Knowledge Combination and Value-Creation Mechanism under the Japanese-Style Career System

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Researches regarding the functionality of Japanese companies' white-collar employees career system having three features, (i) wide-range career development, (ii) job performing ability-based grade system, and (iii) human resources (HR) department involved in personnel transfers has been accumulated mainly on the basis of intellectual skills. In other words, a cause-and-effect relationship, "wide-range career development → obtained intellectual skills → efficiency enhancement," has been hypothesized and borne out. This paper makes the concept of a new framework which is different from intellectual skills, i.e., a cause-and-effect relationship "wide-range career development → knowledge combination → value creation," and advocates a new descriptive principle of the functionality of Japanese-style career system. According to the career tree analysis and interviews conducted on 28 senior managers of House Foods Corporation, "knowledge combination → value creation" mechanism, with three patterns of "continuous role expansion," "add-on role" and "regeneration of the existing role," have been found. In addition, it has become evident that the HR department of the headquarters which demonstrates its initiative in regular personnel transfers is deeply involved in value creation.

I. Placing the Right Persons in the Right Jobs

The purpose of this paper is to insist that although Japanese-style career system is seemingly irrational, it has a systematic wisdom to combine members' knowledge and create new values based on the field survey on a food manufacturer. The target of discussion in this paper is white-collar employees working for Japanese companies. The word "Japan" used here means Japanese major companies and the word "Japanese-style" mainly means "stylized facts"[1] of Japan's human resources management (HRM) or career system accumulated since the 1980s.

Career is narrowly interpreted as time paths of "diversity of work" (horizontal career) and "promotion of position or grade" (vertical career) which are experienced in the organization, and its essence is considered as "placing the right persons in the right jobs." Then what is placing the right persons in the right jobs? Simply stated, it means the best match with skills of "workers" and skills required by "roles." There is, however, a challenge that

[1] "Stylized facts" mean characteristics of Japanese major companies' HRM accumulated through Japan-US comparative and experimental studies.

both are always changing and a time lag occurs between them.

According to "Human Capital" (Becker 1964), although the capacity to play a role is currently insufficient, if the career is developed with the intention to improve special skills (companies' specific training investment), both labor and management will be able to benefit from increased production capacity in the future. In this case, placing the right persons in the right jobs means when and how they experience a variety of jobs in the proper sequence, i.e., an optimum solution of horizontal career's time path, taking training and investment costs and learning efficiency into account.

In addition, for workers who are interested in effects of current job performance on their future career, the position/grade promotion system, i.e., vertical career, works as an indirect incentive effect called "career concern" to bring out their efforts to acquire skills (Gibbons and Murphy 1992). In general, the reason why the seniority-based fixed salary in youth is shifted to merit-based reward reflecting a short-term performance when moving up into management position is because young workers have many potential promotion opportunities and the career concern has a major effect on them. If career concern complements a direct incentive of short-term performance-based compensation, the design of vertical career's time path, e.g., promotion speed, timing of career plateau and skill levels which determine the promotion, would affect workers' motivation of obtaining skills.

In short, placing the right persons in the right jobs is a means to successfully link the time lag between workers' skills and skills required by their jobs with the efficiency of obtaining skills and their motivation in aspects of both vertical and horizontal careers to increase the production capacity. Then what skills have actually been required for workers in Japan? What mechanisms have promoted their learning and increased the production capacity? The characteristics of Japanese-style career system can be found by comparing with other countries as far as these matters.

II. Characteristics of Japanese-Style Career System

1. Horizontal Career

(1) Intellectual Skills

A series of researches conducted by Kazuo Koike who advanced "intellectual skills" showed the characteristics of Japanese horizontal career and clarified their advantages (e.g. Koike 1994). Koike found out that skills which contribute most to the efficiency in Japanese workplaces are "intellectual skills" without a doubt through international comparison of an analysis point, "breadth of career." Intellectual skills are know-how of dealing with "unusual operation," i.e., changes and problems. Even if processes are well controlled in the production plant, operations in the workplace are not always normal. Changes and problems occur very often. The efficiency varies widely depending on whether "the man on the spot" can deal with problems properly by changing tools and tooling or fine-tuning without stop-

ping production line. Hayek (1945) thought that there is an impossibility of centralizing site information that "the man on the spot" has. After all decentralized information based on special circumstances of time and place cannot be centralized or integrated, it is more efficient that "the man on the spot," a direct operator, processes site information (changes and problems). However, the following conditions must be satisfied: (i) operators have built intellectual skills, and (ii) operators have the potential to build them less costly.

Regarding this matter, Koike discusses the division of roles between direct operators, technicians and engineers, i.e., division of labor. The point is, provided that the operator on site satisfies above conditions, (i) "integrated system" in which the direct operator performs various tasks including dealing with changes and problems is better than "separate system" in which operator's scope of tasks is limited from a perspective of cost of division of labor and improved motivation of operators, and (ii) in the case of "integrated system," the skill distribution will be "middle-thick type" in which many mid-level workers have intellectual skills.

Japanese production workers' (blue-collar employees') building method of intellectual skills is an extensive On-the-Job Training (OJT). Extensive OJT means that one production worker experiences major posts of his/her workplace and sometimes workplace next door. However, the range is no more than workplaces both next doors, thus it is limited to when skills can be fully used for other workplaces. This has the advantage of saving opportunity cost as temporary production decline caused by the deployment to an unfamiliar role as well as OJT learning cost for obtaining unfamiliar skills.

(2) White-Collar Employees

Japanese white-collar employees are the same as blue-collar ones in the sense that they deal with changes and uncertainty based on wide-range expertise. For instance, the organizational efficiency would be largely dependent on whether the budget manager analyzes the difference between budget and performance and utilizes the result for the next budget compilation or not (Koike 2005). In order to properly analyze the difference between budget and performance, it is essential for budget managers to have an insight into noises against the plan, i.e., environmental changes and problems on site. Such insight will be cultivated by extensive experiences including experience on site. The difference between white-collar and blue-collar employees is that it is difficult for the former to monitor productivity, individual contribution and intellectual skills (Inoki 2002).

Then, how about the fact of Japanese white-collar employees' career development compared with Western countries? According to JIL Research Report (1998) prepared by Koike as a chief investigator, when asked a desirable career path for developing managers with the current function that the general manager level thinks, the most common answers were: "to experience not only the current function but also some works in other functional fields" in Japan, 56.9%, "to experience many works within the current function" in the United States, 57%, and both "to experience not only the current function but also some

works in other functional fields" and "to experience many works within the current function" in Germany, 30% level each. Therefore, it shows that Japan is headed for wide-range career development.

However, whether how much the policy on such horizontal personnel transfers is actually implemented is another story. In this research, it became obvious that the real career development is either "wide-ranging one function type" in which workers widely experience within one function such as accounting, sales, personnel and production or "primary and secondary functions type" in which functions spread peripherally centered on one function. To go into detail about work experience range of general managers and managers, while wide experience type in which workers widely experience works within the current function is the most in the United States and Germany, one function type, primary and secondary functions type and multiple functions type are about one third each and wide experience type is the most in each type in Japan (Sato 2002). The career range of Japanese general manager/manager level is slightly wider than that of Western countries. In Japan, workers hired fresh out of colleges pay their dues at work (frontlines of manufacturing or sales in the plant or branch). Though this leads to "slow promotion" which is another characteristic of Japan, if it is important to deal with uncertainty at each level of the organization, such dues-paying experiences would be reasonable (Koike 2002).

2. Vertical Career

Many workers would not obtain troublesome intellectual skills without proper incentives. The measures for the promotion of building up intellectual skills are "reward of something other than job." In particular, there are three important elements: payment-for-skills, yearly increments of payments, and merit assessment (Koike 1994). These personnel policies apply to both Western countries' and Japanese white-collar employees, and Japanese blue-collar employees. In other words, Japan's unique point is white-collar phenomenon of blue-collar employees (Ito 1994). Anyhow, Japanese white-collar employees' intellectual skills are promoted by indirect incentive effect (career concern) of promotion, i.e., vertical career. It is especially important for Japan where internal labor markets are developed on the basis of a long-term employment practice.

(1) Job Performing Ability-Based Grade System

Japanese white-collar employees' vertical career is hierarchically-structured with "position" (e.g., chief, manager, general manager, etc.) and "grade" (e.g., rank 1, rank 2, rank 3, etc.). The grade is a rank order in-house and called personnel ranking system. Koike previously identified white-collar employees' reward system in both Japan and Western countries as pay-for-ranking of wide-range rate, but the design principle of the personnel ranking system is different. Many of Japanese companies adopt a job performing ability-based grade system. This system is "a system which sets up grade classes depending on levels of job performing ability approved by the company and classifies employees into

grades to determine the promotion and wages." In contrast, American companies adopt a job grading system. The job grading system is "a system which evaluates jobs based on required skills, responsibilities, difficulties, etc. to determine the job values and sets up some classes as the base for promotion and wages."

In the job performing ability-based grade system, the base pay is provided depending on employee's grade, and when the employee is promoted, he/she gets a raise. Therefore, it shows a weak association between the grade and individual job class. In Japanese, the promotion of position and the promotion of grade are separately called "*Shoshin*" and "*Shokaku*" respectively based on such separation between treatment and assignment. In other words, persons being raised to the upper grade are determined first and persons being raised to the upper position will be chosen from them depending on the vacant position, so called "grade before position."

(2) Slow Promotion

Japanese white-collar employees' promotion pattern follows "slow promotion" in accordance with "grade before position" practice. According to above JIL Research Report, "when the first difference occurs in promotions among employees who joined the company at the same time" (primary selection) is four years or less after joining the company in U.S. companies but is eight to 10 years in Japanese companies. "When the share of persons with no more chance for promotion reaches 50% among employees who joined the company at the same time" (time of appearing a leveling-off group) is eight to 10 years after joining the company in U.S. companies but is about 20 years in Japanese companies, far behind. That is, the primary selection is late and the time of career plateau is also late in Japanese companies. The promotion of position is carried out basically in accordance with age and length of service during a certain period after joining the company, and the selection is carried out after such period. In other words, Japanese career system is a layered structure: it is a uniform seniority system during the early years, moves to a promotion race system during the middle years and becomes a tournament system when the employee becomes the level of manager (Imada and Hirata 1995).

3. Strong HR Department

Human resources (HR) department's power to shuffle personnel is strong in Japan but is weak in the United States. In U.S. major companies, HR departments have no power to shuffle personnel but heads of the relevant departments do instead. The HR departments in the U.S. major companies play a role to assist personnel decisions by the heads of the departments as a professional in charge of developing and improving personnel and education systems, but Japanese HR departments are directly involved in actual personnel transfers (Hirano 2006). Jacoby (2005) clarified, with a questionnaire survey on general managers of HR departments in Japan and the United States, that Japanese HR departments still have the power of career development by employment and relocation, personnel transfers for per-

sonnel reduction and other similar matters substantially rather than line managers. On the other hand, line managers in the United States where personnel affairs are well decentralized have much more discretionary powers to decide the employment and lay-off than that in Japan (Cappelli 1999).

III. Functionality of Japanese-Style Career System

During years from the high economic growth period to 1980s, Japanese-style career system attracted world attention as a source of competitive advantages. According to Aoki (1988) who lucidly theorized characteristics of Japanese internal organization management at that time, such characteristics were Japanese-style organization mode in which decentralized information system characteristics such as precise tuning by sharing information with peers or relevant departments are associated with a training system which is intended to develop centralized HRM characteristics, i.e., intellectual skills (wide-range career development), a merit-based incentive system (job performing ability-based grade system), and the power to shuffle personnel centralized in the HR department in a mutually complementary manner.[2]

A simple explanation of the complementarity of Japanese-style organization mode follows. Firstly, experiences of various workplaces, sharing of knowledge and increased communications between departments, i.e., intellectual skills, were necessary for successful operation of decentralized information system. Secondly, personnel with intellectual skills are developed through job rotation, and whether the particular training is successful or not depended on the mechanism of HRM. Therefore, a job performing ability-based grade system which is not related to particular jobs was suitable for giving them intellectual skills through job rotation. Thirdly, since job rotations beyond the jurisdiction should be arranged by the HR department from total optimization perspective, the power to shuffle personnel was centralized in the HR department. In short, Japanese-style career system in 1980s was characterized by "wide-range career development," "job performing ability-based grade system" and "involvement of HR department in personnel transfers." At the same time, Japanese-style career system was also associated with low liquid labor markets and strict legal system for dismissal and reorganization in a mutually complementary manner.[3] Even

[2] On the other hand, a market-oriented decentralized HRM in which the power of personnel employment/dismissal is decentralized to each hierarchy level is suitable for a vertical information system which associates upper hierarchy with lower one by information processing such as command and standard. This association mode was called as A-type organization mode by Aoki (1989) and was often the case with U.S. companies at that time.

[3] Japan's labor law established discharge restrictions by case law. Therefore, it was difficult to reduce labor force by dismissal. On the other hand, it grants employers wide discretionary powers of personnel transfers such as wide powers of job displacement inside the company (Otake, Ouchi and Yamakawa 2002).

today, this Japanese-style career system has evolved with many of such characteristics.[4]

Then how much experience is the best? Inoki (2002) explained the significance of experiencing more than one function or many areas within one function for the organization from the perspective of "efficiency."[5] Inoki divides the efficiency into two meanings: one means that duties are efficiently carried out by attaining individual proficiency, and another one means the efficiency brought about by combining abilities within the same organization. That is, the former is the efficiency in the sense that routine works can be done quickly and accurately, and the latter is the efficiency in the sense that workers can deal with uncertainty of the work with their intellectual skills.

If there is no uncertainty of things which may happen in the future, the best solution would be that each individual fully specializes in one area within one function and such specialized individual deals with possible outcomes expertly. However, provided that the uncertainty exists (e.g., sudden vacancy, etc.), the personnel substitutability increases if they have obtained a certain level of knowledge of areas between functions or neighboring areas within the function. In this regard, however, opportunity costs as temporary production decline and additional learning costs will be caused by the deployment to an unfamiliar role. The solution how to design functions or areas to be experienced should be determined by the peak point of rent which is the profit from the efficiency to deal with such uncertainty after deduction of above opportunity costs (= current profit – opportunity costs [maximum profit obtained by utilizing resource for another opportunity]). In the intellectual skill theory, therefore, since higher complementarity of skills required by more than one job facilitates the acquisition of this rent, a job rotation between technical and attributive neighboring areas is considered to be favorable.

However, as described herein below, the rationality of our survey results cannot be fully explained if the range of career development is only determined by the efficiency based on the intellectual skills. This is because technically and attributively discontinuous personnel transfers not between neighboring functions or areas were often observed. We need a different explanation other than the efficiency. There must be a surplus or shortage of knowledge/skills by the personnel deployment system intended to Japanese wide-range career development, i.e., deployment to the post or position which are less related to previous work experiences. This shows that the workers who accumulated different work experiences and have different mental programs may play a role by turns which is not always clearly provided and restructure the role based on the mental program. Knowledge is combined

[4] For changes in Japanese HRM from 1990s to present, see Hirano (2006). While Japanese job performing ability-based grade system has changed somewhat to role classification system, it is confirmed that the power to shuffle personnel centralized in the HR department is partially continued and wide-range career development is also maintained.

[5] Aside from "efficiency," Inoki (2002) puts another standard, "equity" for the explanation of optimizing the range of work experiences. In order to assess the person's value, it is better to evaluate performances in many functions and areas. The evaluation accuracy increases and eventually the equity increases.

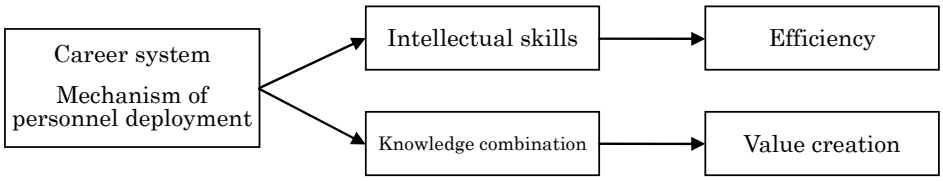


Figure 1. Functions of Japanese-Style Career System

through discontinuous personnel transfers, and the work contents are amended. In other words, the system may make a gap between knowledge/skills/mental programs of personnel and the actual role and the knowledge may be always recombined by design in the dynamics of bridging the gap. In short, the range of personnel transfers may be determined by not only the efficiency generated by intellectual skills but also the intention of value creation (including the efficiency) through new knowledge combination of individuals and roles. That is our analytical perspective (see Figure 1).

IV. Survey and Analysis Method

The survey was conducted on House Foods Corporation in September 2006. Founded in 1913, this company is listed on the first section of the Tokyo Stock Exchange. Its main line of business is production and sales of foods. It has a total staff strength of 2,400 employees and enjoys annual sales of ¥230 billion (as of March 2007). The survey was conducted in two stages. Firstly, managers of personnel and training divisions were interviewed for the company's personnel management, details of the career system and policies. Secondary, 28 senior managers (general manager/deputy general manager level) were interviewed for all roles they played since they joined the company and their skills and knowledge at the time of each role.

Career data were analyzed by two methods. Firstly, 28 senior managers' career paths were drawn using the career tree model of Rosenbaum (1984), and a macro-analysis was conducted on where and when persons with what kind of skills/knowledge were deployed to. We tried to clarify the career characteristics of senior managers in House Foods Corporation from when joining the company to the present as well as characteristics of personnel deployment based on the analysis results.

Secondary, an analysis was conducted on how they performed their duties using what kind of skills at the stage of each role from above-referenced analysis perspective based on the individual interview data. Especially focused on the relationship between skills and roles generated by the discontinuous career (gap between roles to be played and skills/knowledge), the mechanism of creating values was discussed. The analysis broke each interview into the career transition and categorized the relationship between skills and roles

of work experiences.

V. Results

1. Characteristics of Career Path

The following was found from the analysis of career range and the experiences. The persons who were assigned to research and development (R&D) and product/process management (PRD) departments developed most of their careers within the function. On the other hand, the average number of functions experienced per person who was assigned to other departments is more than two. The average percentage of the longest function of total career for 28 senior managers since joining the company was 84%. This tells, except R&D and PRD departments, that senior managers in House Foods Corporation have crossed between functions and have careers with a main function and secondary functions based on wide-range expertise. That is almost the same as Japanese-style career characteristics. See Table 1 for details. However, the difference from the dogma is that there is a major gap between skills, i.e., personnel transfers to low complementary jobs were not a little observed.

This can be confirmed by the career paths shown in Figure 2. 27 out of 28 senior managers were hired as new graduates and one joined House Foods Corporation after he experienced work in another company for one year. 13 out of 28 were firstly assigned to the sales department. When they were promoted to chief level, 4 moved to different functions. When they were promoted to manager level and to deputy general manager level, 1 and 2 moved to different functions respectively. When they were promoted to general manager level, 2 returned from the marketing department to the sales department. These results show that many of managers begin their careers from the frontline (local branches/sub-branches) and move to other departments after obtaining sales-related knowledge. In addition, new recruits are never assigned to particular functions' departments (marketing, procurement and product development). Such departments are strategically important functions for House Foods Corporation and personnel are assigned to those departments after accumulating work experiences in other departments. Particularly, persons who experienced in the sales and HR department are assigned to the procurement departments, and persons who accumulated advertisement and sales experiences are assigned to the product development department.

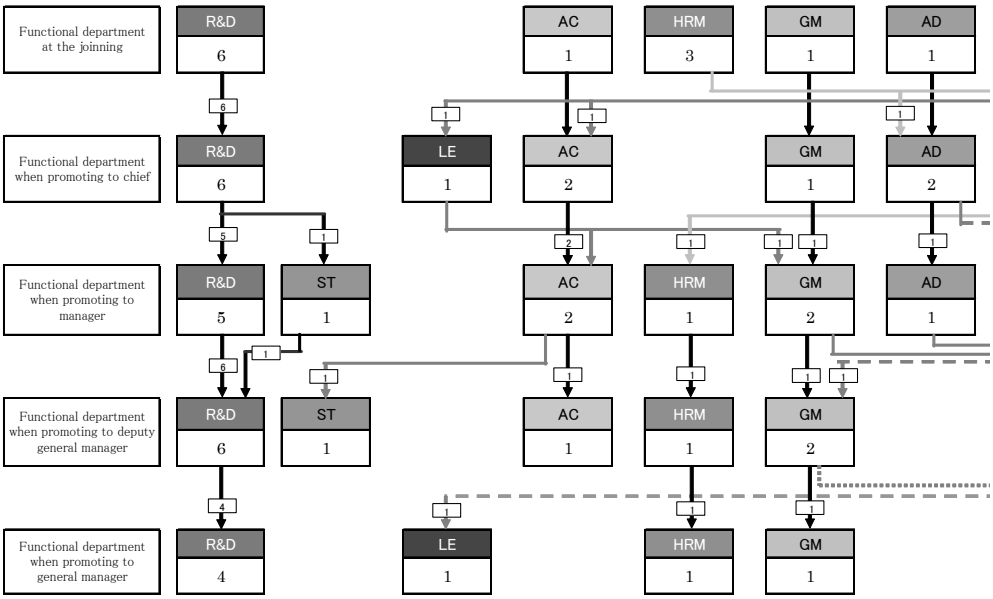
Table 1. Career Tracks of House Foods Corporation's Senior Managers

Present position (length of service)	Duration of experienced functions							
	ST	LE	AC	HRM	GM	AD	MK	SL
ST 1 (26/8)	3/4		23/4					
LE 1 (28/8)		6/6			9/8		1/2	6/11
AC 1 (27/8)			27/1					0/7
HRM 1 (32/7)				29/7				
GM 1 (31/7)					5/4		5/0	11/11
MK 1 (28/6)							9/3	
MK 2 (30/7)							1/7	
MK 3 (29/7)				1/11		23/4	4/4	
MK 4 (28/8)							4/7	24/1
MK 5 (25/7)							3/9	4/11
SL 1 (30/8)							3/0	27/8
SL 2 (30/7)								30/7
SL 3 (29/8)								29/8
SL 4 (29/7)							2/5	27/2
SL 5 (29/7)							6/9	22/10
SL 6 (27/7)				2/11			2/7	2/4
SL 7 (24/8)								24/8
SL 8 (23/7)							1/9	21/10
TR 1 (27/7)					26/0			
PRC 1 (28/7)								6/5
PRD 1 (30/9)								
PRD 2 (29/7)								
P&D 1 (24/9)						13/3		
R&D 1 (30/7)								
R&D 2 (29/1)								
R&D 3 (26/7)	4/0							
R&D 4 (26/8)								
R&D 5 (23/10)								

Notes: 1. ST: Strategic planning, LE: Legal affairs, AC: Accounting, HRM: Human resource management, GM: General management, AD: Advertisement, MK: Marketing, SL: Sales, TR: Trade, PRC: Procurement, PRD: Product/Process management, P&D: Product development, R&D: Research & development, Blank: Not allocated yet.

2. A: ratio of the years of longest experienced function to entire career, B: number of experienced functions, C: ratio of the years in present function including present post to the entire career, D: average A for every function, E: average B for every function.

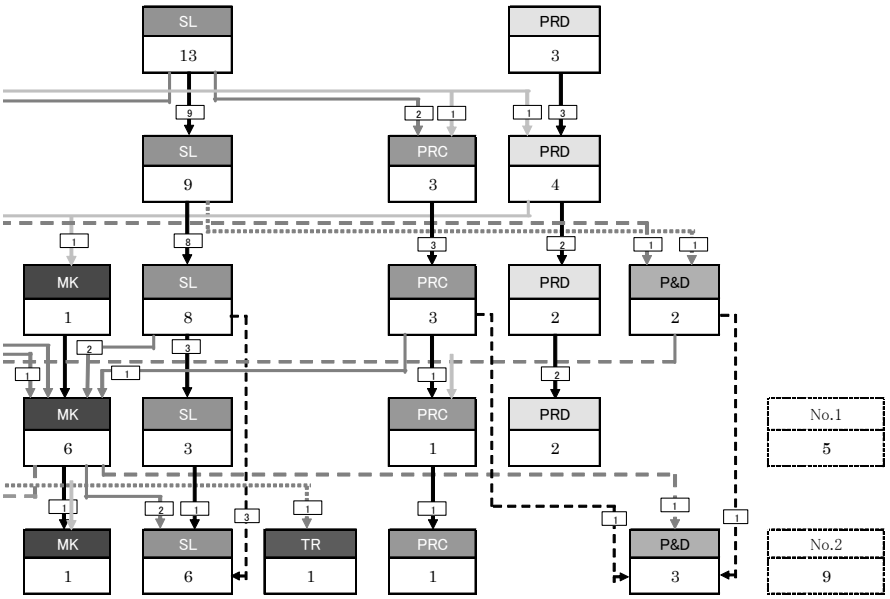
(years/months)						A	B	C	D	E
TR	PRC	PRD	P&D	R&D	Other					
						0.88	2	0.13	0.88	2
					4/5	0.34	5	0.23	0.34	5
						0.98	2	0.98	0.98	2
		3/0				0.91	2	0.91	0.91	2
			9/4			0.38	4	0.17	0.38	4
		15/3	4/0			0.54	3	0.33		
				29/0		0.95	2	0.05		
						0.79	3	0.15	0.75	2.6
						0.84	2	0.16		
	16/11					0.66	3	0.15		
						0.9	2	0.9		
						1	1	1		
						1	1	1		
						0.92	2	0.92	0.9	2
						0.77	2	0.77		
	18/4		1/5			0.66	5	0.08		
						1	1	1		
						0.93	2	0.93		
1/7						0.94	2	0.06	0.94	2
	22/2					0.78	2	0.78	0.78	2
		30/9				1	1	1	1	1
		29/7				1	1	1		
			11/6			0.54	2	0.47	0.54	2
				30/7		1	1	1		
				29/1		1	1	1		
				22/7		0.85	2	0.85	0.97	1.2
				26/8		1	1	1		
				23/10		1	1	1		



Notes: 1. ST: Strategic planning, LE: Legal affairs, AC: Accounting, HRM: Human resource management, GM: General management, AD: Advertisement, MK: Marketing, SL: Sales, TR: Trade, PRC: Procurement, PRD: Product/Process management, P&D: Product development, R&D: Research & development, No.1: Those who were promoted to the general manager without going via a deputy general manager, No.2 not allocated yet.

2. Boxes are 28 senior managers' belonging functions at the times of joining the company, appointed to chief, appointed to manager, appointed to deputy general manager and appointed to general manager.
3. Arrows indicate the paths of personnel relocation between functions.
4. The numeric unit is the number of persons.

Figure 2. Career Paths of House Foods Corporation's Senior Managers


SL
13
PRD
3
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9
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3
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2
MK
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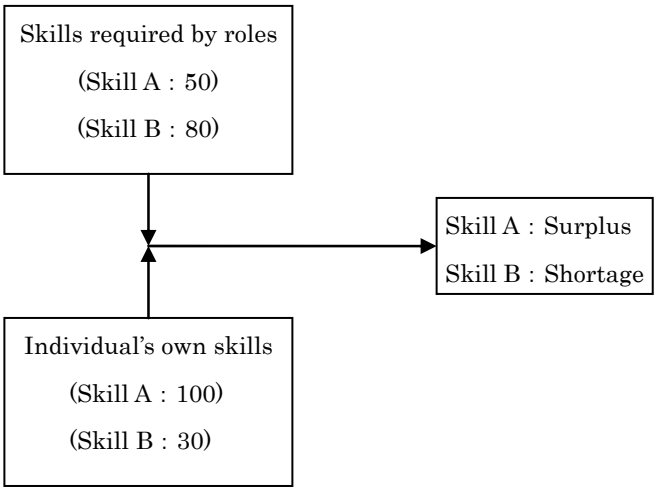

Figure 3. "Surplus" and "Shortage" in the Relationship of Roles and Skills

2. Analysis on Relationship between Roles and Individual Skills

(1) Value-Creation Mechanism

Next, the relationship between roles and skills of individual careers was analyzed. There are two patterns of the relationship. One is when the individual does not have enough skills to play a required role and another one is when the individual has more than enough skills to play a required role. The former is called "shortage" and the latter is called "surplus."

Although surplus and shortage are determined by the relationship between roles and skills, required roles are not just played by one skill. The relationship between skills required by one role and individual own skills may be "shortage," but another relationship between them may be "surplus." Therefore, by using case units, the relationship between skills required by such role and individual own skills can be regarded as a bundle (see Figure 3). The discontinuous career will make a gap between such roles and skills. Some value-creation mechanisms were shown as an effect brought about by such gap. The analysis divided such mechanisms into two as to value-creation types. One is "continuous expansion," another one is "utilization of combination."

(2) Continuous Expansion

"Continuous expansion" is a value-creation type which derives from not discontinuous career but continuous career (personnel transfers among high complementary roles) and tries to play a role more than required. If the relationship between roles and skills is "surplus," the individual can play a strong enough role, and may extend his/her role more than required with the surplus by applying surplus skills to the role (knowledge combina-

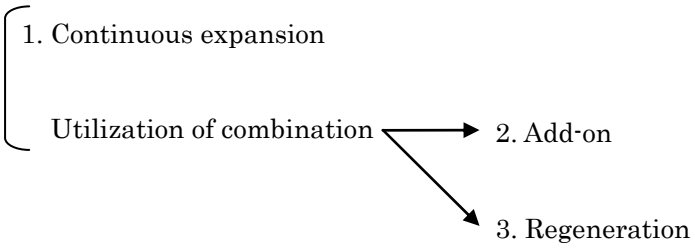

Figure 4. Knowledge Combination Mechanism towards Value Creation

tion).

For instance, Mr. A who has accumulated his career in general affairs and accounting departments was once involved in a project to set up a company-wide accounting information system and was reassigned to the general affairs/accounting department in the branch. Since he carried out a company-wide job and was returned to the original function, he got a broader point of view and undertook various efforts in the branch. Since his supervisor at that time was not familiar with accounting, he was put in charge of many tasks. Under the circumstances, he made the budget planning alone which is usually made through a division of labor in a large branch and compiled the budget in consideration of sales policies, etc. which were never considered before. As in this case, "continuous expansion" is to extend the role utilizing the surplus skills.

(3) Utilization of Combination

"Utilization of combination" is also a mechanism of creating values by using surplus knowledge and skills, but the difference from "continuous expansion" is that the value is created when the surplus skills compensate the shortage of skills. In short, "utilization of combination" derives from discontinuous personnel transfer. Under this mechanism, due to shortage of the required skills, the knowledge is combined by playing the required role using the surplus skills that was originally not necessary for the role, and a new value which was not generated in the previous role may be created. The utilization of combination can be divided into "add-on role (add-on)" and "regeneration of the existing role (regeneration)."

(4) Add-On

"Add-on" is to add values which never existed in the previous roles or jobs. Examples of add-on include the following: Mr. B in the procurement department for packing materials changed the shape of 2-liter PET bottle for drinking water from cylindrical to square for the first time in the industry. The reason why he did so was because a square bottle just fits the storage space of the refrigerator at home. Why did Mr. B get an idea of such shape? Mr. B experienced sales for a general merchandising store at the local sub-branch for six years. He

learned a lot about the importance of sales focused on not only price but also quality and customer value creation (House Foods Corporation's corporate culture) there. Then he was assigned to the procurement department for raw materials for eight years and after that he was assigned to the procurement department for packing materials. Although the personnel transfers from raw materials to packing materials was within the same procurement department, it was very rare discontinuous personnel transfers sine completely different skills are required. Mr. B combined and added the power to imagine the consumption scene of company's products cultivated when he was a salesman and skills to collaborate with business partners over a long period of time with the role of procuring packing materials. Although it was technically difficult to form a square shape since a PET bottle is formed by injecting air into it, as the result of trial and error with a can manufacturer, he succeeded in developing a square PET bottle and made a substantial contribution to increased sales.

(5) Regeneration

"Regeneration" is a mechanism of knowledge combination to play a required role in a completely different manner (mental program cultivated by the previous career) not adding or utilizing knowledge or skills to the existing role.

After college, Mr. C worked for a commercial production company for one year and moved to House Foods Corporation. Since then he carried out advertising work for 13 years, and was assigned to the product development department in charge of main products of House Foods Corporation. These main products had maintained more than 60% of shares and dominated the market. Therefore, the company had not released a new product for 10 years for fear of going against the Antimonopoly Act, and the measures for competition was to review the prices of existing products and the merchandising. Accordingly, the idea of moving the product out tended to be strong inside the company. It just so happened that when Mr. C was assigned to the product development department, one competitor released a new product and took a market share of 10% in the short term. Under the circumstances, Mr. C analyzed the market using knowledge on the interface between products and consumers which were cultivated when he carried out the advertising work and knowledge of the marketing and strategies obtained by self-education. Then he realized that the competing product met customer needs in which House Foods Corporation's existing products could not, and suggested the need for the development of a rival product to upper management. After obtaining approval from them, he released a new product in the short term utilizing the power of market research and concept development capability of a leading advertisement agency cultivated when he carried out the advertising work. This product became a huge hit and he succeeded in suppressing competitor's new product. This shows that new knowledge and technologies based on a customer's perspective were brought from different departments against the role of conventional idea of moving the product out and the role itself was reviewed from its very foundation.

VI. Conclusion—Meaning of Analysis Results

This paper proposed a new framework which explains a value-creation effect on the organization brought about by Japanese-style career system. For that purpose, we focused on the relationship between roles and skills at that time (surplus and shortage) in individual career paths and analyzed the value-creation mechanism brought about by it. From the data analysis, a mechanism, knowledge combination, was found and its three patterns, continuous expansion, add-on and regeneration are shown. Based on this framework, we would like to discuss from three perspectives:

1. Japanese-Style Career System as Knowledge Combination Equipment

For Japanese-style career, it was previously explained that personnel transfers to high complementary jobs brings about a benefit called efficiency to the organization based on the intellectual skill theory. That is, "wide-range career development → intellectual skills → improved efficiency," in other words, "personnel transfers → learning (obtaining inference ability of exceptions by understanding the whole process) → performance (improved capability to solve problems) hypothesis" was the only hypothesis and actual proof to explain the rationality of Japanese-style career system. Under this relationship, personnel transfers to high complementary jobs are only rational. However, according to the relationship, "wide-range career development → knowledge combination → value creation" in which we insist, the hypothesis to explain the rationality of Japanese-style career system will be "personnel transfers → utilization of surplus knowledge (decline in additional learning cost) → performance (review and reform of roles by various mental models)." In this case, personnel transfers to low complementary jobs which appear deceptively irrational lead to value creation. Japanese wide career system which puts personnel through more than one function has a functionality to bring about more new or similar knowledge/skills to this role continuously, encourages changes in the role and create a new value.

2. HR Department as a Leader of Value Creation

The survey results show the presence of Japanese companies' power of corporate changes which is different from that of Western management style which considers all as strategy sources. It means that personnel departments continuously encourage the development, accumulation and utilization of internal resources all over the company through the career system, and the innovation will be made through the emergent process.

In fact, the HR department of the headquarters of House Foods Corporation is deeply involved in this value-creation process. It is carried out through annual regular personnel transfers (every April) in which the HR department demonstrates its initiative. In this company, the HR department comes up with a personnel transfer proposal every November based on requests on personnel transfers from officers in charge and department managers. All personnel transfers are announced by the general manager of HR department of the

headquarters (board approval is required for manager or higher posts). The reason why personnel transfers is regularly made is because when the time of personnel transfers is unified company-wide, the population of candidates and posts targeted for personnel transfers becomes large and the options of knowledge combination increase.

Employees' personnel information is centralized in the HR department for adequate personnel transfers. The contents and routes of information gathering include many things such as self-assessment system, career interviews with employees by the HR department and career interviews with managers and employees. The HR department of the headquarters discerns individual employees' vocation and potential capacity and makes an inference how they connect to a new role.

The framework of the personnel ranking system of House Foods Corporation is basically a job performing ability-based grade system with 12 grades. The promotion system is based on personnel evaluation whether ability improves as time advances and is one by one.[6] The job performing ability is evaluated by two elements, "work performance" and, this is a unique perspective of House Foods Corporation, "human capacity" (behavior, attitude, leadership, personal magnetism, etc. required for work). Therefore, the evaluation for promotion is not based on the performance for the predetermined target but the ability evaluation is translated into the ex-post assessment of newly created value (extension of work performance and human capacity). The HR department is also involved in the determination of personnel to be promoted. That is, characteristics of House Foods Corporation are exactly that of Japanese-style career system which combines wide-range career development, job performing ability-based grade system (role grade system for manager or higher posts) and a strong HR department. Our research, therefore, confirmed that Japanese-style career system functions as a system which motivates members in the organization to combine knowledge and create values, although there is only one company sample.

3. Remaining Issues

Finally, we touch on the limit of this paper and future research. This paper searched for positive significance of the gap between roles and skills. Since senior managers were surveyed and they have achieved relatively satisfactory performances, any negative aspect provided by such gap was not found. However, it is highly likely that surplus and shortage create waste of human resources, delay of personnel development and slumber of organization capability. How should continuous and discontinuous personnel transfers be arranged as a practical management i.e., how to combine "intellectual skills - efficiency" with "knowledge combination - value creation?" In order to get an answer, it is necessary to further explore the requirements in the case whether the latter functions effectively or not. It is

[6] Since 2004, based on this system as a framework, the grade system for manager or higher posts is called role grade, standard annual earnings reflecting market rates by grade are determined, pay raise by age is abolished and job size is reflected in the standard of grade.

also required to analyze what kind of personnel information parameters the HR department involved in discontinuous personnel transfers collects and processes to forecast "knowledge combination - value creation" and the accuracy of such parameters. These are future research issues.

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