Human Resource Management System in Korean Industry and Research Institutes

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I. Introduction

The Korean economy, which experienced a rapid growth through the end of the 1980s, has begun to slow down since 1990. One of the reasons for this is that there has been a recent decrease in the rate of export growth due to the reinforcement of trade barriers in advanced countries. Another reason is the Korean government's open market policy for foreign products which resulted in the penetration of major foreign corporations into domestic markets.

In order for the Korean economy to return to prosperity, it will be necessary

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to enhance the international competitiveness of Korean products. Therefore, technological innovation to develop competitive products becomes a critical issue for Korean economy.

The successful achievement of aggregate technological innovation of one's country requires not only enormous funds for facility investments in terms of quantity, but also the efficient and effective utilization of high caliber human resources in terms of quality. Korea, therefore, needs more effective and efficient utilization of professional human resources.

Technological innovation through the effective and efficient utilization of human resources is called soft productivity, whereas technological innovation through huge capital investments is called hard productivity. We need both. However, analysis of the current situation on Korea suggests that efficient and effective utilization of human resources is more urgent than capital investment in re-boosting of currently staggering Korean economy.

The issue of utilizing human resources more effectively and efficiently in the R&D sector in Korea is related to human resource management systems in private industries. This is because currently, the R&D activities mainly involved in developing new technologies to improve international competitiveness are led mainly by private corporations. Therefore, both the traditional human resource management system in private corporations and the new requirements in their R&D divisions or independent R&D institutes must be discussed together to promote the efficient utilization of human resource management for improving the Korean economy as a whole.

In this paper, the traditional human resource management systems in private corporations and new human resource management systems in R&D institutes will be analyzed comparatively. In Korea, human resource management system in private corporations has a longer history and more systematic arrangement than in the R&D institutes. By comparing the human resource management systems in both sectors, some implications for a better system can be found.

Since human resource management deals with people working in organizations
within a specific society and country, human resource management systems are a reflection of specific cultural characteristics of the particular country. Therefore, in general, the style of the human resource management system is affected by both factors of traditional culture and of industrialization.

A "traditional style" of human resource management system prevails if the traditional culture specific to the country has more influence on management. An "industrialized style" of human resource management prevails when the industrialization process of the country has more influence on management. Although there has been a conflict between these two factors since Korea began its first five-year economic development plan in 1960, the influence of traditional culture was always more powerful until the end of the 1980s.

This implies that the human resource management systems in Korea are closer to the traditional style, which is usually found in Korean private corporations. However, it is curious how much the human resource management systems of the R&D sections in private corporations and independent R&D institutes are affected by the traditional culture and how much they deviate from the traditional style.

The traditional style of Korean human resource management reflects the features of traditional culture, the core of which is the "Confucian thought". Confucianism emphasizes a person's general character and virtue rather than his special ability, an extended-family system attaching great importance to the human relationships among family members, the order between the upper and lower classes, and the community-life style in pursuit of purpose through collective effort and cooperation.

Particularly, the Korean traditional style of human resource management is a person-based system which is affected by a collectivism principle, preferring a group or organization to individuals. The collectivism principle is the basis of family management which relies on its members from an extended family in corporation management. Exhibit 1 shows a summary of the above-mentioned contents in terms of traditional human resource management systems.
In spite of the continuous influence of the rapid industrialization process, the main features of the traditional style of human resource management systems in Korean corporations prevailed until the mid-1980. However, the domestic political democracy movement and the 1988 Seoul Olympic games brought rapid social change and initiated the conflict between the traditional and industrialized styles. Currently, Korean corporations are beginning to show changes which are quite different from the previous ones. This is new phenomenon which developed from the social change.

(Exhibit 1) Determinants of Traditional Human Resource Management in Korean Corporations

The basic process of human resource management in both Korean corporations and R&D institutes can be classified as staffing, evaluation, training and development, compensation, and maintenance. This process is based upon the natural flow of human resources in the organization. The basic process of human resource management system is depicted in the Exhibit 2.

Staffing is a process of acquiring the quality and quantity of human resources required to achieve the mission of the organization. The characteristics of this process include job structure, human resource planning, recruitment, and selection.

Evaluation is a process of obtaining information necessary for human resource management. Management information is obtained from the evaluation criteria, performance-appraisal factors, and performance-appraisal methods.

Training and development is a process of improving the ability of acquired
human resources and utilizing the right person in the right place. This involves education and training, job rotation, and promotion.

Compensation is a process of supplying physical and mental rewards according to the contributions of the human resources to their organization and involves base pay, incentives, and benefits.

Finally, maintenance is a process of retaining the required quantity and quality of human resources. This involves preservation of human resources, turnover management, and human relations. The followings are the major features and recent changes of the human resource management systems in Korean corporations and R&D institutes.

II. Staffing

There are three important issues in staffing. First, what is the job structure composed of and how does the job fit into the organizational mission? Second,
how is manpower planning and recruitment performed? Third, what kind of process should be used to select people and which factors should be treated as the most important in this process?

1. Management of Job Structure

A job structure is composed of a job family and a job hierarchy. Job family defines a job classification system horizontally while the job hierarchy defines the role of the job itself vertically. Exhibit 3 shows a typical job structure for a Korean corporation.

Horizontal job structure in the traditional management style of Korean corporations does not have much differentiation. However, blue collar workers holding technical jobs have been classified into a lower class than white collar workers holding clerical and professional jobs. In addition, relatively large discrimination exists between male and female workers regardless of their job assignment.

The vertical job structure for managerial people in traditional human resource management system contains several job ranks, which is classified into employee, supervisor, section manager, department manager, and executive in the order of hierarchy. This vertical hierarchy of managerial jobs in large corporations
covers usually 6~7 job ranks. However, technical jobs are less differentiated vertically and a strict hierarchy is usually maintained within them.

In Korea, there exists a relatively large discrimination among occupational groups; especially, white collar vs. blue collar workers. People in technical jobs, who are usually high-school graduates or lower, find it more difficult to get promoted since technical jobs have less vertical differentiation and thus promotional and job shift opportunities are scarce. However, engineering and professional staff and managers, who are usually college graduates, have ample opportunities for promotion and job shift as these jobs have more vertical differentiation. In general, educational background determines the occupation of workers when hired in Korea. Therefore, differences in educational background contribute indirectly to this discrimination.

However, the traditional job structure has shown a great change recently. Horizontal job classification has been differentiated further to include managerial, clerical, professional, sales, engineering, technical, and research jobs. In addition, there is a tendency for further differentiation in the vertical classification which leads to 11 or more job ranks on the average.

On the other hand, there is a tendency to abolish the discrimination against technical jobs. As a result, white collar and blue collar job hierarchies are integrated into one. Specifically, by adopting a full-time employee system in some corporations, job shift and job rotation between white and blue collar jobs become possible. Therefore, technical job holders will have the same opportunity for equivalent promotions as clerical and other job holders have by constructing an integrated job structure.

The job structure change indicates a tendency of further differentiation in job families and job ranks. It also indicates a tendency of diminishing discrimination against technical jobs by treating blue collar and white collar jobs similarly.

Differentiated job structures are easily found in the technology development divisions in private corporations and R&D institutes. The horizontal job
structure in the R&D institutes is classified into researchers, engineers, administrators, and supporting staff and discrimination exists among them. In particular, there is a clear distinction between researchers with Master or Ph. D. degrees and college graduate engineers with researchers receiving the most favorable treatment in R&D institutes.

In the past, the vertical job structure has been classified into 3~4 categories; those are Research Assistant, Researcher, Senior Researcher, and Research Fellow. However, currently it is further classified into 6 categories by adding two higher level categories, i.e., Senior Research Fellow and Research Director. To summarize management of job structure within R&D Institutes, in comparison with that in private corporations, not only maintains a discriminating character, but also favors further vertical differentiation.

2. Human Resource Planning and Recruitment

In general, human resource planning in Korean corporations is accomplished by a top-down approach; which means that the higher level people of the organization make the important decisions. Therefore, it is a general practice for human resource planning decisions to be made by those higher levels. In large conglomerate corporations, however, the decisions are often made by human resource development committees.

Human resource planning in R&D Institutes is done also using top-down approach although the medium-range and long-range manpower planning is really set up by each research division or center. However, final manpower planning is normally made in accordance with the budget available for the organizations in both government institutes and private corporations. Therefore, rational, logical, and autonomous manpower planning seldom occurs.

Regular recruitment in large corporations is carried out for expectant college graduates around November each year and special recruitment is carried out two or three times a year for expectant graduates from several highly renowned universities.

Recently, some large corporations have had difficulties in recruiting the "best
of the best due to intense competition in manpower demands and they also face increasing demands for autonomy from their lower level managers. As a result of these two factors, these corporations tend to delegate the authority for human resource planning and recruitment to the lower level managers.

On the other hand, qualified researchers with Master's degrees or above can enter the R&D institutes at any time although regular recruitment is carried out once or twice a year. In general, recruitment in the R&D institutes has been carried out with relatively more autonomy.

Korean R&D institutes have made every effort to recruit Korean scientists who went abroad to obtain their Ph.D.'s and did not return to Korea. However, this kind of recruitment has declined with the recent increasing number of Korean scientists with foreign Ph.D's who are voluntarily returning to Korea.

Thus, although the manpower planning of R&D institutes is set up using the top-down approach as with the Korean corporations, there exists some degree of autonomy in the recruitment area of the R&D institutes.

3. Selection Process

During the selection process, Korean corporations prefer to seek generalists who are well equipped with education, ability, and the "proper" attitudinal traits.

The first criterion for selection is education level. In large corporations, they select liberal arts and social science graduates for administrative work, the science and engineering graduates for engineering work, the technical high-school graduates for technical work, and commerce high-school graduates for simple clerical work. The second criterion is a written test, mainly testing foreign language proficiency (especially English), but also testing knowledge of the major of study as well as common sense.

What is most important in Korean corporations in the selection process is an interview to appraise the attitudinal traits of applicants. Even though the written test score of an applicant is high enough, the applicant may be excluded
in the hiring process if he is found in an interview to have undesirable attitudinal traits. Particularly, an applicant's compatibility with the hiring organization is the most important attitudinal trait to be considered in hiring college graduates who form the core group of human resources in private corporations.

In addition, there are special hiring procedures for highly renowned university graduates without tests. This is possible in Korea because people believe that graduation from a highly renowned university itself indicates that attitudinal traits and abilities are already proven to be acceptable.

Recently, there is an increasing tendency to rely on recommendations from universities and internship programs during vacations instead of relying on written tests in some large corporations. However, the first priority on attitudinal traits is still stressed.

The selection process for R&D institutes is similar to that of private corporations in that education level comes first. The institutes select the Master's degree holders or above for scientists, science and engineering graduates for engineers, liberal arts and social science graduates for administrators, and the commerce high-school graduates for clericals. In the case of open competition for hiring engineers and administrators, written tests are given. However, the scientists, who are the core of R&D institutes, go through only a previous career and performance review and the selection interview. Here, the attitudinal traits are also treated as an important factor in the final hiring decision.

III. Evaluation

There are three main issues in evaluation. First, what is the most important criterion for evaluation? Second, which factors are preferred among the performance-appraisal factors? Third, what method has been adopted for performance-appraisals?

1. Evaluation Criteria

Three criteria can be applied in the evaluation of human resources. The first
criterion is related to personal attributes. This criterion refers to the evaluation factors which consider attitude, educational background of the individual, and seniority in terms of job tenure and age. The second criterion is performance-related. This covers evaluation factors such as ability required to carry out the job and the resultant performance itself. The third criterion is job-related. This is defined as the factors which evaluate the potential ability to perform the specific job itself.

Whereas the first two criteria focus on the aspects of the person who holds the job, the third, job-related, factors can be obtained through job analysis and job evaluation, grasping the importance and the specific characteristics of each job.

Among the above three criteria, the personal attributes-related criterion has usually been preferred over the other two. However, recently the performance-related criterion is becoming more important and the job-related criteria has been gaining increasing interest.

However, an evaluation system based on performance-related and job-related criterion has not been fully developed because the traditional “Confucian” culture attaches greater importance to personality, and accordingly, the corporation's culture emphasizes attitude rather than ability and performance.

Similar features can be found in the evaluation systems of R&D institutes. There are few research institutes which carry out the job analysis. This is not only due to the informal characteristics of the R&D job itself, but also due to the nature of traditional culture attaching greater importance to the person rather than to the job. As a result, the person-centered evaluation has been widely adopted in R&D institutes. Nevertheless, there is a tendency to have greater regard for performance-related criterion than personal attributes-related criterion due to the characteristics of R&D work, which is different from the work of private corporations.

2. Performance Appraisal Factors

Currently, most of the medium and large Korean corporations use not only
a personnel assessment system, such as formal performance appraisals, but also informal personnel evaluations done according to the situation.

In general, the three factors for performance appraisal in Korean corporations are the attitudinal traits, ability, and performance. The term trait or attitude refers to the virtue or character built up over time. In other words, trait implies a personal character which includes integrity, diligence, responsibility, identification with organization, positiveness, etc. Abilities, which can be developed through education or training over a given period of time, are divided largely into job knowledge and job-performing abilities. Finally, job performance implies concrete achievement built up within a short time, usually within one year.

As stated earlier, among the three factors, attitudinal traits are the most important in Korean corporations. A person with good attitudinal traits gets first priority. However, it's not easy to clearly distinguish traits and abilities from each other. That is to say, if one has bad traits, then he is treated as a person with low ability and low performance. This kind of phenomenon is due to the tendency of regarding one peculiar trait as a general trait.

According to a survey done in 1990, 65 percent of employees in Korean corporations responded that a person with good traits or virtues such as integrity, responsibility, or identification with organization must be promoted first of all. This is in contrast to employees in U.S. corporations, where more than 80% agreed with the importance of performance.

As market competition has recently begun to grow, some corporations have begun to regard ability and performance as the most important factors. Furthermore, there is a growing tendency to prefer ability among the young employees. Nonetheless, the preference for traits in the performance evaluation is still dominant in most Korean corporations.

Compared with the performance appraisals of private corporations, the performance appraisals in R&D Institutes put more emphasis on ability and performance. This is because performance in technology development, such as
patent application and patent registration, is important to the characteristics of R&D activities. Some research centers add the items of performance to the performance appraisal for administrators or clerical personnel.

However, there is still a lot of room for subjective evaluation by superiors because it is more difficult to evaluate the ability and performance of researchers objectively than those of managers and supporting staff. When this is the case, as in private corporations, the R & D institutes tend to regard the attitudinal trait as more important criterion than ability and performance.

3. Performance Appraisal Method

The performance appraisals in Korean corporations are usually completed by multiple superiors such as the first and the second appraisers. Also, “forced distribution” is used for the performance appraisals and the utilization of the performance appraisal is often restricted.

Although several different evaluation formats exist by job classification (i.e., more than three formats on average in a corporation), there is still room for the evaluator’s subjectiveness because the appraisal factors are not actually differentiated in accordance with job classifications.

Further, the results of performance appraisals are not officially shown to ratees. A self-reporting system does not work well because it has not been utilized properly to appraise actual performance. For example, approximately 80 percent of Korean large corporations use the self-reporting system, while only about 20 percent of corporations actually utilize the results positively in their performance appraisal processes.

Recently, in order to improve the performance appraisal system in Korean corporations, performance appraisal factors were differentiated and reestablished to be more valid and various training programs on objective performance appraisals have been developed. Also, the MBO(Management By Objectives) and BAR(Behaviorally Anchored Rating) type appraisals have been introduced. In addition, appraisal by subordinates and descriptive appraisal methods are being considered.
There is little difference in the performance appraisal methods between private corporations and R&D Institutes. However, compared with the recent change in the Korean corporations, the performance appraisal method in the R&D Institutes still tends to be more authoritative. This could be interpreted as an indication that the performance appraisals in the R&D institutes are mainly used as instruments for supervisors to control subordinates.

IV. Training and Development

Three important issues in training and development are as follows: first, what factors are emphasized in employee education and training?; second, is job rotation or job specialization preferred in the Korean organization?; and finally, what affects promotion?

1. Employee Education and Training Programs

Although some training programs include professional and technical training, more weight is put on general education to enhance employees' capabilities in human relations regardless of the type of the job. This is a consistent tendency in education and training programs in Korean corporations.

Most corporations offer on-the-job and off-the-job training programs for the purpose of improving the human relations abilities and reshaping the mental attitudes of employees. On the other hand, it is rare for Korean corporations to organize training programs primarily for concrete job-skills and professional techniques.

According to a survey in 1991, the proportion of job-related training from total training periods is 54 percent for office workers and 63 percent for factory workers. This proportion appears to be large enough to improve professional skills. However, more than one-third of the total training is still devoted to general education, and this general education is overemphasized considerably compared to the training programs in foreign corporations.

However, there is a big difference in training at R&D institutes from that
of Korean corporations. The participant of the training programs in R&D institutes are mostly highly educated researchers with expertises in their own fields. In order to sharpen the knowledge in their fields, the R&D institutes implement several programs. They provide financial support to researchers in order for them to complete Ph. D. degrees, send researchers to foreign academic institutes, and educate researchers through internal seminars. However, even in the R&D institutes, general education is also included in programs to improve the disposition and traits of the researchers.

2. Job Rotation

Job rotation in Korean corporations is not done regularly. According to a survey in 1991, only 9 percent of office workers, and 7 percent of factory workers were rotated to other types of jobs, or other job families or clusters over an average of three years. The low rate of job rotation indicates that the employees have handled their main jobs or jobs closely related to their own jobs for a long time. Although employees of Korean corporations normally stay in one type of job or position for five to ten years without job rotation, they eventually become generalists because they are assigned a variety of tasks while staying in one job or position. However, in the Korean corporations,

![Exhibit 4] Comparison of Job Rotation Patterns among Korea, U.S., and Japan

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<tr>
<th>Korea</th>
<th>U.S.</th>
<th>Japan</th>
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<td>No job rotation, but job assignment in various fields to make a generalist</td>
<td>Job rotation within a specialized area to make a specialist</td>
<td>Job rotation beyond a specialized area at the lower level, but limited to a certain job family at the higher level to make a semi-generalist</td>
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this is regarded as an advantage for promotion. In other words, private corporations want to bring up the generalist instead of the specialist in the long run without frequent job rotation. Exhibit 4 describes the differences of job rotation patterns among Korea, U.S., and Japan.

In R&D institutes, jobs are rotated in principle on a two-or three-year basis. However, the jobs are not rotated smoothly because it is not easy to get agreement between the head of the department from which the employee leaves and the head of the department to which the employee moves into.

Also, in R&D institutes, there is a dual career ladder system. After employees serve as researchers for some specific period of time, they can determine their own career paths between becoming a research manager and/or a research professional. At this time, human resources are developed according to the decision. Therefore, in summary, job rotation in the R&D institutes reveals a distinct feature different from job rotation in private corporations which aims at the generalist.

3. Promotion

Promotion in Korean corporations is generally based on job seniority, i.e., the length service. Most Korean corporations have a rule that a minimum job tenure (normally three to five years) is required to be promoted. Also, under this rule, an employee becomes a promotion candidate after a specific period only if there is no serious problem with the employee (Please see Exhibit 5.).

Another criterion for promotion is merit (abilities, results of promotion tests, and performance). According to a survey in 1991, the ratio of the ability factor which affects promotion decisions is about 52 percent. However, it should be noticed that the ability factors considered do not reflect the 'true' abilities of the employees. In other words, the merit system is actually affected by the seniority system since supervisors tend to give higher merit points to promotion candidates of higher seniority (Please see Exhibit 6.).

In addition, some managers still tend to attach more importance, though unofficially, to persons who received their education from the same university
as themselves and who belong to the same kinship.

Recently, the younger employees seem to want the merit criteria to be the major determinant for promotion. Also, managers are recognizing more and more the importance of effective Career Development Programs (CDP) for employees' higher performance, which combine training, job rotation, and promotion.

Because of these changing needs, a possible switch from the seniority-based to the merit-oriented human resource management is seriously being discussed. Some areas concerning the merit-oriented system in Korean corporations cover measurement of the merit factor and introduction of the job ability evaluation system. However, this type of merit-oriented human resource management is still in the early stage in Korean corporations.

Even in the R&D institutes, the seniority factor plays an important role for the promotion. Although the R&D institutes seem to put more weight on the merit system than Korean corporations do, there exists the same tendency of measuring merit in association with the person-related criterion such as seniority.
V. Compensation

In this section, three issues are discussed: first, the criteria of base pay; second, the payment of incentives, including the bonus, and third, the overall benefits system.

1. Base Pay

The structures of base pay in Korean corporations are characterized by the person-related factors such as academic background and length of service. Academic background is a major factor to determine the level of the starting salary. In other words, the level of the starting salary depends on whether the employees have completed their college education. Second, once the level of the starting salary is determined, the salary will then increase with the length of service.

In the Korean corporations, the increase in the level of the base pay does not necessarily depend on improvement of job ability. Rather, the level of base pay is strongly affected by the employee's overall contributions to the firm in terms of the length of service meaning that the base pay of an employee increases steadily as he serves longer with the firm although job ability may not improve. Compared to U.S. corporations, the pay systems of Korean

![Graph showing salary progression over age for Korea, U.S., and Japan.](image)

*Exhibit 7* Comparison of Salary Curves among Three Countries
corporations are significantly different on this point. Therefore, recently there has been serious critique of the base pay system since the seniority-based pay system cannot motivate development of job abilities and performance. In addition, the burden of labor costs is getting larger for the corporations as the employees get older (Please see Exhibit 7.).

Currently, the Korean corporations are considering adjustment of the ratio between the base pay and benefits (80 percent vs. 20 percent, for example), and are introducing a total pay system as well as a job-ability based pay system. However, it is expected that the seniority-oriented compensation system will continue to play a major role for sometime in the future.

Actually the pay system in R&D institutes retains the same structure as that of the Korean corporations. Although there has been several attempts to introduce ability-based or performance-based pay systems in some institutes, the employees have continually moved against this system in favor of the seniority-based system. Thus, the seniority-base pay system is expected to remain as the main system in the R&D institutes.

2. Incentives

Incentives, including bonuses, are paid evenly to employees in each department about four to eight times a year. These incentives are not regarded as ‘pure’ incentives, but as another type of base pay. Many corporations have a group bonus system, but they operate the system in such a way that every member of the department is paid equally.

Until now, there has been no fundamental change in the incentive system of the Korean corporations. According to a survey in 1988, about 80 percent of the Korean corporations distributed the incentives equally instead of basing them on performance or ability. Further, a survey in 1991 shows that if fixed pay, like the regular bonus, is sorted out, only 10 percent of the total pay would be considered ‘true’ incentives over an average of 3 years. This result indicates that the incentives, differentially paid on the basis of performance and ability, are not yet popular and do not have any substantial impact on the
compensation system.

Incentives in the R&D institutes can be categorized in two parts; monetary incentives and non-monetary incentives. Monetary incentives in R&D institutes have the same properties as in the Korean corporations. However, the R&D institutes offer non-monetary incentives, such as opportunities to complete Ph. D. programs and to study advanced technologies abroad. In many R&D institutions, non-monetary incentives are offered to researchers whose performance is outstanding according to set standards, although some institutes operate non-monetary incentives with the principle of collectivistic incentives.

3. Benefits

Benefits of the Korean corporations are mostly based on paternalism except for some legal benefits. The executives of Korean corporations see the relationships with their employees as human relationships, not as contract behavior relationships. As a result, they offer unexpected charity or sympathy to the employees. For example, they often send gifts, with their name cards attached, to the employee’s parents’ birthdays and they also contribute to special events in the employee’s family like marriages and funerals, etc. In addition, they provide financial aid to employees.

Benefits in Korean corporations are paid under the name of the employee’s family. The major items in this category are housing support, scholarships for the employee’s children, and loans for educational expenses.

This paternalistic benefit system has helped to maintain tight relationships between employees and executives. However, paternalistic benefits are controlled at the discretion of the executives, therefore, employees’ benefits are basically dependent on the executive’s paternalism although the employees want the benefit system to be operated consistently.

The basic idea behind the benefits in R&D institutes is almost the same as the one in the Korean corporations. However, in addition to the usual benefits, the R&D institutes usually provide their employees with a housing complex and athletic facilities near the laboratories. In particular, in order to
attract the Korean researchers who have been living in foreign countries, the institutes also offer to cover moving expenses, offer luxurious housing, and pay car operating expenses. This benefit often creates problems as it is discriminating against researchers who have been educated and trained in Korea and have the same qualifications as those returning from abroad.

VI. Maintenance

The important issues in maintenance are as follow: first, what are the characteristics of preservation of human resources in Korean corporations?; second, what is the pattern for turnover, firing and retirement?; third, what kind of human relations comes out in the group activities between the upper and lower classes, and among members?

1. Preservation of Human Resources

The overall structure for the preservation of human resources, which reflects the importance of the individual member, is a three-fold structure for the core, the middle, and the marginal groups (Please see Exhibit 8.).

The core group usually have long-term employment contracts and are highly loyal to their organization or owners. The middle group usually have medium- to long-term employment contracts and may move to the top of the career ladder with seniority or may join the core group if they stay on the job long

![Exhibit 8] The Pattern for Preservation of Human Resources
The marginal group are in the outer boundary of the overall structure, and come from the marginal necessity for the corporation management. These are replaceable manpower that can be obtained directly from the labor market, and are composed of both temporary and female workers.

The ratios of the core, the middle and the marginal are about 10 percent, 80 percent, and 10 percent, respectively. Currently, the marginal group tends to be growing slightly in Korean corporations, which indicates an increasing ratio of temporary or part-time workers resulting from the severe labor-management disputes in 1989. It is important to note that there exists discrimination against the marginal and, sometimes, middle group.

In the R&D institutes, the three-fold structure of human resources is a bit weaker since there are fewer members of the core group in the research institutions than there are in Korean corporations. Furthermore, it is difficult to maintain the three-fold structure due to the high rate of voluntary turnover in the middle and core group. However, the discrimination in preservation of human resources can still be found with engineers, technicians, and clerical workers being discriminated in favor of researchers and the informal relationships with the core group member are still important in terms of personal and school-related ties.

2. Turnover

If an employee of a Korean firm leaves the job either voluntarily or involuntarily due to job switching, being fired or retiring, the paternalistic aspect of human relations among the employees, superiors, and colleagues becomes very important. Traditionally, employees of Korean corporations were not likely to leave their jobs voluntarily as they had a strong sense of commitment to the organization. This was because the owner made an effort to maintain personal relationships with the employees rather than business relationships and it was generally acknowledged that an employee would never betray an owner's confidence.
For example, on the one hand, according to a survey in 1979, 95 percent of respondents indicated a strong organizational commitment with the view that "a company is a second home". In those days, the corporations did not have turnover prevention programs since the turnover rate was very low. However recently, there has been an increase in turnover intention as well as actual turnover rates.

On the other hand, paternalism has traditionally prevented an owner of a firm from firing an employee who lacked ability which is attributed to the extended family way of thinking. An employee is considered a member of the family (firm) once he is employed. In order to reduce the burden of fixed personnel expenses, however, some Korean corporations began carrying out large scale human resource reductions by adding factory automation.

When firing an employee is inevitable, the Korean corporations usually follow the long-established practice of firing all employees who are personally related to the person fired. They may be from the core, the middle, and the marginal groups (Please see Exhibit 9.).

Korean corporations have a retirement grants system with an age limit. The upper age limit for retirement is by and large 55. Firms pay the retirement grants as a pecuniary compensation. However, a retiree who has a connection with the owner or who has made special contributions to the company may obtain an alternative position either inside the firm or with an affiliated firm.

Recently, extension of the upper age limit and early retirement system have

![Exhibit 9] The Patterns of Firing in Three Countries
been implemented in some corporation. In addition, the relationship between the pension system and the retirement grants system has been reviewed since a nationwide pension system for the majority of the working population was introduced by the Korean government. Putting these various turnovers together, it becomes apparent that the traditional nature of paternalistic relationships is gradually decreasing in the turnover, firing, and retirement area.

Voluntary and involuntary turnover issues in R&D institutes are almost the same as in the Korean corporations. However, there are increasing numbers of researchers who move to the universities to become professors while there are few transfers of researchers from one research institute to another. Also, for young researchers, there is a tendency towards voluntary turnover to transfer to other research centers. In addition, the early retirement system made the paternalistic treatment of older researchers and support staff be challenged and shirked rapidly.

3. Human Relations

An authoritative and collective nature is apparent in the human relations of Korean corporations. Strict order, based on collectivism, is maintained in the relationships between the upper and lower class. The collective way of thinking is also emphasized in interrelationships among employees. In addition, authoritative decision making from managers is often observed in the Korean

![Decision Making in Three Countries](image)
corporations (Please see Exhibit 10.).

In other words, the individualistic behavior, which disregards human relationships among members, is not acceptable. The organizations dislike individualistic behavior because it changes the whole atmosphere of the organization even though it may result in higher performance. For this reason, programs which would change the organizational atmosphere by making a hero, a star or a role model out of an individual would not be successful. Although individualistic behavior in the Korean corporations comes out from time to time, the collective nature is still maintained as a whole.

In the R&D institutes, the authoritative nature also appears frequently and there is little difference in the human relationships even though the authoritative orders discourage creativity in R&D work. Since young researchers are usually more independent and egoistic, they often show individualistic behavior. However, this behavior is not accepted by the middle and upper class researchers.

VII. Discussion for R & D Management

The three dimensional model described in the following Exhibit 11 suggests ideas for possible improvement of human resource management in research

![Three-dimensional Human Resource Management (HRM) Model](image)
institutes. In order to make an improved system, a conceptual model should be framed first, followed by development of action programs derived from the model.

This three dimensional model has three criteria—personality characteristics, job characteristics, and goal characteristics. Human resource management in research institutes is likely to aim at more innovative style than that in private corporations in Exhibit 11.

1. Personality Characteristics

Concerning personality characteristics, most of R&D researchers with the higher educations and professional experience appear generally to be introverted and prefer working independently in an autonomous atmosphere. Also, although they are sometimes concerned about their careers, they are usually proud of their individual work accomplishments.

In addition to the researchers’ individualistic characteristics, each unit in the R&D institutes in Korea has exclusive characteristics from one another. Korean R&D institutes generally consist of three layers: Science and Technology units, Design and Development units, and Operational/Technical units. These three units have a hierarchical chain of command relationship. However, the chain of command relationship among these units does not work effectively because of these exclusive characteristics of the three layers.

Also, in Korean R&D institutes, cooperative behavior in terms of a collective culture applies only to the within-the-division bounday. In other words, “bounded” collectivism does exist in Korean R&D institutes. Thus, it is necessary to integrate both the individualistic nature of researchers’ personalities and the “bounded” collectivism into the human resource management system to enhance the creativity of researchers as well as to facilitate the integration of R&D work.

However, too much independence and too extreme “bounded” collectivism in the R&D institutes lead to inefficiency and ineffectiveness in enhancing the creativity of researchers, accumulation of technology, and integration of R&D
work. In order to overcome these difficulties, it is desirable to establish an overlapping linkage system such as that shown in Exhibit 12. Some representatives from each unit should join the linking team (shaded area in Exhibit 12) to communicate and share common missions and objectives of the R&D institutes.

2. **Job Characteristics**

Human resource management varies depending on the characteristics of job. R&D work itself requires informality as well as flexibility and is composed of specialized areas rather than general areas, which also requires accuracy and delicacy. Therefore, the characteristics of specialization in R&D work must be emphasized for creative R&D activities.

In order to accommodate these characteristics, introduction of a dual ladder system in R&D institutes is desirable (Please see Exhibit 13.). Researchers who want to do research only should be given the same motivation as administrative managers. The motivation may come from monetary incentive based on performance and/or awarding position titles similar to titles for administrative managers.

If researchers want to switch their jobs for other job family (i.e. administrative manager), they should apply for and participate in a certain training programs and prove themselves to be capable of management duties before
they switch job, i.e., point to in Exhibit 13. The most appropriate time for researchers' job switching would be when they are in their late 30's.

3. Goal Characteristics

The goals of R&D activities are usually achieved over a period of long-term (i.e., more than 5 years). This characteristic requires R&D goals to be evaluated based on the processes of R&D activities in order to promote more creative R&D activities.

However, the goal-achieving process involves much more uncertainty than other activities. It is not easy to define the process of goal achievement in concrete and precise terms because of the uncertainty involved. Thus, this characteristic requires the evaluation of the goal-related performance to put more emphasis on output rather than process. Furthermore, the utilization of the output is sometimes added to the evaluation criteria of the R&D goal.

To accommodate both characteristics in evaluation of the R&D goals, introduction of a matrix evaluation system is desirable. As shown in Exhibit 14, a researcher's performance should be evaluated by two supervisors: functional supervisor and the project leader.
A functional supervisor such as the head of a center/division or laboratory would evaluate the achievement level of the specialty area of the researcher. This is a general evaluation of professionalism which specifically consists of research experience, the number of the presentations and publications of research papers, academic achievements, and professional knowledge. This kind of evaluation can contribute to identification of process-oriented goal achievement.

A project leader to whose project the researcher is assigned would evaluate the researcher’s capability on research project execution. The project leader might consider evaluating the input, process, and output factors. The input factor includes the cost of the R&D activities, the number of proposals, and the training participation. The process factor includes the scheduling, task involvement, creativity, and coordination. The output factor includes the contribution, cost-saving, and the number of patents.

In sum, human resource management in R&D institutes is more likely to aim at innovative human resource management than that of the Korean corporations. In reality, it has been found that human resource management for R&D institutes is less innovative than for the Korean corporations in some areas. This shows that human resource management in the R&D institutes is at its preliminary stage considering the trend of industrialization and technological innovation. Thus R&D institutes need a change towards more innovative directions in human resource management.
VIII. Summary and Conclusion

In order for the Korean economy to enhance international competitiveness through technological innovation, efficient arrangement of human resource management in R&D institutes as well as in Korean corporations will be necessary. The followings are suggestions for more efficient and effective human resource management in Korean corporations and R&D institutes.

In general, there should be a transition from paternalistic management to other management styles. A suggested direction of an ideal transition from paternalistic management to other styles in both private corporations and R&D institutes is described in Exhibit 15.

More specific examples of the desired transition in human resource management are as follows:

<table>
<thead>
<tr>
<th>Principle of Traditional Type Human Resource Management</th>
<th>Direction of Desirable Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Collectivism/Groupism</td>
<td>- Segmented management according to hierarchy and job classification in communal organizations</td>
</tr>
<tr>
<td></td>
<td>- Harmony between group evaluation and individual evaluation</td>
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<tr>
<td>2. Discrimination</td>
<td>- Egalitarianism/human-respect management</td>
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<tr>
<td></td>
<td>- Scale down of built-in differences among jobs/sex</td>
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<tr>
<td>3. Authoritarianism</td>
<td>- Introduction of participative management</td>
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<tr>
<td></td>
<td>- Harmony between top-down and bottom-up communication</td>
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<tr>
<td>4. Warm-heartedness</td>
<td>- Welfare policy according to employees' life cycle</td>
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<td></td>
<td>- Output-oriented communalism</td>
</tr>
<tr>
<td>5. Person-centeredness</td>
<td>- Harmony between personal factors and ability factors at an individual level</td>
</tr>
<tr>
<td></td>
<td>- Integrated consideration of traits, ability, and performance</td>
</tr>
<tr>
<td>6. All-round man orientation</td>
<td>- Harmony between generalist career and specialist career at an organizational level</td>
</tr>
</tbody>
</table>
1) In manpower planning, current centralized recruitment by corporation headquarters should be changed. Autonomy, in cooperation with higher level management in organizations, is required for manpower planning. Recruitment of administrative staff should be based on a broader grouping of jobs, while recruitment of professional staff should be based on more segmented major areas.

2) The selection method to determine a candidate's actual ability in the selection process should be developed and be used together with the trait-centered selection. The tendency of discrimination among occupational groups should be abolished.

3) In performance appraisals, the criteria for the appraisal should include ability and, especially, performance in addition to the traits which have been regarded the most important elements of evaluation criteria in the past.

In addition, a channel must be opened to reflect the opinion of the evaluated person. As a complementary system, Management By Objective method should be incorporated into the appraisal system to allow subordinates to have the opportunity to participate in setting their goals. More systematic job analysis procedures and job-ability evaluation systems might also be incorporated into the appraisal.

4) Promotion decisions should not be based only on traits, but also heavily on ability and performance. Specifically, a harmony between seniority and ability is needed. An index which can measure performance objectively should be developed.

5) In job rotation, the development of specialists should be considered as important as the traditional tendency to make generalists.

6) In training, the programs should be an appropriate combination of job training and general training (i.e., moral education).

7) Concerning compensation, such as base pay and incentives, both ability and performance factors should be considered in addition to the widely-used seniority factors. The ability and performance factors should be reflected more
in incentives than in base pay. An incentive system based on group performance might also be considered.

8) In general, an ideal Korean human resource management system must aim at changing its basic direction from the traditional human resource management system to more innovative human resource management. Human resource management for the R&D institutes should aim at even more innovative human resource management. However, it should also be considered that innovative human resource management does not necessarily reject all the traditional types of human resource management, but would incorporate the strengths of the traditional types.

〈References〉


