

---

# Careers and Abilities of Next-Generation Executive Candidates

*Yasuhiko Uchida*

*Yamaguchi University*

This study was conducted in order to answer two questions on fostering next-generation executive candidates. The first is whether there are specific abilities that are required of business executives that are not envisioned in intellectual skills theory, such as comprehensive judgment (Inoki 2002), and, if such abilities are indeed required, what they are and how they are learned. The second is whether, in fostering next-generation executive candidates, specialists are being developed by having them go through a wide range of careers as indicated by intellectual skills theory, generalists are being fostered by having them experience various non-complementary cross-functional jobs, or both. The study was conducted by interviewing 22 next-generation executive candidates of A Corporation, an electronics manufacturer.

As a result, it was found that while A Corporation focused on the development of specialists through both broad and narrow ranges of careers, it allowed for the acquisition of non-function-specific abilities including “organizational operation,” “corporate structure,” “corporate strengths and weaknesses” and “trust and networks,” all of which are required of executive candidates. Furthermore, there were indications that these abilities are cultivated through analogical learning based on comparisons triggered by the recognition of differences in business operations as a result of internal transfers not taken into account in intellectual skills theory. This led to the hypothesis that a broad career system involves multiple learning, encompassing not only the capability to deal with function-specific uncertainties envisioned in intellectual skills theory, but also the non-function-specific abilities required of management that are acquired through analogical learning. The hypothesis further included the mechanism, as well as the significance, of multiple learning.

## I. Identification of Problems

The recognition in recent years of the importance of the early selection and cultivation of next-generation executive candidates resulted in the implementation of selective cultivation programs by numerous companies. According to a survey (2007) by the Japan Productivity Center for Socio-Economic Development of its 1600 supporting corporate members (valid response from 202 companies), 58.7% of the companies are engaged in the selective education of human resources with the percentage increasing yearly.

Yet, there is not much accumulation of knowledge on the abilities<sup>1</sup> expected of Japanese corporate management, which next-generation executive candidates are aspiring to become, as well as how these abilities are developed. However, when studies on next-generation executive candidates and white collar workers in general are included, there are

---

<sup>1</sup>As used herein, “abilities” collectively refer to expertise, technology and skills based on experience or leaning that serve as foundation for an action.

mainly two different concepts. One assumes that function-specific abilities, etc., are learned, and the other holds that leadership and corporate management abilities that are not related to any specific function are learned.

Koike (2002a) and Inoki (2002) are representative of those adopting the former stance. Koike (2002a) claimed that intellectual skills theory (Koike 1987, 2002a, 2005) describing the skill formation processes and skill contents for blue collar workers is also applicable to white collar workers. That is, he held that following a “broad career path,” wherein various duties are experienced within a single function or closely-related functions, enhances skills in inferring the causes and dealing with unexpected happenings in the workplace; in other words, the capability to deal with uncertainties.

Inoki (2002) identifies efficient skill acquisition and efficient skill combinations within an organization as the two criteria for determining the optimum career breadth. He holds that a transfer to a closely-related job adjoining the current job will eliminate the cost of skill acquisition and that human resources having a certain level of related work expertise enhance marginal productivity by increasing personnel substitutability within an organization. Inoki further claims that the more complementary the adjoining jobs are, the greater the effects that are achieved, and that the same applies to cross-functional skills. He also stated that the optimum number of functions to be experienced is determined based on the relationship between the additional learning costs generated by internal transfers and the productivity improvement effect thereof. Similar assertions are also made by Nakamura (1992) and Noda (1995). These concepts relate to white collar workers in general, including division managers, department general managers and other managerial workers.

Koike (2002a) also points out that those selected as central management candidates are transferred to other functions in the U.S., British and Japanese companies and that, while each country has generalist-type candidates, they are few in number. Inoki (2002) also defines the skill of white collar management as the ability to make judgment on how to deal with changes, claiming that the skills required vary depending on the type of change. He holds that the skills necessary to deal with “small changes” can be learned through a broad range of experiences in the field, while the “comprehensive judgment” deemed necessary in dealing with “large changes” may be acquired by experiencing a variety of areas or systematically studying a broad range of disciplines, such as MBA courses. Examples given of skills in dealing with small changes include the ability to analyze the discrepancy between the budget and the performance in managing budgets, which are said to be impacted by first-hand knowledge of a broad range of areas (e.g., production, logistics, organization, market). This concept is believed to be attributable to Nakamura (1992) and Noda (1995). Meanwhile, comprehensive judgment was defined as something that involves major actions, comparable to the skills related to the formulation of a plan on whether to select France or Germany as an investment destination, and cannot be broken down due to its comprehensive nature. In other words, it cannot be reduced to function-specific skills.

According to these concepts, while white collar workers are fostered mainly through

the mechanism described by intellectual skills theory, the mechanism encompasses the possibility of developing next-generation management candidates, though few in number, as it also cultivates unintended generalist skills, such as comprehensive judgment.

Meanwhile, examples of those taking the latter stance include Kanai and Furuno (2001) and Kanai (2002, 2008). By taking an approach similar to the one found in a study (McCall 1988) conducted by the Center for Creative Leadership (CCL; the United States), they elaborate on the work experience of relatively successful Japanese corporate managers and what the managers learned from the experience. Kanai (2002, 2008) states that corporate managers learn various things from their work experience to form a “personal leadership theory” that strongly impacts their subsequent leadership. He refers to an experience that shapes personal leadership theory as a “quantum leap experience,” claiming that it is experienced on the occasion of eight types of transfers and assignments. The eight types of transfers and assignments are (i) initial assignment upon joining a company, (ii) first managerial post, (iii) participation in a project team, (iv) transfer from a line to staff department or work, (v) development of a new businesses, markets, etc., from scratch, (vi) improvement or restructuring of a disastrous department or business operation, (vii) expansion of authorities due to promotion, and (viii) other internal transfers, assignments, etc. The relationship between the jobs before and after the transfer or assignment is not an issue here. Examples given of abilities learned from job experiences include, in the case of “(v) development of a new businesses, markets, etc., from scratch,” overall related jobs, strategic mentality, establishment and utilization of organizations and management structures, negotiation strategies, resilience to adverse situations, and dealing with ambiguous circumstances. These abilities, all of which serve as a premise for managerial and leadership behavior, are not function specific.

In a survey conducted with respect to 8,000 randomly selected executive officers of major listed and unlisted life and non-life insurance companies, Tachibanaki (1995) and Ito and Teruyama (1995) reveal the abilities and qualities of corporate executives as recognized by the respondents themselves. Tachibanaki (1995) selected three factors from the results of factor analyses. The first factor was “cooperativeness, fairness and high credibility,” the second was “mental strength, originality and adventurous spirit,” and the third was “abundance of knowledge and ability to plan.” Meanwhile, Ito and Teruyama (1995) calculated the average scores for the items relating to the abilities and qualities deemed important in corporate executives and concluded that generalist, rather than specialist, qualities are valued in executive officers, given the high average scores for four items; namely “fairness,” “ability to build organizations and take leadership,” “ability to process and integrate diverse information,” and “comprehensive corporate and business knowledge.”

The foregoing brings to attention the following two questions concerning the relationship between Japanese corporate career systems and the cultivation of next-generation executive candidates. The first is whether there are knowledge and abilities specific to the management level, such as the ability to make comprehensive judgments, and, if so, what

they are and how they are learned. The second concerns the career systems. Specifically, it is about whether, in fostering next-generation executive candidates, companies are developing specialists by having white collar workers follow a broad career path through transfers to different jobs within the same function and in complementary functions as indicated by intellectual skills theory, or cultivating generalists by having them experience various cross-functional jobs regardless of whether they are complementary in nature, or doing both. The first system that focuses on a broad range of careers within a single function gives rise to the questions of the selection criteria for next-generation executive candidates and the rationality of said criteria. Furthermore, it is necessary to confirm whether there are specialist next-generation executive candidates, given that it is said that generalist abilities are valued in management executives.

## **II. Survey**

### **1. Outline of Survey**

A survey was proposed in order to find answers to the two questions mentioned above. The subjects of the survey were 22 of the next-generation executive candidates directly managed by the Human Resource Development Office of A Corporation, a major electronics manufacturer that has its headquarters in Tokyo. Of the 22, 11 had engineering jobs and 11 had administrative jobs. In terms of academic background, one had a doctorate, four had a master's degree (one having acquired a doctorate while at A Corporation), 16 had bachelor's degrees, and one had a high school diploma. 20 were men and two were women. They had joined A Corporation in the period from 1983 (bachelor's degree) and 1997 (doctorate), and none had experience working for another company. The survey was conducted in March 2005. Two sets of survey data were collected; one being the career data provided by the Human Resources Development Office of A Corporation for the 22 subject to the survey, and the other being data collected from the individual interview survey of the 22. Following confirmation of their careers since joining the Corporation, the subjects were interviewed on the two business operations that they believe provided the most significant learning experience career wise and the details thereof. The interview lasted approximately 90 minutes per person. Each interview was recorded in its entirety, and the contents thereof were fully documented. According to an individual from the Human Resources Development Office, the career system at A Corporation places relative importance on specialization and internal transfers take place mainly within a single function.

### **2. Analytical Framework**

The analytical framework for the survey for obtaining answers to the aforementioned two questions is examined here in this section. In respect to the first question, conceivable abilities required specifically of the management level are those pertaining to cross-functional administration and business management. Inoki (2002) lists the following as the

elements of the ability to make comprehensive judgment: (i) the ability to “quickly” grasp the essence of the theories and facts of other (or adjoining) professional disciplines, (ii) the ability to organize and connect the “facts” concerning immediate problems, (iii) the ability to predict and “profoundly interpret” unreliable human behavior, and (iv) the ability to “quickly” determine whether speculation based on uncertain information is satisfactory in terms of common sense and instinct. What these concepts have in common with the concepts presented in the personal leadership theory approaches of Kanai and Furuno (2001) and Kanai (2002, 2008) is that they are not limited to specific functions. Honda (Okitsu) (2002) classified white collar abilities into four categories by using two axes, which are “company specific – cross-company” and “fixed – non-fixed.” Along the “fixed – non-fixed” axis, it is claimed that fixed skills include basic functional and technical knowledge and that non-fixed skills include both administrative/business management skills and function-specific skills, such as an assessment and judgment of a situation, a response to a new state of affairs, a prediction of the future and planning, and inter-personal abilities. In respect to the “company specific – cross-company” axis, it is held that company-specific skills include technical knowledge specific to products and goods handled by each company, processing methods unique to a company in such areas as accounting and financial affairs, and the human network within a company. On the other hand, cross-company skills are said to include basic functional knowledge, as well as broad knowledge, perspectives, and networks acquired by experiencing the businesses and operations of numerous companies. It is further said that abilities “increase in sophistication” as they move from fixed/cross-company to fixed/company specific, then to non-fixed/company specific, and finally to non-fixed/cross-company. Lepak and Snell (1999) point out the importance of company-specific skills even more strongly in their Human Resource Architecture. In their architecture, the classification axes for the group management of human resources are “human capital value” and “human capital uniqueness.” Human resources are divided into four groups using these axes, with the group ranking high along both axes serving as the corporate core. The model has been corroborated by Lepak and Snell (2002). Here, “human capital uniqueness” signifies the possession of company-specific skills that were developed internally and are difficult for other companies to obtain, either through the market or emulation. Based on the concepts detailed in Resource Based View of the Firm by Barney (1991), it is assumed that corporate uniqueness guarantees the source of a company’s sustainable competitive advantage.

Consequently, if there are abilities that are not function specific and are considered important for business management, it is believed that companies not only will develop more sophisticated skills for specific functions as assumed by intellectual skills theory, but will also be motivated to cultivate and select human resources having more non-function-specific abilities that will reinforce the overall sustainable competitive edge of the company. Furthermore, in terms of corporate uniqueness, which serves as the source of sustainable competitive advantage, it is believed that there is technical corporate uniqueness that be-

comes the foundation for differentiation of products and services and organizational corporate uniqueness for business management that involves, among other things, lowering transaction costs within an organization and promoting the development of competitive new products and services by determining competitive knowledge, technology and abilities that are unique to the company and combining them with other elements (Uchida 2008a, 2008b). If so, there is a possibility that companies, motivated to develop not only human resources having non-function-specific business management and administration abilities, but also function-specific human resources that develop company-specific technologies, are including the latter among their next-generation executive candidates.

Accordingly, it is necessary to classify the abilities learned by next-generation executive candidates in the course of their professional careers along the following three axes for review. The first is the “function specific – non-function-specific” classification axis. The second is the “company specific – general” axis. The third is the “organizational – technical” axis for the further classification of company-specific abilities.

In respect to the methods of developing the abilities of white collar workers prior to the attainment of corporate management positions, both intellectual skills theory and personal leadership development theory deem job experiences acquired in the course of professional careers as the main method. Furthermore, Honda (Okitsu) (2002) organized skill sources into external sources comprising education at academic institutions and experience working in other companies, and internal sources encompassing various off-the-job (off-JT) and on-the-job training, cross-functional teams, subordinates and colleagues, field experience, inter-level transfers within the organization, broad experience within a function, and experiences in multiple functions. Additionally, ideas on the correspondence relationship between these sources and the aforementioned four classes of white collar abilities are presented. Thus, a decision was made to investigate what abilities were learned or acquired and the opportunities therefor, including off-the-job experiences, referring to the scheme presented by Honda (Okitsu) (2002) for use as the analytical framework.

As for the second question concerning career systems, given the review thus far, it is probably necessary to verify not only the number of functional experiences, but also the level of the complementary nature between or among the different functions in cases where multiple functions were experienced. This is because, in the first place, a company is internalized as an organization, due to the need to place each element of its business systems under a single management for the purpose of achieving specific purposes. In other words, each element is complementary in nature to a certain extent, be it direct or indirect. This means that even if an external party were to explain the complementary relationship between any two functions ex-post facto, it is not possible to say definitively that an internal transfer was for the cultivation of human resources depicted in intellectual skills theory, since there is a certain degree of complementary relationship among all elements. Hence, it is necessary to verify in detail the relationship between jobs before and after an internal transfer. Furthermore, it was decided that in order to verify whether there are both general-

Table 1. Jobs Experienced through Internal Transfers, Complementary Relationship, Number of Business Offices, Technical Fields, Complementary Effect and Enrollment in Long-Term Training

Respondent No.	No. of jobs	Type of job	Complementary relations	Remarks	No. of offices	No. of tech. fields	Specific technical expertise	Complementarity effect	Long-term training
1	2	SE, consulting	Yes		2	2	SE, consulting	Yes	
2	1	Development			1	2	Software development, mainframe development	No	
3	1	Planning and development			1	1	Product planning and development		
4	2	Design, maintenance	Yes		2	3	Nuclear power, space, maintenance	Yes	
5	1	Development			3	3	LSI, inverter, battery control	Yes	
6	1	Development			1	3	Accelerator, MRI, linear	Yes	1
7	2	Design, planning	No		2	1	Designing		
8	3	Development, SI, product planning	No		3	2	Analog devices, SI	No	
9	1	Development			2	1	Memory development		
10	1	Research and development			1	1	DNA sequencers		1
11	2	Human resources, business promotion	Yes	Strategic personnel placement	7				1
12	3	Human resources, documents, general affairs	No		3				1
13	2	Human resources, legal affairs	No		3				1
14	2	Sales, planning	Yes		3				
15	3	Advertisement, general affairs, public relations	No		3				1
16	2	Human resources, business development	Yes	Commercialization of HR business	3				
17	1	Manufacturing, production technology			1				1
18	1	Accounting			3				
19	1	Finances			3				
20	1	Human resources			3				
21	1	Human resources			4				
22	1	Sales			1				
Average	1.59				2.45				

ists and specialists, transfer patterns should be analyzed not only based on the average number of cross-functional transfers, but also from the perspective of whether the individuals can be classified into those with numerous cross-functional transfers and those who are pursuing their career within the same function.

### III. Results of Survey

#### 1. Career System

Of the two questions, the analytical results regarding the career system are shown in Table 1. The average number of functions experienced by the 22 individuals was 1.59.

Among the multiple functions, there were some without complementary relationships. Of the 10 next-generation executive candidates in engineering positions, four had experienced multiple functions (Respondents 1, 4, 7 and 8 of Table 1), with two saying that there was no complementary relationship between or among the functions. In either case, the individual was transferred to a job with strong administrative elements, such as business planning and product planning. The remaining cases involved transfers to functions along a continuous sequence of processes.

Of the 12 administrative personnel, six had experienced multiple functions, with three (Respondents 12, 13 and 15 of Table 1) stating that there was no complementary relationship between or among the functions. Of the three, two (12 and 13) have been in jobs in the same specialized field as professionals in the functions (annuity and M&A-related legal affairs) that they were transferred to last. In other words, while their area of expertise switched from the function that they were assigned to when they first joined A Corporation to a different function, they have been working in that same function since. Of those in administrative jobs, there was only one person who experienced multiple functions with no complementary relationships. The details of the complementary relationships between or among the multiple functions experienced by the individuals are shown in Table 2. Based on the information, it is believed that three of the 22 individuals are following a generalist-type career path, experiencing multiple functions without complementary relationships. The remaining individuals were basically being transferred within the same function or within a range of strongly complementary functions. Of the 12 individuals who have never been transferred to another function, approximately half (five) had experience being transferred to three or four different business offices. On the other hand, there were six who have never been transferred either to different functions or business offices. Thus, it is believed that A Corporation basically cultivates specialists by providing broad and narrow career paths depicted by intellectual skills theory.

Characteristic of the analytical results of the data is the large number of transfers to different business offices in the case of administrative jobs. The number of transfers to different business offices totaled 54 for the 22 individuals, 36 for the 12 administrative personnel (three per person), and 18 for the 10 technical personnel (1.8 per person). While concrete cases of abilities learned or acquired will be indicated as appropriate for each analysis, only the top 10 of the 15 abilities learned or acquired will be shown due to limitations in space. The ratio of the number of cases (112) for the top 10 items to the total of 129 cases is 87%.

## 2. Abilities Learned or Acquired

### (1) Function Specific/Non-Function-Specific

As a result of a review of the analytical framework, it was decided that the abilities learned or acquired should be classified and analyzed from three perspectives: namely (i) function specific/non-function-specific, (ii) company specific – general, and (iii) company



Table 2. Complementary Relationship among Jobs Experienced through Internal Transfers

Respondent No.	Complementary relations	Circumstances of internal job transfer
1	Yes	Following the development of systems for the company (or companies) for which I was in charge, I was assigned to a new business division established for system implementation consulting. I was able to take advantage of my experience as an SE.
4	Yes	I designed large-scale built-to-order facilities for about 8 years, worked with a U.S. partner in the business for 7 months, worked on maintenance for 8 months and after going back and forth between the development and maintenance of components for large-scale facilities a number of times, I am currently designing large-scale facilities again.
7	No	I was transferred from a job designing large machinery (engineer) to the Business Strategy Office (administrative work) and had difficulty attaining business management perspectives.
8	No	I was distressed over my career when I was working on the development of analog devices and became a system integrator. As a result, I gained an understanding of both technical and business perspectives and asked to be transferred to new business planning.
11	Yes	After working in human resources at multiple business offices, I studied corporate management through long-term training. After working on service planning and business promotion at an education and training subsidiary, I am engaged in human resources work aimed at promoting strategies.
12	No	I worked on personnel education at a business office, then compiled company history in the documents section, subsequently worked on general affairs, after which I worked on annuities and pensions. I have been in charge of annuities and pensions since.
13	No	After working on human resources at a business office, I went to a U.S. university to acquire an MBA and studied, among other things, M&A-related legal affairs. Upon return to Japan, I took charge of work relating to legal affairs.
14	Yes	I was transferred from device sales to planning within the same department, was subsequently transferred to systems sales and then moved to the sales planning division at the head office. My experience in multiple sales jobs that differ in nature is proving useful for my current job.
15	No	I was assigned to the advertising department (overseas advertising) and produced product advertisements and the like. Next, I enrolled in long-term training and studied about external corporate communication activities. Subsequently, I took charge of general affairs and accounting operations within the advertising department, after which I was transferred to the public relations department. I am in charge of workplace communication within the department. Advertising and public relations differ in both the substance and method of work.
16	Yes	After working in human resources at a business office, I spent one year at a U.S. subsidiary (human resources) and worked on labor affairs at a business office upon return. I subsequently took charge of personnel education at the head office. Some of the human resources operations were separated out as an internal operational support business and I was assigned there. I later took charge of human resources at the head office again.

specific/organizational – company specific/technical (if classified as being company specific in 2). Based on the content analysis of the interview data for the 22 individuals, 129 cases relating to the 15 areas of abilities learned or acquired were selected. The definitions of the 15 abilities learned or acquired are shown in Table 3. The classification results for the 129 abilities learned or acquired in 15 areas along the three axes are shown in Table 4.

First, it can be seen that non-function-specific matters, or matters that are not related to specific functions, are being learned or acquired at high frequencies. With 83 non-function-specific abilities and 46 function-specific abilities, non-function-specific abilities accounted for approximately two thirds of the total abilities learned or acquired.

Table 3. Definition of Abilities Learned or Acquired

Abilities Learned or Acquired	Definition
One's work	Matters concerning the characteristics of one's work and the department to which one belongs
Parties involved in work	Matters concerning the characteristics and methods of relating to customers, human resources of affiliated companies, etc.
One's subordinates	Matters concerning the characteristics and methods of relating to subordinates
Technology	Matters concerning technology specific to one's company
Decisions	Matters concerning technical decisions specific to one's company
General technology	Matters concerning technology that is not company specific and can be obtained by anyone
Organizational operation	Matters concerning expertise and the like for operating multiple departments within one's corporate organization
Corporate structure	Matters concerning the systems and management structures of one's company
Corporate strengths and weaknesses	Matters concerning the business strengths and weaknesses of one's company
Trust and networks	Establishment of relationship of trust and networks within the company
Work	Basic matters concerning work in general
Business decisions	Matters concerning methods and other aspects of making general business decisions
Companies	Matters concerning companies in general
Parties concerned	Matters concerning customers and affiliated companies in general
Methods of acquiring new knowledge	Matters concerning the attainment of new knowledge

Table 4. Classification and Occurrence Rate of Abilities Learned or Acquired

Function-specific 46			Non-function-specific 83		
Company specific 35			Company specific 54		
Organizational 24	Technological 11	General 11	Organizational 54	Technological 0	General 29
One's work (13)	Technology (8)	General technology (11)	Organizational operation (16)		Work (10)
Parties involved in work (8)	Judgment (3)		Corporate structure (15)		Business decisions (8)
One's subordinates (3)			Corporate strengths and weaknesses (13)		Companies (5)
			Trust and networks (10)		Parties concerned (3)
					Methods of acquiring new knowledge (3)

Non-function-specific abilities comprised “organizational operation,” corporate structure,” “corporate strengths and weaknesses” and “trust and networks,” which are company specific, and “work,” “business decisions,” “companies,” “parties concerned” and “methods of acquiring new knowledge,” which are general.

These company-specific abilities defined in Table 3 are necessary in business executives and organizational leaders. As was mentioned above, the career system of A Corporation is characterized in that A Corporation has its personnel take a so-called broad career path, yet attention should be directed to the fact that a majority of the abilities learned are non-function-specific abilities, many of which are expected of management. Concrete examples of each are shown below.

#### Example of “Organizational Operation”

(When A Corporation underwent an organizational reform earlier to shift emphasis from hardware to software) A Corporation adopted what one might say is a rather tough budget system, although I don’t know whether it is a good management index. For one thing, efforts were made to facilitate the transition somewhat through a complete reformulation of the budget, a re-write of the medium-term plan and revision of plans themselves to replace the numbers for hardware to those for software. In other words, the target values were changed. (18)<sup>2</sup>

#### Example of “Corporate Structure”

(Upon having been transferred from device development to system integration) Although A Corporation advocates technology and hires people who did academically well in engineering, I am extremely concerned about this practice. Business viability cannot be ensured that way.... Business cannot be conducted without individuals capable of conducting sales activities, especially in the case of consumer products. I believe the attainment of this perspective was extremely valuable for me. (8)

#### Example of “Corporate Strengths and Weaknesses”

Overall, (the strength of) A Corporation is nuclear power. There are instances where we market technical synergies, using the so-called synergy effect, and talk about the fact that water can cause the pump to rust, but push forward the fact that we also have the technology to prevent corrosion in the plumbing of the nuclear reactor. (5)

#### Example of “Trust and Networks”

Since there are a considerable number of people in our company, it is important to know the key persons well, especially when working on development .... It is extremely

---

<sup>2</sup> The number in parenthesis is the respondent number shown in Table 1. The same applies hereinafter to numbers in parenthesis indicated after a concrete example.

important to know these key persons well and have a network encompassing such people in terms of knowing where to obtain what information and who to consult for which matters.

(4)

The first example on “organizational operation” is a case where the individual was thoroughly familiar with A Corporation’s rigid budget system, which is a company-specific requirement, and had learned the importance of reforming the organization based on such premise. The example of “corporate structure” is a case where the individual began to recognize A Corporation’s excessive emphasis on technology as a problem by experiencing both technology-oriented and customer-oriented jobs, which are completely different. The individual was thus learning the characteristics of the company’s overall management. The example of “corporate strengths and weaknesses” is a case where the individual realized that it is possible to enhance the competitive edge of the products that his/her business group covers by utilizing the high-level technologies, etc., of other business groups. The individual is learning the management expertise that is important to diversified companies. Finally, the example of “trust and networks” talks about not being able to execute large projects without a network of key persons. Again, this is a skill required of management executives and executive candidates.

As previously stated, non-function-specific general abilities include “work,” “business decisions,” “company,” “parties concerned” and “methods of acquiring new knowledge.” Many of the concrete abilities learned or acquired were basic. They are probably considered general abilities, precisely because they are basic. None of the four is in the top 10 abilities.

## (2) Company Specific – General

As indicated earlier, the non-function-specific abilities that are company specific (i.e., “organizational operation,” “corporate structure,” “corporate strengths and weaknesses,” “trust and networks”) were mainly abilities that are sought after in executive management, which are necessary in order to leverage the strengths of one’s company while suppressing the weaknesses thereof, as well as efficiently coordinate an organization overall. On the other hand, there were five function-specific abilities that are company specific: namely “one’s work,” “parties involved in work,” “one’s subordinates,” “technology” and “judgment.” These involve developing, through the execution of one’s business tasks, a deeper understanding of specific subjects, such as parts of a job that are related to company-specific requirements, parties concerned (customers and others), one’s subordinates and subjects of research, in order to enable a more effective and efficient execution of business operations. The following are concrete examples of “one’s work,” “parties involved in work” and “technology.”

### Example of “One’s Work”

Although we conduct surveys every year, what we often see are comments like “ex-

pensive” or “not user friendly,” and it is difficult to unearth information like “this is the kind of function I’m looking for” through questionnaires. The best opportunity for direct communication with customers is at seminars and similar events, where we exhibit our products and explain them to customers. Asking for an opportunity on those occasions to listen to customer comments, such as “These discs are OK too, but don’t you have something like this?” and “It would be nice if you could incorporate a Windows server into this,” is undoubtedly the most common way of finding development ideas. (2)

#### Example of “Parties Involved in Work”

There has been an increase in cases where I have to ensure that a proposal is logically complete, since presenting half-baked proposals results in the customer overturning everything.... What is particularly true of banks (customers) is that even when I work things out in detail with the person in charge, there are cases where that person has to obtain approval on the customer side, and the person in charge may not be able to obtain approval, unless we both are clear on the logic of the proposal. (1)

#### Example of “Technology”

(The reason that it was possible to develop the ground-breaking technology that encouraged the transition from first-generation to second-generation DNA sequencers) has to do with the fact that (laser beam irradiation) results in the scattering of light, since the capillary is cylindrical.... On one occasion, it occurred to us that the desired result may be achieved by using multiple capillaries, and there was a moment in the course of routine experiments where it appeared as though they let light through. That led to the question of why this was.... We thought that the capillaries might be functioning in a manner similar to an array of multiple convex lenses, elicited the conditions (for the clean passage of light), tested the conditions, and found that they allowed for the clean passage of light. We attracted attention by applying for a patent on the conditions, presenting them at academic conferences and publishing them in academic journals.... Even during the times of old-generation flat-plate sequencers, A Corporation was employing the horizontal incidence method where the glass plate is horizontally irradiated (with a laser beam) to allow the beam to pass through gaps, while other companies were using the horizontal scan method. This is because it is more efficient, as it allows for the concurrent irradiation of the multiple DNA arrayed in all lanes.... Capillaries have to be laid perfectly flat (even more so than with the flat-plate method) in order for the sequencer to work. Arranging them in a perfect array is an operation that requires time and effort, which cannot be achieved without a certain production technology. There is no doubt that the technology is based on the production technologies that A Corporation has been developing. (10)

#### (3) Company Specific/Organizational – Company Specific/Technical

This involves differentiation between organizational and technical abilities within

Table 5. Occurrence Frequency and Ratio of Opportunities for Ability Acquisition

Opportunity	No. of Cases	(%)
Transfer: department	69	31
On the job (other departments)	40	18
On the job (content of work)	27	12
On the job (supervisors)	24	11
On the job (customers)	19	9
On the job (other companies)	16	7
On the job (colleagues and senior staff members)	12	5
Training	8	4
Transfer (level)	7	3
Total	222	100

company-specific abilities. Company-specific abilities that are organizational included “organizational operation,” “corporate structure,” “corporate strengths and weaknesses” and “trust and networks,” which are non-function-specific, and “one’s work,” “parties involved in work” and “one’s subordinates,” which are function specific. These abilities allow for the effective and efficient operation of organizations and the execution of business operations based on a profound understanding of the characteristics of the company and the overall business or of the specific characteristics of individual business operations, as well as the human resources and other elements involved therein. On the other hand, “technology” and “judgment” were the company-specific abilities that are technical and related to the utilization, accumulation and development of technical expertise. These serve as the source of products and services that provide a competitive advantage through differentiation. There were no non-function-specific technical abilities that were company specific.

### 3. Opportunities for Learning or Acquiring Abilities

As a result of data analysis, a total of 222 concrete opportunities in nine types were confirmed with respect to 129 abilities learned or acquired in 15 areas. This is because more than one concrete opportunity is involved in the learning or acquisition of a single ability. The nine types of opportunities for learning or acquiring an ability and the number and percentage of concrete cases for each are shown in Table 5.

On-the-job learning accounted for approximately two thirds of the opportunities for learning or acquiring an ability, and transfers to other departments or levels accounted for the remaining approximately one third. Ranking high among on-the-job learning opportunities in terms of percentage were other departments (18%), content of work (12%) and supervisors (11%). On the other hand, learning or acquiring abilities through transfers involves developing an awareness of the differences and commonality between past and

present jobs in terms of content and approach, and subsequent comparative learning based on relativization and association. Of the nine types of opportunities for learning or acquiring an ability, the most common was “Transfer (department)” at 31%. The foregoing is an indication of the importance of comparative learning through internal transfers.

(1) Opportunities for Learning or Acquiring Abilities and Description of Corresponding Abilities

In respect to the relationship between the opportunities for learning or acquiring abilities and the description of the corresponding abilities, the most frequently occurring opportunity for each content (ability) learned or acquired is indicated in Table 6 and the relationships between the abilities learned or acquired and the opportunities therefore are indicated in Table 7.

In respect to the relationship between the ability learned or acquired and the opportunity therefor, data analysis indicated that specific abilities are acquired through specific opportunities. Occurrence Rate (A) in Table 6 is the average occurrence rate of an opportunity. Compared with the Occurrence Rate by Ability (B), there was a minimum difference of 6 points and as much as 24 points in some cases. However, no distinguishing factors were identified based on axes, such as “function specific - non-function specific” and “company specific – general.”

In respect to methods of acquiring company-specific abilities that are non-function-specific, which are believed to be sought after in management executives, the opportunity for acquiring “corporate structure” was “transfer (department),” that for “organizational operation” and “trust and networks” was “on the job (other departments), and that for “corporate strengths and weaknesses” was “on the job (customers).” “Corporate structure,” which signifies an overall understanding of one’s company or one’s business regardless of functions, involved gaining an understanding of the overall corporate structure and nature by relativizing past jobs in terms of conduct and approach as a result of having attained different perspectives through internal transfers, such as from a line department to a staff department. The following are concrete examples.

Example of Opportunity for “Corporate Structure”: Transfer (Department)

(I spent time in sales and subsequently was transferred to sales planning. There we had discussions on narrowing down target customers from a strategic perspective, but I had experience in the field of struggling to establish a relationship of trust with customers due to certain customers being included or excluded from our target every few years. Based on such experience,) I feel that, while there are cases where we have no choice but to focus our efforts on certain customers, it is not necessarily acceptable to discard a customer, if there is a person who is in charge of defending and protecting that particular customer. It boils down to the question of where to strike a balance between the two. We may find in the future that there are certain customers that we can in no way accommodate. However, we can’t just

Table 6. (Abilities) Learned or Acquired and Opportunities

Classification	(Abilities) Learned or Acquired	Opportunity	Occurrence rate (A)	Occurrence rate by ability (B)	Unit: %
					(B)-(A)
<b>Function specific</b>					
<i>Company specific- organization</i>	• One's work	• Transfer (department)	31	50	19
	• Parties involved in work	• On the job (customers)	9	33	24
<i>Company specific- technology</i>	• Technology	• On the job (colleagues)	5	19	14
<i>General</i>	• General technology	• On the job (content of work)	12	29	17
<b>Cross-functional</b>					
<i>Company specific- organization</i>	• Organizational operation	• On the job (other departments)	18	42	24
	• Corporate structure	• Transfer (department)	31	41	10
	• Corporate strengths and weaknesses	• On the job (customers)	9	22	13
	• Trust and networks	• On the job (other departments)	18	24	6
<i>General</i>	• Work	• Transfer (department)	31	52	21
	• Business decisions	• Training	4	14	10

Table 7. Relationship between Abilities Learned or Acquired and Opportunities

(Abilities) Learned or Acquired	Opportunity	Relationship
One's work	Transfer (department)	Develop awareness of differences in the overall scheme and concept of work, as well as the way a department operates, by performing different business operations as a result of internal transfers, which serves as an opportunity to acquire knowledge of a new job.
Parties involved in work	On the job (customers)	Develop profound understanding of customers and collaborating companies through long-term relationship with them.
Technology	On the job (colleagues)	Understand technology by asking colleagues and senior employees questions, as well as by observing them work.
General technology	On the job (content of work)	Develop an awareness of the lack of knowledge on general technology in the course of performing business operations and learn the technology.
Organizational operation	On the job (other departments)	Acquire expertise on soliciting the action of other departments and organizations through activities aimed at attaining their cooperation for the successful execution of work.
Corporate structure	Transfer (department)	Acquire a broader perspective as a result of transfer from line work to staff work, while relativizing past operations and concepts, to develop an understanding of company-wide structures, etc.
Corporate strengths and weaknesses	On the job (customers)	Develop an awareness of the strengths and weaknesses of one's company through communication, etc., with customers.
Trust and networks	On the job (other departments)	Develop trust and networks based on track records achieved through contacts with the key persons of various departments necessitated by work.
Work	Transfer (department)	Develop a basic awareness of "the meaning of work" by recognizing the differences in the content of work before and after the transfer.
Business decisions	Training	Through training, learn the framework and concepts of management and business decisions that cannot be attained on the job.



deal with a few customers that we absolutely want to maintain a relationship with. Since it is possible to establish a broad range of give and take relationships, we must think about things in more ways than one.... We must give thought to both breadth and balance, even more than to importance and the degree of focus. (14)

Other company-specific abilities that are non-function-specific involved turning matters experienced or learned on the job into non-function-specific abilities by developing a more abstract understanding thereof that transcends functions. For example, in the aforementioned case of “corporate strengths and weaknesses” (opportunity: on the job [customer]), the individual knows from communication with customers what the market recognizes as A Corporation’s strengths and understands that customer and market confidence can be enhanced by leveraging that fact.

On the other hand, it was confirmed that technical abilities that are company specific and serve as the source of product and service differentiation are learned or acquired through contact with colleagues on the job, such as research and development.

#### **IV. Discussion**

The following three points were clarified as a result of this study. The first concerns the career paths of next-generation executive candidates. The result was that they were mainly following a broad or a narrow specialist-type career path, with some following a generalist-type career path. Specifically, three out of the total of 22 individuals were essentially following a generalist-type career path, with experience in multiple functions. Of the 12 who have never been transferred to another function, about half (five) had experience being transferred to approximately three or four different business offices. On the other hand, there were six who have never been transferred either to different functions or business offices. The second is that abilities learned by next-generation executive candidates include non-function-specific abilities. Specific examples include “organizational operation,” “corporate structure,” “corporate strengths and weaknesses” and “trust and networks,” which are company-specific organizational abilities. However, there also are company-specific technical abilities that are function specific, such as research and development that serves as the basis for product and service differentiation, and it was found that human resources having such abilities are also considered next-generation executive candidates. In other words, not only generalists who manage a company overall, but also specialists are considered executive candidates. The third concerns how the abilities sought after in these next-generation executive candidates are learned or acquired. First, company-specific technical abilities that serve as the source of differentiation are learned in the course of a career path within a single function. Half of the career paths within a single function were broad, with the remaining half being narrow. On the other hand, in respect to learning or acquiring company-specific organizational abilities that are non-function-specific, it became clear that it is necessary to experience multiple functions and business offices in order to promote

understanding of the company overall that are not related to specific functions. This included expanding one's perspective through a transfer from a line department to a staff department, while relativizing past jobs in terms of conduct and approach, thereby understanding the structures and conduct of the company overall. Furthermore, it was important for the jobs before and after the transfer to be different for this type of learning. Abilities for the precise operation of the company overall (organizational operations, corporate strengths and weaknesses, trust and networks) were being acquired as non-function-specific abilities by developing a generalized understanding of the relationship with customers and other business officers in the course of business operations within a single function.

As for the first finding concerning the breadths of career paths, they were comprised mainly of the broad career system envisioned in intellectual skills theory and narrower career systems, with an average of 1.59 cross-functional transfers. There also were a few who had experienced multiple functions. However, the average number of cross-functional transfers is small also in comparison with past studies. According to Morishima (2002) the average numbers of cross-functional transfers of section managers for human resources, sales and accounting were all over two. It is not known whether this is because A Corporation customarily adopts career systems designed to cultivate specialties or because very few who are qualified to become section managers have actually been appointed section managers.

The data for the second finding on abilities learned are quite interesting in that many non-function-specific abilities are being learned at A Corporation in spite of the fact that, as mentioned earlier, A Corporation mainly employs career systems that are typically used for the cultivation of specialists. It is believed that this is related to the third finding on opportunities and processes of learning. Furthermore, they are highly thought provoking in respect to the formulation of a theory concerning the mechanism for cultivating next-generation executive candidates. Until now, intellectual skills theory was considered the core mechanism for the cultivation of white collar workers. While there is no room for doubt concerning the foregoing, this study clearly indicates that there are some aspects of the cultivation of next-generation executive candidates and others that intellectual skills theory alone cannot adequately explain. While intellectual skills theory assumes the acquisition of profound function-specific skills for the execution of business operations within a principal function, the results of this study verifies the learning or acquisition of non-function-specific abilities that are also considered important for corporate management. It is believed that "corporate structure," a non-function-specific skill, is acquired mainly through analogical reasoning (Gentner 1983; Gentner et al. 1997; Markman 1997; etc.) attributable to transfers (department). Gentner (1983) and Gentner et al. (1997) propose the structure mapping theory, wherein a person, who is learning about a target in comparison with a base, performs cognitive representation in order to recognize the commonalities and differences with the base and proceed with analogical reasoning. Hirano, Uchida, and Suzuki (2008) claim that an internal transfer results in a discrepancy between the abilities necessary for the execution of a job and the abilities possessed, due to the differences in the contents of jobs

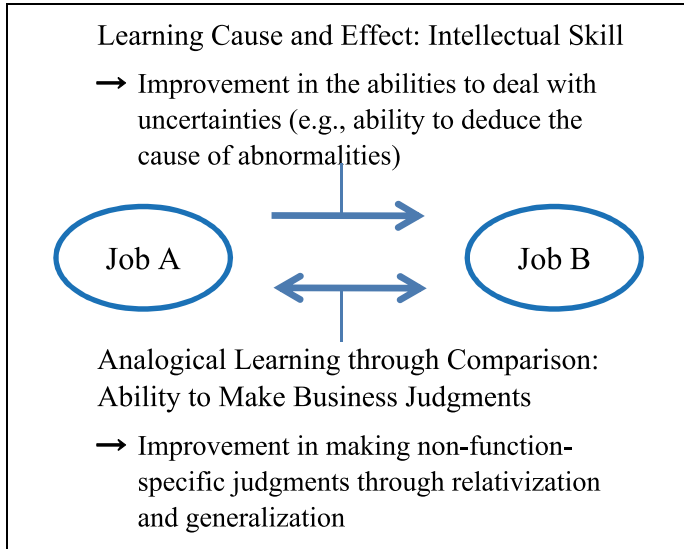


Figure 1. Coexistence of Multiple Learning Patterns in Internal Transfers

before and after the transfer, and that different learning strategies are taken depending on the state of the differences.

Intellectual skills theory asserts that, by developing a more profound understanding of principal function A in relation to auxiliary function B, the skill of dealing with uncertainties will be enhanced or principal function A can be performed more adequately by employing expertise relating to auxiliary function B. A and B do not have to be functions and may be different duties within a single function. The assumption here is that learning is based on cause and effect or on functional linkages. However, a learning pattern confirmed from the results of this study involves the recognition of the differences (and commonalities) thereof, which are subsequently relativized and generalized. It is believed that this results in the development of non-function-specific abilities, such as the ability to deal with diverse situations and make business judgments, which are not business abilities associated with a specific function (see Figure 1). In other words, two learning mechanisms exist in career systems for white collar workers; one being for learning function-specific contents through internal transfers, and the other being for learning abilities expected of non-function-specific generalists. The differences in the nature of learning based on differences between jobs within a single function and that based on differences between jobs in different functions have not been clarified. This is a subject that remains to be studied.

The hypothesis that an internal transfer results in multiple learning patterns is of prominent significance in terms of career systems. This means that the abilities necessary cannot be fostered in individuals prior to appointment as business division directors or other management executives by means of intellectual skills theory alone. According to the hypo-

thesis based on the results of this study, individuals are improving on their abilities relating to their principal function (function-specific abilities), while learning non-function-specific abilities pertaining to business management, etc., as they follow broad career paths. Realistically, it is highly likely that many of the next-generation executive candidates will not be appointed to the position of a management executive, given that there are few positions available. In view of this situation, establishing a system focused only on the development and selection of abilities necessary in next-generation executive candidates will be considered excessive investment, as a large number will not be selected. However, if function-specific abilities are also to be learned, it will not be considered excessive investment, since abilities as specialists in certain functions will also be provided concurrently. The author wishes to leave the examination and verification of this hypothesis as a subject for future studies. It is necessary to note that this study was conducted with respect to 22 individuals of a specific manufacturer, who possess qualifications equivalent to that of a section chief. Further studies are required for different industries and levels.

## References

- Barney, Jay. 1991. Firm resources and sustained competitive advantage. *Journal of Management* 17, no. 1:99-120.
- Gentner, Dedre. 1983. Structure mapping: A theoretical framework for analogy. *Cognitive Science* 7, no. 2:155-70.
- Gentner, Dedre, Sarah Brem, Ronald W. Ferguson, Arthur B. Markman, Bjorn B. Levidow, Phillip Wolff, and Kenneth D. Forbus. 1997. Analogical reasoning and conceptual change: A case study of Johannes Kepler. *The Journal of The Learning Science* 6, no. 1:3-40.
- Hirano, Mitsutoshi, Yasuhiro Uchida, and Ryuta Suzuki. 2008. Nihonteki kyaria shisutemu no kachisozo no mekanizumu [Japanese career systems' value creation mechanisms]. *Hitotsubashi Business Review* 56, no. 1:76-91.
- Honda (Okitsu), Yuki. 2002. Denki tsushin kigyō no niche-bei hikaku [Comparison of Japanese and US telecommunications companies]. In *Howaito kara no jinzai keisei: Nichi, bei, ei, doku no hikaku* [A comparison of personnel development among white-collar workers in four countries: Japan, Germany, the United Kingdom and the United States], ed. Kazuo Koike and Takenori Inoki, chap. 7. Tokyo: Toyo Keizai Shinposha.
- Inoki, Takenori. 2002. Howaito kara moderu no rironteki fukumi: Hito, soshiki, kankyo no fukakujitusei o chushin ni [Theoretical implications of white-collar models: Focusing on human, organizational and environmental uncertainties]. In *Howaito kara no jinzai keisei: Nichi, bei, ei, doku no hikaku* [A comparison of personnel development among white-collar workers in four countries: Japan, Germany, the United Kingdom and the United States], ed. Kazuo Koike and Takenori Inoki, chap.2. Tokyo: Toyo Keizai Shinposha.

- Ito, Hideshi, and Hiroshi Teruyama. 1995. Kaisha yakuin no ishiki to mokuteki: Yakushoku to kinzoku nensu no koka [Consciousnesses and objectives of corporate executives: Effects of executive posts and service years]. In *Economics of promotion*, ed. Toshiaki Tachibanaki and Research Institute for Advancement of Living Standards, chap. 3. Tokyo: Toyo Keizai Shinposha.
- Kanai, Toshihiro. 2002. Shigoto de “hitokawa mukeru”: Kankeiren, “hitokawa muketa keiken”ni manabu [Quantum leap in working: Learning from quantum leap experiences by Kankeiren (Kansai Economic Federation)]. Tokyo: Kobunsha.
- . 2008. Jissenteki jiron no gengoka ga sokushin suru ridashippu kyoyu no rensa [Verbalization of practical theories to promote chain reaction of leadership sharing]. *Journal of Political Economy and Commercial Science* 198, no. 6:1-29.
- Kanai, Toshihiro, and Yoichi Furuno. 2001. Hitokawa mukeru keiken to ridashippu kaihat-su: Chiteki kyosoryoku no gensen to shiteni midoru no ikusei [Quantum leap experiences and leadership development: Training middle workers as sources for intellectual competitiveness]. *Hitotsubashi Business Review* 49, no. 1: 48-67.
- Koike, Kazuo. 1987. Riron to hoho [Theories and methods]. In *Jinzai keisei no kokusai hikaku: Tonan ajia to Nippon* [International comparison of human resources development methods: Southeast Asia and Japan], chap. 1. Tokyo: Toyo Keizai Shinposha.
- . 2002a. Monodai, hoho, imi [Problems, methodology and significance]. In *Howaito kara no jinzai keisei: Nichi, bei, ei, doku no hikaku* [A comparison of personnel development among white-collar workers in four countries: Japan, Germany, the United Kingdom and the United States], ed. Kazuo Koike and Takenori Inoki, chap.1. Tokyo: Toyo Keizai Shinposha.
- . 2002b. Dento aru dai-meka no nichibei hikaku [Comparison of major traditional Japanese and British manufacturers]. In *Howaito kara no jinzai keisei: Nichi, bei, ei, doku no hikaku* [A comparison of personnel development among white-collar workers in four countries: Japan, Germany, the United Kingdom and the United States], ed. Kazuo Koike and Takenori Inoki, chap. 4. Tokyo: Toyo Keizai Shinposha.
- . 2005. *Shigoto no keizaigaku* [Economics of working], 3<sup>rd</sup> ed. Tokyo: Toyo Keizai Shinposha.
- Lepak, David P., and Scott A. Snell. 1999. The human resource architecture: Toward a theory of human capital allocation and development. *Academy of Management Review* 24, no. 1:31-48.
- . 2002. Examining the human resource architecture: The relationships among human capital, employment, and human resource configurations. *Journal of Management* 28, no. 4:517-43.
- Markman, Arthur B. 1997. Structural alignment in similarity and its influence on category structure. *Cognitive Studies* 4, no. 4:19-37.
- McCall, Morgan W., Jr. 2002. *Hai furaiya: Jisedai rida no ikuseiho* (High flyers: Developing the next generation of leaders). Trans. Works Institute Recruit Co., Ltd. supervised

- by Toshihiro Kanai. Tokyo: President Inc.
- Morishima, Motohiro. 2002. Nichi-bei kanrishoku no “kyaria no haba” hikaku [Career width comparison for Japanese and U.S. managers]. In *Howaito kara no jinzai keisei: Nichi, bei, ei, doku no hikaku* [A comparison of personnel development among white-collar workers in four countries: Japan, Germany, the United Kingdom and the United States], ed. Kazuo Koike and Takenori Inoki, chap. 11. Tokyo: Toyo Keizai Shinposha.
- Nakamura, Megumi. 1992. Howaitokara no romu kanri to shokushu gainen [White-collar labor management and job concepts]. In *Satei, shoshin, chingin kettei* [Assessment, promotion and wage decision], ed. Toshiaki Tachibanaki, chap. 5. Tokyo: Yuhikaku.
- Noda, Tomohiko. 1995. Rikoeki, bunkei to shoshin: Rikoeki yakuin to bunkei yakuin no hikaku [Science & technology and art workers and promotion: Comparison of science & technology and art executives]. In *Economics of promotion*, ed. Toshiaki Tachibanaki and Research Institute for Advancement of Living Standards, chap. 9. Tokyo: Toyo Keizai Shinposha.
- Tachibanaki, Toshiaki. 1995. Yakuin eno michi to yakuin no yakuwari [Paths and roles of executives]. In *Economics of promotion*, ed. Toshiaki Tachibanaki and Research Institute for Advancement of Living Standards, chap. 1. Tokyo: Toyo Keizai Shinposha.
- Uchida, Yasuhiko. 2008. Nippon kigyo no chiteki shihon manejimento [Japanese companies’ intellectual capital management]. Tokyo: Chuo Keizaisha.