A STUDY ON CORPORATE STRATEGY OF SUCCESSFUL VENTURE COMPANY IN KOREA

- The Case of Medison's diversification strategy -

By

CHOI, Kwang Hyun

A THESIS

Submitted to
School of Public Policy and Management, KDI
in partial fulfillment of the requirements
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MASTER OF BUSINESS ADMINISTRATION

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ABSTRACT

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This thesis explores the factors that lie behind the sustained success of venture companies. The success of venture companies is crucial to the national economy as well as the entrepreneurs.

Most Korean venture companies were established in recent years and are engaged in advanced technology industries such as information and communication, multimedia and software. They spend over 10 percent of sales on R&D and have shown a remarkable growth performance. Some of the common characteristics of successful Korean venture companies are that they are founded by highly educated entrepreneurs, they emphasize innovative differentiation strategies, and they possess superior technologies and financing capabilities.

In the case of Medison, the company's diversification strategy has contributed to its continuous growth and success. The company's business domain now includes not only medical equipment but also biotech, medical internet and business infra service. Diversification is, of course, not the only solution to the continuous growth of all venture companies, but a worthwhile strategy for entrepreneurs who do not want to maintain the status quo. However, financial feasibility should be carefully taken into consideration in pursuing a successful diversification strategy.

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Chapter 1 : INTRODUCTION

1-1. Background and Objective of the Study

"The miracle of Korean economic growth during the 1970s greatly owed to the traditional manufacturing industries. However, the second take-off of the Korean economy in the future will rely on the success of venture companies" said Min-Hwa Lee, the CEO of Medison. Korea's conglomerate-based mass-production pattern, which has been the key to the past quantitative growth, is losing its effectiveness in re-invigorating the economy and driving its sustained expansion.

The global economy is undergoing a process of rapid integration, spurred by the removal of trade and investment barriers. Accelerated technology development has shortened product life cycles amidst increasingly diverse consumer needs and demand for higher quality goods and services. These trends have intensified international competition, requiring enterprises to adapt to the rule of "survival of the fittest". Korean conglomerates with their economy-of-scale manufacturing strategies are losing their competitive edge in the world market, not being the fittest forms anymore to survive in the fiercely competitive environment. The small-sized, high-tech venture companies should play a pivotal role in developing sophisticated technologies and generating high value-added in the 21st century.

Analysis demonstrates that the United States has succeeded in launching another economic take-off, thanks in large part to the robust growth of venture companies. For instance, average annual employment growth for the years 1991 to 1995 was 34% for venture companies, compared with minus 4% for the Fortune 500.

In Korea, the number of venture companies more than doubled from 3,886 in 1996 to 8,126 as of September 2000. About 2~4 new enterprises are starting up daily, which counts only venture companies registered with the Small and Medium Business Authority (SMBA), a governmental agency for small and medium companies in Korea. Adding unregistered start-ups, the number will be larger.

Nobody denies the importance of venture companies in the national economy and every entrepreneur wants to thrive after launching their business. Many studies have been made on the success factors of venture companies as well as various strategies for success in each development stages. However, many venture companies fail after taking off, especially in the rapid growth stage. In this regard, I would like to find out what strategies enables venture companies to grow continuously.

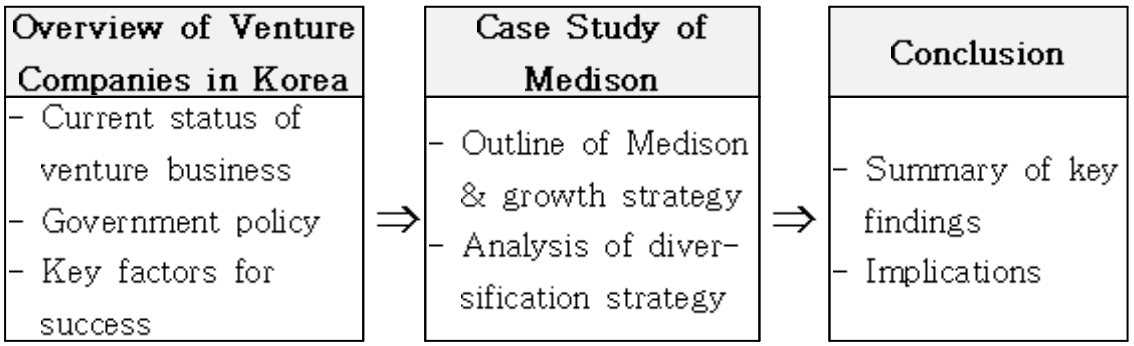
1-2. Structure of the Study

After outlining the overall content of this thesis in the introductory part, Chapter 2 takes an overview of venture businesses in Korea, including trend of establishment, business sectors, regional distribution, R&D activities, founder's profile, etc.. Also, government policies on venture business and key factors for successful venture companies will be analyzed in Chapter 2.

In Chapter 3, the case of Medison will be examined with emphasis on the company's diversification strategy as a continuous growth engine.

Finally, in Chapter 4 I will summarize the key findings of this study and suggest some implications for the sustained success of venture companies.

<Figure 1.1> Structure of the Study



Chapter 2 : LITERATURE REVIEW ON KOREAN VENTURE BUSINESS

2-1. Overview of Venture Business in Korea

Definition of Venture Company

There is no established definition of what is a venture company. However, it generally means a small technology-based firm with new ideas and technology, which is characterized by agility and flexibility in dealing with exogenous challenges, and having peculiar ability in encouraging employees' passion and potentiality. In the US, it is understood that a venture company is a technology-based new business with high risk-high return, whereas the OECD defines venture companies as companies with high R&D intensity or whose key success factors are technical innovation or superiority in technology.

In Korea, the「Special Acts for Supporting Small and Medium Businesses」 provides the following definition of venture companies : ① a company in which the investment of venture capital amounts to more than 20 percent of total equity ② a company whose R&D investment exceeds 5 percent of total revenue ③ a company which commercializes patents, design rights or patents on a practical new device. Though the definition of a venture company varies depending on individual countries, it is clear that new technology is an indispensible requirement for a venture company.

Trend of Establishment and Financial Support System

Since the 1980s, start-ups of domestic venture companies began to rise as new-technology financing companies and venture capital firms[1] were set up and started to provide financial support to venture companies. In particular, the launch of over-the-counter market (KOSDAQ) in 1996 spurred the proliferation of venture businesses in Korea. Korean government also lately encouraged the start-up of venture companies and the conversion of existing small and medium-sized enterprises (SMEs) into venture companies by minimizing administrative regulations which hindered venture companies from taking full advantage of their inherent creativity and technological strengths. As shown in table 1, 33 percent of venture companies was established during the period of 1998 and 1999, reflecting the recent government policy of promoting the venture business.

<Table 2.1> Trend of Establishment of Venture Companies in Korea

	Before 1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000 Sep.	Total
No. of Companies	1,589	217	260	326	430	496	568	827	1,107	1,567	736	8,123
%	19.56	2.67	3.20	4.01	5.29	6.11	6.99	10.18	13.63	19.29	9.06	100.0

Source : Venture Net

1) There are two types of venture capital firms: venture capital firms and new-tech financing companies. Their businesses are very similar, except that venture capital firms are primarily engaged in the acquisition of shares and CBs, and formation of limited partnerships, while new-tech financing companies are involved mainly in extending loans.

The financial support for venture companies comes from government and provincial municipalities, venture capital which includes venture capital firms and limited partnerships (venture capital funds), financial institutions, and the so-called business angels or angel groups. Financial support from the government and municipalities are provided through a variety of measures such as promotion of financing for venture business, financial assistance to venture capital firms, deregulation, and tax incentives. Limited partnerships are major source of funds of venture capital firms, which invest in venture companies. Financial institutions support venture companies primarily by investing in shares, extending loans, and participating in limited partnerships. Investments from angels or angel clubs came to recognition in 1997 when the first angel club was formed, and their activities are still in the initial stage in terms of number of investors and investment amount, compared with those of advanced countries.

Business Sector of Venture Companies

A large portion of venture companies in Korea is focused on advanced technology industries such as information and communication, multimedia, and software, accounting for about 40 percent of companies. However, considering the case of the United States, where more than 60 percent of venture firms are engaged in information and software (38.6%), and communication (24.7%),[2] the portion of high-tech industry in Korea seems still low.

---

2) Pricewaterhouse Coopers, National Venture Capital Survey, 1998. 3/4.

<Table 2.2> Business Sectors of Venture Companies

Business Sector	Number of Companies	Share
Software, Information	2,350	29%
Communication, Multimedia equipment	879	11%
Electric equipment	1,020	12%
Machinery	1,047	13%
Petro-chemical	587	7%
Ferrous & Non-ferrous metal	631	8%
Others	1,609	20%
Total	8,123	

Source : Venture Net

Regional Distribution

Most companies are located in Seoul and its neighboring areas such as Inchon city and Kyunggi province, accounting for 68 percent of venture companies as of September, 2000. This phenomenon may be due to the fact that most large electronic companies and research institutes are concentrated in the metropolitan area, which has close business relationships with venture firms.

<Table 2.3> Regional Distribution of Venture Companies

	Seoul	Kyunggi Province	Inchon	Pusan, Ulsan	Taejon	Other Area	Total
Number of Companies	3,251	1,617	633	585	638	1,399	8,123
Share	40%	20%	8%	7%	8%	17%	100%

Source : Venture Net

Business Performance

According to the survey report titled "Current Status of Venture Companies in Korea" issued by SMBA in November 1999 (hereinafter referred to as 'SMBA Report"), venture companies showed remarkably higher performance in sales growth, employment growth, export growth and operating profit growth than large corporations and SMEs in 1998, when most business firms in Korea were suffering from the downturn in the wake of the financial crisis. On the other hand, this also reflects the fact that most of the venture companies are relatively at the early stage of business, thereby having higher year-to-year growth rate than large corporations and SMEs.

<Table 2.4> Comparison of Business Performance in 1998

	Venture firms (1998)	SMEs (1998)	Large corporations (1998)
Sales growth	71.2%	-2.0%	2.0%
Employment growth	25.3%	-2.3%	8.7%
Operating profit growth	4.0%	0.6%	-2.9%
Export growth	61.5%	-1.0%	-4.2%

Note: Employment growth rates of SMEs and large corporations are for 1997
Source : SMBA, Current Status of Venture Companies in Korea, Nov. 1999

R&D Activity

Advanced technology is one of the important factors for the technology-based small firms to grow in their life cycle. Many studies demonstrated that small firms' strategies for acquiring technical knowledge should include both in-house R&D investment and external

technical sources. According to the survey by Korea Venture Business Association in January 1999 (hereinafter referred to as 'KOVA Survey'), Korean venture companies seem to rely less on external sources in terms of technology development, with about 80 percent of technology being developed by themselves, 10 percent of product technology is induced from existing domestic or overseas technology sources, and the remaining 10 percent from co-development with domestic companies including large corporations.

With regard to external partners in technology cooperation, semiconductor and software industry tend to develop technology in cooperation with domestic companies, while information and communication sectors rely more on overseas sources of technology. SMBA Report reveals that 46.9 percent of venture companies spend more than 10 percent of their sales on R&D activities.

69 percent of venture companies surveyed by SMBA in November 1999 replied that they maintained separate research centers for technology development (40 percent) or in-house departments for technology development (29 percent). The composition of manpower in venture companies also contrasted with those of SMEs and large corporations, showing a higher proportion of technical staff among total employees. 51 percent of total employees was involved in new technology development in venture companies, while only 2.7 percent and 0.3 percent in SMEs and large corporations respectively.

Profile of Founders

In general, founders of venture companies are young and highly educated scientists or engineers. According to SMBA Report, the founder's age between 31 and 40 took the largest share of all companies surveyed, as seen in Table 2.5. Meanwhile, 77 percent of founders graduated from university, and most of them majored in engineering, economics or management.

<Table 2.5> Profile of Venture Companies' Founders

Founder's Age	Younger than 31	31 to 40	41 to 50	Older than 51	
	17%	45%	28%	10%	
Educational Background	Ph D. degree	Master degree	B.A. degree	Others	
	7%	15%	55%	23%	
Majors in University	Engineering	Economics or Management	Arts	Science	Others
	49%	21%	10%	9%	11%
Career	Working at SMEs	Working at large corps.	Own business	Working at research inst. or Univ.	Others
	35%	26%	13%	8%	18%

Source : SMBA, Current Status of Venture Companies in Korea, Nov. 1999

Governance and Ownership Structure

High-technology start-ups that attract much interest from the investment community could acquire outside capital from venture capitalists almost from the beginning. The venture capitalists often require outside members of board of directors to monitor their

investments. As for the capital structure of Korean venture companies, however, most of equity shares are held by CEOs (47%) or founding members (29%), reflecting the meager participation of venture capitals. Furthermore, Korean venture companies are usually run by founders rather than outside managerial experts. 83 percent of venture companies were directly managed and controlled by founders or owners, according to the SMBA Report.

KOVA Survey showed that the timing of investment of institutional investors such as venture capital firms and financial institutions averages around two years after the start-up of venture companies, implying their primary emphasis on stability and growth potential of venture companies. Considering that more investment funds are required at the initial stage of venture business than at the expansion phase, this reluctance of investment from public investors at the initial stage tends to make fund raising activities of venture companies more difficult.

<Table 2.6> Ownership Structure of Venture Companies

Investors	Founders cum CEOs	Founding Members	Public Investors	Venture Capital	Others
% of Equity Share	47%	29%	7%	5%	12%

Source : SMBA, Current Status of Venture Companies in Korea, Nov. 1999

2-2 Government Policies on Venture Business

Enactment of Special Law

Realizing the importance of technology-based venture companies, the Korean government enacted in 1997 the 「Law for Special Measures to Support Venture Businesses」 to encourage the start-up of new venture businesses. The new law focuses on facilitating the provision of capital, manpower, plant sites for venture companies. This policy is expected to build the business infrastructure for facilitating start-ups and innovative activities of venture companies.

First, in order to help the financing of start-ups, various funds including pension fund and insurance companies are allowed to invest in venture companies. Foreign investors are also allowed to participate directly in venture companies or venture funds formed by venture capitalists to invest in venture companies.

Second, for the supply of manpower, professors of national and public colleges and universities or research fellows of national and public research institutes are allowed to take extended leaves for up to three years from their organization, if they start venture companies. When they start up new companies, they are eligible for special technical guarantees from the Technology Credit Guarantee Fund.

Third, for the supply of business spaces or factory sites, the

Minister of Construction and Traffic, mayors of main cities, and provincial governors can designate and develop specific areas and existing buildings for venture companies' business activities. For developing the areas, national and public assets are allowed to be sold and rented to the private sector.

Tax Incentives for Start-up

Various tax incentives are given to technology-based small firms. 「Law for Special Measures to Support Venture Businesses」 provides that the government could deduct or exempt taxes imposed on venture companies. Details of tax incentives are summarized below in Table 2.7.

<Table 2.7> Tax Incentives for Start-up of Venture Company

	Tax Incentives
Income Tax	· 50% deduction of income tax for 5 years after start-up
Registration Tax	· 75% deduction of registration tax concerning corporate registration and business property for 2 years after start-up
Acquisition Tax	· 75% deduction of acquisition tax imposed on business property which is acquired within 2 years after start-up
Property Tax	· 50% deduction of property tax for 5 years after start-up
Income Tax Concerning Stock Option	· Exemption of tax imposed on gains from disposal of stocks which were acquired under stock option scheme
Stamp Duty	· Exemption of stamp duty for 2 years after start-up

Establishment of Five Year Plan

Following the enactment of the 「Law for Special Measures to Support Venture Businesses」 in 1997, the government formulated a "Five Year (1998~2002) Plan for Promoting Venture Business" as part of the efforts for strengthening the nation's industrial competitiveness and improving the economy's chronic "high cost, low efficiency" structure. According to this plan, a total of 20,000 venture companies are expected be in operation by 2002, spurred by various measures including promotion funds amounting to 6 trillion won.

2-3. Key Factors for Successful Venture Companies

Although a lot of entrepreneurs launch new ventures, as we have seen in section 2-1, not every company grows successfully. Many studies have been done on what factors or characteristics successful venture companies have. In the early days, researchers tended to focus on the entrepreneurs' characteristics in finding the successful factors of venture companies. However, it is revealed by subsequent researches that the entrepreneurs' characteristics are one of many factors which have influence on the success of venture companies.

Researchers elaborated several factors which are prominent in determining the ultimate success or failure of venture companies. In Table 2.8, some of those factors are summarized. Kathleen R. Allen emphasizes market factors and management factors. Churchill and Lewis

focus on factors which are related to the enterprise and the owner. Lee Jang-woo and Chang Soo-duk had similar results from their study on factors that affect the success of venture companies.

Lee et. al. found the following characteristics of successful Korean venture companies: First, most successful venture companies were founded by highly educated entrepreneurs. They start up their businesses with technical competence in their major field of study. They hardly have work experience at the previous companies or experience in managerial activities, but had higher level of motivation for achievement. Second, they perceived a higher level of environmental turbulence and emphasized innovative differentiation strategies and the efficient resource acquisition from the outside. Third, they possessed superior technological competence and financing ability.

<Table 2.8> Summary of Factors Affecting the Success of Venture Companies

Researchers	Factors Affecting the Success of Ventures
Kathleen R. Allen	- Market factors · Size, characteristics, buying power of the target market · Nature of the competition, the degree of product innovation, status of intellectual property rights · Volatility of the industry, barriers to entry - Management factors · Entrepreneur's ability to move from controlling all aspects of the company to delegating authority and responsibility for major functions · Ability to encourage entrepreneurship in the entire venture team

Researchers	Factors Affecting the Success of Ventures
Churchill & Lewis	- Factors related to the company · Financial resources, including cash and borrowing power · Personnel resources, relating to numbers, depth, and quality of people, particularly at the management and staff level · Systems resources, in terms of the degree of sophistic-ation of both information and planning and control system · Business resources, including customer relations, market share, supplier relations, manufacturing and distribution processes, technology and reputation - Factors related to the owner · Owner's goals for himself or herself and for the business. · Owner's operational abilities in doing important jobs such as marketing, investing, producing, and managing distribution · Owner's managerial ability and willingness to delegate responsibility and to mange the activities of others · Owner's strategic abilities for looking beyond the present and matching the strengths and weaknesses of the company with his or her goals
Lee & Chang	- Founder's characteristics-in particular, psychological properties, career including educational background, motivation for start-up - Industrial environment such as growth rate of concerned industry and uncertainty surrounding industrial environment - Strategy, that is, niche market strategy, strategy for cost advantage over competitors, marketing strategy differentiated from competitors, technology innovation strategy, etc. - Advanced technology, high quality of product, fund-raising ability - Organizational structure and management system

On the other hand, Lee Kyu-yeol analyzed the management strategies in each development stage executed by successful venture companies in Korea. In his study, he stressed the entrepreneur's managerial ability to cope with problems which take place in each development stages. He found the following managerial focus of successful venture companies in his study, as shown in Table 2.9.

<Table 2.9> Managerial Focus of Successful Venture Companies

	Managerial Focus
Start-up Period	· Recruiting high technical employees through personal connections · Financing through venture capital and policy loans · Financial management attaching great emphasis on cash flow · Development of niche market · Concentrating on S/W rather than H/W
Growth Stage	· Rewarding system based on performance · Re-investment of retained earnings · Minimizing the level of borrowing and maintaining stable cash flow · Making inroads into overseas market · Extension of target market and market segmentation through development of new products · Active publicity through mass-media · Strategic alliance with foreign partners to acquire advanced technology
Mature Stage	· Adoption of MBO and creation of corporate culture · Setting out corporate vision · Introducing incentive system such as stock option · Slimming down the organization · Listing on KOSDAQ and fund-raising through equity issues · Diversification · Inducing foreign capital · Development of new product

Chapter 3 : CASE STUDY OF MEDISON

3-1. Overview of Medison

Medison was established in 1985 by seven researchers from the Korea Advanced Institute of Science and Technology (KAIST), a government-supported high-tech graduate school. Today it has become one of the few Korean companies possessing world-class technology. Armed with strong R&D capabilities, it has solidified its presence in the ultrasound diagnostic scanner market. It is the world-class medical equipment maker, which has complete technology in producing magnetic resonance imaging (MRI), digital and 3 dimension(3D) scanners.

As at the end of 1999, total assets amounted to 849 billion won, up from 781 million won in 1986. Sales also rose to 212 billion won in 1999, 424 times larger than in 1986. In terms of profit, the company has been showing consistent increase from its inception. It recorded 52 billion won in 1999, a remarkable surge from 18 million won in 1986.

From the early stage of development, Medison continued to pursue globalisation and diversification strategy. The company implemented its diversification strategy in the form of spin-out, joint venture, and angel investment. Medison's earnings dynamics and value-creation model has changed. The company has transformed into an internet/medical venture capital company from a medical equipment maker. It also expanded its

overseas network in order to realize its vision of "Global Leader, Leading Technology". Today it has 18 domestic subsidiaries or affiliated companies and 12 overseas subsidiaries.

In his recent speech at the ceremony presenting him with Honorary Doctoral Degree of Business Administration, Chairman Lee Min-Hwa said that Medison will grow into a worldwide venture firm and Medison's ultimate vision is to establish a federation of medical and internet venture business with competitive superiority, aiming to become the world's best manufacturer of ultrasonic diagnostic equipment.

<Table 3.1> Medison at A Glance

<table>
<tr><td colspan="2">☐ CEO : Lee Min-hwa</td><td colspan="2">☐ Establishment : July 1985</td></tr>
<tr><td colspan="2">☐ Product
- Ultrasound diagnostic scanner
- Magnetic Resonance Imaging
- X-ray</td><td colspan="2">☐ Major shareholders
- CMB-CAP Int'l (6.7%)
- Lee Min-hwa (4.5%)</td></tr>
<tr><td colspan="4">Financial Highlights (as at the end of 1999)
(in million won)</td></tr>
<tr><td>Paid-in Capital</td><td>Total Assets</td><td>Sales</td><td>Net Profit</td></tr>
<tr><td>16,949</td><td>849,089</td><td>212,288</td><td>52,377</td></tr>
</table>

<Table 3.2> Brief History of Medison

(in million won)

Year	Events	Financial Highlights		
		Assets	Sales	Profits
1985	- Established by 7 KA1ST researchers	n.a.	n.a.	n.a.
1986	- Awarded "Order of Industrial Merit" by Korean Government	781	500	18
1988	- First factory completed in Hongchon - SonoAce88 introduced - Listed in KOSDAQ	2,919	3,051	168
1989	- Start of ultrasound magazine "SonoAce"	5,614	4,500	347
1990	- Established'Teleradiology Operation System SA88, major selling model, cleared FDA approval	8,679	7,307	220
1991	- Awarded" 1ST Korea Venture Business Prize" - Localization of ultrasound transducer element production	14,002	13,602	1,225
1992	- Designated as "World Class Product Manufacturer" by KOTRA - Approval from FDA(U.S.A), TUV(Germany), and Homologation (France) - Invested to overseas subsidiaries in USA, Germany, U.K and China - Second factory completed	24,238	22,500	1,652
1993	- SA4800HD awarded 1st place of "Technology of Excellence"	39,743	34,413	2,584
1994	- Certified ISO9001 for the first time as a Korean medical equipment manufacturer	56,700	47,500	6,500
1995	- Awarded "Electronic Industries Prize" - Awarded president's prize as "Company of Productivity"	79,263	56,702	4,136
1996	- Listed on Korea Stock Exchange - Acquired Kretztechnik - Introduced SA6000 ultrasound and Magnum1.0T MRI	131,040	79,347	8,234
1997	- Acquired Acoma X-ray - Issued convertible bond(SFR 44million) - Introduced SA8800 and V530D ultrasound	255,461	122,958	14,984
1998	- Strategic alliance with ATL and NEU-Alpine - Introduced 4D ultrasound - Issued convertible bonds of US$30million - Introduced SA6000C, SA5500, SA8800CV and SV900	350,172	190,766	16,905
1999	- Established Medison India	849,089	212,288	52,377
2000	- Established Medison Holdings Japan - Launched new product(SA9900, Digital X-ray)	n.a.	n.a.	n.a.

3-2 Analysis of Growth Factors

Medison shares some of the common characteristics with other successful venture companies in Korea. The company had an advanced technology from the inception and continued to develop new products through R&D activities. Dr. Lee Min-Hwa, CEO and founder, was an engineer with a Ph.D from KAIST and started the business with proprietary technology for 2D digital imaging. Medison had been a front-runner in ultrasound scanner in Korea. In 1996, Medison commercialized 3D digital ultrasound scanner, an advanced version of 2D, for the first time in the world, in co-operation with Kretztechnik of Austria, a wholly owned subsidiary of Medison.

With regard to management, Medison has developed and maintained a unique management approach called the 'Medison Method' in order to encourage venture spirit and voluntary participation. The company adopted 'management by objective (MBO)' as a management system at the early stage of development and carried out a "stock-sharing plan" and "profit distribution plan" for the employees in 1989. Since 1999, Medison introduced a system called 'intraventure' to inspire entrepreneurship and to ensure market competitiveness of each production/function.

It also took appropriate strategies such as penetrating niche markets, going global from the early stage of development, and diversifying its

product lines and business domains. Recognizing its inferiority in product technology, marketing, brand name, and fund raising, Medison tried to penetrate the low-end market first at home and abroad. Its globalization strategy began with export of two ultrasound scanners to Turkey in April 1987, thereafter evolving into the establishment of overseas subsidiaries to secure strong footholds for overseas sales and to acquire new technologies or overseas production bases. Realizing the limitation as an ultrasound equipment manufacturer, Medison broadened its product lines into MRI, X-ray, and endoscope. It also tried to enter new business areas such as bio-signal diagnostic system, medical e-commerce, etc.

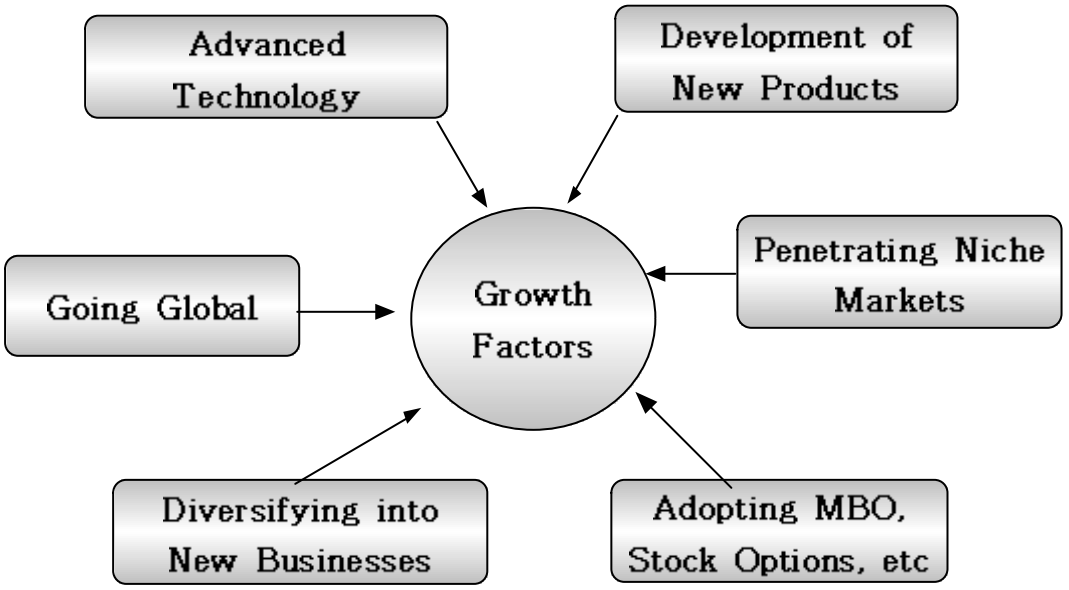
<Table 3.3> Overseas Subsidiaries

Subsidiaries	Established	Country	Business
Medison America Inc.	1992	United States	Sales
Ultramed	1992	Russia	"
KTNP GmbH	1992	Germany	"
Shanghai Medison Medical Instruments Co., Ltd.	1993	China	"
Medison(S) Pte. Ltd	1994	Singapore	"
Medison Brazil Ltda.	1995	Brazil	"
Medison Japan	1995	Japan	"
Kretztechnik	1996	Austria	Ultrasound
Medison Greater China	1997	Hong Kong	Sales
Medison Acoma	1997	Japan	X-ray system
Neu-Medison	1998	China	Ultrasound
Medison medical system	1999	India	Sales

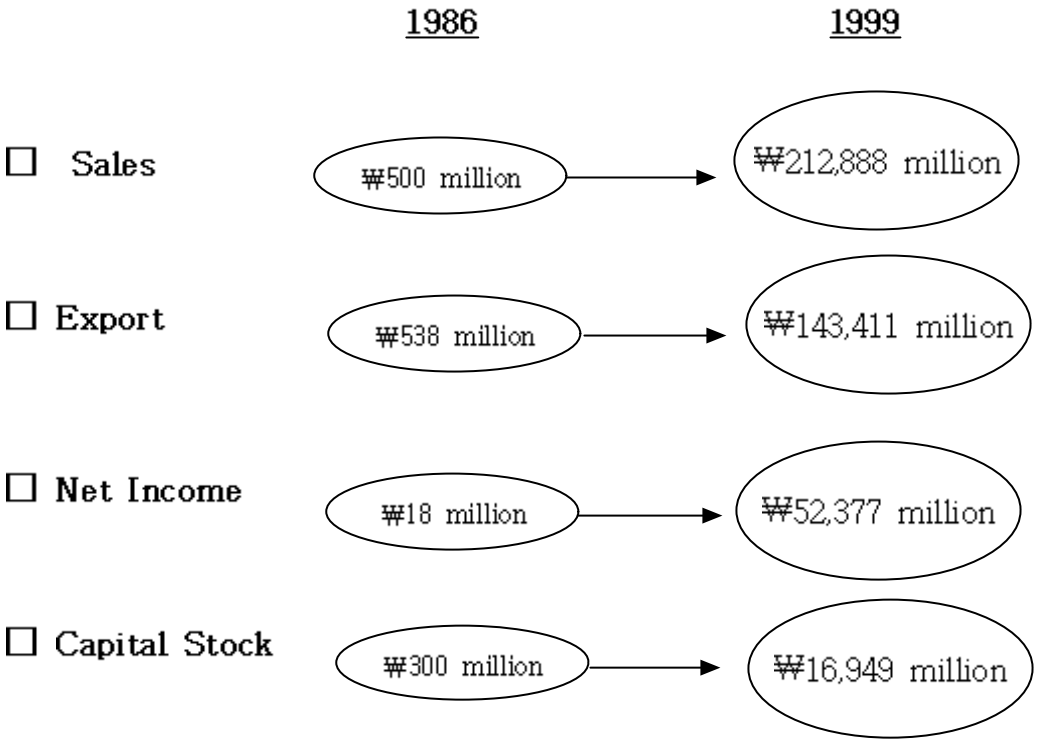
Source : Medison, Rating Report by Korea Investors Service

Entrepreneurial companies mostly follow four steps in their growth path; growing within the current market, growing within the industry, growing outside the industry and going global. In Medison's case, the company also passed through similar stages with some difference in terms of the sequence. Detailed strategies in each development stages are summarized in Table 3.4. Some venture companies may grow in size and profitability, but the owners fail to exploit the companies' accomplishments and keep the companies from growing further. Although there could be various strategies for further success, in the case of Medison, it adopted a diversification strategy to take off to upper level of success. More analysis on diversification strategy of Medison will be made in section 3-3.

< Figure 3.1> Growth Factors of Medison



<Figure 3.2> Success of Medison



<Table 3.4> Summary of Medison's Strategy

Phase	Strategies
Start-up & Initial Growth Stage	- Penetrating low-end markets - Seeking overseas markets - Developing new products - Adopting MBO, stock sharing plan, profit distribution plan
Growth Stage	- Tapping advanced countries' markets and establishing overseas subsidiaries as sales posts - Continuing new product development - Diversification into related business areas
Stable Growth & Take-off Stage	- Expanding product line-up (MRI, X-ray, endosope) - Diversification into other industries - Seeking international M&A and strategic alliances for acquiring new technology and production base

3-3 Diversification Strategy as a Growth Driver

Early in the 1990s, the company entered into the rapid growth stage. Sales soared to 13,602 million won in 1991 from 500 million won in 1986, and market share averaged over 80 percent since 1992. Medison could put more emphasis on 'growing within market strategy' with superiority in technology. However, Medison, being aware that a company with only one product/market has limited growth potential, adopted a diversification strategy as a fundamental growth engine since early 1990s.

<Table 3.5> Performance of Medison since 1991

(in million won)

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Sales	13,602	22,500	34,413	47,500	56,702	79,347	122,958	190,766	212,288
Export	8,213	10,949	17,942	22,300	28,815	41,776	78,165	125,315	143,411
Net Income	1,225	1,652	2,584	6,500	4,136	8,234	14,984	16,905	52,377
Market Share	50%	80%	84%	86%	78%	84%	85%	83%	n.a.

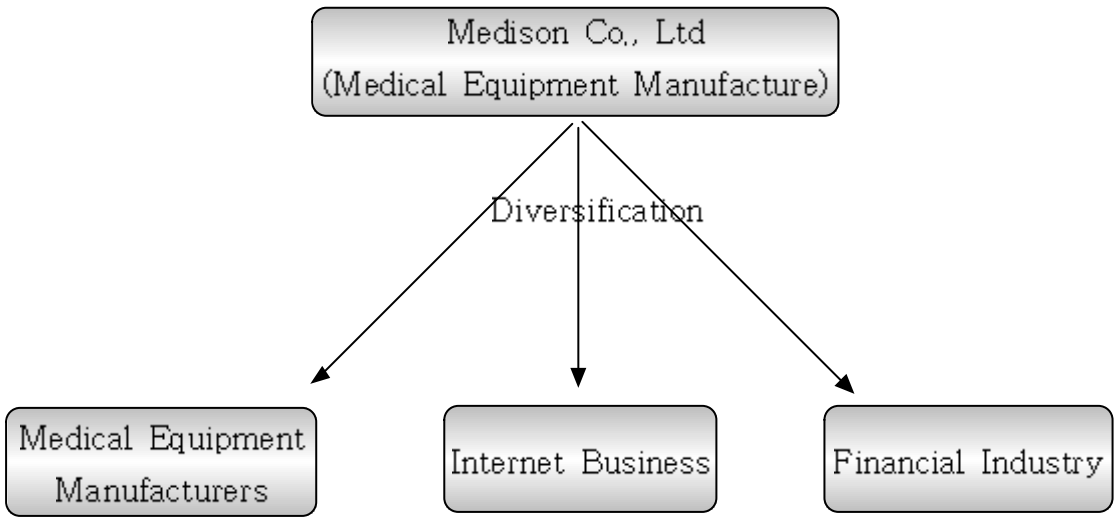
Source : Medison

When entrepreneurs expand their businesses by investing in or acquiring products or businesses outside their core competencies and industry, they are employing a diversification strategy. Usually, but not always, this strategy is used when the entrepreneur has exhausted all growth strategies within the current market and industry and now wants to make use of excess capacity or spare resources. One way to diversify is to use a synergistic strategy, whereby the company attempts to have

new products or businesses that are technologically complementary to its business. Another way to diversify is to employ a strategy whereby the company acquires products or services that are unrelated to its core products or services. There is also conglomerate diversification strategy, which involves acquiring businesses that are not related in any way to what the company currently does. (Kathleen R. Allen)

Medison also followed a similar pattern. It invested in venture companies whose products/technologies have synergy effects with Medison's technology and marketing, or diversified into less related business areas such as the financial industry. Medison also adopted a peculiar diversification method, that is, spin-out of its internal team as well as investment.

<Figure 3.3> Diversification Areas of Medison



3-3-1 Diversification in the Early Period (1992~1995)

As explained above, Medison contemplated diversification in the early 1990s to overcome its constraints on steady growth of its core business. Medison started to seek related business area, where it could efficiently and effectively use its core competence related to technology.

The company's first dversification strategy was implemented through investment in Prosonic, a manufacturer of ultrasonic transducer (or Probe) in 1994. Medison also spun off two internal business units in the same year. It spun off its internal teams as independent firms when the teams successfully developed new products and the product proved to be competitive in the market. Spin-off strategy was also adopted to prevent the deterioration of entrepreneurship, which was likely to occur as the organization of Medison got bigger.

Medison made a first spin-off of its east-west combined medical operation division in November 1994 by establishing Meridian Co, Ltd., which is pursuing Alternative Medicine combined with the East-West. In December 1994, Medison spun off another business division to incorporate Medidas, which provides clients with total medical information through self-developed software (Electronic Medical Record System). From 1999, Medidas has been operating Cyber-Hospitals, Medi-CALs(e-commerce) based on the already established network on the internet.

Besides Prosonic, Meridian and Medidas, Medison set up joint ventures with partners having strategic values and invested in venture companies such as Taeha Mechatronics, Biomedlab and Komed whose products/technologies have synergy effects with Medison technology and marketing.

TaeHa Mechatronics Co., Ltd., established in January 1995, manufactures mechanical equipments including electronic medical equipment such as engine and pump controller, CO_2 gas unsufflator for laparoscopy, and suction/irrigation system for laparoscopy.

Komed Co., Ltd. is a manufacturer of medical equipments for E.S.W.L (Extracoporeal Shock Wave Lithotripter) and C-Arm X-ray system.

Biomedlab, established in September 1994, is a biotechnology venture company engaged in producing artificial heart and DNA chip, and now expanding its business area into biotechnological products.

<Table 3.6> Diversification during 1992~1995

Company	Incorporation or Investment Date	Business	Remarks
Prosonic	Mar. 1994	Medical equipment manufacturer	Investment
Meridian	Nov. 1994	East-west combined medicine	Spin-out
Medidas	Dec. 1994	Electronic medical record Cyber-Hospital, Medi-CAL Hospital supply chain mangement	Spin-out
Taeha Mec-hatronics	Jan. 1995	Medical equipment	Investment
Biomedlab	Sep. 1995	Artificial vital organ	Investment
Komed	Oct. 1995	C-Arm X-ray	Joint venture

Source : Medison, Rating Report by Korea Investors Services

3-3-2 Diversification Strategy in Stable Growth Period (Since 1996)

Medison entered the stable growth path since 1996. Even economic recession caused by the financial crisis of 1997 could not deter the company from growing steadily. Its sales constantly grew to record 212 billion won in 1999 from 79 billion won in 1996.

Diversification since 1996 is characterized by acquisition of foreign companies for securing new technology and entry into unrelated business areas. Since its inception, Medison had successfully but solely relied on low-end 2D ultrasound scanner. Medison was in need of upgrading its product and diversifying its product lines. Since 1996, it shifted its strategic focus towards other diagnostic equipments, expanding its

product lines into MRI (Magnetic Resonance Imaging), X-ray, and endoscope as well as upgrading its existing products. In this regard, Medison turned its eyes to overseas M&A to acquire the necessary technologies.

Medison acquired Kretztechnik AG, an Austrian ultrasound developer of the most advanced 3D ultrasound technology in 1996, which led to the development of VOLUSON 530D in 1997, the foremost 3D ultrasound scanner in the world. The 3D ultrasound system, which is far superior to 2D mode, is considered to be a very influential factor in the ultrasound industry. In June 1997, Medison acquired Acoma of Japan, which specialized in X-ray techniques. For its endoscope technology, Medison took over Medizische Gerate Berlin (MGB) of Germany in 1996. In addition to overseas M&As, Shenyang Neu-Medison Medical Equipment Co., Ltd., a manufacturer of ultrasound and MRI, was incorporated in China in 1998 in cooperation with Neu Alpine to secure an overseas production base.

<Table 3.7> Overseas M&A or Joint Ventures during 1996~1999

Subsidiaries	Incorporation or Acqusition year	Country	Business
Kretztechnik	1996	Austria	Ultrasound manufacture
Medison Acoma	1997	Japan	X-ray system manufacture
Shenyang Neu-Medison	1998	China	Ultrasound manufacture

Source : Medison, Rating Report by Korea Investors Services

While the company continued to enter related business areas during this period such as bio-signal diagnostic system, medical internet services, PASC (Picture Archiving and Communication System), and biochemistry analysis through spin-outs, joint ventures, or direct investments, Medison started to invest in unrelated business areas such as financial business. To support the venture companies financially, Medison participated in launching Terasource Venture Capital Co. in 1996, which engages in venture investment in the fields of life sciences, information technology, e-business and multimedia/contents. Medison also invested in many venture funds which are organized by Terasource Venture Capital Co.

During the period from 1996 to 1999, Medison made 12 investments as shown in Table 3.8. As a result of this diversification strategy, Medison has built a 'Medison Family', which consists of subsidiaries or affiliates covering medical technology, internet, and business infrastructure. Companies or business units within the Medison Family perform autonomous management based on entrepreneurship, and cooperate with the parent company for the overall strategic direction of the Medison Family.

<Table 3.8> Domestic Diversification during 1996~1999

Company	Establishment or Investment	Business	Medison's Stake	Remarks
Biosys	1996	Bio-signal measure-ment system	20.6%	Joint venture
Mediface	1996	PACS	35.7%	Joint venture
Medicapital	1996	Financing service	18.3%	Investment
Terasource venture capital	1996	Medical venture fund	22.9%	Investment
Infopia	1996	Chemical analyzer	9.3%	Investment
Medichems	1997	Breath analyzer	43.3%	Investment
Welson Endotech	1998	Endoscope	54.0%	Spin-out
Raysis	1999	X-ray system	20.0%	Investment
Medilinx	1999	Hospital B2B e-business	40.0%	Joint venture
E*COM	1999	Integrated web design	40.0%	Joint venture
M2 communication	1999	Medical marketing and Internet	33.2%	Spin-out
Sertech	1999	Medical service	20.0%	Spin-out

Source : Medison, Rating Report by Korea Investors Services

3-2-4 Moving Ahead

In order to grow continuously and survive in the changing business environment, Medison has consistently pursued diversification into related business areas through spin-outs, joint ventures, and direct investment. As a result, its business area covers medical equipment, biotech, medical internet, business infra service, and finance.

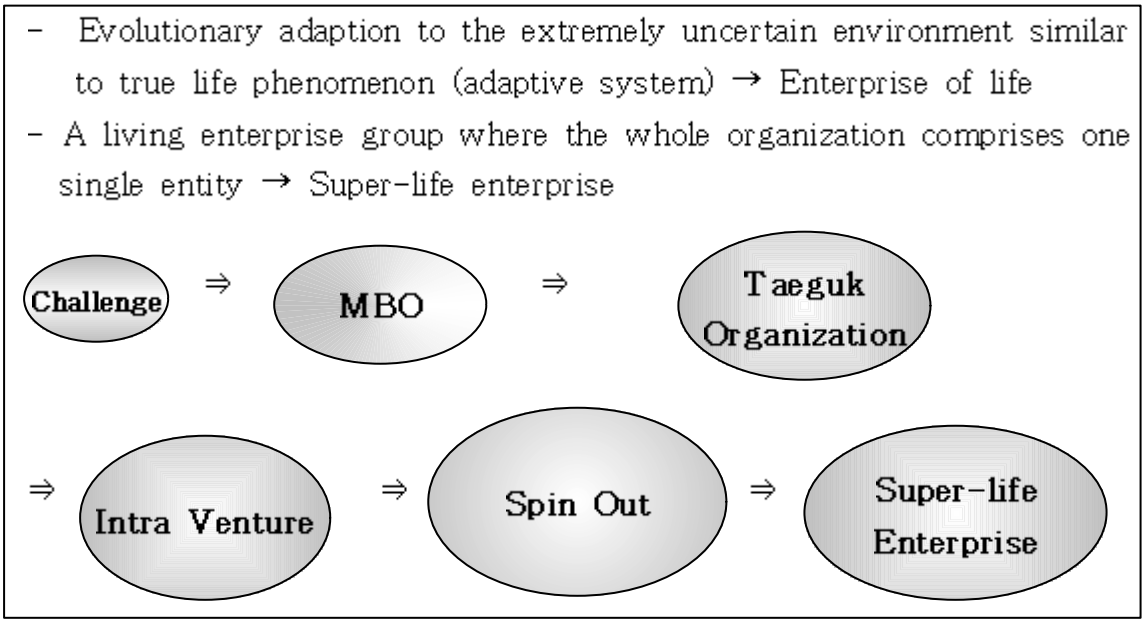
<Table 3.9> Business Areas Covered by Medison

Medical Equipment	- Ultrasound diagnostic imaging - MRI, X-ray, endoscope, chemical analyzer
Biotech	- Artficial heart
Medical Internet	- Cyber-hospital, Medi-CALS - Hospital supply chain management - Internet-based PASC (Picture Archiving and Communication System)
Business Infra Service	- Marketing, Service, Design
Finance	- Venture capital

Some analysts argue that the company has become a medical venture capital/internet company rather than a simple medical equipment maker, generating over 70 percent of its earnings from investment gains. The company disposes of its investment in subsidiaries once the subsidiaries are listed on the stock exchange (or KOSDAQ) to realize investment profits. In fact, Medison realized a profit of 15 billion won from disposal of investment securities, and gained 50.6 billion won from the revaluation of investment assets in 1999. Investment gains have become a recurring item for Medison, not a one-off thing. In light of this pattern, the company's strategy is very similar to a venture capital company. But it shows some difference from the typical venture capitals in that Medison primarily invests in medical-related venture companies and does not sell out all of its stakes so as to secure synergistic effects from the diversification.

Medison recently solidified its diversification strategy by introducing the concept of 'super-life enterprise' and 'Medison Federation'. On July 1st, 2000, Medison declared its rebirth into a "super-life enterprise" through its VISION 2005, which includes a plan to accomplish 2 trillion won in revenues and 5 trillion won in enterprise value in the year 2005. Medison's challenge for a new concept of 'super-life' for the 21st century stems from concerns that even a company established with perfection might be perished by external environmental changes.

<Figure 3.4> Evolutionary Step Toward Super-Life Enterprise



The 'super-life enterprise' philosophy focuses on growth through the synergy generated by challenges, competition, and cooperation among multiple units within the Medison family, small and large, rather than a single static company. In this way, Medison prepares to meet the 21st century and the rapidly changing external environment. These policies are

realized through a strategy of related diversification, which is systematically supported by intra-venture, spin-out, strategic alliances, and angel investment. Though Medison Co., Ltd. may itself disappear in the course of such efforts, the super-life Medison family members will survive forever through steady development, growth, and utilization of core capabilities.

The Taeguk organization in Figure 3.2 symbolizes the process where the challenging spirit of individual staff members is expanded to MBO, which in turn harmonizes conflicting values at the corporate level. This harmony will, in turn, create internal intra-venture units, evolve into spin-outs externally, and form the overall super-life business enterprise.

The life enterprise is an organization which accommodates itself to the extremely uncertain environment as if living creatures do so. Intra-venture is the organization structure intended to enhance such adaptability and competitiveness. Intra-venture allows each part of the organization to attain market competitiveness by introducing a market mechanism within the organization. This life enterprise grows into an super-life enterprise through internal reproduction (spin-off), based on its internal capabilities, through external reproduction (joint venture), by combining with external core capabilities, and through angel investment, which consolidates and utilizes external capabilities.

Each business unit within the super-life enterprise shares common

genome codes such as culture, industrial and business knowledge and capabilities, and institutions. These genome codes allow for cooperative diversification aimed at maximizing synergy among business units within the super-life enterprise.

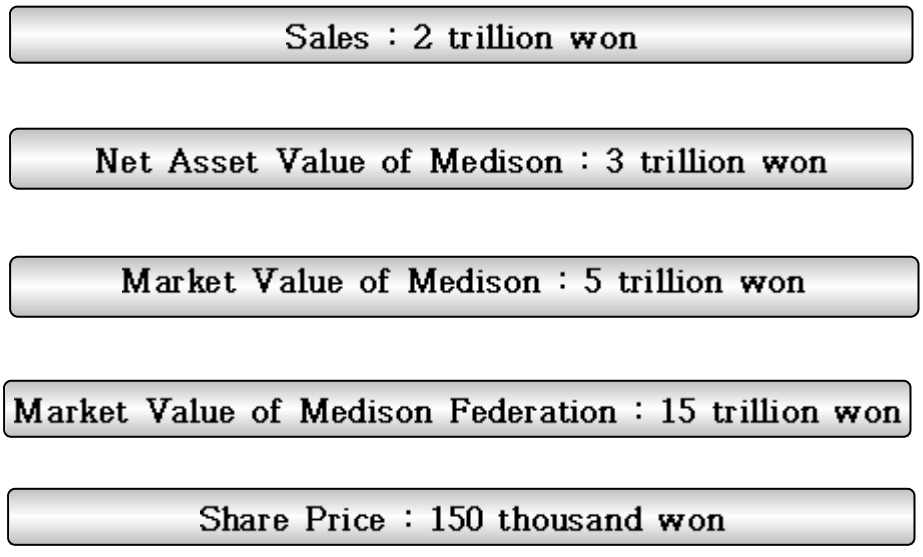
Medison launched 'Medison Federation', as a concrete enterprise system for the super-life enterprise. Roughly 20 companies including Medison, Medidas, Bit Computer and MGB participated in the Medison Federation. Lee Min-Hwa, the Chairman of Medison, said that the Medison Federation is made up from loosely coupled federations, adding that it is a concept which independent enterprises enhance mutual synergy in operations, systems, culture and management know-how while they don't interfere with each other in their financial and personnel affairs. He stressed that Medison will raise the total market value of Medison Federation to 15 trillion won in 2005.

Chairman Lee stated that Medison's rebirth into a super-life enterprise is an expression of its self-confidence which can secure lasting investment profits based on core capabilities, adding that this model is different from venture capital which pursues mainly capital profits, or large conglomerate diversification which doesn't produce any synergy effects.

Noting that a super-life enterprise is a natural evolution process for a venture company, he underlined that it is similar to Cisco Systems'

group of more than 2,000 companies. In particular, he said that Medison's vision aims to incorporate a company which has a super-life for over 100 years. It is Medison's ultimate vision to establish a federation of medical and Internet venture businesses with competitive superiority, aiming to become the world's best manufacturer of ultrasonic diagnostic equipment. President Lee Seung Woo also confirmed that Medison will further maintain its ultrasonic business, saying that the ultrasonic business will play a role as a laboratory of companies within the Federation.

<Figure 3.5> Vision 2005 of Medison



Source : Investors Relation Material, July 2000, Medison

3-2-5 Financial Problems Related to Diversification

Recently, one Korean credit rating agency down-graded Medison's commercial paper to B^+ [3] in June 2000. The rating agency explains that Medison is likely to be exposed to liquidity risk if credit crunch occurs in the financial market because the company's investment exceeds the cash flow generated by business operation and rely too much on short-term borrowings.

In fact, Medison's total amount of borrowings amounts to 246.3 billion won as of March 2000, which exceeds the company's sales in 1999. Medison seems to temporarily face cash flow problems which stems from excessive investment for diversification.

The company has invested 10 to 76 billion won per year on new ventures during the period from 1996 to 1999, as shown in Table 3.10. Cash generated from operation could not cover investment needs during this period. In 1996 and 1997, deficiency of cash was largely financed by rights issues, totalling 50.8 billion won. In 1999, however, the company entirely relied on external borrowing for its investment. Although Medison has an investment principle that it invests half of proceeds from the disposal of investment securities, the company just started to cash

3) B-rated CPs are a speculative grade securities if there is adverse change in situation

in its investment assets in 1999 and intends to do so in the future. Hence, most of the investments were financed by borrowings rather than cash flow from operation. In this regard, Medison should prepare an appropriate financial strategy such as early disposal of investment securities which are already listed or registered on the stock market.

<Table 3.10> Statement of Cash Flow

(in billion won)

	1996	1997	1998	1999
Net profit, depreciation ,etc	15.3	26.8	35.4	-1.6
Change in working capital	9.7	27.7	28.4	-6.2
Cash in-flow from operation	5.6	-0.9	6.9	4.7
Change in investments	10.0	50.4	27.3	76.0
Change in fixed asset investments	3.0	4.9	19.8	33.2
Change in liquid asset investments	3.4	7.9	-3.5	-33.6
R&D, other investments	6.7	10.7	7.2	-1.2
Cash out-flow from investment	23.0	73.8	50.7	74.4
Other outflow such as dividend	4.8	0.4	3.9	2.5
Deficiency in cash	-22.2	-75.1	-47.7	-72.2
Rights issue	21.9	0	28.8	0
Bonds issue	2.8	35.5	71.4	57.8
Short-term borrowing	1.8	26.0	3.2	15.0
Long-term borrowing	10.1	10.6	-26.9	-9.3
Cash flow from financing	36.6	72.1	76.5	63.5
Net change in cash	14.4	-3.0	28.9	-8.7

Source : Tong Yang Securities Co, Company Analysis, June 2000

Chapter 4 : CONCLUSION

4-1 Summary of the Study

Venture companies in Korea play an important role in re-invigorating the Korean economy. Korean government's policy also put emphasis on fostering venture companies to expedite the restructuring and streamlining of large conglomerates.

Spurred by government policy, new venture start-ups rapidly increased in recent years. About 42 percent of total venture companies has been established after the 「Law for Special Measures to Support Venture Business」 was enacted in late 1997, and the main business area is in high-tech industries such as information and communication, multimedia and software, accounting for about 40 percent of the total. Most of the venture companies were founded by engineers and concentrate their effort on R&D to be a front runner in technology.

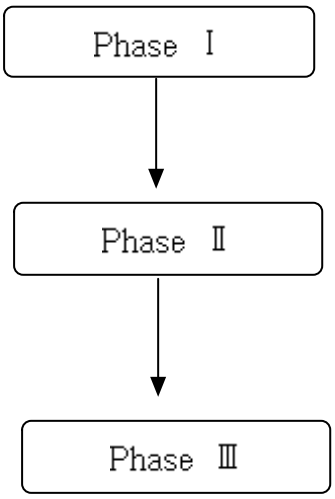
Founded by seven former KAIST researchers based on ultrasonic diagnostic imaging technology, Medison has most of the key success factors which led to the success of the company. They are:

- Advanced technology in ultrasound diagnostic imaging
- Continuous development and differentiation of products
- Going global

- Penetrating niche markets
- Adopting MBO, stock option scheme, and profit sharing plan
- Diversifying into new business areas

Medison has steadily enhanced and expanded its core capabilities thanks to the combination of the above factors. Medison successfully took off to upper level by actively pursuing diversification into related business areas. The company realized in the early stage of development that steady growth would be difficult without diversification. Spin-off of its internal business unit is also distinctive from typical diversification strategy pursued by other companies.

The company's diversification strategy could be summarized as follows:



- Diversifying into related business areas through spin-off, investment, joint venture
- Seeking overseas M&A, joint venture together with phase Ⅰ strategy
- Solidifying diversification strategy by introducing the concept of 'Super-life enterprise' and 'Medison Federation"

Medison did not simply expand its business area by pursuing reckless diversification strategy. The company invested in venture companies whose products/technologies have synergy effects with Medison's technology and marketing. Furthermore, it consolidated its diversification by introducing the concept of "super-life enterprise" and "Medison Federation", which is a unique management approach simulating life phenomenon. Enterprises in Medison Federation strategically cooperate with each other in marketing and R&D so as to complement their weaknesses, but they do not intervene in other companies' financial and personnel management at all.

However, in terms of financing the investment, Medison recently faces liquidity problems due to its heavy reliance on external short-term borrowings.

4-2. Implications

Considering the importance of venture companies in the national economy, their sound development and success is important for the nation as a whole as well as entrepreneurs. Many entrepreneurs launch their businesses with superior technology and entrepreneurship, and may grow successfully to a certain level. Most entrepreneurs do not want to remain in the start-up stage and will try to jump on to the next phase of growth. In this regard, Medison's diversification strategy could have some implications for the continuous growth and success of venture

companies.

Of course, diversification is not the only requirement for steady growth and reckless diversification could lead to failure in the end. A common failing of firms that suffer from the growth syndrome is diversification into unrelated business areas. As seen in the case of Medison, diversification should be implemented so as to enhance core capability through synergistic effects. From this perspective, it is worth recalling that Medison's vision is to establish a federation of medical and Internet venture businesses with competitive superiority, aiming to become the world's best manufacturer of ultrasonic diagnostic equipment.

In addition, venture companies should carefully plan their financial strategy in implementing the diversification strategy in order to avoid the problems facing Medison.

APPENDIX

1. Balance Sheet of Medison

(in billion won)

	1996	1997	1998	1999
Current Assets	80.7	133.7	182.4	216.8
Investment & Other Assets	39.6	109.2	145.0	578.5
Fixed Assets	10.7	12.6	22.8	53.8
Total Assets	**131.0**	**255.5**	**350.2**	**849.1**
Current Liabilities	39.1	92.8	93.9	169.5
Payable & Other C.L.	35.1	61.2	59.2	119.8
Short-term Borrowings	4.0	31.6	34.7	49.7
Long-term Liabilities	30.6	78.0	118.2	114.7
Bonds Payable	9.8	40.1	102.3	85.6
Long-term Borrowings	20.8	37.9	15.9	29.1
Deferred Liabilities	-	7.0	4.0	-
Total Liabilities	**69.7**	**177.8**	**216.0**	**284.2**
Paid-in Capital	13.2	13.2	14.7	16.9
Capital surplus	30.9	30.9	59.1	106.2
Retained Earnings	21.3	30.8	45.3	50.1
Capital Adjustments	-4.0	2.8	15.1	391.6
Total Shareholder's Equity	**61.3**	**77.7**	**134.1**	**564.9**
Total Liab. & Equity	**131.0**	**255.5**	**350.2**	**849.1**

2. Income Statements of Medison

(in billion won)

	1996	1997	1998	1999
Sales	**79.3**	**123.0**	**190.8**	**212.3**
Cost of goods sales	48.4	75.4	110.7	135.0
Gross profit	30.9	47.6	80.1	77.3
Selling and Administrative Expenses	12.8	18.4	33.6	62.6
Operating Income	**18.1**	**29.1**	**46.4**	**14.6**
Non-operating Income	2.6	17.7	26.2	112.6
Non-operating Expenses	12.0	29.6	52.2	54.5
Interest expenses	5.9	9.5	25.5	20.4
Recurring Profit	**8.7**	**17.3**	**20.5**	**72.8**
Pre-tax Profit	9.5	17.3	20.3	72.8
Taxation	1.2	2.3	3.4	20.4
Net Profit	**8.2**	**15.0**	**16.9**	**52.4**

3. Financial Highlights of Major Affiliates as of 1999

(in million won)

	Assets	Liab.	Shareholder's Equity	Paid-in capital	Sales	Net Profit
Medidas	37,012	9,844	27,168	6,790	12,122	10,739
Meridian	9,015	4,566	4,449	2,689	6,098	813
Prosonic	10,888	4,042	6,846	2,536	9,022	1,818
Biomedlab	4,331	1,880	2,451	2,300	307	-985
Biosys	14,413	5,286	9,127	3,700	9,619	1,370
Komed	2,489	2,179	310	700	3,036	237
Mediface	1,997	683	1,314	1,030	1,638	479
M2 communication	1,591	310	1,281	1,281	-	-
Sertech	417	127	290	197	1,505	93
Raysis	310	24	286	200	90	-14
E*COM	200	-	200	200	-	-
Medilinx	1,500	-	1,500	1,500	-	-
Welson Endotech	2,767	892	1,875	2,000	1,869	-92
Medichems	3,590	477	3,113	2,546	452	-541
Medison America	27,511	29,873	-2,362	11,768	15,353	-876
Shanghai Medison	24,783	22,752	2,031	1,165	18,041	405
Medison Japan	23,805	24,855	-1,050	3,693	8,313	-2,723
Medison (Singapore)	6,878	3,676	3,202	4,648	2,225	-1,038
Kretztechik	101,497	69,151	32,346	6,970	111,067	6,837
Medison do Brazil	26,490	25,866	624	1,723	10,336	1,357
Medison Acoma	18,886	16,706	2,180	3,068	11,145	-1,974
Ultramed	2,791	2,779	12	12	-	-
Medison India	2,165	242	1,923	2,161	741	-41
KTNP	2,097	2,252	-155	769	1,527	-1,410
M.G.C	29,786	23,379	6,407	13,047	16,113	-6,063
NEU-Medison	7,474	67	7,407	10,685	1,188	-472

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