



Lead User Methods

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Managing Innovation

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Beyond articulating their unfilled needs to marketing researchers, potential users (or customers) of new products can also contribute valuable information regarding the solutions responsive to these needs. In this respect, LUs rather than the average user are crucial for the development of innovative products. LUs can be characterised by two elements:

1. LUs face needs that will be general in a marketplace, but they face them months or years before the bulk of that marketplace encounters them, and
2. LUs are positioned to benefit significantly by obtaining a solution to these needs.

LUs are an important information source for the development of new products with respect to three aspects: Firstly, they provide insights in future market needs. In particular in rapidly evolving markets, users at the 'front of the trend' of the technological development are most important to provide accurate information, which helps the innovating company to understand user needs and their corresponding solutions, which the majority of users will face tomorrow. In short, LUs serve as a need-forecasting laboratory for marketing research. Secondly, LUs have often developed own innovations related to these new market needs and can thus be regarded as an important source of innovative ideas. Thirdly, LUs who expect to obtain high benefits from a solution to a need can provide the richest information to marketing researchers; the greater the benefit a given user expects to obtain from a needed new product, the higher will be his investment in reaching a solution.

Empirical evidence shows that co-operations with LUs in the NPD process enhances market success and result in a reduction of both development times and development costs. Hence, it should become an important element of technology management to identify the right LU and to manage the interaction with the LU over the entire innovation process. Here, we will shortly describe the major steps of the LU approach for new product development, i.e. identification of LUs, generation of new products with LUs and testing LUs products.

Identification of LUs

Since LUs are defined as being trend-setters in the market, one must first specify the underlying technological and market trends on which these LUs have a leading position. It is suggested to ask industry experts about these important trends. In order to identify experts in the case of CAD systems for example, it would be possible to contact managers of CAD using companies and to ask the following questions: (1) Whom do you regard as the engineer most expert in CAD in your firm? (2) Whom in your company do group members turn to when they face difficult CAD problems? In addition, other means to detect and assess important trends in a company's competitive environment can be used — technological forecasting and environmental analysis, for example.

High expected benefits from the new product are the second important characteristic of a LU. Variables to measure the extent of expected benefits can include for instance:

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- Product development or product modification already undertaken by the user in order to improve the respective product or technology. High investment in these innovations is positively correlated with user expectations of related benefits.
 - Extent of user dissatisfaction with existing products. The degree of dissatisfaction is positively correlated with the expected benefits obtainable from improvements.
 - Speed of adoption or innovativeness. Highly innovative users which operate at the leading edge of technology expect higher benefits from new products. Here, the nature of a user's technology strategy influences the selection of appropriate LU.

Once trend and benefit indicators are specified, the market needs to be screened according to the above described criteria in order to identify a group of companies, which fulfils the requirements of a LU. Based on data from questionnaires mailed to potential users, it is suggested to group companies by means of cluster analysis. This procedure allows to find a subgroup of companies, which is at the leading edge of the trend being focused on and shows high expected benefits from solutions to their respective needs.

Generation of new products with LUs

New product concepts are developed in close co-operation with the LU. Here, the innovating company can draw on existing experiences of the LU with novel product attributes as incorporated in modifications of existing products or even new products created to meet their needs. The NPD process with the LU needs to be co-ordinated. For this purpose, joint development teams can be established in order to pool user solution content with the know-how of the innovating company. Furthermore, QFD can be used as a structured approach to develop the new product. Including the relevant functional entities (esp. R&D and Marketing) from both companies would reduce interface problems in the NPD process. Finally, it has been empirically found that LUs should be included in the early stages of the NPD process and that collaboration with the area of the innovation's usage (domain) on the user's side should be sought. Both activities enhance innovation success.

Testing LU products

The needs of today's LU may not correspond with the needs of those users which will make up a major share of the predicted market. Therefore, the product concept developed with the LU needs to be tested for the average user in the target market. This could for instance be achieved by means of CA.