

Role of Research and Development in Product Innovation; A CORRELATION STUDY

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This study highlighted the role of research and development in the product innovation. The study was conducted from October till December; 2008 the Sample chosen for the study is 70 employees of UNILEVER companies. The factors affecting product innovation were identified; as core competencies (0.876), competitive edge (0.461*), profit (0.136*), market share expansion (0.715**). Analysis showed immense support for positive relationship between R&D and product innovation; greatly affected Technological advancement, Attitude toward new technology, Organizational structure, Production capacity respectively. All these results are statistically significant thus providing rigor and generalizability in research. This exploratory study suggests for the positive relationship between information technology and salesperson performance*

Field of research: Human Resource Management

1. INTRODUCTION

The research and development view of the firm contributes to the management of product development by highlighting how different functional and integrative capabilities affect process efficiency and product effectiveness. Capabilities aim at deploying and coordinating different resources (e.g., Amit & Schoemaker, 1993; Grant, 1996; Prahalad & Hamel, 1990; Teece, Pisano, & Shuen, 1997), and they reside in routines that are intrinsically intangible (e.g., Conner & Prahalad, 1996; Itami & Rohel, 1987; Kogut & Zander, 1992; Leonard-Barton, 1992; Winter, 1987).

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Product development is critical because new products are becoming the nexus of competition for many firms (e.g., Clark & Fujimoto, 1991). Product development is also important because, probably more than acquisition and merger, it is a critical means by which members of organizations diversify, adapt, and even reinvent their firms to match evolving market and technical conditions (e.g., Schoonhoven, Eisenhardt, & Lyman, 1990)

2. Literature review

Technological capabilities are a first important driver of product development outcome. In fact, the presence of R&D and manufacturing routines can positively affect rent generation (Camuffo & Volpato, 1996; Hayes, Pisano, & Upton, 1996; Hayes, Wheelwright, & Clark, 1988; Helfat, 1994; Henderson, 1993). Besides R&D and manufacturing, technological complementarities are another dimension of functional capabilities related to technology. Previously accumulated technological knowledge is, for instance, an important driver of organizational rent (Helfat, 1997; Tripsas, 1997), even if specific capabilities deploying this knowledge still have to be linked to the efficiency of the innovation process.

Marketing capabilities concerning the screening, use, and dissemination of market information can represent another valuable functional source of knowledge (Day, 1994; Hunt & Morgan, 1995). In this regard, research techniques employed to capture customer needs, wants, and preferences are a first dimension of marketing capabilities used in product development. Leonard-Barton (1995)

Lansiti (1997) and Pisano (1994) highlight the integration of different internal sources of technological knowledge (i.e., R&D, design, engineering, and manufacturing) as a primary driver of lead time and productivity. More broadly, Leonard-Barton's longitudinal analysis of Chaparral Steel shows that a firm can improve the product development outcome by widening the internal integration from the project team to the entire organization through the minimization of vertical and horizontal boundaries (Leonard-Barton, 1997)

The literature on product development continues to grow. The research is varied and vibrant, yet large and fragmented. Organizing the burgeoning product-development literature into three streams of research: product development as rational plan, communication web, and disciplined problem solving. Second, synthesize research findings into a model of factors affecting the success of product development. The model highlights the distinction between process performance and product effectiveness and the importance of agents, including team members, project leaders, senior management, customers, and

suppliers, whose behavior affects these outcomes. Third, indicating potential paths for future research based on the concepts and links that are missing or not well defined in the model.

Product development is thus a potential source of competitive advantage for many firms (Brown & Eisenhardt, 1995). Product development is also important because, probably more than acquisition and merger, it is a critical means by which members of organizations diversify, adapt, and even reinvent their firms to match evolving market and technical conditions (e.g., Schoonhoven, Eisenhardt, & Lyman, 1990). Thus, product development is among the essential processes for success, survival, and renewal of organizations, particularly for firms in either fast-paced or competitive markets factor affecting success of product development

This rational plan perspective emphasizes that successful product development is the result of careful planning of a superior product for an attractive market and the execution of that plan by a competent and well-coordinated cross-functional team that operates with the blessings of senior management. Simply put, a product that is well planned, implemented, and appropriately supported will be a success.³

The results of these early studies highlight the importance of external communication to success. Specifically, these studies observed the presence of "gatekeepers"-(i.e., high-performing individuals who also communicated more often overall and with people outside their specialty) (Allen, 1971).

Other authors have built on this early work by Allen and colleagues. For example, the content of external communication has been examined closely by Ancona and Caldwell (1990, 1992a, b).

3. Methodology

The sample study used tells the variability and reliability of the biographical data of the respondents. The procedure used to gather data is the hypotheses and the statistical techniques used to analyze the data

Instrument

Primary Data sources were themselves the suppliers of the Unilever who are working in the region of Rawalpindi/Islamabad the data for the role of research and development for the product innovation, the main instrument for primary data collection would be questionnaire.

Secondary data would be collected through journals, official records. The qualitative data is also determined through observations, semi structured interviews, articles and recent research papers.

Procedure and Statistical Methods

70 questionnaires were distributed among the house officers out of whom 45 were responded appropriately giving an 85% response which is acceptable to make this study rigorous and generalizable. The obtained data is analyzed through Statistical Package for Social Sciences (SPSS) version 16. The statistical methods involved those of inferential statistics (Pearson Correlation) for the predictors of product innovation

4. Result

A Correlation between Dependent & Independent Variables

A statistical concept that shows the tendency of two or more numerically valued random variables to change their values at the same time, either in the same direction (positive correlation) or opposite directions (negative correlation).

Table 1: Correlation matrix

Product innovation R&D		Core competencies	Competitive edge	Profit	Market share expansion
Technological advancement	Pearson Correlation	0.876*	0.461*	.136*	.715**
Attitude toward new technology	Pearson Correlation	0.461**	0.71*	0.16*	0.361**
Organizational structure	Pearson Correlation	.136*	0.34*	0.75*	.287**
Production capacity	Pearson Correlation	.715**	0.361*	.287*	0.62**
	N	70	70	70	70

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

According to matrix the R&D variable such as increase in technological advancement is highly positively correlated with product innovation variable such as core competencies (0.876*), competitive edge (0.461*), profit (0.136*), market share expansion (0.715**). The second variable of R&D the positive attitude toward new technology is positively correlated with product innovation variable such as core competencies (0.461**), competitive edge

(0.71*), profit (0.16*), market share expansion (0.361**). Similarly the third variable organizational structure is highly positively correlated with product innovation variable such as core competencies (0.136*), competitive edge (0.34*), profit (0.75*), market share expansion (0.287**). Like wise production capacity is highly positively correlated with product innovation variable such as core competencies (0.715**), competitive edge (0.361*), profit (0.287*), market share expansion (0.62**) and this correlation is significant at 0.05 and 0.01 level. The data demonstrate strong support for the hypothesis that the use of R&D increase in the product innovation for the organization.

5. CONCLUSION AND RECOMMENDATION

On the basis of the survey results it is seen that the R&D positively role in the innovation of the product. As with the increase the use of R&D the core competencies level increases beside this competitive edge, profit, and market share also expand, with the use of R&D organization is able to get competitive edge, this also help organization to move profit to the peak, as the organization invest in R&D this will help in expanding market share.

Understanding of how senior managers affect development is incomplete. They are consistently found to be important contributors to project success However, the management-related concepts such as vision, subtle control, and even support are vague. There is also little understanding of the links between product effectiveness and the creative processes by which senior managers and others match firm competencies with market needs to create an effective product concept. This process has been virtually unexplored.

Organization need to be practiced its employees familiar with the new technology, there must be flexible organizational structure so that organization is able to mould itself according to the latest information

6. References

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