment for the Automotive segment is shown as organized by customer and then by geography where that customer is present. These people manage the customer relationship in their country and coordinate across borders. There is also Product Management unit which links the Auto Segment to the product lines. This unit also customizes products and bundles products for the industry. At times many customers in the industry have similar problems. In the early 1990's many were investing in China and India. All of them faced issues of financing investments, forming joint ventures, getting access to hard currency, transfer pricing and so on. Teams of relationship and product managers would design and price bundles of financial products for these customers.

When the volume of activity justifies dedicated people, product specialists can be assigned to customers or regions (across customers). For example, in Europe the auto suppliers were consolidating. General Motor's internal supplier, Delphi, was active in buying smaller suppliers. A dedicated M+A specialist and Foreign Exchange specialists could have been fully employed over some period of time by the Delphi merger activity. Or the M+A specialists may be dedicated to Europe and work on the various acquisitions taking place across the various customers. Some may be dedicated to the formation of joint ventures in Eastern Europe. Thus the product specialists bring their expertise to the front end of the business and customize it to meet local customer

Figure 7

Industry - Product Direct Linkage

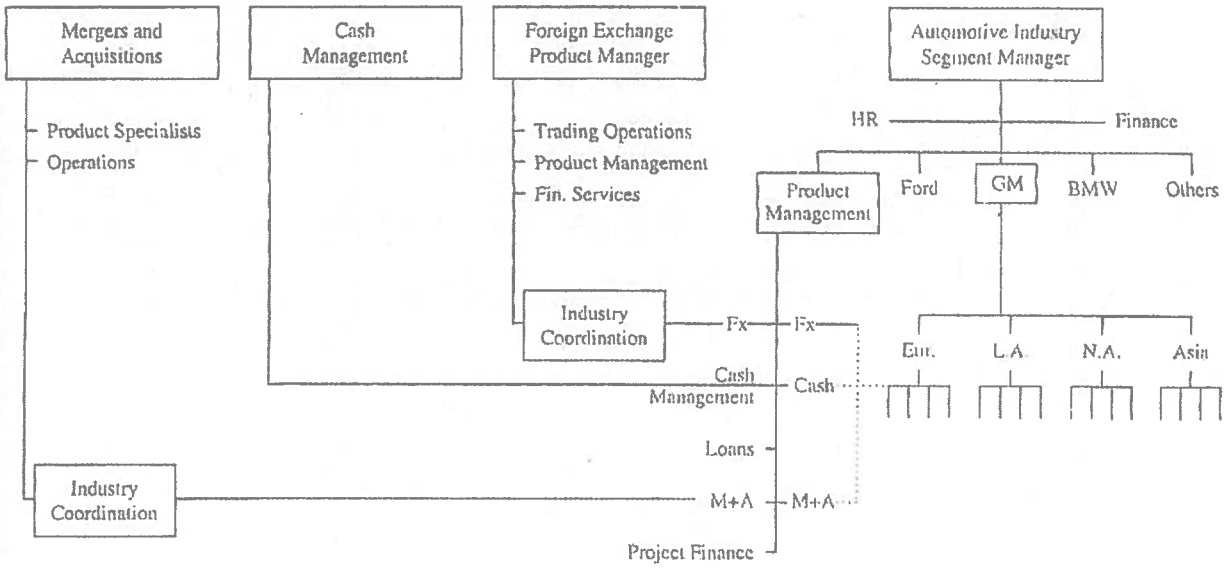
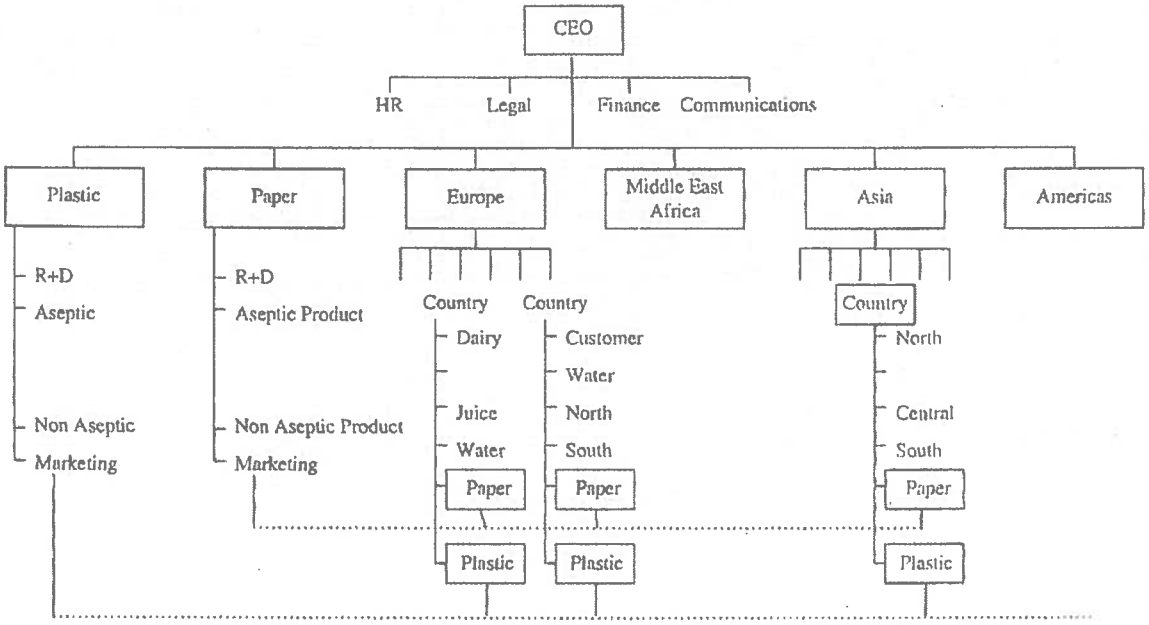


Figure 8

Global Products - Local Markets



requirements. If the M+A activity declines in Europe, they can transfer to Auto acquisitions in North America or to other acquisitive industries in Europe. In this way the Product Managmeent unit in the front end provides the linkage between the front and the back.

An example of global products and local country market companies is Tetra Pak. Tetra Pak is known for the invention of the aseptic packaging process which allows products like milk to be placed on non-refridgerated shelves with extended shelf life. In the 1990's competition started to learn the aseptic process and plastic packaging became a viable alternative. Tetra Pak defined itself as a packager of liquid food using both paper and plastic packaging materials. As shown in Figure eight, Tetra Pak created Global Product Companies for paper and plastic. These Product Companies supplied the Market Companies which were organized around countries. It is clear that each country configures itself differently for Sales and Distribution. Some large countries can specialize by customer segment. One country shown in Figure eight serves the Dairy, Juice and Water customers with specialized segment sales forces. Another country has a large customer which produces both milk and juice and merits a dedicated organization. In addition there are several large producers of mineral water which are served by a dedicated Sales organization. The rest of the country consists of various small producers and dairies. These customers are served by a geographic sales and distribution organization. And finally, an Asian country is shown which does not have a large dairy industry and consists of many small producers. The entire country is organized geographically. So each local market company is designed to serve its unique configuration of customers.

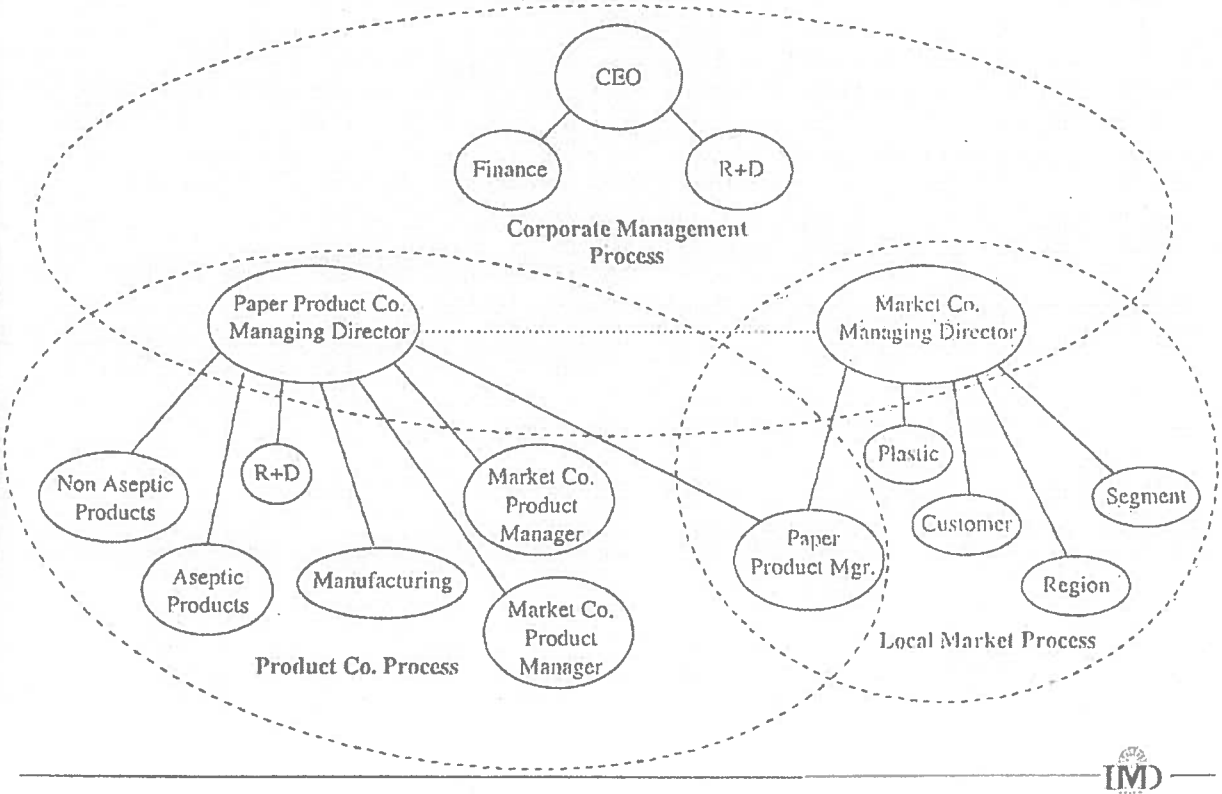
These various countries are supplied by the global product companies. These units get global scale for R+D, purchasing and manufacturing of packaging equipment. The equipment and materials are supplied to the countries which customize the packages using different labelling, colors and sizes of package. The Market Companies focus on the local customer and sell both plastic and paper packaging. The Product Companies supply paper and plastic packaging equipment and materials to all countries and achieve global scale.

The linking roles are Product Managers which are located in the Market Companies. These units report both to the Product and Market Companies. They are the product experts that assist the customer experts in deciding which applications should be packaged in which type of container. They are country experts that assist the Product Company in creating new products for new applications. They are the pivotal roles that link the front end Market Companies and the back end Product Companies.

The successful integration of the front and back requires the development of people to execute the linking roles and the creation of management processes for continuous dialogue. These roles and processes are shown in Figure nine. The first process takes place in the local market company. The managers representing regions, customers and/or segments confront the constant issues of satisfying customers with the managers from the product lines. For example a customer is going to offer a new product, mineral water. What is the best way to package it? What are competitors going to offer? Another agenda item is the trend toward iced tea drinks. A new package would be best for this product. Can the product companies generate an acceptable solution?

Figure 9

Key Roles and Processes



A key role in this process is the Market Company Managing Director (MD). Originally this person was the top sales person in the country calling on the biggest dairies and customers. In addition to this customer contact, the M.D. now needs to build a team and lead that team in intense problem solving discussions. Different customer needs must be met with different product features. When there is not a good match, a new product opportunity may be identified.

The second important process is the Product Company product development process. The global functions and products confront the product managers from Market Companies. Of course each market company can have unique needs. The global products and functions prefer a single standard product to get the global scale and lower costs. Like the Market Company process, this process requires a team based problem solving discussion. The discussions can be intense. The leadership role of the Product Company Managing Director is another key feature. The discussions need to be open, frank exchanges not bargaining with hidden agendas. The process is ependent on having MD's who can build teams and then lead them in discussions which can easily tear them apart.

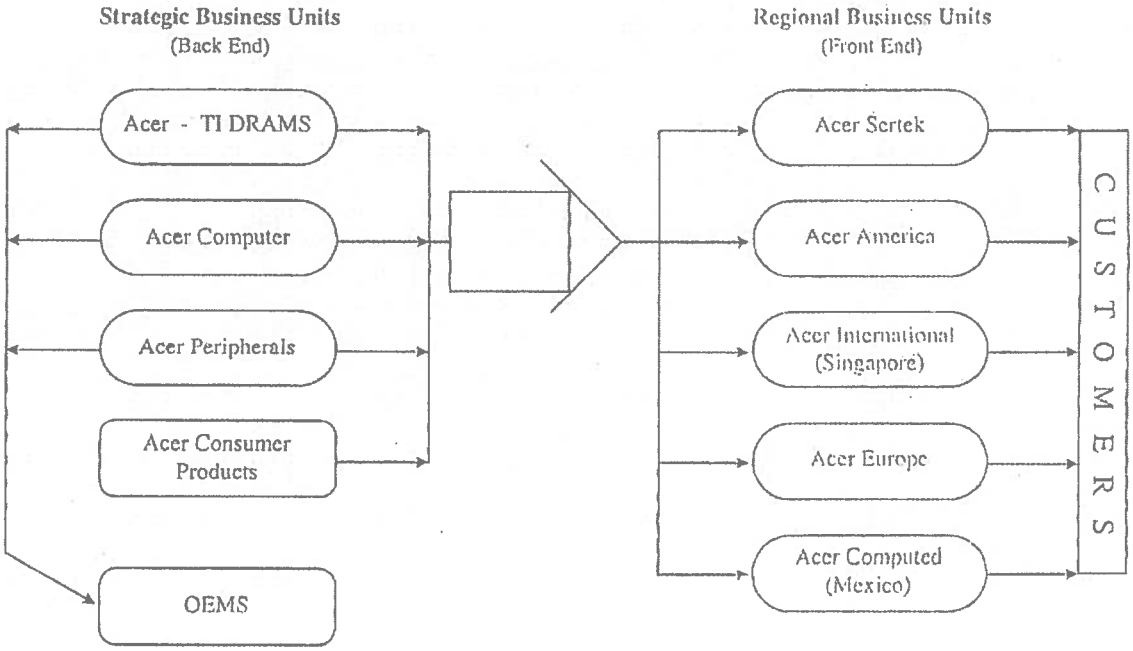
The other key role in these processes is the Product Manager in the Market Company. This person participates in both processes and wears a different hat in each one. In the Market Company where the manager is usually physically located, they represent the product line. They try to understand the local customers and match their product's features to the customer's needs. From knowledge gained in these local discussions, they represent their market in discussions at the global product company. They teach the global units about local customers. They learn from the global units about new materials and technologies. The knowledge gained from the Product Company discussions is then taught to the Market Company. They must teach, learn and yet resolve the contentious issues. This linking role is a crucial role and some thought should be given to the development of people to execute it.

A mix of formal training and experiences is needed. Usually some training in cross cultural group processes is needed. Some companies, like Xerox, have adopted a standard group problem solving process and tools. Then everyone has the same problem solving language in addition to the necessary skills. The ideal experiences for the product manager are roles in the marketing or sales unit of a Market Company and in the Product Company. Then having experienced both the front and the back organizations, the person is positioned to link the two halves. The effectiveness of executing the front back model will probably be limited by the availability of people to execute this linking role.

The last process shown in Figure nine is the Corporate Process described earlier for Xerox. This process is the planning and budgeting process using the spread sheet shown in Figure six. The CEO needs the same team building and leading skills as the MD's need. Then the MD's represent their units in discussions at the corporate level. The Product and Market Company discussions should have prepared them for the Corporate Process.

Figure 10

The Acer Group's Front-Back Configuration



In summary, the successful execution of the front back model using management processes requires the alignment of all policies. In addition to cultural norms regarding conflict as normal, the firm needs an information system to support the different dimensions of products and customers. Then the company needs to convert this information into an aligned set of goals for the front and the back. The planning process and the problem solving processes constituting the planning effort all require team based skills. The plan should lead to the goals by which the participants are measured. Several key structural roles support these processes. People with the appropriate skill sets and experiences need to be selected and developed. Creating this aligned package of skills, processes, rewards, information systems and roles constitutes the challenge to managements who want to be global and local.

Integration Through Market Mechanisms

Some companies use market mechanisms to link the front and the back rather than coordination mechanisms. Rather than invest in skills and processes for communication and coordination, these firms reduce the need for coordination through modular product designs and market prices. The Acer Group, the Taiwanese computer and electronic manufacturer, has created a front-back organization that relies on markets for linkage.

The front and back portions of the business are shown in Figure ten. The back end is made up of global product companies called Strategies Business Units (SBU's). These companies produce DRAM or dynamic random access memories (a joint venture with Texas Instruments called Acer-TI), personal computers (Acer Computer), disc drives, monitors and so on (Acer Peripherals), and consumer products (Acer Consumer Products) among others. They contain the functions for purchasing, product design, manufacturing, product marketing and product sales to other companies who put their own brand on them (OEM's). All of these SBU's supply product to all of the front end companies called Regional Business Units.

The Regional Units (RBU's) supply their local country and regional markets. They are responsible for local marketing, sales, distribution, after-sales service and product assembly. Acer Sertek is the sales and distribution company in Taiwan. Sertek is like most of the RBU's. Acer is the largest stockholder. The rest of the stock is floated on the local stock exchange and is held by the local management. Acer America is preparing for its initial offering (IPO) while Acer International went public in 1996 and is listed on the Singapore Exchange. Acer Computec is a joint venture with a Mexican family. Computec has the largest market share in Mexico and is responsible for Acer production in Latin America. This local ownership and local management form works for Acer. Acer has concentrated on the home and small business market and is the leader in most emerging market countries. It serves local customers through its local companies. It does not focus on global accounts nor the cross border customer.

Acer, like Tetra Pak and Xerox, uses the back end SBU's for global scale. The purchasing of Pentium chips, power sources, etc. is negotiated by the SBU's. Other scale sensitive activities like R+D, component manufacture, product design and global brand management are also executed by the SBU's. The front end RBU's are to attain

local responsiveness. Each local PC market is quite different. The markets are at different stages of development, different levels of affordability and prefer very different product configurations. Despite the publicity given to the big payers like Compaq, Hewlett-Packard, and IBM, about a third of the PC market is served by small, fast local players. These competitors are Acer's main competitors.

In order to respond to the local market. Acer uses locally owned and managed RBU's. They know their local market. The assembly of the PC is also locally performed at the last moment according to the customer's demand and preferences. The simultaneous achievement of local customization and global scale results from the modular product design and product standards. The products are designed for easy local customization. Three different plastic housings allow for all combinations of mother boards, disc drives and other boards. The mother board, which houses the microprocessor, is designed to allow as many as five different pentium processors and different memory chips. The product is designed to be compatible with industry standard chips, disc drives monitors, etc. As a result the product can be assembled locally at the very last moment. It can be asssembled and configured on demand to meet various local preferences. The local RBU can buy components at the last moment. These components are those that show considerable price volatility, usually price cuts. As new technologies arrive in various local markets, the RBU's can adopt and incorporate them into their products. So the RBU has the flexibility to respond to the usual volatility in demand volume but also to variations in preferences for product configuration, in prices for components in a price sensitive business and in the appearance of new standard technologies.

The RBU has minimal constraints on its action. The constraints are placed on activities which provide scale. The RBU must use the Acer mother board. This board is produced in volume and may contain proprietary chips which give Acer an advantage in some applications. However these components are flown by air freight to the RBU's. Mother boards are manufactured in Taiwan, where UPS has a hub, and in Subic Bay, Phillipines, where Federal Express has a hub. The RBU must use the plastic housings, power sources and key boards from Acer. However these components are not volatile, are purchased or manufactured in volume, and shipped by low cost sea transport. The other constraint is the brand. The RBU must use the brand, the logo but it can modify promotions coming from Acer for the loal market.

The RBU is free to choose the other components at market prices. The first choice would be Acer Peripherals but if cheaper, new disc drives and monitors are available locally, the RBU is free to buy them. Acer negotiates discounts from Intel and other suppliers but again the RBU can buy locally if prices fall or new technologies appear. Thus the RBU's are local businesses which respond to the variety of local markets that they serve. The SBU's are global businesses which attain product excellence and global scale in their offerings. A few key components like mother boards are required components to be used by the RBU's. A standard transfer price is set for these components. Other components must compete for the RBU's orders. The modular product design and industry standards allow a market to coordinate the independent

decisions of the RBU's and the SBU's. The other integrating mechanisms are the energy and time of the Acer founder Stan Shih. He carefully selects the RBU partners and maintains relationships with them. Almost all of the RBU partners are ethnic Chinese. They are local citizens but are ethnically Chinese. To some degree the front back at Acer fits the Chinese family business model and the network of companies that make up the Overseas Chinese companies. In any case, Acer is a front-back organization designed to simultaneously achieve global scale when it is required and local responsiveness when it is required.

Summary

The front-back structure is an increasingly popular hybrid organization. It results from separating the value chain and organizing the front end around the customer and the back end around the products. The front end is designed to be locally responsive and customer focused. The back end is designed for product excellence and global scale. In order to be simultaneously global and local the company must master the challenge of linking the front and back ends. This mastery is attained through conflict resolving management processes or through pricing mechanisms.

Bibliography

1. Abell, Derek, Dual Strategies

2. Galbraith, Jay, "The Business Unit of the Future" in Galbraith, J. and Lawler, EE, Organizing for the Future, Jossey-Bass, San Francisco, 1993, Pp. 43-64.

3. Galbraith, Jay Designing Organizations, Jossey-Bass. San Francisco, 1995, Pp. 84-99.

4. Galbraith, Jay "Product-Customer Structures: A New Organizational Hybrid" in Mohrman, S. Galbraith, J. and Lawler G., Tomorrow's Organization, Jossey-Bass, San Francisco, 1998.

5. Lawrence, Paul and Lorsch, Jay Organization and Environment, Irwin, Homewood, Ill. 1967.

6. Lewis, Jordan, The Connected Corporation, The Free Press, New York, 1995.

7. Womack, James; Jones, Daniel and Roos Daniel, The Machine That Changed the World, Maxwell MacMillan, New York, 1990.