

## **Product Modularity, Collaboration and the Impact on Innovation Performance in Intra-Organizational R&D Networks**

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**Abstract :** The challenges of managing a large and geographically dispersed R&D organization have been further increasing during the past years, concentrating on the leverage of a geo-graphically dispersed body of knowledge in an efficient and effective manner. In order to reduce complexity and improve performance, firms introduce product modularity as one key element for global R&D network teams to develop their products and projects in collaboration. However, empirical studies on the effects of product modularity on innovation performance are really scant. Furthermore, some researchers have suggested that product modularity promotes innovation performance, while others argue that it inhibits innovation performance. This research fills this gap by investigating the impact of product modularity on various dimensions of innovation performance, i.e. effectiveness and efficiency. By constructing the theoretical framework, this study suggests that there is an inverted U-shaped relationship between product modularity and innovation performance. Moreover, this research work suggests that the optimum of innovation performance efficiency will be at a higher level than innovation performance effectiveness at a given product modularity level.

**Keywords :** modularity, innovation performance, networks, R&D, collaboration

**Conference Title :** ICIM 2015 : International Conference on Innovation and Marketing

**Conference Location :** London, United Kingdom

**Conference Dates :** October 23-24, 2015