

BUSINESS MARKETING - TECHNOLOGY FOCUS
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Lecture 32 : Marketing - R&D interaction

Hello, I am Jayanta Chatterjee from IIT Kanpur. We are continuing with our sessions on B2B business to business marketing, industrial marketing with technology focus. Our current sessions deal with market orientation and cross-functional marketing R&D interaction. We have in the previous session discussed in detail about market orientation and we are now focusing on the cross-functional, particularly marketing and R&D interaction.

Prioritize Scanning Efforts by Strategy Type: Analyzers (Fast Followers)

- Bring out improved or less expensive versions of products introduced by Prospectors
 - Simultaneously defend core markets and products
- Information focus:
 - Closely monitor customer reactions to Prospectors' offerings
 - Monitor competitors' activities, successes, and failures
- Limit new product introductions to categories that have shown promise in the marketplace

This is where we were at the end of the previous session where we looked at the kind of information need and knowledge transfer needed by the pioneers and then we were discussing about the same needs for the fast followers.

So, fast followers as we know focus on the pragmatists as opposed to innovators and early adopters. So they bring out improved or less expensive versions of products that originally introduced by the prospectors or the pioneers. So, they simultaneously defend a core market as well as they explore growth in new markets. So, their information focus

closely monitor customers reactions to pioneers or prospectors offerings and they at the same time monitor competitors activities successes and failures.

So, they limit new product introduction to categories that have shown promise. So they are not as bold risk takers as the prospectors or the pioneers. They are far more cautious.

Prioritize Scanning Efforts by Strategy Type: Low Cost Defenders (Operationally Excellent)

- Provide quality products or services at the lowest overall cost
 - Generally less technologically sophisticated product lines
 - Role of technology is in process/operations
- Information focus: Competitor orientation:
 - Competitors are a benchmark against which prices, costs, and performance are compared

And then we have other two types of strategy archetypes that we have discussed in a previous session. So, the third archetype is the people who focus on operational excellence.

They are the low cost defenders. So, as opposed to the prospectors and fast followers, these low cost defenders gaining their strength from operational excellence provide quality products or services at the lowest overall cost that gives them lot of strategic pricing maneuverability generally their products may be less technologically sophisticated but their competition benchmarking will be as prominent as in the case of the previous two types and so they continue to benchmark against price, cost and performance of the competitors. So, they try to focus actually they are price warriors usually and they are able to do that because they have operational excellence which allows them to have the lowest cost in the industry.

So, they focus on the other types which are they are also defenders.

Prioritize Scanning Efforts by Strategy Type: Differentiated
Defender (Customer Intimate)

- Focus on customer value for individual/niche segments
- Information focus:
 - Skilled at segmentation to identify customer segments that value superior quality and service
 - Closely monitor customer satisfaction
 - Identify opportunities to increase share of customer's wallet
 - Analyze reasons for customer defections
 - Assess customer profitability

But they are differentiated defenders as opposed to the low cost defenders. This is the fourth strategy archetype as we have discussed before. They focus on customer's value for individual niche segments. Their information focus, therefore, is on skilled customers segmentation to identify customer segments that value superior quality as well as service. So, they are trying to defend but in a differentiated fashion by virtue of their superiority in product and service.

They closely monitor customer satisfaction and identify opportunities to increase share of the customer wallet and they analyze the reasons for customers defections, they analyze the reasons for defections of their own customers as well as competitors customers and that is how they actually derive their competitive strategy. So, these are the four types strategy archetypes and their information needs, the sharing needs.

Cross Functional Interaction:
Marketing Interactions

- Marketing is a *boundary-spanning activity*
 - Effective marketing decisions are dependent on interactions with:
 - Personnel in other departments
 - External stakeholders

Now, in all of these, marketing has a crucial role to play because as we have discussed before, marketing is a boundary spanning activity and boundary spanning means they are at the boundary of the organization and the market, they are at the boundary of organization's contact with the competition and they are also at the boundary of all the other departments because the marketing in this kind of market oriented organization which we are discussing the kind of organization which have very good interaction and integration among all the different departments particularly marketing and R&D.

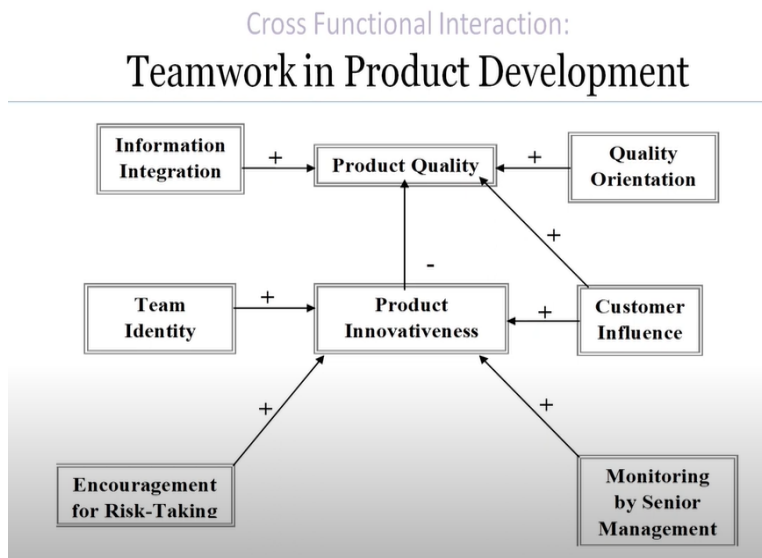
So, marketing here is at the boundary with all the other departments. So, they have lot of communication with other departments as well as with external stakeholders.

Contingency Theory of –Technology Focussed Marketing

- Greater inter-functional coordination
 - Associated with development of radical innovations
 - Reinterpretation of competencies
 - Recombines existing knowledge to generate breakthrough ideas

So, all the four strategy archetypes that we just now discussed depend on marketing to make the information flow happen in their desired fashion. So, in the technology focused marketing organization, greater interfunctional coordination are noted.

Because that makes radical innovation happen, that make fast following happen, that makes low cost defending happen, that makes differentiated defending happen.



So, in all of the six situations, we need the marketing to play a key role as a kind of information flow manager. And because that creates faster product development, lower

cost product development, and it appears as a key role in at every stage of the marketing process. So, this block diagram in front of you represents the teamwork in product development and the role of information and knowledge flow and the players in this that make this teamwork happen.

So, we are basically looking at information integration, quality orientation that leads to product quality, team identity, customer influence, all of that relates to the product innovativeness at the same time the product innovativeness relates to product quality and ultimately the product innovativeness means there is an encouragement for risk taking and monitoring by senior management. But remember what we are actually again and again emphasizing in these interactions and integrations to happen the marketing has a key role to play. We will just now see again some other roles or associated roles played by marketing.

Cross Functional Interaction:

Teamwork in Product Development

- **What determines the effectiveness of team interactions?**

1. Communication
2. Team Orientation
3. The Reward System

Like for example, team interaction, interaction among the different parts of the organizational departments. We obviously need communication, team orientation and appropriate reward system just now we discussed.

Teamwork in Product Development

- **Communication. Teams must:**
 - Simultaneously cooperate and compete
 - Harness diverse functional perspectives
 - Reduce language barriers across functions
 - Engage in constructive conflict resolution

All that to be there to make these things to happen. So, for example for good communication the team must simultaneously cooperate as well as compete because in many organizations particularly technology focused organizations often two or three different types of product developments will be internally encouraged to compete for resources with each other and so that the best will win. So, there will be therefore flow of communication is extremely important here so that silos do not appear, barriers do not appear so that the simultaneous cooperation as well as competition internally can happen because we are trying to harness diverse opportunities and diverse functional perspectives. And that means that we have to engage in constructive conflict resolution. Again in all of these we expect the marketing department to play a leading role.

Teamwork in Product Development

- **Team Orientation**

- Leaders with a clear set of values
- Confidence in other team members
- Reward system promotes organization (not individual) performance

The team orientation of course needs leaders with clear set of values. We need confidence in each other, we need trust among the different team members and of course we need the reward system which should promote teams and organizations and not always the individual.

Teamwork in Product Development

- **Reward System**

- Reward team as a group; split:
 - Equally amongst members –or-
 - Based on position
- Reward individual team members
 - Process-based: tied to procedures
 - Outcome-based: tied to bottom-line

Of course there will be some situation like for example the field marketing people, the field sales people, there the individual contribution is very clear and there we may have some reward systems which are individual based, but in the engineering department, in

the R&D department, in the technology and marketing liaison role, what we call the internal marketing functions, we may actually focus on group reward systems.

Cross Functional Interaction:

Teamwork in Product Development

- Findings on Reward Systems
 - Individual vs. Group
 - If an individual's contribution to the team is easily evaluated, then position-based rewards are best;
 - If individual's contribution is not easily evaluated, does not mean company should use equal rewards—
 - Rather, invest in monitoring to measure individual contribution to team.
 - Outcome vs. Process
 - For long, complex projects, used outcome based rewards, including employee stock options

So, these two types of reward systems one in which individual contribution is rewarded like in field sales or field marketing and in all the other cases we have the group or position based reward system because there we focus on long complex projects where outcome based rewards are more appropriate.

So, what we are trying to say is that not only we need the top management encouragement, the marketing department to work as a shepherd of communication and the flow to be maintained among all the different departments. It must be complemented by the proper managerial reward system because they should not work at cross purposes.

Cross Functional Interaction:
R&D – Marketing Interactions

- Cross-functional Marketing and R & D collaboration particularly important in high-tech firms
 - Associated with greater new product success
- Need for R&D-Marketing integration greater when:
 - Innovations are complex
 - Environmental uncertainty is higher
 - Product development is in the early “fuzzy front end”

This cross-functional marketing and R&D collaboration very, very critical for high-tech firms. In fact, for all technology-focused, technology-enhanced activities, we need this because the technology-focused companies are very dependent on new product flows.

So, the innovation and new product flows depend on this cross-functional integration and that is why we are devoting these two sessions to this particular discussion. The need for R&D marketing integration in fact is greater when innovations are complex and the environment situation is uncertain and the organization has a continuing focus on the so-called fuzzy front end or that what we call the pioneering stage of the product life cycle, early stage of the product life cycle which is sometimes called the fuzzy front end because situations are very fluid in this kind of industry at that kind of product development stage and there again the marketing and their close communication with the R&D and technology departments play a very crucial part.

Cross Functional Interaction: **R&D – Marketing Interactions**

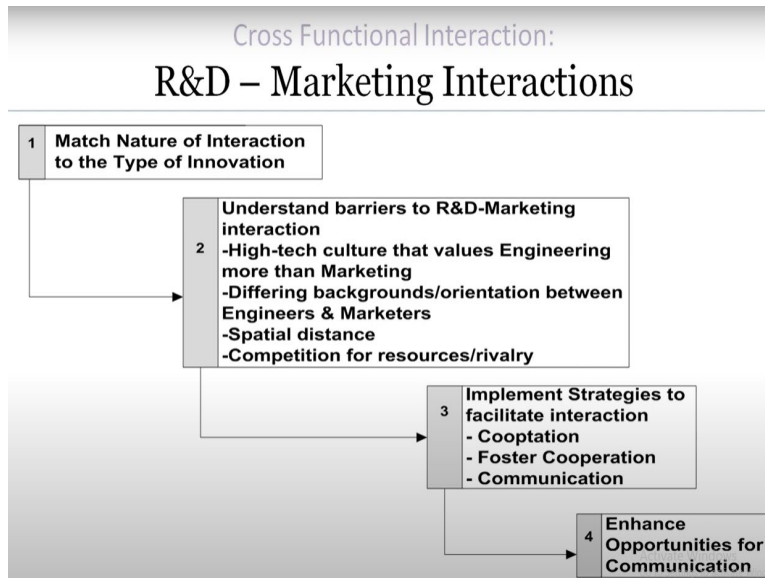
- Rivalry between R&D and Marketing:
 - Reduces the use of information
 - Contributes to failure
- Roles:
 - Marketing brings the voice of the customer into the development process
 - R&D brings the knowledge of what is technically feasible
 - Both participate in customer visit programs, etc.

Because we have to at every stage take care that no rivalry develops between R&D and marketing because that is quite possible to happen as we will just now see because the expertise in R&D and expertise in marketing, both are very valuable but they are a little different. They are related but different in nature and that may actually sometimes create interdepartmental rivalry and we have to in this kind of organization take good care that that does not happen because that will reduce the information flow, knowledge sharing and that will contribute to failure.

Because the most important part is that the marketing department brings the voice of the customer into the development process. In today's organizations, particularly technology focused organizations, marketing departments are not away from the product development. They are actually an integral part of the product development team.

They are all the time bringing in the development process the customer voice and they are liking, they are disliking and prototypes are tested, minimum viable products are tested and the feedbacks are brought in so that the final product can be developed. So R&D is always focusing on what is technically feasible. And marketing is always focusing on what really makes sense for the customer, what brings value to the customer's problem-solving process. And therefore, both must closely work together.

In fact, in technology-focused organization, both are customer facing functions, not product development is an internal function and marketing is an external function. They work hand in hand. They are together in front of the customer. They are together back inside the organization.



So R&D and marketing interactions are to be matched. The barriers are to be understood and resolved. And high-tech culture that values engineering more than marketing is sometimes detrimental. So, we have to understand the backgrounds and orientation between these two departments and often actually we have to encourage co-optation, faster cooperation, foster cooperation and communication flow.

Contingency Theory of High-Technology Marketing

Tailor the nature of R&D-Marketing interaction to the type of innovation

- For Breakthrough Products, Marketing-R&D interaction:
 - Assess market opportunities
 - Determine what industry/market segment company should compete in
 - Set market development priorities
 - Assess desired product feature set

Generally, R&D takes the lead role

And we will just now see what are the differences and how do we manage different situations and different, sometimes R&D will take lead, sometimes marketing will take lead.

So, for breakthrough products, marketing and R&D interaction will assess market opportunities, determine what the industry market segment the company should engage in. They will look at market development priorities. They will assess the product feature set to start with and in the final form. Generally, in this process, the R&D will take lead. Whereas, for incremental innovation, the focus will be on commercialization, on finishing the minimum viable product into its final form. Here, R&D will be assisting marketing strategies, marketing materials, collaterals, but the lead will be played by marketing.

Contingency Theory of High-Technology Marketing

- For Incremental Innovations, R&D-Marketing interaction:

- Establishes direction for commercialization
- R&D assists with marketing strategies and materials

Generally, Marketing takes the lead role

So, what we are saying is that this is a constantly changing role as the product life cycle goes on. At some stage R&D is leading, subsequently marketing is leading and these roles keep on playing.

R&D – Marketing Interaction: Barriers to Collaboration

Different Orientations Between R&D and Marketing Personnel

	R&D	Marketing
Time Orientation	Long	Short
Projects Preferred	Breakthrough	Incremental
Ambiguity Tolerance	Low	High
Department Structure	Informal	Moderately Formal
Bureaucratic Orientation	Less	More
Orientation to Others	Permissive	Permissive
Professional Loyalty	Profession	Firm
Professional Orientation	Science	Market

So, just like in a fluid and flexible football team, people go up and down the field all the time and roles are interchanged often even to confuse the competitors and this is something, this kind of agility, this kind of flexible changing of positions are possible and must be practiced because we should not allow these different orientations between R&D and marketing personnel to harden. We have to retain the flexibility so that they can

change their roles. Because as such, by the very nature of their jobs, their time orientations are different because R&D focuses more on the long-term marketing wants immediate results as well as long-term results. So the projects preferred by R&D are the breakthrough type of products, projects whereas marketing likes incremental projects.

The ambiguity tolerance in case of marketing will be high because they are dealing more with the external world normally but what we are trying to say is that these traditional difference in orientation between R&D and marketing personnel we may not actually totally accept or allow to harden in good, well integrated organizations where marketing and R&D are constantly interacting and that we achieve by interchanging their roles transferring people from one activity to the other activity.

R&D – Marketing Interaction: Achieving Integration

- **Formal systems specify marketing role in new product development**
- **Informal Techniques:**
 1. Co-optation
 2. Cooperation
 3. Communication
 4. Constructive Conflict

So, that these are the called, we call these informal techniques as co-optation that means one type of person will be co-opted in the other kind of function. So, marketing people will be co-opted by R&D, R&D people will be co-opted by marketing that happens more often than the other thing.

The R&D people they go out in the field and work with marketing side by side in front of the customer, but ideally we would like both way flow possible. So, that the cooperation is really feasible and really takes place, communication flows freely and the conflict is always constructive conflict.

R&D – Marketing Interaction:
Achieving Integration

- **Co-optation** - merge R&D/Marketing interests:
 - Build informal networks
 - Gain product knowledge and credibility
 - Build consensus through questions and subtle influence
 - Form strategic coalitions
 - Work on minor improvements to products outside of R&D

So, that's what we were meaning by co-optation, building of informal networks and product knowledge credibility will be shared on both sides, formation of strategic coalitions. And even marketing may be working on minor improvements of the products even outside R&D.

R&D – Marketing Interaction:
Achieving Integration

- **Cooperation** - Enhanced by:
 - Physical co-location of Marketing and R&D
 - Job rotation of personnel across functions
 - Informal cross-functional networks
 - Decentralized organizational structure and tolerance for risk; joint reward systems

So, cooperation will be enhanced by physical co-location. In many high-tech organizations, technology-focused organizations, it is always desired that the marketing and R&D and product development teams are co-located so that there are more what we call around the water cooler. That means there are more informal interactions and more

exchange of tacit knowledge through social interaction because there is a famous model called the Seiki model where we look at this knowledge flow as socialization, externalization, S.E., internalization, and integration. So this process is often helped.

R&D – Marketing Interaction: Achieving Integration

- **Communication**

- Moderate amount of interaction is optimal
 - Must exceed minimum threshold
 - Too much interaction may exacerbate conflict and result in information overload
- Formal dissemination enhances credibility
 - Informal channels provide openness and spontaneity

This knowledge flow process, knowledge management process often is helped by co-locating the teams together and that obviously makes the communication free flowing that actually discourages knowledge holding, information holding and that actually makes the expectations about inter-departmental communication free flowing.

R&D – Marketing Interaction: Achieving Integration

Communication (Continued)

- Information-sharing norms:
expectations about how departments communicate
 - If marketing managers identify more with the company (than with the marketing function), they communicate more

In fact, it has been found that in this type of integrated organizations, the marketing personnel identify more with the whole organization and the total perspectives rather than with the departmental parochial interests. This is a very interesting observation that has been made by many researchers and in organizations like Intel or organizations like AMD or organizations even like Microsoft. We really see this free flow between marketing and R&D and product development really happen and we see marketing people who are connectors as opposed to parochial landlords.

R&D - Marketing Interaction: **Achieving Integration**

Communication (Continued)

- Integrated goals – organization's goals take precedence over departmental goals
 - Even if marketing managers identify strongly with the marketing department, they communicate more when integrated goals are stressed
 - Caveat: Such marketing managers may use coercion to gain R&D compliance
- Implications: Encourage information sharing norms and set integrated goals

So, finally we are talking about developing integrated goals. That means the organization goals take precedence over departmental goals. And even if marketing managers identify strongly with the marketing department, they communicate more with when integrated goals are stressed. So this is the two points. true boundary spanning function that is performed by the marketing department.

So, that brings us to the conclusion of our session on market orientation and marketing and R&D, marketing and technical, marketing and product development, functional integration for the growth of technology focused, technology dominant organizations. Thank you.