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**A STUDY OF THE
PRODUCT DEVELOPMENT PRACTICES
OF SMALL MANUFACTURING COMPANIES
IN NEW ZEALAND**



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ABSTRACT

Companies' existing products are increasingly coming under pressure through competitive forces, changing market demands and rapidly advancing technologies. A continual stream of new products is required to maintain a competitive portfolio of products in the marketplace. Therefore, more and more attention is being focused on the systems that companies use to develop their new products. These systems involve the discipline of Product Development.

The aims of this study were to investigate the practice of Product Development in small companies in New Zealand and to study the effects of the New Zealand environment on the attitudes and undertaking of Product Development. Specifically, the objectives of the study were to investigate the Product Development process used and the techniques used for conducting Product Development; compare the New Zealand practice with those obtained from overseas studies; to assess the management, organisation and attitudes of managers to Product Development; and to investigate the outcomes of the companies' Product Development efforts.

The small companies in the manufacturing sector were the subject of the research and the food, electronics, and light engineering industries were selected to represent Product Development in this sector and to provide inter-industry comparisons. Eight-four companies responded to a questionnaire sent out nationally in April 1993.

The Product Development process used by the small companies was truncated, utilising on average 8 of the 13 prescribed stages of the process. This was due in part to a concentration on the physical development of the product, leading to the omission of vital stages such as marketing research and financial evaluations. Use of a more complete Product Development process was related to product and company success.

The stages in the Product Development process used by these small manufacturing companies were

Idea Screening
Preliminary Market Assessment
Preliminary Technical Assessment
Prototype Design and Development
In-House Prototype Testing
Customer Prototype Testing
Production Start-Up
Market Launch

The techniques used for conducting Product Development were simple and easy to use, particularly for the more intangible activities, thus providing simple information upon which managers make important development decisions.

In comparison with studies conducted in Canada and Spain, the use of the Product Development process was remarkably similar both in the type of stages undertaken and the number of stages undertaken suggesting there exists a 'base-level' of Product Development knowledge and understanding regardless of company demographics or geographics. The techniques of Product Development as used in New Zealand companies were more aligned to that used in Spanish small companies both in level of use and simplicity. The Canadian companies used fewer techniques but they tended to be more complex.

Company managers were found to play a crucial role in product development within their companies in terms of being actually involved in product development, generating new product ideas, and recognising the appropriate environment for development to occur. In these small companies usually only two people were involved in Product Development, the manager almost always was one of these people. The time awarded to developing new products was typically only five hours per week. Although the managers recognised the importance of Product Development, they had little resources to undertake it effectively.

Finally, the study found that these small companies were producing only moderate results from their Product Development efforts in terms of product success, innovativeness, the number of new products introduced, and overall company growth. Over simplistic Product Development methods and resource constraints were preventing companies from fully capitalising on their potential for innovation.

A more complete Product Development process, utilising techniques that provide and analyse more relevant information, and giving more attention, resources, and control to Product Development could significantly improve these small companies' performance in terms of developing and introducing new products. Overall, greater awareness of Product Development as a total system within the company, and disseminating the practice and benefits of Product Development is needed to effect change in the New Zealand small manufacturing sector.

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This thesis was initiated by the author in an attempt to overcome the general lack of awareness of the discipline in New Zealand and the virtually non-existent research literature on product development in this country.

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