

# A comparative analysis of new product development by Italian and Japanese manufacturing companies: A case study

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## Abstract

Based on survey data from Italian and Japanese companies, six measurement scales are developed for practices, process, strategic guide, and capabilities for new product development as potential determinants of its financial performance, that is, attainment of profit goals and revenue goals. By employing a regression model with a country dummy variable, the differential determinants of financial goals attainment between Italian and Japanese samples are estimated. A significant difference can be found in the impact of new product development capabilities on profit goals attainment only. Then, we evaluate the level of improvement in explanatory power by dividing the pooled sample into two and enabling regression coefficients to take different values, and find no evidences of the significant improvement. Technology and marketing capabilities concerning new product development are demonstrated to be overwhelmingly important to financial performance.

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## 1. Introduction

The development and introduction of innovative new products is one of the most important challenges for manufacturing companies facing uncertain and competitive business environments. An intermittent introduction of timely new products into market potentially contributes to sales growth and profitability improvement, which lead to a solid financial base for future growth of their businesses. From a perspective of competition, product and

process technology is often considered as one of the most important sources of core competence, which has a potential to improve reliability and attractiveness of a company's products and reduce its manufacturing cost (e.g. Hamel and Prahalad, 1994). New product development (NPD) based on technological competence is essential for almost all manufacturing companies regardless of their size, location, product area or market they serve.

This paper analyses the impact of practices, process, strategy, and capabilities of NPD comparatively between Italian and Japanese manufacturing companies on their financial goals attainment. The comparison between them is interesting for some

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reasons. As typical Italian companies are much smaller, and more creative or innovative than the Japanese counterparts. Based on the framework proposed by Filippini et al. (2003), Matsui et al. (2003) focused on the difference in NPD activities between two countries. On the other hand, they have similar business orientations and practices such as attitude toward human resources and close relationships with suppliers and customers. This paper intends to emphasize on the similarity of the determinants of financial NPD performance between these two countries, based on the relevant measurement scales of NPD activities. It contributes to making it clear what are common effects and what are country-specific effects of NPD activities upon financial performance.

## 2. Analytical framework and hypotheses

### 2.1. Analytical framework

The first step is taken by a simple analytical framework of NPD, which consists of (1) NPD practices, (2) NPD process, (3) strategic guide for NPD, (4) capabilities or competence concerning NPD, and (5) NPD performance (Fig. 1). NPD practices are concerned with many aspects of NPD activities such as levels of parts standardization and modularization, uses of platform logic and project team, characteristics of project managers, type of incentives, functional integration, and involvements of suppliers and customers. NPD process includes idea generation, concept development, new product concept test, preliminary design, process development, pilot production, and the level of phase overlapping between these phases. Strategic guide represents top management support and clear communication of well-defined strategy for new products, while NPD competence comes from not only technological but also marketing capabilities.

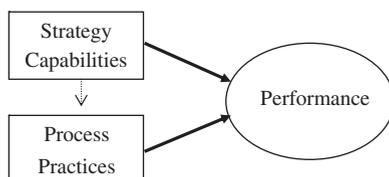


Fig. 1. Analytical framework of new product development.

### 2.2. Hypotheses

The analytical framework above leads to general research hypotheses on the determinants of performance as follows:

**Hypothesis 1.** Use of architecture in developing new products contributes to NPD performance.

**Hypothesis 2.** Close relationships with suppliers and customers in developing new products contribute to NPD performance.

**Hypothesis 3.** Concurrent approach contributes to improving NPD performance, directly in timing.

**Hypothesis 4.** Clear objectives and a shared strategy concerning new products lead to high NPD performance.

**Hypothesis 5.** Capabilities in marketing and technology development lead to high performance in NPD.

## 3. Research methodology and variables

The next steps of our research consist of designing a questionnaire, collecting data from those who are responsible for NPD projects in manufacturing companies, constructing measurement scales, and analyzing the data by statistical techniques. According to the analytical framework, the questionnaire is designed to include more than 50 question items covering: (1) characteristics of new products; (2) NPD performance; (3) NPD practices; (4) process of NPD; (5) new product strategic guide and internal environment; and (6) general demographic information. More than half of these question items are measured on a five-point Likert scale. The other questions are open-ended, quantitative, single-choice or multiple-choice from a checklist, or measured on a fixed sum scale. The respondents were assumed to be NPD department managers, NPD project managers, executives responsible for technology development, or top management particularly for small and medium sized enterprises.

### 3.1. Data collection

Data for this research were gathered from Italian and Japanese manufacturing companies producing mainly industrial goods, working in such sectors as industrial and commercial machinery, computer

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