"LARGE EUROPEAN MANUFACTURERS AND THE MANAGEMENT OF R & D"

by

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1. INTRODUCTION

In the large number of studies which blossomed in the early seventies about the factors of success and failure of innovation projects, manufacturing or production as such were hardly mentioned. The landmark SAPPHO study (Rothwell e.a., 1974) mentioned as important variables, explaining the differences between successful and failed projects, that successful innovations have

(a) fewer after-sales problems

(b) fewer technical "bugs" in production

(c) fewer unexpected adjustments in production

These three variables have, however, been credited to the efficiency of the development process in the R&D department, rather than as an indication of either the large impact of close cooperation between manufacturing and R&D on the successful development of a new product or process, or the importance of the production department as a source of ideas and problem-solving information. The same "R&D-centred" argument has been made in later studies (Gerstenfeld (1976)). Cooper (1979), is however, one of the first to recognise explicitly that one of the three single most important discriminating variables between failure and success in industrial innovation is the "technical and production synergy and proficiency". He argues on the basis of a mixed sample of 195 projects that : "...Projects where (technical and production) synergy and proficiency existed were undertaken in firms with a particularly strong and compatible technical engineering and production and resource base.... In addition, such firms had a thorough understanding of the product and design technology, and also the production process".

Perhaps the importance of the close relationship between manufacturing and research and development has always been taken for granted, and has consequently been underestimated in the literature about innovation management. We want to argue as a basic hypothesis that successful innovation not only requires close cooperation between R&D and Marketing, but rests on an intricate interaction process between three

equally important partners, normally the R&D, Production and Marketing departments.

There is, however, almost no empirical material to tell us what manufacturers think about Research and Development in particular, and Innovation in general.

In this paper we want to look at some empirical evidence about the perceptions of large European manufacturers of the importance and the effects related to Innovation and Research and Development. We will, in particular, focus on the following aspects :

a. How important is innovation and research and development to manufacturing?

b. What are the efforts large European Manufacturers invest in to improve the interaction between production and research and development.

Our assertions are based on the results of the European Manufacturing Futures Survey, administered yearly by Insead.

2. THE SAMPLE

Under the umbrella name of the European Manufacturing Futures Project, a questionnaire is sent out each year to senior manufacturing managers of the large manufacturers in Europe*. The goal of this questionnaire is to measure the strategic directions chosen by these large manufactures, the difficulties and challenges facing them with respect to manufacturing, and the efforts they stress with regard to manufacturing systems and investments. For most of the wide range of questions covering many areas of manufacturing, the respondents were asked to answer on five point scales. The answers were coded on a scale of 10 to 50 and processed as if they were linear scales. In 1983, 1984 and 1985, the three campaign years on which this paper is based, 151, 154 and 164 companies respectively participated in the survey.

(*) Similar surveys are organised in Japan by Waseda University, and in North America by Boston University.

Table 1a: sample by country in % of the total

Country	1983(n=151)	1984(n=154)	1985(n=164)
France	13.9	14.5	12.9
Sweden	0.6	2.0	1.8
Great Britain	15.9	15.1	19.6
Spain	9.3	5.3	7.4
Netherlands	6.6	13.8	11.6
Germany	14.6	13.2	18.3
Denmark	5.3	4.6	3.0
Norway	0.6	2.6	-
Switzerland	2.0	2.6	3.0
Belgium	11.9	11.8	6.7
Italy	10.6	9.9	11.6
Ireland	2.6	4.6	1.2
Finland	-	-	0.6
Austria	-	-	0.6

Table 1b: sample by industry

Industry	1983 (n=151)	1984 (n=154)	1985 (n=164)
Food Products	9.3	10.5	9.2
Textile Mill Products	1.3	-	1.2
Apparel	0.7	1.3	-
Lumber/Wood	0.7	0.7	0.6
Furniture	-	0.7	-
Paper Products	2.7	1.3	3.7
Publishing	-	0.7	-
Chemicals	13.2	17.1	12.3
Petroleum	0.7	0.7	2.5
Rubber/Plastic	4.0	-	3.7
Stone/Clay/Glass	3.3	5.3	3.7
Primary Metals	6.6	-	3.7
Fabricated Metals	9.9	3.3	4.9
Machinery	12.0	20.4	15.3
Electrical Equipment	13.9	17.1	10.4
Transportation Equipment	10.6	9.2	8.0
Instruments	2.0	3.9	13.5
Misc. Manufacturing	1.3	6.6	4.9
Non Classified	7.8	1.3	2.5

Although the sample is neither stratified nor large enough to enable us to see it as representative of European industry, the variety of industries and countries represented (Tables 1a and 1b), seem to suggest that we at least have an interesting sample of what is going on in Europe's manufacturing industry.

One word of warning; for some of the 1985 results, the total sample is smaller than 164. Indeed, it was decided to send those companies who had already answered in 1983 and 1984 an abbreviated questionnaire. It was assumed that for some of the questions, the answers would not change every year.

3. THE RESULTS

3.1. Importance of innovation and R & D to manufacturing :

The senior manufacturing managers who were asked to fill out the questionnaire were offered a choice of eight strategic goals. (Table 2). Out of these eight strategic directions, the ones relating to the launch of new products were clearly perceived to be the most important ones for the survival of the business unit.

TABLE 2 : Strategic directions of large European Manufacturers (average emphasis on a 5 point scale)

	1983 (n=151)	1984 (n=154)	1985 (n=66)
Dev. new prods. for exist. mkts.	39.7	41.6	38.1
Inc. mkt. share in exist. mkts.	38.0	40.0	37.0
Ent. new mkts. with exist. prods.	36.7	37.0	35.2
Dev. new prods. for new mkts.	33.2	34.7	31.0
Growing by acquisition	27.7	28.0	25.3
Withdrawing from certain business	25.4	24.6	21.5
Forward Integration	23.7	22.3	19.4
Backward Integration	20.1	20.9	18.7

It is also striking that there is no difference in the sequence of the eight strategic directions over the three year period. A paired t-test of the 54 companies that answered twice in 1983 and 1984, or the 98 companies that answered at least twice over the last three years shows that there is no statistically significant difference between the answers of two consecutive years.

The picture is pretty clear. Our respondents are well focused on what they do well today, and are not interested in growing by acquisition or by integrating their suppliers or their customers. When one thinks in terms of a two-dimensional uncertainty approach, in which one dimension contrasts new with existing markets, while the second contrasts new with existing products, it becomes clear that European manufacturers prefer to reduce the uncertainty to one of these two dimensions. The most emphasized strategic direction is clearly the development of new products for the already existing markets. An increase in the market share in the existing markets, i.e. the strengthening of an already existing market position comes second. Using the strength of the existing products in order to enter new markets is third, and fourth, just before the four far less important strategic directions, one can find the development of new products for new markets. Our respondents clearly prefer to rely on their existing strengths, and to reduce the competitive uncertainty to either the development of new products, or to an attack on a new market. Comparing these two dimensions of uncertainty, the European manufacturers prefer to keep the uncertainty low on the market side, and to venture on to the technological or the product side. On the whole, we could summarise this data as follows : European manufacturers want to stick to their business, and not to diversify into unknown business areas (e.g. acquisition or vertical integration). If they depart from this position, it will be a technical departure rather than a market one.

Indicating that one has the intention of pursuing a strategy based on innovation is , however, not enough. Is the importance of innovation in general, and R&D in particular, reflected in the efforts the large manufacturers invest in?

To answer that question we can focus on another part of the questionnaire which offers the respondents a choice of 39 efforts they can invest in over the next five years. In Table 3 one finds the rank order of seven efforts related to innovation.

TABLE 3 : Rank order of the efforts related to product and process innovation in the list of 39 possibilities **

Effort in	1983 (n=151)	1984 (n=154)	1985 (n=164)
C.A.D.	22	23	28
C.A.M.	4	9	20
Value analysis and product redesign	18	28	25
Introduction of robots	*	19	32
Flexible manufacturing systems	26	17	16
Dev. new processes for old prods.	9	7	26
Dev. new processes for new prods.	3	2	9

* Not in the questionnaire

** The rank orders are a result of a different question in 1983/1984 on the one hand, and in 1985 on the other. In 1983/84 respondents were asked whether they would invest in the effort or not, in 1985 they were asked to indicate their emphasis on a 5 point scale.

The development of new processes for either new or old products was clearly high on the list of investment priorities of large European manufacturers in 1983/1984. With perhaps the exception of computer aided manufacturing, this effort is not, however, reflected in investments in new equipment e.g. robots or F.M.S. or tools for product innovation or improvement, e.g. C.A.D. or value analysis. In 1985 this emphasis drops consistently, particularly for the development of new processes for old products.

Another way of looking at the importance of innovation or R&D can be to get an insight into the evolution of the product life-cycle (see Table 4).

TABLE 4 : Change in the length of the product life-cycle over the last five years as perceived by large manufacturers (in % of total number of responses).

Trend	1983	1984
Substantially decreased	3.4%	5.3%
Somewhat decreased	26.8	28.9
Remained about the same	56.0	50.8
Somewhat increased	12.0	7.9
Substantiallly increased	1.9	6.6

What is striking about these numbers is that, in contrast to the suggestion of the popular press that product life-cycles are generally becoming shorter, the perception that the length of the product life-cycle is decreased is valid for less than 35% of the responses. In half of the cases there were no changes in the last five years, and in some 15% the length of the product life-cycle actually increased.

Changes in product life-cycles, introduction of new products etc. must have an important impact on the production process. The importance of R&D to manufacturing will often become apparent in the importance of process engineering. What can be found in the questionnaire about this issue? On the basis of the results in Tables 5a to 5c, one can make the following observations :

a. Process engineering has a significant importance to manufacturing. In 1984, in about 75% of the cases, the importance was significant to critical. In 1984 this significance dropped slightly but the general pattern remained the same.

b. This importance of process engineering is perceived to have increased over the last five years by 67% of the respondents in 1984 and 63% in 1985. In respectively less than 3 or 6% of the cases that importance had decreased.

c. The efforts in process engineering have a considerable impact on the manufacturing productivity. In 1984, for less than 20% of the respondents the results were either negative or small. What is striking is the significant difference between 1984 and 1985. Process engineering is not only perceived to be important, but also has an increased impact on productivity. We as

yet have too little data to explain this sudden shift, but one could hypothesize that investment in process engineering, which was started a few years ago at the beginning of the economic crisis and the increased competition of the Japanese companies, is suddenly beginning to pay off.

Is there any relation between the importance of process engineering, and how the change of this importance is perceived, and its impact on productivity? The correlation between the perception of the improvement in total manufacturing productivity and the rating of the importance of process engineering is .31; and with the perception of the change the correlation is .35. In other words, the more important the importance of process engineering, and the more significant the increase in the change of the importance of this process engineering is perceived, then the more substantial the results on the improvement of total manufacturing productivity are perceived.

Process engineering results partly in proprietary process know-how. How important is that in providing a company with a competitive advantage? In Table 6a one can see that over the three consecutive years, 55 to 58% of the respondents consider proprietary process know-how to be of signifiant to critical importance. Between 15 to 23% of the respondents see proprietary process know-how as not or only somewhat important. It is quite interesting to see that the hypothesis that proprietary process know-how would become more important over the recent years to protect or to improve a competitive position in the market must be rejected on the basis of our data. These seem to suggest on the contrary a decreasing importance.

Where does this process know-how come from? Is it from internal sources, or do large manufacturers buy it? A negligible though increasing minority of the respondents buy all their technology outside. A conservative estimate of the number of companies which develop their process technology for more than 50% internally is higher than 60%. The picture one gets out of Tables 5 and 6 is one that suggests that process engineering and proprietary process know-how is important to very important to large European manufacturers. The objective of this process engineering is not to build up a competitive advantage in the market place by providing, for example, greater volume or design flexibility, or better performing products, but to improve productivity in the production process.

3.2. Efforts to improve the relation between production and research and development

Efforts to improve the relation between the production group

TABLE 5a : Rate of importance of process engineering for manufacturing (in % of total responses)

	1984 (n=154)	1985 (n=66)
Not important	2.0%	0.0%
Somewhat important	6.1	6.2
Moderate importance	17.6	30.8
Significant importance	60.1	52.3
Critical importance	14.2	10.8
Average (range from 10 to 50)	38.4	36.8

TABLE 5b : Change in the rate of importance of process engineering for manufacturing (in % of total responses over the last 5 years)

	1984 (n=154)	1985 (n=66)
Substantially decreased	0.7%	0.0 %
Somewhat decreased	2.7	6.2
Remained about the same	28.6	30.8
Somewhat increased	40.8	52.3
Substantially increased	27.2	10.8
Average (range from 10 to 50)	39.8	38.6

TABLE 5c : Results of efforts in process engineering on the total manufacturing productivity (in % of total responses)

	1984 (n=154)	1985 (n=66)
Negative	3.4	0.0
Little	16.4	4.7
Some	45.9	9.4
Moderate	33.6	46.9
Substantial	0.7	39.1
Average (range from 10 to 50)	35.7	42.0

TABLE 6a : Importance of proprietary process know-how in providing a competitive edge for the business unit (in % of total responses)

	1983 (n=151)	1984 (n=154)	1985 (n=66)
Not important	1.3%	6.0%	9.2%
Somewhat important	14.1	12.1	13.8
Neutral	28.9	23.5	20.0
Significant importance	32.9	43.6	43.1
Critical importance	22.8	14.8	13.8
Average (range from 10 to 50)	36.0	35.7	33.9

TABLE 6b : Sources of manufacturing technology (in % of total responses)

	1983 (n=151)	1984 (n=154)	1985 (n=66)
100% external	1.3	2.7	6.3
75% external	14.1	18.1	10.9
50% external	28.9	27.5	21.9
25% external	32.9	40.9	39.1
0% external	22.8	10.7	21.9

TABLE 7 : Rotation of personnel between Production and Engineering and Product development (in % of total responses) 1985

	European (n=66)	Japanese (n=)
Almost never	19.4%	2.7%
Infrequently	48.4	22.6
Normal practice but not specifically planned	27.4	61.3
Frequently but not systematically	3.2	9.7
Frequently and systematically planned	1.6	3.7

and the R&D group will, in the first place, focus on a better flow of information and an easier transfer of prototypes from one group to another. As Roberts and Fusfeld (1978) indicate, one of the best approaches to improve these flows is the rotation of people. How far is this used by the European large manufacturers? On the limited sample of 1985, it is almost alarming to see that in about 60% of the cases rotation of personnel between the two groups does not happen. In 27% it is normal practise, without its being specifically planned. This probably means that either it is part of a company-wide rotation programme, or a natural "loss" of researchers or technologists to the production group. In only 1 company does there exist a systematic practice of rotation.

One question which can be raised is whether this profile differs from one company to another. Although the sample is limited, we were able to split into five groups: electronics and instruments; industrial chemicals; electro-mechanical assembly; consumer non-durables and machinery. The distribution of answers to the question about rotation of personnel was not significantly different from one industry group to another. Finally, a comparison with the results of a similar survey administered at the same time in Japan indicates a totally different approach. Although the rotation is neither more frequently nor more systematically planned in Japan, it is in about two thirds of the cases normal practice. The link between manufacturing people and technologists in an R&D group seems to be somewhat closer in the Japanese environment than in the European one.

4. CONCLUSION

As it was stated at the beginning, production and research and development should cooperate to come to a faster and better innovation process. In that context it is important to have some insight into how senior manufacturing people perceive research and development and innovation. On the basis of a survey of large European Manufacturers we have tried to show that (1) innovation, particularly in existing markets, is a major objective of large manufacturers; (2) for about 35% of our respondents, the pressure which creates this objective is the shortening of the product life-cycle; (3) process engineering is a major issue for manufacturers, but for a majority among them this is more to improve productivity than to influence the competitive position in the market place; (4) efforts to improve communication between production and research and development through rotation are limited and certainly not systematically planned in Europe.

Bibliography

Cooper G, (1979), The Dimension of Industrial New Product's Success and Failure, Journal of Marketing, vol.23, no.3, pp40-47.

Gerstenfeldt A., (1976), A Study of Successful Projects, Unsuccessful Projects and Projects in Progress in West Germany, I.E.E.E. Transactions on Engineering Management, vol.23, no.3, pp116-123.

Roberts E.B. and Frohman A.L., (1978), Strategies for Improving Research Utilisation, Technology Review, vol.80, no.5, March-April.

Rothwell R., e.a., (1974), SAPPHO updated - project SAPPHO, Phase II, Research Policy, vol.3, pp.258-291.

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