Catering the New Product Development through Supplier Integration; the Role of Manufacturing Flexibility and Product Modularity

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Abstract

Dell is a prime example of those supply chains which have integrated suppliers for the purpose of responsiveness. Factually, the supplier integration may aid just in time, improved raw material variety, quality at low cost, and flexibility. This added flexibility provides the design flexibility, at early stages, as well as manufacturing flexibility at later stages. Additionally, the reduced cost of raw materials reduces the cost of new products; ultimately benefiting the new product developing lifecycle. However, since the enterprise-enterprise competition has evolved to chain-chain competition, supply chains struggle to balance the efficiency-responsiveness balance and scuffle to magnify their competitive advantage. There is the dire need to minimize the costs on all possible fronts, therefore, the approaches like standardization and modularity in manufacturing processes are becoming obligatory. Although previous studies have emphasized on the relationship between supplier integration and new product development, it is important to realize that the dynamics of the systems are not that simple and convoluted dynamics of this relationship are not fully explored yet. With this recognition, this study proposes a novel model to examine the relationship between supply chain integration and new product development via manufacturing flexibility, considering that product modularity may enhance the proposed relationship. Employing survey questionnaire technique, the data was collected from manufacturing, serving and process industries.
The inter-variable relationships of proposed model align well on theoretical grounds where Trust Theory and Product Modular Theory support the relationships. Results illustrate that manufacturing flexibility partially mediate the relationship between supplier integration and new product development performance. Manufacturing flexibility improve the integration process of supplier and make smooth the flow of goods. The moderation effect of product modularity between manufacturing flexibility and new product development performance was significant, however, in negative direction. Thus product

modularity needs to be improved in Pakistan for the successful new product development The proposed study does not only have theoretical implications but also can contribute at managerial level by helping managers to make strategic decisions in value chain.

Keywords:

Supplier Integration, New product development, Manufacturing Flexibility, Product Modularity

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