

Strategic Research and Development Management in Japanese Companies

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1. Aim

This survey aims at verifying the heightening awareness regarding the importance of strategic R&D management in Japanese private companies, as well as clarifying the efforts being made and the issues in order to manage R&D activities effectively and efficiently.

In this survey, we have defined "strategy" and "strategic R&D management" as follows.

- Strategy: a vision formulated for the logical and appropriate distribution of the company's resources based on analyses of the environment within and outside the company.
- Strategic R&D management: planning and execution of implementation measures (tactics), keeping in mind differentiation and prioritization in line with the formulated "strategy".

2. Survey Method

A questionnaire was conducted by post.

(1) Companies surveyed: 149 private companies, the majority of which had at least 10 billion yen in R&D expenditure (FY1990).

Conducted: December 1991

Number of respondents: 126 out of the aforementioned 149 companies (return rate - 84.6%)

Of all Japanese companies the total number of responding companies represented 64.4% of R&D expenditure, 38.4% of turnover, 32.2% of staff numbers and 55.3% of researcher numbers.

3. Survey Perspective

The following points were prioritized in designing the questionnaire and analyzing collated results.

- (1) How strategic is the R&D management?
- (2) Is R&D management control-oriented, or is the autonomy of researchers prioritized?
- (3) What are the views on the research environment, including researchers' treatment.

4. Outline of Results

(1) The voice of R&D departments in companies has risen with the overall rise in the position of the managers of R&D departments in the past ten years, giving the impression that greater importance is being placed on R&D in private companies (Figure 1).

(2) From the following collected results, it appears that there is a heightening need for "strategy" and "strategic R&D management" in private companies, with highly strategic R&D management being conducted at the implementation level.

1) 65% of respondents have a department specialized in R&D strategy.

- 2) All respondents feel the need for more efficient R&D.
- 3) 80% of respondents are positive about assessment of investment efficiency in R&D activities.
- 4) 70% of respondents formulate budget plans for strategic R&D (Figure 2)
- 5) 75% of respondents make company-wide research strategy proposals.
- 6) Approximately half of the respondents have participated in consortia (excluding those receiving public funding), seeking to complement R&D capabilities and mitigate the burden of increasing R&D costs.
- 7) There is evidence in the process of transferring research results into development and production of using both the advantages of the European and American method of dividing duties, and the benefits of the customary Japanese method of transferring staff members with the research results.

(3) In comparison with companies which do not have special departments for R&D strategy, the companies with such departments (82 companies in the above (2) 1)):

- 1) overall have a high level of strategy for R&D management. For example, they actively form global networks through consortia etc. (Figure 4);
- 2) co-ordinate the opinions of various departments in the company and feed them back to R&D activities;
- 3) have trends of high performance in R&D from the correlation of new product ratios and contribution ratio to turnover of new products (Figure 5), and;
- 4) have deep understanding and progressive approaches to the desired state of R&D management – that is, the approaches to research and researchers which seek to find management methods to stimulate R&D, and which seek improvement of the research environment including researchers' treatment (Figures 6 & 7)

5. Effective and Efficient Operation of R&D Activities

With the need for "strategy" and "strategic R&D management" to achieve the effective use of resources, Japanese companies appear to be tackling the highly uncertain environment in recent times by taking strategic action spontaneously. Although there is a deeply-rooted desire among managers for more efficient R&D activities, an awareness is seemed to be emerging through repeated trial and error that innovative results will not be obtained by pursuing efficiency in investment (input) and research results (output) above all else.

We believe that this survey enables us to suggest that the following three points are vital for effective and efficient R&D activities.

- (1) The importance of clear proposals for "strategy" for the direction to be aimed for by members of the organization and the objective, such as "what is to be made" and "what needs to be done" to make it.
- (2) Establishment of a system for strategic R&D management which takes account of differentiation and prioritization which allow the smooth vertical, horizontal and inter-departmental flow of information, and the selection and storing of useful, objective data in order to formulate effective "strategies".
- (3) Ascertaining of the absolute minimum level of management of staffs as members of an organization, rather than managing research and researchers, while endowing research units with authority, respecting as much as possible the autonomy of each researcher to increase the degree of freedom, and making other considerations to encourage the production of innovative results.

