How to Transition Chinese Firms into World-Class Corporations --Organizational and Cultural Innovations are Key

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M.S and B.S Electronic Technology
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Submitted to the Alfred P. MIT Sloan School of Management
In Partial Fulfillment of the requirements for the degree of

Master of Science in Management

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Abstract

Entering the 21st Century, after almost 30 years development of the Chinese economy, several famous Chinese firms have grown to a significant scale and achieved the rudiments of world-class corporations. Following Japanese and Korean corporations, several firms began their globalization and expansion: Lenovo, Haier, Huawei, and TCL. During the short period of Chinese corporations' globalization, however, they have faced various kinds of difficulties and challenges. Starting from case analyses of eight major electronics corporations (including Philips, Motorola, Toshiba, LG, Acer, Lenovo, Huawei, and TCL, corporations in Europe, USA, Japan, Korea, Taiwan of China and mainland China), the thesis expounds the course of their growth from a historical perspective. It uses the approach of comparison, conclusion and deduction to seek common elements of their success and the common issues faced in their development. The case studies are the principal factual basis of the discussion in the thesis.

The main text starts from consideration of organizational and cultural innovation and discusses the forms, evolution, and innovation in organizational development. At the same time, I analyze the differences in typical methodology, system, and culture resulting from the differences in national culture in America, Japan, and China. Based on the characteristics of Chinese "Small Groupism" culture, I propose that a solution for Chinese organizational management and cultural innovation is to establish the "Rigid Frame and Flexible Organism," in other words to establish management and cultural bureaucratic organization. In Chapter III, from the perspective of practical application, I explain the methods of diagnosing organizational culture and how effectively to advance innovation in organizational culture. Hereafter, based on the trend and scale analysis of the eight corporations, I draw conclusions as to the common elements in their development as well as guidance for the development and globalization of Chinese electronic corporations. Based on the framework to establish the "Rigid Frame and Flexible Organism", I address in detail recommendations for Chinese firms.

Thesis Supervisor: Edward B. Roberts

Title: David Sarnoff Professor of the Management of Technology

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First, and foremost, I would like to take this opportunity to express my thanks for my wife Lingling Zhang who took care of me so well, and my son Shuhao Zhao who never complained that I have no time to be with him, while I wrote my thesis. Without their love and understanding I could not have pulled it off.

I would like to express my sincere thanks to my thesis supervisor, Professor Edward Roberts. He gave me much advice and help in all respects so that I could develop clear thoughts and methods to enable me to complete this thesis smoothly.

It is hard for me to fulfill the extensive investigation required by this wide-ranging thesis within the limited time of four months. I, therefore, set up two teams in China and Boston, totaling 26 persons. They are Min Chen, Jian Cui, Janet Deng, Jing Gu, Christina Rong, Yi Hao, April Huang, Steve Jong, Bing Li, Jerry Li, Kan Li, Lin Li, Weiran Li, Xiaoya Liang, Grace Liu, Aaron Tong, Bill Wang, Changqing Wang, Schneh Wan, Shannon Wang, Taylor Wu, Feng Xu, Aiwen Yang, Dongyu Zhao, Xu Zhao, Lei Zhu. When I told them that I would write a thesis on the subject of "How to Transition Chinese Firms into World-Class Corporations" they were all pleased to help me pursue and collate research. Here I would like to express my sincere thanks for their hard work and the time they invested in collection of information in the early stages of this thesis.

In addition, some of them, together with me, interviewed, in person or by email, professors at MIT and Harvard, and the China-Europe International Business School in Shanghai. In the process of preparing this thesis I obtained inspiration and different points of view and I would like to take this opportunity to express my thanks.

I also would like to offer my sincere thanks to Christine Connaire. She helped me to do the copy editing and also gave me such advice and help so that I could clean and polish my thesis and enable me to complete this thesis smoothly.

Some time ago, I read the book "Why Chinese People are not Organizable?" by Professor Zhixing Xiao of the China-Europe International Business School in Shanghai. He presented a comprehensive discussion of organizational and cultural issues in Chinese corporations, viewed in the

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light of a great number of events, phenomena, theories and practices at many times and in many parts of the world. The book answered the difficult question which puzzled me for many years, and thereby strengthened my confidence in my thesis. The references in that book directed me to many valuable reference books which made me recognize the organizational and cultural issues more clearly. Here I would like to offer sincere thanks to Dr. Zhixing Xiao.

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Preface

China is a country with a 5000 year-old civilization and a brilliant culture. Throughout most of its history, China took the lead among the countries and regions of the world. Why has it been surpassed by Western countries in the past two or three hundred years? The reform and opening up, which started in 1978, made China grow fast in all sectors of its national economy. Why, therefore, is there hardly one Chinese corporation in the Global Future 500? All these questions have puzzled leaders at all levels of government and business, and have attracted the attention of international scholars who seek explanations. I have been thinking of these questions for a long time. If we regard them as symptoms of an unhealthy situation in China and Chinese corporations, then how do we diagnose the "causes" and propose a plan and a reform strategy which would improve the position of Chinese corporations in the global industry value chain?

Looking back over nearly 30 years of the reform and opening up to a market economy that Chinese corporations experienced, developing corporations are now all anxious to grow bigger and stronger. There is a folk saying in China that: "A big one is not always a strong one, but a small one must be a weak one." Chinese entrepreneurs have been pursuing their "dream" generation after generation--to transition Chinese firms into great world-class corporations in the Global Fortune 500. As a proprietor growing up during the reform and opening up of China, I have been thinking of these questions. While practicing management in the past 15 years I have been asking how to make Chinese firms healthy, strong, and growing. What are the reasons for the lack of organizational efficiency in Chinese firms? Is there an organizational model better suited to Chinese culture? How can we unify and synergize the formal rules and the informal corporate culture? What role should the Chinese entrepreneurs take in the process of making a firm big and strong?

Dongsheng Li, chairman and CEO of TCL Group where I worked, once said: "China's rejuvenation depends on the development of numerous corporations. If Chinese firms do not transition into world-class corporations as soon as possible, they will be acquired by world-class corporations and become subsidiaries, and there's no other choice." But what disappoints the Chinese is that, until now, there is no world-class corporation in China achieved through internal growth. Although After TCL's merger with Thomson color TV business, Lenovo's integration with the PC business of IBM, and the appearance of Huawei and Haier, many Chinese firms pushed a step forward toward becoming global corporations. Some of them even began to take shape as world-class corporations, but they experienced some level of hardship in the process of development. What are the reasons? Does the

problem lie in organizational management, human resources, internal culture, or the impact of Western culture? Looking back at Japan and Korea, who have the same Confucian culture but far smaller land mass and population, we see the rise of a lot of well-known global enterprises, such as Sony, Panasonic, Toshiba, Samsung, and LG. Taiwan also has a big corporation such as Acer. I believe that only if we study their courses of development, and learn from them with an open mind, can we discover the cause of the bottleneck in the development of Chinese firms. And I believe that there will be world-class corporations growing up in China as the result of efforts of future generations.

From years of management practice, and especially through my research, study and experience at MIT, I discerned that organizational and cultural issues are the main bottlenecks in the development of corporations in China. The emphasis of this thesis, therefore, is to use the experience of world-class corporations to solve the organizational and cultural problems of Chinese corporations. I have selected eight companies (Philips, Motorola, Toshiba, LG, Acer, Lenovo, Huawei and TCL) for detailed research to define the lessons in organizational and cultural innovation from these typical companies in Europe, America, Japan, Korea, Taiwan of China and mainland China. Meanwhile, in the light of some influential Western management theories, combined with my own management practices, I engage in a general discussion of organizational, cultural, and diagnostic issues in Chinese firms to provide some different viewpoints and suggestions for Chinese firms on their way to becoming big and strong.

Due to the wide range of the research and the time constraint, it is hard to treat the subject thoroughly in all respects. And as a senior executive in a major corporation, I drew from my personal management practices to form many of my viewpoints. As a result, there may be some discrepancies with academic-oriented research. Please free to give me advice.

Chapter I: Organizational Innovation in Corporations[1]

Why do organizations exist? As Konosuke Matsushita said: "Because one person has limited ability and could not do a lot of major tasks. Thus we organize everybody to work together and, by exerting collective effort, we complete tasks that would be impossible for one person to complete." Certainly, along with organizations there must be organizational forms and rules. If Chinese corporations want to develop their skills to the full on the world stage and to flourish in a competitive market economy, they have to understand the rules of corporate development, evolution and change. "Through another's good quality or suggestion one can remedy one's own defects." Only based on a good understanding of the rules of corporate development, evolution, and change can we have regulations to abide by and rules to follow when faced with problems and challenges in our corporations.

In this chapter I shall examine rules of organizational structure and organizational development, based on the research by Henry Mintzberg and Larry E. Greiner. Their classic works on organizational development embody the current internationally accepted norms regarding organizational structure and development. Based on these studies I hope to establish a framework for an analysis and understanding on the structure and development of corporations.

In his article "The Structuring of Organization", in the book "Strategy of Process", Mintzberg pointed out that the design of an organization recognizes work divisions and facilitates the coordination of departments. In this process, factors that must be comprehensively considered include the orientation of each person in the organization, and the internal structure of the design and decision-making process.

Corresponding to six different coordination patterns Mintzberg has obtained five different organizational forms. I shall explain them, one by one, in the light of my many years of management experience in China.

1. Forms of organizational structure

[1] I appreciate the contributions to the research for this chapter by Jian Cui.

There is a great abundance of writings on organizational structure, but generally speaking their contents do not deviate from the basic framework built in Henry Mintzberg's book on organizational structure, published in 1979.

In this book, the author analyzed six components of organization. The top one is the strategic apex, which is the highest level of management; the bottom is the operating core of the organization, where basic jobs are completed. The middle line consists of strategic apex and operating core. When an organization grows to a certain stage it needs some functional departments. First it needs techno-structure which is in charge of planning, marketing, engineering, and other analytical jobs. Second, it needs support staff to provide such functions as finance, human resources, legal affairs, public relations and logistics. Finally, all organizations have a sixth part, the invisible culture or ideology. See figure 1.1 Components of Organization

Figure 1.1 Components of Organization (Source: from "The Structuring of Organization" by Mintzberg)

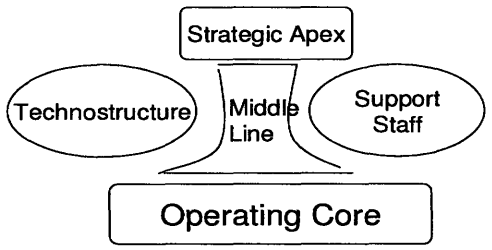


Figure 1.1 Components of Organization

Mintzberg put forward several possible patterns of mutual cooperation among the first five visible components: (1) Mutual adjustment. This pattern is most often seen between equals in the operating core. (2) Direct leadership. This pattern could be seen in the relationship of superiors and subordinates. For example, the strategic apex will normally direct the operating core. (3) Work standardization. Techno-structure will normally establish procedures which coordinate work between different individuals. (4) Output standardization. Result, rather than process, is the basis of this pattern of coordination. For instance, the corporation specifies that next year's income must increase 10% above that of this year; deciding how to achieve this outcome is a task for subordinates. (5) Skill standardization. The skills of the workers who do the jobs, rather than process or result, are the basis

of this pattern of coordination. Only when workers receive the same training and have the same knowledge structure, could they have the common language necessary to coordinate with each other. (6) Values. This pattern of coordination stresses that all participants are moved by a common faith to complete a task. It is also the culture of an organization.

1.1 Simple structure

In a simple structure, the strategic apex superintends the operating core directly. It is flexible and is able to respond fast, adapting to a changing market situation. Most entrepreneurial companies adopt this organizational pattern. Generally it is difficult for a simple structure to support a growing organization unless the founder has the ability to exert extremely strong control; in that case the business can grow very well. Under special circumstances, such as a crisis when the high prestige founder temporarily takes back decision-making authority, an organization may revert to the simple structure for a period of time. As the most basic organizational pattern, it is common in China. See Figure 1.2 Simple structure.

Generally speaking, when an organization grows to a certain scale (for electronics companies, when its revenue reaches 1 billion US dollars) the simple structure organizational pattern must be adjusted. The measures taken to achieve the necessary adjustment depend on the organizational culture and the industry to which the company belongs.

Figure 1.2 Simple Structure (Source: from "The structuring of organization" by Mintzberg)

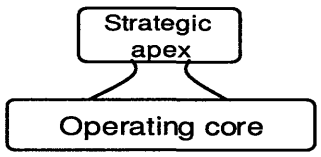


Figure 1.2 Simple structure

1.2 Typical bureaucracy

The second organizational pattern is the typical bureaucracy, the so-called machine bureaucracy. Like the sparrow, small as it is this bureaucracy has all the vital organs. The six components of organization are all reflected in this pattern. When a business grows to a certain scale, it adopts this pattern of organization. The main feature is standardization of process within the whole organization, requiring it to keep a simple way of working, even with thousands of repetitions. This pattern is suitable for assembly-line production, including labor-intensive production (typical examples are McDonalds and Wal-Mart). The disadvantage of this organizational pattern is that it does not have the adaptability to accommodate to changes in the business situation. See Figure 1.3 Machine Bureaucracy: Job Standardization

Figure 1.3 Machine Bureaucracy: Job Standardization (Source: from "The Structuring of Organization" by Mintzberg)

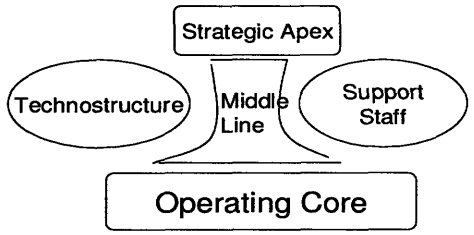


Figure 1.3 Machine Organization, Job Standardization

In a typical manufacturing company, this pattern is mostly used in the production chain, rather than in R&D or sales.

1.3 Professional bureaucracy

The third type of pattern is the professional bureaucracy, which is also a very popular organizational pattern in China. Typical examples are schools, hospitals, and high-tech software companies. Its basic features are that the specialization of technical staff in the operating core is high, the strategic apex is quite small, and middle- to low-level management is not that important either. The operating core and support staff are essential to the running of the organization. The main feature of the professional bureaucracy is that each member has its own task, a plan which is not suitable for a machine bureaucracy. See Figure 1.4 Professional bureaucracy: Skill standardization.

In a typical manufacturing company, this organizational pattern is used mostly in the R&D chain, rather than in production and sales. Within the organization it is imperative to promote respect, fairness, justice and transparency.

Figure 1.4 Professional bureaucracy: Skill standardization (Source: from "The Structuring of Osrganization" by Mintzberg)

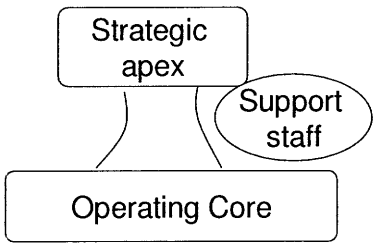


Figure 1.4 Professional bureaucracy:
Skill standardization

1.4 Division bureaucracy

The fourth type of pattern is division bureaucracy. Its operating core is comprised of many machine bureaucracies. There is a relatively small headquarters, including strategic, technical, and support staff. The earliest typical division bureaucracy was General Motors Company directed by Alfred Sloan. It became a classical management case through "The Visible Hand, the Managerial Revolution in American Business," by Alfred Chandler, and the famous biography, "My Years with General Motors," by Sloan. The objective of the standardization in a division bureaucracy is neither specific operation nor employees skills, but the output of each division. The best advantage, of course, is that this structure lays the foundation for further expansion of the organization. The structure is simple and clear. Headquarters is the strategy center, the division is the profit center, each with its own level of subsidiary cost centers. Most big corporations follow this organizational pattern.

In fact it is not a trivial problem in developing world-class corporations. Mintzberg sharply points out several problems in this organizational pattern. First, the division bureaucracy system does not mean decentralization. Each division is nominally rather independent, but in fact their authority is

limited to the operating core level; strategic decision-making must still involve headquarters and get its approval. In China, there are many son-companies or grandson-companies within a Group Company. The bosses in the son-companies or grandson-companies appear to be at the highest level of authority, but in fact they do not have the power or responsibilities of the head and their opinions or visions may not be comparable with that of the heads of independent companies on the same scale.

Second, each division faces strong control from headquarters and to deal with this strong outside force it is compelled to become a highly hierarchical machine bureaucracy.

Third, the headquarters in a division bureaucracy has the ability to add or cut divisions. It seems to have a strong ability to innovate and assume risks, but in fact, looked at from the division level, the adventurous and innovative spirits of division general managers, who need to report their division's performance to headquarters monthly or quarterly, cannot be compared to the general manager of an independent company. The diversified company adopts division bureaucracy, but the problems outlined above suggest the management difficulties of a diversified company. See Figure 1.5 Division Bureaucracy: Output Standardization.

Figure 1.5 Division bureaucracy: Output standardization (Source: from "The Structuring of Organization" by Mintzberg)

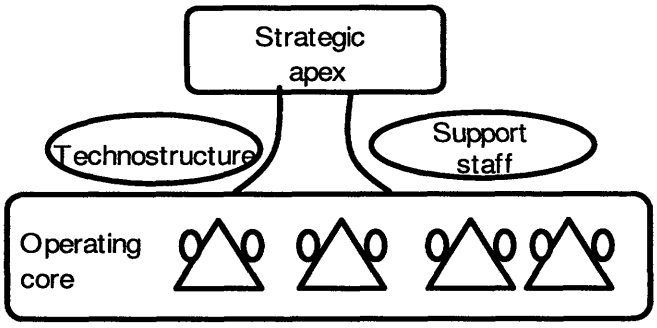


Figure 1.5 Division bureaucracy: output standardization

A good relationship between headquarters and each division is very important. The keys to success in a division bureaucracy are clarifying the responsibilities, authority and benefits of headquarters and of each division, and establishing the rules; in other words setting up a clear authorization system.

1.5 Adhocracy

The fifth type of organizational pattern is adhocracy which features the avoidance of standardization. With cooperation based on capability, it breaks all kinds of traditional organizational boundaries between supervisors and subordinates, strategy and execution, function, and lines of authority or hierarchy.

In general, however, this pattern has the disadvantage of relatively low efficiency. Of course, the higher profit margin of innovative companies offsets to some extent the cost of low efficiency. And supported by a strong and cohesive culture, efficiency can be improved. And people's simple, fair, open cooperation with each other in the organization is characteristic of this culture. See Figure 1.6 Adhocracy

Figure 1.6 Adhocracy (Source: from "The Structuring of Organization" by Mintzberg)

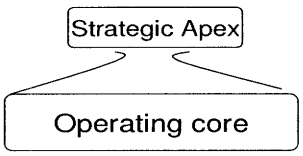


Figure 1.6 Adhocracy

1.6 Matrix bureaucracy

The management theory of matrix bureaucracy, originally an innovative technique to solve problems by establishing system structure, was invented by Dr. F. Zwicky, an astrophysicist at the California Institute of Technology in the U.S. It was later promoted as a management method to stimulate innovation. Based on traditional matrix management theory, contemporary corporations made some innovations, continuing to improve and adjust with the development of the organization.

Matrix bureaucracy represents the balance between a product-based organization and a functional division-based organization. It first appeared in America in the 1950s and was a popular form of

corporate organizational management during the 1960s to the 1970s. After the 1980s, matrix management received a lot of criticism, and some said that matrix bureaucracy was the management system with the most problems. But in the view of Dr. Wells, a project management expert in America, the concept of matrix was very simple: borrow resources. When you need them, you go and borrow them, and when you have finished using them, you just return them. In the matrix composed of different management elements, "you may butter your bread on both sides" and move about freely and quickly.

In the late 1990s, and especially in the new century, matrix bureaucracy regained its popularity. Matrix management brings three advantages to the company:

- It shares resources wisely. In matrix bureaucracy, human resources are effectively utilized. Research shows that companies taking this management model generally hire 20% less employees than traditional companies.
- It solves problems quickly. Staff may be reallocated fast, and talents from different functions can be brought together to form a team.
- It offers employees more opportunities to work in different departments of the company.

But matrix bureaucracy also causes many problems. A company should consider the following four conditions when deciding whether to adopt this organizational model:

- There is resource sharing between product lines. The organization is usually medium in size, with moderate product lines. There is big pressure to allocate staff and equipment flexibly among different product lines, i.e. the organization is not big enough to provide sufficient technical support to all product lines, so people perform multiple tasks simultaneously in order to provide service to several projects.
- There are market demands on two or more products. When the market not only demands specific technical knowledge but also demands that each product line change quickly, matrix bureaucracy management is needed to meet the demand for quick changes of technical quality and products. This dual pressure means that between the function and the product of the organization there needs to be a balance of power, and there must be a dual authority structure to keep this balance.
- The environment in which the organization operates is complicated and unstable, requiring that the organization respond to change quickly. Because of frequent external changes the highly interdependent departments require a high degree of coordination and information-processing, both horizontally and vertically.

When a company initiates its globalization and faces the challenges of multiple products, multiple markets and cross-national management, adopting matrix bureaucracy for fast market response is essential.

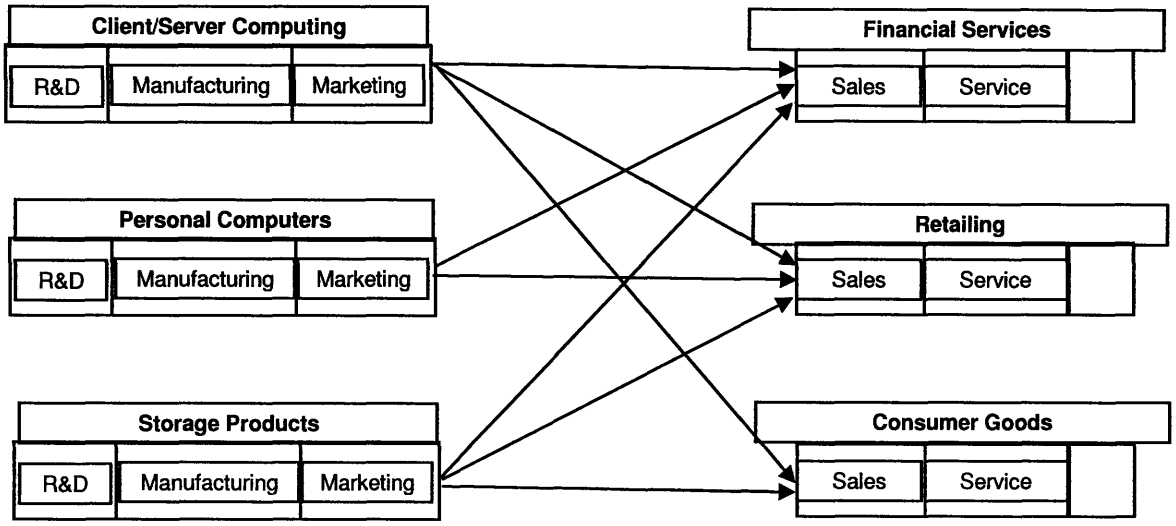
What is the right way to introduce matrix organizational structure?

IBM uses "multi-dimensional" matrix organizational structure. Previously IBM's structure was a typical pyramid structure, dividing departments simply according to region, business function, customers, and products. The company responded with dinosaur slowness. Lou Gerstner, the chairman and CEO of IBM, took office when IBM was in deep crisis and he implemented matrix innovation. A multi-dimensional matrix formed business divisions based both on regions, such as Asia-Pacific, China or Southern China, and products, such as server and software products. The matrix divided the customer base not only by industries, such as banking and telecom, but also by functions, such as sales and channels. Each of the IBM employees has multiple roles as members of both a region, a certain product system, and also possibly in different departments according to some other criteria. Obviously, IBM's matrix innovation enhanced horizontal connections, integrated resources, and improved response speed. Currently IBM, the dancing elephant, is not only king in established fields, but quickly adapts to new fields in the service market.

In my research on IBM, I found that the semi-matrix organizational structure used by the company was actually more valuable as a reference for Chinese firms. In the semi-matrix organizational structure the product divisions are responsible for R&D, and production and marketing of the product line, while the regions are responsible for the sales and service of all product lines in their region. In my opinion, we can conclude that product divisions take responsibility for R&D and production first; then each region's marketing department takes responsibility for the sales, marketing and service of all products; and finally all of them decide whether to transfer the task of marketing to each product division. See Figure 1.7 IBM's Customer-Product Structure.

Figure 1.7 IBM's Customer-Product Structure (Source: the course in "Strategic Management" at MIT's Sloan School of Management by Professor Arnoldo C. Hax)

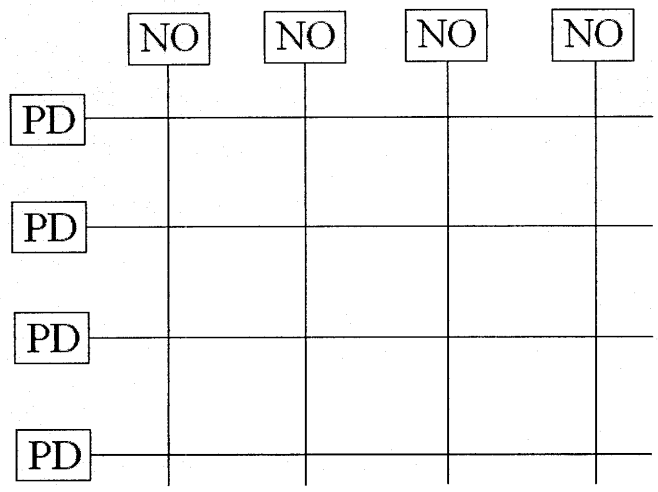
Figure 1.7 IBM's Customer-Product Structure



Philips has always used the matrix organizational structure. In the 1940s, Philips composed its matrix organizational structure of the Product Division and National Division. See Figure 1.8 Philips Matrix Organizational Structure. PD stands for Product Division, while NO stands for National Organization. On the one hand, matrix organizational structure is based on symbiosis; on the other hand, matrix organizational structure is marked by the division of technology management and commercial managements.

Philips has a history of pursuing the improvement of matrix organizational structure (see details in the study of Philips case: Philips and the Electronic Industry of Europe). In the latest development, Philips finally handed over all its commercial responsibilities to the Product Divisions.

Figure 1.8 Philips Matrix Organizational Structure (Source: case study research on Philips by Xu Zhao)



The above two cases, IBM and Philips, show that whether in the normal two-dimensional matrix of product and region, or in the four- dimensional matrix of IBM (product, region, customer, solution) there is only one real line of command. All the other lines by nature are supporting functions. Designing this organization is easy but running it depends on a high level of trust by its members in organization and management, and it cannot work without efforts to build corporate culture and leadership.

For Chinese corporations, we need the following pre-conditions in order to introduce matrix organizational structure in the right way.

- Hierarchy first, then matrix.

Specialization is an important prerequisite to the implementation of matrix The matrix pattern of management dramatically increases the degree of internal communication, and hence increases management costs. This shortcoming can be remedied if the decision-making level of the function department is quite high. If it is not quite high there will be an increase in transaction costs, and, more seriously, heavy losses in the business departments because decision-making does not readily adapt to reality. If a Chinese corporation adopts the matrix organizational structure it must first firmly establish the management and cultural hierarchy and advance the professionalism of functional departments, together with their ability to make good decisions.

- Open and transparent corporate culture is very important

In China, many corporations do not succeed in using matrix management because it demands

that top managers be driven by culture whereas the employees are motivated by money. The two-way and cross-matrix management requires that corporate culture stays open and enhances transparency. Horizontal cooperation between departments and efficient, high quality communication are the bedrock of smooth cooperation. In order to maintain clear and transparent communication employees need to work in totally open surroundings and in an atmosphere that is easy, fair, respectful and productive of mutual trust.

- Information-sharing is vital to the successful implementation of matrix management.

The matrix management model was once in disfavor because of its dual command structure and unsmooth communication. Advanced modern communication technology electronically enables matrix management and makes it an engine of innovation in organizational structure. Management Information Systems (MIS) and Office Automation (OA) systems effectively support matrix structure by making communication quicker and smoother. The implementation of matrix management requires that sharing of company policy and information be built into the management system. And the bottom line is to establish a "safety net;" using a mode of information-sharing such as Customer Releationship Management to ensure basic communication efficiency.

- Realize the limitations of the Matrix Management Model

All management tools and management behaviors are "double-edged swords" and the matrix management model is no exception. While enhancing the promotion of products, projects, and market penetration capability, the matrix model has some disadvantages. It develops a company with better control, smooth communication, and transparent management, but the costs of management are increased and reporting to multiple bosses produces disputes over trifles. Matrix management changes the role of the subsidiary as a pure profit center, but makes staff management more complicated and greatly increases communication costs.

When the operational strategy and product mix has been established, the choice of organizational structure will have a great impact on the productiveness and value advancement of the organization. This is especially true of an increase in efficiency, improvement in management communication, cost reduction and quality advancement. For a company under dynamic, constantly changing and complicated conditions, the multi-dimensional matrix structure is not the panacea to deal with those challenges. And a company cannot realize a flexible organization simply by changing its structure. Matrix is only the framework of organization. To run smoothly an organization needs a healthy "nervous system," the information flow in the organization, and a healthy "psychic system," the

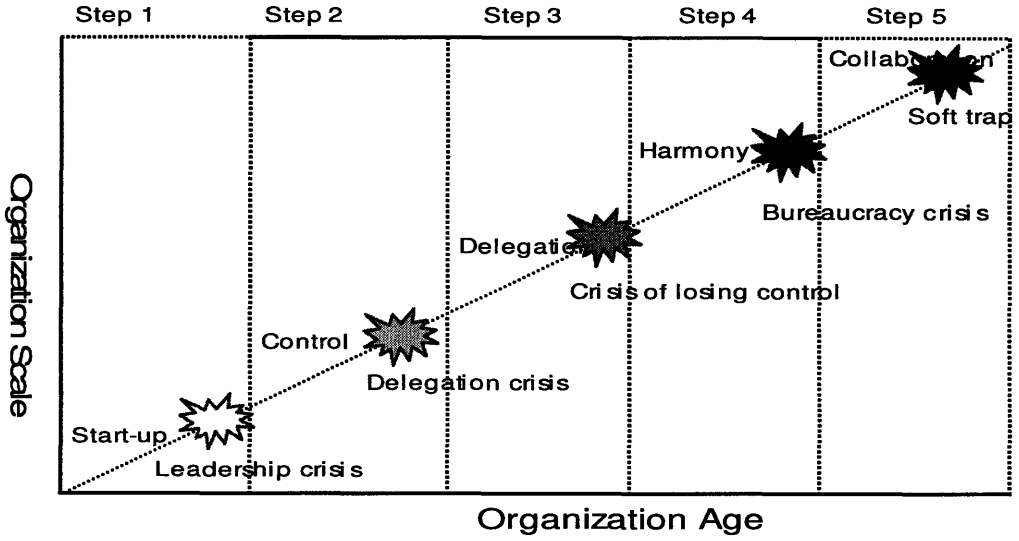
code of conduct, values, and attitudes of the organization.

Now we have discussed the organizational structure, let us take a look at the phases of company development from small to big, according to Greiner's theory, and at what problems and crises it will face. Informed by my years of management experience, I will explore in depth problem-solving and crisis-relief strategies.

2. Evolution and Revolution in organizational growth

When discussing the evolution of an organization we need to study in depth Larry Greiner's article "Organizational Evolvement Model" published in 1972 in "Harvard Business Review". The article divided organizational development into 5 phases: Start-up, Control, Delegation, Harmony, and Collaboration. At the end of each phase there are crises corresponding to each phase: leadership crisis, delegation crisis, crisis of losing control, bureaucracy crisis, and soft trap. Greiner thought the "soft trap" was a crisis of cardiac failure due to over-reliance on team cooperation; I think it is caused by a collectivistic desire to keep on good terms with everyone at the expense of principle. See Figure 1.9 Organization Growth and Crisis

Figure 1.9 Organization Growth and Crisis (Rewritten by myself using "Organizational Evolvement Model" by Larry Greiner)



What is the significance of this theory of management? A leader of a company must know which phase his company is in, what management measures and organizational structure should be pursued in each phase, what the potential crises are and how to defuse them. We see many companies fail, not because they are in a bad/declining industry but because of failed operational and management measures. As a small company develops to a certain stage it will not work well without corresponding organizational and cultural innovation. The stifling of innovation usually leads to bottlenecks in company operations.

2.1 Elements of company development

First the development of a company is related to the following five elements: 1) lifespan of the company, 2) scale, 3) phases of evolution, 4) phases of transformation, and 5) growth rate of the industry.

2.1.1. Lifespan of the company

Current research shows that there are different life cycles in the development of a company. No standard management model fits every phase of company development. When a company remains a long time in one phase it creates inertia with accompanying conflicting emotions among employees and management. People applaud innovation but when they have to face it, conflicting emotions appear. Management problems change and solutions also must advance with time.

2.1.2 Scale of the company

Problems and solutions keep changing with the increase in the company's workforce and product and market expansions. When the company grows to a certain size, coordination and communication become very important. The departments are more correlated as the number of management levels increases and it becomes essential to standardize the management. The answers to how big should the business become and should it keep the current management situation depend on its market and the industry to which it belongs.

2.1.3 Phases of evolution

When a company develops, over time, to a certain scale, overcoming the intervening crises and

transiting to the next phase, it will usually experience four to eight years of relative stability without needing to make big changes in organizational structure before the next transformation.

2.1.4 Phases of transformation

A stable evolution is the most economical way, but that development may not always be linear. Numerous cases prove that there is always a relatively vibrant period between two stable periods. During this period, changes in management behavior and organizational structure are necessary. Many companies fail because they could not effectively give up the old way of operating and carry out an organizational restructuring to support the company's continued development.

2.1.5 Growth rate of industry

The speed of a company's evolution and transformation is relative to the market situation in the industry. For example, in a fast growing market, personnel increase is also fast and necessitates a new organizational structure. By contrast, a company in a rather mature market will experience a longer phase of transformation. Microsoft is an example of the former and Delta Airlines of the latter.

2.2. Phases of development

Figure 1.9 shows a company moving through the five phases of foundation, start-up, control, delegation, harmony and collaboration. The corresponding five crises are: leadership crisis, authority crisis, out-of-control crisis, bureaucracy crisis, and the soft trap.

Now let me briefly analyze the features of these development phases, the problem-solving solutions, and the crisis relief strategies.

2.2.1 Start-up

Following are the features of corporations. Founders usually have technology or entrepreneurial expertise. Communication among employees is frequent and informal. The corporation has relatively longer working hours compensated, not by higher salaries, but by powerful motivation and the benefit of shares in the company. The corporate leader and the operation respond to market demands quickly.

The main crises to consider include the fact that as the corporation gets bigger it becomes difficult to maintain communication among employees. It is necessary to establish levels of management. The corporation faces resistance.

Solution: Corporate leaders need to improve themselves by enhancing their management capability, especially in the area of communication skills. They need to learn to expand their expertise beyond technological and entrepreneurial skill to include the ability to lead teams.

2.2.2 Control

Following are the features of corporations. A corporation is divided into departments according to function. Internal communication becomes formal; efficiency is obviously improved and business process is standardized.

Main crisis: As a corporation grows and business becomes more complicated, management faces a crisis of authority. Subordinates feel that their superiors lose touch with the market and respond slowly to the market. The subordinates feel they either have to make decisions themselves in response to market changes, or wait for a superior's decision, thereby risking the loss of customers. If this situation lasts too long it leads to two possible outcomes. First, subordinates do not think independently and do everything according to the superior's direction. A lot of organization men are thereby fostered, hindering the growth of the corporation. Second, subordinates hope to obtain some authority by negotiation with superiors. If superiors are unwilling to empower their subordinates some of them with thoughtful ideas will strongly resist and some will choose to leave the corporation, resulting in brain drain.

Solution: In my case studies of corporations I found that, when a corporation is in this phase of development, granting authority to subordinates is almost the only way to grow the corporation. Of course, if there are hierarchies of management and culture already established in the corporation, the establishment of a system or authority is extremely important.

2.2.3 Delegation

Following are the features of corporations: Middle management has gained more independence and responsibility. Profit and bonuses have become the main means of encouraging employees. Product

diversification is one of the main features of companies. As the enthusiasm of middle management grows greatly, the company normally has a big jump in development. The great development of Acer after the completion of the first transformation was a typical example.

Main crisis: the corporation manifests uncontrollable tendencies which are reflected in middle managers going their own way and the failure of communication between departments. The corporate leader will have to determine how to handle an out-of-control situation.

Solution: at this level the skills of middle managers will usually be greatly strengthened. According to Maslow's "hierarchy of need" theory, they have reached the stage of "need of respect" and "need of self-worth realization." The first issue at this stage is how to unite a group of people who want to realize their self-worth. Now it is very important to establish a common values system. Regarding the situation in China, with its "Small Groupism" culture, a better result will be obtained by establishing a "rigid frame with flexible organism" and applying management and cultural bureaucracy as "weapons" to regulate the behavior of employees. Viewing the situations of various corporations in the case studies, we see that Acer had applied a management scheme which spiraled from decentralization back to centralization, i.e. the second transformation Acer carried out in 2002. Other corporations sometimes apply industrial restructuring, work shift and internationalization among other means to solve the crisis caused by decentralization. Therefore for Chinese corporations, after they have completed the reconstruction of culture and organization, each corporation should establish a scheme based on the specific situation of the corporation and the industry to which it belongs.

2.2.4 Harmony

Following are the features of a corporation. Corporate decision-making power has been enlarged, reflected in the creation of a strategic decision-making department to coordinate the needs of the different product departments. Planning procedure and a testing system for the corporation's products have been regulated. Each department is regarded as an investment center. For project initiation and capital allocation for each of the projects specific people are assigned carefully to analyze the programs put forward by middle managers. Shares in the corporation and bonuses are applied to motivate employees.

Main crisis: the corporations are too large and too complicated. The management of the corporation using specified procedures and strict systems seriously blocks the corporation's market

response speed and ability quickly to satisfy customers' needs. Gradually lack of confidence develops between the corporate decision-making department and middle management, and between the corporate upper level and lower production departments. For example, the production manager resists people who issue orders but do not know the local situation. In response, those engaged in planning and coordination often complain that the production manager is presumptuous and lacks a cooperative spirit. The corporation's decision-making process has become a formality and no longer addresses problem-solving and customer satisfaction. Innovative ideas cannot be effectively implemented. "Big corporation disease" has seriously restricted the development of the corporation.

Solution: The corporations scale normally exceeds $10 billion when entering into this stage. There are few corporations in China which have reached this stage. Virtually all Chinese corporations still need to go through a stage of endless exploration and learning. From my research and learning through the case studies on corporations I am of the opinion that no single method will prove effective and we need to use systems engineering to survey the situation and arrive at an appropriate solution. Chinese corporations can benefit from deep study of GE's way of reform. In his book, "Masters of Destiny," Jack Welch examines how GE reformed itself to deal with a bureaucracy crisis. The new concepts he presents, including boundary-less communication, Work-out, 6-Sigma, No. 1 and No. 2 strategies, have a lot of useable significance for Chinese corporations. IBM put a lot of manpower and materials into their PR department, which were responsible not only for external public relations but also for the important job of internal coordination. Bridges were set up between various departments, through the PR department, in order to realize the objective of boundary-less communication.

2.2.5 Collaboration

Following are the features of corporations. Collaboration between people is emphasized to solve the problems outlined above. This collaboration in the corporation is expressed when a problem occurs and a specific group will quickly be set up to deal with it. The group members usually come from different product-related departments. Corporate decision-makers consist of experts in different specialties and they provide not command but consultation for the operating departments. The group has a weekly meeting to solve new problems through communication. Material rewards are often given for team achievement rather than personal success.

The main crisis is the following: at present a few American and Japanese large corporations are getting into the so-called "soft trap" crisis. This crisis resulted from over-stressing team work while

settling the bureaucracy crisis. A proposed solution under discussion may not be implemented until all members of the team have agreed. As a result the decision is made slowly. In the current fast changing world such a way of proceeding looks clumsy and lacks vigor. When a corporation reaches this state people need to think earnestly about what to do.

Solution: In my opinion, to solve the "soft trap" crisis we must start with culture. When Carly Fiorina first came to HP, she found that decision-making was slow. All decisions must be approved by everyone. A vital element of HP's style had been distorted. It was used to avoid conflict and became an excuse for bad management and guaranteed an overemphasis on consensus, as well as an umbrella protecting employees playing truant. She explained the HP manner once again and stressed the two core values of speed and innovation. Regarding team decision-making she said, "If you believe in him, you should believe in his decision," thereby reducing unnecessary discussion and speeding up the decision-making process.

In the course of a corporation's development, as the result of various factors, sometimes the corporation reverts to a previous stage, for example from decentralization back to centralization, from coordination back to decentralization, or cooperation back to centralization. A manager must, therefore, determine what are the most appropriate management measures and organizational combination based on several factors. These factors can include the industry to which the corporation belongs, history, current status and the development of the industry structure and culture of the corporation, the corporation's overall and operational strategies, leadership style and the structure of the labor market. The choices made in adjusting the combination of measures to be taken are often vitally affected by external conditions. But we must clearly understand that different management measures and organizational forms mean different management logic. Selection of one measure usually means sacrificing the possibility of using another measure, or, as the saying goes, "One cannot eat one's cake and have it too." Corporations are enhanced in the course of repeated development, change, and hard choices.

In Chinese corporations we should be better aware that all the types of crises we have discussed exist in varying degrees, presenting different key conflicts.

Chapter II: Cultural Innovation in the Corporation[2]

The cultural construction of a corporation will directly determine the success or failure of the corporation. Ruimin Zhang, CEO of the Haier Group, a leading corporation in the Chinese home appliance industry, once proudly announced in a speech at the Harvard Business School that "The success of Haier's operation is actually the success of Haier's culture." Discussion of culture in business has a long history worldwide. Of course, often such discussion was within the bigger frame of the ideas presented in the lecture "On Civilization Conflict," delivered by Professor Samuel Huntington of Harvard University , which generated lively discussion in academic and political circles in various countries. The year of 2001 was designated as "United Nations Year of Dialogue Among Civilizations." Governments, relevant international organizations, and non-governmental organizations actively participated and promoted dialogue and exchange among civilizations through various activities such as public lectures and seminars. The participants accepted a wide variety of cultures and civilizations and sought, by decreasing estrangement, to build up cooperation and blaze a way, through better mutual understanding, to promote world peace. The differences between cultures and civilizations have directly resulted in the differences in operational modes of corporations in different countries, regions, and industries and of different sizes. In this chapter I will compare the differences in corporate operational modes resulting from differences in cultural, and analyze the advantages and disadvantages of these different modes.

In this chapter I shall briefly review American, Japanese and Chinese cultural traditions. In the light of differences between mainstream cultures I shall discuss the advantages and disadvantages of different modes as they are influenced by the national culture, and define the basic culture on which Chinese corporations rely. Finally, on the basis of a large number of case analyses, I shall make some observations on the Chinese management models, as well as on how Chinese corporations can face the challenge of globalization.

1. Definition of corporate culture

Culture is a relatively nonobjective concept, lacking a uniform definition. But generally speaking culture is considered to be a combination of a code of conduct, faith, art, tradition, and other products of work and thinking derived from learning and transferred via social systems.

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[2] I appreciate the contributions to the research for this chapter by Lin Li and Bill Wang.

The essential purpose of corporate culture is to compensate for the shortcomings of the system. To rely on employees' subjective initiatives, on the basis of system, could flexibly, rapidly and effectively solve some problems which formal organization could not settle effectively. Edgar Schein, a famous professor at MIT, in his "Organizational Culture and Leading Power," published in 1985, defined culture as a systematic series of basic assumptions obtained by a group of people when they solve acclimatization and internal solidarity issues. Being highly effective in practice, these assumptions are considered to be correct. They are taught to new members as correct ways to perceive, think and feel in the solution of problems. Edgar Schein describes a famous water lily model to illustrate the three hierarchies of culture. Flowers and leaves on the water surface are the explicit expression of culture, including organizational structure and various systems and procedures. Branches and peduncles of the water lily are in the middle, and these are values advocated openly, including mission, purpose, and code of conduct. The root of the water lily is at the bottom, representing subliminal faith, concepts, and consciousness, is taken for granted. In a word, corporate culture equals corporate values, which produce systems and restraint.

Edgar Schein's definition of corporate culture intends to solve two issues: acclimatization and internal solidarity. The former relates closely to the industry to which the corporation belongs and the strategy of the corporation. For example, prudence is an excellent quality in banking, while high-tech industries may need to have the courage to adventure and innovate, and make mistakes. In a "cheap eats" establishment it is required to greet the customers and recommend menu items according to a training manual, while in high class restaurants it might be considered improper to treat customers in such a formulaic manner.

2. Characteristics of Chinese corporate culture

There are some unique characteristics in Chinese culture which transfer to Chinese corporations.

2.1 Characteristics of corporate culture in Chinese firms.

Since the reform and opening up in China in 1978, all industries have experienced great development, and lots of excellent corporations have appeared. Because of differences in the "situations" and "way" of development of each corporation, after 20 years the principal parts of corporate culture in each corporation (the so-called management philosophy) are quite different.

My management experience of over 15 years in a Chinese corporation, and my personal observation and practices, leads me to think that there are several modes of Chinese corporate culture at present, as follows.

2.1.1 Military culture

In this type of corporation, the management imitates the military management mode--a clear hierarchy and strict regulations, similar to the machine bureaucracy and an autocracy.

High level management establishes strategies, while middle and low level management take charge of execution. A characteristic of this model is that it enables the organization to respond quickly with strong execution and strict enforcement of order and rules. Its shortcoming is that the decision-making is highly centralized, with narrow participation and lack of checks and balances. Once a wrong decision was made, it would vitally impact the corporation and the consequences. It would be too ghastly to contemplate. The sudden collapse of the well-known Chinese Corporation San Zhu 10 years ago was an unsuccessful example of this type of corporate culture. So how does one ensure the correctness of the decision, since it is the key to whether this type of corporation can survive and prosper.

2.1.2 Family culture

Family members or insiders control the key departments of the corporation to ensure that the inherited cultural genetic code is not damaged. Most Chinese firms based in villages and towns are founded in this culture. Characteristically the company easily forms a privileged class to confront other managements. Family members usually enjoy liberal wages and benefits not provided to other workers. It is unfair and un-transparent within the company. Most American corporations start from family management but they successfully transfer to machine bureaucracy. How can Chinese family-based corporations appoint people on their merits rather than favoritism and solve the problems generated by lack of fairness, equality and transparency? It is worth using the experience of American firms as a reference.

2.1.3 Campus culture

Campus culture is also called Professional Bureaucracy culture in the West. Most corporations of

this type are founded by a group of professional people from the same background. When the company grows to a certain scale it becomes liberal and democratic, while the management and employees are overall of relatively high quality. But if an organic knowledge management system cannot be established the company will hit a ceiling. For instance, the reasonable size of Beijing Zhongguancun Software Company is 50 to 100 employees. But once the headcount exceeds 100, some employees will quit for all kinds of reasons. But, in comparable Indian software companies, hundreds or even thousands of people can work together, thereby almost monopolizing the global software out-sourcing business. Chinese software companies could benefit from studying and learning from their operational model also.

2.1.4 Migrant culture

As implied in the name, employees of this type of corporation are from various regions, bringing different regional cultures to the company. Within one system, the cultures are merged into the corporate culture advocated by the company--a diversified culture. This culture's main characteristic is that it is all-embracing and development is its main feature. With these cultural characteristics the corporations must establish a fully developed and reasonable system with good checks and balances. The disadvantage is that integration and merging of different cultures are difficult. America is a typical immigration country and Shenzhen is a typical immigration city. The reason why they are well administered is because both established a full-fledged and reasonable system with strong checks and balances. In this respect these systems are well worth learning and using as a reference by Chinese firms.

2.1.5 Innovation culture

The organization advocates an easy, equal and mutually beneficial atmosphere and encourages innovation. It provides a system which meets employee's desire for innovation. While I was studying at MIT I visited many corporations and felt deeply that the Boston area was one of the regions with the strongest technological innovation capability in the world. The simple, equal, easy and mutually helpful atmosphere among all the people fostered technological innovation.

It is important to emphasize that the innovation culture type of company does not exist in a firm individually. In real life, it might embody a combination of several types of culture. Meanwhile these cultural modes are rooted in Chinese culture.

3. Cultural comparison in USA, Japan and China

The particular qualities of Chinese corporate culture prompt me to explore in depth the national culture and mainstream corporate culture of each country, with the goal of solving the problem posed in this thesis regarding cultural innovation in Chinese corporations. In this section I shall compare and analyze in detail the characteristics of American, Japanese, and Chinese culture and typical corporate culture in order to discover the mechanism beneath the appearance.

I hope to answer two major questions through my cultural comparisons. First, what motivates work in the three countries and what needs are workers seeking to meet. Second, in each country, what is the relationship among methodology, system, and culture?

3.1 History review: methodology, system and culture

3.1.1 America

In the 17th century Descartes published his famous philosophical treatise, "Methodology," which had a deep influence on Western modes of thinking and scientific research method. In the West, scientific research, for example into machinery and human anatomy, is performed basically according to Descartes' "Methodology." This way of thinking has played an important role in the fast development of Western modern science. Galileo was the first to propose that people should combine observation and experiment with mathematical analysis to discover and explore the profound mystery of nature. Galileo used mathematics and the mechanics of machinery to observe the world, forming a complete overview of classical mechanics. He believed that natural philosophy could explain the world only from fact as experienced, and developed the induction method which starts from analysis and then performs synthesis--"the best demonstration method."

Since the 1730s, a series of important technical inventions have been developed, such as spinning machines, multiple axis spinning machines and the steam engine, which started the upsurge of the first industrial revolution. The introduction of British machinery to the New World, in combination with a good many technical innovations, started the second industrial revolution. The entire history of American and Western civilization is driven by progress in science and technology. American and Western society completely identify with the driving force of science and technology, based on

methodology. Without question corporations should follow methodology in their development. What I would like to emphasize is that methodology is a bedrock which exists independently of system and culture. Changes in system and culture do not impact the realization of methodology, and the evolution of methodology has not threatened the orientation of system and culture.

Democracy is promoted by the American social system. Early in February, 1620, a group of English Puritans, fleeing from religious persecution, took the long journey to America in the "Mayflower." When they were about to land on the new continent of America, the 41 adult men on board signed the "Mayflower Compact" guaranteeing that they would abide by a code drafted by the pilot. The Compact says: "We have allied augustly in front of God, pulling together to build a civilized polity for better method and survival. And we will prepare, study out and design at any time equitable laws, ordnances, statutes and codes that were, as recognized, the best fitted to the benefit of the whole people of settlement, as well as setups of governance." In the same vein, the "Declaration of Independence" in 1776 says: that all men are equal. All men have the right to life, right to freedom and the right to pursue happiness. The Declaration of Independence and the Constitution, issued thereafter, formed the concept of democratic republican government. The power of government comes from the public. The power is enforced by representatives elected by the public.

A Constitutional Convention was held in May, 1787 in Philadelphia. The established federal constitution stipulated that the central government consist of three parts or departments: the lawmaking department (Congress, including the House of Representatives and the Senate), the Civil Service (which is led by the President) and the judicial service (the federal courts). This structure establishes the so-called separation of powers. It endows each department with responsibilities and also gives each department considerable independence. It also supplies a kind of "restriction and balance" mechanism to give each department some power not held by the other departments. The separation of powers system established by the Constitution radiated to the systems which framed commercial corporations. There is a perfect directorate setup in American corporations in which the power of executives is restricted and limited. The relationship between the directors and the CEO, a relationship which is both cooperative and restrictive, is a good example.

The principle of supreme law in the Federal Constitution manifests the spirit of the rule of law and of constitutional rule. To rule by law does not mean the legal system. It is not "to run state affairs according to law" but "to run state affairs with law." To run state affairs according to the legal system puts man at the center with law as his tool. Under the system of ruling by law it is not individuals but

the law which runs the state. The lawmaker, civil service officer, or judicial service officer are all the means through which the law manifests its will. The civil officer enforces laws made by the lawmaking department. The judicial officer explains laws made by the lawmaking department. Lawmakers establish laws according to the Constitution. Any proposed law which violates the Constitution cannot be established. The lawmaking department, the civil and judicial services must all obey the Constitution. That is to say, between man and the law the law is first.

In his "Protestantism Ethic and Capitalism Spirit" book, Max Weber explains the root of American culture. The main points he makes include: activity in pursuit of fortune and money is itself a purpose, and not a means to achieve other purposes. Activities in endless pursuit of profit are, therefore, acceptable, and not a crime. To work hard and diligently is regarded as a good quality, a kind of moral obligation and even a vocation.

In America, Calvinist Protestants believed that God wants to save not the whole world but only "chosen people." Who would become "chosen people" to be saved, and who would be destroyed are all determined by God in advance. Personal action is helpless to change one's fate. At first glance, the logical result of predeterminism must be fatalism. But as Weber sees it, predeterminism judges that a person is helpless to change his fate. As a result, in the depths of their hearts, Protestants experienced strain and anxiety. Protestants could use only success in their careers to demonstrate God's favor for them to which they pointed as proof of the existence of God. The creation of fortune became a divine vocation. The goal of success in worldly economic action is not to create wealth to enjoy and squander, but rather to prove God's favor. The religious ethic of predeterminism, therefore, generated a diligent and industrious capitalist spirit which regarded the creation of wealth as a serious cause.

3.1.2 Japan

The Meiji Restoration was the most important revolution in Japanese history. It had an impact on three aspects: methodology, system and culture, and in a sense it combined the three aspects into an organic whole.

As early as engagement with Tokugawa forces, the Emperor's government started to build a political system. In June 1868 the Meiji government issued the *Instrument of Political System,* an order regarding state system and organization, establishing that all power belonged to Dajokan. Under Dajokan three official functions were set up: deliberation, administration, and criminal law. The

deliberation officer is in charge of lawmaking, the administration officer is in charge of administrative affairs, and the criminal law officer is in charge of justice. This system established the political separation of powers. In June 1869 the Meiji government had enforced the Abolition of Seignior States and Establishment of Prefectures and Counties, among other policies, and Japan was divided into 3 Prefectures and 72 Counties, setting up the political system of centralization of state power.

Along with reforming the system the Japanese government brought forward three major policies as guidelines for building the state. These guidelines included *Establishment of Enterprises* and *Civilization. Establishment of Enterprises* aimed to encourage the development of a capitalist economy and to introduce modern Western industrial technology. Kubo Toshimichi, regarding Britain as an example of his new policy, had set up a Ministry of Internal Affairs. The government used state capital to set up spinning mills and encouraged mine development and railroads. After more than 10 years of development, by the mid-1890s the industrial revolution had almost swept through Japanese industry. The whole Japanese society and public had totally accepted Western methodology.

The purpose of Civilization was to reform Japanese feudal culture through the study of Western education, science and life style. To build a national civilization the government had abolished the Confucianism-centered educational system and followed the Western model in establishing an educational system consisting of primary and middle schools and institutions of higher learning. Japan whole-heartedly followed Western culture and customs, including switching from the lunar to the solar calendar. What was more, as a symbol of reforming the old system Kubo Toshimichi and the Meiji Emperor had their hair cut short.

These reform measures had a great impact on the traditional and conservative society of Japan. Not only material objects and the customs of daily living changed to Western style, but the tendency to modernization gradually appeared in people's ideas and concepts, promoted by the educational system and social organizations.

As the Meiji Restoration advocated total Westernization, reformation in methodology, system and culture took place simultaneously, and were combined into an organic whole. In fact, the newly formed methodology, system, and culture had realized a kind of amalgamation of Western culture with Japanese culture, and not a total Westernization. It is notable that the traditional collectivistic culture of Japan is reflected in the reformed methodology, system and culture.

3.1.3 China

With a 5000-year-old civilization, China has developed a brilliant culture and a complete ideological system. The ideological system is centered in Confucianism, combined with Legalism, Taoism, and Buddhism. The Chinese people are industrious and brave, they aim to move forward, and they have both strong sympathy and tolerance.

The fact that Confucianism has deep roots in each Chinese has had a deep influence on China. Confucianism goes back 2000 years. It was strongly criticized by Mohism, Legalism and Taoism in the Early Qin period. Confucianism was excluded by the Qin and Early Han dynasties, and subsequently was challenged by metaphysics and Buddhism. Confucianism, however, has survived several crises and continues to this day. The reason for its tenacity is that it is rooted in the Chinese value system and could adjust to changes in society over time. Chinese culture is formed around a core of Confucianism. It is a culture which has outstanding advantages in a traditional agricultural society.

Confucianism stresses correcting the mind, acting in good faith, cultivating morality, governing the family, ruling the state and pacifying the world. It embodies paying attention to education, order and discipline, duty and obligation, industry and agriculture. Encouraged by this culture, the Chinese people work very hard in order to bring honor to their ancestors and to leave a good name to posterity. For this reason "face" is very important to the Chinese, and also to the Japanese.

Confucianism and its system had supported prosperity and development in China for a thousand years in a traditional big power closed to the outside world. But with the arrival of the industrial revolution people were at a loss. More recently men of insight encouraged an upsurge of learning from the West.

Unlike Japan, where total Westernization was carried out in the same period, modern China's learning from the West was a process which was at first shallow, and gradually became deeper: from the methodology layer (Westernization Movement) to the systems layer (the Reform Movement of 1898) and finally to the cultural layer (the May 4th Movement), step by step.

The representative figures of the Westernization Movement, Guofan Zeng and his successor Hongzhang Li in the late Qing Dynasty, combined the study of Chinese culture, and the study of Western culture for its usefulness. They took two actions in order to learn from the West. First, they

sent 50 youngsters aged 12-15 to Western countries every year. On their return they played a decisive role in promoting the development of modern China. Second, they established the Jiangnan Machinery Factory which, together with other new organizations, started an upsurge of learning from the West, including mathematics, physics, chemistry, machinery construction, electric power, and textile manufacturing. The Westernization Movement had successfully put into practice the slogan "to learn from foreign countries to prepare ourselves for competing with foreign countries". The reform in methodology generated outstanding achievements which promoted the birth and development of China's modern national industry. Today many walks of life do not exclude Western methodology at all, which is a result of the influence exerted by the Westernization Movement on Chinese ideology.

In the system and cultural layers complete success was not achieved either by the Reform Movement of 1898, advocating replacement of the feudal system with a capitalist constitutional monarchy, or by the New Culture Movement promoting democracy and science. Certainly the influence of these movements on modern China is far-reaching, and they played a critical role in pushing the development of society. But their partial success gives a hint that system and culture could not be separated in China. The traditional system is built on the basis of traditional culture. Every nation has its own traditional culture, and in China it is Confucianism-oriented and there must be, therefore, a Confucian color from Chinese tradition in Chinese system and culture. I would say that only when corporate organization is compatible with Chinese culture can the corporations achieve success in their structure.

3.2 Cultural comparison of three countries

After reviewing three societies from the perspectives of methodology, system and culture, I shall try to make some comparison among them. There are, of course, many studies comparing the cultures of these three countries. My study will focus on the impact the national culture has on the organization and management of corporations.

First, as mentioned in the previous section, the influences of methodology, system and culture on modern corporate civilization and the development of society are quite different in the three countries. In America the development of methodology, system and culture is totally different, they occurred at different times, and the correlation among them is relatively loose. In Japan, the methodology, system and culture of modern corporations are formed in the same period, and the correlation between them is

much closer. Finally, in China, the study of Western methodology is successful and independent, separate from the close and intimate correlation between culture and system.

Second, cultural differences directly influence the operation of the corporation. How on earth are these differences brought to bear on corporate management and operation? And what is the impact of these differences on corporate management and operation? We need first to go back to Maslow's hierarchy of needs, noting that different cultures lead to different "self-actualization needs" in different nations. Corporate management and operation must meet the relevant "self-actualization needs" defined by the corresponding culture.

The comparison of management modes between American and Japanese corporations is currently a hot issue in the field of business study. The former emphasizes functions of general knowledge and is characterized by standardized work design, professional management and vertical coordination. The latter attaches importance to specific knowledge and is characterized by blurred work design, employee participation in management, and horizontal coordination. The formation and continuation of these two management modes are rooted in the two different national cultures: America emphasizes individualism while the latter focuses on collectivism. The American Protestant ethic and culture advocated vocation and the greatest need for self-actualization is to fulfill the vocation and reach individual actualization. By contrast, the culture of Japan, an island nation in the Eastern world, stresses collectivity, which is reflected in individuals regarding glory and collective benefit as sovereign goals, and the first need in the pursuit of self-actualization.

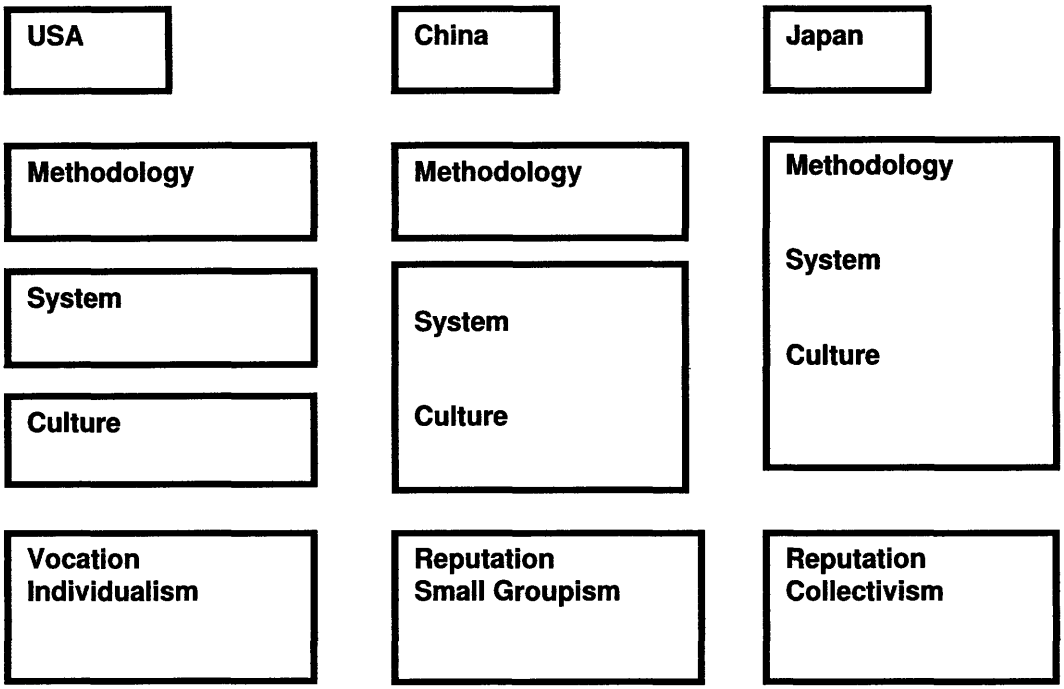
American firms stress standardization of work plan. For each job position, management takes charge of collecting experiences and summarizing them into regulations and rules with which the employee needs only to comply exactly and he or she will be doing a competent job. In Western corporations the functions of comparable jobs are similar in different companies, requiring standard knowledge and skills. When an employee no longer works for one company he or she may find suitable work in a similar position in another company. Each individual, if only he masters the skills of the position and works hard, can realize his vocation and achieve self-actualization. In Japan, where the corporation is based on Eastern culture, there is another scenario. Japanese corporations strongly stress the acquisition of knowledge specific to that company. They adopt a system which provides employees opportunities to know other departments and other jobs. Consequently employees get a chance to develop a range of skills which create value only for that specific company. If the employee chooses to leave this company the value of his knowledge will shrink dramatically because it relates primarily to

that company. From the point of view of self-actualization, only if the employee links himself to the collectivity which the company represents and masters the specific knowledge and skills as much as possible, can he best accomplish the pursuit of glory and collective benefits.

With respect to corporate management, American corporations mainly carry out professional management. The principal communication in the corporation is between superior and subordinate within a department, namely vertical communication. Cooperation between departments consists mostly of coordination among department heads and functional departments. By contrast, in Japanese corporations supervisors usually delegate authority for decisions to employees so as to foster communication among employees directly. For example, in American management the responsibility of production workers and machinery maintenance workers can be completely independent. Once a machine breaks down the production worker usually needs to report to his supervisor and his supervisor then coordinates with the supervisor of the machinery maintenance worker to have the equipment repaired. In the Japanese management system, when the machine breaks down the operator has the authority and responsibility to shut down the production line and work directly with the machinery maintenance man to get the equipment repaired.

What are the differences between Chinese corporate culture and those of the US and Japan? It is typical in America for workers to hop from job to job. The Japanese never jump to another company, while the Chinese change employment as a team. For example, it is quite common in the Chinese IT industry for a whole R&D team, or a new product division, to change their bosses. As I mentioned before, another phenomenon is the scale of Zhongguancun IT companies--typically from 50 to 100 employees. Once a company exceeds this scale the company will be dispersed, or there will be a group resignation in some department. Why does this happen in China? In the next section I shall discuss in more detail the characteristics of the Chinese people and the organizational operation of Chinese firms. See Figure 2.1 Cultural Comparison in USA, Japan and China.

Figure 2.1 Cultural Comparisons in USA, Japan and China



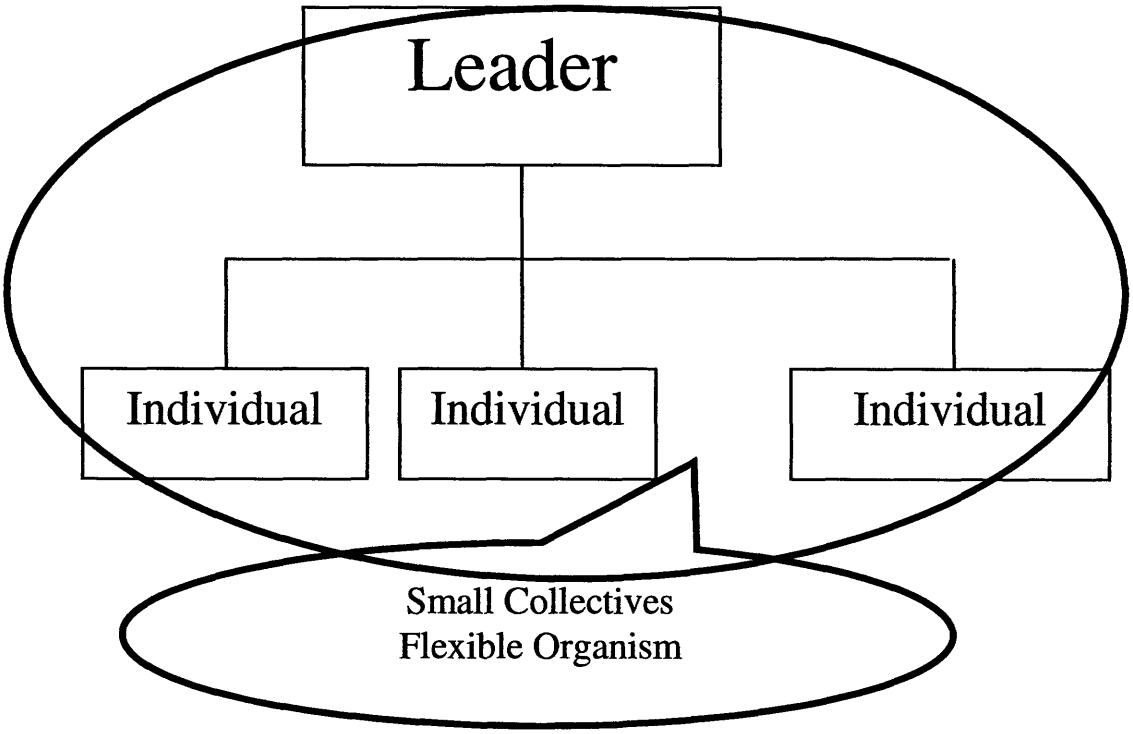
4. China: "Small Groupism"

4.1 Measures of organizational operation in Chinese corporations

Influenced by Chinese culture there are measures of organizational operation unique to the Chinese people and Chinese corporations. When a company is still small, or in its initial phase, the CEO tends to adopt the Confucian ideology of "universal love" and the "middle way" to establish an organizational culture that is "tranquil and peaceful." At a time like this, company leadership is able to give its subordinates more understanding and care, even manipulating "gentle" means for them to feel warmth from above, which sometimes is moving to the point of tears. In order to facilitate the R&D of a new product at the inception of his company, Zhengfei Ren, CEO of Huawei, encouraged his staff to work overtime into the evenings. He would often drop by the company in the evenings, treating everyone to fresh warm-from-the-oven late night desserts. Actions of this kind create a relationship between the management and the rest of the company which is much more intimate, with one common goal in mind, the creation of a positive propelling force at the early stage. See figure 2.2 Operation of Small

Collectives.

Figure 2.2 Operation of Small Collectives



On the other hand, the CEO is also skilled at applying the philosophical school of Legalism (Fa Jia), which is what we commonly refer to as political manipulation, or the "rule of the human" in managing a company. The CEO would often create competition between key figures (managers) of the company, and this "motivation" proved to be efficient. This form of competition fosters a company's development and achieves more productivity with less effort.

From another perspective, the CEO would also use Legalism, political manipulation, and the "rule of the human," to rein in and control the company, subconsciously creating a balance of power through competition among his key reports, resulting in in-fighting. These struggles lead to the formation of spheres of influence, commonly known as "Small Groups", feeding into reciprocal motivations as well as forces of counterbalance which prevent any group from standing out, thereby achieving the goal of "divide and conquer." These people spend their days conspiring against one another, thinking of ways to overcome each other as well as please the CEO (which, of course, would often involve increasing one's sales). As a Chinese idiom goes, "If the subordinates can sleep soundly every day, the boss will not be able to rest; if the subordinates are unable to sleep, then the boss will be able to rest well." In

other words, the position of the CEO is strengthened as the relationship among his subordinates becomes more complicated, creating an energy drain that restrains the growth of the company.

While a corporation is still on the smaller size, the CEO can use his own authority and capability to coordinate resources from all sectors, carry out strict self-regulation, and use himself as the hub of information exchange. This can become a rather efficient organizational structure, and as an organizational culture, it represents the stage of coexistence between Clan Culture and Corporate Authority. When the company reaches a certain size, its internal organization becomes too complicated and, regardless of the CEO's own capabilities (and at times an "ability ceiling" exists), he will no longer be able to handle every issue, big and small, by himself. A common outcome is the use of makeshift measures, with a reduction in operational efficiency. Of course, the stage in the company's development in which this problem occurs varies, depending on the CEO's ability, mentality, and personal health.

4.2 China: "Small Groupism"

Although Japan is also strongly influenced by Confucianism, it is also influenced by its island culture and historical development, resulting in a more distinct and stereotypical "collectivism." Japanese corporations, making use of collectivism, had skillfully incorporated into their culture the Japanese inherent spirit, the morality and custom of submission, dedication, being of one mind, and striving for national survival. This corporate spirit is manifested in the view that the corporation is family. Submission and devotion to duty have powered the development of Japanese corporations. Striving constantly to become stronger, and quality consciousness are the magic weapons in Japanese corporations' drive to victory. Hard work and thrift further strengthen Japanese corporations.

Individualism in the Western market economy is founded on law and the principle that everyone is equal. As described in the Declaration of Independence, everyone has unalienable rights to "life, liberty and the pursuit of happiness," and the whole of Western society strives to promote such individualism. Because such individualism without restraint could result in something beyond our darkest imaginings, a complementary system of "the rule of law," has been strongly developed. Everything must follow the regulations, and abide by the laws and charters. From my personal experience studying at the MIT Sloan School of Management, almost every issue I encountered--buying a subway ticket, seeing the doctor, applying for a bank card or registering for classes--demonstrated the impact of building a system on law. Initially I was shocked and unable to comprehend the stubbornness and the lack of

flexibility (in situations that allowed for alternative options) in the American way of doing things, but after studying and living here for a period of time, the superiority of such a method is revealed. Studying and living in such a 'fool-proof" environment makes one feel relieved. Although specific issues may be less efficient, the entire cost of running the society is reduced, and the relationships are simplified, both between people, and between people and organizations. By contrast, in China one may experience greater efficiency on the smaller scale, the total transaction cost for the society is high, resulting in complicated social relationships. Data show that in China the entire cost to society is four times higher than in the U.S. Even though there is in China some emphasis on individualism, individual heroism is still criticized because of the influence of traditional Confucianism, while the individualism of small groups is recognized everywhere.

Unlike Japan, China has a continental culture as well as thousands of years of feudal rule and as a result its cultural characteristics are more typically "small collectivism" such as clans and villages. The German economist and socialist Max Weber, in his book "Confucianism and Taoism", wrote about how Chinese village organizations operated, and that the high efficiency of their internal organization can often be rather shocking. Since China started thirty years of collectivist economy in 1949 the resulting backsliding also proves this point. When viewed in a corporate setting, small organizations are found to have high operational efficiency, but once they grow larger efficiency falls off.

Close research into Chinese organizational culture has revealed that, while small collectives and organizations are internally efficient, their unwillingness to collaborate with other organizations is evident and the effect can be observed in the low efficiency of cooperation. At the root, is the lack of collectivism, founded on the traditional Confucian belief as a "bondage of feeling". Instead, more elements of the Western market economy's individualism enter into the operational method. Nonetheless, in China what differs from the West is that it is no longer an issue between individuals but one between two organizations, or representatives of these smaller organizations. These people represent an organization, a force, one that exists regardless of our recognition, and whose essence will not be affected even if its representative were switched or its format changed. In the past, in the management of the country and of companies, the method of collectivism was most commonly adopted, resolving issues between organizations with education, training and coordination. But the relatively small return demonstrates the existence of a problem. The most obvious examples are two of the most successful Chinese companies, Lenovo from mainland China, and Acer from Taiwan. In 1999 Lenovo was divided into Lenovo and Digital China, while Acer did the same thing in 2002, splitting up to become Acer, BenQ, and Westron. There were many factors behind the divisions, but, in the last

analysis is it the inevitable path to be taken by Chinese companies once they reach a certain size? I believe that if Acer had not been split into three, the Acer Group (the Pan Acer Group) would be now like one of the top 100 international enterprises of the Fortune 500, an equal to HP and Dell in every way. If Lenovo had remained one company, on the path to internationalization, at least its human resources would be more advantageous than they are now. At a time when global companies are all strengthening their competitiveness through mergers, Lenovo and Acer have chosen the path of internal splitting, which is rather intriguing.

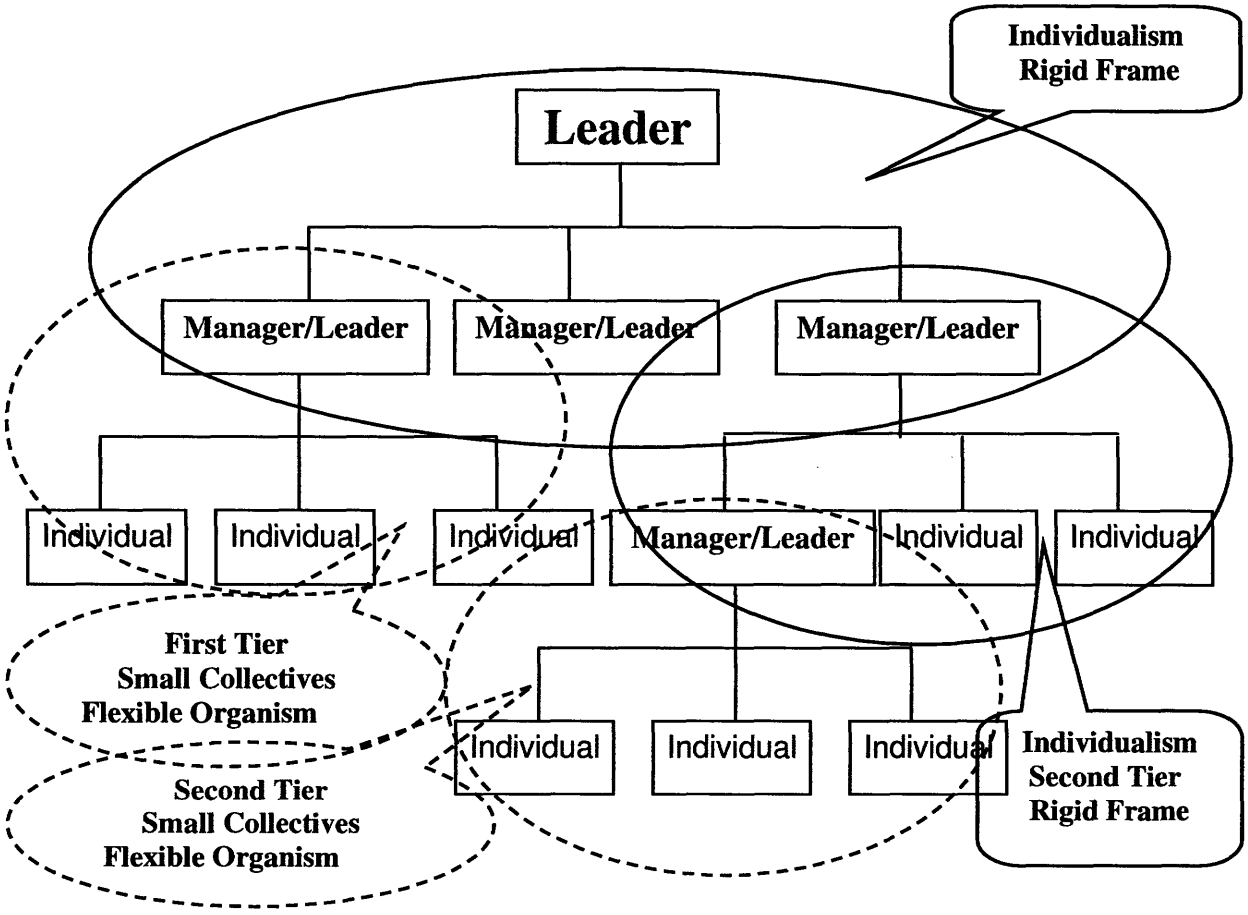
I have summarized the above characteristics of "Small Groupism," which represents the high flexibility and high efficiency achievable within a smaller organization, as well as the conflicts caused by incompatibilities between organizations. In other words, collectivism functions inside the small collective while individualism functions between organizations. And for the Chinese people, the benefit of "reputation" and "small collectives" is that they fulfill the need of self-actualization. See Figure 2.3 About "Small Groupism."

In the past when China began to learn advanced management methods from the West, as well as from Japan (such as 6-sigma, ERP, TQM, JIT., etc), it encountered many obstacles. When Chinese companies analyzed the reason behind these problems, they often considered it from the perspective of management (such as the lack of talented human resources or weak management), neglecting the spiritual and cultural aspects of these advanced management theories (such as Western individualism and Japanese collectivism). For this reason I believe that the incompatibility of management culture (China's Small Groupism) is the root cause of Chinese lack of corporate development.

A well-known case of failure concerns the Shida Corporation in China, where failure was caused by neglecting the characteristics of "Small Groupism" of Chinese culture. In 1998, Shida Corporation invited McKinsey to assess its marketing and sales system, and design a new system and to support going forward to become a global corporation. After close analysis and research, McKinsey recommended to the Shida Corporation a new organizational structure--the Division system. The plan was to disperse the original independently run "subsidiaries" and establish a sales division, a hardware-producing division, a marketing division, and so on. Each would be responsible for a different industrial function. In the marketing division the product manager was empowered to initiate each product. The product manager took charge of profit and loss of related products in the Corporation, through coordination of human resources and operational activities. The adjustment made a great impact on the old system. The original hierarchical organizational structure of subsidiaries and levels of

authority had been changed to an organizational structure of business process and functional levels. Particularly, the subsidiaries, which were small collectives, were dispersed and the benefit of small collectives was enhanced. This change offended the culture of Chinese "Small Groupism". As a consequence the reform was defeated. After less than half a year of implementing the proposal, Shida Corporation was again divided into sections and reverted to its original subsidiary system. But it is interesting that McKinsey's proposal was implemented successfully inside the subsidiaries. We can easily explain this phenomenon by reference to the fact that the culture of Chinese "Small Groupism" is very efficient in a small group, where individuals cooperate very well with each other when they are all aiming at the same goal of collective benefits. When facilitated with high efficiency the matrix management model can be implemented successfully.

Figure 2.3 About "Small Groupism"



5. The Solution to the problem of management and culture in Chinese corporations—a "Rigid Frame with Flexible Organism"

In Chinese society the "Small Groupism" of corporate culture is not the same as Japanese collectivism, and it differs also from American individualism. Just as the master of Sinology, Professor Weiming Du says: Even though it is collectivism, it is not Japanese collectivism; and even though it is individualism, it is not Western individualism. We should view it as a complicated system.

Given the more complex cultural characteristics of the Chinese corporate system and culture, what corporate system and culture can innovatively guide the development of Chinese corporations? To answer this question I shall now propose a solution based on my own research—a "Rigid Frame with Flexible Organism".

I shall first use the analogy of a highway company to present my thoughts. What does a highway company need to do? First of all, it needs to prepare (form a company, build a structure). Next, it needs to establish a set of rules and regulations (Rigid Frame) which includes painting the lines, setting up street signs (understanding strategic directions), install the railings on both sides as well as in the middle (the core values of the company which no one can infringe without paying a price), hire a police patrol and install speed cameras (regular check-ups by company leadership and auditing), as well as build toll booths at both ends of the highway (to generate profit). The owner and staff of this highway should not delegate the driving to others (in other words, the company leadership should complete its own responsibility and not take over the subordinates' work; we often say that the CEO cannot be an "athlete" at the same time he "coaches.") This is the "Rigid Frame", People will drive within this structure, and it is up to the drivers to decide when to accelerate or decelerate within the speed limit (this relative flexibility is the "Flexible Organism"). Obviously, the operation of a company is much more complex than that of a highway, but the basic management ideology remains the same.

5.1 "Rigid Frame"

In their article, "From Fiefs to Clans to Network Capitalism: Explaining China's Emerging Economic Order[3]," Max Boist and John Child analyze in detail the difference between Chinese and Western companies' organizational management. They point out that Western companies have already experienced the development from fief economy to bureaucratic economy and then to market economy.

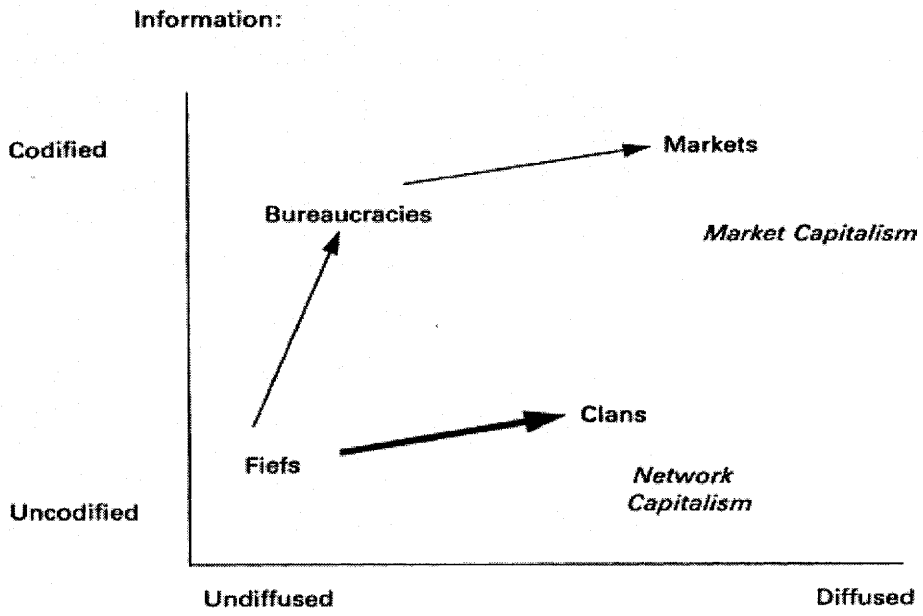
[3] Boist and Child, "From Fiefs to Clans to Network Capitalism: Explaining China's Emerging Economic Order,"

Chinese companies have completed, or are in the process of completing, the progress from fief economy to bureaucrat economy, and they need to achieve the next step, to transfer substantially from bureaucratic economy to market economy. (See Figure 3, from "From Fiefs to Clans to Network Capitalism: Explaining China's Emerging Economic Order"). Kim S. Cameron and Robert E. Quinn have also elaborated on the transition of company organizational culture from spontaneity to group mentality, then to bureaucracy, and lastly to market culture. I shall address these points in detail later.

Based on the experts' research as well as my own personal experience I believe that in order for Chinese companies to stand among world class corporations, a system of bureaucratic economy must be developed to suit the reality of Chinese corporations. But Chinese company culture (Small Groupism) and Western company culture (individualism) have their differences, and an identical copy of Western bureaucratic economy will not work for China. Indeed, many Chinese companies had already had extensive experience with Western bureaucracy, and the results have not been very good. This failure is due in part to lack of research into China's own corporate culture (Small Groupism). The "Rigid Frame" is designed to be a management system that suits Chinese society, including bureaucratic management and bureaucratic culture.

Bureaucratic management is the traditional Western bureaucracy, based on the rule of law, establishing a system suitable for managing modern corporate culture and fully utilizing advanced Western management to help Chinese companies succeed. The key aspect is what the management controls. Bureaucratic management defines only the relationship between organizations, meaning that it manages only the small organizations or small collectives, keeping in mind the big picture and letting the smaller parts take care of themselves.

Figure 3. Chinese and Western paths to modernization.



In his article, "Why Chinese People are not Organizable," Professor Zhixing Xiao[4], examines Max Weber's description of bureaucracy management in the light of realities in China. Now I would like to discuss in detail the application of bureaucracy management in China in the light of my personal management experience.

5.2 Main characteristics of bureaucracy

5.2.1 Specialization: Clear division of obligations for various departments of an organization

The aim of division according to specialization is clearly to define the obligations of various departments. Its main purpose is to set up a functional organization. The first step to realizing a division by specialization is to set up a functional system in real earnest, which people often neglect. Many corporations, when their scale is small, find it hard to harmonize the relationships between family members or founders, and they are therefore forced to divide the corporations into several parts. The corporations then become relatively independent small organizations, each with its respective functional departments. Here is the crux of the issue. When a corporation has developed to a certain scale it is vital to establish a functional system.

[4] Xiao, "Why Chinese People are not Organizable"

Accompanying continuous scale expansion, solving the issue of management motivation and communication requires a switch from a function system to a division system. The income of the division system is open and transparent, reducing disputes over trifles and increasing motivation. These are the benefits, brought about in a division by specialization, which advances the corporation through specialized operations in purchasing, marketing, and R&D, among other areas.

For example in 1999, Lenovo had been divided into two parts: Lenovo and Digital China, led respectively by Yuanqing Yang and Wei Guo. Subsequently the Lenovo Group entered vigorously into the IT service business, while Digital China tried to enter the hardware industry via Great Wall PC. When the businesses of the two corporations almost combined it was really an embarrassing situation.

5.2.2 The rank system and a uniform instruction system in the organization

The rank system of a bureaucracy refers to ranking jobs; all men are equal but all jobs are not. In the West, jobs are different but people are equal. It is quite common for a worker to express an idea and have a conversation with a person whose job may be of a higher rank, regardless of the difference in rank. In China things are different in a way that has resulted in a common problem in organizations: conflict and confusion are caused by the fact that the formal rank of a position and the informal rank of that position do not always match. In China a driver, a guard, a secretary, a relative of the CEO or founders might have power that does not correspond to their job rank, resulting in increased complexity of management.

In management practice in China, the formal instruction system often does not coincide with the informal instruction system, which generates complexity in corporate internal management. This is the main form of expression of Chinese “Small Groupism”. The so-called " Rigid Frame" would put the informal instruction system on the table as much as possible and make it coincide with the formal instruction system in order to reduce the complexity of corporate management. Here is the key to increasing the transparency of corporate management.

In addition, formal power often intrudes into informal fields to create formal power. In corporations, as a result, on one hand, "skip-level command" often occurs, the emperor does the eunuch's job; and on the other hand different opinions are listened to and tolerated with difficulty, even leading to a personality cult, seriously influencing the decision-making quality of the organization.

Another expression of the intrusion of formal power into informal fields is to call a position Zhang Zong and Wang Zong (usually Zong is the short form of general manger or president). This practice is in sharp contrast with the Western manner of calling people by their names. (When Yuanqing Yang from Lenovo took his post he asked employees to use his first name, in imitation of a Western corporation, so as to undermine the rank system and promote communication between superior and subordinate).

5.2.3 Regulate systems, unify and harmonize organizations to ensure their stability and continuity

Rules within organizations can be divided into two major types. One is the "restriction" type, used to coordinate the benefits of all sides in a corporation and make both the corporation's and the employee's benefits inviolable. The other is the "enabling" type, used to coordinate the behavior of all members of a corporation so as to offer the best service to customers. We are quite familiar with restrictive rules, especially those rules to restrict the conduct of employees and protect the interests of the corporation. Examples include specified length of toilet time, restricted areas, ID badges, sign-in and sign-out requirements, warnings all over the sky and new regulations coming out every day. In this regard Chinese corporations, as the saying is, could learn a few things without being taught, and have brought these kinds of rules to the peak of perfection. This class of rules, however, is bad at restricting the conduct of leaders and protecting the benefits of employees. This lack of reciprocity violates the equality principle behind bureaucracy and puts the organization on an increasingly narrow path.

Active type rules reflect the professional skills and know-how of a corporation and they are the base of a corporation's core competitive capacity. Take McDonalds, for example, where all actions from the enquiries of "For here or to go?" "What size?" and "What kind of sauce," through payment and goodbye must strictly accord with a pre-designed series of regulations, procedures and standards. A little slacking is not allowed. And these are just the regulations governing service. In regard to food, to ensure uniform quality there is a series of complicated regulations, procedures and standards for materials supply, storage and production, and probably a little slacking is not allowed. The core competitive capability of an American-style chain restaurant requires these regulations, procedures and standards, as well as the ability to do a simple job thousands of times without deviating from the rules. This is an example of a labor-intensive industry. The business processes of the intelligence-intensive and capital-intensive industries would be more complicated. An example of the former would be Huawei Corporation, which spent a huge sum to introduce Integrated Product Development from IBM. An example of the latter could be an insurance agent's process of settling an insurance claim. These

methods are unexpected, and known to only a few, but they are very effective.

5.2.4 Non-personalizing and professionalizing style

In everyday language, non-personalizing and professionalizing means doing official business according to formal principles. The idiom of "doing official business according to official principles" is slightly derogatory in China. Many Chinese feel that rules are intended to punish others, and therefore when someone faces the rules he inwardly expects that others will be held to the rules but that he, best of all, will be treated differently. If he is treated entirely according to the rules he feels that he was treated badly and is, of course, a little disappointed. Many people complain of corruption and the operation of privilege because they do not have the chance of benefiting from them, but once they have the chance they will not hesitate to use it. Everybody agrees that all men are equal facing the rules; the question is how will you respond when you are restricted by the rules?

Professionalizing mean not only handling affairs justly, not abusing one's power and not seeking personal gain, but also not personalizing conflicts and collisions at work.

5.2.5 Promotion and appointment based on ability and qualifications instead of personal likes and dislikes

Given that the purpose of an organization is to maximize that organization's interests, then hiring should naturally be based on ability and not the selector's likes and dislikes. This sounds simple, but it is very hard to accomplish.

Fostered by the Chinese "Small Groupism" culture, various small collectives and small organizations have been formed. Sometimes they stick up for each others interests, and sometimes they sacrifice the interests of the whole corporation to maximize the interests of a small collective. When selecting staff, such small circles often base decisions on personal likes and dislikes. Another form of the small circles consists of a leader surrounded by sycophants. Such a small circle, a group of "toadies," is very harmful to an organization, especially when the leader is not the main owner of the corporation. An interesting question: is it possible that the leader does not know that the people he appointed are ingratiating flunkies? Now this leader can do anything to obtain the devotion of his circle, but once he loses power and influence, they will change their coats quickly. Under most circumstances, the leader recognizes that he will use the people around him to maximize his own benefit instead of

maximizing the organizations interests.

5.2.6 Members' jobs in an organization are their only important role

Bosses in Chinese corporations often like to establish multiple corporations and simultaneously take the important positions or delegate their responsibilities to trusted managers who report to them. They seldom designate professionals to the positions, as bosses in the West do. Chinese entrepreneurs control multiple corporations, creating a complicated net of relationships among those corporations. This situation is quite different from typical large corporations in Western countries, where a structure better than the bureaucracy system is implemented; the division system, for example. Once the bosses have lost their control for whatever reason the result is often the partition of the corporations.

Another common weakness in Chinese organizations is that the boss occupies the chief position in name, but the "vice administrator" actually does the job. The person in the vice administrative position has the actual power, and can also use the authority of the chief position to acquire resources with which to repel ambitious competitors. He is free to go forward or to back out, and it is really a perfect arrangement. But once the boss in the chief position suddenly begins to interfere in internal affairs, the situation will become very complicated, and in this situation the person in the administrative vice position usually complains loudly and loses his job.

5.2.7 To be scrupulous in separating public from private interests

Once a person becomes a member of an organization, he is in the public domain. McKinsey stipulates clearly that in corporate culture: customer first, corporation second, and individual third. That is to say, when there is conflict between customer and corporation the customer should be first; when there is conflict between the corporation and the individual, the corporation should have priority and the individual must step back.

After TCL merged with the TV business of Thomson, TCL encountered a big problem with the issue of separating public from private interests. If the CEO wants to have a conference call to France, people at headquarters need to participate. The headquarters employees have to wait until very late, while the Thomson employees avoid using their private time. To avoid harassment by the Chinese boss they each bought another cell phone card for private use and switched off the business card when leaving work. TCL employees naturally complain that Thomson personnel are lazy and less dedicated.

In fact, looking at it from the viewpoint of the bureaucracy system the behavior of the French employees is reasonable and not exactly an issue of laziness and lack of dedication.

In China the connection between personal relationships and business relationships is still a big issue. Westerners believe that business and friendship should be separated and business should go first, while the Chinese weave friendship and business relations together and put friendship first. As the Chinese say, get along with well with people before doing business.

5.2.8 "Blood" of the bureaucracy organization: documentation

The last feature is the importance of written records. All the rules, all the organizations' agreements, all production procedures are recorded in written form. To demonstrate that an issue is controlled by the organization it must be written on paper. Of course nowadays IT technology is changing the situation as more and more information is entered directly into an electronic database.

The Haier Group set out to control the whole production procedure, systematically and comprehensively, through the measures of 6S, Daily Settlement and Daily Improvement, all recorded in written form. Even for a small piece of glass, a responsible person is assigned to clean it in a timely manner, and keep written records of the work. The CEO of TCL group, Dongsheng Li once was posted as head of the Import Department in the Industrial Development Company of Huizhou in China's province of Guangdong. Part of his work was to negotiate with multi-national companies. He recalled that he learned a lot from the experiences, one of which was the way these companies conducted their meetings. "One particular thing is that when negotiating with Japanese and European corporations, there are standardized meeting materials ready for the meeting, and the minutes are completed right after the meeting. We were surprised that this is how they run their business."

The "Rigid Frame" is for resolving the issues that exist between organizations. At a corporate level, the structure is to standardize the first tier and second tier of management. It is also necessary, of course, to establish a secondary "Rigid Frame" for the second and third tier of management, and so on. The key aspect is what the management system controls. Bureaucratic management defines only the relationship between organizations, which means that it governs only the small organizations or collectives, keeping in mind the big picture while letting the smaller parts take care of themselves. All small collectives are controlled strictly by rule of law (basic corporate law) under the overall framework

of the corporation and supporting the overall benefit of the corporation.

5.3 Cultural bureaucracy

Cultural Bureaucracy sets up a corporate constitution under law, formalizes corporate customs through this constitution, and formulates a shared value system. In this way, through the corporate constitution, the essence of management can be inherited by posterity like a genetic code from the elder entrepreneurial generation. Just as the U.S Constitution, though not lengthy, fully embodies the spirit of every human being's unalienable rights to "life, liberty and the pursuit of happiness." As an example take one of China's top real estate companies. Wanke has an unbendable rule in its management of human resources--both members of a couple are not allowed to work at Wanke at the same time, and one's spouse's company should not have direct business relations with Wanke. If such a thing happens, it is the responsibility of the personnel concerned to submit a report, which will be dealt with by human resource management at headquarters. If no report is submitted by the people concerned, and the situation is discovered by the company, then that person will be unconditionally laid off (having had a crisis of honesty) without any recourse.

Looking at the history of China, it is not difficult to see that enforcing the principle of "penalizing the prince by the same standards as civilians" played a crucial role in determining the fate of dynasties. Those which strictly observed this principle had a longer period of prosperity, while those who failed to do so headed toward decline.

5.4 " Flexible Organism"

The "Flexible Organism" is meant to provide for the resolution of internal issues within small collectives. These represent the essence of Chinas management culture, and should be given deserved credit. (Chinese companies have rich resources in this area). Internally, managers at all levels should be given complete autonomy within the "Rigid Frame" while maintaining relative flexibility in the assumption of responsibility, which will improve corporate efficiency. The "rule of man" concept is represented very well in this structure.

"Rigid Frame with Flexible Organism" provides for the overall interests of the company as well as the need for individual "glory" and the benefit of the small collective. I believe this solution will be an efficient means to realize the globalization of Chinese corporations, and propel them into the global

Fortune 500.

Regarding how to implement "Rigid Frame with Flexible Organism", I shall discuss the details in the last chapter, "Recommendation to Chinese Electronic Corporations."

In corporate reform certainly key factors in success are the determination of the chairman and the CEO, and their ability to set an example themselves. The reformation of Chinese corporations requires, therefore, foresight and hard work on the part of one or two generations of leaders, who set the role models themselves and push ahead with great perseverance. They have indeed a heavy responsibility on the long path ahead.

Chapter III: Diagnosing and Changing the Organizational Culture of Corporations[5]

In the previous two chapters, I have made a comprehensive examination of corporate organization, organizational evolution, and corporate culture. I also presented a complete framework applicable to the real situation in Chinese corporate organizations and culture. But how is one to achieve a comprehensive analysis of the reality of corporate culture, and, taking that analysis as the starting point, how can one change corporate culture? In this chapter, I hope to help Chinese corporations to understand the influence of culture on a corporation's survival and growth, as well as how to diagnose and change a corporation's organizational culture. The theoretical underpinning for this chapter is the organizational diagnosis and change model developed by Kim S. Cameron and Robert E. Quinn[6]

Based on their theory, I shall probe into how to diagnose the culture of Chinese corporations from two angles, theory and operation, and on the basis of my diagnosis I shall discuss how to improve the culture of Chinese corporations at the organizational and individual levels.

1. The theoretical base and framework of organizational culture

Just as there are not two identical leaves in the world, so there are no two organizations whose organizational cultural types are exactly the same. Is there a difference between "good" culture and "bad" culture? What is the cultural difference between successful corporations and unsuccessful corporations? In how many ways can a corporation transition from one culture type to another? Could new and better ways be found? To answer these questions we need a solid theoretical base.

The development of each corporation will go through a spiraling progression: from start, through development to maturity, to re-development and re-maturity, like the process described by Larry Greiner starting from creation, leading, separation of powers, coordination, and, finally, cooperation, as discussed in Chapter I. And at each stage in the corporation's development the corporate culture may also experience the same progression to some extent. We should, therefore, regularly diagnose corporate culture so as to find out what aspect of a corporation's culture is mismatched to its development stage, and propose appropriate solutions. First I shall make a theoretical analysis on a Competing Values Framework.

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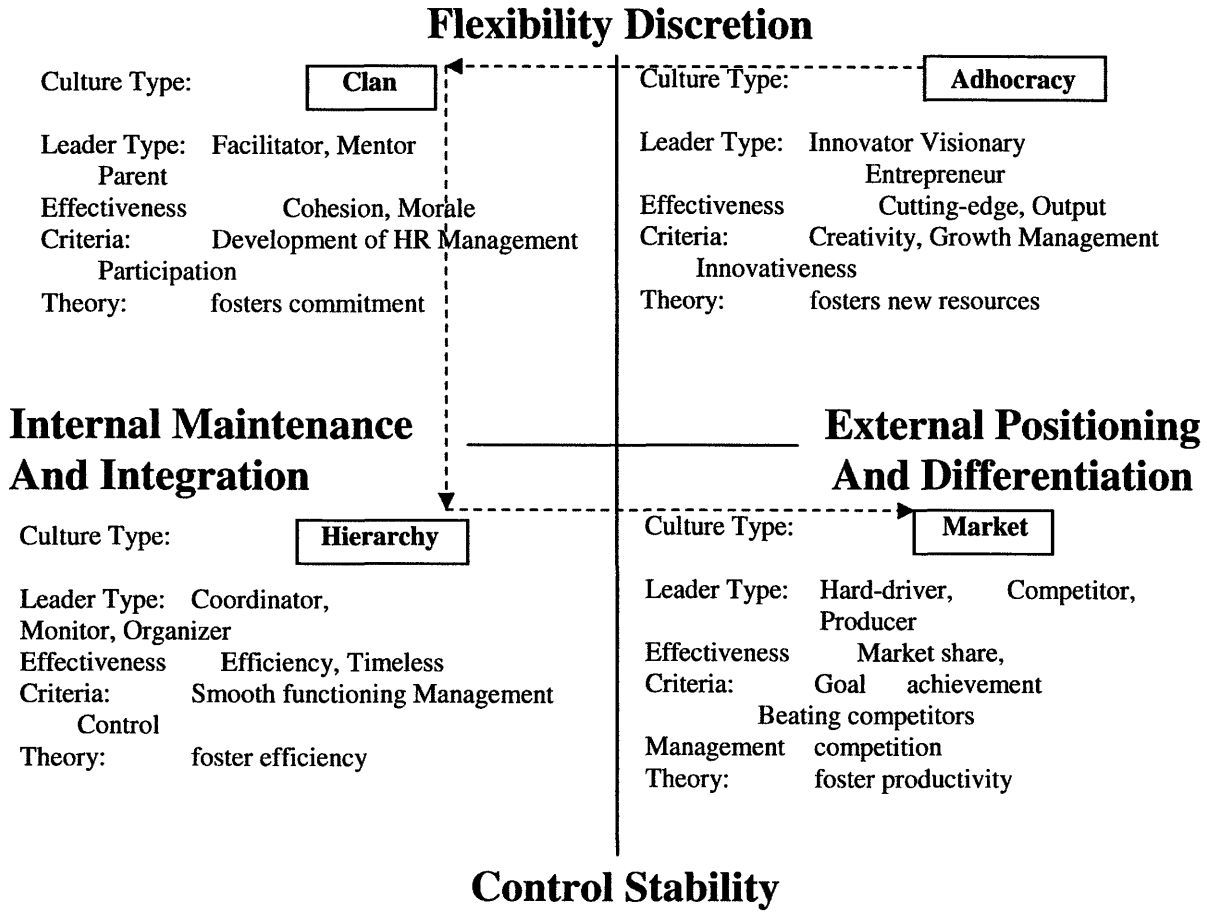
[5] I appreciate the contributions to the research for this chapter by Changqing Wang.
[6] Cameron and Quinn, "Diagnosing and Changing Organizational Culture"

Using the Competitive Values Framework we can analyze corporate competitive strength and performance and classify organizational culture (see Figure 3.1 Competing Values Framework). There are two dimensions: the first describes whether an organization's culture emphasized an internal or external orientation. The second examines whether an organizational culture values stability or flexibility. These two dimensions divide organizational culture into four types: Adhocracy, Clan, Hierarchy, and Market. In fact, this way of classifying organizational culture is similar to that described in previous chapters. Now I shall elaborate on features of the organizational culture types in each dimension of the model by Kim S. Cameron and Robert E. Quinn.

Figure 3.1: Competing Values Framework[7]



Hierarchy culture: An early researcher and proponent of Hierarchy Culture was the German

[7] Cameron and Quinn, "Diagnosing and Changing Organizational Culture"

sociologist Max Weber. In the early stage of the industrial revolution, the main challenge facing a corporation was effectively to produce goods and provide services. In the large scale industrial production stage Weber's Hierarchy organizational form was considered to be the most effective because the corporations with such a culture could steadily, effectively produce highly standardized goods and provide services. Both Ford Motor Company and McDonalds are typical representatives of Hierarchy culture.

Market culture: Spurred by increasing market competition, in the late 1960s another outward-facing organization form--the market form--began to appear. The basic assumption of market corporate culture is that the external market is hostile and customers are greedy and make rigorous demands. Market culture stressed transactions with external constituencies, and it emphasized how to reduce costs and expand market share and position by using market mechanisms in dealing with suppliers and customers. Its core value is competitive strength and productivity. Its basic target is to increase profit. In my eight case studies I found that almost all large corporations have gradually adjusted their corporate culture to a market-oriented culture, starting out from a variety of cultural forms. For example, the early Philips Group was a typical corporation with Hierarchy Culture. After its first deficit appeared in 1991, corporate management carried out a shift to a market-oriented culture with good results.

Clan culture: In the early 1970s the remarkable performance of Japanese corporations propelled them into the world economy. Some scholars observed that these corporations had strong cohesiveness by comparison with Western corporations. Employees had a strong sense of participation. Employees shared common values and targets, actively giving of themselves to the corporation, and making suggestions for corporate development. At the same time, the corporations took care of their employees, providing conditions for employees' growth and offering lifetime employment. Because these corporations are rather like big families, the culture is called Clan Culture. Clan Culture emphasizes internal team spirit, collectivism, and external cooperation and they treat suppliers and customers as partners.

Adhocracy culture: In the late 1970s and early 80s the information age began, marked by PCs and the Internet. With the development of information technologies, corporations with a new type of culture developed; corporations such as Microsoft, Apple PC and Google. This type of organization culture, called "Adhocracy Culture", emphasizes innovation, personality, vision, flexibility, and prompt response to the market. The target of these corporations is continuously to develop new products and

new services. The task of corporate management is to set up an environment conducive to innovation, to encourage and cultivate the spirit of the entrepreneur, the innovator, the adventurous, and to foster the courage of research and the development of cutting-edge products.

For most corporations, the corporate culture is a mixture of the four types of culture. Different corporate cultures reflect different proportions of the four culture types, as well as the specific organizational culture of the various departments in the corporation. When reviewing the development process of corporations we observed that corporations have gradually migrated from Adhocracy-based culture to Clan culture, to Hierarchy culture, and then to Market culture.

2. How to diagnose the organizational culture of corporations

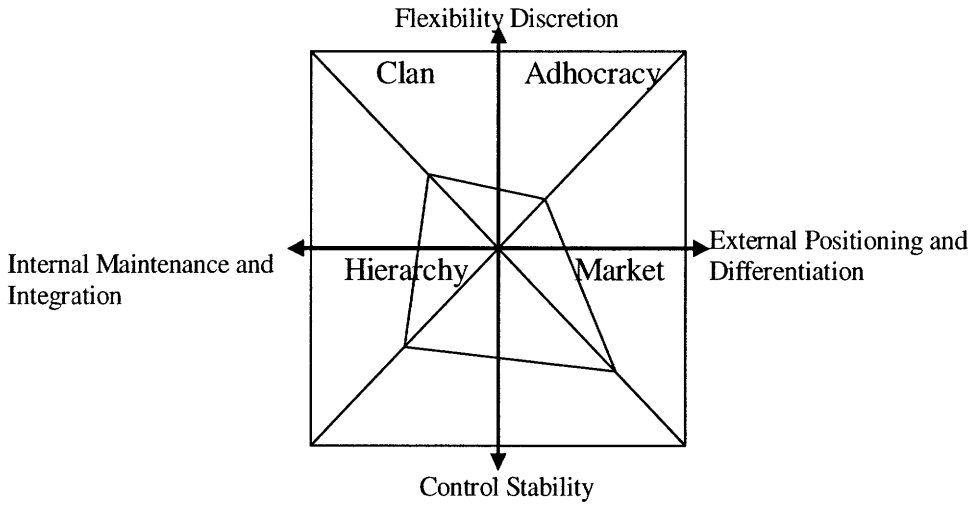
For a corporation, it is the market that determines if its culture is "good" or not, or if its culture will serve as the basis for healthy development. It is hard to imagine how Google could survive in the industrial times depicted in Charlie Chaplin's movies. On the other hand, it is not hard to understand that the famous photocopier corporation, Xerox, having preceded Microsoft and Apple Corporation in the invention of a graphical user interface system on PC, allowed those corporations, with their adhocracy culture, to get ahead and put out the Windows operating system and the Macintosh PC.

Corporate leaders should pursue the target of improving their corporate culture to avoid Xerox's mistake and instead become the outstanding leaders in their industries. But, before improving corporate culture we should first find out the difference between the corporations current, organizational culture and the market-driven corporate culture (or the culture of the industry leader). In other words, we should diagnose the organizational culture of the corporation. What we are going to introduce below is an effective and operable method and tool for diagnosing organizational culture: OCAI (Organizational Culture Assessment Instrument).

OCAI addresses a questionnaire to middle- and high-level management about organizational culture. Then the answers are graded and calculated to obtain an organizational culture profile of the corporation. We can find the deficiency in the organizational culture by comparing the current organizational culture profile with the expected profile. If we compare the actual profile with the organizational culture of industry leaders, the discrepancies can guide us in establishing a plan to change the organizational culture. There are six questions in the questionnaire. Each question corresponds to an attribute of organizational culture: dominant characteristic, organizational leadership,

employee management, organization glue, strategic emphases, and criteria of success. Each of the questions has four options, A, B. C, and D, corresponding to Clan culture, Adhocracy culture, Hierarchy culture, and Market culture. For each of the six attributes of organizational culture, the questionnaire describes the characteristics of each of the four culture types. For example, for the attribute relating to "Management of Employees" the characteristic of Clan Culture is described in the questionnaire as "The management style of the organization is characterized by teamwork, consensus, and participation." According to the level of agreement, the respondent distributes 100 points into the four options. The higher the level of agreement, the higher the score. The optional scores from all six questions are averaged to obtain the proportion of Clan culture in the organizational culture. Then the answers to the other three questions are averaged to obtain the profile of the corporation organizational culture (Figure 3.2 Outline of Organizational Culture). Please review the details in the book, "Diagnosing and Changing Organizational Culture," by Kim S. Cameron and Robert E. Quinn.

Figure 3.2 Outline of Organizational Culture[8]



3. Methods and procedures for diagnosing organizational culture

There are two steps in diagnosing organizational culture with OCAI: 1) Describing the outline of organizational culture. 2) Analyzing the outline of organizational culture. Each step consists of several sub-steps. The following is a simple description:

3.1 Describing the outline of organizational culture

[8] Cameron and Quinn, "Diagnosing and Changing Organizational Culture"

First, capture the general organizational culture following the steps below:

- By the method mentioned in the last sector, draw the outline of the current organizational culture.
- In the same way, draw the expected organizational culture outline and mark that date with a dotted line, so that we can compare the outlines of the two cultures and find the differences.

The expected outline of organizational culture, which we mentioned in the above procedure, can be decided by the subjective expectation of the informant, or it can be the average organizational outline in the industry, or the outline of the industry leader's organizational culture. So we shall have a multi-dimensional analysis and general understanding of the current organizational culture.

3.2 Analyzing the outline of organizational culture

After getting the general and multi-dimensional comparison chart, we can make an analysis in the following steps to lay the foundation for changing cultural direction.

- **Type:** In the outline chart of general organizational culture, find the type with the most points, which is the dominant culture type of the corporation. Is it accommodated to the organization's competitive situation and its long-term strategy? Then draw the sub-outline of organizational culture, finding which cultural feature need improvement.
- **Difference:** Find the difference between current organizational culture and the expected organizational culture, especially in the field with a relatively big difference. This information helps the organization to decide where to focus the effort of cultural change.
- **Strength:** The strength of organizational culture depends on the points of specific culture type in the organizational culture outline. The more points, the stronger the specific culture in the organization. Strong culture generally comes from the spirit of one mind; people think in unity and join hands to make concerted efforts together. In a situation characterized by common consensus, corporations with strong culture would have excellent performance.
- **Congruence:** The congruence of organizational culture means the sub-outline of each cultural feature has a similar shape, which means that when a corporate leader's style is shaped to the market culture, then successful staff management should also be shaped to the market culture. Inconsistency usually leads to confusion and drives people to their wit's end. The corporation with high consistency of culture usually has a relatively better performance.

- **Compare with Norm:** Whether the organizational culture is good or not depends on market demands. The average of all competitors' organizational culture in the same market reflects to some extent the features that are needed in the market. When comparing themselves with the average organizational culture, the organization will do well to follow what Sunzi says, "Know the enemy and know yourself, and you can fight a hundred battles without defeat."

OCAI is an effective tool for diagnosing organizational culture and it is also a very good tool for initiating cultural change. In the course of diagnosis, it helps the organization to find out those potential, implicit and unnoticed cultural features, and sort them out systematically and clearly. In the course of changing the organizational culture, this diagnosis helps to design the direction and strategy of change. There are several steps in the procedure of change based on OCAI, as stated below.

- **Diagnosis and common consensus on current organizational culture:** Select some middle to high level employees who have some understanding and thoughts on the general culture of the organization; ask them to diagnose the current organizational culture, using the method mentioned in the last section, and then ask them to discuss their diagnosis together, to reach a true consensus rather than getting an average individual diagnosis.
- **Diagnosis and common consensus on future organizational culture:** Repeat the first step, diagnose the expected culture and reach consensus.
- **Clarify meaning:** Put the two outlines of the first and second steps into the same outline, and ask each participant to explain what each way of changing the culture means, and does not mean. These explanations can be detailed for each cultural feature, and then the participants discuss until they reach consensus.
- **Explain in stories:** Select real cases from the organization, describe the situation, through story-telling, when implementing the new organizational culture; it can better explain the value and significance of organizational culture through vivid case studies.
- **Strategic Action Approach:** Participants discuss to reach consensus and to establish some specific actions that would change the culture. For each cultural type, list what things should be done more and what should be done less, and what should be done continuously.
- **Implement the Plan:** Make an implementation plan including time table and standard of short-term evaluation. As the process of implementation begins, select four or five actions that have the strongest impact, organize a team to concentrate their efforts on reaching a target in making a specific cultural change, bring the change to bear on their personal behavior, and then go for a wider scope and try to involve more people's participation.

4. How to make individuals adapt and advance organizational cultural change

Culture is an attribute of society and must be connected closely to the basic element of society, people. If a member of an organization wants to acclimatize himself/herself to the organization, he or she must adjust to the organizational culture.

Achieving change in an organization's culture is the result of collective action of all the members of the organization, with each member carrying out the cultural changes. When the organization's planned changes have been implemented, each member of the organization, and especially the management staff, must diagnose and improve his culture by measuring it using the OCAI standards. Otherwise, the change plan is only an armchair strategy and nothing more than a formality.

4.1 Classify key management capabilities

The leader's or management's personal cultural improvement is the key to the success of making change in organizational culture. Their personal culture in great part created the existing organizational culture. In other words, the outline of organizational culture must be coincident with the management staff's capabilities and skills. Now, let's make the classification of key management capabilities according to the outline of organizational culture.

Clan culture: Teamwork, personal relationships, each helps others to improve.

Adhocracy culture: Innovation, future, continuing to improve

Market culture: Competitive capacity, employee motivation and care for customers.

Hierarchy culture: Cultural adaptation, control system and synergy

4.2 General Situation of individual Management Capability

The outline of individual management capability is similar to the outline of organizational culture, and is also a foundation for culture diagnosis and change. We diagnose organizational culture with OCAI, but for evaluating personal culture and management capability we use the MSAI (Management Staff Assessment Instrument), created by Cameron. It helps management staff to find the strengths and weaknesses of their management, and defines the skills useful to changing an organization's culture.

The procedure with MSAI is similar to that of OCAI:

- Management use MSAI to make a self-evaluation;
- Management distributes MASI to several subordinates, colleagues and superiors and asks them to evaluate him;
- Report the comparison result to the management, make a plan for individual culture change, and implement the plan based on the report.

The development of China is inevitably linked to the development of Chinese companies. During 20 years of development many Chinese companies, such as Lenovo, Huawei, Haier and TCL , grew from nothing and became corporations famous in China and the main force of China's economic development. Growing to a certain scale and gradually initiating some activities on a global scale have generated some bottlenecks of development. An important reason behind these problems is that China had only 20 years in which to evolve from a planned economy into a socialist market economy. There are large gaps in organizational culture standards between big modernized corporations and most Chinese companies. The gaps influence not only the development of the company itself, but also bring about cultural conflicts in international trade cooperation. How can Chinese companies advance successfully through cultural innovation, as China did on a national level, accelerating the development of a socialist economy in a unique way? I will explore further this issue in the next two chapters through detailed trend and scale analysis based on electronic industry evolution.

Chapter IV: Analysis of Future Trends in the Chinese Electronics Industry[9]

In this chapter, I use my case analyses of eight companies as benchmarks when probing into the general environment of the Chinese electronics industry, with special attention to elements external to the corporations such as economic and industrial environment, and government actions. I also discuss future internal development trends in the Chinese electronics industry for the next 10 years.
See Table 1 Trend Analysis of Chinese Electronic Industry

1. External elements analysis

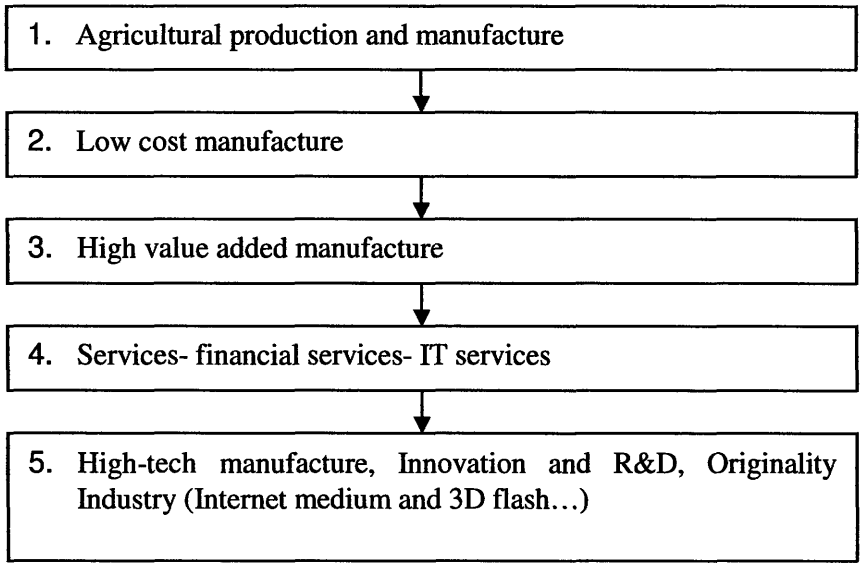
1.1 Economic environment and industrial competition

At MIT, I earnestly studied the economic operational rules of Western countries. I found that, from the modern industrial revolution until now, the whole development of the Western economy has basically followed these stages (Figure 4.1 Development stages of the Western Economy). At present, America is in stage 5, Japan between stages 4 and 5, Korea between stages 3 and 4, and Taiwan is mainly in stage 3. China has individual industries in various stages but, on the whole, as a large-scale manufacturing-oriented developing country, China is now between stages 2 and 3.

When looking at the development track of corporations in Western developed countries, each corporation had conformed to the economic development track of the whole country. This parallelism gave the corporations an opportunity to establish their long-term development strategies.

[9] I appreciate the contributions to the research for this chapter by April Huang.

Figure 4.1 Development stages of the Western Economy



1.1.2 The current economic environment and industrial competition in China is similar to that in Japan in the 1970s, Korea in the 1980s, and Taiwan in the 1990s

From the eight cases I found that the current economic environment and industrial competition in China have egregious similarities to those in Japan in the 1970s, Korea in the 1980s and Taiwan in the 1990s. From 1972 to 1989 the Japanese yen appreciated 70% under external pressure, mostly from America, and the Japanese stock market grew nineteen-fold. In the 1980s, the Taiwan dollar appreciated continuously for 10 years, which resulted in a nineteen-fold growth in the Taiwanese stock market. In 2006 RMB started to increase in value under external pressure and the stock market doubled. In the light of the pressure exerted by a favorable balance of foreign and domestic trade in China, RMB will continue to appreciate in the next few years.

From the point of view of industrial competition, Japan was mainly a low cost manufacturer in the 1970s, but in the 1980s, concurrently with the development of the Korean economy, Japan's low cost advantage was gradually replaced by Korea. This forced Japan to engage in industrial restructuring and seek other bases for competitive superiority. Until the 1990s Korea faced double challenges, from Japan's superiority in quality and technology and from Taiwan's low cost advantage which made Taiwan the factory of the world. These challenges prompted Korean industrial restructuring. Since the start of the 21st century Taiwan gradually transferred to high value-added industries, while still Original Equipment Manufacturer/Original Design Manufacturer-oriented, and China replaced Taiwan to

gradually become the factory of the world. Mainland China, however, was heavily impacted by the high value-added industries of Japan, Korea and Taiwan, and by low-cost industries in other regions of Asia. Chinese corporations need to think seriously about the best direction to take now. In my opinion a gradual transfer to high value-added industries should be the logical choice for Chinese electronics corporations.

Although Japanese, Korean and Taiwanese industries had been gradually transferred to mainland China, we could not completely determine if we could establish 10 years as the standard period for industrial transfer because this process is completed step by step. But generally industrial competitive capability transfers between countries according to this rule of development.

1.1.3 RMB appreciation will weaken the low-cost advantage of the Chinese electronics industry

RMB appreciation will further weaken the low-cost advantage of the Chinese electronics industry. Local corporations' low cost comes mainly from a cheaper labor force and lower cost raw materials. But the appreciation of RMB will cause an increase in cost of transportation, water, electricity and infrastructure, followed by increased labor costs. The competitive price advantage of Chinese products will be weakened along with the RMB appreciation. From July 2006 the rate of RMB appreciation quickened. Economic experts at the China Commercial Information Center forecast an annual appreciation rate of around 5%. Some foreign investment banks, such as Goldman Sachs, considered that a reasonable exchange rate should be US $1 for RMB 7, and Credit Suisse First Boston (CSFB) considered that a reasonable rate should be US $1 for RMB 5. These rates would reduce the price superiority of Chinese corporations exported products by 15% to 33% in the next 3 years.

RMB appreciation means a reduction in the cost of purchasing overseas assets and an increase in local production costs. As the central government unlocks restrictions on capital accounts, further appreciation of RMB will encourage Chinese local corporations to invest abroad. As more and more Chinese inland corporations seek for overseas investment, the industrial position of China will change significantly over the next 10 years.

1.2. Government act: impact of transformation of government-corporate relations on corporate development

1.2.1 Transformation of government functions: from leading to guiding and service

The role of government in dealing with corporations will change gradually over the next 10 years into guiding and serving. In the past the situation of each era determined the relationship of the government to corporations as a leader. At the beginning of opening and reform in China every walk of life was in an embryonic stage and it was hard for a newly established market mechanism to play a leading role. Government had been incubating corporations carefully by setting down policies for industries to follow. After nearly 30 years of trials and hardships in the market, Chinese corporations are now closing the gap with world-class corporations with regard to internal capital accumulation, talent reserve, product R&D and external market development. Corporations now clearly know their needs to a certain extent. What government needs to do from now on is to reduce direct interference in corporations' economic affairs and, through guidance and service, to advance internal cash flow and marketization of the Chinese economy.

Here I explain the importance and inevitability of this trend with reference to the transformation of government functions in Korea. The 1960s was the initial stage of Korea's economic takeoff, when the market mechanism was in a growth period but did not yet play a leading role. During this period the government strongly interfered in and controlled economic operations by means of official policies for industries. For example, the Korean government offered many low-interest loans to export-oriented corporations and had depreciated the Korean currency by 100 in order to stimulate export growth. As for the development of the large number of medium- and small-sized corporations, the government did not interfere in their affairs and relied on the operation of the market mechanism. After the middle 1980s the government reduced direct interference in the economy and gradually implemented the New Economic policy to promote the internationalization and marketization of the economy. In the 1960s and 1970s the Japanese government carried out an industrial policy similar to that in Korea, promoting the development of Japanese corporations.

1.2.2 Interaction between government and corporations gradually enhanced

The influence between government and corporations is an interactive process. Corporations should bring forward their needs and seek for help via multiple channels, encouraging the government to offer various types of support. An obvious example is the Income Tax Law for Enterprises (draft) passed in March 2007 in China. This law sets the unified income tax rate at 25%, both for corporations funded from overseas and domestically. The effect of the law was actually the termination of the double-track

system of income tax for corporations. This law was the Chinese governments positive response after many local corporations, like Cherry, made strong appeals. The law created a level playing field in the Chinese market for both foreign- and domestically-funded corporations. We believe that, as a result of the transformation of the Chinese government functions from leading to service, active government-corporation interaction will play an ever more important role in the development of Chinese corporations.

2. Analysis of internal elements and forecast on the direction of the Chinese electronics industry

2.1 Quality advancement and the development of high value-added products become the keystone of a strategic shift in Chinese corporations

Manufacturing high quality and high value-added products is the product positioning direction that Chinese corporations should and must take. Looking back on the developing history of growing European, American and Japanese world-class corporations, we see that they carried out different levels of quality advancement during each phase of their development. When Motorola reached US$3 billion in 1980 R. Galvin initiated Total Quality improvement activity, based on Motorola's corporate strategy model, and in response to competitive pressure from Japan and from industrial innovation. The model set a clarified quality target to increase product quality ten-fold by 1985. During the late 1980s and 1990s, Toshiba of Japan carried out a transformation from expansion of scale to improvement in quality. Striving for perfection, all of these quality advancement activities aimed at establishing a product competitive advantage, which cannot be emulated by rivals in day to day severe competition.

In the current economic and competitive environment, Chinese corporations must shift their strategy to focus on high quality and high value-added products. With the increase of exports from China trade friction also increases. Anti-dumping laws by all countries are aimed at the cheap and fine products of China. Price increases consequent upon improved product quality are an effective way for Chinese corporations to evade anti-dumping laws and explore overseas markets. In addition, the European Union's Waste Electrical and Electronics Equipment (WEEE) directive was issued on August 13, 2005. As an environmental protection barrier it set standards and required that manufacturers accept responsibility for recycling and disposal of the waste by-products from electrical and electronics products in the EU market. Manufacturers are also requested to put a recycling mark on their products from the date the directive became effective. For Chinese industries, if the products listed in WEEE are

not replaced by low energy consumption and high value-added products, the low profits could not sustain the recycling costs of those electronic products at all.

2.2 The fast pace of Chinese corporate globalization; overseas merger and acquisition will become a key approach

The main purpose of Chinese corporations' push to globalize is to gain overseas resources, including new technologies, new markets, talents, brands and overseas capital. Overseas merger and acquisition will be a new approach for Chinese corporations attempting to obtain resources for their globalization (of course, some of them will choose the step by step method). TCL merged with Thomson Color TV and obtained Thomson's brands, RCA's brand and patents technologies in order to evade the trade barrier and successfully enter the European and American color TV markets. Lenovo also gained the capital necessary for its business expansion by seeking part of the capital in the overseas market.

2.3 Training will become vital to corporations

I will discuss this point in detail in Chapter 6.2. All the companies in my case studies attach great importance to training during their development. We can say that if Chinese firms want to grow big and strong they must concentrate their efforts on training hand-in-hand with employees 'career development. Huawei's six-level promotion system is a successful example. Looking at the overall Chinese electronics industry, the needs of training are continuously increased and this increase is an inevitable accompaniment of the development of Chinese firms. When the core competitiveness of products changed from low cost to high value-added, the core competitiveness of human resources changed from a low cost labor force into high quality and high competence talents. The Chinese electronics industry being mainly a labor-intensive industry, to accomplish the transition from low cost to high value-added the solution is not to hire large numbers of high quality talents from outside because the cost is too high. But training existing workers, particularly those in the low and middle levels, would be the best choice to improve their quality and to solidify the corporate culture as well.

The scope of training should not be limited to the advancement of technology and skills, but should also accomplish the integration of corporate culture. Training can be conducted internally or can be self-training by the employees themselves. Lee Kun-hee, president of Samsung Electronics, once adjusted Samsung's working hours to 7am to 4pm which had an impact on self-training and study after

work, and encouraged a vital spirit in the company.

2.4 Application of the IT system becomes the key means to improve management transparency, enhance communication efficiency, and reduce communication cost

With the scale-up of Chinese corporations the application of an IT system becomes the key action to improve management transparency, enhance information communication efficiency and reduce communication cost. All the corporations in my case studies expended a lot of manpower and material resources on IT systems in order to manage business systematically. In particular it is essential for Chinese firms modeled on "Small Groupism" to strengthen their investments in IT. A unified and standardized IT system enables the company to: 1) effectively monitor the man-controlled links in the organization and improve the transparency of internal operation; 2) reduce the cultural collision of globalization to some extent. The standardized information from an IT system is simpler than orally-delivered words and will not cause misunderstanding between people due to cultural differences.

For example, in the second transformation of Acer in 2001, the launch of the Executive online interface enabled information transparency and immediate communication between regional managers and headquarters. This discouraged under the table agendas and increased the operational transparency in the company. Siemens presents a similar case: when the company came into China and struggled for several years, it finally identified that the source of external chaos was disordered internal management and, especially, information management. After establishing a full-fledged, real and controllable digitalized information system, Siemens quickly overcame the man-made chaos caused by the differences between Chinese and Western culture. Once management efficiency and control were improved, the foundation was laid for stable and fast development.

2.5 Transfer to a market-oriented organization

Taking a broad view of the development history of the eight companies in my research, I found that they all experienced the transformation from various forms of organization towards market orientation.

For example, Philips completed the transformation from technology-driven to market-oriented through over 20 years of innovation, and thereby pushed the company back on to the track of strong development. The Chinese electronics industry has already been transformed from product-driven to

market-driven, so Chinese corporations must acclimate to this change.

Samsung Electronics of Korea is a company which pays great attention to market orientation. The design of its different series of mobile phones represents very well its recognition of different markets for different consumers and different regions. For example, Samsung designed a mobile phone with a blue LCD screen for the European market, because it found that Europeans like neatness and visual uniformity, and 75% of consumers thought foldaway mobile phones not convenient to use. The organizational structure of Samsungs design department follows consumers' tastes so as to take advantage of the market.

2.6 Continuous investment in innovative R&D, relying on government support gradually to master independent intellectual property rights

Chinese corporations adopt step by step strategies on innovative R&D. The main reasons for this way of proceeding are: 1) The foundations of corporate R&D are relatively weak. The innovations are principally simulation, refinement, or integration. Few companies have strong innovative ability. However, those capabilities still lag behind on R&D management capability, integration of internal and external innovative integration, and management of the overall value chain, from product and technique to marketing and service. Even Huawei, who invest 10% of revenue in R&D annually, has no basal core patent. 2) Although capability to innovate has greatly advanced in Chinese corporations, compared with world-class corporations, there is still a long way to go. Take the IT industry, for example, where high-end products are still dominated by overseas brands and key components are also imported from abroad.

Continuous investment in R&D, making use of the opportunity offered by the next round of the technology revolution, and mastering the core patents are the strategies to prepare Chinese firms for taking the lead in the competition among world-class corporations. Currently the core patents of mainstream technologies are all controlled by European, American and Japanese world-class corporations. Chinese firms, relying on government support, should take the opportunity to master their own independent intellectual property rights. Before this advance takes effect, purchasing intellectual property rights or paying the patent fees should be an effective way. Huawei's experience in this regard serves as a good example for Chinese firms.

Chapter V: Scale analysis of Chinese electronics corporations[10]

The eight electronics corporations in my case analysis have all experienced rapid growth before they reached a certain scale, which in some cases means sales revenue of $50 billion. Reviewing their development process, we would find that each of them had by no means experienced plain sailing, but all made their way through multiple chokepoints. Depicted as an "S" curve, corporate development can go forward only by overcoming various hurdles. In this chapter I will present how these eight established global corporations have gone through hindrances and kept up their high growth rates. In the light of my experience in corporate operations as well as the reality of Chinese corporations, I estimate that a corporation would suffer approximately four stages of chokepoints during periods in which the corporation achieved sales of $1 billion, $3 billion, $5 billion, and $7 billion respectively. By summing up the common things all eight corporations did as they struggled against their chokepoints we could find effective guidance for Chinese electronics corporations to overcome their bottlenecks on their development life cycle. See Table 2 Scale Analysis of Chinese Electronic corporations

First of all, I would like to focus my analysis on identifying, in the development of the corporations in my eight case studies, how the corporations implemented several masterstrokes on the way from $1 billion to $7 billion. And then I want to set out longitudinally the common significant events which arose at different expansion stages, and give dynamic illustrations of these masterstrokes.

1. Tactical options in each stage of the enterprise

1.1 Diversification and/or specialization option

In recent years, many Chinese corporations have been audaciously endeavoring to diversify. A considerable number of corporations failed in this endeavor and began to doubt the feasibility of diversification. They formed an "Alert Theory on Diversification," some after they had paid out more than enough in tuition to learn diversification and then on turning their direction back to "focusing on their primary businesses." A Chinese scholar, Ruxiang Jiang, said in 2004 that the reality is that where the Chinese market is pre-mature at the moment it is more appropriate for a corporation to concentrate on specialization. In fact, both diversification and specialization have advantages and disadvantages, and it is hard to distinguish which is better. The choice to diversify or not depends on the core

[10] I appreciate the contributions to the research for this chapter by Xiaoya Liang.

competence of a given corporation, i.e. the question is could the corporation's core competence and capabilities support diversification?

Different types of corporations have separate core competencies; for an electronics corporation the top priority among core capabilities should rest with the core technologies, originating directly from the company's R&D and technical innovation capabilities which benefit the corporation in the long run. Currently, Chinese corporations have core competencies in aspects of brand management, distribution channels, production management, operational control and so forth, whereas R&D capacities are lacking. A corporation could indeed wisely choose to specialize/focus, and be strong that way in a fractionized market, unless it already has a world-leading level of R&D capacity and a colossal market volume. For Chinese corporations at the present stage, therefore, the best choice is to adopt a diversification strategy to help them to accumulate resources and experience, enlarge the core competencies, breed technological innovation capabilities, and prepare for the next strategy transition. Chinese corporations should specialize, establishing their solid major business while exploring diversified expansion, cautiously and with stringent selectivity, round the corecompetencies.

1.2 Application and perfection of matrix management

As I mentioned and analyzed deeply in Chapter I, Matrix Management is a great invention by Western organizational management researchers in the 20th century, effectively balancing resources around an assembly line and according to functionality classifications. It achieves a sharing of resources and improved managerial efficiency in cross-functional team work. In the late 1990s, and especially in this century, Matrix Management prevailed in enterprising circles among both big and medium-sized multi-national corporations. Successful examples were IBM, HP, Nike etc. Recently, Matrix Management has been blown into China by Huawei, TCL, Lenovo, etc. Looking back we found real hardship in applying Matrix Management in China, but for corporations aiming toward internationalization and diversification Matrix Management may be the only choice. In my view, semi-Matrix Management which is used by IBM might be a better course for Chinese corporations, considering the realities. In a perfect example of semi-Matrix Management, BENQ nimbly combined the front and back desks. One should notice that Matrix Management should grow step by step with the corporation's business.

The corporations in my case analyses offer three convincing examples in how to succeed in applying Matrix Management:

- Matrix Management should match with each development state and scale of a corporation. For a corporation in the beginning and developing stages, below the scale of $1 billion, a simple functional structure might work better.
- Matrix Management cannot be achieved in one step, but requires gradual application, perfecting and deepening.
- Matrix management should be flexible and compatible both with frameworks that are rigid and with those which are yielding. Huawei is a valuable instance: "In China, many companies are unqualified to adopt Matrix Management, which is driven by culture top up and by profit top down." An open culture and smooth communication should be the cornerstones of Matrix Management's success.

For details please refers to Chapter I, the description of Matrix Management.

1.2 Balancing between centralization and decentralization

The balance between Centralization and Decentralization is the heart of implementing organic strategy. At the beginning a small-scale corporation, with comparatively simple staff and duty divisions, a centralized familial management works more efficiently and flexibly. At this stage a boss is engaged in and strictly controls everything, with high efficiency and low risks. The staff would work as a family and the corporation would function as a cohesive fighting team. Even though, as the corporation expands, the boss might be tormented by trivial chores and managerial failures, one after another, and the business might be gravely held up. Without decentralization an enterprise will not go forward.

Judging from the case study, without decentralized and delegated management, a corporation could not expand to the US$1 billion scale. As for a huge company, one solitary boss might be reluctant to undertake every corporate duty, and then decentralization of power might, of necessity, be his last and best choice. According to Larry Greiner's theory, after decentralization there arises a trust crisis as well as lack of inspiring and supervising policy, making things complex and uncontrollable.

As for the timing of the "uncontrollable" condition, different companies have different conditions and solutions. Some companies might revert to centralization, for example Acer twice retreated from decentralization to centralization and then reversed itself. Some do what Lenovo did, coordinate both into one path. In China, constructing a "Rigid Framework together with a Flexible Organism" might be a good method for conquering the "loss of control crisis."

1.4 Internationalization strategy and the route to it

Qualifications have been created by Chinese corporations through two decades of endeavor. An unarguable solution for developed Chinese corporations is to be internationalized with their eyes open. Success in this endeavor might be affected by various elements: first of all, the internal power of the corporation, second the good sense and instincts of top management, and third the international macroeconomic situation. The practices in my case studies serve as warnings and lessons to be learned.

The path to internationalization can be classified into 2 categories: 1) becoming market-oriented, and achieving internationalization step by step. Huawei and Haier are examples of this category, gradually following the marketing route by building up R&D, sales and service globally, step by step and region to region, moving from developing to developed countries. 2) Grasping external opportunity, and jumping into internationalization through massive and fierce acquisitions and restructurings. Lenovo, TCL, and BENQ set the example here. As I understand it, when a corporation possesses not enough qualifications in talents, IT systems, or managerial talent, then the corporation wouldn't execute international acquisition. This might saddle the corporation with huge costs and end in speedy failure. Moreover, there is no necessary relation between an Internationalization Strategy and corporate scale. Neither would success in the former be affected by the latter. As in the course of my case studies, when corporations grew from $1 billion to $7 billion, they all engaged in the continuous pursuit of internationalization, yet each corporation at each stage had different focuses and different models.

1.5 Risks with split public companies

Through case analysis we found that the two best corporations with Chinese culture, Lenovo in Mainland China and Acer in Taiwan China, were ultimately split into 2 and 3 companies which greatly restricted the integral development of the company. I couldn't help wondering if a split into smaller entities the only choice for a mature company? Admittedly, the Japanese Toshiba Group followed the splitting route as well, but they went public for development financing, and were guaranteed integrity by means of an absolute group holding or single dominant shareholder, and splitting never happened because of personal factors.

2. The analysis of the stages of corporate development

2.1 How to enter the US$1 billion sales stage

2.1.1 Start and pursue the construction of the company's own brand

First, let us take TCL as an example. It paid a lot of attention to building its brands, first as a brand in the telephone set industry, and then step by step extended its brand into other fields of electronic products, including television, mobile phones, and so on. During this stage, Acer also committed itself to brand construction. Acer's brand construction theory is a representative example. In 1992 the president of Acer, Stanley Shi, put forward the famous Smile Curve theory, which took the brand marketing and maintenance of lower level products as the focus of its profit strategy in this period of the corporation's development.

2.1.2 Realize delegation of authority

Through case studies in the electronics industry we find out that almost all the corporations have set up their division of power policy and a complete authorization system before they entered the $1 billion sales stage. Take Acer for example, through its first business mode transition which took power division as the focus, it carried out the creative 21 in 21 Power Division program, which insured its later high speed development.

2.1.3 Carry out the hierarchical pyramid structure and start to experiment with the Matrix Management structure.

At the beginning stage of a corporation's development, its scale is relatively small, and the business and products are not very complex. In this situation, the Hierarchical Pyramid Management Structure, based on function, is very effective. But with development at high speed and constant expansion of its scale, many corporations start to experiment with the Matrix Management Structure. Taking Lenovo as an example, during this period it carried out the reorganization of its management structure. Like a big ship transformed into an armada, it changed its centralized and functional power system into the Products Division Structure, a combination of centralized power and division of power system. This important reform of Lenovo has greatly improved its productivity and simplified its organization.

2.1.4 Diversification

The development of diversification in this period is mostly experimental. Warily, corporations start to invest on a limited scale in some related product fields, seeking the seed business from which to grow their sustainable development. TCL, while maintaining and strengthening its main telephone set business, started to enter the color television and mobile phone market by making use of its existing business channels and brand advantage. And it made good preparations for its successful foray into the color television industry. As another example, Motorola entered the semiconductor parts market. Through a series of diverse experiments and attempts during its $1 billion period, Motorola formed its core industries.

2.1.5 Rationalizing the company's management structure

With the expansion in scale in both the corporate and management levels, rationalizing the balance between ownership and right to control is a problem that must be solved when corporations set up a rational division of power policy. TCL implemented its property rights reform, which defined the relationship between the state and the corporation, and also between the management and the staff. This reform helped the corporation to realize the transition from a state-owned corporation to a joint stock corporation, and also introduced both the incentive and restrictive systems to TCL.

2.1.6 Emphasize training, human resources, and building corporate culture

Staff training and building corporate culture are two important activities which must permeate the whole development of a corporation. Every corporation in the case studies highly values staff training, makes its accomplishment a policy of the corporation, and incorporates it into the construction of corporate culture. For example, in 1969 Motorola set up an executive training center to provide targeted training to its middle and high level executives.

2.1.7 Improving marketing ability

During a corporation's stage of fast development, especially when it has limited capacity and investment in high tech research, it is vital to improve marketing capability. Lenovo made a great effort to invest in channel construction, and set up a very strong distribution system, helping Lenovo to defeat all international and domestic competition and achieve an important position in the Chinese PC market.

2.1.8 Set up the basic principles of the corporation, strengthen internal business flow, standardize management, and build the corporate institution

During this period, most corporations are confronting the conflicts and problems inherited from the earlier family management style, and the nonstandard venture period. Standardization and institutionalization are now on the agenda. Huawei took two years to define completely value, target, and management workflow, so as to define a systematic code of behavior for every member of management. Lenovo also experienced the transfer from a guerilla to a regular army, in order to prepare its system for new opportunities and challenges.

2.1.9 Start the internationalization experiments very carefully

Those early forays into internationalization are normally aimed at economies of scale, and carefully expand to near-by areas when opening a new market for their products. Because the size of Holland is so small, Philips very early started to expand its product market into Europe. Similarly, Acer was restricted by the parochial Taiwanese market, and began to expand its market overseas to many other countries.

2.2 How to achieve the three-billion USD sales revenue stage

2.2.1 Experimenting in internationalization

Internationalization during the period of ramping up to the US$3 billion sales stage should be on a much wider scale, and more diverse. For example, during this period Acer set out to exploit the United States market. It established Acer in the US, built up manufacturing in North America, and started up strong marketing promotion.

2.2.2 Put into effect the Matrix Management structure

On the way to internationalization and diversity, an important management issue is how to adapt Matrix Management and implement it with flexibility. Philips carried out reforms in its organizational structure, and implemented a multi-dimensional Matrix mode comprised of different National Divisions, regions and products.

2.2.3 Further streamlining the diversification strategy by integrating different businesses

After trial investments in different fields and industries, the corporation should start to integrate the industries in order to improve its core competitiveness, and also should adjust its diversity strategy so as to prepare itself for a strategy transition and upgrade. For example, Motorola transferred its development emphasis into the computer domain, and sold its television business. Philips also sold its non-core businesses, and devoted attention to the acquisition of businesses congruent with its core business. On the basis of a strong position in the telephone set and color television industry, TCL started its diverse extension into the Consumer Electronics, Computer and Communication industries, and realized the 3C integration strategy.

2.2.4 Start the new round of cultural reform in order to entrench it into the organization

After 1999 Huawei de-emphasized its "Huawei Basic Law," and transferred its emphasis to the integration of culture into the system. In order to speed up management reform, Zhengfei Ren invited professors from Beijing University and the Academy of Social Science to offer thinking mode training to high level administrators. He wanted gradually to transplant the "Basic Law" from the upper levels down through the whole corporation in a Western-style cultural revolution. As demonstrated by the experience of Samsung, LG, Sony and other successful Asian companies, it is both impossible and unnecessary to adopt the Western model wholesale. The best direction for a corporation's cultural reform is to explore an organic combination of Eastern and Western cultures.

2.2.5 Advance Human Resources management and staff training

The corporation should strengthen staff training. Motorola established detailed training plans and programs, and built up training and education centers. During 2001-2003, Lenovo strengthened training at the management level and carried out a yearlong on-the-job training which improved the knowledge of 400 director-level administrators, and transformed implementation managers into strategy managers.

2.2.6 Emphasize market research and set up a market-oriented organization

The corporation should value research investment highly, and emphasize the accumulation of research capacity. In the corporations we studied, the corporations invested constantly in technical research. And during this period, the emphasis or research turned to marketing. The corporation

changed from judging research capacity simply by reference to technical innovation to valuing the utility and marketability of the innovations.

2.3 How to reach the five-billion USD revenue stage

2.3.1 Increase R&D investment in

In this stage, companies should focus on continuous attention to R&D, introducing new technologies and products. This focus absorbs more than 10% of Huawei's sales income, strengthening the corporation's competitiveness based on its core technology.

2.3.2 Adjust the diversified strategy and concentrate resources on the main industry

Lenovo shrank their diversification strategy, formerly a focus, and instead clarified its core business, key business, and seed business, absorbing them into its core business—the development of the PC. Philips defined the policy of "Towards One Philips" (TOP), highlighted cohesion among business groups, sold the semiconductor department, and developed key fields such as medical treatment and health care. Furthermore, Philips achieved a transition from a low-cost operation to one with high additional profits.

2.3.3 Improve the matrix management structure

To adjust to internationalized development, companies need further improvement in the matrix management structure. For example, Huawei adopted a multi-matrix structure in order to further development. Lenovo and TCL have also adopted this structure in order to improve themselves.

2.3.4 Deepen the strategy of internationalization and international acquisition

Internationalized development is moving forward. Huawei took the step of eliminating the separation of domestic and international markets, in order to advance the global market. TCL purchased Germany's Schneider Company, became a shareholder of American Go-Video, and, in France, restructured the Thomson TV business and Alcatel mobile phone business. Lenovo's acquisition of the PC division of IBM is a big event in Chinese international moves to merge and purchase. Huawei, on

the other hand, by selling its stock in 3COM and Avansys, abandoned its minor business and focused on its core wireless and broadband businesses.

2.3.5 Fully implement quality management

Quality will become the key to development for Chinese corporations. The companies in the case studies which are at the US$ 5 billion stage provide some examples of quality management. Motorola is a typical example in this respect. Organizing some effective actions, such as 6-Sigma Management, the company improved both requirements and management capability with regard to quality. In 1999 Philips, also, carried out a series of measures to improve quality. As early as 1983, Wisse Dekker started the first Quality Movement—Company-Wide Quality Improvement (CWQI)—with the focus on the quality of the products. Later, Jan Timmer changed the title of the program to "Philips Quality" to encourage managers to follow consumers' needs in the achievement of quality. Subsequently Boonstra changed Philips quality into BEST (Business Excellence through Speed and Teamwork) which emphasized quality as an important element in assessing an employee's performance.

2.3.6 Persist in the drive to develop market-oriented organizations

From 2000 to 2003, Lenovo waged a massive and continuous reform, with the customer as its guide, to respond to industry changes such as the challenge of Dell's scale, the industrial concept of CRM (Customer Resource Management), and the influence of customer service operations. Motorola fully implemented the focus on fulfilling customers' needs, emphasizing the guidance of customers and the market.

2.3.7 Focus on the quality of operation and stress profits

At this stage, companies have attained a relatively large scale. Growth rate and size of the business are no longer the focus of attention and examination because growth at the cost of profits is unacceptable. Operation quality is measured by comparing all the indices with those of fellow companies. Profits and balanced development are the main indices with which to assess the company's development at this stage.

2.3.8 Strengthen training by building company universities and sending employees to study outside and build the corporate value system

Motorola set up Motorola University to provide full and varied training for employees. Huawei also set up a complete training system and creatively developed the tutor system adopting training models with many channels to bring tutors in or send employees away for training. Meanwhile these actions emphasized a sense of value and culture.

2.4 How to achieve the seven-billion USD revenue stage

2.4.1 In-depth development of internationalization

Prioritize international development. For example, Motorola focused on the fast developing Asian market. In 1984 it arranged for senior management staff to study business opportunities in Asia with the theme "Yesterday, today and tomorrow in Asia," so as to uncover opportunities to develop business and to se up low cost production. Motorola set up a representative office in Beijing in 1987 and began to sell pagers and other communication products.

In 1995, in order to create a dynamic business identity, LG Group started its globalization process through a series of corporate identity-amending programs, such as changing the company's name to LG Electronics. TCL's priority is the integration of former acquisitions, and the restructuring of business and organizational structure.

2.4.2 Business restructuring and strategic transition, division of business functions, and focus on core business and key business areas

Philips carried out a business restructuring plan, defined its core business, and centralized its resources for core business development. Having realized the low-cost advantage of Japanese competitors, Dekker, the CEO of Philips, had closed many low-cost factories, especially 40 of the 200 factories in Europe. The company sold welding, energy cable, furniture and some other non-core businesses. At the same time, Philips merged some core businesses to conform to the new direction of the company.

2.4.3 Guided by the market and customers finalize the transformation into a market-driven organization

In 1996, a passionate choice was made by Philips—to hire as his successor an outsider accomplished in marketing and knowledgeable about Asian companies, instead of choosing a candidate familiar with technology and European companies. In May 1996 Cor Boonstra became the new CEO. He replaced 150 local brands with Philips' brands, used "*Let's Make Things Better*" to replace the previous "*Philips invents for you*" as its theme, built a university, serving the employees of the product divisions and the R&D department, in order to make study and research more market-oriented. After 20 years of persistent effort, Philips has been developed into a real market-driven company.

On July 16, 2006, Philips announced Q2 performance: sales increased over 10% compared with the previous year and profits reached 301 million Euros. Here was the first fruit of rebuilding a more market-driven company in the industries of healthcare, lifestyle and technology.

Okamura, president of Toshiba since June 2000, interprets the new managerial plans to shape them into third millennium business terms for his senior and mid-level executive. Use technology to give customers exactly what they want, not what you think they should want. Listen, listen, and listen to their voices.

2.4.4 Emphasize technological innovation and R&D, which is the vital condition for winning

At the beginning of 1994, Timmer, the CEO of Philips, planned to develop software, service and multi-media and make them 40% of revenue in 2000. These investments in software were based on the theory that, whatever the hardware standard is, software is always needed to run on it. Timmer believed that Philips' traditional strength in innovations would push Philips forward again. He invited the Director of R&D in HP, Frank Carrubba, to join the company and encouraged him to develop fifteen kinds of core technologies including, among others, interruptive CD, digital compressed tape, HDTV and multimedia software. These projects were soon honored as "the Chairman's projects".

Motorola adopted a market-oriented R&D strategy, and with regard to international progress, Motorola established a Chinese R&D center in Beijing in 1999 and invested heavily in R&D. Motorola founded 18 R&D centers in China before 2000 and set up plants for silicon semiconductor chip manufacturing. With its international venture, Huawei strengthened it investment in R&D and founded R&D centers globally, aligning corporate R&D with market exploration.

2.4.5 Flexibly apply the matrix management structure

Philips reformed its matrix management mode, and changed the structure of it by transferring the product manufacturing right to the product business unit. Simultaneously it changed the two-person management mode, containing both the technology manager and the business manager, into a one-person management mode.

2.4.6 The pursuit of quality and organic growth

Quality management has always been the emphasis for Motorola. The company designed the famous 6-sigma management program and has continuously carried out quality enhancement activity. Quality management should always be the focus for Chinese corporations, and especially for those who want to become multinationals, strict quality management is essential. Chinese corporations should learn from companies such as Motorola, Philips, and Toshiba for their dedicated pursuit of quality.

2.4.7 Profit should be the main indicator for corporate development

When a company reaches a scale of US$7 billion, sustainable growth and positive development based on profit generation should be the main indicators for a company. Pure pursuit of size is harmful.

2.4.8 Never-ending focus on HR and training

Talent is the resource in shortest supply for a company. The company should pay attention to the development of employees, organizing training and setting up a complete management system. This should be a perpetual project in the development of a company.

Chapter VI: Recommendations to Chinese Electronic Corporations[11]

In previous chapters, I have made detailed analysis and discussion of organizations, culture and diagnosis of corporations as well as development trends in the Chinese electronic industry and the issue of scale in Chinese corporations. In this chapter I shall give my opinion with regard to a few key issues in business management by combining what I have learned at MIT and my years of experience in corporate management. I hope sincerely that Chinese electronic corporations may find these observations helpful.

1. Corporate governance issue

According to Company Law of the People's Republic of China, a listed company shall set up a general meeting of shareholders, a board of directors, and a board of supervisors. The board of directors may establish a corporate strategy committee, a human resource committee, a remuneration and appraisal committee, and external independent directors. In my opinion, this structure is similar to that in use in the United States. Furthermore, currently, the chairman of the board acts as CEO in 80% of companies, both in China and in the U.S.

Based on the law and corporate governing structure in the United States, the difference is that the chairman of the board is just the meeting convenor of the directors. And directors have quite strong power to control the strategy of the company. Chairmen of boards usually consume a lot of energy persuading directors to agree to implement a new strategy. In China, however, the chairman of the board is often the boss of the company, who has great prestige to control the actions of the board of directors to a certain extent, and to control the operation of the company at the same time. Boards of directors and boards of supervisors are usually the "tools" of the chairman in controlling the company. In the short term, or when a company is relatively small, the structure has some advantages in executing orders, proclaiming prohibitions, and responding quickly to the market.

When considering the history since the opening up and reform in China in 1978, I have found that: In the first 10 years of the corporation's existence, many bosses of corporations work quite well. In the second decade, some corporate bosses begin to go wrong, and especially when corporations have been

[11] I appreciate the contributions to the research for this chapter by Janet Deng.

developed to a certain scale, many more bosses will go wrong. Why? The main reason is that the corporation lacks a controlling mechanism, and the board of directors does not play a big role.

American government is based on the structure of "triangle separation of power," that is the separation of legislative, judicial and executive. For Chinese corporations I suggest a binary structure, which is to say, a board of directors (representing the shareholders) highly separate from the senior management. Now the China Securities Regulatory commission (CSRC) has published relevant laws and regulations, demanding that the board chairman and CEO shall be appointed separately. My suggestion meets the requirements of the CSRC.

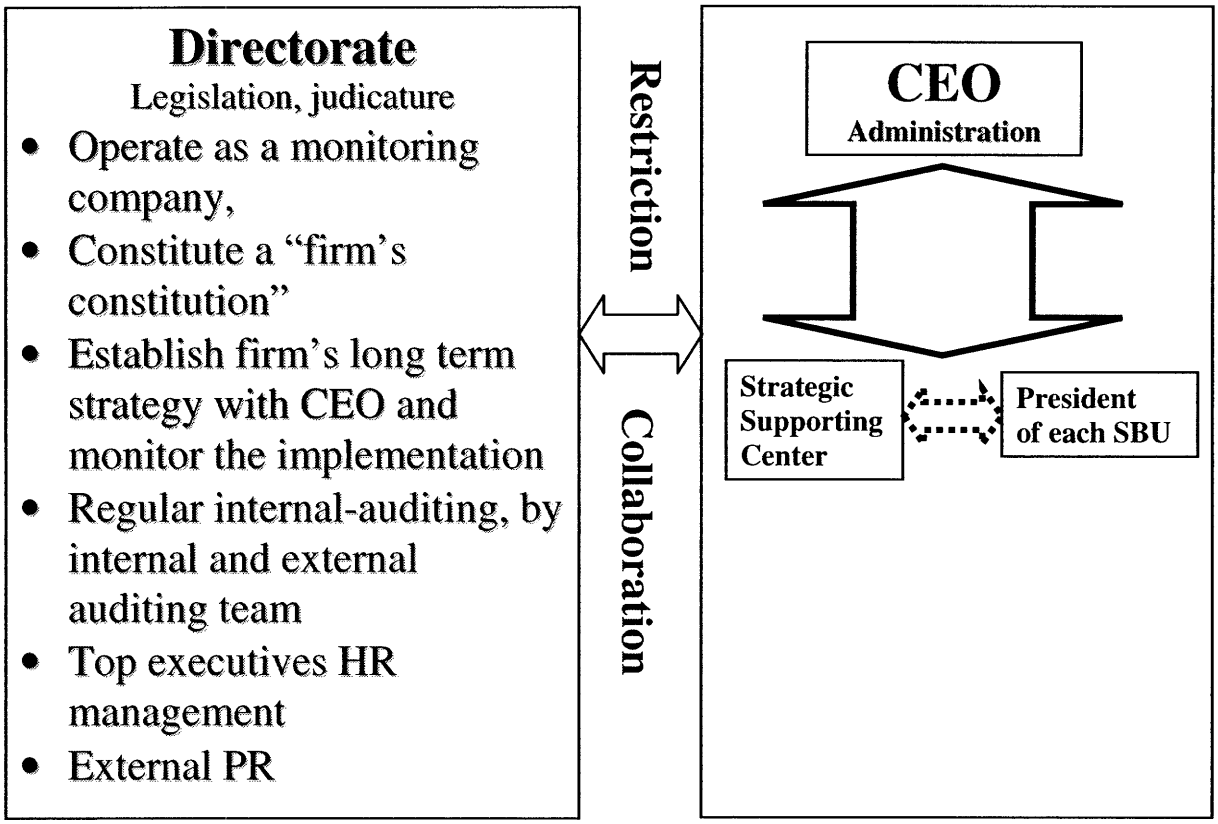
As shown in the following diagram (see Figure 6.1 Binary Directorate Structure), the board of directors takes legislative and judicial functions in order to supervise and audit the operations of the corporation. The board's main functions are:

- Draft, supervise and implement a corporate constitution
- Together with the CEO, draft, supervise and inspect a long-term development strategy for the corporation.
- Use internal/external audit teams to make regular audits of the corporation, and not just of the financials.
- Manage senior human resources to ensure long-term stability of the corporation.

Promote external public relations.

Management takes the administrative function and is responsible for the overall operation and performance of the corporation. A triangle structure consists of CEO, strategic operations support center, and president of each business unit. Particularly, the strategy operations support center is in charge of strategy management, operations audit, as well as providing support for strategic decision-making with the financial management center. When defining design specifics, corporations could have flexible arrangements, according to their real situation.

Figure 6.1 Binary directorate structure



2. Human resources management issue

When people talk about human resources in China, I believe all corporation executives may say that HR strategy is the most important strategy, and the first to be put in place, but in practice there are few executives who really regard HR strategy as the foremost strategy or spend much time on it.

In the course of studying the eight corporations, I found that one of the notable features is that they all attach great importance to the HR sector. Zhengfei Ren from Huawei Corporation said: "All industrial products are created by humans. Because Huawei does not have natural resources to rely on, the only way for us is to dig out large oil fields, forests, coal mines and so on from the human brain." What Zhengfei Ren stressed is "Responsible and effectively managed employees are the Huawei's greatest resources." As a result of this vision, Huawei is always in the leading position with regard to talent recruitment, training, attraction and stimulation.

Van der Klugt, CEO of Philips, repeatedly emphasized the importance of HR management in a videoconference of the whole Group in 1987. He said: "Talented persons are our most important resource. HR management is the strategy that we should put in first place." His speech made the following points regarding the goals of the company: "Improve selection and training of young talent, improve management training, make talent flow and take advantage of international exchange, create a challenging life plan, and establish a desirable working environment."

Here I am not going to define how to establish an HR management system, but I would like to think about a few of the key issues in HR management from the point of view of a Chinese corporate leader.

2.1 Employee performance evaluation system

Lance A. Berger and Dorothy R. Berger pointed out in their "Salary and Reward Manual" that the reason for performance assessment is that "you could hardly manage something you can't assess, and you could hardly improve something you can't asses, and performance assessment should be quantized." In practice, however, many Chinese corporations make performance assessment and evaluation a mere formality. The reason is that Chinese corporate leaders like to rely just on their feelings in evaluating their subordinates.

A long time ago, the Lenovo group implemented an International Position Evaluation system as its evaluation tool, and used a quantization method uniformly to rate the typical positions in seven aspects and sixteen levels. Huawei had also established a unified job ranking system. The whole group applies consistent job ranking and a unified salary standard. Through quantized job ranking evaluation measures, the corporation could realize justice, equity and transparency in HR management and avoid subjective judgments as much as possible.

Meanwhile multi-level performance evaluation systems should be established for employees and managers, and, especially, for senior managers. Of course the result of performance evaluation is important, and the process should not be neglected. During the process the strengths and shortcomings of employees could be revealed in a timely fashion. Through communication the corporation helps employees to design career plans and to understand and realize a brighter future.

2.2 Organizational control and coordination issues

We have experienced a changing process regarding how to design an organization's official rank system. At the beginning there were too many ranks in the Chinese corporate structure, with the result that the organization operated slowly, functions were unclear and efficiency was reduced. In order to remedy this situation many corporations started to cut down the number of levels in the organization and tried to adopt the flat management model.

In Chinese corporations we have found it is easy to make a vertical communication but it is harder to make horizontal communication, and the cost is much higher than that of vertical communication. Meanwhile, implementation of flat management will certainly reduce management levels. This change is advantageous in regard to improving operational efficiency, but it also reduces the number of jobs. Even though their rewards remain the same, losing a post is hard for Chinese people to accept who are keen on face-saving.

How can we satisfy employees while cutting down the organizational structure? In answer I propose the idea of a multi-tier management model. This multi-tier system is different from a traditional multi-level management system. It is an employee management and promotion system implemented inside the corporation without changing the original framework of the organization. It also differs from the double channel management system implemented in many corporations. Corporations may offer two types of promotion via the double channel management plan: one leads to senior management posts, and the other to senior technical posts. This management model could be reflected in the organizational framework, where positions and salaries are related closely to rank. The multi-tier management I bring forward here, however, is a management model similar to military rank in the army. We call it a sub-technical title, as shown in Figures 6.2 and 6.3.

All employees desire promotion. With it may come a higher salary, and upgrade of social status in the corporation, and many rights and freedoms. The implementation of multi-tier management must link up with the employee evaluation system, which is the basis for the multi-tier management system. When making a specific design, corporations could shape their flexible arrangements based on their real situation. Many consulting companies apply this multi-tier management model in order to motivate employees.

Figure 6.2: Employee promotion channels

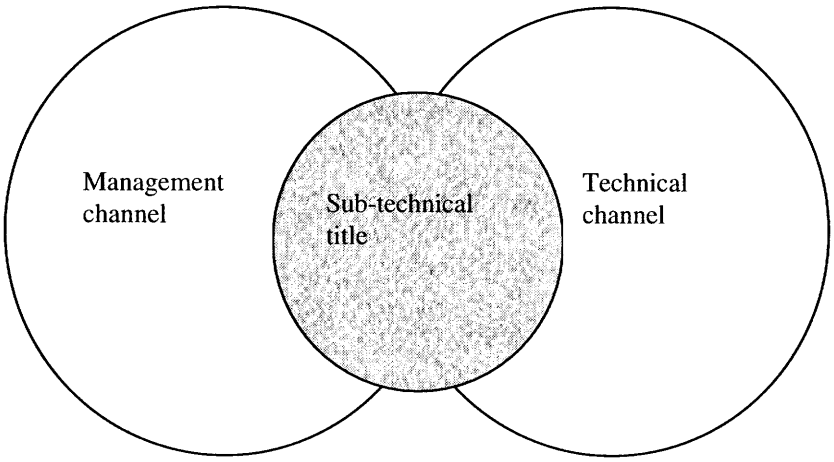
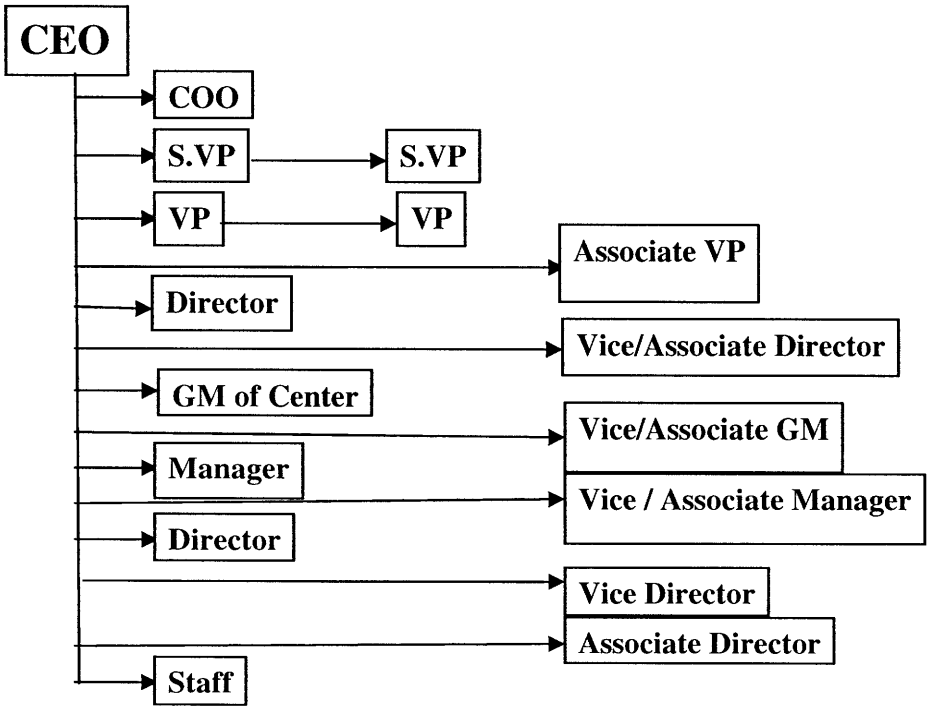


Figure 6.3: Multi-tier management model



2.3 Job rotation and career management

The job rotation system is a common method used in many successful corporations in their HR management. An employee, especially one in middle management, works very hard in his/her job in the first and second years. He becomes less active in the third and fourth years. He goes somewhat wrong in the fifth and sixth years and, in addition, various small collectives are formed. How is the manager of the corporation to take appropriate measures before subordinates get lazy or go wrong, in order to nip in the bud such situations before they develop? To implement job rotation and career planning are certainly excellent measures for the following reasons:

- Prevent the formation of small collectives. This is especially important in the face of Chinese "Small Groupism".
- Develop comprehensive management talents. Job rotation gives employees the opportunity totally to understand various functional departments and industries within the corporation.
- Through career planning, give employee's confidence in their future in the corporation, which makes them willing to do long-term valuable work to prepare talents for the future.

For example, GE sends excellent employees to different jobs for training every year, while IBM regularly rotates senior managers, normally every three to five years. Even cleaners, for example, are sent to work on another floor after working on one floor for 3 months. IBM still has a backup talents team training plan, called the bench plan to manage employee career development as well as encourage talented workers to remain in their jobs while they mature.

2.4 The training issue for corporations

In China all corporations offer training to their employees, but there are few corporations where the leader attaches importance to it and seriously implements training activities. When examining the corporations in the case study, I found that they all attach importance to training. For example, in 1979 R. Galvin, CEO of Motorola instructed the HR department to design a five-year employee training plan, which laid out in detail programs for employees at all levels. He also required that every employee take at least 40 hours of training each year. Motorola University was established in 1989 to provide formal courses for employees. Unlike other corporations, Motorola University offers formal course programs and the lecturer system. It was set up to provide both on-and -off the job education, short or long term, and management or technical training. Internal training includes tutorships and training for employees

given by both foreign consultants and local experts. And exchange and joint training with famous institutions both at home and abroad, enhanced employee quality.

Through the case analyses of corporations I have found that they all have their core concept. They all use training to instill in their employees the core concept as a code of conduct in the minds of all employees so as to create a sect-like corporate culture.

2.5 Focusing on internal training and linking it with external recruiting

We all know that it is usually easy to reach a balance of supply and demand in the labor force. But there is always a severe lack of really qualified talent. Especially when a corporation is preparing, or starting, its globalization, it finds that there is no capable internationalization talent around. The talent shortage is the main obstacle in the path of Chinese corporations seeking globalization. It is, therefore, an urgent task right now to develop a range of talents which the corporations need.

When facing a shortage of specialized talent, the quick solution most often adopted by corporations is to introduce "paratroopers" brought in from outside companies. This is especially the case when the need is for senior management or high level technical staff and corporations turn to headhunters for help. We cannot deny the utility of "paratroopers" but there are issues, which must be considered, regarding their ability to merge into corporate culture well and quickly, and their capacity to get accustomed to the corporate management style. Many examples show that we take a risk when resorting to this solution to the talent shortage.

How do corporations solve the problem of talent drain while reducing the risks associated with hiring personnel? The key is internal personnel training, which we know is a time-consuming, costly and long-term strategy. And it cannot turn a profit in a short time. Leaders should think about it strategically and attend to personnel training plans and implementation measures in advance.

In addition to the regular training in the corporation, I think there are two more methods which need to be considered:

- Open the internal MBA classes as a one-year full time training, with release from official duties, to raise the middle level managers to high level.
- Carefully select three to five young managers and send them abroad to study in famous institutions or universities for six months, to widen their vision and train their language skills.

Though the investment in educations may increase, the investment is all in insiders who accept the corporate culture, are loyal, and know the corporation's operation very well. They will become the vital new force on the way to globalization.

These actions are important but not urgent; they must, however, be done in advance of the need for talent.

3. Recommendation regarding IT system construction

I have recently been thinking about the relationship between the "system" and the "people" in the corporation, when I study in MIT. Through my observation and research in recent months, I found that, from the point of view of individual quality, there is no difference between the Americans and the Chinese, while each have their own strengths. Sometimes it seems that Americans are somewhat "simple-minded." So why is America (and the whole Western world) stronger than China, and American corporations much bigger and stronger? The inherent difference is the strength of the system. In the U.S., each individual is only one "terminal of the system," and does things based on the requirement of the system. There are few things that an individual can change, or "stretch the rules" to accommodate.

For example, actions like an application for insurance, to rent a house, or to send a kid to school are all done through a standard process in the U.S. Whoever did these actions, the results will be the same. No one can change the process at random. It is illegal and the computer just won't accept such an attempt. Sometimes this seems somewhat silly, but the overall social efficiency is high and the process is orderly. And all the data and processes are kept in a computerized IT system, so the consistency is very good.

While studying at MIT, I was led by the nose by "SloanSpace" almost every day. The computer system guides people through what they need to do. Assignments, materials, and all sorts of information are on the Internet. You can do no work or studying without the computer. When you chat with other students, or ask a question, they will give you several websites so that you can search for yourself.

Compared with this situation, there are too many "changeable" things in a Chinese corporation, and also too many things that can be accommodated. Each individual is a part of the process. Although there are many regulations and rules in a corporation, they are transferred or implemented by human

hands. It is necessary, therefore, in a Chinese corporation, to pay great attention to the construction of "system." Although sometimes we miss some flexibility, the overall management of the corporation will be consistent. This is the reason why we need to establish "Rigid Frame."

It is essential to use an IT system to solidify the construction of "system" and process. This is particularly important as Chinese corporations scale up IT construction is almost inevitable. As viewed from the case study and analysis, all the corporations spent a lot of manpower and material resources on developing an IT system. For example, Lenovo took the lead in implementing the ERP system in 1998. Later some other IT projects like Customer Relationship Management, Supply Chain Management, Product Life Management), Pipe Relationship Management, Fourth Generation e-Business, Knowledge Management and Business Intelligence System were carried out step by step. These projects laid the foundation for Lenovo's global competitive capability and operational efficiency. During 2000 to 2004 Lenovo invested about US$37.5 million annually in its information systems, including IT operation management expense, which is far higher than the industry standard.

As for the characteristic of "Small Groupism" in China, strategically we need to keep in mind the big picture while letting the smaller parts fall into place in IT system construction. An IT system manages only that you need it to manage. We have to allow certain flexibility in small collectives.

Concluding Remarks

As a company gets bigger and stronger, much more complicated problems need to be addressed. Making mistakes at the corporate level becomes ever more expensive and irreversible. Rather than covering all of the problems, in this thesis I choose to elaborate on some important ones from the perspective of a CEO. I hope to urge Chinese CEOs, and those who aspire to be CEOs, of the importance of establishing a good organizational structure and culture within their companies. I hope that, with the help of this thesis, they are able to find the essence of organization and culture in Chinese companies, to place more emphasis on human resource management and IT system construction, to take full advantage of their board of directors, and to further improve their organizational structures.

During the past fifteen years' working experience I have come to realize that, when the company reaches a certain scale, there are always problems or bottlenecks slowing down the companies' development. Moreover, the problems at different stages are quite different, and so are the solutions. I hope, therefore, that CEOs could approach the problems case by case, taking into account both the experiences of the companies studied in this thesis, and the specific situations for their own companies.

Best wishes to all Chinese Corporations. Hope their futures will be smooth!!

Table 1 Trend Analysis of Chinese Electronic Industry

	1960s	1970s	1980s	1990s	2000 - Now
EU(Philips)	1.1.1 Focus on R&D 1.1.2 Regional expansion and extended product lines 1.1.3 A Business leader and a technical leader 1.1.4 Formation of highly autonomous operations outside the Netherlands 1.1.5 Formation of matrix organizational structure	1.3 Reforms in the 1970s by Van Reimsdijk and Rodenburg: centralized production and simplified matrix structure	1.4 In 1982 Wisse Dekker reformed Philips by centralizing core business, extending technical cooperation, reforming the matrix structure in favor of the Product Divisions, and scaling down the board of directors 1.5 Van der Klught's reforms in 1987 1.5.1 Emphasis on Profit 1.5.2 Emphasis on HR 1.5.3 Establishment of Core Business 1.5.4 Go on Favoring Product Division in Matrix Organization Structure 1.5.5 Market-oriented R&D	1.6 Timmer's 1990 reforms 1.6.1 Operation Centurion 1.6.2 Pooling of Resources 1.6.3 Enhance quality control, improve company morale, and create a new company image 1.6.4 Expand software, service and multi-media 1.7 Boonstra's 1996 reforms 1.7.1 Move manufacturing to low-cost locations 1.7.2 New Governance Model 1.7.3 Portfolio restructuring 1.7.4 Quality improvement activities 1.7.5 Sales and marketing: dedicated to Philips' branding 1.7.6 Market-oriented R&D	1.8 Kleisterlee 2001 reform 1.8.1 Synergy among business divisions: the TOP Program 1.8.2 Transformation into a medical care and consumer fashion business 1.8.3 Sense and Simplicity
USA(Motorola)	1.1 The electronics industry in the U.S.A. before the 1960s 1.1.1 Wireless communication technology drove the industry forward 1.1.2 RCA rose with the popularity of the TV market 2.1.1 Initiation of product innovation 2.1.2 Entering the TV industry 2.1.3 Access to the semiconductor components market 2.1.4 Operating in the family enterprise mode 2.1.5 Pay attention to education and establish training centers for top managers 2.1.6 Pay attention to overseas development and expansion	1.2 The future of the electronic industry in the U.S.A. in the 1970s 1.2.1 Industry transits to the integrated circuit phase 1.2.2 Japanese electronics industry matures 1.2.3 American electronics manufacturers were acquired by their competitors, and the transition began to the computer and semiconductor industries 2.2.1 Consistent input of R&D 2.2.2 Transfer to the computer industry and withdrawal from TV 2.2.3 Continue to enhance employee training	1.3 Features of the electronics industry in the U.S during the 1980s 1.3.1 Entering the technological development stage of SLSI and semiconductors 1.3.2 Popularization of commercial communications technology 2.3.1 Steady input of R&D 2.3.2 Creation of the mobile phone market 2.3.3 Quality improvement conducted across the board 2.4.1 Sustained input from R&D and creation of new products 2.4.2 Industry turns to high-tech communication and semiconductor spheres 2.4.3 Consistently improve quality and introduce 6-Sigma management methodology 2.4.4 Meeting the requirements of customers across the board 2.4.5 Establish Motorola University 2.4.6 Focus on the Asian market	1.4 The U.S. electronic industry in the 1990s 1.4.1 Wireless broad bank technology alters the consumer electronics industry 1.4.2 Arrival of the digital era 2.5.1 Meet the digital era 2.5.2 Business conformity, more focus and all-around separation of rights 2.5.3 Establish R&D center in Asia and improve R&D competitiveness 2.5.4 Need for organizational reform caused by the low efficiency of top decision-makers	1.5 Features of the U.S. electronics industry in the first decade of the 21st century 1.5.1 Digital application and domination of the new technology market 1.5.2 Cast off production and processing, R&D, content and property rights became keystones of development 2.5.1 Meet the digital era 2.5.2 Business conformity, more focus and all-around separation of rights 2.5.3 Establish R&D center in Asia and improve R&D competitiveness 2.5.4 Need for organizational reform caused by the low efficiency of top decision-makers
JAPAN (Toshiba)	1.1 Characteristics of Japanese industry before and during the 1970s 1.1.1 Strong support by government for enterprises 1.1.2 The notable effect of technological advancement 1.1.3 Conglomerates formed through bonds such as mutual shareholding, loans, and mutual appointment of senior managers 1.1.4 A labor-intensive and export-oriented economy 2.1.1 Formation of early Toshiba 2.1.2 Focused on technology 2.1.3 The government's strong support 2.1.4 Toshiba's early stage reforms 2.1.5 Focused on the "white goods" appliance business		1.2 Features of Japanese industries in the 1980s 1.2.1 Transition to technology-intensive industry 1.2.2 The government guides economic operations 1.2.3 Transition to an economy based on quality and efficiency 2.2.1 Focused on information and communications segments 2.2.2 "The Toshiba event:" in which the company was punished for breaching the COCOM list 2.2.3 Attention to international affairs	1.3 Features of Japanese industries in the 1990s 1.3.1 from follower to leader 1.3.2 from expansion of scale to expansion of quality and efficiency 1.3.3 Merger and acquisition became the trend 1.3.4 "Lifetime employment," seniority," and "corporate trade union" appear in Japanese HR strategy 2.4.1 The globalization process 2.4.2 Training	
KOREA(LG)	1.1 The transition from an agricultural economy to an industrial economy (1960-1969) 3.1 1947-1959: Birth of a new era for the chemical and electronics industries 3.1.1 The chemical industry 3.1.2 Business expanded into the electronics field 3.2 1960-1969: Establishing the foundation for the key industries of the Group 3.2.1 Multi-element development of relevant industries	1.2 Corporate empires obtained Government Support (1970-1979) 3.3 1970-1979: Solid business growth and expansion 3.3.1 Establishing guidelines for stabilized operation 3.3.2 Subsidiaries had to go public 2. Korean overseas investment policy 2.1 Development of Korean direct overseas investment 2.1.1 Adaptation to changes in the international economic environment (before the 1990s) 2.2 Various measure to encourage overseas investment 2.2.1 Credit support 2.2.2 Tax shelters 2.2.3 To establish an overseas investment insurance program 2.2.4 To provide consulting service to enterprises. 2.2.5 To provide international protection for overseas investment	1.3 The government withdraws from domination of the economy and industrial policy (1980-1989) 3.4 1980 to 1989: Age of globalization and development of cutting-edge technologies. 3.4.1 Dedicated to the pursuit of diversification 3.4.2 Innovation in 1987: decentralization and Quality Control 2. Korean overseas investment policy 2.1 Development of Korean direct overseas investment 2.1.1 Adaptation to changes in the international economic environment (before the 1990s) 2.2 Various measure to encourage overseas investment 2.2.1 Credit support 2.2.2 Tax shelters 2.2.3 To establish an overseas investment insurance program 2.2.4 To provide consulting service to enterprises. 2.2.5 To provide international protection for overseas investment	1.4 The downturn of the market economy (1990-1999) 2.1.2 Focused on large enterprises in relatively concentrated regions (in 1990s) 3.5 LG from 1990 to 1999: Great innovations for the 21st century 3.5.1 Established a new management principle: "Creating value for customers and people-oriented operation." 3.5.2 Innovation in 1995 • Strategy of Digital Technology Advancement; • Strategy of Globalization; • Super A activities and Six Sigma plan; • Merger; • Acquisition • Global cooperation; • E-Business;	1.5 Development into a high value added industrial country (2000 until now) 2.1.3 Direct overseas investment (after 1990s) 3.6 From 2000 until now: Giant leap forward toward the future
TAIWAN OF CHINA(Acer)	1.1 1960s: Started with electronic assembly business	1.2 1970s: Entry into the electronic component manufacturing business 1.2.1 Global technological advancement created development of OEM and ODM business 1.2.2 Fast growth of industries in Taiwan 2.1.1 1970s and early 1980s: Engaging in commercializing microprocessor technology in Taiwan	1.3 1980s: Entry into computer manufacturing business 1.3.1 Shifting to scientific, technological and service industries 1.3.2 Cloning IBM PC and IBM PC-compatibles 1.3.3 Focused on the development of small and medium-sized enterprises 2.1.2 Mid-1980s to 1990s: "Dragon Dream"—growth and expansion beyond the Taiwanese market	1.4 1990s: The move into the microelectronics manufacturing business 1.4.1 Focus on producing computer accessories 1.4.2 Fast global growth in the PC Market 1.4.3 Manufacturing gradually moved to low-cost locations 2.1.2 Mid-1980s to 1990s: "Dragon Dream"—growth and expansion beyond the Taiwanese market 2.1.3 Early 1990s: First transformation—decentralization 2.1.4 Fruitful results of the first transformation 2.1.5 Stan Shih's "Smiling Curve" diagram. 2.2.1 Mid-1990s: development in the U.S. Market 2.2.2 Changes in the business environment demanded another transformation sting based on timely market feedback from different regions 2.2.3 Emphasis on product ID design	1.5 2000 and beyond: challenges and opportunities 2.3 Achieving US$5-9 billion in revenue (1998-2005) 2.3.1 "One Global Team" working for "One Company" with "One Brand" 2.3.2 Leverage global resources along the value-chain partnership 2.3.3 Fruitful result from the second transformation 2.3.4 Positioned for future growth (over US$9 billion revenue)

MAINLAND CHINA (Lenovo)			1.1 Characteristics of the Chinese PC industry in the 1980s 1.1.1 The beginning of the 1980s: oriented to trade 1.1.2 Emergence of national computer companies 2.1 1984 – 1993: Initial stage and rapid development; revenue reached US$100 million 2.1.1 Technological innovation: Lenovo's Chinese-character card 2.1.2 Cooperation with foreign manufacturers to develop compatible computers 2.1.3 Developing the company's own micro computer through independent inovation 2.1.4 Goal- and market-oriented innovation culture 2.1.5 Three managerial elements: build management teams, set strategy and optimize staff	1.2 The characteristics of the Chinese PC industry in the 1990s 1.2.1 Computer manufacture 1.2.2 International companies break into China and accelerate international competition 1.2.3 Lenovo becomes the bellwether of the Chinese PC industry by shifting to decentralized management and low price strategy. 1.2.4 The development of trading, manufacture and technology 2.2.1 Establishment of high efficiency distribution system 2.2.1 Establishment of a high efficiency distribution system 2.2.2 The PC Business division organizational structure changed from centralization to centralization-plus-decentralization 2.2.3 Rationalize the enterprise management structure 2.2.4 Implementation of the ERP system in 1998 2.2.5 Change in the management team 2.2.6 Corporate culture focused on management and parental culture and Management Outline of Legend Group was introduced 2.2.7 Management Discipline	1.3 Characteristics of the Chinese PC industry in the first 10 years of the 21st century 1.3.1 The impact of Internet technology and internationalization's opportunities and challenges 2.3.1 The splitting-up of Legend 2.3.2 Industrial diversification strategy 2.3.3 Building a client-oriented organizational frame 2.3.4 Entering the IT services industry by merger 2.3.5 Technological innovation—a computer with 1,000 GFLOP 2.3.6 Developing the initial innovation, services, and internationalization-compatible cultures. 2.4.1 Change of logo and shrinking of industrial diversification strategy 2.4.2 Acquisition of IBM's PC division 2.4.3 Globalization of Lenovo negatively influenced by the international political environment 2.4.4 The operating policy of the new Lenovo—eyes on the Chinese market 2.4.5 Big customers replaced by small and medium-sized ones in European and American market 2.4.6 Revelations derived from Lenovo's globalization
MAINLAND CHINA (Huawei)			1.1 Characteristics of the Chinese communications equipment industry in the 1980s 1.1.1 A suitable environment for development and "disorderly competition" 2.1.1 Ability to transform technological innovation into low-cost production 2.1.2 Introduced the IBM management model: IPD (integrated product development) and ISC (integrated supply chain) 2.1.3 Motivation, reward and pressure as the company's core management measures 2.1.4 Established the "Basic Law of Huawei"	1.2 Characteristics of the Chinese communications equipment industry in the 1990s 1.2.1 Local manufacturers rose rapidly and the "Julong, Datang, Zhongxing and Huawei" pattern emerged 1.2.2 Major international corporations enter China and international competition is sharpened 2.1.1 Ability to transform technological innovation into low-cost production 2.1.2 Introduced the IBM management model: IPD (integrated product development) and ISC (integrated supply chain) 2.1.3 Motivation, reward and pressure as the company's core management measures 2.1.4 Established the "Basic Law of Huawei"	1.3 Characteristics of the Chinese communications industry in the first ten years of the 21st century 1.3.1 China's entry into the WTO is both challenge and opportunity for the Chinese communications equipment industry 1.3.2 M&A wave of international corporations brought both greater growth pressure and challenge for Chinese telecom equipment manufacturers 1.3.3 The 3G standard in China is an opportunity for the Chinese Communications Equipment industry 2.2.1 Strategy of globalization pulled Huawei out of the "winter' of its fortunes 2.2.2 Purchasing and paying for patent license fees is the optimal path to enter global markets 2.2.3 Process realignment in marketing 2.2.4 Flexible matrix organizational structure 2.2.5 Integrating the culture into the system 2.3.1 Constant investment in R&D 2.3.2 Emphasis on software development 2.3.3 Organization restructure, eliminating the separation between domestic and overseas divisions 2.3.4 Changed logo 2.3.5 Business transformation adapted to sustaining technologies and "disruptive technologies"
MAINLAND CHINA(TCL)			1.1 Introduction and industrial development of color TV in the 1980s—incorporate overseas technology and production capacity; demand exceeds supply 1.1.1 Build up color TV throughput by introducing, digesting and innovating 1.1.2 Huge Chinese market motivates the development of the Chinese color TV industry 1.1.3 Famous color TV enterprises abroad invade the Chinese color TV market 1.1.4 Price war breaks out in Chinese color TV market 2.1.1 Establishing the TCL brand and becoming the "China Telephone King" 2.1.2 Successful entry into the color television market 2.1.3 Establishing a channel model: "speed challenges scale" and "intensive cultivation" strategies 2.1.4 Low-cost acquisition strategy 2.1.5 The management of TCL under the authority of the Huizhou government 2.1.6 State-owned share rights gradually withdrawn; the whole group went public 2.1.7 Launch of the initial cultural change—innovation and decentralization 2.1.8 Corporate culture guided by chance	1.2 Industrial expansion in the 90s—intensified competition between domestic brands and international brands; supply exceeds demand; price war wreaks havoc on industrial profit 1.2.1 Famous international home appliance enterprises launched the first round of investment in China 1.2.2 New Chinese color TV enterprises rise quickly, powered by market advantage 1.2.3 Quality and hi-tech drive the Chinese color TV industry 1.2.4 Furious competition in a money-losing industry 2.1 How TCL reached US$1 billion in sales (1981-1999) 2.1.1 Establishing the TCL brand and becoming the "China Telephone King" 2.1.2 Successful entry into the color television market 2.1.3 Establishing a channel model: "speed challenges scale" and "intensive cultivation" strategies 2.1.4 Low-cost acquisition strategy 2.1.5 The management of TCL under the authority of the Huizhou government 2.1.6 State-owned share rights gradually withdrawn; the whole group went public 2.1.7 Launch of the initial cultural change—innovation and decentralization 2.1.8 Corporate culture guided by chance	1.3 A mature and regulated period (2000)—technology updated, products diversified and enterprise internationalized 1.3.1 With China's entry into the WTO the overseas home appliances industry adopted a localization strategy, launching the second round of investment in China 1.3.2 The Chinese color TV industry faces a structural reshuffle 1.3.3 Products diversified, enterprises multiplied, and corporations internationalized together form a big tide in the color TV industry 2.2.1 Multiple expansions in the fields of consumer electronics, computer and communications production, achieving the overall industrial arrangement of 3C 2.2.2 TCL achieves great success in the mobile phone industry through ID marketing 2.2.3 Marketing reform in TCL's color TV business—value evaluation and value incentive as the core of reform 2.2.4 The corporate cultural innovation in 2002—"create a new corporate culture with international competitiveness" 2.2.5 Introduce international strategic investors, forming a group with a multi-investing entity and mixed ownership 2.2.6 "Emigration culture," "combination culture," "winning by strategy" 2.3.1 Start from simple processing and trade 2.3.2 Build distribution channels and manufacturing bases 2.3.3 Realizing international operations through international acquisition 2.3.4 Difficulties and challenges in internationalization integration 2.3.5 The third cultural innovation, rebirth of the eagle 2.3.6 The corporate culture of "winning by organization and reformation"

Table 2 Scale Analysis of Chinese Electronic Corporations

	Under 1 Billion	Around 3 Billion	Around 5 Billion	Around 7 Billion			
PHILIPS (EU)	1.1.1 Focus on R&D 1.1.2 Regional expansion and extended product lines 1.1.3 A Business leader and a technical leader 1.1.4 Formation of highly autonomous operations outside the Netherlands 1.1.5 Formation of matrix organizational structure			1.3 Reforms in the 1970s by Van Reinsdijk and Rodenburg: centralized production and simplified matrix structure	1.4 In 1982 Wisse Dekker reformed Philips by centralizing core business, extending technical cooperation, reforming the matrix structure in favor of the Product Divisions, and scaling down the board of directors 1.5 Van der Klught's reforms in 1987 1.5.1 Emphasis on Profit 1.5.2 Emphasis on HR 1.5.3 Establishment of Core Business 1.5.4 Go on Favoring Product Division in Matrix Organization Structure 1.5.5 Market-oriented R&D	1.6 Timmer's 1990 reforms 1.6.1 Operation Centurion 1.6.2 Pooling of Resources 1.6.3 Enhance quality control, improve company morale, and create a new company image 1.6.4 Expand software, service and multi-media 1.7 Boonstra's 1996 reforms 1.7.1 Move manufacturing to low-cost locations 1.7.2 New Governance Model 1.7.3 Portfolio restructuring 1.7.4 Quality improvement activities 1.7.5 Sales and marketing: dedicated to Philips' branding 1.7.6 Market-oriented R&D	1.8 Kleisterlee 2001 reform 1.8.1 Synergy among business divisions: the TOP Program 1.8.2 Transformation into a medical care and consumer fashion business 1.8.3 Sense and Simplicity
MOTOROLA	2.1.1 Product innovation initiation 2.1.2 Entering TV industry 2.1.3 Access to semiconductor components market 2.1.4 Operation with family enterprise mode 2.1.5 Pay attention to education and establish training center for top managers 2.1.6 Attach attention to overseas development and expansion	2.2.1 Consistent input of R&D 2.2.2 Transfer to the computer industry and withdrawal from TV 2.2.3 Continue to enhance employee training	2.3.1 Steady input of R&D 2.3.2 Creation of the mobile phone market 2.3.3 Quality improvement conducted across the board	2.4.1 Sustained input from R&D and creation of new products 2.4.2 Industry turns to high-tech communication and semiconductor spheres 2.4.3 Consistently improve quality and introduce 6-Sigma management methodology 2.4.4 Meeting the requirements of customers across the board 2.4.5 Establish Motorola University 2.4.6 Focus on the Asian market		2.5.1 Meet the digital era 2.5.2 Business conformity, more focus and all-around separation of rights 2.5.3 Establish R&D center in Asia and improve R&D competitiveness 2.5.4 Need for organizational reform caused by the low efficiency of top decision-makers	
TOSHIBA	2.1.1 Formation of early Toshiba 2.1.2 Focused on technology 2.1.3 The government's strong support 2.1.4 Toshiba's early stage reforms 2.1.5 Focused on the "white goods" appliance business 2.1.6 Developing the company's own know-how			2.1.1 Formation of early Toshiba 2.1.2 Focused on technology 2.1.3 The government's strong support 2.1.4 Toshiba's early stage reforms 2.1.5 Focused on the "white goods" appliance business 2.1.6 Developing the company's own know-how	2.2.1 Focused on information and communications segments 2.2.2 "The Toshiba event:" in which the company was punished for breaching the COCOM list 2.2.3 Attention to international affairs 2.4.1 The globalization process 2.4.2 Training		
LG	3.1 1947-1959: Birth of a new era for the chemical and electronics industries 3.1.1 The chemical industry 3.1.2 Business expanded into the electronics field 3.2 1960-1969: Establishing the foundation for the key industries of the Group 3.2.1 Multi-element development of relevant industries		3.3 1970-1979: Solid business growth and expansion 3.3.1 Establishing guidelines for stabilized operation 3.3.2 Subsidiaries had to go public	3.4 1980 to 1989: Age of globalization and development of cutting-edge technologies. 3.4.1 Dedicated to the pursuit of diversification 3.4.2 Innovation in 1987: decentralization and Quality Control	3.5 LG from 1990 to 1999: Great innovations for the 21st century 3.5.1 Established a new management principle: "Creating value for customers and people-oriented operation." 3.5.2 Innovation in 1995	• Strategy of Digital Technology Advancement: • Strategy of Globalization: • Super A activities and Six Sigma plan: • Merger: • Acquisition • Global cooperation: • E-Business: 3.6 From 2000 until now: Giant leap forward toward the future	
ACER	2.1.1 1970s and early 1980s: Engaging in commercializing microprocessor technology in Taiwan 2.1.2 Mid-1980s to 1990s: "Dragon Dream"—growth and expansion beyond the Taiwanese market 2.1.3 Early 1990s: First transformation—decentralization 2.1.4 Fruitful results of the first transformation 2.1.5 Stan Shih's "Smiling Curve" diagram.	2.2.1 Mid-1990s: development in the U.S. Market 2.2.2 Changes in the business environment demanded another transformation sting based on timely market feedback from different regions 2.2.3 Emphasis on product ID design	2.3 Achieving US$5-9 billion in revenue (1998-2005) 2.3.1 "One Global Team" working for "One Company" with "One Brand" 2.3.2 Leverage global resources along the value-chain partnership 2.3.3 Fruitful result from the second transformation 2.3.4 Positioned for future growth (over US$9 billion revenue)				

LENOVO (CHINA)	2.1.1 Technological innovation: Lenovo's Chinese-character card 2.1.2 Cooperation with foreign manufacturers to develop compatible computers 2.1.3 Developing the company's own micro computer through independent inovation 2.1.4 Goal- and market-oriented innovation culture 2.1.5 Three managerial elements: build management teams, set strategy and optimize staff 2.2.1 Establishment of a high efficiency distribution system 2.2.2 The PC Business division organizational structure changed from centralization to centralization-plus-decentralization 2.2.3 Rationalize the enterprise management structure 2.2.4 Implementation of the ERP system in 1998 2.2.5 Change in the management team 2.2.6 Corporate culture focused on management and parental culture and Management Outline of Legend Group was introduced 2.2.7 Management Discipline	2.3.1 The splitting-up of Legend 2.3.2 Industrial diversification strategy 2.3.3 Building a client-oriented organizational frame 2.3.4 Entering the IT services industry by merger 2.3.5 Technological innovation—a computer with 1,000 GFLOP 2.3.6 Developing the initial innovation, services, and internationalization-compatible cultures.		2.4.1 Change of logo and shrinking of industrial diversification strategy 2.4.2 Acquisition of IBM's PC division 2.4.3 Globalization of Lenovo negatively influenced by the international political environment 2.4.4 The operating policy of the new Lenovo—eyes on the Chinese market 2.4.5 Big customers replaced by small and medium-sized ones in European and American market 2.4.6 Revelations derived from Lenovo's globalization		
HUAWEI (CHINA)	2.1.1 Ability to transform technological innovation into low-cost production 2.1.2 Introduced the IBM management model: IPD (integrated product development) and ISC (integrated supply chain) 2.1.3 Motivation, reward and pressure as the company's core management measures 2.1.4 Established the "Basic Law of Huawei"	2.2.1 Strategy of globalization pulled Huawei out of the "winter" of its fortunes 2.2.2 Purchasing and paying for patent license fees is the optimal path to enter global markets 2.2.3 Process realignment in marketing 2.2.4 Flexible matrix organizational structure 2.2.5 Integrating the culture into the system	2.3.1 Constant investment in R&D 2.3.2 Emphasis on software development 2.3.3 Organization restructure, eliminating the separation between domestic and overseas divisions 2.3.4 Changed logo 2.3.5 Business transformation adapted to sustaining technologies and "disruptive technologies"		3. Course of globalization 3.1 The background 3.2 Management system and organizational structure brought in line with international practice 3.3 Global marketing 3.4 Independently developed property rights enhance international competitiveness 3.5 Financing—an engine of globalization 3.6 Government support for internationalization	
TCL (CHINA)	2.1 How TCL reached US$1 billion in sales (1981-1999) 2.1.1 Establishing the TCL brand and becoming the "China Telephone King" 2.1.2 Successful entry into the color television market 2.1.3 Establishing a channel model: "speed challenges scale" and "intensive cultivation" strategies 2.1.4 Low-cost acquisition strategy 2.1.5 The management of TCL under the authority of the Huizhou government 2.1.6 State-owned share rights gradually withdrawn: the whole group went public 2.1.7 Launch of the initial cultural change—innovation and decentralization 2.1.8 Corporate culture guided by chance	2.2.1 Multiple expansions in the fields of consumer electronics, computer and communications production, achieving the overall industrial arrangement of 3C 2.2.2 TCL achieves great success in the mobile phone industry through ID marketing 2.2.3 Marketing reform in TCL's color TV business—value evaluation and value incentive as the core of reform 2.2.4 The corporate cultural innovation in 2002—"create a new corporate culture with international competitiveness" 2.2.5 Introduce international strategic investors, forming a group with a multi-investing entity and mixed ownership 2.2.6 "Emigration culture," "combination culture," "winning by strategy"	2.3.1 Start from simple processing and trade 2.3.2 Build distribution channels and manufacturing bases 2.3.3 Realizing international operations through international acquisition 2.3.4 Difficulties and challenges in internationalization integration 2.3.5 The third cultural innovation, rebirth of the eagle 2.3.6 The corporate culture of "winning by organization and reformation"			

Table 3 Interview Time Table

Interviewee	Company	contents	Time	Attendee
Lee Sun, Weiqiang Liu	MIT SF 06	Thesis contents	Nov 30, 2006	charls, April Huang
Jianxi Lou	MIT P.H.D	Thesis concept		Charls
Donald Lessard	MIT Professor	Thesis concept		Charls
Kent Xu	MIT/Huawei	Huawei		charls, April Huang
Yoshita Hase	MIT SF/Toshiba	Toshiba		Charls, Dongyu Zhao
Arthyr Yang(Guo An)	Hbbs	Acer/BenQ	Dec 13,2006	Charls, Xiaoya liang, Dongyu Zhao, April Huang
Yanbo Wang	MIT P.H.D	Thesis contents	Dec 14,2006	charls
Matthew Growney	DarwinSuzsoft/Motorola	Motorola	Dec 14,2006	Charls, Dongyu, Jerry Li
Liangtao, Liuping	Harvard	Confucius	Dec 16,2006	Charls, Dongyu, Guijing, Yanglan
Li Jin	HBS	Thesis contents		charls, Xiaoya Liang
Guang Zhong(Mark)	IBM	IBM/Chinese culture	Dec 22,2006	Charls, Yunhui Wang
Lai Cheng,liangTao	Beijing University(Havard)	Chinese culture	Jan 7,2007	charls, LingLing,Dongyu,
Loren Heinold/WenChao	Downer & Company	US culture	Jan 8,2007	charls
Heng(Alice) Xu	MIT P.H.D	orginazation	Jan 8,2007	charls
GujiCheng	Professor	Chinese culture	Jan 14,2007	charls
Guang Zhong(Mark)	IBM	IBM/Chinese culture	Jan 17,2007	Charls,
David Yang	NBA	US/chinese culture	Jan 18,2007	charls
Juwen	Mentor	US/chinese/Japan/culture	Jan 19,2007	charls,LingLing
Daisuke Suzuki	MIT SF 07	Japan/Fujitsu	Jan 20,2007	charls,Dongyu
Baoling Zhou, John Zhang	MIT alumna, Systemmedia	Thesis contents	Jan 25,2007	charls, Gujing, Xufeng
John Van Maanen	MIT Professor	Thesis contents	Jan 29,2007	charls, Xu Zhao
Lee Sun, Weiqiang Liu	MIT SF 06	Thesis contents	Jan 30, 2007	charls, Dongyu
John Zhang, Jim Xu, WEI Gao.....	BICA	Thesis contents	Feb 1, 2007	Charls
Tu weiming, Chen lai,Gangchunshong, Liangtao	Harvard Professor	Culture	Feb 4,2007	Charls, Dongyu,Guijing,Wangchangqing,Bill Wang, Zhaoxu,Lingling
Xioaming Zheng, David Xie	Qinghua Professor, VP of WanKe	Thesis contents	Feb 8,2007	charls, April Huang
William Pounds	MIT professor	Corporate Governance	March 1 2007	charls,April Huang
Kazuo Fujitani	pre-Toshiba Executive	Toshiba	March 30 2007	charls, kanli, Taylor Wu
Zhixing Xiao, Yueming Yu	Professor of CEIBC	culture	March 30 2007	charls

Appendix: Benchmark Analysis

For these case studies, I have selected eight companies (Philips, Motorola, Toshiba, LG, Acer, Lenovo, Huawei and TCL) for detailed research to define the lessons, focused on organizational and cultural innovation in these typical companies in Europe, America, Japan, Korea, Taiwan of China and China. The courses of their growth are expounded from these historical perspectives.

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Case Study 1: The Development of Philips[12]

Philips Group, also called Royal Philips Electronics, headquartered in the Netherlands, with 161,500 employees, is one of the largest electronic companies in the world, and takes the lead in Europe. It ranks No. 145 among the Fortune 2006 Global Top 500 companies and No. 9 for electronic products manufacturer. In its 100-year history it has contributed to the world a lot of inventions such as recording tape, CDs, rewritable DVDs, and 100Hz color TV. Its sales for 2005 reached 30.3 billion Euros. At present Philips' products mainly cover medical systems, domestic appliances, personal care, consumer electronics, and lighting. The brand promise of Philips is laid out in Sense and Simplicity which encapsulates their commitment to delivering products and solutions that are advanced, easy to use, and designed to meet the needs of users.

In the 20th century's heavily competitive and continuously-innovative electronics industry, many old companies have disappeared, one after another, and a lot of new companies have been formed. In this process Philips is one of the few companies that, after being active throughout the 20th century, still plays an important role in the electronics industry. When most other European and American companies slump due to the challenges from Japanese and Korean companies, Philips, as a flagship European electronic companies, must have unique strengths to account for its continuing success today. By studying organizational and cultural innovation of Philips we can learn how Philips dealt with each new round of industry transformation and still kept a leading position in the field.

1. Development of Philips

1.1 Before 1960

Gerard Philips and his father established a light bulb factory in Eindhoven, the Netherlands, in 1891. When their venture almost failed, they hired Gerard's brother, Anton Philips, an outstanding salesman and manager. By 1900 Philips had become the third largest light bulb producer in Europe.

1.1.1 Focus on R&D

Philips established a lot of physics and chemistry labs to address manufacturing problems. By these means it became the leader in industrial research and development. The labs developed a tungsten

[12] I appreciate the contributions to the research for this case study by Xu Zhao, Christina Rong and Yi Hao.

metal filament bulb that was a great commercial success and gave Philips the financial strength to compete against its giant rivals. In 1914, Philips built a research laboratory to study physicochemical development. From the beginning, Philips had given great importance to product design. When Louis Kalff became the first "official" designer at Philips and affected the world's view of a radio with his design for the first radio, he, like everyone else, would not have expected that 80 years later that design would have played such a pivotal role. Today, Philips design center, with over 400 designers, is one of the largest and most diversified international design organizations.

1.1.2 Regional expansion and extended product lines

Before long the situation of limited land in the Netherlands forced Philips to look beyond its Dutch borders for enough space for large scale production. Anton Philips hired the first manager in charge of exports in 1899, and soon thereafter the company started to export its products to countries such as Japan, Australia, Canada, Brazil, and Russia. In 1912, with the appearance of signs that the lamp industry was saturated, Philips began to set up a sales organization in America, Canada, and France. All other functions were highly concentrated in Eindhoven. After that Philips changed from a highly centralized company into a decentralized sales company with autonomous marketing companies in 14 European countries plus China, Brazil and Australia. Meanwhile the company began to extend its product lines.

1.1.3 A business leader and a technical leader

A tradition of Philips early period was that the company was managed jointly by a business leader and a technical leader. Gerard Philips as an engineer, and Anton Philips as a businessman, sustained a subtle competition. Gerard tried to produce as many products as possible so that it was hard for Anton to sell out. But they both thought that strong R&D was critical for the company's survival. In its early stage the strategy of focusing on both marketing and technology had made Philips a great success.

1.1.4 Formation of highly autonomous operations outside the Netherlands

During World War II, most of Philips factories in the Netherlands had been destroyed and, after the war, the board of directors decided to rebuild Philips using the force of national organizations. The reason for doing so was because of the stringent trading restrictions among European countries in the reconstruction period. Apart from the consideration of tariff barriers, independent operation in

individual countries and factories serving only local needs meant that Philips functioned just like a local company, and effectively satisfied local demand. The resulting weakening of the direct leadership from headquarters, changed the original centralized management.

The self-sufficiency of the national organizations formed in the War meant that they handled their local markets freely. For example, while the world was quarreling over three-color TV transmission standards, Philips National Organization had decided which standard to adopt according to the local situation. Also, because consumers in different countries have different preferences and economic conditions, independent national organizations had the advantage in discerning and responding to different requirements. Consequently, the development of products was usually based on local market conditions.

1.1.5 Formation of matrix organizational structure

For years Philips has associated its products with broad regional interests through a matrix form of organization. Fourteen product divisions are in charge of global product policies but they are finalized through negotiation with the national organization. Management levels of the National Organizations in more than 60 countries are in charge of business operations for their respective countries. A board of ten directors makes the most important policy decisions for the company. The role of Philips headquarters in Eindhoven, in the Netherlands, is to coordinate the activities of the highly autonomous national organizations. Product Divisions and National Organizations often consult together. The board of directors is the judge and arbitrator. Even within the board of directors there is consultation, and also inside various product divisions and between business and technical supervisors. This management structure originated in the time, early in Philips history, when Anton Philips was in charge of business operations and Gerard Philips directed technology.

In a matrix organizational structure, national organizations are mainly responsible for financial, legal, and administrative matters, fourteen product divisions located in Eindhoven are responsible for product development, manufacture, global distribution, while R&D set-ups are independent, with a total of eight independent laboratories in Europe and the U.S.A.

Although the formal structure of the company is a type of geographic/product matrix, in fact the national organizations hold the real power. They report directly to the board of directors, The National Organizations often send envoys to Eindhoven to report on their work and present ideas. The ten board

members often visit the national organizations, too. In 1954 the board of directors established an organization, the International Concern Council, through which they met frequently with the leaders of the National Organizations.

The management structure inside the National Organizations initiated the traditional model of Philips, with a technical and a business leader, and, in some regions, a financial director. This inter-functional coordinated operation is reflected at all levels of the National Organizations.

1.2 Philips in the 1960s

By the end of the 1960s, problems emerged over the high degree of local operational autonomy. The formation of the Common Market had broken the original trade barriers which had initially prompted the creation of the national companies in various countries. The development of transistors and printed boards necessitated extensive manufacturing capability which most of the National Organizations could not support. At that time many of Philips competitors had transferred their electronics manufacturing to such low-cost regions as East Asia, and Middle and South America. Meanwhile, the marketability of Philips' products had been somewhat weakened despite a great many technical innovations.

In the more than 30 years since the 1960s Philips has experienced reforms led by seven successive chairmen.

1.3 Reforms in the 1970s by Van Reimsdijk and Rodenburg: centralized production and simplified matrix structure

Soon after coming into office Hendrick Van Reimsdijk had set up an Organization Committee whose job was clearly to assign responsibilities between the Product Divisions and the National Organizations. In 1971 their report analyzed the abuses of Philips matrix organizational structure: "If we have not defined the responsibilities between the Product Divisions and the National Organizations, we do not know who should take charge in any set of circumstances. When the operation of a company gets more and more complicated, such an organizational structure can only reduce the company's ability to respond."

On the basis of the report, Van Reimsdijk proposed to re-balance the management relationship

between the Product Divisions and the National Organizations. He advised that the matrix structure should favor the Product Divisions in order to reduce the quantity of products, enlarge the scale by centralizing production, and increase the flow of products between National Organizations. He advised the closing of some low-efficiency factories, and the combining of high efficiency factories into International Product Centers (IPCs), each of which would supply products to multiple National Organizations. The hope behind Van Reimsdijks proposals was that the managers of the Product Divisions could control production. But the political and organizational fall-out from the factory closings slowed down implementation of Van Reimsdijks measures.

By the end of the 1970s Dr. Rodenburg became Philips CEO. He continued Van Reimsdijks reforms, but the power of the National Organizations was still too big. He went on with simplification of the matrix structure, and replaced the model of two leaders-one business and one technical-with a single leader. By the end of the 1970s the sales revenue of the Philips Group had reached $17 billion.

1.4 In 1982 Wisse Dekker reformed Philips by centralizing core business, extending technical cooperation, reforming the matrix structure in favor of the Product Divisions, and scaling down the board of directors

Wisse Dekker became the CEO of Philips in 1982. He believed that reforms originated by the two former CEOs needed to be pushed and accelerated. The net profit of the company had dropped below 1% in 1981. What Dekker first delivered to his employees was a sense of crisis. He let them know that if reforms were not carried out the company might close down.

Having realized the low-cost advantage of Japanese competitors, Dekker had closed many low-cost factories, especially 40 of the 200 factories in Europe. The company sold welding, energy cable, furniture and some other non-core businesses. At the same time, Philips merged some core businesses to conform to the new direction of the company.

In addition, Dekker greatly extended technical cooperation with other companies.

In order to reform the huge bureaucratic administration, Dekker continued the reforms of his predecessors, replacing the two-person with a one-person governing model. He assigned authority for product management to the National Organizations and gave them responsibility for local profit in each country. He continued tilting the matrix structure in favor of the Product Divisions.

Dekker also scaled down and activated the board of directors, promoted some managers with strong operational experience and set up sub-committees to deal with some troublesome problems.

1.5 Van der Klught's reforms in 1987

1.5.1 Emphasis on profit

When Cor van der Klugt succeeded Dekker as chairman in 1987, Philips had given up its leading position in consumer electronics to Panasonic, and was one of the only two non-Japanese companies ranking among the top ten in consumer electronics. Its net profit of 1% - 2% was not only behind GE, with 9%, but even behind another Japanese competitor, with 4%. Van der Klugt had set up a goal to increase profit to 3% - 4% and regarded challenging the Japanese companies as the most important task of the company.

1.5.2 Emphasis on HR

On the second videoconference of the whole Group van der Klugt repeatedly emphasized the importance of HR management. He said: "Talented people are our most important resources. HR management is the strategy which we should put in first place." His speech defined the following as among the goals of the company: "Improve selection and training of young talent, improve management training, make talent flow and foster international exchange, create challenging life plans, and establish people-friendly work environments."

1.5.3 Establishment of core business

Management began the company optimization strategy. In addition to a lighting business with a bigger scale and better efficiency, Philips selected some other electronics divisions on which to concentrate.

Three of the four selected core businesses were strategy-related: components, consumer electronics, telecommunications and data systems. The fourth was the lamp business, which Philips regarded as very important for the company's strategy because it funded company development.

1.5.4 Go on favoring product division in matrix organization structure

In order to further establish the position of the Product Divisions, Van der Klugt re-constructed Philips based on four core product divisions (instead of the former 14), which made it possible to simplify the board of directors. The independent board members had been appointed to the newly established Group Management Committee in charge of strategic planning. This Committee, which included directors of the Product Divisions, had replaced the International Concern Council directed by the former National Organizations.

In order to make the Product Divisions be in close contact with the market, Van der Klugt had sent many mature prodction line supervisors to do battle with cut-throat competition. For example, the production line managers of digital recording tape and electric shaver had been sent to Japan, while production line managers of medical and domestic appliances went to the USA.

1.5.5 Market-oriented R&D

When he realized that the R&D activity of Philips had not been directed by the market, Van der Klugt reduced by half funds for fundamental research, so that it made up only 10% of total research funds. Meanwhile, he assigned a specific research direction to each of the research laboratories.

In addition, Van der Klugt worked to construct effective, specialized and market-oriented production facilities. He closed 75 of the remaining 420 companies and cut down 38,000 of the company's 344,000 employees. He expected that all these measures would bring about recovery of the company by 1990. But Philips' unanticipated financial loss in 1990 forced Van der Klugt, and half of the board of directors, out of office in May, 1990.

1.6 Timmer's 1990 reforms

When Timmer came into office, he called together 100 top managers to issue a hypothetical but fact-based press conference to announce that Philips would close down. He challenged the managers: "What can you do this weekend?" Jan Timmer became the CEO amid a flurry of gossip about the closing down. In 1990 Philips' revenue reached $25 billion.

1.6.1 Operation Centurion

Suffering years of continuing poor performance and stock price downturn, Jan Timmer was promoted when he took the CEO post and put forward a long-term "Centurion" program (1990-1994). His goals were to change the existing thinking and business model and instead to prioritize customer needs, reduce operational costs, and improve quality and efficiency through major business and process restructuring. He intended also to "change Philips' operational model," set up new performance evaluation systems for all business supervisors in all countries, and ask that they commit to financial target forecasts and sign performance contracts.

1.6.2 Pooling of resources

In 1992, Timmer focused major projects on lowering the costs of Consumer Electronics (CE) and industrial components and setting clear targets of P&L and return on investment. The background to these actions is: 1) the market situation resulting from the economic slowdown after the Gulf War in 1991; the depreciation of the U.S. dollar and the quite severe price war in the CE industry directly influenced the CE and components industry; 2) the continuing heavy losses of Grundig (Philips Holding) pulled down the performance of Philips CE. The actions to address these situations were: 1) simplify sales organization; 2) close factories in Europe, downsizing in 1992/1993 and move factories to Asia and Eastern Europe; 3) improve product development and reduce the lead time to market; 4) shorten the products line; and 5) strengthen cooperation with external resources.

1.6.3 Enhance quality control, improve company morale, and create a new company image

In 1992, the board of directors announced that the Mission of the company—"the Philips' Way," comprised five key factors: 1) generate a high level of enthusiasm among customers; 2) regard the employees as key to the company; 3)quality assurance; 4) increase return on investment; and 5) advocate an entrepreneurial spirit at each level of the business.

In 1995, a global marketing promotion, "*Let's make things better*," was carried out to solve seven major problems and increase profits. The promotion mainly included: 1) realize fast growth in the high-tech industries (e.g. semi-conductor and components); 2) strengthen further media software and service; 3) purchase businesses to become an IT solution provider; 4) develop CE industry into a platform to meet new requirements arising in the multi-media market; 5) sustain growth strategy on lighting, domestic appliances and medical systems; 6) sell companies that have no growth potential; 7) make use of every opportunity to explore existing and new markets.

1.6.4 Expand software, service and multi-media

At the beginning of 1994, Timmer submitted a new growth strategy to the board of directors. His plan was to develop software, service and multi-media and make them 40% of revenue in 2000. These investments in software were based on the theory that, whatever the hardware standard is, software is always needed to run on it. Timmer believed that Philips' traditional strength in innovations would push Philips forward again. He invited the Director of R&D in HP, Frank Carrubba, to join the company and encouraged him to develop fifteen kinds of core technologies including, among others, interruptive CD, digital compressed tape, HDTV and multimedia software. These projects were soon honored as "the Chairman's projects," and during later years Philips invested $2.5 million in them. But, because Timmer stopped some very high-tech businesses during the first few years, and also due to the previous 37% downsizing of R&D, there were very few talents left who understood the new business.

1.7 Boonstra's 1996 reforms

When Timmer left his job in 1996, a passionate choice was made by Philips—to hire as his successor an outsider accomplished in marketing and knowledgeable about Asian companies, instead of choosing a candidate familiar with technology and European companies. In May 1996 Cor Boonstra became the new CEO. Not held back by tradition, Boonstra immediately announced his innovative strategy: 1) simplify the organization (called the "Boonstra project"), move operations to countries with low labor costs, shorten products line and dispose of any company or business unit running in the red. Within three years Boonstra sold 40 of 120 Philips businesses, including famous Polygram and Grundig; 2) establish R&D centers close to the major markets; 3) restructure media activities, Regina CP; 4) start to implement Cor Boonstra's "*what can be measured is likely to be well executed,*" and set up a new management process focusing on performance evaluation.

In addition, Boonstra moved the company headquarters to Amsterdam after 100 years of history in Eindhoven, and kept only 400 HQ positions out of 3000.

1.7.1 Move manufacturing to low-cost locations

During one year, Boonstra cut 3100 employees in North America and increased manpower to 3000 in Asia, showing his determination to transfer manufacturing to low-cost locations. During the next

three years he closed 100 factories out of 356 globally. He also restructured 21 business divisions into seven sectors and passed daily operation responsibilities to 100 business units, with each unit responsible for its own profits.

1.7.2 New governance model

In November 1996, Boonstra and his senior management team sent a memo to other levels of management at Philips announcing a new governance model. In this model, Philips' responsibility was to define business and outside clients and to control the overall business system and clarified management team. All business is managed by product divisions which, in turn, are managed by the respective chairmen. All business among business divisions would share the same management system, composed of the company's core processes, including strategy planning, financial, human resources, IT, technology and branding management. The core processes were corporate and could not be compromised, and these key factors increased Philips' value. Compared with this situation, each function, such as R&D, manufacturing, sourcing, marketing, sales, service, and distribution are not managed centrally but only get some advice from time to time. The corporation controlled and coordinated strategy (generating policy, approving strategy and controlling the performance of each department), but not the profit centers.

1.7.3 Portfolio restructuring

A new business plan was prepared, based on Boonstra's master plan to strengthen the product divisions. In 2000 the company was divided into six product divisions (PDs) including CE, semi-conductor, components, lighting, medical systems, domestic appliances, and personal care products. Boonstra and his management team realized, however, that Philips was still far behind other companies in its strategy execution. Boonstra made a series of reforms in financial and reporting systems, enabling the company to spot potential problems through quarterly or monthly reporting. At the same time, he introduced a motivation system to improve employee performance.

In 2000 Philips had 219,000 employees and 1200 operational business units with profits of 9,602 million Euros on revenue of 37,862 million Euros. Sales revenue increased 20%, while net profits increased to 11.3% of sales revenue.

1.7.4 Quality improvement activities

In 1999 Philips carried out a series of actions to improve quality. Back in 1983 Wisse Dekker started up the first *Company-wide Quality Improvement*, which mainly focused on the quality of products. Later Jan Timmer renamed this project *Philips Quality* intending to focus management on consumers and process. Boonstra changed *Philips Quality* to *BEST* (Business Excellence through Speed and Teamwork). Through BEST, quality became an important part of employee performance evaluations. At the same time in 1999, Philips strengthened human resources management with the support of the BEST program.

1.7.5 Sales and marketing: dedicated to Philips' branding

Boonstra's background in CE products and his recognition that Philips was better on R&D than on marketing, made him pay more attention to sales and marketing, especially to improve Philips' global brand. Boonstra hired Gerard Dufour as supervisor of marketing to manage branding. Meanwhile, a business movement was called on to replace 150 local brands with Philips' brands. For example, in the U.S. Philips began to use its own brand on Magnavox. In 1998 Philips increased advertising investment 50% and started a large scale global promotion. It used "*Let's Make Things Better*" to replace the previous "*Philips invents for you*" as its theme. The branding activity especially focused on the U.S market because Philips was weakest in the U.S. market, where it was thought of as a lamp brand rather than a CE brand. The promotion was soon a notable success.

The emphasis on marketing influenced technological development and management. Boonstra explained: "We finished our product development without communicating with consumers or knowing their interests. Through market study we now know what products we should make and what products consumers like."

1.7.6 Market-oriented R&D

In 2000 Philips invested 7.3% of sales revenue in R&D, but the capital was usually used on the development of business divisions. The investment in basic research was less than 1% spread between 13 laboratories in three continents. Boonstra increased the budget for technical research which had been cut down during Timmer times, and brought business management into the laboratories. What's more, he even tried to quantify the output of research through the publication of articles and patents. A

university was built, serving the employees of the product divisions and the R&D department, in order to make study and research more market-oriented.

1.8 Kleisterlee 2001 reform

On May 1, 2001 Gerard Kleisterlee became Philips' CEO and president, succeeding Boonstra.

1.8.1 Synergy among business divisions: the TOP Program

The purpose of starting up TOP ("Towards One Philips") program was to seek a synergy of operations, finance and strategy among five business divisions (including CE, components, semi-conductor, medical systems). In general, it aimed to centralize non-business functions, such as a sub-program of "Leverage" to reduce the global sourcing hierarchy and flatten it into several sourcing groups, e.g. plastic, electrical parts and so forth.

The background to this program is: 1) Philips' costs were 30% - 40% higher than that of its counterparts; 2) the back-office supporting departments put more effort into daily administration than into value-added work; 3) Philips' cost structure showed that it lacked unified corporate process, standards and methods; 4) although operating on a large scale, Philips lacked the corresponding competitive advantage.

The purpose of the project was: first, to simplify the supporting functions by introducing shared IT, HR, finance, sourcing, operations management (capital, communications, branding, legal and general management); second, to establish a shared service center to improve healthcare, lifestyle and related technical support skills, including 1) cutting the headcount of redundant or duplicated functions to reduce cost; 2) bringing non-business functions into corporate management to increase the financing capability of each industry; 3) realize strategy synergy and branding synergy among industries as an aspect of core competitiveness; seek a new business model through cross-division cooperation. In 2002, as "One Philips" the company moved its current management to subordinate businesses and standardized operations in order to become a true market-oriented company.

1.8.2 Transformation into a medical care and consumer fashion business

On August 2006 Philips announced that it would sell 80.1% of shares in its semiconductor division, keeping 19.9% of shares with a transaction volume of around 8.3 billion Euros. Philips was expected to realize 6.4 billion Euros after tax from this sale. This decision grew out of Philips' transformation from a traditional, vertically integrated electronics company into a medical care and consumer fashion company.

1.8.3 Sense and Simplicity

In 2004 the company used "*Sense and Simplicity*" to replace the previous "*Let's Make Things Better*". The background of this change was: 1) Globalization and digitalization was quickly changing the whole world. 2) The knowledge economy promoted fast growth of the service economy, bringing two kinds of employment. On the one hand were high-end knowledge-based jobs, and on the other hand were the less educated service jobs such as food service, nursing, and so forth. Knowledge became the driving factor to boost the new economy. An efficient knowledge economy needs strong target-oriented cross-industry cooperation. 3) Outsourcing and off-shore movement became the trends resulting from the fast development of the internet. 4) There was an increasing trend toward localization of manufacturing, staffing and employee management.

The main purpose is three-fold: 1) Move away from industries with seasonal prosperity, such as components or semiconductors. 2) Focus on the branding commitment of *Sense and Simplicity* to build competitiveness in the healthcare and lifestyle industries; 3) End the history as a traditional and vertically integrated electronic company to build up a new image as Royal Philips; 4) Dedicate the company to improving people's lifestyles through meaningful innovation.

Major actions involved in this transition include: 1) Emphasize the three areas of healthcare, lifestyle and technology; 2) Advocate a brand new concept of innovation: first, innovation is true innovation only when the product can be successfully sold—success means profit); second, innovation through more open-minded ways. 3) at the beginning of each project the R&D team must work closely with marketing recognizing customer needs, and must regard design as a major function through the concept of "*Sense and Simplicity.*"

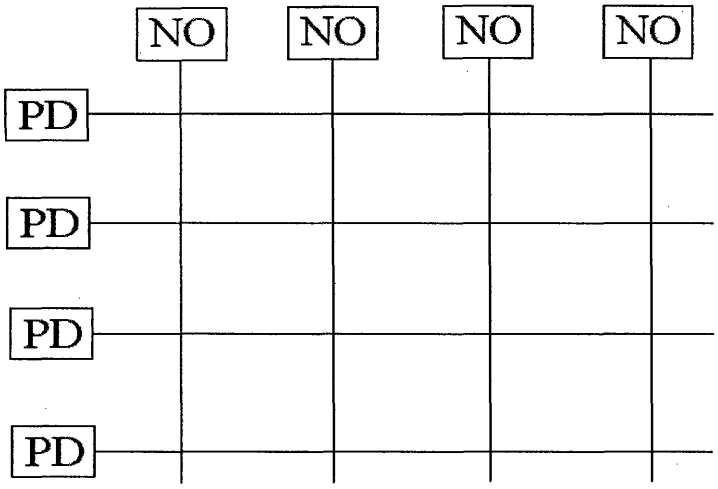
On July 16, 2006, Philips announced Q2 performance: sales increased over 10% compared with the previous year and profits reached 301 million Euros. Here was the first fruit of rebuilding a more market-driven company in the industries of healthcare, lifestyle, and technology.

The beginning of the new millennium means opportunities and challenges to every company. Philips still had a long way to go to realize a renaissance.

2. Matrix organizational structure

As we mentioned above, in the early period after the war, Philips formed a matrix organizational structure composed of product divisions and national organizations which is shown in the chart below. See Figure 1.1 Philips Matrix Organizational Structure

Figure 1.1 Philips Matrix Organizational Structure



PD stands for Production Division and NO for National Organization. On the one hand, matrix organizational structure is based on the longtime mutual coexistence of PDs and NOs; on the other hand, matrix organizational structure is marked by the separation of technical from business management. Running a business through PDs was first adopted by DuPont and General Motors. It is a method used by most American companies during the 1950s. Philips' management started out this way and gradually developed a unique matrix organizational structure of its own. The formation of the structure made the reporting system more complicated. Each level of the organization has two bosses. What's more, there's some discrepancy between product divisions and national organizations. And a longtime discrepancy would make the organization inflexible and inefficient.

Henk van Riemsdijk, CEO in the 1960s, established a senior executive committee. The report from this committee was called the Yellow Book inside Philips. It stated that Philips should reduce the quantity of products brought to market, focus on manufacturing, and strengthen the movement of goods among regional product divisions. As the executive committee suggested, and endorsed by the later CEO Dr. Rodenburg, manufacturing was moved to the newly built International product centers and the Main Industry Groups were transformed into product divisions responsible for factory operations, product distribution, international strategy, and the generation of product policy. Yet the Yellow Book emphasized that product divisions should coordinate with national organizations, which were still in charge of overall factory operations, marketing, and sales.

In 1982, Wisse Dekker became CEO. He replaced the two- or three-person governing structure with one-person governance. He went on to reverse the matrix organizational structure by establishing a company committee composed of leaders of the product divisions and regional organizations, and designed the matrix to favor the product divisions. In 1988, another report, known as the Blue Book, defined the regional organization of each nation as the supporting organization in each nation and formally handed all business responsibilities over to the product divisions. This action was aimed at eliminating the old structure of PD/NO matrix.

Figure 1.2 Philips' sales

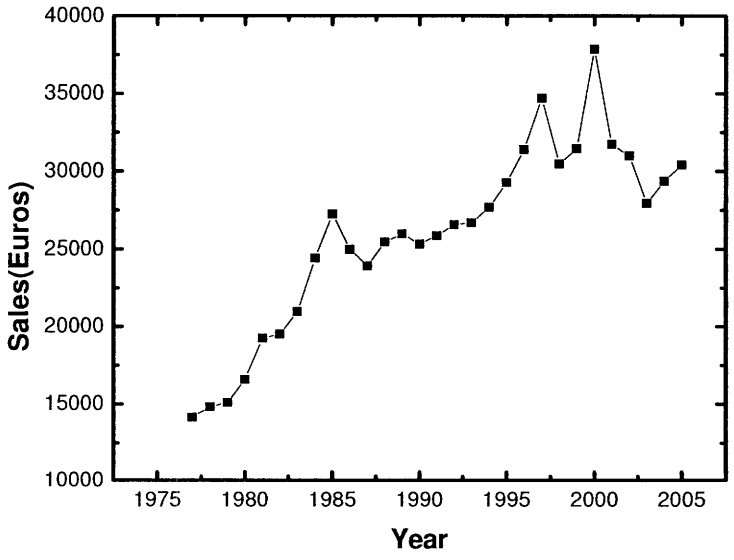


Figure 1.2 above shows Philips' sales in the last 30 years, demonstrating that when Boonstra was CEO company performance improved a lot. The improvement is due in large part to Boonstra's reforms, such as quality improvement activities, and the big-scale branding promotion. Of course it also owes much to Philips' structural reorganization and business simplification. There should be lessons here for Chinese companies.

Case Study 2: Motorola and the Communications Industry in the U.S.A[13].

Headquartered in Chicago, Motorola is the biggest electronics company in the U.S.A. It has been first to create multiple items all over the world ever since the invention of the first simple car radio, followed by the mobile phone, as well as the first cell phone with a Chinese menu. As the bellwether among cell phone and mobile paging fields, Motorola has made great contributions to the development of communication development, taking the lead in communication integration and plug-in electronics solutions globally.

When a lot of electronics enterprises declined we still saw Motorola growing rapidly, due to perfect management and proper policies and principles. It has become a pillar of enterprise among those American electronics firms which are capable of competing with their Japanese counterparts. As one of the world's Fortune 500, Motorola ranked 171st in 2005, with sales of $35.3 billion, and $42.9 billion in 2006. Motorola is considered to be a rare model of a successful electronics and technical company across the world—a well-known enterprise with global business impact.

1. Development of the electronics industry in the U.S.A

1.1 The electronics industry in the U.S.A. before the 1960s

1.1.1 Wireless communication technology drove the industry forward

In terms of industry technology, the electronics industry in the US before the 1960s consisted mainly of vacuum tubes and transistors, and great priority was given to Consumer Electronic products. During this period wireless technology pushed the industry ahead and accounted for two successful companies, RCA and Telefunken.

1.1.2 RCA rose with the popularity of the TV market

Subjectively speaking, World War II pushed the electronics industry ahead, particularly as an outcome of the universal application of wireless communication technology on the battlefield, laying the foundation for future technological innovation. RCA kept ahead globally in technology after World

[13] I appreciate the contributions to the research for this case study by Jerry Li, Weiran Li and Aaron Tong.

War II, and began to work on TV, seeing its strong market potential. Henceforth, TV became the banner of electronic products, especially for consumer electronic products. But the core business of RCA dispersed rapidly after the 1960s, as the company merged with and acquired other industries irrelevant to the electronics industry: for example, Hertz Rent A Car, frozen food companies, savings and loan enterprises. Latecomers in the electronics industry were, therefore, able to surpass the former leaders.

1.2 The future of the electronic industry in the U.S.A. in the 1970s

1.2.1 Industry transits to the integrated circuit phase

Industry technology began to move into the integrated circuit phase during the 1970s, enabling electronic products to be mass produced, bring great opportunity for Consumer Electronic products to develop rapidly.

1.2.2 Japanese electronics industry matures

Accompanying the maturing of the Japanese electronics industry over two decades was a revolution in products, production modes, and marketing. Sony, Panasonic and Toshiba brands developed and quickly seized the global market by relying on high quality, low cost and novel design. Then American electronics manufacturers were faced with unprecedented pressure.

1.2.3 American electronics manufacturers were acquired by their competitors, and the transition began to affect the computer and semiconductor industries

A number of medium and small-sized electronics manufacturers have been acquired by competitors, and even some firms with leading technology and market share had to give up manufacturing consumer electronics products and change over to computers and semi-conductors. The analog signal for the communications industry still occupies a great majority of market share, and most wireless communication technologies were applied in urgent scenarios in war or other emergencies without application in the consumer market.

1.3 Features of the electronics industry in the U.S during the 1980s

1.3.1 Entering the technological development stage of SLSI and semiconductors

The technology of the electronics industry entered SLSI and semiconductors in the 1980s. Along with digital progress, American enterprises began to have a presence in the market again and left the assembly business to manufacturers with low costs. In terms of technology and the industry chain, American companies once again started to surpass their Japanese counterparts and take the lead globally.

1.3.2 Popularization of commercial communications technology

Although the analog signal still dominated the communications industry, digital technology began to cut a splendid figure and commercial communications technology rose in popularity. With the arrival of the 1G age for cell phones, the representative technologies were NMT, TACS and AMPS.

1.4 The U.S. electronic industry in the 1990s

1.4.1 Wireless broad band technology alters the consumer electronics industry

We saw rapid development in semiconductor and integrated circuit technology in the 1900s. With the changes in the industry introduced by the development of semiconductor and integrated circuit technology, American consumer electronics manufacturers began to look to conversion and expansion of products and American firms kept their leading positions in innovation through their strength in finance and research and development.

1.4.2 Arrival of the digital era

Digital became mainstream in the communications industry, and many communication technologies no longer held commercial patents or dominated in government use. The consumer was the focus and, as the 21st century arrived, the representative technologies were GSM, D-AMPS, CDMA, PDC, GPRS, HSCSD and EDGE.

1.5 Features of the U.S. electronics industry in the first decade of the 21st century

1.5.1 Digital application and domination of the new technology market

Digital application and new technology continued to dominate the market after the beginning of the 21st century, as more and more new products were developed to meet consumer requirements. Consumer interests dominated innovation and design. Technically, multimedia, software and IP communication took the lead.

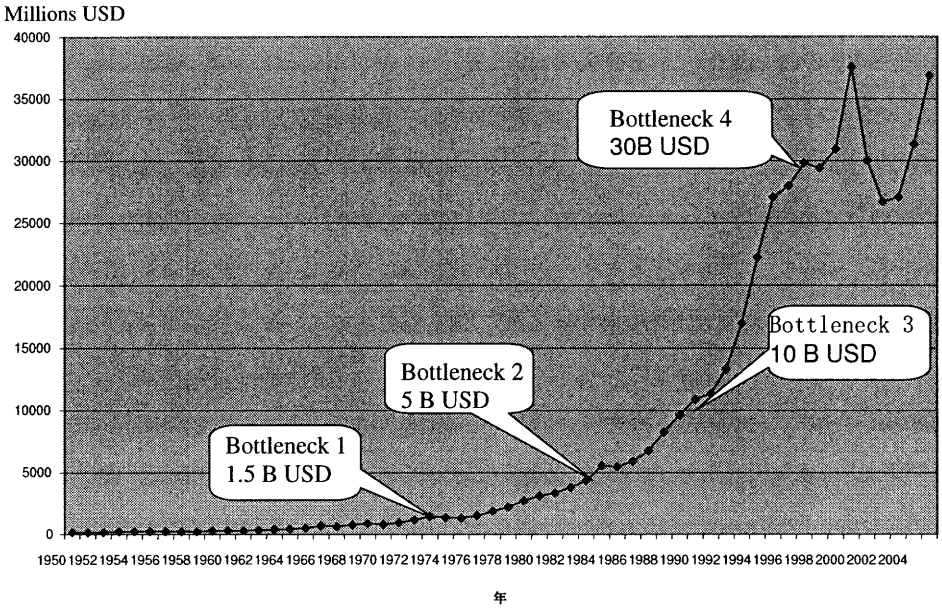
1.5.2 Cast off production and processing, R&D, content and property rights became keystones of development

Along with the globalization of the consumer market the consumer group targeted by the electronics industry was not concentrated in a single nation but, rather, was world-wide, with broad band and multimedia as the main products. American firms continued to dominate technology and the market while cast off production and processing, R&D, content and property rights became the keystones of development.

2. Development of Motorola

Looking back on the history of Motorola, it seems a miracle of revenue growth. The performance improvement in Motorola was perfect before the 21st century. Although some bottlenecks have been encountered during this rapid performance growth, Motorola overcame them and maintained high speed development. Please refer to the detailed analysis below. See Figure 2.1 Analysis of Motorola sales and bottlenecks of development

Figure 2.1 Analysis of Motorola sales and bottlenecks of development



2.1 How Motorola achieved US$1 billion sales revenue

2.1.1 Initiation of product innovation

P. Galvin and J. Galvin founded Galvin manufacturing company in Illinois in 1928. The first product was a battery eliminator, which replaced a battery with a home power supply for home broadcasting. In the following few decades Motorola saw its main lines as products concerned with automobiles and broadcasting. It is worth mentioning that Galvin Manufacturing Company adopted the trademark "Moto-rola" in line with an industry trend, in 1930. The literal meaning of the name refers to mobile sound. Then the name was officially altered to Motorola, demonstrating clearly the company's product positioning. World War II created a solid market for Motorola products. The wide application in battle of wireless broadcasting products with SCR536 portable and moveable two-way broadcasting (walkie-talkie) not only enhanced the reputation of the Motorola brand, but also laid a solid foundation for a cooperative relationship between Motorola and the American government. Abundant R&D allowed Motorola to create a series of firsts in the broadcast sphere. For instance, Motorola was responsible for the first successful commercial television, and the first FM wave band broadcasting system as well as the first moveable two-way broadcast. Motorola was the industry innovator and these inventions became key components of Motorola culture.

2.1.2 Entering the TV industry

Motorola entered the TV industry in 1947. It launched the 19 inch Astronaut TV in 1960, the first large-screen, transistorized, cordless portable television. A TV with a price lower than US$200 was introduced in 1969, demonstrating Motorola's strength and position in the Consumer Electronics industry as represented by its TV products.

2.1.3 Access to the semiconductor components market

Given its solid foundation in the electronics industry, Motorola began to enter the semiconductor component market in 1955. The high-power transistors for vehicle radio by Motorola ranked No.1 in the world as the first mass-produced semiconductor. Subsequently Motorola developed strength in its core industries of broadcast communication, consumer electronics, and semiconductors.

2.1.4 Operating in the family enterprise mode

Motorola came to the market in 1943 with control and power held by the Galvin family, so that Motorola was run with the features of a private company with R. Galvin, son of founder P. Galvin, serving as president. During his tenure some profound revolutions took place which exerted a great impact on the company's future development.

2.1.5 Pay attention to education and establish training centers for top managers

In terms of culture, Motorola attaches great importance to stimulating employees' initiatives. As early as 1943, P. Galvin shared profits with employees as a way to improve self-motivation and enthusiasm. R. Galvin set up a training center for top managers in 1969 in order to improve their administrative skills. After a couple of months it became apparent to him that the training was too limited, and should be expanded. Motorola carried out a regular Participation of Management (PMP) with the aim of improving productivity and increasing involvement of employees in management and decision-making. This participation became embedded in the company's organization, and for the last several decades it has played a significant role in Motorola's development and culture.

2.1.6 Pay attention to overseas development and expansion

Motorola attached great importance to overseas development and expansion, starting in 1967 and including Australia, Canada, France, Hong Kong, Israel, Italy, Japan, Malaysia, Mexico, Puerto Rico, South Korea, Taiwan and Britain, as well as Germany. Motorola sales exceeded US$1 billion in the early 1970s through organizational and cultural innovation and adjustment.

2.2 How Motorola achieved US$3 billion in revenue

2.2.1 Consistent input of R&D

Motorola grew steadily in the 1970s. During this period, Motorola continued to increase reliance on R&D so as to enrich the product line and enhance strategic strength. A prototype of DynaTAC moveable television phone was displayed by Motorola in 1973. The cellular technology used by this product became the basis of wireless cell phones.

2.2.2 Transfer to the computer industry and withdrawal from TV

The Japanese electronics industry grew up very rapidly in the 1970s. The American electronics industry faced unprecedented pressure from Japan's improved methods of production, reduction of costs, comparatively low labor costs and rapidly improved quality. Confronted with Japan's competitive advantages, Motorola began to change its product line. Leaders of the firm realized that consumer electronics production had been moving to Asia, and they determined to adjust Motorola's strategic direction and transfer their focus of development to computers, wireless communication, and semiconductors, where American companies were more competitive on the basis of their leading R&D and technology. To effect this strategic conversion Motorola sold its TV business to Japanese manufacturer Matsushita in 1974.

2.2.3 Continue to enhance employee training

Regarding corporate culture, Motorola continued to enhance training. R. Galvin asked the HR department to prepare a detailed five-year training program for each level, and officially established the Motorola Training and Education Center within headquarters in 1979. Turnover of the company surpassed US$3 billion in 1980, with another step forward.

2.3 How Motorola achieved US$5 billion in revenue

2.3.1 Steady input of R&D

After turnover reached US$3 billion, Motorola continued to introduce new technologies and products. The communication equipment sold to the government for Voyager 1 sent pictures back from Saturn, one billion miles away. Meanwhile Motorola invented the first computerized and electrical engine control system and reduced fuel consumption and exhaust emission. The automobile industry became the first big market for Motorola's microprocessor.

2.3.2 Creation of the mobile phone market

Motorola DynaTAC launched the first commercial cell phone, with a weight of 23 ounces, in 1983 and consumers began to purchase them in 1984. The enormous significance of wireless cell phones' entry into the consumer market, strongly demonstrated the advantages of Motorola in this field.

2.3.3 Quality improvement conducted across the board

In the light of Motorola's strategic model, competition from Japan, and industry innovation, R. Galvin began to transfer the company's attention to production level and enterprise reform after revenues reached A US$3 billion. During PMP (Participating Management Program) in 1980, R. Galvin proposed that product quality be improved ten-fold by 1985. R. Galvin issued an internal memorandum depicting a reform program for company management, with the aim of shaping each department independently to meet customers' requirements. Organization Effective Project (OEP), as originally planned, was adjusted to Organization and Management Development Review. Although employees questioned the program a lot at the beginning, it approved Galvin's far-reaching insight by eventually producing effective results.

The requirements in quality and the reform of departments laid a solid foundation for the future development of Motorola. Sales went beyond US$5 billion in 1984.

2.4 How Motorola achieved US$10 billion revenue

2.4.1 Sustained input from R&D and creation of new products

In the mid-1980s Motorola sales reached US$5 billion. Motorola set up an advanced and automatic paging system in Florida in 1984, based on the consumer communication market. Bravo digital paper was introduced in 1985 and became the best-selling product because of its functionality. Cabinet Micro-Tac was one of the best-selling products all over the world in 1989.

2.4.2 Industry turns to high-tech communication and semiconductor spheres

Based on changes in the market, Motorola once again underwent a basic structural adjustment. It halted business in car radio, display, and manufacture of most electrical equipment, focusing instead on high-tech communications and semiconductors, thereby enhancing the company's strength and power in these key industries in 1987. Meanwhile, Motorola was faced with a training phase for a new generation of leaders. Fisher became CEO, Tooker served as president, and C. Galvin, the third generation of the Galvin family, assumed the office of Senior Vice President.

2.4.3 Consistently improve quality and introduce 6-Sigma management methodology

Management focus was transferred to quality. Motorola came up with the 6-Sigma movement during this period, and it became the company's formal strategy in 1986. Along with quality improvement priority was given to efficiency as well. New criteria for quality required that the quality of all production units must be improved ten-fold in 1989 and again in 1991; the goal of 6-Sigma must be achieved by 1992, in other words the product error rate cannot go beyond 3ppm. The production and non-production procedure cycle must be shortened ten times with five years. Overall quality management continued to be emphasized in 1988, 10% of the annual sales amount was used for R&D, and more than US$100 million was invested in maintaining Motorola's leading technology in engineering. It is worth mentioning that, if Motorola is representative, Japanese enterprises have exerted a profound impact on American corporations.

2.4.4 Meeting the requirements of customers across the board

In order to adapt to a new corporate culture, Motorola changed its original PMP and updated it with a Total Customer Satisfaction program which fully demonstrated the company's pursuit of customer satisfaction and providing total customer solutions. Employee competitions were held for

ideas to improve customer service. These competitions were popular and reinforced the corporate philosophy.

2.4.5 Establish Motorola University

Concurrent with these changes was ongoing updating of employee training. In 1985 CEO R. Galvin approved the controversial Motorola Training and Education Center (MTEC) and prepared a special fund of US$35 million for sharpening the skills of employees. He requested that every employee be trained for at least 40 hours in 1987. MTEC was renamed Motorola University and began to teach employees. Motorola University differed from other training programs in that it possessed formal curricula and lecturers and offered professional fulltime/part time, short-term/long-term training in administration and technology.

2.4.6 Focus on the Asian market

In terms of overseas business, Motorola began to focus on the ever-prosperous Asian market. In 1984 it arranged for senior management staff to study business opportunities in Asia with the theme "Yesterday, today and tomorrow in Asia," so as to uncover opportunities to develop business and to set up low cost production. Motorola set up a representative office in Beijing in 1987 and began to sell pagers and other communication products. Because fixed phones and mobile phones were not prevalent at that time the pager provided Motorola with an opportunity for development and a way quickly to open up the Chinese market. The campus upheavals, which occurred in China in 1989, drove away a log of foreign investors. Motorola, however, stayed because of its farsighted vision in Asia and China, the company enhanced its relationship with the Chinese government and market. During a series of reforming storms which profoundly influenced the company, Motorola sales surpassed US$10 billion in 1990 with another key step forward.

2.5 How Motorola achieved US$30 billion

2.5.1 Meet the digital era

Motorola's revenues surpassed US$10 billion in the 1990s and continued to introduce key industry products. Standards of the first digital HD TV technology were introduced by Motorola in 1990, and the first workable GSM system and mobile phone prototype in 1991. In 1994 Motorola introduced the first

iDEN digital radio with multiple functions to integrate paging, data and cellular in one signal system, and the cell phone was introduced in 1994. In 1995 Motorola launched the Tango two-way paging system through which customers can transmit text and email and can be connected with a computer for a data download. The smallest and lightest cell phone originated in 1996. Motorola and Cisco worked together to introduce the first commercial GPRS system applied in Motorola's Timeport P7389i cell phone in 2000. Meanwhile, the first 700MHz broad band high-speed system was tested by Motorola. All of these successful technologies and products steadily enhanced Motorola's market performance and competitiveness.

2.5.2 Business conformity, more focus and all-around separation of rights

Facing an ever-changing and evolving industry, Motorola was restructured as eight divisions: semiconductor, universal systems, multimedia communication, information and multimedia, mobile devices, government, systematic science and technology, automobile, energy and controls. Each division has a certain independent right of self-determination under the Total Customer Satisfaction program. Tooker assumed the responsibility of CEO in 1993.

2.5.3 Establish R&D center in Asia and improve R&D competitiveness

With regard to international progress, Motorola established a Chinese R&D center in Beijing in 1999 and invested heavily in R&D. Motorola founded 18 R&D centers in China before 2000 and set up plants for silicon semiconductor chip manufacturing. Accompanying vigorous international development of semiconductor manufacture, Motorola's revenues achieved US$37.6 billion by 2000.

2.5.4 Need for organizational reform caused by the low efficiency of top decision-makers

In the following few years, however, cultural and organizational innovation did not change with profound outside influences, and as a result the company was stricken in the market The chip business and communication network equipment made the company feel even more pressured. While maintaining an equal footing with Intel in microprocessors, Motorola had dropped out of the leading position in semiconductors. Motorola was excluded from the chip manufacturing industry. And Motorola no longer held the lead in the basic wireless facility area, while Ericsson occupied the number one position despite Motorola's invention of the GSM and GPRS technologies in the cell phone

business. The company was beaten by latecomers to the industry due to a failure to grasp industry's technological orientation. As a result, revenue at Motorola fluctuated a couple of years after 2000.

Facing more and more severe situations, the company was determined to carry out grand reforms. E. Zander took over as chairman and CEO and introduced restructuring. He introduced the "seamless motion" strategy, directed the company to emphasize design. Though opportunities were lost during the arrival of the digital era, Motorola intensified its effort to catch up. In order to achieve Zander's proposed objectives, Motorola began to work on a series of actions for defining brand individuality. In addition, E. Zander came up with eight driving forces: achieve sustainable and rapid development; increase cash flow; innovate incessantly in order to satisfy customers; boost market share; increase profit; conduct global development; enhance brand reputation; realize end-to-end seamless motion.

In 2005 Zander conducted a profound business restructuring , resizing and integrating the original five SBUs into four industry groups: Individual Communication Equipment Department, Communication Network Department, Government and Enterprise SBU, and Home Network Department.

The effect of these reforms can be seen in recent years. The first cell phone with PDA functionality, the Motorola A760, was introduced in 2003. MOTORAZR V3, with its novel design, became the best-selling product in 2004 and sales returned to more than US$35 billion, thanks to a series of successful products launched in 2005.

3. Motorola's internationalization process

Viewing the development of Motorola in the last 100 years, internationalization is one of the key reasons for the company's success. In this process, Motorola accomplished three major stages as described below.

The first stage: taking 1967 as the jumping-off point for overseas business expansion, Motorola developed in a number of countries including Australia, Canada, France, Hong Kong, Israel, Italy, Japan, Malaysia, Mexico, Puerto Rico, South Korea, Taiwan and Britain, as well as Germany at the end of the 1960s. The main feature of this stage: give priority to a proactive market and business expansion.

The second stage resulted from the growing success of Japanese electronics in the 1970s, when Motorola felt heavy pressure from the cost and quality of Japanese products and began to reform its own internationalization in the Japanese manner. With the 6-Sigma movement, and its ten-fold product cycle improvement movement as examples, it is apparent that Motorola absorbed the essential foundation of Japanese success.

In the third stage Motorola initiated sending managers to study business opportunities in Asia. Motorola internationalization entered another level in this phase, i.e. setting up manufacturing and R&D abroad. Along with the development of globalization, overseas business not only provided a huge potential market, but also better cost-cutting opportunities through a cheap labor force and favorable government policies. Motorola transferred a lot of core business and even R&D, particularly to China. This provided support both for penetrating the local market, and the rest of the world.

4. Features of Motorola HR strategy

Regarding HR, Motorola attaches great importance to cultivating and respecting employees. The following are some of the policy features:

4.1 Continuously emphasize the spirit of innovation

The spirit of innovation is stressed incessantly, making each employee feel excited and proud of working in a world-leading corporation. Historically, Motorola has created many inventions and innovations and this record of achievement attracts talent from outside and motivates existing staff.

4.2 Respect employees and value greatly those who make outstanding contributions

Since the day when the company was established, respect for employees has been the core of talent policy at Motorola. When the company was listed in 1943, P. Galvin set a profit-sharing plan for employees to foster motivation and enthusiasm. During the following several decades, Motorola's unwavering policy has been to put a premium on talented employees who made contributions to the company's development.

4.3 Offer wide and ongoing training for employees

From top managers' training to an ongoing training center, programs range from five years to 40-hour compulsory training up to Motorola University, the company firmly holds to the principle that constant training and enhancement for employees is one of the most effective means to maintain innovative capability and improve operational efficiency. Meanwhile, effective training is considered a key measure in utilizing talent.

Figure 2.2 time table of ongoing training

1969	Motorola Managers Education Institute (MEI)
1979	Robert Galvin established five-year training program and MTEC
1985	Set up Galvin continual training center
1987	Each employee was required to complete 40 hours' training
1988	Total quality initiatives
1989	Motorola University

Employees are encouraged to generate proposals for management reorganization. Motorola realized quite early the importance of employee motivation. From management participation to the Total Customer Satisfaction program movement, Motorola always aims to stimulate creativity and enthusiasm for the benefit of the company.

Figure 2.3 Management Program

1970	Participation of management Program (PMP)
1983	Robert Galvin called for management reform through OMDR
1989	Total Customer Satisfaction (TCS)

Case Study 3: Toshiba and the Japanese Electronic Industry[14].

Established in 1875, Toshiba, by its own estimate, is the world leader in high technology. As a diversified manufacturer and marketer of advanced electronic and electrical products, the company spans information and communications equipment and systems, Internet-based solutions and services, electronic components and materials, power systems, industrial and social infrastructure systems, and household appliances. The company is ranked 87th in the Fortune global 500, with annual revenues of over US$56 billion.

At present, Toshiba Group has 750 companies worldwide, with over 170,000 employees. Headquartered in Japan, it has established regional headquarters in America, Europe, Asia-Pacific and China, as well as manufacturing, R&D and distribution branches all over the world.

This year Toshiba has deployed a three-year plan, running to the fiscal year 2010. Under the plan the company is channeling significant resources into key businesses that will sustain growth and add to profitability. This strategy can be seen in capital investments in new semiconductor facilities, particularly for NAND flash memory, the commitment to building a global presence in the nuclear power business, and the drive for leadership in the AV market through products such as HD DVD and the next-generation display, SED.

As one of the industrial companies with the longest history, Toshiba Group is following its advanced business philosophy and taking aim at the future.

1. Development of Japanese industry

1.1 Characteristics of Japanese industry before and during the 1970s

1.1.1 Strong support by government for enterprises

From 1951 to 1953 Japan had exchanged mint foreign currency of US$2.47 billion (accounting for 40% of foreign currency income at that time) for arms and ammunition. 200,000 people were employed in manufacturing military supplies. Foreign currency-exchanged materials and fuels stimulated fast

[14] I appreciate the contributions to the research for this case study by Dongyu Zhao, Taylor Wu and Schneh Wan.

development of the Japanese economy. In the 1950s Toshiba set up a strategy of becoming an economic giant. In 1957 Japan advanced the *economic diplomacy* slogan, intending to serve its commercial enterprises through diplomatic channels.

A shareholder-controlled, monopoly-oriented economic system brought about Japan's fast post-war growth. The main features are:

- Low-pay and low-dividends result in accumulation of capital, and provide strong support for equipment investment.
- Tax policies favor business, especially large enterprises.
- Financial services favored business, especially large enterprises.
- Excessive loans from the bank system, and a serial loan system, meant that bank loans and security investments exceeded deposits and freed up capital. In 1957-1958 and in 1960-1964 the ratio of loans to deposits in the Japanese city banks exceeded 100%, and in 1957 reached 107%.
- Low spending and high deposit was the pattern for personal and family expenditure, leading to the mechanism of high savings—high bank loans—high investment in enterprises.

1.1.2 The notable effect of technological advancement

Share-holder control has freed business from the bondage of short-term share price and dividend benefits imposed by shareholders, thereby enabling enterprises to focus on long-term production and management strategies and to target new technology and new product development. A lifelong employment system relieved the pressure on workers generated by technological advancement and productivity improvement. Labor's resistance to technological advancement was weakened and a sense of participation in innovation was enhanced.

Business has benefited from the rapid development of government research institutions. The state treasury funded a lot of research for civilian research institutions. The government has strongly promoted an educated workforce, creating conditions necessary for the business' technical advancement.

From the 1950s to the 1970s, industrial structure was optimized, which was reflected in three successes: 1) industrialized heavy industries; 2) building large-scale enterprises; 3) a high concentration of capital and technology.

1.1.3 Conglomerates formed through bonds such as mutual shareholding, loans, and mutual appointment of senior managers

Japanese monopolized industrial organization consists of three levels: 1) The bottom level: large enterprises control numerous small and medium-sized companies through multiple level contractual relationships. 2) The middle level where large enterprises are combined into conglomerates through bonds such as mutual shareholding, a variety of loans, and mutual appointment of senior managers. 3) The top level: the financial society consisting of the heads of large enterprises and conglomerates, this level refers mainly to Keidanren (Federation of Economic Organizations), Nikkeiren (Japanese Federation of Employers' Associations), Keizai Doyukai (Japan Association of Corporate Executives) and Nisho (the Japanese Chamber of Commerce and Industry), the so-called four organizations of financial society. These four organizations hold the balance of the macro economy of the whole of Japan: on one hand, they regulate relations among the conglomerates, series, and monopolized enterprises, and between monopolized enterprises and small and medium-sized companies, and they also control various economic interests. On the other hand, the four organizations deal with the Japanese government in behalf of the whole of industrialized society. They not only play an important role in the writing and implementation of the government's macro economic policies, but they also directly influence political structure and the change in governments to a certain extent.[15]

1.1.4 A labor-intensive and export-oriented economy

Through industrial restructuring the proportion of heavy industry and chemical industry has increased from 44% in 1955 to 63.7% in 1965, with a 19.7% rise in ten years. This change transformed Japan into a resource-consuming and pollution-creating industrial structure. Meanwhile, due to an export-oriented economy, Japan became the world's number one consumer of resources. Statistics show that for every US$1000 GDP Japan needed to consume US$76 in resources, while the average was US$ 40-50 and Germany uses US$60. In this period Japanese industries were mainly labor-intensive.

[15] Dongliang, Yang, "A study on Japanese Economic Policies in the Post-war Period, and on Economic System Reform"

By the end of the 1960s the GNP of Japan exceeded that of the U.K. and Federal Germany, and Japan became the third economic giant after the U.S and the Soviet Union.

1.2 Features of Japanese industries in the 1980s

1.2.1 Transition to technology-intensive industry

After the late 1960s Japanese industry entered a new era. Demand for electronics and home consumables, such as TV sets, washing machines, and refrigerators, had increased rapidly, and the export of timekeepers, precision instruments and computers has continuously grown. Japanese industry has clearly transferred from labor-intensive to technology/knowledge-intensive. In the 1980s the strategy of *building the nation with technology* had been put forward in Japan. Generally, technology-intensive industries have such features as rapid development, complicated process, high technology, less material consumption, low cost, high production values and little pollution. In short, technology-intensive industries make money with knowledge and technology.

In the process of transition, technology needed to be further advanced and many new activities developed, such as antipollution, information processing, labor-saving machinery, space navigation industry, atomic energy development, ocean development, solar energy and geothermal exploration.

1.2.2 The government guides economic operations

Facing a yen appreciation depression, the Japanese government put forward a policy to shift to economic growth oriented toward internal demand. The interest rates had been lowered five times from 5% in 1985 to 2.5% after March 1987. But the growth of the Japanese economy under its original industrial structure tended to saturation; industries could hardly absorb the rapidly increased money supply. Driven by obsession with land and benefit anticipation, a lot of capital flowed into shares and real estate, and therefore a very serious bubble economy formed.

1.2.3 Transition to an economy based on quality and efficiency

1.3 Features of Japanese industries in the 1990s

From 1991 to 1997 the average growth rate of Japan's GDP was only 1.5%, obviously lower than the 2.3% average in other developed countries. Japan's legally monopolized economy relied on basic economic factors, determined by unique characteristics and the high level of social productivity which developed in Japan in the 1950s – 1960s. But after the end of the period of fast growth, especially in 1990, there was a profound change in all the basic economic factors which had previously played an effective role in forming the Japanese economy.

1.3.1 From follower to leader

Through fast economic growth Japan chased capitalist countries at high speed in order to improve its lagging and unfavorable position in the world economy. Meanwhile, the fast growth of the 1950s and 1960s speeded up modernization. By the end of the 1960s and the early 1970s, when fast economic growth ended, the modernization process had mostly been completed and Japan had become the second largest economic giant, by GDP, second only to the US in the capitalist world.

1.3.2 From expansion of scale to expansion of quality and efficiency

The fast growth period mostly affected expansion of scale. It was mainly reflected in pursuit of size expansion to ensure speed of growth, increase in capital investment and technology, and increase in product quantity to demonstrate scale superiority. In the 1980s and 1990s Japan speeded up conversion to the pursuit of quality and efficiency.

1.3.3 Merger and acquisition became the trend

After entering the 1990s, a new high tide of merger and acquisition swept the world. Under these circumstances, more and more mergers and acquisitions took place, speeding up restructuring of industrial groups and having a huge impact on the original industrial groups. The average number of mergers and acquisitions in Japan was 1142 in the 1980s, jumping to 2079 in the 1990s.

Since the 1990s major reforms had been made in the design of employment and compensation systems. These changes were mainly expressed as an active search for outside talent while paying attention to internal labor flow, reducing long-term employment contracts, and especially reduction in the number of formal employees enjoying lifetime employment status. The possibility of dismissal is

enlarged to include not only informal employees but also formal employees, and even management. The ability-oriented principle is introduced and strengthened in the compensation system.

1.3.4 "Lifetime employment," seniority," and "corporate trade union" appear in Japanese HR strategy

The Japanese business model, with its glorious core elements—lifetime employment, seniority, and enterprise-internal trade unions—played an important role in the 1950s to the 1970s. These features were due to a certain economic environment. Japan was in a fast development period at that time. Most enterprises adopted a shareholder monopolization system and the legal person as the symbol of financial society directly influenced various Japanese policies. Hence, this system and the former planned economy in China had, more or less, the same result by different methods. The employee lifetime employment in Japan was similar to "iron bowls" (lifelong jobs) in China at that time.

Obviously, in the general trend to market economy and internationalization, the Japanese operation, with the so-called "three mysterious implements" as its core, no longer adapts to its environment and the implements become fetters to bind efficiency and improvement in Japanese business. According to statistics by the Japanese Productivity Center, Japanese companies would need to cut 39% of their headquarters staff if they were to compete with American companies. Japanese middle level managers had become a burden on their companies.

The lifetime employment system played an active role in a specific historical period, though we heard much about abuses of the "iron bowls." Everything is two-edged, and we should explore the question of how to balance the positive and negative effects of any policy, and how to allow enterprises to develop steadily.

2. Development of Toshiba

2.1 Early Toshiba

2.1.1 Formation of early Toshiba

Toshiba began as the confluence of two corporate streams, both of which rose in the heady days of the late 1800s, in the modernization of Meiji Japan.

Tanaka Seizo-sho (Tanaka Engineering Works) was established in 1875 as Japan's first manufacturer of telegraphic equipment. Its founder, Hisashige Tanaka (1799-1881), was well-known from his youth for inventions, including mechanical dolls and a perpetual clock. Under the name Shibaura Seisaku-sho (Shibaura Engineering Works), his company became one of Japan's largest manufacturers of heavy electrical apparatus. In 1890, Hakunetsu-sha & Co., Ltd. was established as Japan's first plant for electric incandescent lamps. Subsequent diversification brought the company into the consumer products industry. In 1899 the company was renamed Tokyo Denki (Tokyo Electric Co.).

In 1939 these two companies, leaders in their respective fields, merged into an integrated electric equipment manufacturer, Tokyo Shibaura Denki (Tokyo Shibaura Electric Co., Ltd.) The company was soon well known as "Toshiba," which became its official name in 1978.

2.1.2 Focused on technology

In the first few decades after establishment of the two companies their founders had reached a series of great achievements in the invention and innovation in heavy electric equipment and home appliances: they had created the first filament lamps in Japan, the first turbine generator (60kW), the first electrical washing machines and refrigerators, and the first transistor TVs in Japan, and even in the world. This enthusiasm and drive for technology and invention have been inherited and carried forward for over 100 years of company history. Technical innovation is the engine of Toshiba's development.

2.1.3 The government's strong support

Toshiba has obtained great support from the government in its growth process, including both pre- and post-war technical cooperation, and licensing agreements with General Electric of the U.S.

2.1.4 Toshiba's early stage reforms

In 1949 Ishizaka agreed to be Toshiba's president during a time of labor troubles: strikes and other labor actions were shaking the struggling company. Ishizaka stepped in and created a proposal in four phases:

- Restructuring the organization and labor roster;
- Reforming the structure of the company's leadership, expelling incompetent executives;

- Kicking off a funding plan with clear accounting;
- Negotiating with GE for technical support.

2.1.5 Focused on the "white goods" appliance business

Home appliances are one of those honored "legacy businesses." In 1930 Toshiba made the country's first electric refrigerator. Today the company's refrigerators dominate Japan's ten billion-dollar white goods appliance industry, placing at the top with a 20% share and almost a million units sold every year. The brand is also number one in vacuum cleaners and irons, either number one or two, depending on the year, and second in microwave ovens.[16]

2.1.6 Developing the company's own know-how

In 1965, Toshi Doko became Toshiba's president, and moved the company towards a merit system which gave more importance to job performance. And it was he who said that Toshiba must not rely on foreign technology but develop its own know-how.

In the 1960s and 1970s, a different kind of market stimulus—the corporate presence of IBM in Japan—stirred the Ministry of International Trade and Industry to organize Japan's largest electrical/electronics firms (Fujitsu, Hitachi, NEC, Toshiba, Mitsubishi Electric, Oki Electric) as an impromptu R&D and product development group, to try to compete against the American giant. The government would finance a majority percentage of the research cost needed to build Japanese computers.

2.2 How did Toshiba reach US$30 billion in revenue?

2.2.1 Focused on information and communications segments

In 1980, the Japan land bubble, a speculative maelstrom that infected the entire national economy, permitted companies like Toshiba to raise capital very easily in the stock and other securities markets, and to borrow huge sums outright from the main banks. It was this cash, invested in chip plants, allowed Toshiba to leverage itself to number one overall in the world.

[16]Cutts, "Toshiba: Defining a New Tomorrow"

When Shoichi Saba became president in 1980 he invested heavily in Toshiba's information and communications segments. The company became the first in the world to produce the powerful one megabit DRAM chip. That year, also, Toshiba unveiled its first portable PC. By 1987 Toshiba emerged as the number one producer of DRAMs, with 45% of the global market.

But in 1987 Toshiba incurred the wrath of the U.S. government. A subsidiary sold sound deadening equipment to the USSR, resulting in threats of U.S. sanctions and a precipitous decline in stock prices and U.S sales. It was called the "COCOM" incident.

2.2.2 "The Toshiba event:" in which the company was punished for breaching the COCOM list

The Coordinating Committee is an institution with which Western countries implement economic and technical blockades and embargos against communist countries. This organization has absolute power of decision for its member countries' trade with communist countries. It may specify what goods shall be under embargo for communist countries. Without its permission the goods permits for communist countries will not be issued. On the surface the organization is not responsible to any country, but in fact it is influenced and overruled by the U.S. As stipulated by the U.S. "Butler Law," if any member country violates the COCOM list, it will be punished, and the U.S. will stop economic and military aid. For more than the past 40 years the U.S. has controlled COCOM and destroyed normal international trade. This has harmed not only communist countries, but also the economic interests of businessmen in America and other member countries. The "Toshiba event" was one of the examples of American influence on COCOM.

On April 24, 1981, Toshiba Machinery Corporation and the Soviet Union signed a contract to export a 9-shaft NC press to the Soviet Union. A 9-shaft press was embargoed goods according to COCOM, which stipulates that only 2-shaft presses could be exported to communist countries. More shafts support higher performance, creating complicated parts with high precision. In August of that year Toshiba Machinery Corporation had obtained an export permit and began the process of exporting the press to the Soviet Union. In December 1985 Hitori Kumagai, a former staff member of WAKO Trade co., Ltd., Japan wrote to the head office of COCOM to expose the matter. In June, 1986, the U.S. presented a note to Japan asking for an investigation. Japan tried to skimp, in the national interest, and replied "No fact of breach." But in December of that year the U.S. again presented a note to Japan and threatened Japan by stressing that a 9-shaft press is a national defense matter. In March, 1987, Japan investigated the matter again. In April Toshiba was accused, two people were arrested and some houses

were searched. On May 13 Japan imposed a punishment on Toshiba to stop its export to communist countries for one year. The manager of Toshiba Machinery Corporation and two senior principals of Toshiba Corporation had to resign. The U.S. was still not satisfied. On June 30 the Senate passed a resolution to apply economic sanctions on Toshiba. It was decided that for two to five years no product was allowed to be exported by Toshiba to the US[17]. The punishment imposed by the Japanese government on Toshiba to stop its exports to communist countries for one year had affected contracts, valued at 2.4 billion yen, signed between China and Toshiba corporations. In reply, the principal of the Chinese Ministry of Foreign Economic Relations and Trade made a statement to the press and demanded reparation for economic loss by Japan. This action of the U.S. had not only had an impact on a Toshiba corporation, but also created invisible political pressure on other Japanese companies, and companies in Western countries that are willing to develop business with communist countries.

2.2.3 Attention to international affairs

From the COCOM incident, Toshiba learned that international relations were something more than a matter of trade relations. In fact these matters were a growing concern for corporate governance. Saba, after he had resigned and become a Toshiba advisor years earlier, had the idea of creating a panel of international advisors, which gathered twice a year with Toshiba executives to discuss "international affairs." Toshiba also completed a new code of conduct. Nishimuro expanded the department of statutory auditors, established as a requirement under the Japanese commercial code for all corporations, and charged them with certifying that all terms of all contractual agreements by Toshiba subsidiaries, as well as the parent company, are thoroughly vetted.

2.3 How did Toshiba reach US$40 billion in revenue?

In 1991-1992 Toshiba became the number one company in PCs in the U.S, above Compaq. And by launching a completely new product, with an Intel 486 processor and a full-color thin-film transistor display screen on a portable PC, Toshiba regained its number one share in the United States, and kept it for five straight years. In the same year they also became number one globally in portable computers—a position they have not lost since.

2.4 How did Toshiba reach US$45 billion in revenue?

[17] Cutts, "Toshiba: Defining a new Tomorrow"

2.4.1 The globalization process

In 1996 Nishimuro, the president of Toshiba, redirected the company's globalization process by the following actions:

- Began to cleave away whole product sectors;
- Cut Toshiba's main business groups from fifteen to eight (presently ten), along with sharply defining business lines to get as close an alignment as possible between Toshiba's experts and customers and free their leadership up from the bureaucratic morass of the dense corporate headquarters structure.
- Brought in the executive-officer system to lead ten operations, making them all separate "in-house" companies and making their officers and mid-level managers directly responsible for performance, so that both could be judged on profit and loss results every year.
- Reduced the board of directors from 34 to 12 (presently 13), tearing down whole areas of ceremonial court pageantry (all 34 board members were salaried Toshiba executives) and focusing on managing every minute, getting the products out and the profits in.
- Set new and startlingly high goals for corporate return-on-equity and shareholder value, the better to attract capital from investors around the world.

2.4.2 Training

In the mid-1990s Toshiba began to give managerial courses to local staffers in Malaysia, Singapore, Thailand, the Philippines and China. And now with 16,800 local employees staffing 47 subsidiaries in nine Asian countries, Toshiba gives managerial training to about 1200 persons a year.

A pan-European management level two training program was begun in 1998, held once a year for senior managers with five or more years of experience with Toshiba. The goal is to disseminate awareness among all personnel of how business planning runs for all of Europe, not just for individual countries.

2.5 How did Toshiba reach US$50 billion in revenue?

After the reform of the corporate structure, which created ten in-house companies, all with the independence to pursue their core businesses along their own lines, Toshiba laid down some essential guidelines in its mid-term business plan:

- The new companies were told to grow and increase corporate value, not by acting in isolation but by employing the skills and technologies of sister companies. The results would be measured by use of the new metric, "Toshiba value created," which would measure capital returns against the cost of capital.
- Toshiba would re-orient itself and its management plans by moving as close as possible to the market.
- Toshiba would focus its resources on information technology, announcing a plan for US$1.2 billion-worth of research and development outlays over the next three years, with 70% of it aimed at IT fields.
- Strengthen the profits earned by the "legacy" business of Toshiba, that is the non-IT areas such as heavy electrical machinery, infrastructure systems like water and power grids, and home appliances.

Meanwhile, Toshiba was working hard to install MI 2001 (Management Innovation 2001) systems, introducing 6-Sigma organizational tools with which all of Toshiba must comply.

In addition, Toshiba's chiefs also proposed:

- To create new business models. An integrator model would lead to an even more open business structure, relying more on outside suppliers and partners and less on Toshiba in-house production.
- To reduce corporate debts by US$4.5 billion by March 2004, with US$1.5 billion coming from divestiture of unprofitable businesses and reorganization of affiliates, and US$3 billion from financial securitization strategies.
- To reduce procurement costs by US$1.5 billion, 20%, over the next two years through standardization and joint-venture buying operations.
- To reduce worldwide employment by 20,000.
- To liquidate within the 2003 fiscal year 8 billion yen worth of assets.

Okamura, president since June 2000, interprets, and where necessary reconstructs, the new managerial plans to shape them into third millennium business terms for his senior and mid-level executives.

- Use your best competitors and their technological resources available to improve your products and give yourself the market edge.
- Use technology to give customers exactly what they want, not what you think they should want. Listen, listen, and listen to their voices.
- And plan and invest for a future you cannot even see today, for it will be here, with all its opportunities, soon enough.

Okamura sees the three pillars of Toshiba's business, from now on, as three distinct domains: industry and society, the individual, and components of high technology. And to balance all this on the high-wire of an 188,000-staff company, three models for business strategies were defined:

- Innovator type, where the company invents and brings to market epoch-making new products with excellent margins.
- Integrator model, where Toshiba's strong core of competencies and patents can be used in partnership with other firms.
- Platform-type, in which Toshiba furnishes, under proprietary contract or on the open market, its high-quality manufactures for any industrial customer to buy and use as components in anything it wants.

In April 2000, iValue Creation Company was launched as Toshiba's in-house company to explore ways to enter the business of information services that would be offered on mobile devices. A full-dimension mobile commerce is the model.

In 2001, the president of Toshiba's mobile communications company said that "digital, mobile, and network are the key words for the new Toshiba; it's all based on the IT revolution." The reasons are:

- Toshiba has not been able to become a bigger player in its own home market.
- Toshiba has skyrocketed in its production of handsets, doubling the total from four million to eight million just from 1998 to 2000.
- The global market, thought it may seem to be saturated already, really isn't.

- Most important, a new technology—3G will completely enable digital, mobile, and network communications.

In August 2001, Toshiba announced the reduction of its production capacity at its Yokkaichi DRAM operations plant, cutting capacity in a single stroke from 25 to 20 million chips per month. And it all happened less than a year after Toshiba had drawn up a budget for 170 billion yen more investment in the chip business, so promising had the future for IT looked back in mid-2000.

Beginning in late 2001, Toshiba Semiconductor Company switched to a new plan for basic supply-chain management, called Global One System.

Toshiba in 2002 suffered a big loss. In 2001, Toshiba had announced that the semiconductor commodity DRAMs, a horrible loss-maker, would be sold to Micron Technology of the United States. Liquid Crystal Display screens, for portable computers, cell phones, and the like, would be turned into a co-venture with Matsushita Electric Industrial.

In 1960, 12% of its business was information and communications systems and electronic devices—the forerunners of the digital age. By 1980, those products were a quarter of Toshiba's business, and by 1990 they were more than half. In 2000, IT products constituted 82% of Toshiba's business by net sales.

3. Toshiba's industrial restructuring

The preceding study of Japanese industries and Toshiba's development history illustrates the evolution of a representative Japanese electronics enterprise. Responding to the economic and industrial environment, Toshiba has experienced several major reforms. Each reform had its different focus and brought about a large change in industrial operations. (See Figure 3.1 below)

Figure 3.1 Toshiba's several major reforms

Period	Features of Japanese industries	Major industries	Major reform	Digital Product %
60 & 70	Government support; Labor intensive; Scale expansion type;	Home appliances	Leadership reform	12%
1980	Technology intensive	PC	Technology reform	25%
1990	Quality expansion type; Enterprise mergers & acquisitions;	DRAM Chip & Portable PC	Structure reform	50%
2000	IT revolution	Digital, mobile & network	Management, Organizational & HR reform	82%

The industrial focus and cultural reform had different themes in different years:

Industrial focus:

1996 DVD and Beyond—Toshiba and the Multimedia Era

2000 IT—a Driver of Growth

2006 Acquisition of Westinghouse—the opening of a new era for the world's nuclear energy business

Cultural reform:

1996 Advanced I—project harnessing the diverse skills essential to shaping multimedia products

2000 Molding an Inter-Company Value Chain

2006 Corporate Social Responsibility (CSR) management

Guided by its strategy of achieving high growth with steady profitability, Toshiba has set its mid-term plan and vision for 2010, aiming for net sales of $90 billion and operating income of $5.4 billion (6% of revenue).

Case Study 4: LG and the Electronics Industry of Korea[18].

LG Electronics Inc. has a 50 years' illustrious history, and has become a global company leading industry development in the world. It has reached US$73 billion in annual sales revenue, and has 120,000 employees around the world. Now it has established over 300 overseas subsidiaries in 171 countries and its business covers the chemical and energy industries, electrical and electronics, mechanical, metal, trading service, and non-profit activity.

LG Group invests 5% of its total revenue in science and technology research and development, and continues to enhance its technology through the establishment of R&D offices overseas. Now it has established 31 research centers in 6 countries: in Chicago, San Jose, San Diego in America, Sendai in Japan and Dublin in Ireland. All these centers use their cutting edge experiments to initiate various kinds of research activities with the goal of improving the company's products and bringing them early to market.

The LG Group invests heavily globally to establish strategic alliances with other leading corporations, sharing cutting-edge technological information through interactive IT. The company establishes research, manufacturing and sales systems to implement the localization of operations, providing customers with fast and excellent products and services. The maturing of LG represents the strength of Asia, a strength based on the culture of Confucius.

1. Development of the electronics industry in Korea

1.1 The transition from an agricultural economy to an industrial economy (1960-1969)

The Korean economy shrank as a result of the wars. As an agricultural country, Korea's GDP per capita was only US$80 during the 1960s. In the early 1960s, General Park Chung Hee led a series of five-year plans directing Korean private enterprise to achieve the economic and societal goals set by the government.

1.2 Corporate empires obtained Government Support (1970-1979)

[18] I appreciate the contributions to the research for this case study by Jing Gu and Feng Xu.

The Korean government continued to advocate the implementation of the next five-year plan. Some corporate empires have arisen at an historic moment. The government expected that the companies would consider low-cost labor and skillfully trained employees as their core competitive advantages. During this period, major corporations such as Samsung, Daewoo, and LG set their operational targets according to the government's requirements, in order to obtain from the government strong support and assistance with taxes, loans, international trading licenses, capital expansion, and domestic market protection.

1.3 The government withdraws from domination of the economy and industrial policy (1980-1989)

In 1979 Korea began to implement its first five-year Plan. The government adjusted its economic policies, withdrawing extensively from domination of the economy and industrial policy, but still leading the overall economic operation of Korea by means of market economy methods. The government cancelled credit allowances to force companies to develop with the economic discipline of the market. It moved against monopolies in order to create fair competition among companies. Through tariff reduction, the government opened its local market to investors from abroad.

During this period, the Korean electronic industry regarded its competitiveness as based on a low-cost strategy. The Korean companies, however, were more and more facing competition from low costs in China and high-tech in Japan. This period was, therefore, the point in Korea which divided the low-cost strategy from the value strategy.

1.4 The downturn of the market economy (1990-1999)

Korean imports decreased dramatically as a result of pay increases, appreciation of the Korean War, import quotas, anti-dumping moves, and technical barriers. Although the defense industry was driving overseas industry, the manufacturing of industrial electronic components, especially PC and wireless communication equipment, had been continuously expanding.

1.5 Development into a high value added industrial country (2000 until now)

Through restructuring and heavier investments in R&D, the Korean electronic industry recovered from the Asian financial crises; financial status and competitiveness have been improved. It was anticipated that that Korean industry would move toward high value-added manufacturing, such as the international markets of LCD, PC, printed circuit boards, semiconductors, and mobile phones. The dominant businesses with high competitive strength, and small businesses with high innovative capability, occupied the global market and earned generous profits.

2. Korean overseas investment policy

2.1 Development of Korean direct overseas investment

2.1.1 Adaptation to changes in the international economic environment (before the 1990s)

In the 12 years from the early 1970s to 1986 the target of Korean overseas investment was to adapt to the changes in the international economic environment, to maintain the existing import market, to ensure a long-term stable supply of raw materials, and to break through both tariff and non-tariff barriers obstructing indirect export via a third country. The overseas investment in this period was focused on large enterprises and the scale of investment had been expanded to some extent. In 1981-1985 there were a total of 241 overseas investment projects, valued at US$457.4 million.

2.1.2 Focused on large enterprises in relatively concentrated regions (in 1990s)

A prominent feature of Korean overseas investment was that it was in relatively concentrated regions. These regions were mainly in North America and Asia. But in the late 1980s, the range of overseas investment had gradually expanded to Africa, Oceania, and Middle and South America, while investment in China, the former Soviet Union and Eastern Europe had steadily increased. The goals of the expansion were: to avoid import restrictions, diversify the market, reduce production costs and ensure a supply of resources.

Before the 1990s Korea's overseas investment had been focused on large enterprises. The features were a concentration on international trade and labor-intensive manufactures in the early stage of development when the scale of investment could not be too large. After 1986 overseas investment on manufactures grew rapidly. By the end of 1990 manufactures and international trade made up over 70% of the overseas investment projects, and 53.4% of the overseas investment amount.

2.1.3 Direct overseas investment (after 1990s)

After the 1990s Korea's overseas investment saw some changes: 1) Both total investment and individual investments grew. 2) Distribution of overseas investment markets became diversified, while giving prominence to some key regions. 3) Shift of investment from the low end to the high end of the value chain. 4) Investment methods tended to diversify.

2.2 Various measure to encourage overseas investment

2.2.1 Credit support

The Korean import and export bank was responsible for providing financial support to those who invest overseas, including the provision of loans in foreign currencies, securities, certificates and so forth, to domestic enterprises that invest in foreign countries. In addition, the following financial aids were provided:

- Overseas business funds. When domestic enterprises need to install or expand equipment in their overseas operation, they could receive support from overseas business funds.
- Development and support funds for corporations' main resources.
- Provision of loan funds to governments of foreign countries. The Korean government could offer necessary capital support to foreign governments or foreigners.
- Provision of long-term loans to foreign companies

For foreign enterprises, operated by foreign legal persons, in which Korean residents invested, the Korean government could directly provide long-term loans to the foreign legal persons.

2.2.2 Tax shelters

To support and promote investing in foreign countries, according to the Tax Law for Legal Persons and the income Tax Law, the Korean government provides various policy supports.

- Loss reserve system for investing overseas. The core of the system is to require enterprises to accumulate reserves to prevent possible losses in overseas investment activities.
- Foreign tax deduction system.

- Foreign tax credit system.
- Exemption from dividend tax for overseas resource development.

2.2.3 To establish an overseas investment insurance program

2.2.4 To provide consulting service to enterprises

To reduce the risk of overseas investment failure, and increase the success rate, the Korean government provides information about investment in advance to investors. The information includes not only reports on the political and economic pulse, the financial systems, tax, foreign currency and investment policies, but also specific information about enterprises where the goal is cooperation with investment prospects. In April 1988 the Korean government had set up an overseas investment section in the Korean Import and Export Bank to be specifically in charge of providing overseas investment information and consultation, and started to run the Overseas Investment Information system (OIIS) to provide information regarding overseas direct investment to investors via the Internet.

2.2.5 To provide international protection for overseas investment

In order to promote the development of overseas investment, the Korean government had actively advanced and signed an agreement of investment protection, an agreement on avoidance of double taxation with relevant countries, and had entered into the Multilateral Investment Guarantee Agency (MIGA).

3. Development history of the LG Group

3.1 1947-1959: Birth of a new era for the chemical and electronics industries

3.1.1 The chemical industry

The founder of the LG Group, Koo In Hoe, had established the Lucky Chemical Industrial Company (currently LG Chemical) and started to inscribe the history of LG Group on that poor and blank land.

Originally, LG Group mainly produced cosmetic "Lucky Cream." In order to develop a nonbreakable cosmetic bottle cap, LG Group had first entered the plastic industry and had produced such plastic products as combs, toilet soap boxes, tooth brushes and tableware, and had thereby made a contribution to improving the standard of living of the nation. In 1954 LG Group had successfully developed the first tooth paste in Korea, and had quickly occupied the domestic market in Korea, making a contribution to the health of the nation. In 1959 LG Group set up Lucky Grease to produce toilet soap and glycerin.

3.1.2 Business expanded into the electronics field

While expanding in the plastics industry LG Group had set up Goldstar Industrial Company (LG electronics) in 1958 and had produced Korea's first radio in 1959, opening a new epoch in the Korean electronics industries. By the 1950s LG Group had established a solid base for its two pillar industries—chemical and electrical/electronic, and meanwhile the company set the pace for Korean industrial development.

3.2 1960-1969: Establishing the foundation for the key industries of the Group

3.2.1 Multi-element development of relevant industries

Along with the implementation of an economic development plan, the base of Korean economic development was constantly consolidated. Meanwhile, LG Group continuously expanded the scope of its chemical and electric/electronic industries and had laid the foundation for LG to enter into a business conglomerate.

In 1962 LG Group set up Korean Cable Industrial Company (currently LG Cable), extending the scope of the company's electric and electronic industries. In 1967 LG Group set up the first private refinery, Hunan refinery (currently GS Caltex) and entered into the field of basic materials industries, laying the foundation for LG to enter the field of heavy chemistry. Lucky Chemicals (currently LG Chemicals) had produced the earliest synthetic detergent "HAITAI" in Korea in 1964, and had produced kitchen detergent and liquid shampoo in 1967.

Goldstar (currently LG electronics) took the lead in making electric fans, refrigerators, black and white TVs, air conditioners, washing machines and elevators, with sales breaking US$33.33 million. In

just the first ten years after the company was founded had it multiplied 239 times. LG Group entered the 1970s hopefully, among the leading companies in chemicals, energy, electric, and electronic industries.

3.3 1970-1979: Solid business growth and expansion

3.3.1 Establishing guidelines for stabilized operation

In the 1970s the world experienced two oil crises, and combined with the political turbulence in Korea, these situations made the operating environment increasingly bad.

On December 31, 1969, the founder of LG Group, president Koo In Hoe, passed away. Koo Cha Kyung took up the post of second generation president as the Group entered the 1970s. After taking the post Koo Cha Kyung said that "The 1970s will be a transition period for LG Group on the way to internationalization." He decided to define a development policy for the 1970s with internationalization as its keystone.

LG Group determined to make 1970 and 1971 the "Year of stabilized management," and to solidify the management base. Export performance of Goldstar Industrial Company (currently LG Electronics) had increased 170% over the previous year. Hunan Refinery (currently GS Caltex) had completed phases I and II of its expansion projects. It took only three more years to triple production capacity, which provided the development foundation for the main enterprises. Meanwhile, LG Group took over Pan-Korean Fire Marine (currently LIG) as an entry into the insurance field in 1970. International Securities Company came into existence in 1973, and LG started to relate to securities and successfully extended its business field from manufacturing to services.

3.3.2 Subsidiaries had to go public

One after another LG companies became public companies: Lucky Chemicals, Goldstar Industrial (1970), Goldstar Telecom (1975), Korean Mining Refinery (currently LG-Nikko Copper Refinery), Peninsula Corporation (currently LGI) (1976), Goldstar Electric (1976), Pan-Korea Fire (1976), Goldstar Wire (currently LG Cable) (1977), Goldstar Mechanical andEelectric (1978), and Korean Continental Carbon (1979). These companies opened up a new chapter in Korean enterprise history. In 1973 LG Group established the Institute of LianAn to serve society through education.

LG Group's achievements in the 1970s were to serve society through solid business development, and to emerge as a national and mature enterprise.

3.4 1980 to 1989: Age of globalization and development of cutting-edge technologies.

3.4.1 Dedicated to the pursuit of diversification

In chemicals and energy LG Group's presence was based on the petrochemical industry of LG Chem. While continuing to expand development in the fields of plastics, home goods, and fine chemicals, LG Group re-entered the cosmetic industry. Expanding in synthesis industries, LG diversified by entering the field of medicine and a range of multi-national enterprises through active overseas investment. Meanwhile, a PP plant with 120,000 tons annual capacity, and a BTX plant with 450,000 tons annual capacity were completed at the Human refinery (currently GSC Caltex) in 1988 and, at the same time, construction began of a TPA plant with 200,000 tons annual capacity. LG started to diversify in the petrochemical field.

After entering the electric and electronic fields in the 1980s LG Group began to take the lead in the development of high-end products such as color TV, VCR and PC, and made a concentrated investment in the semiconductor industry. Meanwhile, Goldstar Semiconductor had developed a standard Korean switchboard and broke new ground in the Korean telecom industries. Goldstar Wire (currently LG Cable) had rapidly realized conversions from copper to optical cables and from ordinary to extra high voltage specific wires, leading the qualitative conversion of the cable industry.

By right of being first in export growth two years running, as well as passing US$ 20 billion sales and US$3 billion in exports in 1988, Lucky Goldstar Corporation (currently LGI) had advanced its image as a comprehensive trading corporation. In 1984 LG Group set up LG Ad, moving into the advertising business, and took over Korean Express (currently LG Card) to establish STM (currently LG CNS) and thereby entering the fields of credit cards and computing systems.

To celebrate the 40th anniversary of LG Group in 1987, Yeouido Park LG Twin Towers of LG Group were completed, further advancing the image of the whole Group. Later, as LG Group entered the 1990s, the Group laid out the blue-print for long-term development, resolving to push reform of the enterprise.

3.4.2 Innovation in 1987: decentralization and Quality Control

In the 1980s the development of the Korean economy was mainly advanced by industrial empires. The government provided these conglomerates with favorable tax policies, loans and assistance to encourage new industry. In 1996 the top 30 industrial empires accounted for 50% of Korean GDP, and, while the top four groups employed only 3% of the population, their exports and revenues counted for 60% and 1/3 of total exports and revenue respectively.

With the growth of chaebols workers began to demand better treatment, and in the late 1980s there were several strikes. Between 1985 and 1990 the salaries of Korean workers increased 143%. Because the public began to be concerned that chaebols had too much control of the economy, the government initiated some changes. Since 1979, the Korean government gradually stepped out of the direct control of chaebols. The government opened its national market in the late 1980s.

For a long time LG carried out a low-cost strategy based on: 1) Korean labor costs are low, and chaebols got allowances from the government to keep them competitive; 2) the large scale of production made it possible to combine low price with acceptable quality.

During this period LG was quite competitive in the domestic market, but it faced a lot of pressure and did not possess international competitiveness on either technology or quality. On the internal side, domestic consumers were more diversified, requiring better quality and service; on the external side, the products of foreign companies entering the Korean market gradually provided better quality than LG. Tariff reductions by the Government also cut the cost of these foreign products. And simultaneously, labor costs increased remarkably.

From the middle to late 1980s, LG Group experienced pressures from all sides. Facing these pressures, LG implemented a series of innovations, starting in 1987. The general direction of the innovation was defined as: the company can no longer rely only on a low price strategy, but must attend to customers' requirements. LG began, therefore, to emphasize key factors such as quality and customer satisfaction. Because of the radical change from domestic to international the decision-making needed also a radical change, and could not be focused only on senior management. Some actions were taken: decentralization through restructuring meant dividing the subsidiary companies into 21 culture units,

composed of several SBUs (Strategic Business Units). And the supervisor of each SBU was responsible for the unit's own results in providing better value to customers.

The results of these innovations were manifested after seven years. During 1991 and 1994, the overall rate of return of the LG Group increased from less than 1% in 1991 to 4% in 1994, with 800% growth in terms of net income.

Meanwhile, LG started to use a new logo. "Lucky Goldstar Group" was changed to "LG Group," and the five core principles were established: *The World, The Future, The Youth, Humans,* and *Technology.*

3.5 LG from 1990 to 1999: Great innovations for the 21st century

3.5.1 Established a new management principle: "Creating value for customers and people-oriented operation."

In 1990 chairman Cha-Kyung Koo announced new management principles for organization and system restructuring, self-discipline and talent based on "Operation Vision in the 21st Century," and "creating value for customers and a people-oriented operation." In his blue-print he clarified a plan for the LG Group's future and established the principles of business operation.

In 1995, in order to create a dynamic business identity, LG Group started its globalization process through a series of Corporate Identity amending programs, such as changing the company's name to LG Electronics. After Cha-Kyung Koo, Bon Moo Koo succeeded as the third chairman and CEO, and brought in a second round of operational innovation.

Bon Moo Koo took "the right way operation" and "Super A" pioneering as the core of his reforms and obtained a series of notable achievements, such as vertical integration in the petrochemical field with the invention of various high-end pharmaceutical products and the expansion of the oil-refining business into an integrated energy source business, development of all kinds of multi-media and digital products, realization of world-class communications technology, and entrance into the field of Internet and online shopping.

Despite being an economic basket case because of the financial crisis at the end of 1997, LG Group still focused on its basic principle of "choose and concentrate," putting forward its business restructuring which became a good operational model for Korean corporations.

Until now, LG has built up a "21st Century business structure" with the core businesses in the fields of chemical, energy sources, electronic, communications, financial and services. LG is starting to stride forward into "digital times" with "Super A" as its goal.

3.5.2 Innovation in 1995

After the innovations of 1987, LG's sales revenue grew year by year from 1991 through 1994. The overall return on investment of the Group increased to 4% from 1% and net income was increased 800%.

In 1995 Bon Moo Koo continued in the position of chairman. He planned to increase revenue ten-fold within ten years, gaining 50% of the revenue coming from international sales. His basic concepts were: 1) Internationalized competition; 2) Maximum value for customers, employees and shareholders; 3) Create the company's reputation; 4) Contribute to the development of society.

In order to achieve these targets, Bon Moo Koo introduced changes in the corporate culture. Influenced by the Chinese Confucian culture for a long time, Korean firms have a strong tradition in this culture; for example, LG's original culture was *Stability, Harmony* and *Respect.* Bon MooKoo thought this kind of culture was not suitable to meet the challenges of international competition. He changed LG's culture into: *Challenge, Speed, Simplicity* and *Borderless Operation,* and eliminated the characteristic of "*Stability*" from the original corporate culture. Meanwhile he re-defined "respect" as mutual respect instead of respect from subordinate to superior. The purpose of this innovation was to adapt the company to be better suited to international competition.

Further, Bon Moo Koo thought that the company should not increase revenue without considering the profit it returned, and should take the following actions to improve profit:

- No longer support industries with bad performance; either improve or remove them;
- Classify the markets strategically based on 1) forecast economic growth and scale; 2) business opportunities (how open is the market, how strong is the competition, and what is LG's competitive capability).

- Regarding technological innovation, LG focuses on innovation in product and process technology (e.g. is the service good or not) to improve customer satisfaction.
- HR innovation; LG faced certain challenges such as the "ceiling effect." According to the strategic target, 50% of revenue will be from international markets, which means 50% of international leaders are not Korean.

3.6 From 2000 until now: giant leap forward toward the future

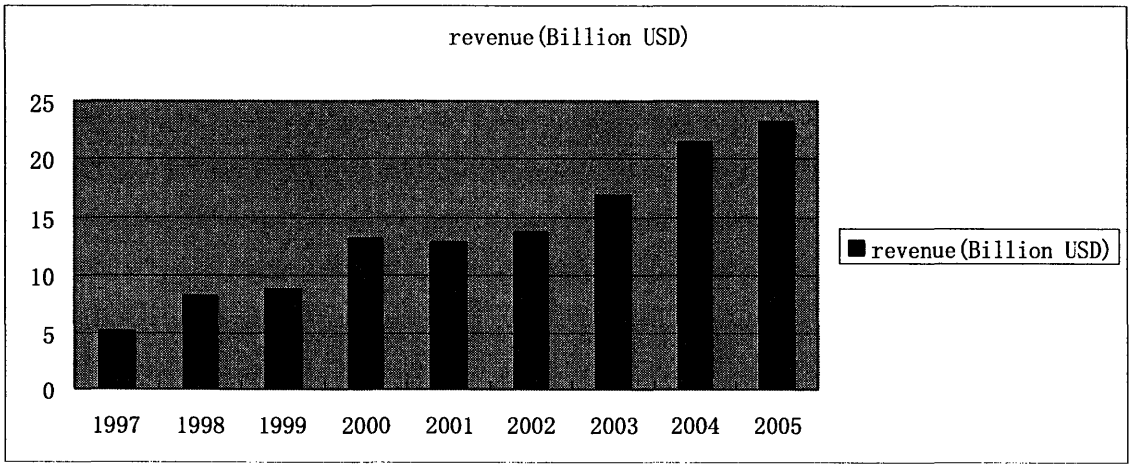
LG Group in the 21st century is a company that brings each employee's potential into full play, maximizes shareholders' value through a transparent operation, that satisfies each customer, and that is a benefit to the country and society. At present LG Group is on the right footing, through innovative thinking and actions, to become a "Super A" LG Group in the 21st century.

4. Development of LG Electronics since 1997 until now

4.1 General information

LG Electronics (LGE), as a subsidiary of LG Group, focuses on electronics, communications, and the electric businesses. The chart below shows its revenue changes since 1997

Figure 4.1 LG Electronics Revenue (Billions USD)



4.2 Restructuring and transformation of LGE

Digital LG vision:

Declaration of digital LG vision in 1999, named that year "the Year of Digital LG."

Organization: Separated out Digital Display Company, Digital Appliance Company, and Digital Media Company into three major independent businesses.

Strategic actions:

Strategy of Digital Technology Advancement: Pursuing yet-to-be-invented technologies in selected business fields; put investments mainly into the following four fields: Marketing, Technology, Design and Networking. Advocate three core values of the company: Innovation, Openness and Partnership

Strategy of globalization: Strengthen the "Super A" initiative in global subsidiaries, improve the financial structure, increase sales and competitiveness in the market; build up LG brand image in a diverse culture through sponsorship of cultural and sports activities; initiate cost saving and quality improvement activities.

Super A and 6-Sigma plan: Super A integrates all knowledge-based innovative tasks into one framework, which includes R&D, cost reduction, quality improvement, knowledge management, customer service and many other corporation-wide activities. Every year over 700 small or large activities are carried out in the Super A mindset. Project members from different teams or business operations learn higher specialties while carrying out their projects. When they return to their jobs they pass on the knowledge they have acquired.

Internal management: Enhance the sharing of knowledge within the organization through ErP system.

Strategic Action Plan in 2000:

- **Merger:** LG Information and Communications merged into LG Electronics, to prepare for the implementation of digital Home and Mobile network product integration strategy.
- **Acquisition:** LG Information and communications merged into LG Electronics; peel off non-nuclear businesses and restructure into five subsidiaries: digital Display and Media, Digital Appliance, Digital System, Digital Handset, Digital Network.

- **Global cooperation:** Strategic alliances with INTEL, Microsoft, SONY, Philips, Hitachi, and together build an "Infotainment" platform; integrate CE products with information products to create more values for consumers.
- **E-Business:** LG Electronics continued to be restructured during 2001-2002 and separated business operation from investment business. The new LGE operation was separate from LGEI investment, with the latter concentrated on investing in 3G technology.

In 2003, LGE implemented the new strategic target, "Making LG Electronics into a Global Top 3 company by 2010," and becoming "Great Company and Great People," promoting an organizational culture of advancement for the individual and the company. The main focus of development strategy is on exports, and there would be a significant increase in investment in promising businesses.

Key action plans:

- Speed up implementation of globalization, focusing on emerging markets in China, Vietnam, and India, and the traditional markets such as Europe and America.
- Implement fast growth strategy and establish high-end brand image.
- Promotion of the principle "great Company and Great People," and hasten the development of corporate and individual culture and company progress through "Tear Down and Redesign (TDR)" activities and Six Sigma initiatives.
- "Value Creative Management and Employee Management:" everyone devotes themselves to their duties and places their trust in one another.

At the end of 2004, the following Global Top 3 actions were advanced:

- Focused on implementation of High Quality Manpower Development Management: select employees that have the most potential and assist them to be experts in certain fields; create a situation that motivates employees to face the challenge passionately; recruit high-quality staff from outside the company.
- Continued to put forward technology management to increase R&D: Enhance investments on R&D, create core competency through advanced technology; set global standard through research and technological development; seek medium to long-term point of growth through R&D.

- Further strengthening of the implementation of Global Management through Fast Execution activities to accelerate the improvement across the board; keep on strengthening global marketing.

Three major tasks: enhance strategy of marketing, increase brand value, and advance to the leading position in the Market. To execute the three major tasks through fast execution to achieve the target of 30% increase in performance.

Case Study 5: Acer and the PC Industry of Taiwan[19].

No one else could yet see a better example for China's IT and manufacturing industries than Stan Shih, the founder of Acer, the most famous Chinese PC brand in the world. Dubbed "the IT Godfather of Taiwan" by Taiwan's IT circle, he was selected by Fortune (1989) as one of "the 25 people that you have to know when trading in Asia". In 1996, he was selected as one of "the 25 Top Managers of the Year" by *Business Week.* In 1997 he was identified by *Asia Week* as a spokesman for Taiwan enterprises. He was described by CNN *Talk Asia* in 2003 as a visionary entrepreneur who enabled Taiwan to take a place in the global science and technology field.

Acer was established in 1976. Over a 30-year period of both hardship and growth, Acer has gradually developed from an unknown manufacturer to a world-renowned PC brand, providing world-class IT products and service. Today, Acer has become the fourth largest PC distributor and the third largest PC manufacturer. Acer mobile PC, Acer network server, and Acer PC have all been among the world's top ten brands in their respective fields. Acer has become the market leader in 13 countries and is ranked among the top 5 in 30 countries.

Beginning with eleven local employees in Taiwan, Acer Group now has over 34,000 employees across 100 countries, providing high quality service to distributors and integrators. Acer has become a real global firm and is playing an important role in Taiwan's transition to a global center of innovative IT products. The development of Acer Group has also proven that world-class firms can grow from Confucian culture.

1. The development of Taiwan's electronic industry

1.1 1960s: Started with electronic assembly business

The modern Taiwanese economy was primarily export driven. Since Taiwan was starting from a relatively inexpensive labor base, its chief export items were products that were labor-intensive and low tech. After the Vietnam War, the government of Taiwan encouraged family business and promoted the idea that families are factories, helping to cultivate a family business culture in Taiwan. In the 1970s, Japanese electronics companies set up facilities in the hope of benefiting from costs lower than in

[19] I appreciate the contributions to the research for this case study by Shannon Wang and Steve Jong.

Japan. Because Taiwan was a former colony of Japan, and was accustomed to the Japanese culture, Taiwanese people could adapt to the strict management style and quality standard of Japanese companies. As a result, Taiwan quickly became Japan's assembly base. During the same period, Taiwan's electronic industry simply focused on assembling products such as transistor radios and tape recorders.

1.2 1970s: Entry into the electronic component manufacturing business

1.2.1 Global technological advancement created development of OEM and ODM business

The outsourcing of Japanese video game machines created a huge opportunity for Taiwan's manufacturers, causing rapid growth in the electronics industry and creating a fad for video games. In the early 1970s, Intel invented the microprocessors (4004, 8008 and 8088) that propelled the development of the PC industry worldwide. Many manufacturers studied the application of the product in the small appliance market. Acer put out a learning machine, the "Little Professor Learning Machine," which became a prototype of the first PC product in Taiwan. Soon after, the Taiwanese government targeted electronics as a strategic technology and heavily promoted its development through various policies. The Taiwanese government's National Science Council coordinated research activities in a wide range of technologies. Taiwan's Hsinchu Science Based Industrial park opened in 1979. As a result, a group of small and medium-sized companies emerged, specializing in OEM (Original Equipment Manufacturing) and ODM (Original Design Manufacturing).

1.2.2 Fast growth of industries in Taiwan

Twenty years after 1975 was a golden time for Taiwan's economy to take off. The successor of Jieshi Jiang, who was also his eldest son, Jingguo Jiang, put policy emphasis on building Taiwan, creating the famous "Ten Construction Priorities." He encouraged American Chinese to return to Taiwan to start businesses or to take government positions. The return trend from overseas stimulated the technical development of Taiwanese industries; it also aroused strong interest in the new enterprises started by overseas Taiwanese on the part of venture investors from Silicon Valley. Acer received investment from venture investors H&Q (Hambrecht and Quist), among others; this provided Acer with sufficient funds to open up an overseas market.

1.3 1980s: Entry into computer manufacturing business

1.3.1 Shifting to scientific, technological and service industries

In the 1980s, Taiwan's economy began to shift to scientific, technological and service industries. Many Taiwanese companies moved their labor-intensive production to the Chinese mainland and other locations in Asia. Foreign investment rules were liberalized to attract capital and expertise to upgrade Taiwan's economic base. The Taiwanese government also made substantial investments in education and training in the skills needed in the electronics and IT industries.[20]

1.3.2 Cloning IBM PC and IBM PC-compatibles

In the meantime, IBM introduced its PC in 1981, which quickly became the industry standard. Soon after, computer companies in Taiwan began cloning the IBM PC, and IBM PC-compatibles. There were about twenty assembly factories and over 100 satellite factories at that time. In the 1980s, electronics became the number one export and Taiwan became the fifth-largest supplier of PCs[21]. In the light of the flourishing PC assembly market in Taiwan and the rise of American Compaq PC, IBM decided to find OEM manufacturers in Taiwan. As a result, many Taiwanese factories changed their businesses over to manufacturing. In the late 1980s, Taiwanese factories shifted their key business to OEM and ODM, which helped American PC companies to expand their global market. In addition to making Compaq PCs, Acer at that time also insisted on its own brand and launched its brand strategy in the third world market which major PC companies had so far ignored (similar to the strategy of encircling the cities from rural areas). Up to today Acer is the only successful, Taiwanese-owned PC brand in Taiwan.

1.3.3 Focused on the development of small and medium-sized enterprises

While the Taiwanese government was formulating its development strategy for Taiwan's enterprises, many scattered technical and service systems, brought back by company founders who returned from Silicon Valley, developed rapidly and had easy access to foreign capital. In order to combine market characteristics of Taiwan and the U.S., the Taiwanese government determined to focus on developing small and medium-sized enterprises. This was quite different from the development

[20] Wei, "The Acer Group: Vision for the Year 2000"
[21] Mak and Enright, "Acer in 2001: The Reorganization"

model in Korea, where large enterprises dominate the market. In contrast, companies in Taiwan are famous for their small size and flexibility.

1.4 1990s: The move into the microelectronics manufacturing business

1.4.1 Focus on producing computer accessories

With the fast development of the OEM and ODM business in Taiwan, and the trend toward specialization in the IT industry, in the 1990s Taiwan moved into microelectronics manufacturing and became the world's number one supplier of motherboards, monitors, scanners and mice. In 1995 Taiwan became the number three supplier of computers, with a value of US$1.97 billion[22]. In1997 a second science-based industrial area (after the Hsinchu Science Based Industrial Park) was opened in southern Taiwan. The Taiwanese government continued to place heavy emphasis on education. Much was invested and many students went overseas for degrees in engineering and management. Many Taiwan Research Institute senior managers came to the MIT MOT Program. The MIT Sloan professor, my supervisor Edward Roberts, together with professors Cusumano and Urban, did Sloan's first program in Taiwan on technology strategy. A key part of this was the formation of a Taiwanese Foundation to support the Sloan School in providing to Taiwanese corporations leading edge management and technical education from MIT. Due to a shortage of factory workers, Taiwanese companies began hiring workers from the Philippines.

1.4.2 Fast global growth in the PC Market

Globally, the personal computer industry grew at an annual rate of 13.1% between 1991 and 1993, and industry revenues amounted to more than $73 billion at the end of 1993. PC revenues in the industrialized countries of Western Europe, Japan and North America grew at a modest rate of 7.53% per year during this period. The Asia Pacific region experienced much higher growth at 24.18%. The highest growth rate, 55.58%, came from the rest of the world. China was expected to become the world's largest PC market by the turn of the century[23]

1.4.3 Manufacturing gradually moved to low-cost locations

[22] Lee and Pecht, "The Taiwan Electronics Industry"
[23] Wei, "The Acer Group: Vision for the Year 2000"

With the increase of manufacturing costs in Taiwan, Taiwanese enterprises had been gradually moving low value-added products' manufacturing to lower cost locations, including Mainland China, Malaysia, Indonesia and Thailand.

1.5 2000 and beyond: challenges and opportunities

In late 2000 a global slowdown hit Taiwan hard. Land was scarce and wages high. With the rapid development of china's electronics industry, homogenization of products was becoming more and more serious and competition on price became the main form of competition[24]. As Taiwan's costs escalated, the government began to support the leading-edge technologies and to provide incentives for firms to enter high-technology industries. The Economic Minister in Taiwan proposed a plan in 2001 which advocated transforming Taiwan into a "high value-added manufacturing center," and using the market and resources of Mainland China as a link in Taiwan's industrial globalization[25].

2. The development of Acer

Acer Inc. was founded in Taiwan by Stan Shih, his wife and three friends in 1976. It started as simply a distributor of electronic parts and a consultancy firm for microprocessor technologies, with eleven employees and an initial capital investment of US$25,000. Through the years, Acer developed its core competency in personal computers, and contract manufacturing of computer peripherals and other IT products. Today, Acer Group companies employ nearly 5600 people, and support dealers and distributors in over 100 countries. Revenue in 2005 reached US$9.7 billion[26].

2.1 Exceeded US$1 billion in revenue (1993)

2.1.1 1970s and early 1980s: Engaging in commercializing microprocessor technology in Taiwan

Positioned to promote the application of emerging microprocessor technology, Acer engaged in commercializing microprocessor technology in Taiwan in the early years. The company started making copies of IBM's personal computer shortly after it was introduced in 1981. IBM-based computers,

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[24] Boulton, ""Taiwan's Electronics Industry"
[25] Engbarth, "Taiwan follows value path to recover from milestone contraction"
[26] Consolidated Financial Statement, 2005, Acer Inc.

peripherals, and accessories, many manufactured for other companies, soon became Acer's largest product lines[27]

2.1.2 Mid-1980s to 1990s: "Dragon Dream"—growth and expansion beyond the Taiwanese market

Because the market in Taiwan is small, Acer started to explore globalization at a very early stage. In 1986, Acer beat IBM with 32-bit PCs. Acer was confident that its products could compete globally. Unsatisfied with its small home market in Taiwan, which accounted for less than 1% of the worldwide PC market, Shih started eyeing markets outside Taiwan. Acer went public in the same year in order to obtain more capital to fund its expansion plans.

But there were two major roadblocks on its path to the global market. To compete globally Acer would need to acquire more advanced technologies and partner with trusted overseas distributors. To overcome the technology difficulty, Acer acquired minicomputer company Counterpoint Computers from Silicon Valley in 1987. Two years later, Acer formed a joint venture with Texas Instruments. In 1990 Acer purchased computer system manufacturer Altos Computer from Silicon Valley. Through a continuing series of acquisitions, Acer was able to equip itself with the technologies necessary for its global expansion. In addition, to build trusted local distribution channels, Acer invested in overseas distributors and even went public with some of them in their overseas markets.

Under the slogan "Dragon Dream", Acer also attracted talent from overseas, including recruiting senior managers from IBM. Ying-Wu Liu, one of these recruits, brought along a group of people with him to Acer. Liu was later appointed CEO of Acer America[28].

2.1.3 Early 1990s: First transformation—decentralization

In the early 1990s an industry-wide price cut, initiated by Compaq, together with Acer's over-investment in mergers and acquisitions, resulted in a major decline in sales. Acer's U.S. market was severely hurt. Shih realized that the centralized corporate structure did not provide enough motivation to local partners. Shih, therefore, initiated three innovative business and organizational strategies which eventually created a new growth momentum: a "21 in 21" Strategy (a decentralization

[27] Mak and Enright, "Acer in 2001: The Reorganization"
[28] Interview with Arthur Yeung, December 13, 2006

plan to create a flat organization by means of a confederation of companies—establishing 21 listed companies at the beginning of the 21st century), a Client-Server Organization Structure (Acer's headquarters were described as a "server" using its resources to support client business units, which controlled key operating activities)[29], and a Fast-Food Business Model (franchising Acer's manufacturing along the lines that McDonald's did with food, contracting out manufacturing and marketing under Acer's brand name)[30] This model reduced the risk of a price decline resulting from fast product changes.

2.1.4 Fruitful results of the first transformation

The first transformation turned the company around. Acer's sales revenue exceeded US $1 billion in 1993, and grew by over 50% in three consecutive years from 1993 to 1995.

What impelled Acer's first transformation was later summarized by Shih, Wang and Yeung[31]: 1) the PC market was growing rapidly and it was important to build market presence quickly around the world through partnerships; 2) the industry standards for key components and operating systems were well established, which enabled the distribution of value-chain activities among different strategic business units and regional business units; 3) the technology and price of key components were undergoing rapid changes; and 4) the financial resources and talent base of the company were limited. Without these specific internal and external catalysts at this particular time, Acer might not have achieved its success through these business models. That was why Acer had to reverse these models in its second transformation ten years later.

2.1.5 Stan Shih's "Smiling Curve" diagram.

Stan Shih introduced his "Smiling Curve" diagram in 1992, and it has been applied widely in the IT field. The diagram reflected the value-added essence of the PC industry—from design and production to assembly and distribution.

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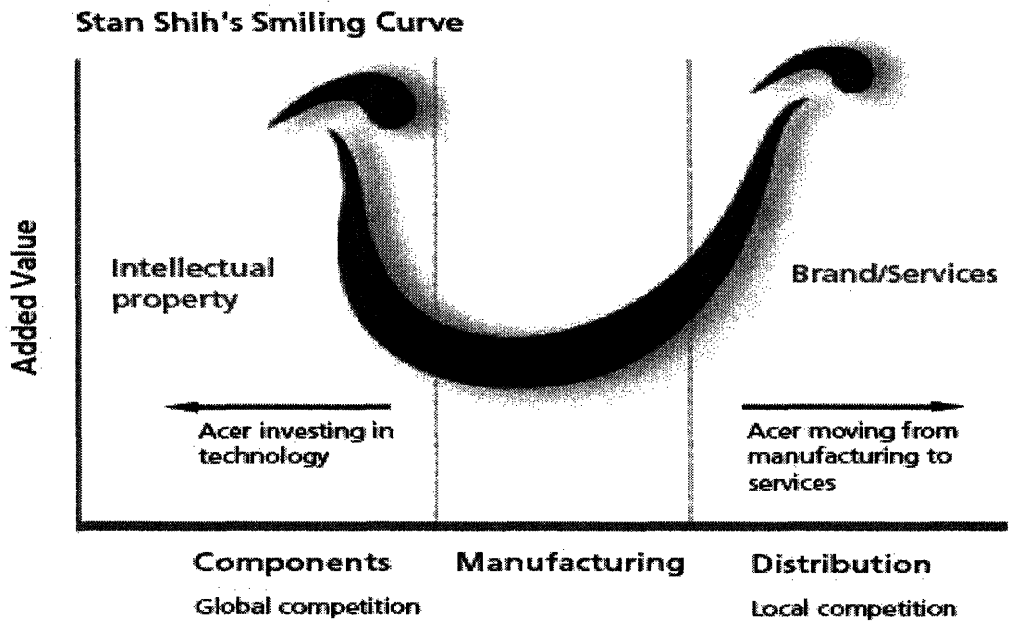
[29] Bartlett and St. George, "Acer, Inc.: Taiwan's Rampaging Dragon"
[30] Ibid.
[31] Stan, Shih, Wang , J.T. and Yeung , Arthur, "Building Global Competitiveness in a Turbulent Environment: Acer's Journey of Transformation," Advances in Global Leadership

This radical change in the business model expressed Shih's belief that value-added in the PC industry was rapidly migrating away from assembly, upstream to component design and software development, and downstream to branding and distribution. It was a concept he captured in his diagram. See Figure 5.1 Shih's Smiling Curve

In the early 1990s, the severe competition in IT came from innovation in component design and software development, reflected in the upstream portion of the "Smiling Curve." Meanwhile, local competition came from the distribution of finished products and the regionalization of customer service, reflected in the downstream. The two streams of the curve, unlike the middle, reflect that only through intellectual property rights, software development, and service can the company create the optimum value for consumers and businesses. After the first transformation, Acer began to focus on the two streams of the "Smiling Curve," putting its capital and investment into its subsidiaries and changing from a manufacturer to a marketing and service-oriented company.

Figure 5.1 Shih's Smiling Curve



Source: Company Document

2.2 Achieving US$3-5 billion in revenue (1995-1998)

2.2.1 Mid-1990s: development in the U.S. Market

The U.S. market had received increasing attention in Acer's global strategy. Acer America Corporation (AAC) was converted into a sales office in 1986, corresponding to Acer's global expansion strategy. In the early 1990s, AAC was able to recover from the price war and over-investment in Acer's mergers and acquisitions. Thanks to the cost controls and the inventory reductions made possible by the Uni-Load Process (Fast-Food Model). AAC achieved record profits in 1994.

In the same year, the development of new technologies such as the Internet, voice messaging, video messaging, and telecommunications were focused on the whole world. Michael Culver, Director of Product Management of Acer North America felt that it was an opportunity to produce multimedia home PCs. Culver and his team studied the needs in the market and verified this idea. Because the PC's life cycle was 3 to 9 months, or even shorter, they must act quickly to be successful. Acer North America then started to seek technical and financial support from headquarters and Acer's world-wide branches. In 1995 Acer launched the "Aspire" home PC, an easy-to-assemble model for the U.S market. In order to promote the flagship "Aspire" products vigorously in America, Acer North America launched powerful marketing promotional activities which quickly achieved success. This achievement verified again Shih's concept that an innovation with global promotion potential could be led by the leader of a branch office instead of by headquarters' centralized control.. In the meantime, the contract manufacturing arm of Acer had developed into a global business involved in OEM and ODM activities. In 1997 it established factories in the Philippines and in Mexico. Acer's revenue exceeded US$3 billion in 1995 and US$5 billion in 1998[32].

2.2.2 Changes in the business environment demanded another transformation based on timely market feedback from different regions

In the late 1990s, Acer experienced three changes in the external and internal business environment: 1) externally, the PC industry became saturated and growth slowed down; 2) meanwhile, with excess capacity and the pressure of consolidation, many PC companies hesitated to award orders to Acer which, in addition to its OEM business, also had brand business which competed directly with the PC companies. OEM clients feared leakage of business secrets to Acer. IBM cancelled an order with Acer in 2000, causing its OEM revenue to decrease by almost 30%; 3) in addition, due to the decentralization in Acer's first transformation, autonomous business units within the group had been

[32] Consolidated Financial Statement, 1995 and 1998, Acer Inc.

"replicating each other's efforts and competing for the same customers"[33]. In the late 1990s, the high level of decentralization as a result of the "21 in 21" Strategy, Client-Server Structure, and Fast-Food Business Model, created inefficiencies and bottlenecks that eroded Acer's organizational capability to win in the new and more demanding marketplace.

2.2.3 Emphasis on product ID design

In the 1990s, Acer had a relatively concentrated layout in the mainstream market. At that time, Acer began to put heavy investment in ID (Industrial Design). Aspire was Acer's brave attempt in the field of ID that brought great success. The success of the Acer notebook was also due to the ID design of the TI notebook and the changes in the TI Acer brand.

2.3 Achieving US$5-9 billion in revenue (1998-2005)

To avoid competition among subsidiaries and to promote internal communication, Acer carried out the second transformation and reversed decentralization during 2001 to 2003.To increase global coordination and synergy, the company pursued centralization at headquarters by creating "Principle of One Company, Policy of One Brand, and Spirit of One Team," through global material management, including centralized procurement, global logistics, and centralized forecasting based on timely market feedback from different regions.

2.3.1 "One Global Team" working for "One Company" with "One Brand"

The principle of One Company was to facilitate better global integration and coordination. Acer de-listed all public companies and purchased back all minority shareholders' interest that was created under the old "21 in 21" strategy, to ensure 100% ownership through one global firm called Acer Inc., listed on the Taiwan stock market.

The Principle of One Brand was designed to avoid conflict of interest with its OEM customers and to strengthen its own brand. Acer was separated into three divisions in 2001: Acer Inc., which focused only on the selling and marketing of Acer brand products; Wistron, which was designed for the OEM and ODM businesses; and BenQ, which was dedicated to the design, manufacturing and marketing of computing, communications, consumer products. Acer also focused resources on profitable regions and

[33] Burns, "Far Eastern Economics Review", May 24, 2001

product lines, cutting down the variety of products sold in countries where Acer was relatively weak[34]. Under the Spirit of One Team, Acer formed a new executive committee, in which the top executives from all the "fiefdoms" were expected to take on the role of headquarters and think and behave from the global perspective. In terms of performance measurement, the executives were rewarded for their achievement of overall corporate results, in addition to their regional results. Furthermore, the launch of Executive online interface enabled information transparency and immediate communication between regional managers and headquarters. This discouraged the "behind the curtain" agendas and increased operational transparency in the company.

2.3.2 Leverage global resources along the value-chain partnership

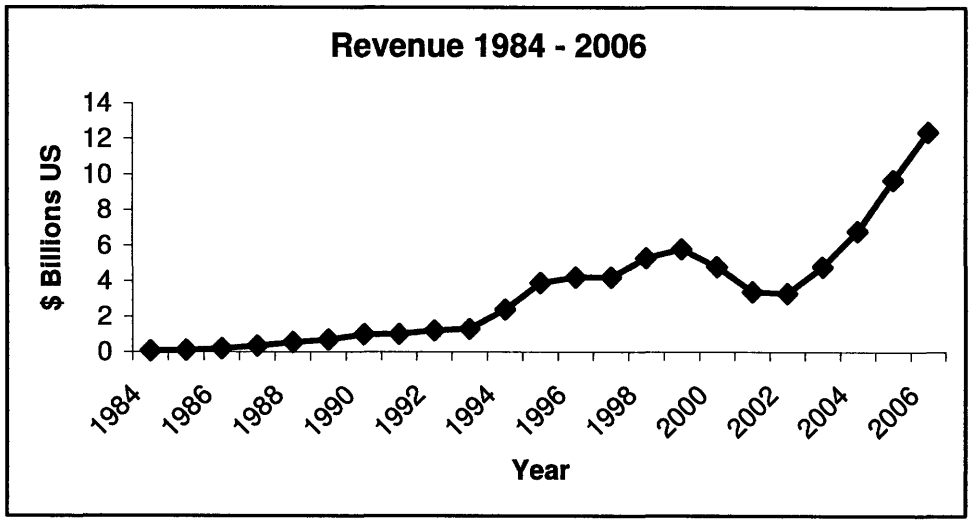
To ensure the competitiveness of Acer products from the vendors' side and the competitiveness of the sales and marketing push on the channel partner side, Acer made two important changes in its value-chain partnership: 1) it used other OEM manufacturers to build Acer products by outsourcing globally; 2) it committed to a channel strategy (as opposed to a direct sales strategy), rallying support from leading channel partners. As a result, Acer was able to obtain lower costs, high quality, and faster delivery time through its value chain.

2.3.3 Fruitful result from the second transformation

Acer's second transformation was soon proven to be successful. It started turning losses into gains again in 2002. By 2005, the revenue of Acer Inc. had exceeded US$9 billion. The revenue of Pan-Acer Group (Acer Inc., Wistron and BenQ) had topped US$23 billion[35]. See figure 5.2 Acer Revenue

[34] Shih, Wang and Yeung, "Building Global Competitiveness in a Turbulent Environment"
[35] Shih, Wang and Yeung "Building Global Competitiveness in a Turbulent Environment: Acer's Journey of Transformation"

Figure 5.2 Acer Revenue



Source: Acer annual reports

The reorganization was driven by an important change in business concept. Acer's main revenue source had been the manufacturing of PCs and motherboards. It used to have hundreds of different PC models on sale globally, but after the reorganization it sold only six different own-brand desktop models and three or four notebook models. Standard components were also be used in different models, so that all Acer desktops were manufactured from one of three motherboards[36]. Looking forward, new Acer would shift to the service-oriented business model from a traditional hardware business, focusing on e-business services.

2.3.4 Positioned for future growth (over US$9 billion revenue)

Since 2001, Acer had reduced its U.S. operations substantially, as a result of the global economic slowdown and the bursting of the Internet bubble. Geographically, Acer started shifting more and more resources away from the U.S. and Europe to focus on the Asia Pacific region with an emphasis on Greater China, where wages were low and the market was large. The new management, led by J.T. Wang (Stan Shih stepped down at the end of 2004) believed that in terms of product lines, the same business model and capability could be extended to offer other information and telecommunication products beyond the PC, for example LCD, TV, storage, server, printer for Acer's brand business, and PDAs and games for Acer's OEM business. The same platform could be used to reduce costs and

[36] Mak and Enright "Acer in 2001: The Reorganization".

increase profits even more. In addition, Stan Shih saw branding as Taiwan's next major industry to enter.

3. The cultural impact on Taiwanese corporations

3.1 Taiwan's culture

The traditional Chinese culture is more deeply rooted in Taiwan than in Mainland China, according to Arthur Yeung, professor at the China-Europe International Business School, and formerly HR Director of Acer. Apart from the impact of Chinese culture, Taiwan is also heavily influenced by Japanese culture, as a result of the Japanese occupation from 1895 to 1945. This influence is reflected in the hierarchical structure in many Taiwanese companies, for example seating by seniority in corporate meetings, and promotion according to years of service. In addition, the American corporate culture also plays a role, contributed both by the return of Taiwanese from the U.S. and by American companies that entered Taiwan in the mid-1960s. These three cultures carry different weight in different industries. The Japanese culture has strong influence in the traditional industries. But in the electronics industry, which is relatively young, the American corporate culture plays a greater role. Much was borrowed from the early OEM clients, who were chiefly American firms.

3.2 Acer culture

According to John Wang, Acer has four core values: 1) the belief that human nature is fundamentally good (Confucian philosophy). As a result, Acer tries to "create an environment that encourages good behavior," instead of implementing controls and procedures to prevent employees from doing things that are not in the best interest of the firm; 2) pragmatism—"everything you do should be for the benefit of your company, your department, and your customers; 3) commitment to customer service—"the customer is always right, but do not promise what you cannot deliver." Following this belief Acer actually turned away some OEM businesses in the early 1990s when it was reorganizing. However, the company won customers' trust in the long term; 4) pooling of effort and knowledge—every employee is encouraged and expected to contribute ideas. Acer executives promoted these four values among both their Taiwanese and foreign employees[37].

[37] Mak and Enright "Acer in 2001: The Reorganization".

4. Corporate governance in Taiwan

4.1 Close relationship between board members and the management

Corporate governance is a relatively new concept for companies in Taiwan. The majority of Taiwanese firms (over 90%) are small and medium-sized enterprises run by small groups or family conglomerates (as was the case for Acer when it was started in 1976). Taiwanese firms generally have significant numbers of family shareholders. Minority shareholders have little influence on the board's decision-making process. As a result, there is little distinction made between owners and managers. Board members are also managers, or have close connections with the management.

4.2 Government's effort to strengthen corporate governance

In recent years, corporate governance in Taiwan has moved into the spotlight because of corporate scandals in the U.S. and the high level of bad loans by Taiwan's financial institutions. The government has taken several steps to improve corporate governance. In early 2002 the Securities and Futures Bureau announced that all public companies must have independent directors and supervisors in order to qualify for listing with the Taiwan Stock Exchange (TSE) or the over-the-counter market. It also recommended the separation of the positions of board chairman and CEO, and the setup of independent board committees

4.3 Acer's board and CEO structure

Different from many Taiwanese companies, Acer allowed employees to become shareholders and pushed for a common consensus and goal. In addition, Shih chose professional managers over family members. Shareholders elected Acer's new Board of Directors and Chairman when Stan Shih stepped down in 2004. But Acer's Chairman and CEO are not separate positions; J.T. Wang succeeded Stan Shih in 2005 as the new Chairman as well as the CEO.

Case Study 6: Lenovo and the Computer Industry of China[38].

Chuanzhi Liu, the initiator of Chinese No. 1 IT brand—Lenovo, goes by the name of the godfather of Chinese IT. He was honored as one of "CCTV Most Influential Men of the Commercial Sector" in 2006. He was named the "Annual Fortune Figure" twice by *Beijing Youth* and "the Best Entrepreneur of 2000" and "the Lifetime Achievement Award for Chinese Entrepreneur of 2006" by the Chinese Enterprise confederation. He was selected as "Asia's Best Businessman" by Forbes in January, 2000 and listed as one of the Stars of Asia in *Business Week* in June 2000.

Lenovo Group was established in 1984 by eleven computer scientists with RMB 200,000 invested by ICT (Institute of Computing Technology, Chinese Academy of Sciences). Lenovo became the rapidly rising new power of the international IT industry, the representative of China's national industry and the bellwether of the Chinese IT industry throughout its twenty-year development. The revenue for FY2005-2006 reached US$14.8 billion. With 19,000 employees worldwide the company's sales network is global.

In the course of its development Lenovo, with courageous innovation, has made a lot of important technological breakthroughs, including the Chinese Character Card that translated English operating software into Chinese characters, PCs with one-button access to the Internet, and a self-developed collaborative application technology in 2003. This technology heralds Lenovo's future important role in the 3C era (computer, communications, and consumer electronics). These and other market-leading PC products catapulted Lenovo to a leadership position in China for eight consecutive years with the No. 1 market share in 2004. With Lenovo's landmark acquisition of IBM's Personal Computing Division in December 2004, it leaped to the position of the third largest PC company in the world, and a Fortune 500 company.

Lenovo has experienced the development process through which most Chinese private enterprises have gone. The stages and challenges and the periodic changes in management models and adjustment of development strategy Lenovo experienced are typical, representative and characteristic. They would repay study by other Chinese enterprises.

1. The development of the Chinese personal computer industry

[38] I appreciate the contributions to the research for this case study by Xiaoya Liang and Aiwen Yang.

1.1 Characteristics of the Chinese PC industry in the 1980s

1.1.1 The beginning of the 1980s: oriented to trade

The history of PC development can be traced back to the first PC introduced by IBM in 1981, when the computer started to join the household. In the middle of the 1980s, the computer entered China. China was still incapable of producing PCs, and the whole PC market was monopolized by foreign-made computers on which China imposed tariffs as high as 30%. There was a series of computer companies located in Zhong Guan Chun: BJ, which started in the same period with NTD (New Technology Development Company, which pre-existed Lenovo). These companies all relied primarily on agent sales of foreign-made computers, with related technology services as a secondary activity. The procedure of importing foreign-made computers is very complicated and the state-owned foreign trade companies monopolized the market. Besides the formal import channels, certain small vendors imported PCs into the Chinese market illicitly in order to evade taxes.

1.1.2 Emergence of national computer companies

The NTD (New Technology Development Company), which was built by Chuanzhi Liu in 1984 directly under the auspices of the ICT (Institute of Computing Technology, Chinese Academy of Sciences), later changed the name to "Legend." In the same year, Stone Science Company (Si-tong) was established with private funding. In 1986, Peking University invested and founded Founder Computer Company (Fang Zheng). In 1986 the state-owned Greatwall Computer Company was established and invented the first Chinese screen and produced a micro computer—Greatwall 0521CH –using an industrialized, large-scale production method. Hereafter, under the influence of Greatwall's Legend, many computer manufacturers emerged, such as Stone (Si tong), Founder (Fang Zheng), Star (Shi Da), Lang Chao, Tong Chuang and others, developing a Chinese computer industry.

1.2 The characteristics of the Chinese PC industry in the 1990s

1.2.1 Computer manufacture

At the end of the 1980s, especially after the Tiananmen Square protest of 1989, the Western countries instituted economic sanctions and a technology blockade so that the Chinese government

realized the importance of national development in the computer and electronics industries. MEI (Ministry of Electronics Industry) started to issue production licenses for personal computer manufacture, and Greatwall was the first enterprise that was allowed to manufacture computers under their own brand name. Greatwall built the first development and manufacturing base with mass production capability in June, 1988, launching the first made-in-China 486 micro-computer and developing the first ASIC application-specific chip in China. In the same year Legend was given permission to produce and distribute their own brand of computer. After 1990 Legend started to mass produce Legend main boards and micro computers and gradually branched out from the trading field to the manufacturing field.

1.2.2 International companies break into China and accelerate international competition

After 1990 China reduced the tariff on the computer industry and opened the doors of the Chinese market to foreign computer-makers. In the twinkling of an eye, 286,386 foreign computers swarmed into China and competed fiercely with Greatwall, Langchao, and Legend (current Lenovo). In 1991 the "Black Storm of Price-cutting" created by Intel and AMD brought another disaster to the Chinese computer industry. As a result of chip overstock which most integrated equipment enterprises purchased at a high price, quite a few of such companies suffered considerable losses. Many were close to bankruptcy and Greatwall, Langchao, and Legend were severely hurt. In 1992 the government regulated purchasing and Chinese integrated equipment enterprises were at their nadir. Henceforth, domestic computer enterprises undertook only PC assembly with low added value. In 1993 many domestic computer companies abandoned production of the own PCs and took the route of assembly production partnered with foreign manufacturers, including Greatwall with IBM, Founder with DEC, and Stone with Compaq. Foreign manufacturers excelled domestic computer companies on technology, funding, advertising, after-sale service, and so on. By comparison the one and only advantage of domestic computer enterprises is knowledge of marketing channels—in other words the power of accumulated years of experience as distribution and sales agencies. Legend stood up to the international computer giants under tremendous pressure and persisted in making their own brand of computer to the middle of the 1990s.

1.2.3 Lenovo becomes the bellwether of the Chinese PC industry by shifting to decentralized management and low price strategy.

Greatwall was always the No. 1 PC enterprise in China in the first ten years of Chinese PC development from 1986 to 1996. After 1996, through a series of reforms, Lenovo replaced Greatwall to be the bellwether of the Chinese PC industry. Firstly, Lenovo internally converted the "Big ship Mode of centralization to the Fleet Mode of decentralized divisions," in order to improve production efficiency in 1994. Meanwhile, Lenovo developed the distribution channels. Then Lenovo launched its low price strategy that reduced the Lenovo PC price four times. Even the foreign manufacturers like IBM and HP responded too slowly; Lenovo had already overtaken IBM as No. 1 in domestic PC market share.

1.2.4 The development of trading, manufacture and technology

When reviewing the development process of the first group of Chinese computer enterprises from the 1980s to the 1990s, we can divide the development patterns into two kinds: one, chosen by Greatwall and Founder, was "Technology, Manufacture and Trading;" the other, followed by Lenovo, was "Trading, Manufacture and Technology. In the case of a well-established and mature market "Technology, Manufacture and Trading" should be the best choice for the development of science and technology enterprises which focus on technology, are supported by sufficient funds, take science and technology as the core competitive strength. These enterprises follow the line of coordinated-process service: development, manufacture, distribution and services. This method, however, will not work at an early stage of a market economy in China. The "Trading, Manufacture and Technology" strategy initiated by Chuanzhi Liu better suited the realities of the time. "Trading means the market and this is the weak point of Founder and Greatwall, as well as some other Chinese enterprises. Lenovo surged ahead precisely because of market and management. Lenovo was quite clear: do the trading first, and then lay the base for a large-scale industry and ultimately let technology drive the market.

1.3 Characteristics of the Chinese PC industry in the first 10 years of the 21st century

1.3.1 The impact of Internet technology and internationalization's opportunities and challenges

Three factors brought new opportunities and challenges to the Chinese PC industry: the opening of the 21st century, the arrival of the Internet's power, and China's entry into the WTO. The Internet swiftly changed the world, promoting the long-range development of electronics and telecommunication in China. A series of portal websites like Sina, Sohu and Netease had driven the development of electronic business and deeply impacted many traditional industries. The traditional PC

manufacturers and vendors confronted the change brought in by such factors as "Internet server" and provider. Chinese PC enterprises started to generate technological innovation, and promoted Internet computer and related products actively, and also resorted to the Internet to implement business process and the "informationization" of management mode.

Furthermore, China promised to abrogate the tariff and trade barriers gradually after the country joined WTO and Chinese enterprises prepared to offer stiff competition to overseas manufacturers. After 2000 the PC market progressively matured and the products tended to become homogeneous, implying that you can be outmaneuvered only by large scale and price war. HP acquired Compaq in 2001, and Lenovo acquired the PC division of IBM in 2005.

2. Lenovo's development process

2.1 1984 – 1993: Initial stage and rapid development; revenue reached US$100 million

The following chart illustrates Lenovo's progress:

Financial Year	1992	1993
Revenue US$100 million	0.83	1.25

2.1.1 Technological innovation: Lenovo's Chinese-character card

On October 17, 1984, scientists from ICT (Institute of Computing Technology, Chinese Academy of Sciences) had a vision—to create a company that would turn research into successful products and expedite information technology. With RMB 200,000 (US$25,000) they set up NTD (New Technology Development Company, ICT, CAS), which antedated Legend. The earliest lines of business were mainly import of computers and related products, and their distribution and related services. The early revenue source was from distributing foreign-made computers to state-owned enterprises, and providing related services on information management.

The most important program of technological innovation was the Chinese character system launched in 1985, which was also named the "Legend Chinese Character card." There were no less than 110,000 personal computers in China in 1984, and almost all came from IBM whose computers can operate only in an English environment and cannot identify Chinese characters. Language became the ultimate obstacle to popularizing computers in China. By comparison with other Chinese character

systems on the market, Legend's Chinese character card possesses massive "character association." It set up its own character system by utilizing Chinese phrases and homophones in order to increase the input speed of Chinese characters. Lenovo incorporated the Legend Chinese Character card into foreign-made computers, and achieved the great success of selling 100 copies of LCCC in six months. In 1987, 38% of revenue and 46% of profit originated from LCCC, and the success of LCCC not only drove the sales of foreign-made computers, but also earned the distribution rights for HP computers. In a word, the success of LCCC laid a sound foundation for the development of Lenovo's initial stage.

2.1.2 Cooperation with foreign manufacturers to develop compatible computers

Lenovo's next goal is to develop their own micro computers. In the late 1970s the international computer market entered the micro computer era and many small and medium-sized manufacturers emerged to produce compatible computers. At this time Chuanzhi Liu had high hopes of future PC domination in the Chinese computer market, and chose to develop compatible computers with AST rather than IBM. Chuanzhi Liu designed a three-step overseas development strategy to achieve his goal of producing his own micro computer. In the first step, Legend Hong Kong was established with initial capital of HK$300,000 from three sources—Lenovo, HK Dao Yuan Company, and the Chinese Technology Transfer Company. The primary business of Legend HK is to be agent for distribution of AST compatible computers. The early 1990s is the prime time for AST micro computers, and 80% of its products entered the Chinese mainland through legend HK, and Legend HK obtained clients through Legend BJ. Lenovo took the profit from being the AST agent, off-setting the loss of their own board card; and invested US$1.68 million to develop "Legend Micro Computer."

2.1.3 Developing the company's own micro computer through independent innovation

In 1990 Legend actualized another technological innovation in launching its own brand of micro computer. From "Legend Character Card," to "computer motherboard," to Legend micro computer, Legend had accomplished three weighty innovations within only 5 years. After 1990 Legend HK achieved the second step in overseas strategy: extending beyond the trading field to the production field, and accomplishing massive production of Legend Motherboards and micro computers. The company sold 2000 Legend micro computers in 1990 and 17,000 units in 1992. Legend HK was listed on the Hong Kong Stock Market with US$118 million market capitalization in February 1994, which symbolizes the accomplishment of the overseas strategy. And Legend carried out a crucial restructuring by taking the opportunity of going public which established the Legend PC business division, and

assigning Yuanqing Yang as General Manager to lead production, purchasing and distribution. And the company quit as agent for AST computers.

2.1.4 Goal- and market-oriented innovation culture

Lenovo took agency and service as the primary business during its initial stage. In order to accumulate capital and gain a foothold in the market the slogan of this period is "Only the contribution speaks," and "Reputation is everything."

2.1.5 Three managerial elements: build management teams, set strategy and optimize staff

Chuanzhi Liu summed up the development of Legend as "Build management teams, set strategy, and optimize the staff," and this managerial method penetrated into each development stage, and every program at various levels.

The core of "Three Elements" is individuals, actually the management team. Chuanzhi Liu had mentioned several times that the primary condition for development was that there be an appropriate candidate to lead the program; if not, Lenovo would not begin the program even if other conditions were favorable. Lenovo offers young and able people an arena for their talents and an opportunity for rapid growth. There were three people under 40 among the seven senior Vice Presidents in 2000.

To build a management team the head and the team members should focus on morality and have both ability and moral integrity. The management team is composed of the head, the core team, and operation principals. The management team should have both vertical and horizontal fragmentation. The management team should clearly define power and responsibility, and take unanimous decisions. Regular, timely and effective communications must be kept within the management team. In addition the fixed discussion method also includes point-to-point communications. The basic principle of decision-making is that the head follows a consensus and confers with the minority and then makes a decision. The decision made by the management team will be pursued steadily until it is accomplished. Ensure the self-discipline of the head and team members, avoid the formation of a small group within the group, and remove any unqualified staff with a firm hand.

Setting strategy can be divided into five steps: first, unify the general strategy—to build Lenovo into a long-term, large scale high-tech company; next, define the medium-term development goal; third,

design the general line of the development strategy; fourth, set the target of the year (for both headquarters and the branches) and analyze the specific tactical approaches; and last but not least, conduct checks and make adjustments during the operation in order to achieve the goal. During the first Three-year plan for 2001-2003 the strategic management ability of Lenovo actually achieved the leading level of domestic enterprises and built a whole suit of methodology, workflow, and template that syncretized the famous international strategy company's style, and combined Lenovo's own innovation with international code of practice. The most distinguished method is to learn from world famous strategy consultancy firms like McKinsey, Bain, and Deloitte, about their workflow, methodology, and template. In the light of its practice, experience, and innovation the company developed the *Annual Budget and Strategic Revenue Plan Template of the Lenovo Group* and the *Workflow and Template of Lenovo Mid-term Strategy.*

Optimizing the staff means setting up the organizational structure and jobs to match the enterprise strategy. It is vital also to set up the regulation system, to accomplish performance appraisal and create an incentive system, to enhance the enterprise culture, to strengthen cohesiveness, to emphasize internal training and to look to the cultivation of leaders and key persons. From 2001 to 2003 Lenovo conducted intensified training, providing an annual training plan for leaders, and advancing more than 400 managers from the operational to the strategic management level, enabling them to manage a project well or explore a market.

2.2 Rapid development period—revenue reaches US$1 billion in 1998

The following chart illustrates Lenovo's progress:

Financial Year	1994	1995	1996	1997	1998	1999
Revenue (in US$100 million)	3.64	5.75	8.10	9.35	15.12	21.26

2.2.1 Establishment of a high efficiency distribution system

In the early 1990s competition in the computer industry was white-hot; Chinese-made PCs had been almost defeated and turned to cooperation with foreign companies, Greatwall with IBM, Founder with DEC, and Stone with Compaq. Confronted with powerful opponents, Yuanqing Yang tried two long shots. First, he cancelled the direct distribution system, and concentrated on building company-owned sales channels. This decision led to a highly efficient distribution system which brought the products into households. From 1994 through the first half of 1995, he took charge of the

channel development and marketing himself, and inspected the development channels in each province. The core channel which occupied an 80% share of the Chinese market was basically developed during this period. Second, he grasped the chance to replace the 486 by Pentium. Yuanqing Yang planned the long-term marketing campaign that took the lead in reducing prices four times in one year. The company passed ISO9001 certification for quality competition. The company launched the "service innovation month" activity nationwide for service competition. Through the efforts of Yuanqing Yang in 1994, 1995 and 1996, Legend PC sales increased 100% per year, the market share surpassed 10% in 1996, proving that Legend had replaced IBM as the top PC in China's mainland market.

The main technology innovations in this stage were: Legend pushed the first Legend brand laptop; and simultaneously Legend had launched "Legend Tianxi" PCs with one-button access to the Internet.

2.2.2 The PC Business division organizational structure changed from centralization to centralization-plus-decentralization

In 1994 Lenovo internally restructured the centralized "Big Ship Mode" structure to "Fleet Mode" division structure, which is a centralization plus decentralization structure designed to improve production efficiency. A dozen segments in Legend PC separated in the group that had functioned with centralized purchasing, supply, manufacture and sales departments, which were directed by more than ten vice presidents in an untidy PC Business Division. At the same time, founder "vizirs" had retired from the decision-making level to enable young leaders of the Legend PC lines. Yuanqing Yang, 29 years old at that time, was enabled to steer the PC Business division and had the power to organize the staff and management team, operate sales, and distribute incentives.

Yuanqing Yang instituted bold and resolute reform. First, he streamlined the administrators. Over 300 Legend PC staff from about ten departments were reduced to less than 100 to comprise the PC Business Division with six affiliated departments. Second, he reduced the Legend PC sales team from over 100 to 18 (the so-called "18 Green Pilasters" of Legend history) and changed the direct sales mode to channel distribution mode, abolishing the direct team.

2.2.3 Rationalize the enterprise management structure

Regarding the organizational innovation, Legend Hong Kong had sluggish performance because, after it went public, it did not readily adapt to change. It was still managed as a small company and was

plagued by such weaknesses as unclear department definition and responsibility, and friction in the management team. These factors had led to bad performance by Legend H.K (Hong Kong). In November, 1996, Chuanzhi Liu and some senior leaders decided, after some discussion, to integrate the Beijing and Hong Kong companies. BJ Legend's business was transferred to the public company to constitute "Legend China."

2.2.4 Implementation of the ERP system in 1998

Regarding process innovation, Legend took the lead in setting up an ERP system in 1998 so as to meet the demands of a rapidly developing company. The company officially actuated an ERP Project in November 1998. Chuanzhi Liu transferred the Deputy General Manager of Legend PC to lead the ERP Project as director. The plan, aimed at improving internal management process, lasted 14 months and cost US$2.5 million. The company's net profit in 2000 increased 136% in comparison with the same period in 1999; the average lead time was cut down from 11 days in 1996 to 5.7 days, stock turnover decreased from 35 days to 19.2 days, and accounts receivable turnover was shortened from 23 to 15 days.

After the ERP project started, the results in the first six months were not good at all—not even as good as before. The main reasons are that the ideas and behavior of the staff hadn't changed, and the data workflow was still not thoroughly transformed. The function of the ERP project turned out to be effective after eight months. Continuous improvement was made through phase II and III of the ERP projects. Some other projects like CRM (Customer Resource Management), SCM (Supply Chain Management), PLM (Product Life Management), PRC (Pipe Relationship Management), Fourth Generation E-Business (applied to key accounts), Knowledge Management and Business Intelligence System were carried out from 2000 to 2004. During this period, Legend invested about US$37.5 million annually in its information systems, including IT operation and management expense.

2.2.5 Change in the management team

The development of Legend could be divided into two periods based on leadership. 1984 to 2000 is the old Legend Group era, led by Chuanzhi Liu, and 2001 brought in the new Legend Group, led by Yuanqing Yang. Looking back over the development of the "old" Legend, Chuanzhi Liu had made pivotal changes. The causes of his success could be summarized:

- Chuanzhi Liu's idea of "Trading-manufacture-technology" solved the subsistence problem of the enterprise. Organizational and incentive problems are effectively solved by the separation of powers which enabled a smooth transition of managerial power from the "visirs" to the new generation, such as Yuanqing Yang.
- Raised three managerial elements, continuously achieved management breakthrough and innovation based on development stages and main conflicts of the various stages, rectified the overall situation in 1994. The first college in China teaching business administration—Legend Management College—was established in 1995. The "Big Ship" model was changed to "Fleet Model" in 1993, and "Fleet Model" became "Aircraft Carrier Model." Sales and management process was restructured in 1999 by implementation of ERP and management IT was instituted.
- He insisted on unified management in finance and senior management, decentralized the sales operation at the basic level and stayed close to the market.
- He grasped opportunities, developed the business line and broke through the bottleneck of resources and capital by means of overseas strategy.

The deficiencies and problems in the old Legend era were mainly:

- The personal interests and preferences of the entrepreneur led him to ignore technological innovation and capital accumulation so that the company did not seize the innovative technology of the PC industry at a time when LCCC technology led the market and was widely distributed. This failure caused an irreparable flaw in the further development of the Legend PC business, and also rendered Legend PCs unable to break through technology bottlenecks.
- The original dominance of the industry was lost. For instance, the technology and sales of the digital SPC switch is comparable with Huawei in 1994, but the Legend digital SPC switch division fell out of competition because of poor management in 1997. Huawei became world leader in this field in one leap, developed an international market with this technology and enjoyed both competitive advantage and rich profit from it.
- Overemphasizing current operational profit at the expense of a business strategy for long-term development. The result was that, after 2000, seriously lacking an advance strategic technology reserve, Legend could not adapt to industrial transformation with its single marketing superiority, leading to sluggish competitive power and no room for growth during its first three-year plan 2001-2003.

2.2.6 Corporate culture focused on management and parental culture and *Management Outline of Legend Group* was introduced

The 1990s were ten years of rapid development at Legend. From launching their own brand of computers to being No. 1 in the Asia-Pacific computer market, it took Legend ten years to actualize the strategy of "Trading-Manufacture-Technology." Chuanzhi Liu began to advocate the managerial culture of "Seeking Truth and Looking Forward" and introduced *The Management Outline of the Legend Group* in 1990. Chuanzhi Liu had brought forward his famous three elements of management in 1996. Yuanqing Yang became the leader of Legend after 1996, advocating the strict culture of "business-like, accurate performance, take initiative, and high efficiency", and pushed to refine management on the principles of "reduce cost, optimize process, standardize operation, and make continuous improvement." In 1999 Legend implemented "No Job Title" (say hi without using a title), and parental culture which Yuanqing Yang inaugurated with his statement "Please call me Yuan Qing" in welcoming the staff. The parental culture can be summarized as "Equality, confidence, Appreciation, and Humaneness." This parental culture is also reflected in Legend's HR policy. Legend pays attention to the ideal of "blending personal interests into the long-term development of the company." For instance, Legend recruits lots of outstanding graduates, pays attention to their training and varied job experience, and gives employees self-development and self-realization chances in the company. Legend also cares about staff welfare and established welfare policies to create in employees a sense of dependence and of being part of a big family.

2.2.7 Management Discipline

All Legend employees well understand that the company has several disciplines: do not take advantage of your position for private gain; do not accept any cash gift; do not take a second job; and bonus amount is confidential. An employee will be dismissed at once if he violates the disciplines. Among the Legend disciplines is punishment of the latecomer. Once any convention or meeting has started people who come late whatever the reason (except with prior approval) have to stand as a punishment, and receive a note of criticism. And the relevant officer will be criticized by means of a circulated note.

2.3 Industrial diversification 2000-2003; revenue reached US$3 billion in 2003

The following chart illustrates Lenovo's progress:

Financial Year	2000	2001	2002	2003
Revenue (US$ 1 million)	23.94	24.71	25.94	29.72

2.3.1 The splitting-up of Legend

Digital China was founded in April, 2000. On May 12 Legend formally split into Legend PC and Digital China. The major cause of this split is the change in senior management. Chuanzhi Liu had assigned Yuanqing Yang as his successor, but hated to part with Wei Guo. The unavoidable choice was to split Legend.

In 2000, Legend (current Lenovo) Group was upgraded to Legend Holding Ltd., and principally took charge of operations and capital management of the subsidiaries. Legend PC company inherited Legend Group to become the new Legend Group. The distribution business, system integration business, and software development business were incorporated into Digital China Group. The new Legend and Digital China are both listed as public companies in Hong Kong.

2.3.2 Industrial diversification strategy

The Chinese electronics and telecommunications industry had a frosty winter in early 2001, and many leading enterprises, including Legend and Huawei, faced falling sales and sluggish growth. The Legend Holdings with Chuanzhi Liu as its board chairman energetically pushed for diversification. In 2001 Chuanzhi Liu invested US$30 million to build Legend Capital, of which Linan Zhu was appointed president. Legend Capital invested in several companies including the "Golden Eye Company" which offered VPON (Video Phone on Network), "An Hui Keda Xunfei" for voice technology and systems integration, and "joyo.com" for electronic business. Lenovo entered the real estate field through capital investment (Raycompark Ltd.), conventional industries (including pharmacy, cement, glass etc.), through bad debt acquisition, and entered high technology like the Internet and software development by venture capital investment.

2.3.3 Building a client-oriented organizational frame

To cooperate with the new diversification strategy of Legend, Yuanqing Yang adjusted the organizational structure. He gave up the former division management system which was established

with the PC production chain as its core, and set up six major business groups that provide client-oriented IT service. During 2000-2003, the new Legend Group conducted a large scale customer-oriented transformation based on industry's changing trends under the impact of the DELL model, the CRM industry concept and the customer services industry.

- The first company to start a CRM project in China in 2000, Legend pushed continuously to optimize the concept, mode and workflow of the marketing system, which lasted until 2004 and formulated the dual-mode of today.
- During 2001 to 2002, Lenovo established customer-oriented SCM, the Fourth Generation E-Business system, and the PRC system, in its relationship with suppliers, channels, and key accounts. It actualized the seamless connection of direct information from up-stream suppliers to major channels and parts of key accounts, constituting the corporate clustering operational model of a large corporate group.(Modern competition is not just between two corporations, but rather among all the clustering companies on the supply chain centered on the two corporations).
- The group actualized the service system transformation and established the Sunshine & Dew service brand between 2001 and 2003. It pushed forward the primacy of the customer and adopted multi-shift training in customer service concept and behaviors for all 8000 personnel, learning from specific cases to remedy the deficiencies in customer service and gradually changing the concept from product management to customer management. (Certainly the transformation of a concept cannot be accomplished in one action and it may take a long time.) These continuous service transformations laid the foundation for emphasis on customer-oriented service, and also smoothed the way for the dual-mode marketing transformation.

But there was a big problem. The separation of the once-unified sales and marketing system, established in 2000, required the newly built product-driven business groups to work independently in their respective markets. The overall competitiveness of Lenovo over big rivals such as DELL was decreased as a result of the decentralization of Lenovo's resources. And this was also regarded as one of the major mistakes of Lenovo other than the Group's strategic misdirections between 2001 and 2003.

2.3.4 Entering the IT services industry by merger

In order to enhance its capability in consulting and software services and cultivate the IT services mode like IBM (PC hardware service driven by a software consulting solution, Lenovo initiated a few

big merger activities during 2001 and 2002. In respect of IT consulting, Legend purchased Han Consulting in March 2002. In April Lenovo announced the founding of a joint venture with Zhi Ruan Computer System Development Company Ltd., to develop IT services in the insurance field. In October Legend acquired the major business and assets of China Weal Business Machinery Company Ltd., and formally founded Lenovo-China Weal System Services Company Ltd. As an entry into the telecommunications IT services market. By such large and fast merger and acquisition activity, the IT services of Lenovo had primarily completed the overall business arrangement of "Three Horizontal and Four Vertical;" the three horizontal being basic platform, horizontal application and operational support, and the four vertical being the targeted industries of telecommunications, finance, government and manufacturing. The services ranged from IT consulting, utilization and system integration to operation outsourcing. The target set by Yuanqing Yang was that, in three years, the revenue of IT services would make up 10% of the total Legend Group; the actual result was that in 2002 IT revenues made up only 1% of the total revenues of the group.

2.3.5 Technological innovation—a computer with 1,000 GFLOP

The technology innovation event was the debut of Legend's super-computer, the DeepComp 1800. It was China's first computer with 1,000 GFLOP (floating point operations per second) and the country's fastest computer for civilian use, ranked 43rd in the Top 500 list of the world's fastest computers. In the same year Legend launched its first technological innovation convention, "Legend World 2002," which opened up Legend's "Technology Era." Legend introduced its visionary concept for the future of technological development and applications, its Collaborating Applications project, as well as its strategies for implementing the project. After Lenovo successfully developed DeepComp 6800 in November 2003 it ranked 14th on the global list.

Lenovo dares to face the challenges from big international corporations. It was the first Chinese corporation to establish an academic business education institution, and annually invested more than 3% of corporate resources in technological innovation and product development. Its entire technology policy and product development system was based on innovation, intellectual property management,, technological design and management, and technological breakthrough design, computer applied technology, information security and local key technology. As a result, its information security is in the global leading position at present). Lenovo turns "π" mode to modern innovation management used in effectively managing the development team of IBM. And it successfully launched the Collaborating Applications project.

The major problem is that the company has still not accumulated enough experience in the IT high technology field, and cannot make a breakthrough in important and key technology. There is a large gap between the corporation's basic innovative capability and its targets.

2.3.6 Developing the initial innovation, services, and internationalization-compatible cultures.

Starting in 2000, Legend has been on the industrial diversification road, expanding rapidly with a lot of mergers. The employee count increased from about 7000 in 2000 to 12,000. Industrial diversification caused Legend a "big enterprise disadvantage." There was overstaffing, no passion motivating the staff, and no aggressiveness to get and keep customers. The president Yang Yuanqing brought up the initial innovation culture again, and emphasized it again in a reform mobilization letter of February 2, 2002: "Hope everybody can keep the initial passion of innovation and the fighting spirit. We should be the wolf, be the tiger, and the sharp-set wolf and tiger that make the competition terrified at the sight of us."

After 2003, Lenovo conducted another strategic adjustment and took aim at the goal: international Lenovo. Lenovo had acquired a lot of senior brain power when it acquired IBM in 2004-2005. At this stage the management of Lenovo added "Compatibility, Learning, Communications" elements to Lenovo culture.

The ability to learn is one of the Lenovo core competitive abilities. During the building of the Lenovo PC basic management system from 1997 to 2000, the company learned the advanced international process management model. And during 2000 to 2003 it mainly learned advanced measures of strategy planning and management.

2.4 2003-2005: Development of globalization; revenue reached US$13.3 billion in 2005

The following chart illustrates Lenovo's progress:

Financial Year	2003	2004	2005
Revenue (US$100 million)	29.72	28.92	132.82

2.4.1 Change of logo and shrinking of industrial diversification strategy

Legend did some preparation work for advancing to the global market. First, Legend changed the English brand name, which they had been using for many years, to "Lenovo." Second, Lenovo paid a high price to the global sponsor of the Olympic Games as a way to advance its worldwide reputation and influence, while carrying out profound structural readjustment and restructuring. As the first step, senior management reconsidered the industrial diversification strategy. Recognizing that the pursuit of rapid development and industrial diversification does not match with Lenovo's limited ability and resources, and the result is low profit for the company. They decided to shrink the industrial diversification strategy, plot out core business, key business and seed business, and focus on the first two. Yuanqing Yang restructured the organization into five levels. The new matrix structure was based on five platforms: R&D, operations, marketing, central design and the central functional system. Parallel with these five platforms are five groups: information products (PC etc.), mobile communications, IT services, overseas business and other types of business. We should mention that Lenovo axed 5% of the staff (about 600 people) to cooperate with the strategic shrinkage and restructuring. The staff reduction resulted in the total loss of employees' faith in the corporation's culture, and had a negative influence on its reputation and culture. An article on the Internet named "Lenovo is not my home" had stripped off the pleasing coat of "growing with the company" culture which Lenovo had been airing all this time.

2.4.2 Acquisition of IBM's PC division

Acquiring IBM's PC division is the most important single move in Lenovo's global development. Lenovo had acquired the PC division in December, 2004, paying IBM US$1,250 million, including US$650 million in cash, US$600 million in Lenovo's stock. Lenovo also took over IBM's US$500 million debt, created by the PC business.) The total price was US$1.75 billion. On May 1, 2005, Lenovo concluded the transaction with IBM. Lenovo had also asked famous global strategic consultants such as McKinsey & Company and Goldman Sachs to design the project. They considered every key element of global acquisition and mergers and studied many cases of global mergers. There were, nevertheless, still big problems on Lenovo's globalization road. Why?

2.4.3 Globalization of Lenovo negatively influenced by the international political environment

Lenovo had neglected a problem during its globalization which was usually unnoticed in the internal workings of strategic and business activity: the influence of the global political environment. Lenovo's original vision of its globalization was to achieve the development and operation of an

international market by acquiring IBM's channel and organizations in 154 countries and regions, building on IBM's reputation and strong technological innovation (it is said that more than 1000 international patents are included in the deal). Although Lenovo paid a price of US$1,750 million, the company had the chance to realize its globalization vision and to become one of the top 500 in the world. IBM's main markets are centralized in Europe and America. Most of IBM's customers are governments and corporate groups. In Europe and America the defense contractors are usually the big customers, and that provided the excuse of "national safety" to elbow out Lenovo. Interference from international political elements existed at the beginning of Lenovo's merger with IBM's PC division. This interference forced Lenovo to adjust its strategic route. Lenovo wanted to exert its core advantages—low cost operation and effective cost control—to conform to IBM's PC business worldwide and turn a deficit into a surplus. But the loss of big customers, due to the interference of political elements, led to a declining market share in the European and American market, right after the merger forced Lenovo to rethink its route to globalization.

2.4.4 The operating policy of the new Lenovo—eyes on the Chinese market

Lenovo had to turn its back on China and the steady increase in profit in the Chinese market in order to ensure Lenovo's global market share and stable profits. The Pan-China area contributes 2/3 of Lenovo International's profit on one third of the revenue. The key to Lenovo's globalization success is whether or not the Pan-China area can continue its steady and continuing growth and be a strategic supporter of Lenovo International. At present, Lenovo dominates the competition and has a market share of about 40% in mainland China. But the whole industry is restructuring, as well as individual corporations, and if some companies can unite, turning a competitive relationship to a cooperative one with joint ventures and mergers, the new partners can expand rapidly in size and strength and then compete with Lenovo.

Furthermore, Lenovo still cares about the international market. It replicated its careful-distribution model, which succeeded in China, in new prosperous markets like Brazil, India, and Russia in the hope of achieving market competitiveness. But to develop these new markets Lenovo needs at least three to five years to achieve a substantial profit. During this period, Lenovo has to continue its market development and strategic investment.

2.4.5 Big customers replaced by small and medium-sized ones in European and American market

At present, there are no effective plans for Lenovo in the European and American markets. In these markets, IBM's products and consumers, even in the PC field, are high level. Lenovo and its products cannot gain recognition from these high level customers. Lenovo can only turn to the small and medium sized enterprises with low level products. But the original IBM portfolio does not have low level products. It will take at least three years for Lenovo and its products to gain a reputation in the European and American market. So right now Lenovo can only take a defensive position and wait out this stagnant period. At the same time, Lenovo invited the senior managers of DELL to join Lenovo and defeat DELL. We are eager to know whether these imports from DELL can duplicate their success or not.

2.4.6 Revelations derived from Lenovo's globalization

The core and keystone of Lenovo is still the overseas market, and it has not given up on the Euro-American market but is just biding its time. Only if it wins the Euro-American market can Lenovo's globalization story have a happy ending.

The core of Lenovo's globalization strategy is its major competitive capabilities. These are:

- Sound and all-around basic management system and operational efficiency conforming to international conventions. These include, in Human Resources, a job responsibility system, salaries and awards, performance evaluation, staff cultivation, training system, ability ladder, leader management and so forth; in operational systems are included workflow, KPI, completion of innovative change, business information, sales operation calculation and analysis, business planning, annual budget management, administrative management and so on.
- Effectively introduce the international advance model, practice with the corporation's own competitive capability, innovate the marketing model. Lenovo is skilled at introducing the model and at innovation.
- Relationship Model: learn and copy the key account management of IBM, Dell's key account direct marketing mode, Legend business lines marketing and electronic marketing platform.
- Trade model: upgrade the channel which faces the small and medium-sized customers to a sophisticated new model with punctilious distribution + digital information platform + marketing planning + delicate management + accurate management analysis.

The enlightenments of Lenovo's globalization mainly are listed as below :

- The globalization of corporations is far more complicated than the exploitation of any other market within China, and there many unexpected elements. So we shall not leap into globalization imprudently.
- The international political relationship shall be considered while exploring the Euro-American market and conducting mergers with well-established European and American companies or brands.
- The enterprise must have a steady strategic source of income and market base before exploiting any international market; otherwise it is hard to deal with any extraordinary and unexpected situations.
- The harmony of the international merged management group is the key point in integration. Other enterprises should learn from Lenovo about its practical experience.
- The globalization of an enterprise must actualize the globalization of the company's values as well as the cultural and managerial values. Consider, deal with and settle problems with the conception of internationalized commercial values.

3. The enterprise culture of Lenovo

3.1 The three stages of Lenovo culture

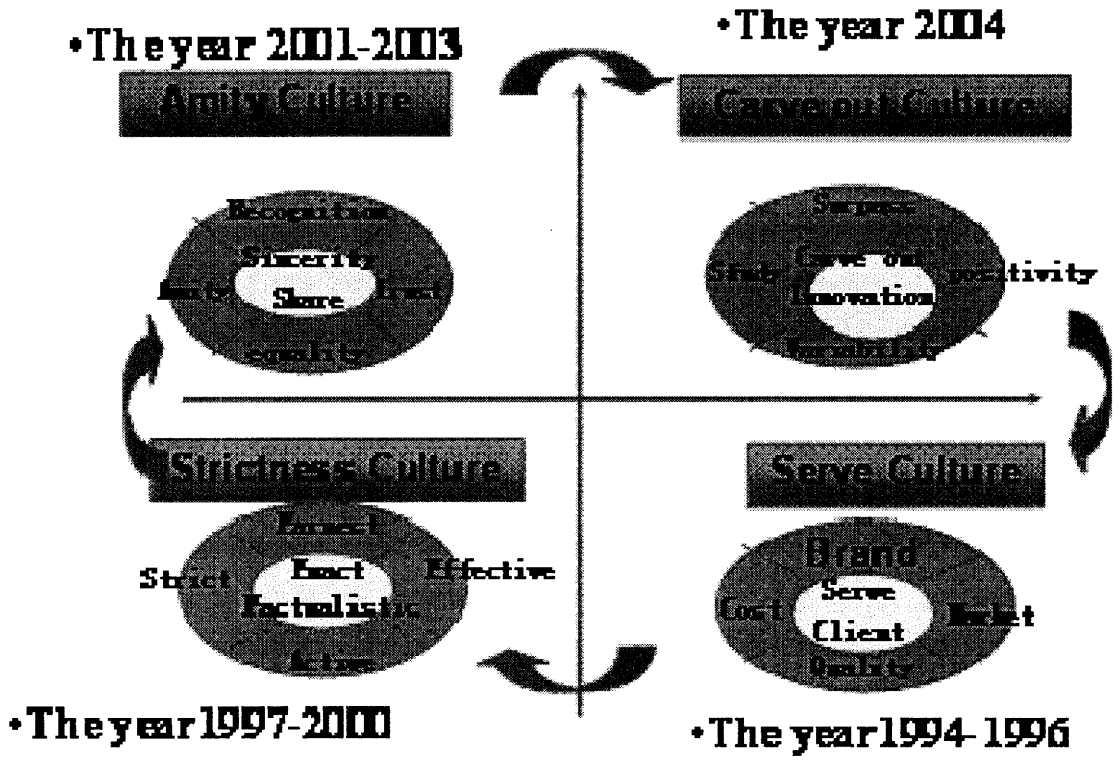
Many "Lenovos" believe that core competitiveness is the aspect of the company's culture which is compatible with the company's development. Lenovo's culture can be divided into three stages. The core value (serve the customer, pursue accuracy and reality, innovation, behave well and protect reputation) profoundly reflect the building of Lenovo's culture, as the Figure 6.1 shows.

1st Stage (1981 to 1990), carve out culture oriented by target and market.

2nd Stage (1990 to 2000), management culture, amity culture Installed *The Management Guidelines of Lenovo.*

3rd Stage (2001 to 2005), Service culture, internationally compatible culture and reignite the "carve out" culture.

Figure 6.1 Lenovo's culture



3.2 The prospects and mission of Lenovo

The prospect is: a Lenovo with high technology, a Lenovo with full service awareness, a Lenovo of globalization.

The mission can be summarized as "Four Fors:" **for customer**, providing information, technology, tools and services so as to make life and work more efficient, more colorful; **for society**, serve the society culture and process; **for shareholders**, supporting their long-term interests; **for employees**, creating space for their development, exalt their value, improve the quality of both work and life.

4. HR management of Lenovo

People-oriented corporate cultural vision: "The "people-oriented" management theory is expressed in the Lenovo training brochure for new employees: respect people, understand people, care for people

love people, help people and bring up people. Human resources is the foundation of all resources in an enterprise, and such a human-centered theory prevails throughout Lenovo's complete system of HR management in areas such as job responsibilities, performance measurement, rewards, punishment and allocation.

4.1 Unified pay system

The Lenovo group implements an International Job Evaluation system which is based on the Swiss CRG3P theory to rate uniformly the typical jobs against a grid of seven aspects and sixteen levels. The entire group sets up unified job grades as well as pay standards.

4.2 Internal job rotation

Lenovo provides staff with chances of job rotation internally. In the course of moving between different positions, people find their best fit and the jobs with are most interesting to them in which they can perform at their best. For a company, regular working in the same job results in people's loss of creativity. Lenovo, therefore, always reminds their key staff to forget about their past glory; this kind of activity can be voluntary, or it can be achieved by the reminders of others, or by job rotation.

4.3 How to treat unqualified staff

Lenovo greatly values staff who have served the company, even those with limited capability or staff who do not fit their present jobs. These people appreciate Lenovo's aims and culture, they are familiar with Lenovo and they know the business well, so they are resources as well as employees Lenovo never denies the value of such staff and instead efforts are made to reassign them internally. For example, Lenovo promulgates regulations to help unqualified staff. For staff who do not fit their present positions, analysis is done to uncover the reason for the poor fit: is it limited capability, poor colleague relations, or wrong choice of placement; when the reason is found, the vice general manager of senior managers writes an evaluation and a reference letter for the employee, which will be discussed at the level of the company's decision-making management. If other departments are recruiting new staff, this employee shall be considered first.

Case Study 7: Huawei and the Chinese Telecommunications Equipment Industry[39].

In 2005 Zhengfei Ren, CEO of Huawei Group, was selected as one of the world's top 100 powerful people by *Time*, USA He was in the company of other IT eminent persons, such as Microsoft chairman Bill Gates, Apple Computer CEO Steve Jobs, Google co-founders larry Page and Sergei Brin, eBay chairman and CEO Meg Whitman, Sony's newly-appointed foreign president and CEO Howard Stringe, Samsung Group chairman Lee Kun-hee and media king Rupert Murdoch.

Huawei, a telecommunications equipment giant, established in 1988 with 24,000 RMB, had risen rapidly and swept away all obstacles ever since it entered the telecommunications equipment manufacturing field in 1989. It is estimated that Huawei's sales will exceed US$10 billion in 2007. Huawei has set up over 100 branches all over the world. Its products and solutions are used in over 100 countries and by 31 of the top 50 telecommuncations operators in the world. Huawei established a few research centers in India, the USA, Sweden, Russia, and Beijing, Shanghai, and Nanjing in China. Forty-eight percent of over 61,000 employees are engaged in R&D. By the end of 2006 Huawei had accumulated over 19,000 patents and Huawei was the Chinese company with the most patent claims for several years funning. Ten percent of sales revenue is put into R&D every year, which gives Huawei the power for continuous strong development. The rise of Huawei represents the kind of force that can make China rise. This energy is a noticeable characteristic of the development of a global corporation.

1. Development of the Chinese communications equipment industry

1.1 Characteristics of the Chinese communications equipment industry in the 1980s

1.1.1 A suitable environment for development and "disorderly competition"

Ever since the reform and opening up policy was carried out in 1978, cheap labor and favorable official policies have provided the Chinese communications equipment industry with a suitable environment. Starting in the 1980s China had leaped over the traditional development stage of fixed-line telephones and achieved rapid development of these telephones through purposeful introduction of SPC (stored-program control) telephone and optical cable. Later, China seized the development trend of mobile communication and built networks on a large scale, bringing about a new

[39] I appreciate the contributions to the research for this case study by April Huang, Grace Liu, and Bing Li.

growth in the development of communications. Many communications equipment manufacturers were in their initial stage: Julong started production in 1980, Huawei was established in 1988, and Zhongxing in 1985. Although there were over 200 telecommunications equipment suppliers in the country, they were in disorderly competition with a low technical standard.

1.2 Characteristics of the Chinese communications equipment industry in the 1990s

1.2.1 Local manufacturers rose rapidly and the "Julong, Datang, Zhongxing and Huawei" pattern emerged

Local manufacturers in China had risen rapidly through the introduction, digestion, absorption and innovation stages. Comparatively complete industrial chains had taken shape. Huawei, Zhongxing, Datang and Julong had played a more and more important role in the communications market. The "Julong, Datang, Zhongxing and Huawei" pattern had taken shape in Chinese telecommunications enterprises.

1.2.2 Major international corporations enter China and international competition is sharpened

Because tariff duty for communications equipment was relatively low in the 1990s international telecom corporations unavoidably regarded the Chinese market, still in its initial stage, as a target market and a source of profit growth. Siemens, Ericsson, Nokia, Lucent, and Motorola had all set aside large funds to build a production base in China. While bringing experience and capital to China, they simultaneously put great competitive pressure on local companies. The Chinese government and businesses had realized the importance of autonomous technology and intellectual property, and had, therefore, evolved the former low-level cost competition into a high level cost plus technology competition.

1.3 Characteristics of the Chinese communications industry in the first ten years of the 21st century

1.3.1 China's entry into the WTO is both challenge and opportunity for the Chinese communications equipment industry

According to the commitment on Information Technology Agreement of the WTO into which China had entered, in 2002 China would implement a zero tariff for such main IT products, out of 122 tariff items such as mobile communications base and mobile communication exchange, and about a 3% tariff for such IT products as mobile phones, station SPC exchanges, optical transmission equipment, network equipment, needle printers and capacitors. Zero tariff would be enforced for all IT products in 2005.

Zero tariff duty further weakens the price advantage of Chinese telecom equipment. But for the manufacture of information communication equipment the opportunity is greater than the challenge after China's entry into the WTO, because before China's entry the main foreign telecom equipment manufacturers had entered China and been granted the same treatment as that awarded to domestic manufacturers, or even better treatment. Now, after directly competing for so many years with big foreign telecom equipment manufacturing corporations, some powerful Chinese telecom equipment manufacturers had grown up rapidly, and a few of them, such as Huawei and Zhongxing, had acquired the strength to enter the international market.

1.3.2 M&A wave of international corporations brought both greater growth pressure and challenge for Chinese telecom equipment manufacturers

The wind of M&A activity of the telecom industry started in 2005 and got stronger and stronger in 2006. The wind blew from telecom operators to equipment manufacturers. In March 2006 Lucent and Alcatel announced that the two parties had formally reached a merger agreement. In June 2006 Nokia and Siemens had formally announced that they would combine their subordinate telecom equipment companies. Facing the united superiority of international competitors, Chinese telecom equipment manufacturers would meet greater challenges in manpower, materials resources, and financial strength.

Under the guidance of national policies in past years Chinese corporations have not only taken the leading position in the domestic market, but have also successfully entered the mainstream international market. While closing the gap with international competitors, they have had an impact on the competitor companies. With the evolution of new technologies and the development of the market, the scale effect and the synergies created by the international corporations' M&A have enlarged once again the previously narrowed gap between Chinese enterprises and the competitors. In such a competitive environment Chinese enterprises face new challenges and also new opportunities for their development.

1.3.3 The 3G standard in China is an opportunity for the Chinese communications equipment industry

In January 2007 China's Ministry of Information for Industry announced China's own 3G Standard, TD-SCDMA. This is good news for Chinese enterprises in the communications equipment industry. From the beginning of its communications industry China lacked intellectual property of its own and had paid US$32 billion in patent fees of 1G-stage and even more, US$64 billion, for 2G-stage. Datang Telecom, a Chinese enterprise, introduced TD-SCDMA, and Zhongxing and Huawei now have a lot of patents of TD-SCDMA. As China's communications equipment market grows the inferiority of Chinese enterprise with regard to patents would damage the domestic companies. The foreign companies' technical superiority over Chinese companies has changed to a new pattern of reciprocal favored treatment and common development. Although new technology and intellectual property would still be the bottleneck fin Chinese companies' further development, the future looks brighter now.

2. Development of Huawei

2.1 Achieving US$1 billion in revenue

2.1.1 Ability to transform technological innovation into low-cost production

Started as a telecommunications equipment agent with a USD$3,000 investment, Huawei developed into a telecommunications manufacturer with revenue of US$1.1 billion in 1998. Its core advantage is its ability to transform technological innovation into low-cost products. In the initial stage in 1988, Huawei was an agent who dealt only with switchboards. Soon afterwards Zhengfei Ren found that being a manufacturer could obtain more long-term and continuous economic returns than being an agent. In 1989 Huawei started to develop products of its own. Zhengfei Ren engaged Baoyong Zheng from the Central China University of Science and Engineering to be responsible for Huawei's product development. In 1990 Huawei launched its SPC exchange on the market and broke the path to gain its core superiority in product innovation. During 1990 to 1998, beginning with their first PBX product developed independently, Huawei brought out a whole product line of telecommunications equipment and services, such as a 10,000 line digital switch, wireless products, network products and value-added services.

2.1.2 Introduced the IBM management model: IPD (integrated product development) and ISC (integrated supply chain)

In order to bring Huawei's management more in line with international practices, in 1997 Huawei started to introduce the management system and concept from global corporations, and carried out a series of innovations in management process, including human resources management, finance management, and quality control.

Huawei put 10% of sales revenue into product research and development, but its ratio of waste, and the development cycle time, was over twice that of the best in the industry. In 1998, therefore, Huawei spent a lot of money to invite IBM experts to introduce the IPD model designed to improve product competitiveness through innovation in product development, shortening the product time to market, reducing cost and improving quality. Besides solving the problem of product development, in 1999 Huawei also introduced the ISC management model to reduce operational costs through innovation on the supply chain.

2.1.3 Motivation, reward and pressure as the company's core management measures

Huawei takes motivation, reward and pressure as its core management measures within the organization. Before 1996 Huawei used the straight line management system of medium or small businesses to clarify responsibility and authority, centralize power, unify command, and define duties and vertical contact. In 1996 Zhengfei Ren held a group resignation meeting in which each senior manager submitted two reports, a work report and a resignation reort so as to be re-selected by the company all over again. It was the famous Huawei "Management Innovation."

2.1.4 Established the "Basic Law of Huawei"

In the initial stage, Huawei's culture was family-style. When the business became bigger and stronger it was not likely that the company could relay its value and thoughts to each Huawei employee through personal contact and charm, and it was even less likely to pass the values on from generation to generation. Zhengfei Ren began to think of how to establish a complete mindset value system to guide Huawei people's performance and pass down the Huawei DNA. The idea of establishing the "Basic Law of Huawei" came to his mind. During 1996 through 1998, taking more than two years and jointly drafted by "six gentlemen from the People's University of China," the "Basic Law of Huawei" became

the "Constitution" to summarize business values, operational principles, and management strategies in China. It defined Huawei's business value and vision and also defined behaviors and thoughts of Huawei people from all aspects of the value chain, such as R&D, manufacturing, and marketing and service. For example, Article 22, Operation Model, states that: "Our operation model is to get hold of opportunities, obtain the lead in product technology and cost performance through heavy investment in R&D. We'll form a virtuous circle in the shortest time through large-scale and intensive marketing to make virtuous excess profits out of our opportunities." It was actually Huawei's rule of thumb for its successful operation over almost ten years.

2.2 Achieved US$3 billion in revenue

2.2.1 Strategy of globalization pulled Huawei out of the "winter" of its fortunes

Pursuing the target of becoming a world-class enterprise is like long-distance running. It never goes smoothly without a hitch, and the race will surely have extreme moments. During 2000 to 2002, Huawei suffered such a winter when not only its growth rate declined but it even experienced negative growth for the first time in its history.

The first debacle (growth ceased) was due to both external and internal reasons. Global Telecom's fall brought about the NASDAQ disaster, which hit the Chinese market-- the external factor. Meanwhile, the industry lost two big pieces of "cheese" during this winter—personal handy-phone system (PHA) and CDMA as a result of poor strategy, and these internal events destroyed Huawei's myth of uninterrupted growth.

But Huawei did not collapse. After 2003, with the advancement of managerial innovation and the strategy of globalization, Huawei experienced another peak period of development. During the last three years the growth rate in terms of sales revenue reached 27%, 42% and 56% respectively.

2.2.2 Purchasing and paying for patent license fees is the optimal path to enter global markets

As an up-and-coming youngster in the telecom equipment manufacturing industry, Huawei knew very well how to take advantage of existing technologies in product development. One way, for example, is to make some functional or characteristic improvement to the products of Western companies. Improvement of integrated ability was reflected more in technological advancement of

engineering design and implementation. Huawei successfully entered its products into the global market by purchasing patent licenses for those core technologies which the company lacked and in this way it has gradually prospered in the competitive market.

Zuochao Hu, secretary general of the Patent Protection Association of China, said, when interviewed by the media, "Regarding patent strategy, many Chinese enterprises are neither aware, nor aware correctly, that Huawei's strategy on purchasing patent licenses is the right way to gain markets." Huawei's approach to technological development can be used as a model for other Chinese enterprises.

In 2003, Huawei independently developed chip technology so it is no longer necessary for them to purchase chips from overseas, lowering their cost per chip from USD $200 to $10.

2.2.3 Process realignment in marketing

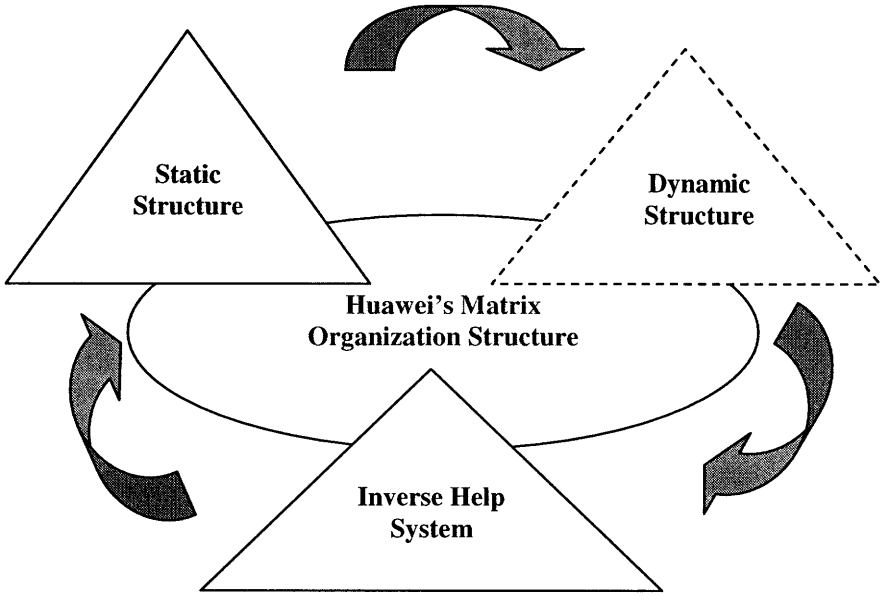
Huawei went on making transformations on its way to becoming a "market-driven process-based organization," which were necessary conditions for its globalization. In 2003, while it was optimizing, firming up, and continuing the fruitful results of its product development and supply chain innovation, process realignment in marketing became the main part of its transformation. Ren Zhengfei assigned his key senior manager Xu Zhijun to the Marketing and Engineering Department. In 2004, based on marketing engineering, he combined the internal marketing resources to set up a Strategy and Marketing department, expecting effectively to connect and drive the two departments of sales and R&D.

2.2.4 Flexible matrix organizational structure

With its business development and promotion of its position in the world, Huawei replaced its family style straight-line management system with a flexible matrix organizational structure, which brought the organization more vitality. The daily operation kept a relatively static business structure. Once a strategic key business, new business growth point, or market opportunity occurs, a dynamic business structure with related departments would be formed and the department would drive the organizational structure to change. The connecting factors (processes) within the organization remained unchanged while the correlated quantity and content changed in the structural change process. And the change is temporary. When the short-term task is done, the organization returns to its normal situation. It is an enforcing loop from balance to unbalance and the back to balance again. The characteristic of a

flexible matrix organizational structure is relatively stable but also adjustable to accommodate itself to changing situations, going along with the Key Account Management Model. A flexible matrix organizational structure is comprised of a static structure, a dynamic structure, and an inverse help system. See Figure 7.1 Flexible Matrix Organization Structure.

Figure 7.1 Flexible Matrix Organization Structure



Through continuous management practices, Huawei's matrix organization structure, composed of business divisions and regional divisions, developed in a process from solidification to optimization and then back to solidification. It made Huawei's management structure more and more international and scientific.

2.2.5 Integrating the culture into the system

After 1999, Huawei no longer stressed the "Basic law of Huawei" and put more efforts on integrating culture into the system. Zhengfei Ren, with his vision of establishing a "world-class enterprise," set up the "Basic Law" expecting to pass on his management mindset and values. Meanwhile he introduced the advanced, mature business process and management system from the West in order to enhance Huawei's overall competitiveness. During the implementation of process and system innovation, however, the company culture gradually became an obstacle. Take IPD implementation, for example; it divided production development procedures into six steps: concept,

plan, development, verification, issuance and cycle time. To reduce waste during subsequent development and manufacturing; a roadmap plan before development was defined, which sometimes lasted more than three months. But Chinese people are used to ignoring the plan and emphasizing the hard-working spirit; they like to work and change. When Zhengfei Ren realized this he initiated a new cultural innovation. A new publication within the organization was developed, called the "Management Optimization Newspaper" publishing the management's mindset and specific learning methods, focusing on IDP and ISC.

To quicken the management innovation Zhengfei Ren invited some famous professors from the Philosophy department of Beijing University and the Chinese Academy of Social Sciences to open training courses on a thinking model for the senior management. The courses included Eastern culture—"*Zhou Yi* and the Thinking Model," "Wisdom of *Zhuang Zi* ," and Western philosophical thought such as "Protestant Ethic and Capitalism." Zhengfei Ren hoped the integration of Chinese and Western cultural innovation would start from senior management and percolate through the whole company. He knew that the success of Asian companies such as Samsung LG and Sony showed that it was unnecessary and impossible totally to take on Westernization. The best way in company cultural innovation was to pursue an organic integration of Chinese and Western culture in the company's practice.

2.3 Achieved US$5 billion in revenue

2.3.1 Constant investment in R&D

Huawei continuously improved its innovative ability based on customers' needs, and kept on investing no less than 10% of sales revenue in R&D. It used 10% of the total R&D investment on pre-research to go on studying and following new technologies and new fields. Up until 2006 Huawei had introduced solutions successfully in such new-tech and new application fields as FMC, IMS, WiMAX and IPTV. See Figure 7.2 Number of patents currently held by Huawei

Figure 7.2 Number of patents currently held by Huawei

No.of Patents （by Sept.30, 2006）

Domestic Patents	14,252
PCT International & Overseas Patents	2,635
Authorized Patents	2,528

Source： Huawei official website: http://www.huawei.com

In 2006 Huawei stopped producing SPX, the start-up product line, and moved its focus to the research and development of wireless and broadband.

2.3.2 Emphasis on software development

The Ministry of Information for Industry of China announced that Huawei was ranked No. 1 in five consecutive years on the list of "Top 100 Businesses in terms of software sales revenue in China. Its revenue was two times that of the 2nd place company. More than half of the Huawei R&D staff are dedicated to software development, and Huawei's R&D offices in India, Beijing, Shenzhen and Hangzhou all passed the CMM level 5 accreditation authorized by the industry. Huawei's view of the future is that it will be more and more software driven.

2.3.3 Organization restructure, eliminating the separation between domestic and overseas divisions

Huawei carried out organizational restructuring to accommodate to the fast development of the overseas market and changes in the international telecom industry. At the end of 2005, the two sectors of overseas and domestic sales were divided into nine regions globally. It made Huawei's sales organizational structure the same as multi-national companies like Cisco and Alcatel.

Huawei also adjusted its product line and customer line. On the product side, Huawei integrated telecom core network business so that it provided complete solutions. On the other hand it was planning to separate its business network as an independent business. For the customer line, Huawei set up a one-on-one Global System department for each key client.

A structure similar to IBM's multiple matrix organization was formed with product line, customer line, supporting platform and regional HQ.

In late 2005 Huawei restructured the business department again. Senior management formed an EMT (Executive Management Team) and divided the company into seven departments: Sales, marketing, R&D, Supply Chain, Finance, Strategy and Cooperation, and HR.

2.3.4 Changed logo

In May 2006 Huawei announced that it was changing the logo which the company had used for 28 years. The purpose was to introduce an internationalized image acceptable for mainstream culture in a global market.

2.3.5 Business transformation adapted to sustaining technologies and "disruptive technologies"

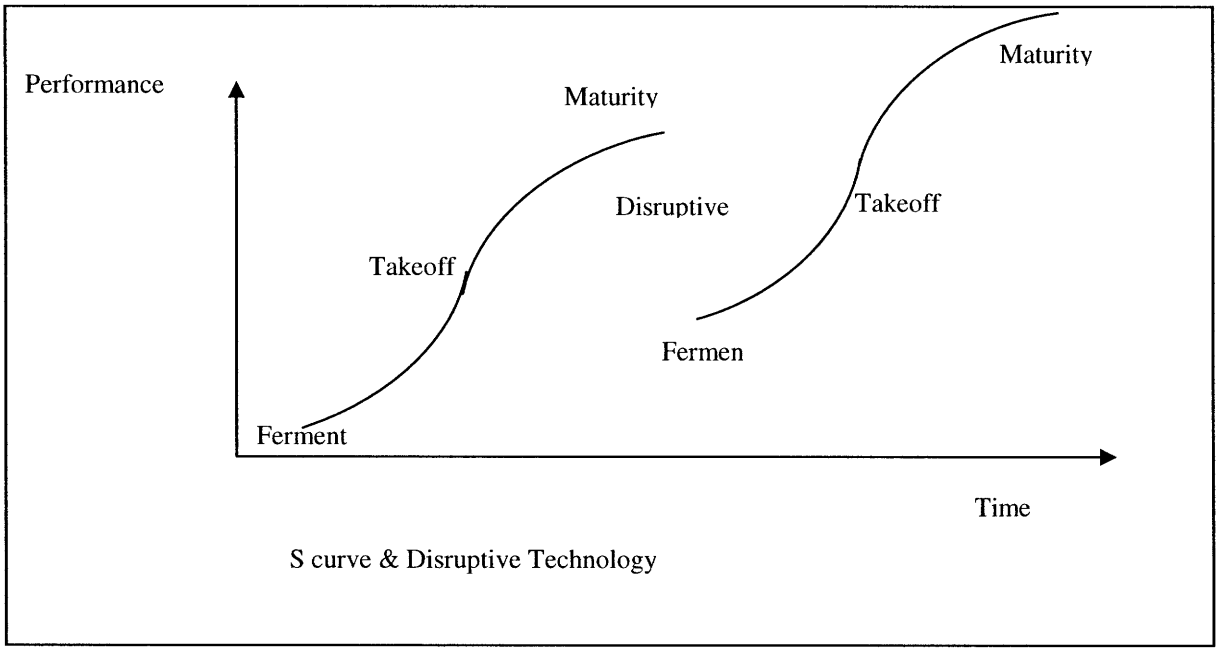
The term disruptive technology was coined by Clayton M. Christensen, a professor at the Harvard Business School, and introduced in his 1955 article, "Disruptive Technologies: Catching the Wave." A disruptive technology is a technological innovation, product or service that eventually overturns the existing dominant technology or product in the market. By contrast, "sustaining technology or innovation" improves the performance of established products. Rebecca Henderson, a professor at MIT's Sloan School of Management, uses an S curve and disruption model to address the challenges and opportunities facing each industry and firm. Henderson presents the research work of Utterback and Tushman who divided the technology life cycle into three eras: ferment, takeoff and maturity. The disruptive innovation brings out the next S curve. How to generate value from the current S curve and catch the wave of the next S curve is the challenge facing each firm. For example, Kodak, a leader in traditional film, fell into decay due to an unsuccessful transition from traditional film S curve to new digital S curve. The company with forward-looking ability must foresee the upgrading technology and make good preparation for the transformation, not only in technology, of course, but also in organizational structure, talents and market. See Figure 7.3 Rebecca Henderson's presentation of Utterback and Tushman's S curve model

Huawei did quite well at S curve and disruptive technology in upgrading and technological development. Ren Zhengfei focused on the thought of "making every effort in advancing the core network technology," and emphasized that software and hardware, the key core of network technology,

should form its own core technology. Back in 1993 Huawei invested in the C&D08 digital switch all the money it had made in the five years since its founding. After gaining the market advantage with this switch, then the market changed.

Huawei put great effort into optical networks and intellectual networks with SDH as the core technology. While developing wire technology Huawei saw the opportunity and potential of wireless technology. In 1996 the company began to develop 2G and gradually moved on to 3G in WCDNA, TD-SCDMA. It finally made magnificent achievements on 3G technology. Huawei's forward-looking view of technology development and the restructuring of certain businesses gave the company its great impulse to continuous development.

Figure 7.3 Henderson's presentation of Utterback, Tushman, and Christensen's ideas



3. Course of globalization

3.1 The background

Since 1996, when Huawei formally entered into the international market the company regarded globalization as an important strategy of business development. In the same year when Premier Zhu visited Huawei, he indicated specifically that the government will provide buyers' credit to producers of

native-made brand switchboards so that they can enter the global market. This was a strong driving force for a telecom manufacturer like Huawei who usually gets slow payment. The support of this government policy accelerated Huawei's determination to internationalize.

In the course of Huawei's globalization, Zhengfei Ren's three ideas about globalization, professionalization and maturation had been influencing Huawei's development. His three ideas are: only after the narrow sense of national pride comes the real globalization mindset, and only after the narrow sense of pride in Huawei comes professionalism, and only after the narrow sense of brand awareness comes maturity.

3.2 Management system and organizational structure brought in line with international practice

Since 1996, Huawei had prepared for achieving the goal of "world class enterprise" in internal management, structure and process. In 1997, Huawei introduced the management system and concept used in global corporations, and made a series of process transformations in human resources management, financial management, and quality control. HAW, an American firm of consultants, assisted in the design of a Position Qualification Evaluation System in 1997. In 1998 Huawei began to use the ISC (Integrated Supply Chain) and IPD (Integrated Product Development) management model and invited QA consultants from Fraunhofer-Gesellschaft, the German State Institute of Implementation Research, financial consultants Price Waterhouse Coopers (PWC), and the strict audit of KPMG to establish a world-class "process and effectiveness-driven" advanced management system.

Huawei carried out an organizational transformation to ensure that its international business ran smoothly. On the basis of its vertical product departments the company was divided horizontally into eight regions globally. The position of president was established in each region, with whole teams of sales, post-sales, marketing and finance to form a complete subsidiary system. Finally, a matrix model was formed, which is the benchmark model used in multi-national companies for their global operations.

3.3 Global marketing

Huawei, continuing its domestic marketing strategy of "encircling the cities from the rural areas" in its global marketing, first went to Africa, Asia and Latin America and then entered Europe and America.

The Africa, Asia and Latin America areas include: CIS (Commonwealth of Independent States), Southeastern Asia, Middle East, North Africa and Latin America. Despite differences in culture, which is true of the Chinese market also, their markets are not quite mature, making the sales experience in China quite relevant. Huawei mainly adopted direct marketing and sold its products by submitting tenders in these areas.

Europe and America are quite mature markets. The competition is severe and relatively standardized, which requires higher overall business competency. Huawei therefore took an indirect strategy and entered these markets by various ways of cooperation with local businesses or dealers.

3.4 Independently developed property rights enhance international competitiveness

Huawei has about 30,000 R&D, staff accounting for over 48% of the total number of employees. Its domestic R&D centers are located all around China and attract talent locally. Huawei set up its R&D center in India in 1999, and later established centers in America, Sweden and Russia. By establishing R&D centers in its global markets, the company gets the most updated science and technology information, knows well about the technology level and strength of world-class corporations, and keeps its R&D in step with industrial standards. In this way, Huawei formed a core technology to consolidate and enhance its core competency.

To match up development of globalization with the development of marketing, in 1996, led by Yinan Li, the company started to transition from the traditional importing and development of SPC to a new generation of equipment and technology research and development. In 2005 the company entered 3G (WCDMA, CDMA2000, TD-SCDMA), NGN, optical networks, XDSL and data communication fields. Huawei has the ability to provide end-to-end business operation solutions. Its network covers the six fields of fixed network, mobile network, optical network, data communication, business, and software and terminals. Costs are reduced thanks to the hardware and software platform and the ASIC chip design shared between product lines. Meanwhile a complete core technology was built up to promote the overall competitiveness of the network.

3.5 Financing—an engine of globalization

When Huawei's product lines became broader and broader, Zhengfei Ren began to peel off it's non-nuclear businesses in order to advance globalization with more capital. Currently, its product line is wired network, optical transmission, wireless network and later mobile phone terminals. The company's customers have expanded from business customers to telecom operators. In the field of wireless communication, Nokia, Motorola Ericson, NEC are all its competitors. Rivals in the field of optical transmission are Alcatel and Siemens. And Cisco is Huawei's No. 1 counterpart in the field of data communication. It was a challenge to compete with those industry giants in such a broad array of product fields.

Since 2001 Huawei has started an "Autonomy plus Capital" dual-driven model. In 2001, Huawei sold a subsidiary called Avansys to Emerson for US$750 million. The separation of these non-nuclear businesses brought Huawei capital for globalization, and also enabled the company to put more effort into its core businesses—wireless and broadband.

3.6 Government support for internationalization

Zhongxing from China had been eliminated in the first round in the invitation for tenders for GSM mobile network extension, valued at US$4.8 billion, held by BSNL (Bharat Sanchar Nigam Ltd.), one of the biggest mobile telecom operators in India. Before that Huawei had submitted a trade qualification permit application nine times to India's Foreign Investment Promotion Board (FIPB), but the applications had been refused repeatedly by departments of the Indian government, citing "influence on state security" as the reason.

An internal message came from Huawei not long ago to say that they had an initialed 3G contract with T-Mobile USA (an American mobile operator attached to German Telecom and the fourth largest operator in the USA) . After innumerable difficulties Huawei is making a success in the U.S.A. This year Lenovo Group obtained the contract for 16,000 sets of ThinkCenter desk computers with the U.S. Department of State through open tender, and this caused a violent reaction in the U.S.A. Under pressure from all quarters in America the Department of State had to change its mind about these computers.

When the competitive strength of an enterprise has been brought into full playand yet no breakthrough has been achieved, we must think again about the "competitive strength of the country." In fact, the competitive strength of a corporation is one of the many manifestations of the competitive

strength of the country. Professor Michael Porter, of the Harvard Business School, said in his book "The Advantage of Nations," "Country is the basic competitive superiority of enterprises. The reason is that it creates and continues competitive conditions of enterprises. Country not only influences strategy made by enterprises, but is also the center for creating and continuing production and technology development." After studying the cases of numerous enterprises in nearly ten countries, he found that even today, when the global economy is so integrated, the importance of country to industry and corporate competition has not decreased, but, rather, increased. He further summed up that success in competition is derived from differences of economic structure, values, culture, political system and history between countries.

No matter how Chinese enterprises such as Huawei, Lenovo and TCL advance on their roads ahead, even if they have become international companies headquartered in New York or London, their fates will still connect closely with their motherland. And today, in order to realize the goal of leaping the last few steps to become world level enterprises, companies must have greater support and assistance from their governments.

4. Features of Huawei's HR strategy

People are always the greatest resource of Huawei. Zhengfei Ren once said, "All industrial products are created by humans. Huawei does not have natural resources to rely on, so the only way for us would be to dig out large oil fields, forests, coal mines and so forth from the human brain." But what Zhengfei Ren stressed is that "Responsible and effectively managed employees are the greatest resources of Huawei." Huawei has, therefore, been looking for the most effective way to recruit, train, attract and motivate talent.

In comparison with other local enterprises in China, Huawei has always held an advanced sense of the value of human capital, and has expressed this commitment by investing as much as possible into human resources. In order to adapt to different stages of development, a mature HR management system has been formed gradually at Huawei, including a perfect talent recruitment mechanism, training and rating system, and motivation mechanism.

The four core elements of Huawei are talent, technology, products and opportunity. The target of continuously increasing the value of Huawei's human capital takes precedence over the pursuit of increased financial capital. Opportunity draws talent, talent draws technology, technology draws

products, and they, in turn, draw opportunity, thus forming a positive cycle of HR management at Huawei.

The most essential part of the *Basic Law* Huawei issued in 1998 is Chapter IV, an elaboration on Huawei's basic HR policy. Article 55 in this chapter incisively defines the basic objectives of HR management in this way: "Huawei's sustainable growth relies basically on organizational construction and cultural construction. Hence the basic objective of HR management shall be to build a mammoth core of highly qualified, highly united personnel of high ideals, and to create a mechanism to help excellent talents to reach distinction through motivating and disciplining themselves, so as to provide security for the rapid growth and effective operation of the company.

4.1 Recruitment

Zhengfei Ren always encourages the strengthening of spiritual civilization by means of material civilization. The high pay policy has attracted a great many excellent talents to Huawei, either from academia or society. On-campus recruitment in 1997 offered a new graduate who came to Huawei 800 RMB more per month than was offered by the famous British/American Tobacco Company at that time.

Before 1996, during the pioneering period of Huawei, the demand for technical talent was met mainly through the talent market and unorganized resources. In late 1990s, during the period of fast growth, talent was selected mostly through campus recruitment. From 2005 until now the company has set up a mature global recruitment and internationalized talent data system. During recruitment Huawei insists on recruiting the best talent. And no recruited employee is to be wasted. Huawei abides by seven recruitment principles: 1) The most suitable is the best. 2) Mutual selection is now regarded as the ideal. 3) Each of the recruitment strategies is target-oriented. 4) The recruitment staff person's responsibility is both to the company and to the candidates. 5) The departments who are hiring should come to the recruiting process. 6) Design scientific and reasonable candidate registration forms. 7) Storage of talent information means adequate provision for the future of the company.

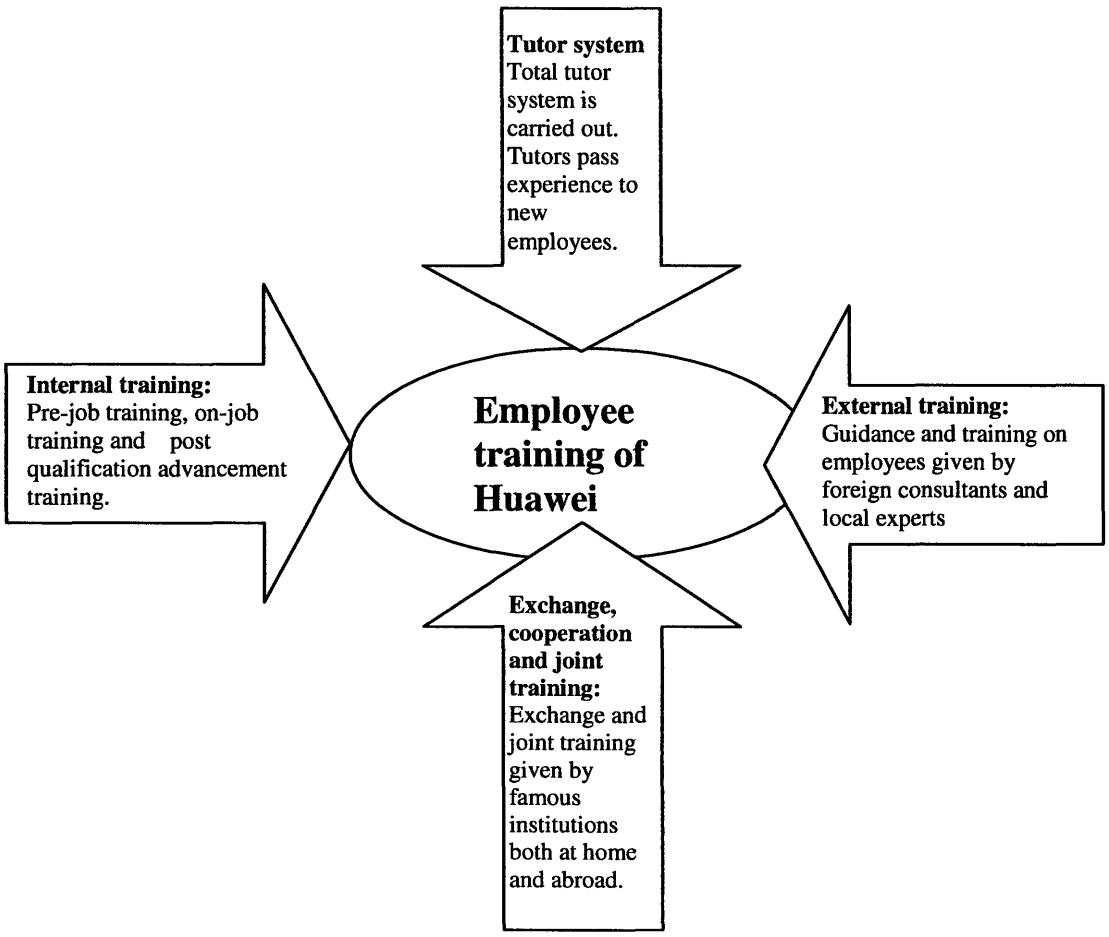
4.2 Training

Huawei always aims to build an organization which fosters learning. The career growth of Huawei's employees is mainly supported by a strong and systematic training system, offering training

for different types and levels of employees, and a job qualification management system providing double promotion channels.

An all-employee tutoring system is carried out at Huawei, so that experienced employees provide overall guidance and assistance for new or low level employees regarding thought, technology, business skills and so forth. The tutoring system provides an effective way to pass on, from generation to generation, technology, culture, system and the company's spirit. Internal training is always active at Huawei, including pre-job training, on-the-job training and job qualification advancement training. The company offers external training and training of employees by both foreign consultants and local experts, as well as exchange and cooperative training, joint training ,including total enhancement of employee quality through exchange and joint training with famous institutions both at home and abroad. See Figure 7.4 Huawei's Employee Training System

Figure 7.4: Huawei's employee training system

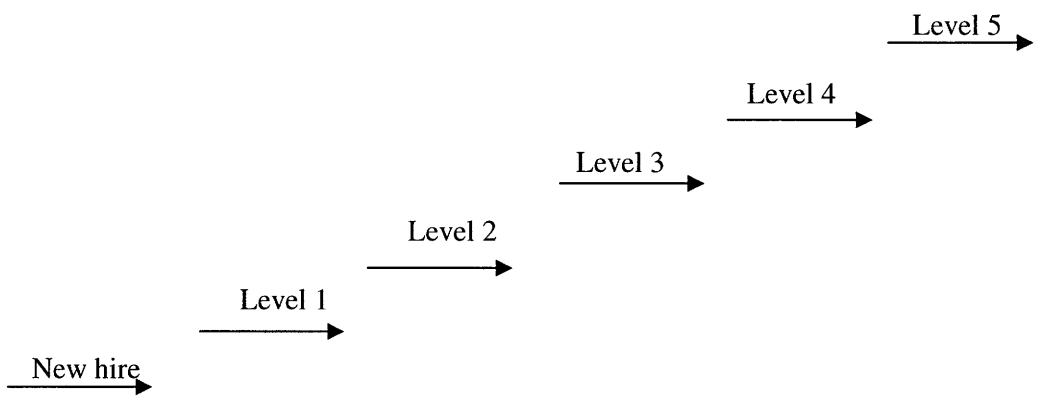


4.3 Talent retention and motivation

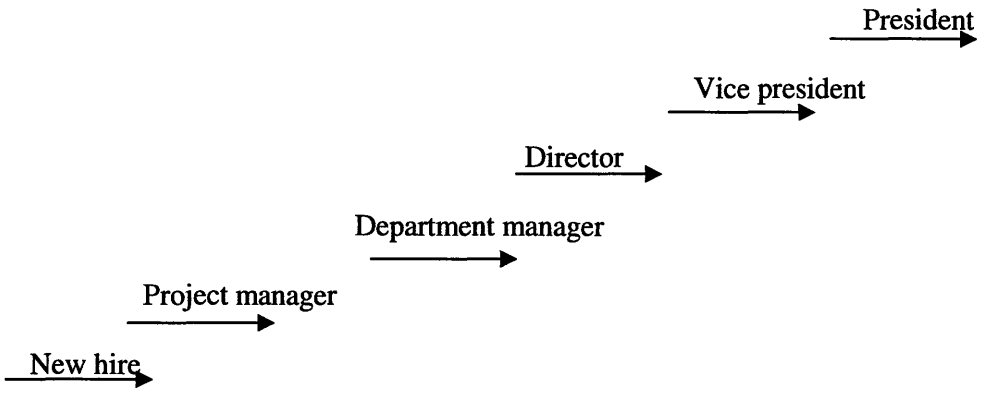
How to retain excellent talent to the maximum extent is one of the reforms Zhengfei Ren long ago incorporated into the company's HR management. In 1997 Huawei cooperated with the National Council for Vocational Qualification, in the U.K., to promote reform of the job qualification system. The reform included three parts: design of a vocational development channel, establishment of vocational ability rank standards and vocational rank certification. Based on the British model, Huawei designed a *double promotion channel model.* In this model employees may choose either the management or the professional channel for development. After an employee has been promoted as a senior expert, his pay and job status may correspond to the level of vice president of the company. As a result, excellent technical talents may work whole-heartedly in their jobs and give full play to their professional knowledge or skill.

Huawei has designed two paths for employees' careers: the professional path and the management path are on an equal footing so that all types of talent get full play. This equal valuing of technical and management skill has stimulated the overall and balanced development of the company.

Figure 7.5 a double promotion channel model in Huawei



Management path:



A very effective motivating force at Huawei is its "Employee Stock Option Plan," which was created to resolve an earlier problem of a need for funds for business development. When the problem had been resolved, the Employee Stock Option Plan became actually more effective as part of a staff reward and motivation plan. In 1997 Huawei finished its reform of the Employee Stock Option Plan and completed the first increase in capital. The purpose of the amended "Rules of Employee Stock Holding" was clarified to be "to link up employees' benefits with long-term benefits of the company, to enhance a sense of belonging, to care for long-term development and participation in management, to form a competitive and motivating allocation system." The important reason why Huawei's Employee Stock Option Plan has been continuously developed is based on two management concepts advocated by Zhengfei Ren: "community benefit" and "knowledge capitalization."

Case Study 8: TCL and the Chinese Color TV Industry[40].

Dongshen Li, Chairman and CEO of TCL Group, leader of TCL's high growth, was awarded "CCTV Man of the Year in the Chinese Economy" in 2002 and 2004, and in 2002 the "Annual Innovation Prize." In 2004 he was elected "Man of the Asian Economy" by *Fortune.* In 2004 the Medal of National Honor was conferred on him by French President Jacques Chirac, and in 2004 Dongsheng Li was also listed in the "Top 25 Most Powerful Global Business Leaders" by *Times Weekly.*

Founded in 1981 and headquartered in Guangdong province, TCL Group Ltd. is the largest consumer electronics group in China, with three public companies in Shenzhen and Hong Kong. For 25 years TCL has sustained rapid growth. In 2005, TCL Corporation attained revenues of US$650 million, with 65,000 employees in 145 countries. Focusing on multimedia electronics, mobile communications and digital electronics, TCL also engages in industries such as home appliances, core accessories (e.g. modules, chips, display facilities, energy resources, etc.) lighting and cultural products. In 2004, by acquiring and restructuring the TV business of Thomson France, TCL became the world's largest color TV manufacturer, with the world's largest annual color TV sales of about 23 million sets in 2005. Through acquiring the mobile phone business of Alcatel, TCL's mobile phone business became a global supplier, covering Europe, South America, Southeast Asia, and China.

With support from the reform and open door policy adopted by the Chinese government, TCL is one of the few companies that emerged from the highly market-oriented Chinese home electronics industry, one of the earliest local state-owned companies that focused on capital activities and structural reform, and also one of the first Chinese companies that competed in the global market. Therefore, as a typical example of a mature Chinese firm, the history of TCL is of great value in a study of the internationalization of Chinese corporations.

1. Development of the Chinese color TV industry

In the past two decades, The Chinese electronic industry has been rapidly growing into a leading industry, and the overall scale of Chinese electronics manufacture has reached US$475 billion by 2005, ranking No. 2 in the world, and in color TV and mobile phones the output stands as No. 1 in the world.

[40] I appreciate the contributions to the research for this case study by Janet Deng.

What follows here is a study of the Chinese electronic/ information technology industry, taking color TV as an example.

As the most marketed home appliance sector in China, the color TV industry has been of great importance in the development of Chinese marketing. We could also say that the development of the color TV industry is the epitome of the Chinese electronics industry as a whole, adapting to the change from a planned economy to a market economy. Looking back on the past several decades of growth, the history of this industry could be roughly divided into three stages: the industrial development and introductory phase in the 1980s; the high growth period in the 1990s, and the maturing and adjusting industrial period at the end of the 1990s and into the 21st century.

1.1 Introduction and industrial development of color TV in the 1980s—incorporate overseas technology and production capacity; demand exceeds supply

1.1.1 Build up color TV throughput by introducing, digesting and innovating

The first black and white TV set, trademarked "Beijing" and sized 14", was produced by Tientsing Communication and Broadcasting Television Factory in 1958. It was created by combining a radio tube made in China with components imported from the former Soviet Union. Right at the same place, on December 26, 1970, the first color TV was created. Ever since then, production of color TVs had grown dramatically. Following the principle of exchanging market for technology, Chinese TV manufacturers introduced advanced technologies and equipment to China. Within 20 years, China has become a global color TV production center.

In the late 70s and early 80s, with the evolution of the Chinese reform and openness initiative, the Chinese color TV industry converted gradually from independent fumbling into introducing, incorporating, absorbing, and innovating advanced technologies and manufacturing capacity from abroad, to Chinese capability in manufacturing, R&D and marketing of color TV. In 1979, for instance, Changhong took the lead in cooperating with Panasonic to set up a black and white TV production line. In 1982, ratified by the Chinese government, and driven by exuberant market demand and profit, the production lines increased to 150, accompanying the rise of the Chinese color TV industry. A second collaboration was arranged between Changhong and Panasonic in August, 1986 on the introduction of the first automatic color TV production line in China. The daily color TV output was up to 1500 sets,

and scaled up the color TV manufacturing capabilities of Changhong bringing it into the No. 1 group of Chinese color TV brand.

1.1.2 Huge Chinese market motivates the development of the Chinese color TV industry

In such a populated country as China, the domestic color TV industry has been greatly stimulated by the huge domestic market demand, consisting of 16,630,000 sets up until 1985, in excess of the U.S. and ranked only after Japan as the world's second biggest TV manufacturer up to today.

1.1.3 Famous color TV enterprises abroad invade the Chinese color TV market

In the late 1980s, however, due to the constraints (technology, function, quality and price) on the Chinese color TV brands, the products made by domestic manufacturers could not meet the rapidly increasing market needs for diversity and novelty inside China. Seeing this situation, well-known color TV enterprises overseas lost no time in competing in the Chinese color TV market, promoting their technology and brands, which undoubtedly impaired brand exploration and product distribution of Chinese manufacturers.

1.1.4 Price war breaks out in Chinese color TV market

As a disparity in production technology did exist between domestic brands and internationally-known ones, and in addition Chinese consumers are very sensitive over price, Changhong cut his prices and 50 days later a state policy was issued regulating such activities. Although the ensuing price war had a negative impact on the development of the Chinese color TV industry, the price-cutting brought about also two essential events: 1) the pricing of Chinese color TV came out from the shadows of the planned economy, initiating the voice of the market and setting the industry on the path toward marketization; 2) the price war between domestic brands.

1.2 Industrial expansion in the 90s—intensified competition between domestic brands and international brands; supply exceeds demand; price war wreaks havoc on industrial profit

1.2.1 Famous international home appliance enterprises launched the first round of investment in China

Since the 1990s, foreign investments, especially from renowned Japanese home appliance enterprises, had surged in China in response to advancing Chinese reform and open policy, making the Chinese color TV market into one of the most efficient markets, full of competition and openness.

1.2.2 New Chinese color TV enterprises rise quickly, powered by market advantage

In a turbulent market where domestic and foreign brands of color TV battled, some color TV brands born in the old-fashioned planned economy environment were forced to stop manufacture, transfer, or even declare bankruptcy because they failed to beat the fierce market competition. Yet others,, which accommodated to the new market challenges, grew fast.

Take TCL, for instance; in the 1990s, TCL built up a formidable domestic sales network by implementing production of original equipment manufacturer and distributing huge 29-inch color TVs. Following up this strategy, TCL acquired Hong Kong's Lu and several old state-owned counterparts, providing capacities of R&D production and distribution in a short period of time. Hence with Changhong, Konka, TCL and Skyworth as leading firms, a new pattern emerged and the industry entered into a stage of vigorous growth, and a few solidly competitive, technologically advanced key industrial enterprises appeared in China.

1.2.3 Quality and hi-tech drive the Chinese color TV industry

Since the early 1990s, Chinese consumers had been maturing—caring about technology and quality rather than simply enquiring about price. The foreign color TV vendors seized on this characteristic and highlighted their exotic qualities, their advantageous technology, and flashed out upgraded or new breed products and grabbed a significant market-share in China. These competitors drove the domestic manufacturers to recognize their inferior products and change their status, offering better quality and technology in addition to a simple price reduction. Being more familiar with the Chinese market, domestic enterprises had a competitive advantage in price and service over foreigners. On March 26, 1996, Changhong led the industry in making a huge 29-inch screen color TV, named "Red Sun", with good technology and quality and a competitive price 30% lower than the foreigners and for the first time domestic color TV sales outran the foreign ones in an historic victory.

During the late 90s, the Chinese color-TV industry had been advancing toward maturity in matters of production techniques, scale of product and sales, and corporate management, as well as with

comprehensive brand competition. The intense market competition led to increased concentration on the TV market. Famous domestic brands such as Changhong, TCL, Konka and Skyworth started to dominate the market. As a follow-up, the marketing impetus of foreign brands kept fading away in the face of the technological enhancement and lowered prices of domestic color TV manufacturers.

1.2.4 Furious competition in a money-losing industry

Due to the low barrier to entry into the color TV industry and the high margin, plenty of companies joined this industry, resulting in over capacity and over supply. To minimize the inventory, the color TV industry fell into endless price battles to obtain high market share at the expense of profit.

Led by Chang Hong, who launched the price battle with a reduction from 8% to 18%, the whole industry got involved in the war. According to the research, during 1996-2001, the overall industry experienced ten price wars. Take the 21-inch set, for example: the price decreased from US$175 in 1999 to merely US$100 in 2000. In 2001, the average price reduction reached 18%, and the overall industry loss of profit amounted to US$375 million. The color TV industry decreased from a high margin business to merely average. From 1999 to 2001, the profitability of the color TV industry decreased from 2.26% in 1999 to 2.11% in 2000 and 2.05% in 2001. In 2001 the total profit of the main color TV manufacturing enterprises all decreased ranging from 15% to 80%, and many became money-losing enterprises.

In 2000, the Chinese color TV industry was in a fatigued state; the frequent price reductions failed to rejuvenate the entire market and sales volume and profit both fell tremendously. According to the information provided by the Ministry of Information for Industry (MII)in the beginning of 2001: from January to October in 2000 the color TV output was 27.71 million units, with a sales volume of 29.02 million, down by 10.6% and 5% respectively, compared with last year, and the accumulated inventory amounted to 6 million units.

1.3 A mature and regulated period (2000)—technology updated, products diversified and enterprise internationalized

1.3.1 With China's entry into the WTO the overseas home appliances industry adopted a localization strategy, launching the second round of investment in China

After experiencing the rounds of price war in the late 1990s, the whole domestic color TV industry faced constant profit reduction. Meanwhile, with China's entry into the WTO, the overseas home appliances enterprises adopted a localization strategy and launched the second round of investment in China. They started to seize the high-end market in color TVs with new display modes represented by PDP, LCD, and PTV. The overall domestic market was in furious competition.

1.3.2 The Chinese color TV industry faces a structural reshuffle

Chinese color TV enterprises have to confront and solve their increasing problems of industrial configuration, product updating, and product exporting. These problems plague the technology of color TV and advanced display. Since TV developed from black and white to color and then to digital, and from common flat to super flat to pure flat, the production scale of color TV increased, and domestic producers gradually upgraded the technologies to meet the market demand. Technologies such as progressive scan, 50Hz/75Hz-100Hz and digitalization were introduced to the market.

A price comparison of TCL and other known industries is known world-wide because their products are not only saleable in China but are exported to international markets, America in particular, paving the way to a new stage for Chinese color TV companies to stage a breakthrough in technology and industrial upgrades.

1.3.3 Products diversified, enterprises multiplied, and corporations internationalized together form a big tide in the color TV industry

Along with recent new breakthroughs in display technology (rear screen projectors, PDP, LCD) color TV has been moving into a period of industrial advance. The sudden rise of Hisense exemplifies that it is technological upgrades in the industry that initially transforms the industry from low-level, price-oriented competition into a match, on a level playing field, about technological innovations, brand recognition, R&D of new products and after-sales service. Diversification of products, multiplicity of enterprises and internationalization of corporate operations now form a powerful trend in the color TV industry, and even in the appliance industries. As for Chinese color TV industries with poor technological base, they must constantly enhance their R&D capabilities on the one hand and, on the other, they must improve and internationalize their own operational competence in order to catch up with the leaders, stylize their product research to know consumption trends, to ensure their dominant status and profitability.

2. Development of TCL

2.1 How TCL reached US$1 billion in sales (1981-1999)

2.1.1 Establishing the TCL brand and becoming the "China Telephone King"

Founded in 1981, TCL was a local state enterprise which began with cassettes and telephones. Then it incorporated "TTK household electronic Appliance Co. Ltd.," a joint venture with Hong Kong investors, to manufacture and sell TTK cassettes. In 1985 TCL seized the developing chance in the telecommunications market and advanced into the telephone industry. At that time it had its own brand, "TCL" (Telephone Company Limited) and incorporated TCL Telecommunications Equipment Co. Ltd. It spent only three years to reach the top telephone production and sale volume. The highest market share was 70%. Afterwards it became widely known as the "China Telephone King." In 1986 it registered the TCL trademark in the State Administration Bureau of Industry and Commerce. Since that time the TCL brand became well-known all over the country and, in fact, the world. TCL became the only Chinese enterprise without a Chinese name. In 1993, TCL Telecommunications Equipment Co. Ltd. was listed in the Shenzhen Stock Exchange.

2.1.2 Successful entry into the color television market

In the early 1990s, there was fierce competition in the domestic color TV industry. But the productivity of domestic big-screen color TV was very low. TCL seized this chance, beginning with big-screen color TV and by that means the company entered the TV industry. It cooperated with Hong Kong Great Wall Electronic Co. Ltd. to produce televisions and forged ahead to take a leading place in the domestic color TV market after a few years, becoming one of the top three in domestic color TV in 1996.

2.1.3 Establishing a channel model; "speed challenges scale" and "intensive cultivation" strategies

It is very late for TCL to enter the color TV market, and in addition they had no factory and could succeed only by dint of sales. TCL gained great success mainly by three tactics:

(1) "Focusing Tactic:" when they first began selling they focused on the big-screen TV. The focusing tactic also provided good experience for their entry into the high-level mobile phone market at the end of the 1990s.

(2) "Speed Challenges Scale" and "Intensive Cultivation" strategies: in the middle of the 1990s, the main color TV providers, such as Chang Hong, depended on a general agent system, composed mainly of big dealers. The disadvantages were too many levels, too much stock, and price disorder. TCL was keenly aware that they couldn't go deeply into rank two and three cities, or into the county level market. So it established sales branches in the rank two and three cities, and sold directly to shopkeepers. It established seven regions, 32 branches, 180 departments and sales teams of 14,000 persons in a sales network which could cover counties. The sales network was much larger than Chang Hong's and the branches were much deeper. Although it is very difficult to establish and manage this kind of channel model, it is much better than the general agent system of Chang Hong. TCL rose to the top three quickly by this channel model, which they invented, and became No. 1 in the color TV industry in 2001. This channel model accumulated important resources for TCL. Later TCL used this kind of channel model when it entered the mobile phone industry. It is also very useful for the rise of the mobile phone business partially to use the color TV channel.

(3) "Low Price Competitive Strategy:" to enter the market quickly, at the beginning TCL used low price competitive strategy. At that time the imported 29 inch color TV cost more than US$1,250. The products of other domestic manufacturers cost about US$1,000. But TCL cost only about US$500. In the price competition launched by Chang Hong in 1996, TCL realized this chance immediately and followed closely. It became the biggest winner and in the top three in the China color TV market.

2.1.4 Low-cost acquisition strategy

TCL acquired Hong Kong Luk's Enterprise, Henan Meile Electronic Group, Mongolia Rainbow TV Company, and Wuxi Swan Color TV Company, one after another at low cost. With these acquisitions it completed its own overall color TV production arrangement and made itself stronger, and also it mastered necessary techniques and obtained human resources.

2.1.5 The management of TCL under the authority of the Huizhou government

TCL was a local state-owned enterprise which began with US$625 in assets. Even in 1997 the total net assets of TCL were only US$40 million. At the beginning of development, Mr. Jieshi Zhang was a pioneer first general manager of TCL Group. The company had three subsidiaries which developed independently, including the Telecommunications Group (focused on telephone business), electronic Group (focused on color TV and AV business), and Yuntian Group (other business).

In 1997 the company was restructured into TCL Holdings Co. Ltd after the revocation of the three subsidiaries. Li Dongsheng was appointed as Chairman and President. At that time TCL was a state-owned enterprise, whose 100% share rights were owned by the Huizhou government.

Property rights reform was the core of establishing the modern enterprise system. In 1997, following the reform of China's state owned enterprises, the Huizhou government decided to carry out a five-years' authorized management experiment on the TCL Group. On the base of value maintenance and increase of state-owned assets, share rights from increased assets could be used to encourage managers. Any return higher than 10% of the government-owned assets were distributed according to company management as a bonus in the form of company shares. Share rights could be used to encourage the team of managers according to their proportion. Therefore, state, enterprise, managers and employees began to share the fruits of reform together. Everyone benefited. What is more important was that TCL accomplished the transformation from a traditional state-owned enterprise into a modern enterprise, adapting to market competition through expanded system reform. It is a significant incident in the development of TCL, which seized the chance offered by the government's decision-making and promoted the reform immediately.

Since the implementation of "incremental rewards through stock sharing," TCL Group began to enter a period of fast development. After seven years the total net assets of TCL Group increased from US$40 million to US$692.5 million. It increased 17.3 times. The sales revenue increased from US$825 million to US$5.25 billion, a six-fold increase . The total profit increased from US$46.25 million to US$178.75 million in 2003.

In 2002, through incremental assignment and share options employees and managers held 42% of shares. Managers held 25%. In 1999 TCL sent out warrants to employees and encouraged employees to hold shares. The employees' share options amounted to US$16.25.

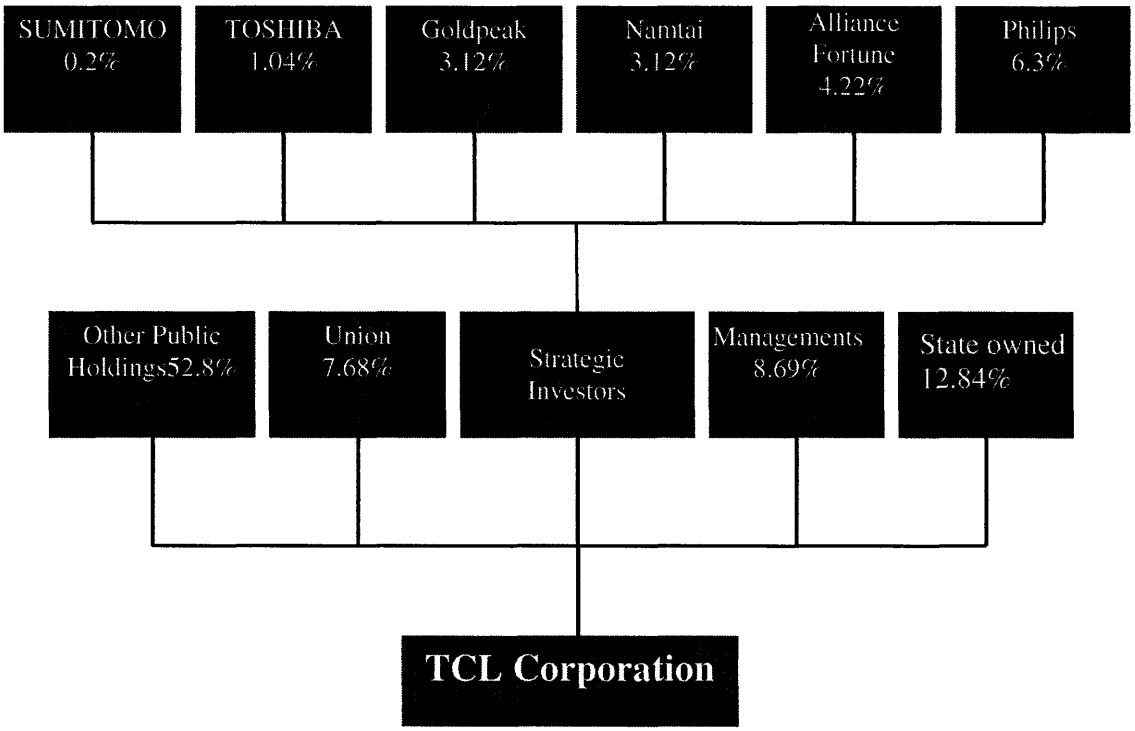
2.1.6 State-owned share rights gradually withdrawn; the whole group went public

In 2002, TCL completed the reform of the share-holding system and introduced international strategic investors. The company transformed from a state-controlled enterprise into an enterprise of multiple investors and mixed ownership. It changed its name to "TCL Corporation." State-owned share rights were still 53%.

In January 2004, the whole of TCL Corporation went public through an initial public offering and merger by absorption.

At the end of 2005, the Huizhou government sold down their TCL shares again, and held only 12.84% of shares. The current share-holding structure of TCL Corporation is shown below.

Figure 8.1 The share-holding structure of TCL corporation in 2005



After many years of property rights reform, TCL Corporation became a public company which had multiple share-holders. The corporation's governance structure had been optimized.

2.1.7 Launch of the initial cultural change—innovation and decentralization

At the beginning of 1998, TCL started the initial cultural change and innovation activities. The telephone business was stagnant; the color TV business was developing very slowly; domestic market competition grew ever fiercer.

The change and innovation activities solved several big problems:

1) They re-established the core ideology of the corporate culture.

2) They realized the effective integration of the organization, and pulled together the internal separate organizations of the TCL Corporation. The activities formed a decentralized and separate organization system based on common values. This decentralized system, based on trust and common values, accredited fully every management team and encouraged the "entrepreneurial spirit" of management teams. It is very useful in a period of fast development.

3) The activities effectively promoted the innovation of the marketing model. They formed the systematic marketing ideology of "win at last."

In 1995, TCL Corporation realized sales revenue of US$130 million. In 1999 TCL Corporation's sales revenue was US$1.218 billion, with a total profit of US$37 million. In 1999, TCL International Holdings Limited, which mainly did color TV business, went public in Hong Kong.

2.1.8 Corporate culture guided by chance

The early cultural characteristic of TCL was "Be good at chasing the market chance." That is to say, the early stage was guided by chance and won by chance. At that stage TCL did not systematically establish a corporate culture, and just developed some slogans, such as "unite and pioneer," "hard work and struggle," "dedication, teamwork, innovation," and so on.

2.2 The stage of multiple developments: how TCL reached US$3 billion in revenue (1999-2002)

2.2.1 Multiple expansions in the fields of consumer electronics, computer and communications production, achieving the overall industrial arrangement of 3C

To taking a leading place in the domestic market in the telephone and color TV industries, from 1998 on TCL entered multiple related fields on a large scale through joint investment and cooperation with well-known international enterprises. Since then, TCL became the first electronic manufacturer in China to have a 3C industrial spread: Consumer electronics, Computer, Communication.

In the field of computer production TCL entered the PC industry in 1998. In 1999 it entered the fields of network route production, education on the Internet, website and IT product distribution through acquisition and absorption. TCL completed the integrative IT arrangement of computer,

software development, network access equipment, information platform, and content provider. After several years of industrial restructuring, TCL kept only three industries. These were computer, IT products distribution and education on the Internet.

In the field of consumer electronic production: in 1999 TCL entered the refrigerator and washing machine industries, and in 2000, air-conditioners. In 2004 it entered the small household appliances industry. In the field of communications production it entered the mobile phone industry in 1999.

2.2.2 TCL achieves great success in the mobile phone industry through ID marketing

In 2001 the total revenue of TCL mobile phone surprisingly reached US$375 million. In 2002, the achievement of TCL mobile phone continued to rise rapidly, and the total revenue reached US$1.025 billion. That year the whole TCL Corporation realized a total profit of US$187.5 million, to which the mobile phone business contributed uS$150 million.

Mobile phone was the second great success after color TV in the history of TCL. The success of mobile phone can be attributed to three main reasons:

1) The successful experiences and channel resources of the color TV business helped TCL's mobile phone business avoid detours and go deeply into rank two and three markets. It avoided the monopolized status of foreign mobile phones in big cities at that time.

2) TCL entered the mobile phone industry at the right time. After two years groping TCL formed its competitive capability. It was the right time for the mobile phone market to grow explosively. So TCL gained a large profit quickly.

3) "Blinged mobile phone" succeeded as a marketing concept. The person in charge of the mobile phone business, Mingjian Wan, related the mobile phone to precious stones in a creative way. Although blinged mobile phones had no technical characteristics, the product had a very unique design that attracted a certain segment of consumers. The success of this product made the trademark of TCL mobile phone famous and established a base for the maturing of TCL mobile phones.

2.2.3 Marketing reform in TCL's color TV business—value evaluation and value incentive as the core of reform

The marketing network of TCL color TV business was one of the main driving forces behind the rapid growth of TCL color TV. But many years' rapid growth and expansion also brought problems.

The most distinct problem was "high cost and low efficiency." Since 2001, the marketing network of color TV promoted organizational reform for three years. Starting with the promotion of KPI assessment, it improved the management efficiency of the network and lowered operational costs through the reform of business logistics and the construction of information systems.

The reform mainly solved the following problems:

1) Through the promotion of the KPI assessment system, TCL established an assessment mechanism directed by achievement and a distribution system according to value. In the marketing system it solved the value evaluation and value incentive problems;

2) Through the restructuring of the management department and office it simplified processing, streamlined organs and improved the management quality of the marketing network;

3) Starting with reform of business logistics and the construction of information systems, it built up the core competitive capability of the marketing network, "three channels and two platforms," to adapt to new channel environments. This reform established a successful base for the long-term development of the TCL color TV business and provided an example for the marketing model innovation in TCL's other industries.

(P.S. "Three channels refer to logistics flow, capital flow and information flow. "Two platforms" refer to the customer resource management platform and service management platform)

2.2.4 The corporate cultural innovation in 2002—"create a new corporate culture with international competitiveness"

Between 1999 and 2002, after diversified expansion, TCL rapidly attained a scale of US$3 billion. During this period TCL harvested the mobile phone business which was in a golden period at that time. Meanwhile it had also undergone the cold winter of IT business and the cruel competition of the home appliances industry. A series of problems occurred during the fast and diversified expansion, but TCL just blindly pursued size while neglecting quality, and this blind pursuit of business development resulted in a series of internal management problems. Except for the mobile and color TV businesses which were profitable at the time, most of the businesses were losing. Dongsheng Li has even admitted that "51% of the subsidiaries were at a loss."

In the beginning of 2002, Mr. Li launched the cultural reform and innovation entitled "create a new corporate culture with international competitiveness," and carried out a series of organizational regulations.

The main contents of the reform are:

1) Enhance the macroscopic management capability, focusing on the management of HR, Finance, Brand, IT and Auditing, and promote the performance of management and KPI evaluation at the corporate level.

2) Regulate the business layout and shrink the IT industry; put forward the slogan "either eliminate the loss from an enterprise or eliminate a losing enterprise," and proposed a "dragon and tiger plan" in 2003, with the goal of becoming a global leading corporation in the color TV and mobile phone business, and domestically in computers, home appliances, electrical lighting, components, and culture.

3) Reflect on the main problems in the TCL corporate culture: the contradiction between full authorization and actual capability; the authorization to the management team always changed into self-centered parental management; the staffs were lacking in the passion and energy essential for an open organization; lack of cooperation and teamwork; limited talent usage. It also pointed out that the cultural revolution should "formulate management and keep speed and efficiency" as well as "encourage an innovative and learning corporate culture."

The impact of the reforms: they have partly solved, at least partially, the conflict between limited resources and fast expansion that faced the company during the process of diversification. The money-losing subsidiaries were reduced from 51% to only one; corporate competitiveness and performance have been improved to a great extent; meanwhile, the industry layout has been optimized, which built up the foundation for later internationalization; the negative factors in the corporate culture which restricted corporate development have been improved, and the conflict between culture and expansion has been relieved.

2.2.5 Introduce international strategic investors, forming a group with a multi-investing entity and mixed ownership

In 2002, TCL Group completed its share holding system reform, introduced international strategic investors (including Philips, Toshiba, Sumitomo, etc.), changed from a state-owned share holding corporation into an enterprise with a multi-investing entity and mixed ownership, and formally named the corporation "TCL Group Holdings Limited." The company attained revenue of US$2.672 billion for the year, and total profit of US$173 million.

2.2.6 "Emigration culture," "combination culture," "winning by strategy"

From the mid 1990s to 2003, TCL established its dominant place domestically in color TV and the mobile phone business, and related businesses such as TCL computer, electrical lighting, air-conditioners. In this period TCL also stabilized their position in China. TCL made substantial progress on operational scale, market position, and brand influence, and became the leading enterprise in the Chinese electronics information industry. During this period, TCL innovated its marketing mode, enhanced brand strategy and enlarged the company's scale quickly through acquisition and restructuring of domestic industries. With the implementation of system reform, a corporate culture of reform and innovation was established with a vigorous and creative spirit. This period is characterized as "emigration culture" and "combination culture." Slogans such as "win honor for the nation, become one of the world's top 500," "professionalism, credibility, teamwork and innovation," were put forward at that time.

A lot of classical and successful theories came into being within this period, for instance, "seize market first and build factory afterwards," "carry out market promotion with planning," "speed challenges scale," and so forth. This is a period of winning by strategy and three important drivers for success were formed in TCL culture; they are: the entrepreneur spirit bravely assumes responsibility; the reforming and innovating spirit bravely breaks the old traditions and establishes new ones; and the priority of speed, efficiency and cost.

2.3 The period of international development—how TCL reached US$5 billion in revenue

TCL is the pioneer among its domestic peers, marching ahead into international operations, and it has built global competitiveness specializing in color TV and mobile phone products.

Its internationalization has gone through three stages: from simple processing and trade, to marching forth and setting up factories in emerging markets for the company's own brand promotion, through capital utilization and acquisition, to finding its position in well-developed countries, home to internationally famous brands, and finally to building a global business structure.

2.3.1 Start from simple processing and trade

Before 1997, TCL ran its business overseas mainly through OEM and ODM, and during this period it focused on simple processing and export business; this stage was by way of preliminary exploration for future international operations.

2.3.2 Build distribution channels and manufacturing bases

Stage two, from 1998 to 2001, TCL promoted its brand in the overseas emerging market, building up distribution channels and manufacturing bases. Influenced by the Asian financial crisis, which broke in 1997, the processing and export business encountered great challenges, and as a result TCL decided to proceed toward internationalization. In 1999, TCL established its first TCL color TV manufacturing factory and distribution channel in Ho Chi Minh City in Vietnam, and after 18 months of hardships, the Vietnamese company reached a turning point, with continuous growth in market share and sales scale thereafter. The breakthrough in the Vietnam market had significant influence for the internationalization aims of TCL. Since 2000, TCL started to run its business in other south-east Asian countries, and gradually enlarged to Russia, mid- and south-east Africa and Latin America. Nowadays, TCL color TVs are sold in all the emerging markets world-wide, and among them the market share in Vietnam accounted for 20%, ranking No. 2.

2.3.3 Realizing international operations through international acquisition

After stabilizing its position in emerging markets, TCL implemented its international operations with brand strategy, building up a global business structure. To realize the objective of becoming an international enterprise, in 2002 TCL purchased Schneider in Germany and became a shareholder of American Go-Video. The company restructured the color TV business of Thomson (France) and the mobile phone business of Alcatel (France), made big strides into the international market through capital cooperation and business integration, proactively materializing its global brand strategy.

The acquisition of Thomson's color TV business and Alcatel's mobile phone business in 2004 was the milestone for the internationalization of Chinese enterprises. There were ups and downs in the pursuit of international business integration; but they were valuable experiences for later ventures.

2.3.4 Difficulties and challenges in internationalization integration

Since the middle of 2004, the two international businesses (color TV and mobile phones) confronted unprecedented difficulties.

The first comes from TCL's mobile phone business, which encountered a huge slump and loss domestically; the overseas business also failed to achieve the anticipated synergy effect because of low efficiency and high cost.

The next problem arose in the European business of TCL Multimedia. In the middle of 2005, the color TV business was in a crucial period of shifting from CRT to FPD, and this was a fatal shock for TCL Multimedia, whose priority lay in CRT at the time.

During the course of international integration, the main challenges are:

1) The conflict between domestic corporate management systems and international corporate management systems. TCL is a localized enterprise, the overall management system of which is based on domestic business, and the management culture is one with a Chinese character. The international business operation, however, is much more complex with cross-national management, and it requires definite strategies, clear business process and a responsibility system. Therefore, the management system failed to satisfy the operational requirements, which resulted in bad performance in some businesses.

2) Deficient HR strategy. During the process of integration, on the one hand TCL's lack of international talent accumulation and storage; on the other hand, TCL relied too much on the original management team and could not, therefore, take firm action when problems arose.

3) Underestimating the difficulties created by lack of sufficient preparation. TCL failed to make preparations for cash flow, legal protection and manpower. These failings resulted in a resource shortage when crisis happened.

4) Lack of negotiation experience. Due to lack of experience the conditions and terms obtained were not in line with the actual operational requirements.

2.3.5 The third cultural innovation, rebirth of the eagle

In mid-2006, when TCL was on its voyage of international acquisition for two years, the mobile phone business began to realize a turnaround after a tough battle, and progress was also achieved in

North American business. But huge losses unexpectedly accrued in the EU business, which even amounted to US$250 million in 2006. The whole TCL Group had a tough period. Under these circumstances, in August 2006 the Chairman of TCL Corporation, Dongsheng Li, delivered a series of articles: "Rebirth of the Eagle," with the theme of "Abide by our core values, enable global leadership." He formally launched a new round of cultural innovation.

In "Rebirth of the Eagle," Dongsheng Li summarized the factors that drove TCL's success, pointing out the challenges and difficulties they were facing, and analyzing the rooted cultural source of them. He also said that TCL should use cultural reform to improve the daily work, realizing that their goal was world champion.

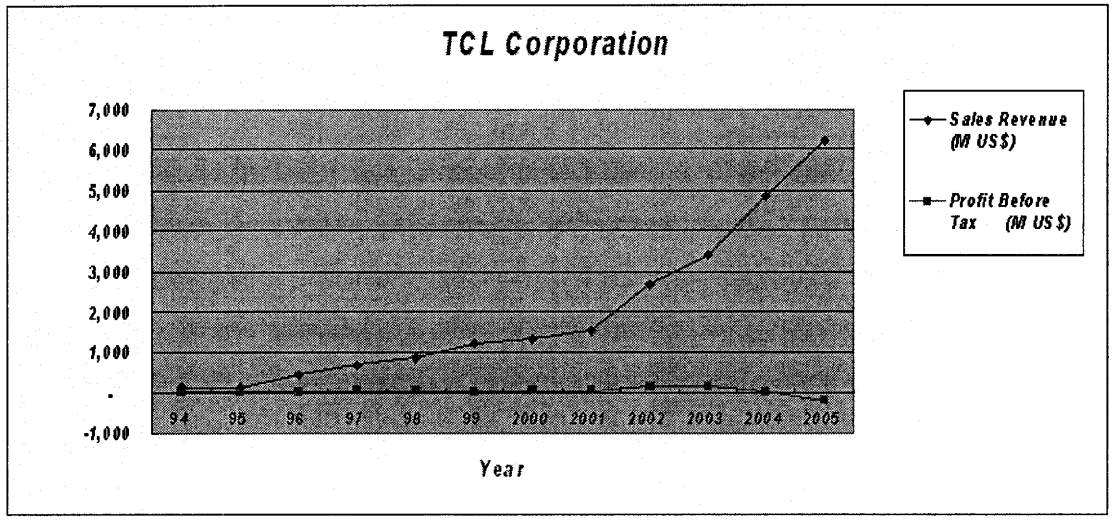
2.3.6 The corporate culture of "winning by organization and reformation"

The acquisition of Thomson and Alcatel in 2004 symbolized TCL's setting its foot on the path to internationalization. Learning from leading global enterprises and building TCL from an excellent Chinese enterprise to an outstanding global one is the objective of TCL. It will build up its global competitiveness by specializing in product planning, ID, manufacturing, supply chain, sales and service, establishing global competitiveness brands, and technological innovative capability. To achieve the target, TCL must amalgamate its own culture with the global one through organizational and cultural reform, and thereby enter into the era of "winning by organization and reformation."

By the end of 2006, the international integration of TCL achieved favorable results. The integration of TCL communications (mobile phone business) basically achieved the objective with a clear strategic target and powerful global resource integration. With stable growth in the overseas sales volume, the domestic market in mobile phones started to become profitable by the second half of 2006. The first stage success for TCL Communications has contributed a lot to the internationalization of TCL. In addition, for TCL Multimedia, the North American business has been improved significantly, and the domestic business continued to maintain a leading position. For European business, which suffered a great loss, a new organizational structure and business mode was established after the overall business restructuring in mid-2006. A breakthrough in international integration for TCL in 2007 is foreseeable.

The following Figure 8.2 depicts the sales revenue and the total profit trend for TCL Corporation in the past two decades.

Figure 8.2 the sales revenue and the total profit trend for TCL Corporation



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Chapter IV: Trend Analysis of the Chinese Electronic Industry

Table 1: Trend Analysis of the Chinese Electronic Industry

Chapter V: Scale Analysis of the Chinese Electronic Corporations

Table 2: Scale Analysis of the Chinese Electronic Corporations

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Notes:

1. "Six Gentlemen of People's University of China": six professors of People's University of China Zheng Bao, Jianfeng Peng, Chunbo Wu, Jianmin Sun, Weiwei Huang and Zhuang Yang, who drafted "*Basic Law* of Huawei" since 1996.
2. Zhengfei Ren: Huawei's founder and CEO, was born in 1994 in Anshun, Guizhou province, founded Huawei in 1987.
3. Baoyong Zheng: the first President of Central Research Department of Huawei, graduated from Central China Science and Engineering Universiaty, later entered Qinghua University for a PhD degree, quit from Qinghua University and joined Huawei in 1989.
4. Yinan Li: the 2nd President and concurrently Executive Vice President of Huawei Central Research Department, born in Hunan province in 1970, entered Youth Class of Central China Science and Engineering University at age of 15, joined Huawei in 1992 when only 22 years old, acted as President and EVP of Central Research Department when he was 26, resigned from Huawei in Dec.2000 and found "Gangwan Network" which was purchased by Huawei in 2006, he came back again to Huawei.

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