

Introduction

Treatment of Professionals

Research interest in “professionals” has burgeoned in recent years. Classified occupationally as those engaged in specialist and technical lines of work, they have grown in number and are projected to continue to grow in number in the future, and three main areas of research interest may be identified.

The first is the question of how professionals should be treated in terms of pay and other incentives. Due to rising expectations of this class’s role as an enterprise’s source of creation of value added, Japanese companies have grown more interested in technology management strategy since the start of the 21st century. This has been accompanied by conspicuous moves to develop methods of human resource management that are suited to R&D engineers, such as by reviewing conventional remuneration and career management methods to stimulate the development of in-house professionals and rethinking ways of rewarding employees who make major contributions to the company, and underlying these developments has been rising interest in the treatment of professionals.¹

The second issue concerns the propensity to move and career management of professionals. In terms of their occupational awareness, professionals are considered to be more committed to their work than to organizations, and also to have greater mobility. Under conventional Japanese employment practices, however, professionals’ frequency of movement between enterprises has been low, and they have traditionally been internally transferred and promoted while employed long-term by a specific enterprise. Now, though, this Japanese-style

¹ A recent topic that has had a major impact on us in this context is, above all, that of the fairness of the compensation paid by companies for inventions made by their employees, as highlighted by the lawsuit brought by Shuji Nakamura against his former employer, Nichia Corporation. In its first ruling on January 13, 2004, the Tokyo District Court ordered Nichia to pay Nakamura 20 billion yen as compensation for the rights to his invention. This amount was appealed and a settlement worth in excess of 800 million yen, including delayed damages, was reached in January 2005. Due partly to the large difference between this settlement and the first ruling, this case drew considerable coverage in the media, setting a landmark for consideration of the question of how professionals should be rewarded in Japan in the future.

model of career development is showing signs of crumbling in the face of globalization and intensifying market competition, and more research is needed on how inter- and intra-enterprise transfers are related to the results of R&D.

The third issue of interest concerns professionals' occupational ethics. Because of their advanced expertise and discretionary authority, the professions were originally occupations that needed personal discipline. Recently, however, there has been a rash of incidents involving a loosening of such discipline, such as cases of window-dressing by certified public accountants, heightening concern about how human resources should be managed to ensure that the occupational ethics expected of professionals are followed.

From this albeit brief glance at recent areas of research interest concerning professionals, it should be obvious that more research needs to be pursued following a variety of approaches in order to deepen understanding on this theme.

Addressing the first two areas of interest, therefore, this special issue contains (A) one paper on the role and design of human resource and personnel management as a means of managing R&D personnel in association with technology management strategy (specifically, Fukutani's paper entitled *Changes in Human Resource Management with the Transformation of Technology Management Strategy*), and (B) one paper dealing with the relationship between movements of R&D engineers likely to play an important role in raising corporate competitiveness and R&D results (Aoshima's paper entitled *Mobility of R&D Workers and Technological Performance*) and another paper exploring the pay and other recompense of scientists and engineers (Fujimoto's paper entitled *Employment Systems and Social Relativity from the Perspective of Pay and Benefits for Science and Technology Researchers and Engineers*). On the third area of interest, we include (C) a paper that explores the issue of conflict arising from professionals' having their own peculiar professional ethics while at the same time being located within organizations, i.e., the "local" and "cosmopolitan" problem (Chae's paper entitled *Scientists and Engineers' Occupational Community and Organizations: Their Partial Inclusion and Role Conflict in Organization*).

In his paper, Fukutani demonstrates that, while the prevailing technology strategy pursued by Japanese enterprises to date has been one of improving

technologies and playing catch-up, growing globalization, rapid technological innovation and paradigm shifts, and shortening product life-cycles present them with new challenges necessitating the training, utilization, and evaluation of human resources as “developable knowledge assets” with the purpose of developing new products, exploiting new markets and generating new value added. He therefore proposes that forms of management of R&D personnel be developed in order to effect (a) a transition from uniform group-based management to individual multi-dimensional management, (b) a shift to emphasizing work performance rather than length of service as a determinant of remuneration, (c) active use of “technology personnel mapping,” and (d) moving from general to individual employment contracts.

The papers by Aoshima and Fujimoto explore the treatment of R&D personnel by focusing on their movements and transfers. Using survey data, Aoshima analyzes the interrelationship with movements within and between organizations to determine whether the movement of R&D personnel encourages innovation. He finds (a) that inter-organizational movements do not always lead to greater technology results and that transfers of implicit knowledge due to movements may not be sufficient, and (b) that inter-departmental rotations do not necessarily increase technology results, and in particular that making engineers move between departments during the initial stages of their careers has a negative effect on subsequent results. Finding (a) suggests that evaluation, pay, and promotion systems can be modified to incorporate engineers who move between organizations smoothly into internal human and information networks.

In her paper, Fujimoto observes (a) that science and technology researchers and engineers in manufacturing receive lower pay than in finance and insurance, but higher than in other industries, and (b) that an international comparison of the treatment of researchers and engineers shows that pay scales tend to be defined more by age at Japanese enterprises than at American and British companies, and that promotion to management positions tends not to serve as a strong motivator, the main motivators instead being increases in research spending and freedom of research. Science and technology researchers and engineers in Japan generally exhibit a low propensity to move, underlying which is their integration with other employees and determination of treatment emphasizing their social relativity among them, rather than their

receipt of special treatment.

What then of the relationship between professionals and occupational ethics? On this subject, Chae considers what form the management of human resources should take in order to establish appropriate occupational ethics for the future, with a particular focus on the scientists and engineers who comprise one archetype of the professions.

Chae stresses that in order to understand and predict the attitudes and behavior of professions—and in particular scientists and engineers—working in organizations, it is necessary to employ the lens of the occupational community, i.e., the communities formed by scientists and engineers' sharing of the same specialist field. Thus while scientists and engineers belong to the organizations by which they are employed, they at the same time belong to horizontally-organized professional communities. Focusing on two problems arising from this dual membership—specifically, the issue of inclusion in an organization arising from belonging to an organization, and the problem of role conflict arising from having a role as a scientist and a role as a member of an organization (a conflict tellingly captured by a certain manager's once telling an engineer, "take off your engineer's hat and put on your manager's hat")—he explores the role of human resource management in corporate organizations, which have in recent years been growing more dependent on scientists and engineers, and what form the relationship between professions and corporate organizations should take. He argues as a result that the values and needs of scientists and engineers' groups—in other words, their contributions to their specialist fields, autonomy in research and development, respect for authority, and their external activities as specialists—should be recognized and actively encouraged.

We hope that this special issue provides overseas readers with a useful introduction to recent findings in the Japanese context of research interests concerning professionals.

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