

**A STUDY ON CORE COMPETENCE
MANAGEMENT**

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ABSTRACT

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The major objective of this study is to understand the concept and methodology of core competence management. The survival and growth of a company depends on competitive advantage, and effective core competence management. By examining the related literature and analyzing of the case study of Canon, I explain the importance of core competence management as a source of a firm's competitive advantage and future growth potential.

Core competence gives companies significant meaning. The company that has a systematically structured core competence does not experience difficulties despite the changing environment. Core competence offers long-term and differentiated advantage to companies. In other words, core competence provides companies with the source of true competitiveness. That is why so many companies are investing their resources in strengthening their core competence.

Korean companies had a tendency to focus on new markets or the attractiveness of an industry rather than on the relatedness with the existing business. Unrelated diversification could be successful to some extent because the first mover in the new market could enjoy some advantage when the industry is in the growing stage and competition is restricted. However, diversification will not be successful if a company pursued it only because of the attractiveness of the market at the neglect of systematic core competence management.

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. Introduction

1-1. Purpose of the Research

Many Chaebols in Korea were able to grow in a monopolistic market environment that was protected by government support without facing severe competition. The main problem was that these Chaebols, rather than specializing in a specific area were investing their limited financial and managerial resources in diversified, often unrelated areas, without building core competence.

Now, in this age of global competition, Korean Chaebols are standing at an important turning point. Either they have to find their core competence areas and acquire competitive advantage in the specialized fields to effectively meet the global competition, or resort to being ruled by those global companies with accumulated core competence.

Given this background, this study aims to answer the question of “what is core competence” and “how it can be identified”. Then I look at the process of how core competence can be established and implemented based on the identified core competence. The case of Canon will also be examined to identify the process of core competence management.

1-2. Research Methodology and Structure

This study can be divided into two sections. The first section is a review of previous studies on the subject and the second section is a case study.

In the first section, the basic concept of core competence is explained, then a brief summary of studies on the issue by academic scholars is introduced.

The second section suggests a method of finding core competence, and by applying the method in the case study, it provides an empirical analysis on the subject.

This paper also analyzes the case of Canon to understand best practices in core competence management. Finally, the conclusion part explains the significance of this study.

. Literature Review on Core Competence

2-1. The Concept of Core Competence

Competence is particularly important to competitive activities such as business. As a result, much of the thinking about business strategy over the last thirty years has been about what competencies a business needs to have to compete in a specific market, and what markets a business should plan on competing in given its current and potential competencies.

One of the difficulties of the literature on skill-based management is the range of terms writers in this field use to describe their ideas. Similar terms - strengths, skills, competencies, capabilities, organizational knowledge, intangible assets - are used interchangeably by different authors. Kenneth Andrews uses the term 'distinctive competence' to define not just what an organization does, but what it does particularly well.¹

C. K. Prahalad and Gary Hamel introduced the phrase 'core competence' in their landmark article in the Harvard Business Review in 1990. They defined core competence as an integrated bundle of skill and technologies; so that managers consider the corporation as a collection of competitively important competence which could be used in different products and markets.²

Some authors, wishing to place particular emphasis on 'collective learning in the corporation' have chosen to use the phrase 'capability' or 'core capability' as better expressing the dynamic learning processes involved.

What these terms have in common is that they define those unique capabilities, knowledge and behavioral routines which are a potential source of an organization's advantage.

The idea that complex internal capabilities are critical to a firm's success is not new. Phillip Selznick, in his book *Leadership in Administration*,³ was one of the first writers to acknowledge that factors internal to an organization, such as its personnel and its previous experiences, are crucial to its chances of success in executing a chosen policy. In essence, Selznick argued that in the field of business activity, the past determines the present.

He states that an organization's developmental history results in its having 'special limitations and capabilities' - a character, or 'emergent institutional pattern that decisively affects the competence of an organization to frame and execute desired policies'.

Selznick called the peculiar character of an organization its 'distinctive competence'. He defined the art of good management as the ability to make a practical assessment of an organization's suitability to its task or strategy. To illustrate this, he gave an example of a master boat-building firm that specializes in high quality craftsmanship. The firm's management decided to expand into mass production of low cost speed boats.

It proved impossible to adapt worker attitudes away from their commitment to quality and craftsmanship, and the management was forced to relocate the speed boat production and

recruit a separate workforce.

The new venture failed because the history and culture of the organization did not fit it to the new task. Thus Selznick observed that a 'distinctive competence' in one area – quality craftsmanship–may amount to a 'distinctive incompetence' in another–low cost mass production. Selznick concluded that internal social forces affect an organization's chances of success as much , if not more, than do the vagaries of the external market place.

This conclusion influenced many business policy writers, who saw that strategy formulation and opportunity surveillance were useless exercises unless the company had either the internal abilities to execute its decisions or at least a good chance of developing the required capabilities. With this in mind, Igor Ansoff in his book *Corporate Strategy*⁴ advocated that managers compile a comprehensive checklist of their firm's skills and resources, a 'grid of competencies'. Similar grids were to be compiled on competitors, and a cross-comparison was to be made of all the results. The profile emerging from this exercise would be a ready guide to the relative strengths of competitors already operating in a given market.

Ansoff proposed that this document, regularly updated, would form a permanent reference guide for future strategy decisions and could be used in assessing the likely success of diversification. Also writing in the 1960s, joint authors learned, Christensen, Andrews and Guth⁵, influential academics of the Harvard Business School, suggested that a company's competitive strength derived from its 'distinctive competence', or what the company could do especially well.

The goal of corporate strategy was to match a firm's distinctive competence with available opportunities and thereby gain competitive advantage.

The familiar SWOT framework – the analysis of a business's strengths, weaknesses, opportunities and threats – emerged from the work of these writers on business policy.

However after the early 1970s the thinking on distinctive competencies or corporate strengths stalled. The greatest reason was that managers had a hard time deciding what were the corporate strengths or weaknesses.

Howard Stevenson⁶, in an empirical study on assessing corporate capabilities, found that there was often little consensus on a company's strengths among its managers and that higher level managers tended to be more optimistic about their firm's capabilities than lower level managers.

Charles Hofer and Dan Schendel, in their 1978 text *Strategy Formulation : Analytical Concepts*⁷ advocated the process of assessing corporate resources, strengths and weaknesses but noted that many strategy formulation models skipped this step. The reason, they explained, was because such an analysis can be fruitless in isolation. ' Thus, one cannot tell

whether it is a strength or a weakness to be seven feet tall until one specifies what that tall individual is supposed to do.’

Another reason that the thinking on competencies remained relatively dormant during the 1970s and early 1980s, was that influential academics and consultants turned their attention to other approaches to strategy. At the level of the business strategy, the environmental school exemplified by Michael Porter⁸ developed frameworks such as the five forces analysis, which helped managers understand external opportunities and competitive threats. In this approach, the strategist analyzes industry attractiveness and market opportunities and formulates a strategy based on these analyses. The next step is to determine if the business has the requisite skills to implement the chosen strategy, or if it can acquire those skills at a reasonable cost. At the corporate level, techniques of portfolio planning, developed by the Boston Consulting Group and others, helped corporate managers analyze the often disparate businesses in terms of competitive position and industry attractiveness.

Portfolio management offered guidance to corporate managers on building portfolios of businesses with complementary growth and cash generating characteristics.

These approaches to business level and corporate level strategy dominated management ideology through the 1980s, but the idea on a firm’s internal competencies was not entirely forgotten. The Japanese academic Hiroyuko Itami⁹, in his influential book *Mobilizing Invisible Assets*, also stresses the importance of building on a firm’s strengths, or what he calls its “invisible assets”. He defined invisible assets as properties of a company with the potential for producing profit that do not show up on a printed balance sheet such as reputation, brand-name, technical expertise and customer loyalty as compared to physical assets such as plant, real estate or manufactured stock. Itami argued that although invisible assets are often overlooked, they are the most enduring source of a company’s competitive advantage. In his review, a successful strategy rests on finding ways of fully exploiting such invisible assets in the marketplace. For these authors, the starting point of strategy was the analysis of the firm’s internal resources and capabilities. This gathered momentum with the emergence of the resource based school during the 1980s.

The resource based school focuses on the firm’s internal characteristics to explain why firms pursue different strategies with different outcomes.

The central proposition of this group of writers is that the organization is an accretion of specialized resources which can be used to gain a privileged market position – in other words, sustainable competitive advantage. Firms acquire, develop and expand their resource bundles over time, and because organizations follow different developmental paths each firm has different resources. Thus, firms pursue different strategies in order to

exploit their specific resources.

These concepts are relevant to both business unit strategy and to corporate level strategy. At the business level, the key idea is that competitive advantage stems from a firm's unique resources and capabilities which are hard for competitors to imitate or acquire.

At the corporate level, resource based theorists perceive the firm as bundles of resources which can have different applications, which means the firm's resources can be deployed in different businesses with different end products. A successful corporate strategy depends on accumulating specialized resources and exploiting them by matching these resources to market opportunities through the creation of business units.

Resource-based thinkers regard internal attributes and capabilities as a more stable anchor for both business level and corporate level strategy than the varying demands of a volatile market place, and this is similar to earlier concept on a firm's strengths and current work on competencies and capabilities.

The firm's resources and capabilities are competitively important if they are (1)valuable, (2) rare and (3)difficult to imitate. First the value of a resource depends on the opportunities available for exploiting it, and these opportunities can change. For example, IBM's capabilities in mainframe computers became less valuable as personal computers became more sophisticated and cheaper. Second competitively important resources are also rare.

If many competitors have the same or similar capabilities, none of them will have a competitive advantage.

The third criteria for competitively important resources is that they are difficult to imitate. Many physical resources are easily imitated; rivals can build similar plants or copy a process technology.

It is far more difficult to imitate capabilities which depend on teamwork, culture and organizational routines. These resources are usually complex, the result of firm's own history and of numerous small decisions over time which contribute to the development of unique capabilities. Barney cites the example of Hewlett Packard's corporate culture, which encourages teamwork and co-operation across divisions.

This has enabled HP to use its technologies in varied products-printers, plotters, computers and electronic instruments – and to make these products compatible. Rival firms may be able to duplicate the technology of HP's products, but it is not easy for competitors to imitate the culture and organization which HP's success.

Capabilities are often a firm's most important resources because they are valuable, rare and difficult to imitate. At the same time, the complexity and opaqueness of a firm's

capabilities creates a management problem of its own. To capitalize on an organization's resources, managers need to be able to identify them, make decisions about how to exploit them, and know how to expand them. Without this knowledge, successful strategies would only be the lucky result of historical decisions or accidents.

The authors of the process of organizational learning are Edwin Nevis and Janet Gould of the Organizational Learning Center at MIT Sloan School of Management and Anthony DiBella. In their article, 'Understanding Organizations as Learning Systems', the authors define organizational learning as 'the capacity or processes within an organization to maintain or improve performance based on experience'. The authors argue that improving a firm's learning processes can enhance its performance.

Nevis, Gould and DiBella¹⁰ identify three stages in the learning process: knowledge acquisition, knowledge sharing and knowledge utilization, but they caution that learning is not necessarily linear through these stages. Their research, at companies such as Motorola, Electricite de France and Fiat, revealed that firms learn in different ways. For example, some firms develop knowledge internally while others more readily accept knowledge developed externally. Knowledge dissemination is highly formal in some companies, but in other companies it occurs informally, through networking or casual interactions. Companies also differ in the areas in which they invest in learning: an engineering company is likely to focus on production or process improvement while a consumer goods company may devote more time and effort to better delivery or service systems. The authors suggest that there is no single type of a successful 'learning organization'; instead, there are many different learning systems, each of which can be effective. The authors also identify facilitating factors, or approaches which can enhance learning in all organizations. A concern with measurement, a climate of openness, champions and involved leadership are among the factors which contribute to an organization's learning system.

Nevis and his co-authors also suggest strategies for improving learning in an organization. One option is to make the existing learning system more effective by strengthening or modifying the firm's learning orientations. For example, a firm that traditionally invests heavily in production improvements may improve service by putting more resources into the education and training of sales personnel. Another option is to improve facilitating factors, such as developing measurement systems or encouraging more communication across units. A third option is to try and change both learning orientations and facilitating factors. This is most difficult option, amounting to transformational change. Nevis, Gould and DiBella urge managers to evaluate their firm's current learning system, and its facilitating factors, to understand its strengths and weaknesses. This will help managers select appropriate strategies for improving or changing the ways in which the

firm acquires, shares and utilizes knowledge.

Yves Doz,¹¹ draws on many of the concepts developed by the resource based school and in the literature on learning organizations to discuss the management of core competencies. Doz, writes that his work is a modest attempt to move in the direction of a managerial theory of core competencies'. His aim is to identify the major dilemmas managers confront in trying to manage core competencies, and to suggest some approaches which can help solve these dilemmas.

Doz begins by discussing how difficult it is to manage competencies. In the first place, competencies are complex organizational routines and therefore difficult to define or to understand fully. They develop in different ways, even in a single organization, and the developmental path is often unclear. The learning which competencies is often tacit and therefore difficult to communicate and share. Doz aims to make sense of the 'messiness' of competencies by identifying five key processes in competence management, they are development, diffusion, integration, leverage and renewal of competencies. Each process may follow a natural track, but managers can also intervene to manage it more efficiently. For example, every firm must have some competencies if it is to survive. These usually develop through 'learning by doing', which demands no specific intervention from managers. At certain times though, managers may need to accelerate the development of competencies. The firm may face competitive threats from new rivals, or it may be in a position where its existing competencies are becoming less valuable.

Doz examines the managerial tools available to accelerate the development of competencies. These include business process reengineering, quality management, professional training. Yet, the use of such tools also involves risks. Organizational focus on improving or gaining a specific competence may challenge existing power structures, or undermine naturally emerging competencies. Managers may mis-identify the competencies which should be encouraged. Similar dilemmas arise with each of the key processes of competence management. Should managers leave the diffusion of competencies to the informal network of the organization, or should they try to improve diffusion through best practice exchange or by managing the internal labor market? Is it likely that the organization will fully exploit its competencies, or should managers deliberately explore new ways of leveraging its competencies?

2-2. Understanding Competitive Advantage

Strategic managers and researchers have long been interested in understanding

sources of competitive advantage for firms. Traditionally, this effort has focused on the relationship between a firm's environmental opportunities and threats on one hand, and its internal strengths and weaknesses on the other. Summarized in what has come to be known as the SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis, this traditional logic suggests that firms that use their internal strengths in exploiting environmental opportunities and neutralizing environmental threats, while avoiding internal weaknesses, are more likely to gain competitive advantages than other kinds of firms¹⁰.

This simple SWOT framework points to the importance of both external and internal phenomena in understanding the sources of competitive advantage. To this date, the development of tools for analyzing environmental opportunities and threats has proceeded much more rapidly than the development of tools for analyzing a firm's internal strengths and weaknesses.

The history of strategic management research can be understood as an attempt to 'fill in the blanks' created by the SWOT framework; i.e., to move beyond suggesting that strengths, weaknesses, opportunities, and threats are important for understanding competitive advantage to suggest models and frameworks that can be used to analyze and evaluate opportunities and threats.⁸ Porter's work on the 'five forces model', the relationship between industry structure and strategic opportunities, and strategic groups can all be understood as an effort to unpack the concepts of environmental opportunities and threats in a theoretically rigorous, yet highly applicable way.

However, the SWOT framework tells us that an environmental analysis no - matter how rigorous - is only half the story. A complete understanding of sources of competitive advantage requires the analysis of a firm's internal strengths and weaknesses well.¹² The importance of integrating internal analyzes with environmental analyses can be seen when evaluating the sources of competitive advantage of many firms. Consider, for example,

- WalMart, a firm that has consistently earned a return on sales double the average of its industry for the last twenty years
- Southwest airlines, a firm whose profits continued to increase, despite losses at other U.S. airlines that totaled profit almost \$10 billion from 1990 to 1993; and
- Nucor Steel, a firm whose stock price continued to soar through the 1980s and '90s, despite the fact that the market value of most steel companies has remained flat or fallen during the same time period.¹³

These firms, and many others, have all gained competitive advantages-despite the unattractive, high threat, low opportunity environments in which they operate. Even the most careful and complete analysis of these firms' competitive environments cannot explain their success. Such explanations must also include these firms' internal attributes,

their strengths and weaknesses, as sources of competitive advantage.

A firm's resources and capabilities include all of the financial, physical, human, and organizational assets used by a firm to develop, manufacture, and deliver products or services to its customers. Financial resources include debt, equity, retained earnings, and so forth, physical resources include the machines, manufacturing facilities, and buildings firms use in their operations. Human resources include all the experience, knowledge, judgment, risk taking propensity, and wisdom of individuals associated with a firm. Organizational resources include the history, relationships, trust, and organizational culture that are attributes of groups of individuals associated with a firm., along with a firm's formal reporting structure, explicit management control systems, and compensation policies. In the process of filling in the 'internal blanks' created by SWOT analysis, managers must address four important questions about their resources and capabilities:(1)the question of value, (2) the question of rareness,(3) the question of imitability, and (4) the question of organization.

2-2-1. The Characteristic of Value

To begin evaluating the competitive implications of a firm's resources and capabilities, managers must first answer the question of value : Do a firm's resources and capabilities add value by enabling it to exploit opportunities and/or neutralize threats?

The answer to this question, for some firms, has been yes. Sony, for example, has a great deal of experience in designing, manufacturing, and selling miniaturized electronic technology. Sony has used these resources to exploit numerous market opportunities, including portable tape players, portable disc players, portable televisions, easy-to-hold 8mm video cameras and mini disc player. 3M has used its skills and experience in substrates, coatings, and adhesives, along with an organizational culture that rewards risk taking and creativity to exploit numerous market opportunities in office products, including invisible tape and Post-ItTM Notes. Sony's and 3M's resources – including their specific technological skills and creative organizational cultures –made it possible for these firms to respond to and even create new environmental opportunities.¹⁴

Unfortunately, for other firms, the answer to the question of value has been no. For example, USX's long experience in traditional steel market made it almost impossible for USX to recognize and respond to fundamental changes in the structure of the steel industry. Because they could not recognize new opportunities and threats, USX delayed its investment in, among other opportunities, thin slab continuous casting steel manufacturing technology. Nucor Steel, on the other hand, was not shackled by its experience, made these investments early, and has become a major player in the international steel industry. In a

similar way, Sears was unable to recognize or respond to changes in the retail market that had been created by WalMart and specialty retail stores. In a sense, Sears' historical success, along with a commitment to stick with the traditional way of doing things, led the company to miss some significant market opportunities.¹⁵

Although a firm's resources and capabilities may have added value in the past, changes in the consumers taste, industry structure, or technology can render them less valuable in the future. General Electric's capabilities in transistor manufacturing became much less valuable when semi-conductors were invented. American Airlines' skills in managing their relationship with the Civil Aeronautics Board (CAB) became much less valuable after airline deregulation. IBM's numerous capabilities in the mainframe computing business became less valuable with the power increases and price reduction of personal and mini computers. Therefore one of the most important responsibilities of strategic managers is to constantly evaluate whether or not their firm's resources and capabilities continue to add value despite changes in the competitive environment.

Some environmental changes are so drastic that few, if any, of a firm's resources remain valuable in any environmental context.¹⁵ However, this kind of radical environmental change is unusual. More commonly, changes in a firm's environment may reduce the value of a firm's resources in their current use, while leaving the value of those resources in other uses unchanged. Such changes might even increase the value of those resources in those other uses. In this situation, the critical issue facing managers is : how can we use our traditional strengths in new ways to exploit opportunities and/or neutralize threats?

Numerous firms have weathered these environmental shifts by finding new ways to apply their traditional strengths. AT&T had developed a reputation for providing high-quality long distance telephone service.

It moved rapidly to exploit this reputation in the newly competitive long distance market by aggressively marketing its services against MCI, Sprint, and other carriers. Also, AT&T had traditional strengths in research and development with its Bell Labs subsidiary. To exploit these strengths in its new competitive context, AT&T shifted Bell Labs' mission from basic research to applied research, and then leveraged those skills by forming numerous joint ventures, acquiring NCR, and other actions. Through this process, AT&T has been able to use some of its historically important capabilities to try to position itself as a major actor in the global telecommunications and computing industry.

Another firm that has gone through a similar transformation is the Hunter Fan company. Formed in 1886, Hunter Fan developed the technology it needed to be the market share leader in ceiling fans used to cool large manufacturing facilities.

Unfortunately, the invention of air conditioning significantly reduced demand for industrial fans, and Hunter Fan's performance deteriorated rapidly. However, in the 1970s, rising energy prices made energy conservation more important to home owners. Since ceiling fans can significantly reduce home energy consumption, Hunter Fan was able to move quickly to exploit this new opportunity. Of course, Hunter Fan had to develop some new skills as well, including brass-plating capabilities and new distribution networks. However, by building on its traditional strengths in new ways, Hunter fan has become a leader in the home ceiling fan market.¹⁶

By answering the question of value, managers link the analysis of internal resources and capabilities with the analysis of environmental opportunities and threats. The models developed by Porter and his associates can be used to isolate potential opportunities and threats that the resources a firm controls can exploit or neutralize.

Of course, the resources and capabilities of different firms can be valuable in different ways. This can be true, even if firms are competing in the same industry. For example, while both Rolex and Timex manufacture watches, they exploit very different valuable resources. Rolex emphasizes its quality manufacturing, commitment to excellence, and high-status reputation in marketing its watches. Timex emphasizes its high-volume, low-cost manufacturing skills and abilities. Rolex exploits its capabilities in responding to demand for very expensive watches; Timex exploits its resources in responding to demand for practical, reliable, low-cost timekeeping.

2-2-2. The Characteristic of Rareness

A firm's resources and capabilities are valuable if that is an important first consideration in understanding internal sources of competitive advantage. However, if a particular resource and capability is controlled by numerous competing firms, then that resource is unlikely to be a source of competitive advantage for any one of them. Instead, valuable but common (i.e. not rare) resources and capabilities are sources of competitive parity. For managers evaluating the competitive implications of their resources and capabilities, these observations lead to the second critical issue: how many competing firms already possess these valuable resources and capabilities?

For example, consider, two firms competing in the global communications and computing industries: NEC and AT&T. Both these firms are developing many of the same capabilities that are likely to be needed in these industries over the next decade. These capabilities are clearly valuable, however since at least these two firms, and maybe others, are developing them. If they are not rare, they cannot be sources of competitive advantage for either NEC or AT&T. If either of these firms are to gain competitive

advantages, they must exploit resources and capabilities that are both cited as developing . This may be part of the reason why AT&T recently restructured its telecommunications and computer businesses into separate firms.

While resources and capabilities must be rare among competing firms in order to be a source of competitive advantage, this does not mean that common, but valuable, resources are not important. Indeed, such resources and capabilities may be essential for a firm's survival. On the other hand, if a firm's resources are valuable and rare, those resources may enable a firm to gain at least a temporary competitive advantage. WalMart's skills in developing and using point-of-purchase data collection to control inventory have given it a competitive advantage over K-Mart, a firm that until recently has not had access to this timely information. Thus, for many years, WalMart's valuable point-of-purchase inventory control systems were rare, at least relative to its major U.S. competitor, K-Mart.

2-2-3. The Characteristic of Imitability

A firm that possesses valuable and rare resources and capabilities can gain, at least, a temporary competitive advantage. In addition, if competing firms face a cost disadvantage in imitating these resources and capabilities, firms with these special abilities can obtain a sustained competitive advantage. These observations lead to the question of imitability : do firms without a resource or capability face a cost disadvantage in obtaining it compared to firms that already possess it ?

Obviously, imitation is critical to understanding the ability of resources and capabilities to generate sustained competitive advantages. Imitation can occur in at least two ways: duplication and substitution. Duplication occurs when an imitating firm builds the same kinds of resources as the firm it is imitating. If one firm has a competitive advantage because of its research and development skills, then a duplicating firm will try to imitate that resource by developing its own research and development skills. In addition, firms may be able to substitute some resources for other resources. If these substitute resources have the same strategic implications and are no more costly to develop, then imitation through substitution will lead to competitive parity in the long run.

2-2-4. The Characteristic of Organization

A firm's competitive advantage potential depends on the value, rareness, and imitability of its resources and capabilities. However, to fully realize this potential, a firm must also be organized to exploit its resources and capabilities. Numerous components of a firm's organization are relevant when answering the question of organization, including its formal reporting structure, its explicit management control systems, and its compensation

policies. These components are referred to as complementary resources because they have limited abilities to generate a competitive advantages in isolation. However, in combination with other resources and capabilities, they can enable a firm to realize its full competitive advantage.¹⁷

Much of Caterpillar's sustained competitive advantage in the heavy construction industry can be traced to its history. It became the sole supplier of this equipment to allied forces in the Second World War. However, if Caterpillar's management had not taken advantage of this opportunity by implementing a global formal reporting structure, global inventory and other control systems, and compensation policies that created incentives for its employees to work around the world, then Caterpillar's potential for competitive advantage; i.e. adopting a global organizational form was only relevant for Caterpillar because it was pursuing a global opportunity. However, this organization was essential for Caterpillar to realize its full competitive advantage potential.

In a similar way, much of WalMart's continuing competitive advantage in the discount retailing industry can be attributed to its early entry into rural markets in the southern United States. To fully exploit this geographic advantage, WalMart needed to implement appropriate reporting structures, control systems, and compensation policies. We have already seen that one of these components of WalMart's organization - its point-of-purchase inventory control system – is being imitated by K-Mart, so in and of itself, it will not likely to be a source of sustained competitive advantage. However, this inventory control system has enabled WalMart to take full advantage of its rural locations by decreasing the probability of stock outs and by reducing inventory costs.

While a complementary organization enabled Caterpillar and WalMart to realize their full competitive advantage, Xerox was prevented from taking full advantage of some of its most critical valuable, rare, and costly-to-imitate resources and capabilities because it lacked such organization skills. Through the 1960s and early 1970s, Xerox invested in a series of very innovative technology development research efforts. Xerox managed this research effort by creating a stand alone research laboratory (Xerox PARC, in Palo Alto, California), and by assembling a large group of highly creative and innovative scientists and engineers to work there. Left to their own devices, these scientists and engineers developed an amazing array of technological innovations, including the personal computer, the 'mouse', windows-type software, the laser printer, the 'paperless office', ethernet, and so forth. In retrospect, the market potential of these technologies was enormous. Moreover, since these technologies were developed at Xerox PARC, they were rare. Finally, Xerox may have been able to gain some important first mover advantages if they had been able to translate these technologies into products, thereby increasing the cost to other firms

of imitating these technologies.

Unfortunately, Xerox did not have an organization in place to take advantage of these resources. For example, no structure existed whereby Xerox PARC's innovations could become known to managers at Xerox. Indeed, most Xerox managers – even many senior managers – were unaware of these technological developments through the mid-1970s.

Once they finally became aware of them, very few of the innovations survived Xerox's highly bureaucratic product development process – a process where product development projects were divided into hundreds of minute tasks, and progress in each task was reviewed by dozens of large committees. Even those innovations that survived the product development process were not exploited by Xerox managers. Management compensation at Xerox depended almost exclusively on maximizing current revenue. Short-term profitability was relatively less important in compensation calculations, and the development of markets for future sales and profitability was essentially irrelevant. Xerox's formal reporting structure, its explicit management control systems, and its compensation policies were all inconsistent with exploiting the valuable, rare, and costly-to-imitate resources developed at Xerox PARC. Not surprisingly, Xerox failed to exploit any of these potential sources of sustained competitive advantage.¹⁸

2-3. Core Competence Management

2-3-1. Core Competence Management

Core competence implies the aggregate capabilities, technologies and /or knowledge of a company, which are unique to it and are acknowledged to its members. The core competence has led the company to where it is and will lead it in the future with an adequate modification or with an addition of another core competence.

Companies have been so far evaluated only with the tangible measurements such as their scales, manufacturing equipment, financing capabilities, etc. We have, however, neglected the other factors like the company image, the accumulated technology, the information for consumer, the creativity of employees, the sense of challenge, the influence on distribution, the favorable relationship with suppliers, the corporate culture of challenge, the influence on distribution, the favorable relationship with suppliers, the corporate culture of challenge and creativity, the efficient management system, etc., all of companies.

Core competence management involves the activities such as 1) finding out the core competence of a company 2) further developing it 3) creating new core competence with an addition of new technology, product, service and so on to the existing core competence and

4) diversifying itself to new and promising business domain.

2-3-2. The Method of Core Competence Management

The process of core competence management is listed below.

- 1) The mind-transformation activities (the mind of the company members) should be preceded with forming the agreement of the company members on why they have to compete based upon the core competence.
- 2) The vision of the company should be clearly presented to its members.
- 3) What should be needed for the improvement of the company after the most comparative competitiveness of the company should be analyzed. (A bench-marking to the advanced companies is needed.)
- 4) The needs of the future should be grasped with understanding the trend of the industry. The trend involves the transformation of competitors, the change of customer needs, the technology changes, etc, which are very crucial factors for the precise forecast of the industry.
- 5) A study should be done on the method of developing the existing core competence, and furthermore creating new core competence with some technology, service, and/or product connected with it.
- 6) Restructuring of the company's business should be decided upon as well as a diversifying the growing industry.
- 7) Finally, the company members should be educated on the new core competence, so that the organization may be vigorously activated.

2-2-3. Some Critical Factors for Core Competence Management

- 1) Either the core competence should be decided based upon the strategy, or the strategy should be formulated based upon the core competence. Therefore, a company should clarify the relationship between the strategy and core competence.
For example, once Domino Pizza formulated the strategy that it would deliver its pizza within 30 minutes upon a request, it should have or develop the relevant core competence on the production technology of fast cooking or the order taking and the delivery.
- 2) The company should clearly define its core competence which is distinguished from other and form the agreement of its members. It is not possible to manage its core competence unless the company knows. Often are the cases that a series of some technologies and capabilities are selected being as core competence, which shows that

many a people wants their work to be treated as core work , but not to be so. In other words, it is requested that the core competence be distinguished from its products and services, and also from the capabilities around it.

The company should have all its members in terms of business field, function, geography, hierarchy, etc. participating in drawing and defining its core competence.

- 3) It is crucial to create the right core competence. The core competence of a company should be distinguished from its capital, infrastructure, competitive advantage, critical success factor, etc. For instances, such capabilities can be classified as the core competence as Toyota's optimal factory management, Walmart's distribution management, and Sony's miniaturization.

It is also important to understand that a core competence can not last for good. The core competence of Domino pizza fast delivering capability- used to be its unique and successful, but became the basic capability which all the pizza companies are required to have. Therefore, a company should check whether or not its core competence might change to the basic competence which all competing companies own.

- 4) Core competence should be studied through bench-marking to the competing companies and be continuously developed to be accumulated. A company should not only analyze itself but also its competitors. It is impossible to get a competitive advantage if a company judges its technology and service to be excellent, yet does not surpass its competitor. Even though a company has some competence that is not so satisfactory, it should closely understand and continuously develop and accumulate competence when it is the best among others or superior to that of its competitor.
- 5) A company should keep its core competence to itself. Transferring information to its competitors may lead to their successful development of the core competence.
- 6) A company should avoid centering upon the business division. The companies with several business divisions or the groups with many subsidiary companies are usually setting goals and formulating strategies independently. This causes a company to compete among business units and each business unit to focus on its partial optimization, which erodes on the total optimum of the company which gives negative effects on it, failing to have any synergy effect.
- 7) It is desirable to use strategic alliance or M&A as ways to secure core competence.
- 8) The recent revolutionary adopt trend requires the companies to have new core competence and to be compelled to connect it to the exiting core competence, so that they should need the capability of organization learning. The company should analyze the environment internally and externally to decide which capabilities and technologies are needed in order to compete with its competitors with a new core competence, and

should educate its members to the goal.

2-4. The Application of Core Competence

Core competence performs different roles in each organization according to company's individual situation and need. The applied field of core competence approach is listed below.

First, it works as the guidance for diversification. According to the strategic report of AT&T, while the company enters into a new market, core competence enables the company to concentrate on the existing business. Cargill produces steel vessels as well as fertilizer, flour, and corn syrup. The company not only sells cooked meat to buyers but also imports shrimp. It also provides financial service, and trade & intermediate service. All these businesses listed above seem to be the collection of unrelated activities, but in fact, a few basic techniques –treatment of large volume product-interlink all businesses. Cargill takes a very cautious approach when it takes over other companies or enters into new fields. It enters into a field, only when such field has been previously experienced, and in this case, it attempts expansion only when entering into such field can increase the prominent aspect of the existing business.

Second, it leads the activation of the organization. By linking traditional business to products and service of the future, the company acquires greater opportunity for success. Corning Co., Ltd. can be a good example, since it applied traditional core competence to new high-growth field. Corning went back to the past from 1983 to 1989, and underwent a process to fundamentally look back upon how the company used to be. James Riesbeck, Vice Chairman, who is in charge of the business development, threw several questions. “What are we good at?”, “What is the field that was important for us historically, but at present attained maturity, and that can't be included in the up-and-coming business of the 1980's and the 1990's?”

While Corning disposed several business divisions in the 1980's which had \$0.5billion amount of sales, including Corning's oldest business field such as the light bulb business and the laboratory of glass products in Europe, it invested \$0.4billion to enter into high-growth fields such as the research and service business. Out of the experimental ideas they fostered, Corning selected the field that had the greatest potential to lead the future's market. As a result, even though the company's competence hadn't changed, Corning's up-and-coming business of the early 1990's had changed drastically from that of 1980's.

Third, it accelerates company's globalization. Colgate – Palmolive, made of 62

subsidiaries and 42 product lines, reorganized the company centering around 5 core global businesses and 5 areas. This company united diversified business utilizing the concept of core competence. Geoff Dance, Vice President of the Strategy Planning Division said, “We found out that the element our subsidiaries had in common was core competence.”

By emphasizing the core competence subsidiaries held in common, Colgate strived to break down the cultural barrier of the company, the unlimited right of self-regulation that executives of the subsidiaries exercised. By calling a meeting with global staffs in each core business division in the first place, the company assembled many people of various abilities such as the manager, the research & development staff, the producing employee, the market research specialist, and the marketing & business law expert, and set up the short and long term goal for each of the core business. By examining the organization in the perspective of each business division’s core competence, the company was able to establish a new strategic direction. This company made the best use of it’s ability in brand management & division of specialists.

Fourth, it maintains the competitiveness of the company. Comprehending one’s own core competence, the company can prevent failures when investment withdrawing from already matured industry to all appearances. The good example can be America’s TV manufacturing companies. They lost the VCR market by disposing the VCR business division.

Garry Hamel, the professor of London Business Management Graduate School, said “you must realize the fact that giving up certain businesses or products is the same as giving up the market where you can use your potential capability. By getting a supply of important part of product from outside, the company can be worn out of it’s core competence gradually without any realization. Such parts are called, ‘core product’ since these have a direct influence toward final product’s value and effect.

Professor Hamel said that the standard practice of getting supply of core parts from outside was a “dangerous tendency”. Even if there is no necessity for companies to perform complete vertical integration, important core parts should be manufactured within the company in order to maintain the competitiveness continuously in one’s own business field as a leading company.

Fifth, it makes the company to concentrate on the research & development endeavor. NEC of Japan reinvestigates company’s fundamental technique & core technique every five years, and checks if it’s R&D effort is heading for the right direction. 15 years ago, NEC discovered approximately 20 core techniques, and now retains 36 core techniques in total. NEC asserts that they use 18% of it’s earnings to R&D. Other companies which hold a leading position in this industry is known to spend far less amount of money in

R&D than NEC. Even though some companies didn't pour in a great amount of resource in R&D, they said they obtained a very complacent result by concentrating on their R & D investment in a particular field. In order to maximize the effect of R & D investment, many pharmaceutical companies concentrate their resources on diseases and pharmaceutical fields where they are convinced of their distinguished ability.

Sixth, it allows the company to select strategic alliance. It has become a trite fact that strategic alliance must be implanted for the company to grow and develop continuously in the future. When Polaroid applied immediate image developing technique to the new market, Polaroid didn't make an attempt to manufacture all the facilities and products internally essential to it. Instead, Polaroid circumspectly selected a partner based on the analysis of the company's core competence. When the company wanted to set a foot in the medical technique field with the core competence which the company had possessed, Polaroid made every effort to find a suitable partner who possessed the company's lacking special technique of medical technique field.

Seventh, it leads to a consensus of the goal of strategic business division and that of the whole company. The common defect which the strategic business unit organization has is the tendency to sacrifice the organization's goal on the interest of their division where the members of the business division and executives take their positions. This tendency especially appears when people are insecure about their employment. By reinforcing the perception of core competence, AT & T confronted with the closed-mindedness of the strategic business organization.

AT & T discovered 5 core fields where it could utilize all the resources surpassing the level of strategic business unit. These were visual communication, wireless communication, data networking, manufacturing industry, network construction, and so on. As the result, the consideration of core competence contributed enormously to the appearance of the video phone which came under the first product out of the TV phone products and service expected to come out in the future in early 1992.

With the help of Bell Lab's, the subsidiary of AT&T, well-known R&D, AT&T possessed a core competence in various fields. Therefore, their urgent challenge was not how they could develop the core techniques, but how they could accelerate the development of products and service by using the core competence.

• A Case Study Based on Core Competence

The success of the company depends on the ability to grasp the core competence and develop it continuously. One can study on the core competence through the example of Canon Co. Ltd.

Canon, the worldwide camera and copier company, introduced two revolutionary new products in 1982, the PC-10 and the PC-20 maintenance free personal copiers. Designed to be smaller, simpler, less expensive, and more reliable than the nearest competitor, they were the world's first truly 'personal' copiers. They were designed for use in small offices or at home by professionals and self-employed individuals. The PC copiers were rapidly accepted by these potential buyers, resulting in a major success for Canon.¹⁹

Through the success of the PC copiers, Canon achieved market performance, market expansion, technological benefits, and organizational renewal. Within a few months of their market introduction, sales had reached a point at which Canon's manufacturing facilities were operating near capacity. By the end of 1987, the PC copiers had become the most sold copiers in the world. They served the needs of a previously ignored market segment (small offices and home offices), one that Canon has since dominated.

Overall, Canon's market share in plain paper copiers increased dramatically, almost doubling in the United States from 1982 to 1991. The development of the PC copiers also enabled Canon to acquire major technological know-how and patent rights. The company leveraged this technology through many new and successful products, including the laser and bubble-jet copiers. Consequently, Canon's worldwide sales of business equipment more than tripled from 1982 to 1991, and during that time Canon became the world's largest copier company in units sold. This success was not only financially rewarding, but also energized the Canon organization.

3-1. The Canon Organization

Canon started in Japan in 1937 as a small camera manufacturing company. It grew

rapidly after World War . Although it was the world's largest camera company in 1982, less than half of its revenue came from cameras and more than a quarter of its revenues came from large copiers. Canon had diversified into many areas in the 1950s and 1960s, including office micro graphic equipment in 1959, copiers in 1962, and electronic calculators in 1964. It had also expanded globally during that period, with Japan, the United States, and Europe each accounting for roughly one third of its business.

Canon's main business strengths were its commitment to technology and an aggressive, entrepreneurial, and risk-taking corporate culture. In every sense, R&D drives Canon's strategic direction and business, but success could not be achieved without its flexible organizational structure that allows for collaboration, creativity, and synergy between different functional and business areas. Over the years, this structure has resulted in numerous R&D accomplishments. For example, among other feats, Canon introduced its New Process (NP) copier technology in 1968, the first acceptable alternative to the xerographic process. It also developed the world's first electronic camera, the Canon AE-1. Both of these developments became major commercial successes.

Since the 1960s, Canon has also been one of the world's leading companies in patent ownership. For example, Canon acquired more than 500 patents each for the NP and the AE-1 electronic camera technologies. These patents enabled the company to preempt its competitors by establishing strong entry barriers, earn revenues by licensing technology, and build a reputation in the market as an innovator.

Canon's entrepreneurial culture facilitated a steady stream of new ideas, product development, entry into foreign markets, and bold strategic alliances with competitor (such as the one in which Canon licensed its technology to, and manufactured products for, Eastman Kodak). Canon's corporate culture deviated from the traditional Japanese management style. Canon openly recruited engineers from other Japanese companies, and often paid its employees not simply on seniority but also on performance. Its corporate philosophy showed tremendous respect for the individual to stimulate and reward the energy and creativity necessary for innovation.

Canon's main weaknesses were poor marketing and inadequate protection of its technology, which resulted in market failures and missed opportunities. For example, its pocket calculator failed because of late entry in an already saturated market. Its NP series of copiers took a long time to become successful because the company was slow to convey the real benefits of the technology to users. Also, Canon may have licensed too soon its "liquid dry" system of copier technology to more than 20 competitors, thereby forfeiting the financial benefits of a proprietary sales position.

On balance, if Canon could develop technology that squarely met and satisfied a

market need, it would have tremendous potential for success, especially if it could better manage its marketing capabilities. It had achieved success with the marketing program for its innovative electronic camera (the AE-1), but the copier division had not had a major marketing success despite significant technology breakthroughs

3-2. Copier Market Background

Prior to the introduction of the Canon PC copiers in 1982, the world copier industry was characterized by rapid market growth, major advances in technology, and increasing competition. The direction of the technology and the market favored plain paper copiers over coated paper copiers. In 1981, revenue in the world copiers industry was more than three times greater and unit sales were almost five times greater than the 1976 levels. This growth had occurred uniformly across the United States, Europe, and Japan. By 1981, the copier industry had worldwide revenues of about \$19.5 billion, with about 45 percent in the U.S., 30 percent in Europe, and the remainder split about evenly between Japan and the rest of the world.

Before PC copiers became available in 1982, copying was done on a departmental basis within companies and through commercial copy centers. Copy centers served a range of copying needs, from small copying jobs to large, high speed/high volume projects involving document preparation. Satisfaction of copying needs depended on a copier's price, quality, performance, features, maintenance, and after-sales support. Those factors became the bases for defining various market segments.

For example, one part of the market could be characterized by low usage (no more than 5,000 copies per month), a need for clear copies and simple features such as enlargement and reduction, moderate price sensitivity, and minimal need for after-sales support from the vendor. Another segment of the market might be characterized by high usage (more than 25,000 copies a month), a need for high resolution copies and complete document preparation, high price sensitivity, use of numerous copying features, and an extensive vendor maintenance requirement.

Most copier companies sought to meet the market needs of the segments that had large usage requirements. Because of its patented process, Xerox was the world market leader in satisfying the needs of high volume users. However, many Japanese firms such as Canon, Ricoh, Toshiba, and Minolta successfully developed alternate technologies, initially to serve the Japanese market, but subsequently to penetrate the U.S. market with high quality products at competitive prices.

As competition for the large users increased, growth opportunities became available in other market segments with different needs. For example, convenience copying at commercial centers increased more rapidly than the entire world copier market. Although these centers themselves presented opportunities for sales of large and midsize copiers, the needs of their users, usually small offices and home offices, represented a hidden market opportunity.

For small offices and the growing number of home offices, taking a large job to the local copy center was reasonable, but going to the copy center to make just a few copies was a nuisance. High value would be placed on a relatively inexpensive copy machine that could make satisfactory individual copies and perform routine copying projects. Larger copying projects could still be taken to local copy centers. The opportunity for an easy-to-use, durable, low priced, and maintenance-free small copier awaited innovation. Canon was one of several competitors that recognized this opportunity, and all were racing to build the best machine possible and be the first to market.

3-3. The Canon PC Copier Development Process

Because of the strong support of new ideas in the Canon organization, the idea and vision for a personal copier developed readily. Such a copier had been discussed a few years previously and not regarded as feasible, but senior managers at Canon seized upon the idea during the late 1970s. However, the barriers to success were high. At the time the lowest copier prices were more than \$2,000, and the machines required substantial maintenance. Nevertheless, spurred on by the success of the AE-1 camera, top managers were keen to develop a similarly unique product for the copier market.

Canon conducted market surveys in both Japan and the United States to understand the nature of the copier market and to confirm that the small office / home office market segment was an attractive one. The company also solicited informal feedback from its salesforce. Both the formal and informal studies indicated a growing opportunity in the market segment consisting of small offices with fewer than five employees and home offices of self-employed professionals.

By the end of 1979, Hiroshi Tanaka, the director of the copier division, received the go-ahead from top managers to develop a new line of copiers to meet the needs of the targeted segment. A staged new product development process ensued, which involved concept development, engineering feasibility studies, prototyping, engineering model development, and trial mass production.

A small team was formed and the core concept was developed around several clearly defined key benefits:

- Being the world's lightest and most compact copier(under 45 pounds)
- A price of about \$1,000
- Ease of use
- Maintenance – free operation

These benefits were the basis on which an engineering task force examined the feasibility of the concept. The engineering team had to evaluate disposable cartridges, instant toner fusers, and other components to reduce current copier price by a factor of 50 percent and increase current copier reliability by a factor of 10.

By September 1980, a companywide taskforce parallel to the engineering taskforce was formed. It was headed by Tanaka, who had become the product champion. This taskforce consisted of more than 200 people working in more than 23 groups drawn from many horizontal functional and business lines at Canon: marketing, production, engineering, design, optics, cameras, copiers, quality, costs, and even legal. To generate enthusiasm among the taskforce and mobilize the entire company behind the development process, Tanaka used the slogan, "Let's make the AE-1 of copiers."

This taskforce, the second largest ever assembled at Canon, was divided into subgroups and smaller teams. A development and design group was divided into seven teams (such as the toner development team) and a production group was divided into 10 teams (such as the plastic molding team). Six other teams were also included in supporting roles: a steering committee, a cost team, a quality team, a patents team, a marketing team, and a user application software team. Clearly, effective communication among the various teams was essential for success.

If feasible, the smaller teams worked parallel with each other. For instance, while the design team was working on the functional aspects of the new product, another team was investigating the feasibility of new materials and components. Because the small, informal subteam interacted frequently, many issues were resolved before they became problems. For instance, in its effort to design a global product, Canon faced the dilemma of whether to use the A4 paper size (used in the United States and Europe) or the B4 paper size (used in Japan). An innovative, yet low cost, compromise solution was eventually reached that promised to make the new product globally appealing: the copier would use A4 paper size, but would also have a special facility to copy business cards, which are used in large numbers in Japan.

The taskforce faced two major hurdles: (1) providing reliability within tight cost/price limits and (2) circumventing the “Xerox wall,” or Xerox’s tight patent protection on many aspects of copier technology. Xerox also had a strong hold on dealerships and salesforces. Because Canon wanted to sell the personal copiers in all markets, large geographic region. Because of the low volume of copying in the target segment, absorbing this service cost would be difficult for Canon. Therefore, an absolute requirement for the new copier was high reliability, with no breakdowns and no need for service. Similarly, it was absolutely necessary for Canon to develop its own proprietary technology.

These issues led to the process of “inverted thinking,” which Canon managers defined as planning from scratch when left with no options. For example, studying the causes of copier troubles, Canon discovered that 90 percent of them involve the drum. This finding led to a major concept change and the genesis of the disposable cartridge. With disposability, the problem-causing part would be discarded after a certain number of copies, thus making the copier essentially maintenance free. Similarly, Canon realized that it could neutralize Xerox’s distribution strength by selling the new copiers through totally different channels: office product retailers and mail-order catalogs.

Although the actual development process was much more detailed and comprehensive than described here, its major features included:

- A product champion supported by top managers;
- An integrated taskforce, using interpersonal communication as a means of technology transfer;
- The use of parallel development wherever possible;
- Deliberate attempts to create energy and enthusiasm;
- Quality and cost goals incorporated in the earliest stages and used as key criteria in the major go/ no-go decisions at each phase of development;
- Extensive prototype development; and
- Extensive product testing

The outcome was a new personal copier that met all of its design criteria and top management expectations.

The PC copiers were “new” products in many respects: features, performance, physical characteristics, and technology. Two models were developed, both plain paper copiers capable of producing up to eight copies a minute. The PC-10 was the base model, priced at \$995, and the PC-20 was an advanced model with automatic paper feeding (but

identical to the PC-10 in every other way), priced at \$1,295. Smaller than an electric typewriter and weighing less than 45 pounds, the Canon PC copiers became the most compact, lightweight, and inexpensive copiers in the world. Not only had Canon achieved its goals, but with its new product development process beat all major competitors into the personal copier market.

3-4. Market Entry

The taskforce delivered the PC copiers within a three-year development time. Canon introduced them into the market by the end of 1982. They were first launched in Japan, and then a month later in the United States and Europe. Prior to the launch, Canon organized two major conferences for its salesforce and retailers to educate them about the product.

Canon supported its launch of the PC copiers with a high profile media campaign, especially in the United States. Taking the communications strategy used in the successful launch of the AE-1 as a model, the company spent almost \$15 million in the United States and \$1.5 million in Japan during 1983 for television advertising. Television was selected because the target markets of professionals and small-office personnel were not concentrated in geographic location or media usage habits. In fact, during 1983, Canon became the single largest TV advertisement in the United States. In Europe, television was not used as extensively because of the lower penetration rate of TV sets and the relatively in three major global market areas (United States, Europe, and Japan), primarily in business, general, and lifestyle publications such as Fortune, Business Week, The Economist, and Time. Canon also advertised in many in-flight airline magazines. Across all of these linguistically and culturally different media environments, Canon attempted to develop a clear and common communication strategy: it emphasized the personal, simple, reliable, affordable, and fun nature of the PC-10 and PC-20 copiers.

3-5. Reasons For Success

The success of the Canon PC copiers was swift and long lasting. The most obvious reasons for their resounding success was that Canon:

- Substantial shared corporate resources available to their business
- Recognized a growing market opportunity;

- Set clear objectives and goals;
- Capitalized on its entrepreneurial corporate culture and flexible organizational structure to facilitate the flow of ideas, resource sharing, and a quick response to the external environment;
- Developed and exploited its technological strengths; and
- Recognized a weakness in its marketing area and overcame it through experience gained from its AE-1 new product success.

However, underlying these reasons are Canon's fundamental attitude toward innovation. Many organizations, for a variety of apparently logical reasons, are resistant to new product development projects. Its personnel is stimulated to rise to new challenges, especially those presented to them by leadership. The corporate philosophy of Canon is Kosei, which means 'living and working together for the company good'.²⁰ This guiding philosophy has been clearly communicated to each employee and is engraved on the façade of corporate headquarters. Consequently, when given a challenge to develop a personal copier with certain characteristics, everyone worked cooperatively to meet it.

Cooperation involved the formation of many teams on all aspects of the project, some working parallelly and some depending on the work of others. Parallel development teams can accelerate a development process because one group does not have to wait for another to finish its work. If the groups communicate effectively, they can expedite the identification and resolution of difficult development problems.

A product champion was instrumental in effectively communicating top managers' vision of the new product concept to all teams. He continually motivated and inspired participants to achieve clearly stated goals and objectives. He also included as many young people as possible in the various task groups, especially at the early stages of development, to stimulate creativity and new ideas to solve difficult problems.

The clarity and integrity of the new product concept were instrumental in maintaining effective communication among various groups that were approaching the problem from different functional perspectives. Marketing personnel would see the problem in different terms than R&D engineers; both would see the problem in different terms than production managers; and so on. A clear product concept that can be understood by all participants tremendously improves communication.

3-6. Conclusion

The launch of the PC copiers was a major milestone for Canon. Not only were

these products successful, but the know-how obtained during the course of their development helped Canon establish a technology platform on which to build other new products in the future.

The elements of Canon 's core competence are listed as (Table 1) which led the company to succeed from camera to copier.

The first core competence was the fine optics technique. Canon developed new techniques in the copier market with the optics technique accumulated in camera.

Second, the most important Canon's core competence was the precision mechanism technique. As Canon proceeded to another business applying their optical technology, Canon made a growth applying precision mechanism technique which is necessary for producing camera to the related business. We can say that the drum of copier and printer engine of laser printer are the core components which was developed in the basis of the precision mechanism technology.

Third, the final core competence of Canon was the micro electronics technique. They developed the copier which was controlled by the micro processor for the first time in the world. As a result, the copier is not more simple, mechanically operating machine, but became to have the skills to reduce, enlarge, and to indicate errors. This show us that the Canon has developed new products continuously with the mixture of precision mechanism technology, optics technology and micro electronics technology

The success of the PC copiers enabled Canon to dominate the small office/home office market segment for many years. Strategically, these products helped Canon reduce its dependency on its camera business, and helped it to become a truly global company. (Table 2) For example, to reduce costs and maintain adequate margins in the personal copier business in an increasingly competitive environment, Canon moved many of its production and sourcing activities overseas (to Germany, France, the United States, and Taiwan).

Finally, the success of products, such as the PC copiers and the AE-1 cameras, demonstrated to employees that Canon's special philosophy of doing business with the individuals in mind can work well and provide benefits to all. The result is high employee morale, willingness to work together on future projects (i.e., less resistance to innovation), and evidence that new product development can be an important part of the organization's continuous process of renewal.

. Conclusion

This research examined the concept and methodology of core competence

management to survive and grow in the 21st century. This report is based on related literature, case analysis, personal experiences. The upcoming business environment of the 21st century will have no boundary dividing the domestic and foreign market. Just by having competitive position without any concentrated investment, or by simply introducing a new management technique, the company can't keep the predominant position continuously.

When the company applies core competence in management, it helps diversification into new fields, it leads the activation of the organization, it accelerates the company's globalization, it maintains competitiveness, it allows the company to concentrate on R & D, it allows the company to select strategic alliance, and it unites the goals of strategic business divisions and those of the whole company. Core competence is indispensable for successful diversification, and companies need to strengthen their core competence continuously..

Companies will attain a preeminent the position like Canon if they develop diversification strategies based on core competence. Korean companies with various businesses should attempt to restructure their businesses by focusing on their core competence to overcome the IMF crisis. If we take a look at the world market, the competitiveness of Korean companies is much lower than that of global leaders. It is also impossible to raise the level of all the businesses up to the world's standard at the same time given the limitation of resources. Accordingly, the most urgent task for a company is to identify their the core competence and to restructure their businesses based on it.

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Table 1. Canon's Core Competencies and Core Products

Precision Mechanics	Fine Optics	Micro- Electronics
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Basic camera
 Compact fashion camera
 Electronic camera
 EOS autofocus camera
 Video still camera
 Laser beam printer
 Color video printer
 Bubble Jet printer
 Basic fax
 Laser fax
 Calculator
 Plain paper copier
 Battery PPC
 Color copier
 Laser copier
 Color laser copier
 NAVI
 Still video system
 Laser imager
 Cell analyzer
 Mask aligners
 Stepper aligners
 Eximer laser aligners

Source : C.K Prahalad and Gary Hamel. "The Core Competence of the Corporation", Harvard Business Review, May-June 1990.

Table 2. Canon-Sales by Product (Millions of Yen)

Year	Cameras	Copiers	Other Business	Optical & Other Products	Total
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			Machines		
1981	201,635	175,389	52,798	40,222	470,044
1982	224,619	242,161	67,815	45,905	580,500
1983	219,443	291,805	97,412	48,665	657,325
1984	226,645	349,986	180,661	73,096	830,388
1985	197,284	410,840	271,190	76,466	955,780
1986	159,106	368,558	290,630	70,923	889,217
1987	177,729	393,581	342,895	62,506	976,711
1988	159,151	436,924	434,624	75,301	1,106,010
1989	177,597	533,115	547,170	93,035	1,350,917
1990	250,494	686,077	676,095	115,282	1,727,948

Source: Canon Annual Report, 1981-1990