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# Interview with a Korean Entrepreneur: Dr., CEO, Daeje Chin

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**Abstract** Asian Journal of Innovation and Policy (AJIP) would like to introduce an interview section on innovations, innovators, and entrepreneurs if possible in every issue. The interviews introduced will be selected not based on a journalistic view, but rather by its theoretical or practical implications. This issue will introduce an entrepreneur who was a key engineer, Chief Technology Officer (CTO), and CEO of Samsung Electronics, in addition to being the Minister of ICT in the Korean government. Currently, he is the CEO of an investment company. His success was tied to the success of semiconductors at Samsung Electronics, which became the world leader, leading some to even call him "the god of semiconductors". This interview resurrects the debates on the mode 2 society and the role of education in entrepreneurship.

**Keywords** Entrepreneur, creativity, mode 2 society, role of education, role of government

Asian Journal of Innovation and Policy (AJIP) is a meeting place for researchers of Asian studies to accelerate Asian innovation. AJIP would like to introduce an interview section on innovations, innovators, and entrepreneurs if possible in every issue. The interviews introduced will be selected not based on a journalistic view, but rather by its theoretical or practical implications.

Some countries in Asia put great emphasis on generating front-edge technologies, and others on catching-up. On the other hand, some countries lack even the ability to imitate leading technologies. Therefore, forthcoming interviews will raise interest only to a limited audience, while others will be interesting to all interested in entrepreneurship and innovation.

This issue will introduce an entrepreneur who was a key engineer, Chief Technology Officer (CTO), and CEO of Samsung Electronics, in addition to being the Minister of ICT in the Korean government. Currently, he is the CEO of an investment company. Editor-in-Chief Sung-Soo Seol and Professor Sanghyuk Suh of Hoseo Graduate School of Global Startups who is also a

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Steering Committee Member of the Asian Society for Innovation and Policy (ASIP) conducted this interview in the office of Dr. and CEO Daeje Chin of SkyLake Investment Co. in Seoul, Korea on June 15, 2015.

## I. Introduction of Dr. Daeje Chin

### 1. History

Dr. Daeje Chin was born in 1952. He graduated from Kyunggi High School and Seoul National University, both of which are considered the best in Korea, and received his Master's degree from MIT in addition to a Ph.D. in electronics from Stanford University. After graduation, he worked for the IBM Watson Research Institute (1983) to develop semiconductors, and was scouted by Samsung Electronics (1985). This transfer was very adventurous for him, since Samsung Electronics was just starting its semiconductor business. He was in charge of the development of DRAM (dynamic random-access memory), and his success on the development of DRAM was a milestone for Samsung Electronics to be a world leading company.

Based on the success of DRAM, he became the head of the non-memory semiconductor division and the CTO of Samsung Electronics in 1997. In 1999, he was promoted to CEO of the entire consumer electronics division. Shortly after, he daringly proclaimed at an official meeting in 2000 that Samsung would overtake Sony of Japan in consumer electronics. Moreover, he delivered a keynote speech as the 1st Asian in the opening ceremony of the 2002 CES (Consumer Electronics Show), and upgraded the brand of Samsung Electronics in the show by introducing many innovative consumer products.

In 2003-2006, the Korean government appointed him the Minister of ICT. His monumental policy was the IT839 Program, which featured 8 service and 3 infrastructure targets and 9 new growth drivers. After finishing his duty, he failed in the election to become the head of Gyeonggi-do, the largest province in Korea. Instead, he established a private equity fund, SkyLake Investment Co. in 2006. This company operated with a US$ 1.3 billion fund and has invested in 25 companies by the end of 2014.

He also runs an education program, the Daeje Chin Advanced Management Program, mostly for CEOs of small and medium companies. The program educates about 40 CEOs yearly, with a class every week, and has an 11 years history. He considers this school a way for him to give back to society, since he received scholarships all throughout his schooling. Applications to this program are plentiful and all the graduates are welcomed by firms.

## 2. Performance

Samsung Electronics entered the semiconductor business in 1983, and even if Dr. Chin's success in leading the development of the 64k DRAM was the 3rd quickest in the world following USA and Japan, it was 4 years later than Japan. The learning cost in the production of the semiconductor, however, put Samsung Electronics as well as the Samsung Group in financial danger, due to the heavy losses from the low yield ratio of semiconductors. In this hostile environment, Dr. Chin's team developed the 256k and 4M DRAM. Further, his team developed the 16M DRAM on October 1989, nearly similar to Japan, but achieved the success of being the 1st to send commercial samples to customers around the world. In 1992, his team was the 1st worldwide in the development of the 64M DRAM. These developments helped shape Samsung Electronics to become the world leader in memory.

Dr. Chin noted 2 decisive factors in the success of Samsung Electronics and the Samsung Group: semiconductor investment and the "new management" of Samsung by Chairman Kun-hee Lee. He said Samsung's new management was the sole decision of the Chairman.

At the firm level, the success of semiconductors led the memory division of Samsung Electronics from losses of US$ 100 million in 1985 to profits in 1988, and to the further several US$ billions of accumulated net earnings during 1993-95. At the industry level, the success of semiconductors made memory the largest item for Korean export. At the country level, semiconductors shaped the electronics industry to become the major driver of growth in the Korean economy.

We felt that Dr. Chin recognizes well the stages of all these processes and that he takes great pride in this sequential process of success, although he did not mention the whole process. He did, however, add the historical fact that the low growth of the Korean economy began at a time when there was no IT Ministry.

Strictly speaking, one man cannot achieve all the things we mentioned. Other people and efforts played a part: Samsung's improvement was aided by other people such as Yoon-Woo Lee and Dr. Chang-Gyu Hwang, both of whom were CEOs of Samsung Electronics. At the firm level, Chairman Gun-hee Lee's innovative management boosted technological success. In the domain of policy, government policy also supported the success of memory. Commentators said that the success of memory was the product of the cooperation between industry, government lab, academy, and government led technology policy. For example, "Government set memory as a target of the Specific R&D Program and supported around US$ 2.7 million per year from 1982 and increased to US$ 4.5 million from 1986 and further supported

US$ 13.5 million per year from 1989. The 4M DRAM Collaboration Program from 1987 was also very helpful for the success"[1]

## II. Theoretical Disputes

### 1. Basis of Performance

Our 1st question to Dr. Chin was "As an engineer, CTO, CEO, Minister of ICT, CEO of an investment company and educator, which do you consider your greatest achievement? And the 2nd question was "How did you prepare the next stage?" To be a CEO from being an engineering team leader, management knowledge might be needed and to be a leader of an investment company, investment related knowledge might be needed. We believed this knowhow or strategy of preparation might be helpful to researchers and students.

His answer was simple. "I made great effort at each stage, so every stage was meaningful to me." The 2nd question, he said, was one he got many times from students: To be the 1st or CEO, what kind of learning or preparation is required? He answered the basis of his success: "I did the best to be the 1st in each work. If I got the 1st, I could see the next stage, and then, I left." His saying is that the attitude to be the 1st in current work, even if it is a small thing, is the very virtue of success. After reaching the pinnacle, the next stage is easily visible, so transferring to the next stage is easy. Also, he added, "After being a real specialist, fusion with other areas or collaborating will be easy. But, if you think fusion first, you will risk not achieving anything."

He moved to the non-memory semiconductor division after success of memory, and moved to consumer electronics after success of non-memory. The transfer to consumer electronics was his wish, since he thought the world would turn into the digital society. "The division of consumer electronics was very weak at the moment, so the growth of consumer electronics was essential to Samsung Electronics. Also, in the technology domain, consumer electronics was meaningful to memory, since memory could be applied to consumer electronics where technology reaches people through end products. So, I moved there and adopted memory technology to consumer electronics successfully." A person who knew him said "He was the god of semiconductors and a real engineer down to the inner part of his bones."[2]

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[1] Lee, Suenghwan, Memory industry, cannot break the crisis without government support, Asia Today, 2015-07-31. http://www.asiatoday.co.kr/view.php?key=20150731010019430.

[2] http://cafe.daum.net/ssaumjil/JnwJ/1184961?q=%C1%F8%B4%EB%C1%A6&re=1

This attitude can be related to the dispute of the so-called "mode 2 society" and the need for education of fusion or multi-disciplines. We omit the disputes on the need for education of fusion or multi-disciplines, which is out of the scope of our interview. Rather we discuss the "mode 2 society" dispute. This dispute is old and reflects the social aspects of fusion or multi-disciplines.

Gibbons et al. (1994) pointed out that new trends of knowledge production appeared, which could be called "mode 2" compared to the tradition of "mode 1". Knowledge production in mode 2 is the result of fusion or multi-disciplines and mode 1 is that from a specific discipline. Therefore, rank of knowledge, relationship within discipline, or thinking in ivory towers are considered important in mode 1, and co-relationship between disciplines, networks, and practical problem-solving are important in mode 2. Nowotny, Scott and Gibbons (2003) said that mode 1 is the typical mode of knowledge production and mode 2 is the new paradigm of knowledge production. The discussion for mode 2 expanded to industry-academy-government interaction by Etzkowitz and Leydesdorff (2000), and Van Aken (2005) expanded it even to management science.

Pavitt (2000), however, disliked the mode 2 discussion. He reasoned that the application in mode 2 has been the nature of mode 1, and industry-academy-government networks are the evolutionary type of mode 1, so mode 2 is not the replacement of mode 1. In addition, the discussion of mode 1 may neglect the importance of basic research. Godin and Gingras (2000), through the analysis of knowledge production of Canada, pointed out that although knowledge production out of the university is increasing, the importance of the university is not decreasing. Rather the increase in knowledge production was from the collaboration with out-side organizations. There has been no difference in the importance of basic science and university in knowledge production, but new collaborations have expanded. Therefore, mode 2 is complimentary to mode 1.

## 2. Can Entrepreneurs be Nurtured by Education?

Our 3rd question was on the entrepreneur, conceptualized by Schumpeter (1934). Can the entrepreneur be nurtured by education? The related studies are as follows: Who is an entrepreneur (Carland, Hoy and Carland, 1988)? What makes an entrepreneur (Blanchflower and Oswald, 1990)? Entrepreneurship in business (Krueger, 1988).

Specifically, we asked, "Could someone like the former Chairman of Samsung Electronics, Gun-hee Lee or Dr. Chin be nurtured by education?" He replied with 2 facts saying he got many similar questions. "First, a leader of organization is different from an entrepreneur. A desirable employee is the person who achieves targets easily, takes the lead, and communicates well with

other people. Therefore, a leader may be selected under indices such as performance, leadership and communication ability. Creativity is not an index of leadership. Leadership and creativity are abilities in different domains. Second, an entrepreneur can be defined as the person who thinks different, and has ability to pursue that thinking. People, however, cannot see 9 specialists who support the entrepreneur. Those kinds of supporters were near Bill Gates and Jeong-ui Son of Soft Bank of Japan. The entrepreneur like Steve Jobs cannot be nurtured by education. We can only educate those supporters and only time and chance can make one of the supporters into an entrepreneur."

He points out that creative education will be strengthened, since some jobs and even occupations will disappear to new technologies. Therefore, "creative education will be essential for the survival of students, since simple education will lead to joblessness. For example, "reverse education" is more efficient than normal studying: instead of homework at home and listening at class, studying at home and discussion and questioning in class. Curiosity, questioning, and praise may be the virtues of a creative education."

## III. Perspective

### 1. Asian Innovation Patterns

The next question was "What lessons can you give to the Asian Society for Innovation and Policy, which is a society that includes countries in various development stages?" He also said he had many similar questions especially during lectures for high-level civil officers from African and Asian countries. Simply speaking, "What can we do to be like Korea?" His answer is "Send young students to advanced countries and let them learn from entrepreneurs of the countries."

As for Asian innovation patterns raised by ASIP, he pointed out several facts. "First, there is a big difference between Japan, China, Korea, and ASEAN. ASEAN is a region worthy to monitor. Second, China and Korea put emphasis on speed, but Japan is weak in speed. Memory sector of Japan has disappeared in 2012, and a representative non-memory company is on sale. There may be mistakes in decision-making, but the Japanese type of thinking may be a key reason for its slow speed in the IT sector. Korea responded to the iPhone of Apple within 6 months, but Japan demonstrated no such speed. The very basis of IT is speed. On the other hand, Japan is strong in heavy sectors such as machinery, parts, cars, and fine chemicals like Germany. These are the sectors needing time."

As for China, he started with the discussion on the speed of China. When he visited China in the 1990s, mayors and heads of the Communist Party of the region asked for the construction of new plants of Samsung Electronics, but in the 2000s, there was no such asking. On December 2014, when he delivered a speech at the Chinese Academy of Engineering, the question he was asked shows the current concern of China. "Leaders of the Chinese Academy of Engineering wanted to know how to avoid the Korean experience of failure during the period of high growth. China already exceeds Korea in many sectors, and after 5 years they will have no concerns on the Korean experience."

## 2. Role of Government

The last question was on desirable government technology policy. His answer was the same with the teachings of academic books. "The role of government should be to support the market. It is not the role of government to say "do this and do not do that." For example, "Government can get involved in the market to set up a new market in the introduction stage, but they have to be able to back up after setting up the market."

An example of his intervention was for software manpower. Before he intervened, he recognized that there was no shortage in manpower, but the problem of manpower distribution by field. So, he made a policy on manpower in the embedded software field.

As for current government policy on the management of technology, he is pessimistic. "Although any developer or CEO meets obstacles because of lack of business knowledge, they can put their energy on developing products and it is enough to call for management experts to solve business obstacles."

He also pointed out the consistency of policies. "The Korean government always focuses on new policies instead of existing policies, when a new administration starts. Thus, problems arise in the operating of organizations and infrastructures under old policies. Here is an illustration: techno-park in 1990s, innovation cluster in late 1990s and early 2000s, and currently the Innopolis project based on existing science towns and parks, and the creative economy innovation center. Are there real differences between such policies?

Even firms have policies to respect existing policies: For example, there is a feedback process after planning, process, and evaluation. Second, there is a 70% rule to develop new technologies. That means new technologies should use a minimum 70% of existing technologies. Third, every worldwide plant should be similar to the original one. Consistency of policy is important."

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