

**ACHIEVING AN EFFECTIVE
R&D/MARKETING INTEGRATION IN THE
TELECOMMUNICATIONS INDUSTRY:
ACTORS PERSPECTIVE**

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INTRODUCTION

The objective of this research is to understand the nature of the relationship between marketing and R&D departments in the telecommunications industry; to study why a satisfactory level of integration has not yet been achieved and how an R&D/marketing interface can be managed effectively. With the help and cooperation of the telecommunications industry, a large number of R&D and marketing managers were contacted and their opinions were solicited.

The results of our study are presented in this chapter. Our goal is to present the perceptions and beliefs of R&D and marketing managers about the interface problems and their suggestions to solve them. The methodology of data collection for this research was a comprehensive questionnaire containing

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both structured and open-ended questions administered to our participating R&D and marketing managers.

First, we provide a description of the respondents profile, then give a brief explanation of the questionnaire. The results then follow and concluding remarks summarize this chapter.

PROFILE OF RESPONDENTS

A total of 176 R&D and marketing managers from five telecommunications companies responded to our questionnaires. One of the five companies (company 2), had attempted some degree of integration between its R&D and marketing groups. Responses from this integrated division (total of eighteen responses, nine from R&D and nine from marketing) were recorded and tabulated separately for comparison with the nonintegrated divisions.

Table 1 presents number of responses by company. Company 2 is broken into two separate sections (2A and 2B) where 2B depicts the responses of the integrated group. Only two questionnaires were returned from each group in company 4. Although we have reported their results, they should be viewed with discretion due to the small sample size.

Over 52% of the respondents were directly engaged in product planning tasks, 18% in market planning and 30% came from related departments. One-third of the responses came from top managers (directors, department heads, and so on) and two-thirds were from other management levels.

The level of work experience of our respondents was remarkably high. Fifteen percent of those who responded had over 20 years of experience, 50% were in business between 10 and 20 years, 9% had between 5 and 10 years of related work and only 6% were in the industry for less than 5 years. The technical work exposure of the respondents was also high with two-thirds

Table 1. Response Counts by Company and By Divisions

| Company | R&D Respondents | Marketing Respondents | Total |
|---------|-----------------|-----------------------|-------|
| 1 | 5 | 44 | 49 |
| 2 | 35 | 33 | 68 |
| (2A) | (26) | (24) | |
| (2B) | (9) | (9) | |
| 3 | 19 | 14 | 33 |
| 4 | 2 | 2 | 4 |
| 5 | 12 | 10 | 22 |
| Total | 73 | 103 | 176 |

of them having worked in R&D, manufacturing or in the engineering departments.

Finally, 46% of our respondents came from a science or engineering background, 17% of them had M.B.A. degrees, almost 3% of them had Ph.D. degrees, and 30% had other educational backgrounds.

QUESTIONNAIRES

Two similar sets of questionnaires, one for R&D and one for marketing, were designed. The objective of the questionnaires was to study the following issues:

1. The level of R&D/marketing integration required versus that currently achieved.
2. The causes of friction between R&D and marketing groups and how their relationship has changed over time and why.
3. R&D and marketing's suggestions on what R&D, marketing and the senior management can do to improve relations between the two groups.

The questionnaires were distributed among the R&D and marketing managers through our contacts in each of the five companies. After completion, respondents anonymously returned the questionnaires to the same contact in their company who in turn mailed them back to us.

RESULTS

Current Relationship Between R&D and Marketing Groups

Respondents in the telecommunications companies were asked to evaluate the current status of the relationship between the two departments. Eighty-five marketers and 60 R&D managers responded to this question. The results showed that neither departments had a high opinion of the state of their relationships. Only 19% of marketing and 28% of R&D respondents ranked the relationship between the two as being above average, while 45% of the marketers and 35% of the R&D managers thought that the relationship was below average or worse. Table 2 summarizes our findings.

Table 2. Current Relationship Between R&D and Marketing Divisions (In Percent)

| | Excellent | Above Average | Average | Below Average | Not Good At All |
|--------------------|-----------|---------------|---------|---------------|-----------------|
| Marketing (N = 85) | 0 | 19 | 36 | 33 | 12 |
| R&D (N = 60) | 0 | 28 | 37 | 30 | 5 |

Table 3. Changes in the Quality of Relationship Between Marketing and R&D Divisions in the Last 5 Years (In Percent)

| | Improvement | No Change | Deterioration |
|--------------------|-------------|-----------|---------------|
| Marketing (N = 80) | 48 | 41 | 11 |
| R&D (N = 59) | 46 | 37 | 17 |

Table 4. The Relationship Between R&D and Marketing Departments Has Improved in the Last 5 Years

| Reasons for Improvement in Relationship | Number of Responses |
|--|---------------------|
| Marketing's Views | |
| • It has to happen because of the divestiture and changing environment. There are now new people and new organizational structures. | 19 |
| • Better communications between R&D and marketing. | 7 |
| • There is more emphasis on cooperation. | 4 |
| R&D's Views | |
| • Environmental changes (caused by the divestiture) required a better R&D/Marketing relationship. | 10 |
| • Business teams, product line management, and joint committees have created closer working relationships and better integration of the two divisions. | 8 |
| • Better communication between R&D and Marketing divisions. | 4 |
| | 5 |

To measure the dynamics of the relationship, we asked the respondents to indicate if they perceived any changes in their partnership over the past five years. Responses to this question were more optimistic. Only 11% of marketing and 17% of R&D respondents believed that their relationship had deteriorated over time, while 48% of marketers and 46% of R&D managers believed that the relationship had improved. Table 3 depicts the summary of our findings.

What was not so encouraging, however, was the fact that both R&D and marketing managers attributed any improvements in their relationships to environmental changes rather than to any internal factors. The top three reasons for improvement of the relationship are given in Table 4, ranked by degree of importance.

Table 5. The Relationship Between R&D and Marketing Departments Has Deteriorated in the Last 5 Years

| Reasons for Deterioration in Relationship | Number of Responses |
|---|---------------------|
| Marketing's Views | |
| • R&D is technology-driven while marketing has a market-driven philosophy. | 8 |
| • R&D has become fragmented. | 1 |
| • There is competition for resources. | 1 |
| R&D's Views | |
| • Changes by marketing from strategic to tactical. | 2 |
| • Marketing's lack of interest to communicate with R&D and to ask for R&D's input in viability studies. | 2 |
| • Poor information received from marketing. | 1 |

Table 5 presents most frequently cited reasons for deterioration of the relationship between the two divisions. These factors, unlike those of Table 4, are more internal.

Degree of Involvement of Marketing and R&D

How much integration is achieved and how much integration is truly desirable? To understand this, we asked our respondents in each company to evaluate their current state of relationship and what they believed their desirable level of involvement should be for successful innovations. Tables 6 and 7 represent the actual level of involvement as a ratio of its ideal level as perceived by both R&D and marketing groups in each company. Each entry in Tables 6 and 7 can then be viewed as a satisfaction measure with 100 being "the actual is ideal" and zero suggesting that the actual is the opposite of the ideal.

As was mentioned earlier, company 2 had accomplished some degree of integration in one of its divisions. The integrated division's results are reported under company 2B.

Several interesting issues are raised here. First, the actual integration is far below its optimal level. Second, the R&D division believes that a higher level of integration is achieved (relative to its optimal level) than the marketing groups. Third, as depicted in Table 6, marketing is more dissatisfied with its own involvement with R&D than R&D's perception of marketing involvement

Table 6. Degree of Marketing's Involvement with R&D*

| Companies Studied | Actual-Ideal Ratios (%) | |
|--|-------------------------|------|
| | Marketing | R&D |
| Company 1 | 52.6 | 68.0 |
| Company 2a | 68.7 | 74.3 |
| Company 2b | 72.1 | 70.0 |
| Company 3 | 66.4 | 64.7 |
| Company 4 | 72.9 | 70.0 |
| Company 5 | 67.6 | 57.9 |
| (All companies combined except Company 2b) | 61.0 | 67.6 |

Note: * This applies to setting new product's goals and priorities, R&D's budget proposals, scheduling, generating and screening new product ideas, analyzing customer needs.

Table 7. Degree of R&D's Involvement with Marketing*

| Companies Studied | Actual-Ideal Ratios (%) | |
|--|-------------------------|------|
| | Marketing | R&D |
| Company 1 | 50.4 | 73.2 |
| Company 2a | 74.4 | 79.1 |
| Company 2b | 77.6 | 86.1 |
| Company 3 | 68.6 | 67.6 |
| Company 4 | 65.1 | 77.7 |
| Company 5 | 62.7 | 59.8 |
| (All companies combined except Company 2b) | 60.7 | 72.1 |

Note: * This applies to setting new product's goals and priorities, marketing budget, proposals, scheduling, generating and scheduling new product ideas, developing and modifying products based on marketing information, designing promotion strategies for marketing new products, analyzing customer needs, designing service manuals, training users of new products.

with R&D! Fourth, and most encouraging, is the fact that the integration efforts in company 2, as depicted by company 2b, seems to be at least partially effective since this group (especially the R&D division) scores the highest relative to other companies. Company 4, as was mentioned earlier, has only two respondents in each division so its responses may be viewed with discretion.

One of the issues raised by R&D about its poor relationship with marketing was the quality of marketing's information. Hence, R&D managers were asked to evaluate marketing's information quality and its ability to provide information to R&D on a timely basis. We again found that although overall R&D's perception of the quality of marketing information was above average

Table 8. Degree of Marketing's Information Sharing with R&D*

| Companies Studied | Actual-Ideal Ratios (%) | |
|--|-------------------------|------|
| | Marketing | R&D |
| Company 1 | 57.6 | 67.4 |
| Company 2a | 69.6 | 59.9 |
| Company 2b | 71.2 | 56.1 |
| Company 3 | 64.0 | 64.8 |
| Company 4 | 75.1 | 59.7 |
| Company 5 | 66.6 | 55.7 |
| (All companies combined except Company 2b) | 62.9 | 61.3 |

Note: * This applies to customer requirements of new products, regulatory issues, test marketing results, customer feedback, competition, market trends.

Table 9. R&D's Perception of Marketing Information

| Companies Responded | Mean Response on a Scale of 1-5* |
|--|----------------------------------|
| Company 1 | 3.11 |
| Company 2a | 3.28 |
| Company 2b | 3.36 |
| Company 3 | 3.10 |
| Company 4 | 3.21 |
| Company 5 | 3.20 |
| (All companies combined except Company 2b) | 3.20 (40% were satisfied) |

Note: * 1 = Non-Satisfied
5 = Highly Satisfied

(Table 8), they perceived marketing's degree of information sharing as being inadequate (Table 9). Overall, company 2b, the integrated division, performed better but the differences were not highly significant.

Organizational Support for the Interface

Another objective of this study was to learn if the respondents believed that their organizations are supportive of R&D/marketing integration. Although overall, both groups had an "above average" opinion of the other departments' manager (Table 10), in general, they did not feel that their organizations were actively supportive of this integration. Only 30% of marketing and 34% of the R&D managers studied were satisfied with their organization's conductiveness to a closer R&D/marketing relationship (Table 11). Oddly enough, even company 2b shared this view.

Table 10. R&D's (Marketing's) Perception of the Marketing (R&D) Manager

| Companies Studied | Mean Response on a Scale of 1-5* | |
|--|----------------------------------|------------------------------|
| | Marketing | R&D |
| Company 1 | 2.89 | 3.28 |
| Company 2a | 3.28 | 3.23 |
| Company 2b | 3.01 | 3.37 |
| Company 3 | 3.17 | 3.18 |
| Company 4 | 3.18 | 3.31 |
| Company 5 | 3.08 | 3.08 |
| (All companies combined except Company 2b) | 3.06 (36% were satisfied) | 3.19 (41% were satisfied) |

Note: * 1 = Unfavorable Perception
5 = Favorable Perception

Table 11. Organizational Conductiveness for a Close R&D/Marketing Relationship and the Support of the Senior Management for a Cooperative R&D/Marketing Environment

| Companies Studied | Mean Response on a Scale of 1-5* | |
|--|----------------------------------|------------------------------|
| | Marketing | R&D |
| Company 1 | 2.57 | 2.91 |
| Company 2a | 2.89 | 2.86 |
| Company 2b | 3.00 | 2.86 |
| Company 3 | 2.94 | 2.89 |
| Company 4 | 3.14 | 2.58 |
| Company 5 | 2.80 | 2.82 |
| (All companies combined except Company 2b) | 2.74 (30% were satisfied) | 2.86 (34% were satisfied) |

Note: * 1 = Low Organizational Support
5 = High Organizational Support

As a matter of fact, when asked about the ongoing efforts of the senior management to improve the R&D/marketing interface, the most frequently cited response of the two divisions combined was "not much at all." Improving communications and building business teams followed closely (Table 12).

Barriers to Integration

Marketing viewed R&D's lack of market orientation and the inadequate communications between the two groups as the most important barriers to

Table 12. What Senior Management is Currently Doing to Improve the R&D/Marketing Relationship

| Views of Marketing and R&D | Number of Responses |
|---|---------------------|
| Marketing's Views | |
| • Nothing or very little. | 14 |
| • Establishing business teams, emphasizing team teamwork. | 7 |
| • Trying to improve communications between R&D and marketing | 6 |
| R&D's Views | |
| • Trying to team up R&D and marketing through product line management and business teams. | 7 |
| • Encouraging the R&D design management to interact with marketing. | 6 |
| • Not much at all. | 5 |

Table 13. Major Barriers in Achieving an Effective Integration of Efforts Between R&D and Marketing

| Views of Marketing and R&D | Number of Responses |
|--|---------------------|
| Marketing's Views | |
| • R&D's lack of appreciation of customer needs and competition. | 39 |
| • Inadequate communications. | 19 |
| • R&D's lack of respect, trust and understanding of marketing. | 13 |
| • There are different goals and priorities. | 13 |
| • Lack of confidence due to recent failures. | 10 |
| R&D's Views | |
| • Inadequate communications. | 16 |
| • Marketing's shallow knowledge of technical product requirements. | 9 |
| • Organizational structure. | 9 |
| • Lack of sufficient resources. | 9 |
| • Marketing's lack of long-run planning and direction. | 8 |

Table 14. How Marketing and R&D Are Trying to Improve Their Relationship

| Views of Marketing and R&D | Number of Responses |
|--|---------------------|
| Marketing's Views | |
| • Trying to team work with R&D, form joint committees, and get more involved with R&D in activities. | 27 |
| • Improving its communications with R&D. | 22 |
| • Nothing! Ignoring it. | 14 |
| • Try to implement the product management process. | 5 |
| • Trying to educate and train marketing personnel. | 3 |
| R&D's Views | |
| • Improving its communications with marketing. | 15 |
| • Increasing teamwork and its involvement with marketing. It provides ideas to marketing and asks for marketing's feedback on engineering plans. | 13 |
| • Forming the product-line management interface and joint committees. | 12 |
| • Providing marketing with better product specifications. | 5 |
| • R&D conducts more customer contact in product design, planning, and development stages. | 5 |

effective integration between the two departments. R&D also cited communications and marketing's lack of product orientation as the most important reasons for an effective interface. Table 13 represents a summary of most important barriers to an R&D/marketing interface in the telecommunications industry cited by R&D and marketing managers.

To alleviate the problem, both divisions indicated their efforts in attempting to improve their communications and to emphasize teamwork as shown in Table 14.

What Can Marketing, R&D and the Senior Management Do to Achieve an Effective R&D/Marketing Integration?

R&D and marketing respondents were asked to explain their opinions on:

1. What they believe their own group could do to improve relations with the other group,

2. What they believe the other group could do to enhance relations with their group and
3. What they believe the senior management could do to achieve a more effective interface between the R&D and marketing groups.

The results are summarized in Tables 15-17.

On the self-evaluation issue, both R&D and marketing thought that improving communications was the single most important task they could undertake to improve relations with the other department.

When it came to suggesting ways for the other department to build a better relation with their own, marketing wanted R&D to become more market driven and try to improve communications with marketing on product applications.

R&D, on the other hand, wanted marketing to do a better job on market research and to cooperate with R&D in the early stages of product development. Table 16 depicts the most frequently cited actions R&D and marketing departments expect from each other to help improve the integration of the two divisions.

Table 15. R&D and Marketing Should Take the Following Additional Steps to Improve Their Relationship

| Views of Marketing and R&D | Number of Responses |
|--|---------------------|
| Marketing's Views | |
| • Better communications and more involvement and interaction with R&D. | 40 |
| • Educate itself and increase its technical expertise. | 14 |
| • Provide reliable feedback and data on time. | 11 |
| • Improve performance to raise credibility and better information collection. | 7 |
| • More customer involvement and more fieldwork. | 4 |
| R&D's Views | |
| • Better communication and more interaction and involvement on a regular basis with marketing. | 26 |
| • Emphasize development and not only planning. | 6 |
| • Should push for a core R&D/Marketing team to collect data and meet with each other (product team concept). | 5 |
| • Learn more marketing. | 4 |
| • Should have a market-driven philosophy. | 4 |

Table 16. What Marketing and R&D Should Do To Improve Relations

| Views of Marketing and R&D | Number of Responses |
|--|---------------------|
| Marketing's Views | |
| • R&D should become more responsive to markets, competition and be more market driven. | 23 |
| • R&D should communicate with marketing with regard to applications. | 18 |
| • R&D should improve its communications with marketing; should be more involved with marketing and cooperate more. | 11 |
| • R&D should have higher quality, more dedicated and open-minded personnel. | 6 |
| • R&D needs marketing education. | 6 |
| R&D's Views | |
| • Marketing should learn more about customer needs, do better market research and better forecasts. | 11 |
| • Marketing should be involved with R&D in the early stages of product development and planning. | 11 |
| • Marketing should communicate more with R&D, should be more involved and should share information. | 9 |
| • Marketing should learn more about R&D and improve its technical knowledge. | 8 |
| • Marketing should be more responsive to R&D's requests for timely information. | 8 |

Finally, both R&D and marketing expect the senior management to push for more links between the two departments and to support more interaction between the two groups. They want the senior management to assume a more active role and to provide more resources for planning and interaction. The top five recommendations of marketing and R&D managers for the senior management are summarized in Table 17.

CONCLUDING REMARKS

In this research, 176 R&D and marketing managers from the telecommunications industry were surveyed to understand the degree of R&D/marketing integration in the telecommunications industry. We found that in none of the five telecommunications companies studied, had R&D/marketing integration

Table 17. What the Senior Management Should Do To Improve the R&D/Marketing Interface

| Views of Marketing and R&D | Number of Responses |
|---|---------------------|
| Marketing's Views | |
| • Push for stronger link between R&D and marketing. | 10 |
| • Improve communications within and between the two departments. | 9 |
| • Assume a more active role. | 7 |
| • Clarify responsibilities, roles and objectives. | 6 |
| • More strategic planning. | 3 |
| R&D's Views | |
| • Support more interaction between R&D and marketing in all steps (product planning, design, development, and so on), support the joint task force. | 11 |
| • Provide more resources for planning and interaction. | 5 |
| • Senior management should be more involved and have the middle management be more involved. | 3 |
| • More emphasis on long-term planning. | 3 |
| • Stress technical training/education for marketing. | 3 |

been effectively achieved. Based on findings in other studies, the problem seemed to be prevalent in the overall high-technology industry and is not specific to the telecommunications companies.

The trend in recent years, however, seemed to be positive and most respondents perceived the relationship between the two groups to have either improved or to have stayed the same. Lack of effective communications and involvement were cited as the most important barriers to effective integration. Senior management did not receive a very positive score for their attempt to effectively manage the R&D/marketing interface and most respondents requested greater involvement from them.

On the positive side, both groups indicated their endeavor to improve the relationship and that they were attempting to build more effective lines of communication between the two departments.