

An Investigation into Technology Entry Strategy

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Thesis Summary

The last three decades have seen a rapid proliferation of literature in the area of strategic planning. The concept of strategy has grown more complex with a rapidly changing environment and a better understanding of the subject. From the situational analysis presented in the preceding decade, the 1970s saw the emergence of a large number of planning and forecasting models based on a few variables, around which entire theories of strategy were constructed.

The early 1980s saw the emergence of the concept of competitive advantage and of the crucial role of technology in providing it with the needed thrust as one of the dominant aspects of strategy.

Technology-related literature in the 1960s was marked by a great deal of proliferation in the area of specialised technological issues related to functional areas, such as R&D personnel, investment in R&D projects, methods of control for R&D management etc. However, literature focusing on the relationship of technological issues in strategic decision-making was scarce. The 1970s witnessed work by several pioneer researchers, which brought into the purview strategic linkages related to the economic, manufacturing, organisational and entrepreneurial considerations of technology. Yet scant attention has been paid to literature incorporating technological considerations in the business-strategy area. The pioneer research in this area has been done by Ansoff and Stewart, keeping in view the environment in the technologically-advanced nations. Within the Indian context, steps like opening up the economy to more imports, the recent signing of large number of collaboration agreements, and greater liberalisation in licensing norms have provided further impetus to the use of technology as a powerful weapon in the hands of the management. Hence, it had become pertinent to develop a conceptual framework integrating technology to business-strategy while keeping in view the realities of the Indian environment.

The first objective of this study was to develop a definition of high and low technology in the Indian context. The second objective was to understand why firms choose different technology entry strategies, and how a set of variables changes systematically with a change in market-entry strategy and the level of technology used by the firm.

Both questionnaire and case study methods were used to collect data, which was then analyzed quantitatively as well as qualitatively. In all, 33 companies participated in the study, 9 in-depth case studies were conducted.

The scale used for the classification of technology also matched well with the perception of the operating executives relating to different components of the scale. Various technologies, classified as high and low on this scale, tallied with the perception of a large number of experts and executives.

The findings were in line with the hypothesised relationships – such as, early entrants pursue a skimming pricing policy, enter unserved market segments or position their products distinctively, while late entrants closely monitor competitors' activities, control inventories tightly and implement strong cost cutting measures through development of specialised raw materials.

We also found that high-technology companies had a strong commitment to technology, vis-à-vis low technology firms. Within high-technology companies, early-entrants had research orientation whereas late-entrants were development-oriented. Early entrants also displayed greater skill in the management of new technology.

Hypothesis related to promotion, brand image, delivery schedules, after-sales service, coupling, quality control and supplier support could not be proved due to inadequacy of data base. Hypothesis related to product and process development, production process structure and product standardisation could not be proved due to the very mode of industrialisation in the country – large-scale import of technology and lack of competitive pressure.

Implication of the study in managerial terms means early entrant must have a strong commitment to research and/or development, especially in the high-technology area. Pricing policies for early entrants can be generally of a skimming type, whereas late entrants should operate on penetration strategy through stringent cost control of operations. Late-entrants should preferably follow a segmentation/positioning strategy and maintain elaborate competitive intelligence systems. Public policy implication mean, by making use of this definition to classify technology government planners can formulate suitable licensing policy

to help serve the dual purpose of technology absorption and development as well as developing market competitiveness. The study would also be of help in developing programmes and policies to guide entrepreneurs and new firms in the high-technology area.

Being exploratory in nature, the study has raised many questions – such as what kind of technology-entry (T-E) strategy, in what kind of market, against what kind of competitors, for what kind of parent-company organizational skills is likely to succeed? – which remains to be answered. Further, influence of technology on organisational structure, reporting relationship and management style should be paid serious research attention. Also, in the public policy area, research should be conducted to understand how new and existing firms should be made to readily absorb technology, and how research advances from various research laboratories should be commercialised by the industry.