

# Modularity and Interface Management: The case of Schindler Elevators

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## Abstract

Modularity refers to the scheme by which interfaces shared among components in a given product architecture are standardized and specified to allow for greater reusability and commonality sharing of components among product families. The management of innovation through modular product architecture strategies is gaining increasing importance for firms, not only in practice but also from a theoretical perspective. It is argued that the degree of modularity inherent in a given product architecture is sensitive and highly dependent upon the number of components and the interface constraints shared among the components, modules, sub-systems, and systems. This paper applies a mathematical model, termed *modularization function*, for analyzing dynamics and the degree of modularity of a given product architecture by taking into account the following variables: number of components, number of interfaces, new-to-the-firm component composition, and substitutability factor. The application of the modularization function is illustrated with two elevator systems from Schindler Lifts of Switzerland: traction and hydraulic elevators. The comparative analysis of the elevators captures the sensitivity and dynamics of product architecture modularity created by three types of components (standard, neutral, and unique) and two types of interfaces (fundamental and optional).

**Keywords:** Modularity, product architecture, interface management, elevator industry

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