

From Information to Knowledge to Wisdom: My Journey

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Four decades have passed since I graduated from the University of California at Berkeley with a PhD. My interests have evolved from information to knowledge to wisdom, from its process to creation. My focus has broadened from private firms to public organizations to communities and society, from management to strategy and to leadership. The more research I do and the more I meet people, I become more confident that it is our human nature to pursue excellence relentlessly according to our beliefs, passion, and commitments. My Knowledge-Creation theory, is about the being and the becoming of ourselves.

In this paper, I will use my academic path as a guide to review how the theory on management, strategy, organization, and leadership evolved in the past half a century, and how the theory on Knowledge-Creation can play a vital role in the 21st century.

STARTING MY CAREER

Looking back, I came to be interested in management and organization while I was working at Fuji Electric. I joined Fuji Electric in 1958 and during my nine years of assignments; in personnel, marketing, labor union, corporate university, and corporate planning responsible for financing subsidiaries. In the 1960s, new management theories and methods such as quality control, theory Y, participative management were introduced to Japan from the U.S. When the corporate university at Fuji Electric invited instructors who used the Harvard case method to introduce the latest theories and concepts, I saw that Japanese management was quite outdated and felt a sense of crisis. So at the age of 32, I decided to leave the company and study in the U.S. From the beginning, I had the ambition to

develop a new, original theory because I believe Japan needed a made-in-Japan theory rather than borrow theories from the U.S.

BERKELEY YEARS

So I went to the University of California at Berkeley. The Berkeley years had a great impact on my life. It was also at Berkeley that I met my best friend and colleague, Hiroataka Takeuchi.

Berkeley had a reputation for its theoretical approach in management. I took marketing as my major for a master's degree under Professor Francesco M. Nicosia, whose major contribution was conceptualization of the consumer decision process from the perspective of information processing. At that time, information processing theory and contingency theory dominated the management theory. Herbert A. Simon, Richard Cyert, and James G. March from Carnegie Mellon University were the big names. Accordingly, I was influenced heavily by the Carnegie School of Thought (c.f. Cyert and March, 1963; Simon, 1969). In fact, for my master's thesis, I wrote about Paul Lazarsfeld's latent structure analysis for measuring the cognitive structure of consumer information processing, which used complicated statistical method.

At the doctoral level, I took sociology as my second major. I attended a course on theory construction conducted jointly by Neil Smelser and Arthur Stinchcombe entitled "Basic Theories and Methods in Sociology." In one year, they taught me how theory should be constructed. I learned research methodology through case study of ten great theories. Smelser analyzed from the theoretical perspective, Stinchcombe analyzed from the methodological perspective, and they synthesized their views. This process itself was an apprenticeship

system to nurture next generation of academics. At the end of the course, each student was required to present their own theory, however primitive it was. My proposal was about centralization and decentralization in the organization, and was titled "Organization and Market" which eventually became my doctoral dissertation. Based on the concept of requisite variety by Ashby, I examined how organizations cope with the variety of information and decision burdens that the environment generates.

FROM INFORMATION-PROCESSING TO KNOWLEDGE-CREATION AND INNOVATION

After graduating from Berkeley in 1972 with the PhD, I returned to Japan to Nagoya, the third largest city in Japan. Nanzan University had offered me a position in their new department of management. While at Nanzan, I researched and wrote papers focusing on Japanese firms. Then I came across an opportunity. I was invited to a research workshop on globalization in Brussels in the late 1970's, initiated by Gunnar Hedland and Eleanor Westney. In this workshop, bright scholars such as C.K. Prahalad, Yves Doz, Sumantra Ghoshal, and Bruce Kogut also attended. The workshop gave me a new perspective on globalization. So I started working with other Japanese scholars the different management styles of Japanese management and U.S. management. In 1985, "Strategic and Evolutionary Management: A U.S.-Japan Comparison of Strategy and Organization," co-authored with Tadao Kagono, now a professor at Konan University, and other collaborators was published. The finding was that Japanese firms tend to favor long-term strategy and evolutionary progress. However, they were neither good at making drastic restructuring nor efficient in the use of resources. I believe that this is still the case with many Japanese firms and, therefore, remains the source of problems that Japanese firms face today.

My interest also expanded to military strategy. I first became interested while teaching at the National Defense Academy in Japan, from 1979 to 1982. There, I did research on Japanese military organizations and their strategies. Later, with colleagues at the National Defense Academy, we did a research project on the failures of the Japanese mili-

tary organization during the WWII. We published the results in a book entitled "Essence of Failure (in Japanese, Tobe, et.al, 1991)," in which we identified concepts such as "over adaptation to past success," "unlearning" and "self-transformation." These concepts explain how Japanese military organizations created knowledge from failures, but at the same time, how difficult it is to change behavior after a success. Again, these concepts still apply to many Japanese firms.

One of the greatest turning points of my academic career came in 1984 when I participated in a Harvard Business School colloquium on productivity and technology that was organized by William J. Abernathy, Bob Hayes, and Kim B. Clark. It was then that I left the information-processing paradigm and began the knowledge creating paradigm. While I was doing research with colleagues at Hitotsubashi University, Hirotaka Takeuchi and Kenichi Imai, on innovation processes of Japanese companies in developing new products, I realized that the innovation process cannot be explained solely by the information-processing model, because this is a passive model that only explains how a firm adapts itself to environmental complexity. I felt that innovation needs to be proactive rather than merely respond to environmental changes. So, I proposed the concept of "information creation" in which a firm is viewed as an entity that evolves intentionally through information creation, rather than simply adapting to the environment.

But I was still not fully satisfied with this concept, because it did not include human factors such as personal commitment, will, emotion, and strong belief. Carnegie School of Thought, especially, that of Simon, considered human as a computer, information processing machine, and insisted on ignoring the value premises from the decision-making premises. But I felt all of these seemed to be very important for innovation processes. Then, with a hint from others at the Harvard colloquium, I came to realize that it was knowledge, not information that we should be dealing with. In 1985, Hirotaka Takeuchi and I had published "The New New Product Development Game" in the Harvard Business Review (Takeuchi and Nonaka, 1985). Later, I developed the concept further in the 1991 article in the Harvard Business Review, "The

Knowledge-creating Company (Nonaka, 1991)” and we wrote the book of the same title in 1995 (Nonaka and Takeuchi, 1995). Since then, I have been devoting my academic life to establishing a theory that explains firms’ activities from the viewpoint of knowledge creation.

Another turning point was working with David J. Teece at U.C. Berkley in 1989, when we taught a course together on innovation. David and I hosted the Knowledge Forum at Berkeley for five years, where people such as Yotato Kobayashi, the former CEO of Fuji Xerox, shared their issues and ideas concerning knowledge, and people such as Dorothy A. Leonard at Harvard Business School, John Seely Brown from PARC, and major CEOs and consultants who are the leaders in the field of knowledge management and creation. From David, I learned the economist’s viewpoint. David and I often discussed strategic management issues and our concerns about the current MBA education, which seems to place too much emphasis on ‘objectivity’ and rational analysis. Strategy from that perspective is about adapting to an environment and/or utilizing inimitable resources to meet the short-term goal of maximizing value for shareholders. But, this view of strategy neglects the fact that strategy is about creating a future, not only the company’s but also that of the world in which it exists. Georg von Krogh, Kazuo Ichijo, and I co-authored a book “Enabling Knowledge Creation” in 2000 and discussed the six enablers of knowledge creation and innovation (von Krogh, Ichijo, and Nonaka, 2000).

THE THEORY OF THE KNOWLEDGE-CREATING FIRMS

As P.F. Drucker predicted, the 21st century is becoming to be the “Knowledge Society” (Drucker, 1993). Accordingly, we must embrace knowledge creation in every aspect of our lives, which involve human subjectivity such as beliefs, dreams and values that aim for the common good. This calls for practical wisdom of a special kind, first identified by Aristotle as *phronesis* (Aristotle, 2002).

I came across the concept of *phronesis* when the team that wrote “Essence of Failure” gathered again, and studied the strategy and leadership of the wartime leaders. I identified several abilities that are common of the great leaders of the wartimes. One

of the best examples is Churchill in the World War II. One of Churchill’s role models was Edmond Burke, who wrote the book “Reflections on the Revolution in France” (Burke, 1890). In this book, Burke emphasized the importance of prudence, originating in the concept Aristotle called *phronesis*. In 2005, team published the findings in the book “Essence of Strategy.”

So what is *phronesis*? Roughly translated as prudence, practical wisdom, ethics, or practical rationality, *phronesis* is generally understood as the ability to determine and undertake the best action in a specific situation to serve the common good. *Phronesis* is a very important aspect of leadership of knowledge-creating firms because management is not only a science but also an art and a craft, as Henry Mintzberg argued (Mintzberg, 2004). The situation that each manager faces is different from others, and he or she must take action appropriate to that situation, not only to maximize profit but to serve the common good.

Phronesis is practical wisdom to make the best judgment for the common good in a particular context. It is the ability to find just right answer to the particular context and situations. It is also the ability to synthesize the particular and the universal, contemplate rationale, and improvise on the spot. It is contemplation in action. It also involves contextual judgment and timely balancing. In short, phronetic leaders have to be able to synthesize particulars and universals, and to convert tacit and explicit knowledge, thereby promoting the continuing spiral of the SECI process. *Phronesis* is acquired through the relentless pursuit of excellence, which makes one a virtuous artisan.

From our research and study of Japanese business people and wartime leaders, I have defined the following six abilities of the phronetic leader, which I published in Management Flow (Nonaka, Toyama and Hirata, 2008), and Virtue Based Management (in Japanese, Nonaka, and Konno, 2007): 1. the ability to make judgments and act on goodness; 2. to share context with others to create *ba*; 3. to grasp the essence of particular context and situations; 4. to conceptualize the essence; 5. to exercise political power, and finally, 6. the ability to foster *phronesis* in others to build a resilient organization.

I published an article with Hirotaka Takeuchi in

the May 2011 issue of Harvard Business Review. The title is “The Wise Leader.” To our surprise, the editor was excited about this article and he positioned it as “something we can still learn from the Japanese management,” especially after the Lehman shock and global financial crisis. The article describes the cases of eight Japanese companies and their leaders and Ratan Tata of Tata Motors of India. All the nine leaders exhibit the abilities of the phronetic leader. However, we believe this is not anything exceptional because Japanese management, in general, holds values that seek common good of the society. This is the first ability, the ability to make judgments and act on goodness. This ability questions one’s being. According to Steve Jobs, “If today were the last day of my life, would I want to do what I am about to do today? You are already naked. There is no reason not to follow your heart.” Thus, in Apple’s DNA, “technology alone is not enough. It is technology married with the liberal arts, married with the humanities that yields the results that make our hearts sing.”¹⁾

The second ability is the ability to create *ba*: imaginative capacity to understand and empathize with others through daily verbal and nonverbal communication, to read the context to judge the best timing for interaction, and to elicit empathy in return. *Ba* is a base for emerging knowledge. By sharing the here and now context, *ba* becomes a dynamic platform for intersubjectivity. Soichiro Honda often made jokes. He said, “Joking is very difficult. You have to grasp the atmosphere of the occasion and the opportunity. It exists only for that particular moment, and not anywhere else. The joke is in the timing and it doesn’t work at any other moment.... To joke is to understand human emotion.”

Third is the ability to grasp the essence: the ability to recognize the constantly changing context correctly, and quickly sense what lies behind phenomena to envision the future and decide on the action to be taken. There are two photos of Soichiro Honda at the Automobile Hall of Fame in Detroit. One photo is of Soichiro Honda and his development team in the test driving course. Soichiro is staring the rider on a motorcycle, crouching on his knees, with his hands on the ground. He is listening with his hands, feeling the vibration of the motor-

cycle running. At the same time, he is at the same eye level with the rider. He is becoming the rider. This is a good example of “contemplation in action”, indwelling in actuality with deep thinking, and seeing the details of every moment.

Fourth is the ability to articulate the essence: the ability to conceptualize and articulate subjective ideas in clear language, link these ‘micro’ concepts to a macro historical context and convincingly articulate them as vision and story for the future. The other photo is Soichiro Honda in discussion with the engineers as he draws his ideas on the on the shop floor.

Fifth is the ability to exercise political power: the ability to bring people together and spur them to action, combining and synthesizing everyone’s knowledge and efforts in pursuit of the goal, by choosing and utilizing the means and rhetoric (the art of effective or persuasive speaking or writing) suitable to each particular context with shrewdness and determination. Steve Jobs could effectively persuade his employees to his ideas with his rhetorical power. His subordinates called this “the reality distortion field.” One said, “The reality distortion field was a confounding *mélange* of a charismatic rhetorical style, and indomitable will, and an eagerness to bend any facts to fit the purpose at hand. If one line of argument failed to persuade, he would deftly switch to another. Sometimes, he would throw you off balance and suddenly adopting your own position as his own, without acknowledging that he ever thought differently” (Kerney, 2008).

Sixth is the ability to foster *phronesis* in others. The ability to create a system of distributed *phronesis* by fostering and transferring the existing phronetic capabilities of individuals to others to build a resilient organization which can respond flexibly and creatively to any situation to pursue its own good. Basic process is apprenticeship. At Honda, there is a system to foster *phronesis*, which is called LPL, the large-project leader. LPLs are assigned to lead a new strategic product development, with no hierarchical authority or personnel selection power. They work with as many as 200 project members in charge of various fields of expertise; design, engineering, testing, marketing. LPLs need to attract and manage these members with their personal

character and magnetism and, because of that, LPLs are well respected and trusted.

Another example of *ba* can be seen in software development in IT industry. Recently, the “Agile-Scrum” development method has become popular (Schwaber and Sutherland, 2012). “Agile scrum encourages team members to socialize, externalize, internalize and combine technical knowledge on an ongoing basis, thus allowing technical expertise to become community property for the community of practice. Agile scrum is a *ba* and, at the same time, a process of creative routine, as well as a way to distribute the sense of ownership and leadership among the team members.

To sustain innovation, practice of “Kata” or creative routine is the key. This is the process of “breaking routines.” With high quality feedback, Kata synthesizes the differences between the predicted outcomes and the practiced reality, and modifies the next practice/action. Without continuous modification, it is not Kata; it is just a routine.

Drucker said that management is a liberal art. “Management as liberal art” must therefore involve a foundation in values, virtues, and character formation. By nature, we seek truth, goodness and beauty. It is to question our values. We must possess our absolute values in ourselves and build on them. We have to be idealistic pragmatists who pursue “contemplation in action”. That is, one has to be both a deep thinker and an active doer. We have to think deep, and also we have to act at the right time.

LIVE AND LET LIVE

Looking back at my academic journey, I see the variety of topics and areas I have been dealing with, starting with marketing, then information processing, organization and its behaviors, sociology, theory construction and methodology, knowledge creation, innovation, strategy, leadership, virtue and ethics, and now processes. I don’t think I ever had a concrete agenda for my life or a long-range plan. Rather, it has been a network of processes created from the many context and encounters with people. I was probably half reacting and half pro-acting to the environment at any particular moment, working on the topic that was most interesting to me. Looking back, I find myself living the timely time,

the flow of the “here-and-now” relationship with various others. Through such flow, I can say I have relentlessly pursued excellence, or, at least, I have tried. I continue to pursue “knowledge creation,” which is still evolving and progressing.

I have come to the conclusion that the knowledge-creating firm is the company that synthesizes ontology, that is, “how to be” or “for what purpose do we live” correspond to tacit knowledge, with epistemology or “how to know” or “what is truth” correspond to explicit knowledge, and axiology, that is, “on what value should we base our judgment” correspond to *Phronesis* which synthesizes tacit and explicit knowledge. Through the synthesis of three types of knowledge, that is, tacit knowledge, explicit knowledge, and *phronesis*, knowledge-creating firms and their leaders can change themselves and their environment. Management in such a firm is viewed as “a way of life,” and not a money-making tool. I think what I have been up to in my life is the same, synthesizing this and that, creating new meanings of myself and of the environment. The process of identifying and creating the theory of knowledge creation has been the way of my life, and will continue to be so.

I am closing this essay with a quotation from Lao Tzu;

The Way gave birth to unity,
Unity gave birth to duality,
Duality gave birth to trinity,
Trinity gave birth to the myriad creatures.

NOTE

- 1) Steve Jobs keynote speech at Apple iPad launch, January 27, 2010.

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