

**NEW PRODUCT DEVELOPMENT PRACTICES OF THE U.S.  
CONFECTIONERY MANUFACTURERS: 2006 SURVEY PRELIMINARY  
FINDINGS**

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**Aslihan D. Spaulding<sup>1</sup>**

**ABSTRACT**

This paper reports on the new product development practices of the U.S. confectionery manufacturers. A mail survey method was used to collect data. Confectionery manufacturers, specifically, new product development managers listed in the Thomas Food and Beverage Marketplace were contacted. A donation to charity on behalf of the respondents was used as an incentive to participate in the study. Analyses of the data, including graphical, descriptive, cross-tabulation, and correlation were conducted using SAS and SPSS econometric softwares and Microsoft Excel. Preliminary findings of the survey are reported in this paper.

*Keywords:* New product development, confectionery industry, supply-chain management.

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## **INTRODUCTION**

Introduction of new products has been a challenging activity for the food industry for many years. It requires financial and human resources and it is very time sensitive. In the last two decades or so, the number of new food product introductions has soared. As the food industry became more aware of the importance of new products for a business' continuing success, as suggested by academic researchers and professionals in the food industry, an upward trend in number of new food product introductions became more noticeable (Cooper, 1994; Graf and Saguy, 1991; Griffin, 1997).

New product introductions have been used as a managerial strategy for growth and survival by many food manufacturers. As Dornblaser (2003) pointed out, number of new product introductions is not a measure of an organization's success or failure; however, it is important to see which companies consistently invest in new product development and marketing.

The competitive environment in which new food products are marketed is undergoing fundamental changes. Increased globalization, retail and manufacturer consolidations, changing nature of consumer needs, changes in technology, and increased competition have been the driving forces behind new product development activities. Manufacturers under pressure from these forces are required to develop and introduce new products quickly. Firms with "first to market" products usually capture the market, enjoy a high market share, and create barriers to entry for the competition (Helms and Ettkin, 2000; Smith and Reinertsen, 1998). Long term competitiveness can also be improved with reduced new product development cycle times (Sánchez and Pérez, 2003).

Speed to market has been the focus of many studies on new product development process management (Langerak and Hultink, 2006; Filippini, Salmaso, and Tessarolo, 2004; Buxton,

2000; Cooper, 1994; Ittner & Larcker, 1997). Recently, the focus of many academic and business studies has been now how fast a successful new product can be developed and introduced and how a speedy development process affects firm market position and market share. Quality of the development process and type of new product in terms of its newness to market and to company have an impact on how fast a firm can develop and deliver a new product.

Supply-chain management has been found as one of the determinants of how fast a new product can be developed (Gupta and Souder, 1998; Handfield et al., 1999; Hood et al., 1995; Spaulding, 2002). Coordination of efforts through supply-chain management allows firms to meet customer wants cheaper, faster, and better, thereby meeting the desired financial performance. The supply chain approach involves individual companies operating autonomously, and moving products to the next player in the chain: from source to supplier, to manufacturer, to distributor, to retailer, and to the customer.

The U.S. confectionery industry, with a value of \$27.9billion in 2005, has been the number one sector of the food industry in terms of number of new product introductions (Covino, 2006). Candy and gum ranked 3<sup>rd</sup> among food categories in 2004 following carbonated beverages and milk. Candy and gum also ranked 1<sup>st</sup> in snack categories in sales (Davis and Corcoran, 2005). There have been several studies of new product development practices in the chemical and electronic industries (Cooper, 1979; Booz, Allen, and Hamilton, 1982; Zirger and Maidique, 1990). Neither the confectionery industry, nor the food industry in general has received much attention from the new product development researchers. However, a similar survey on confectionery manufacturers was conducted by Spaulding in 2000.

## **OBJECTIVES**

This paper summarizes the preliminary findings of a survey on new product development and management practices in the U.S. confectionery manufacturing industry. The main objectives of this paper are:

- 1) To report current new product development practices of U.S. confectionery manufacturers.
- 2) To identify emerging trends in supply-chain management and new product development management.

## **METHODOLOGY**

A mail survey, which is a commonly used method of marketing research, was utilized to collect data. An updated list of U.S. based confectionery manufacturers was purchased from Thomas Food and Beverage Market Place. The survey procedure suggested by Salant and Dillman (1994) was followed. The estimated time frame for the survey mailing was approximately twelve weeks. As an incentive to participate in the study a donation to St. Jude Children Research Hospital on behalf of the respondents as well as results of the study are offered to the product development managers.

There were 1,080 U.S. manufacturers listed in the database purchased from Thomas Food and Beverage Marketplace. However, only 772 manufacturers had a correct address. First mailing included a cover letter, copy of the survey, and pre-addressed, pre-paid return envelope. A reminder postcard was mailed three weeks after the first mailing. A second mailing included a new cover letter, copy of the original letter, survey, and pre-addressed, pre-paid return envelope. Eighty-six surveys were returned with a response rate of 11.1 percent. However, sixty-one of the returned surveys included information on company's most recently introduced new product.

## **DATA ANALYSIS**

Data collected from the mail survey was entered into a computer database and analyzed using Microsoft Excel for graphical analyses and SAS and SPSS for econometric/statistical analyses.

Descriptive statistics was used to describe the results of each section of the questionnaire. Statistical significance tests were applied to analyze relationships between variables representing new product development management practices of confectionery manufacturers.

Survey respondents reported that the most emphasized type of product was Chocolate Candy (38 manufacturers) which was followed by Non-Chocolate Candy (30 manufacturers) and Snacks (8 manufacturers). Some manufacturers reported other types of products not listed in the survey (18 manufacturers) (Figure 1). Representative manufacturers ranged from very small to very large both in terms of annual sales and number of employees. Average annual sales of the responding manufacturers were in the range of \$10-20 million (Table 1) and average number of employees was 82 people at the location survey respondent was employed at.

Responding manufacturers indicated that, on average, 2% to 5% of their annual sales were spent on new product development process. Manufacturers reported a total of 610 new product introductions in 2005. Majority of these introductions were modifications (199), followed by new item in an existing product line (141) and innovative products (103).

We asked confectionery manufacturers to report on their most recently introduced new product. The most commonly reported type of product was new item in an existing product line (24), followed by modifications (13), new to market-new to company (9), new line (8) and innovative (7) (Figure 2).

Out of 61 manufacturers, 34 of them reported that they used cross-functional team in developing their most recently introduced new product. Manufacturers who used cross-

functional teams found cross-functional teams useful for developing 33 out of 34 new products. Manufacturers reported that they did not seek outside assistance for 22 new products. However, they did outsource some of the activities while developing the remaining 39 new products. Packaging, advertising, and prototype development were the activities where outside assistance sought the most. Business and financial analyses were conducted mostly in-house (Table 2).

The most ignored stage of the development process was the product use, field & market testing stage (50.8%) followed by the concept screening stage (37.7%). The confectionery manufacturers spent 9.2 months on average to develop a new product. The most of the time was spent on product development (5.6 months) and business analysis (4.7 months) stages and the least amount of time was spent on product use, field, market testing (3.2 months) and concept screening (3.3 months) stages (Table 3). Innovative products took 27.5 months on average to develop while modifications took only 3.8 months (Table 4). As the product became less innovative, less time was spent on developing it.

Some of the confectionery manufacturers (21) offered a straight salary as a financial compensation to their employees who were specifically involved in new product development process, whereas 12 manufacturers offered base salary and a bonus. Twenty-five manufacturers did not offer a direct compensation for an employee even if the product was a success. The most commonly used forms of financial compensation were cash bonus and salary raise for those offered compensation. Non-financial compensation plans included promotion and company award.

Customers were mostly involved at the product use, field, and market testing stage whereas supplier involvement took place mostly at the product development stage. Customers were not involved as much in business analysis stage of the process, while suppliers were not

active in the concept screening stage (Table 5). Supplier and customer involvement have stayed the same according to 38 and 40 manufacturers respectively, while 16 manufacturers reported an increase in supplier involvements and 17 manufacturers reported an increase in customer involvement (Table 6).

## **CONCLUSIONS**

This paper reported on preliminary findings of a survey conducted among U.S. confectionery manufacturers. New product development activities of the U.S. confectionery manufacturers were examined. Data on types of new products introduced, time spent on development activities, multi-departmental/cross-functional team use, customer and supplier involvement, outsourcing of development activities, and demographic information, including the size and experience of the firm, were reported. This paper summarized only preliminary results of the survey due to submission deadline. Survey is still being administered and an online version will be used to reach more manufacturers. In the follow-up report, detailed information on relationships between variables and their impact on new product development time will be presented.

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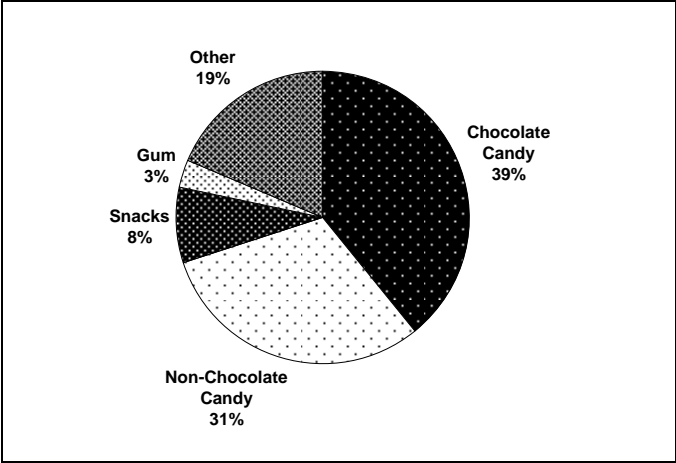
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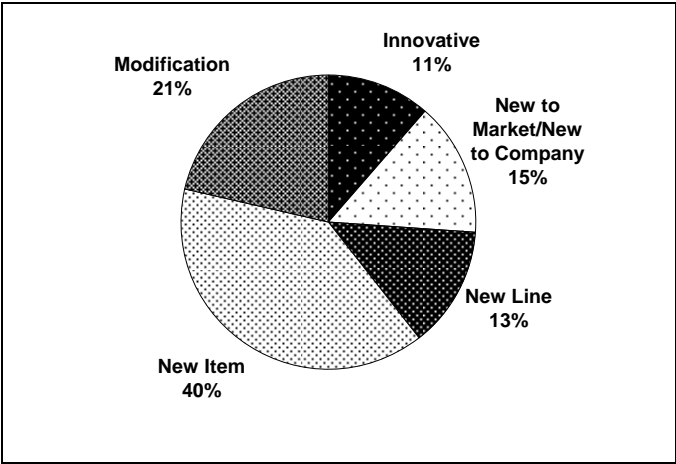
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**Figure 1. Product Category.**



**Figure 2. Product Type.**

**Table 1. Number of Manufacturers by Annual Sales.<sup>a</sup>**

<b>Annual Sales in \$</b>	<b>Number of manufacturers</b>
<b>less than 5 million</b>	27
<b>5 million ≤ 10 million</b>	6
<b>10 million ≤ 20 million</b>	8
<b>20 million ≤ 50 million</b>	5
<b>50 million ≤ 100 million</b>	5
<b>100 million ≤ 250 million</b>	3
<b>250 million ≤ 500 million</b>	1
<b>500 million ≤ 750 million</b>	0
<b>750 million ≤ 1 billion</b>	1
<b>more than 1 billion</b>	2

<sup>a</sup>Three new product managers did not report their company's annual sales.

**Table 2. Activities with Outside Assistance.**

<b>Outsourced Activity</b>	<b>Number of New Products</b>
<b>Packaging</b>	24
<b>Advertising</b>	9
<b>Prototype Development</b>	8
<b>Market Tests</b>	8
<b>Technical Analysis</b>	5
<b>Idea Generation</b>	4
<b>Other Activity</b>	4
<b>Distribution</b>	3
<b>Market Analysis</b>	3
<b>Legal Analysis</b>	2
<b>Business Analysis</b>	1
<b>Financial Analysis</b>	0

**Table 3. Average Time Spent on Each Stage of the New Product Development Process.**

<b>Development Activity</b>	<b>Time (month)</b>
Concept search	4.4
Concept screening	3.6
Concept testing	4.6
Business analysis	4.7
Product (prototype) development	5.6
Product use, field, and test marketing	3.2
Commercialization	4.2

**Table 4. New Product Development Time by Product Type.**

<b>Product Type</b>	<b>Total Development Time (months)</b>
Innovative	27.5
New to Market/New to Company	14.5
New Line	5.7
New Item in an existing company product line	7.6
Modification	3.8

**Table 5. Activities in which Customers and Suppliers were at least “Sometimes Involved”.**

<b>Development Activity</b>	<b>Customer Involvement</b>	<b>Supplier Involvement</b>
Concept search	22	19
Concept screening	28	9
Concept testing	23	14
Business analysis	27	6
Product (prototype) development	9	30
Product use, field, and test marketing	36	11
Commercialization	25	15

**Table 6. Trend in Customer and Supplier Involvement over the last Five Years.**

<b>Trend</b>	<b>Customer Involvement</b>	<b>Supplier Involvement</b>
<b>Declined</b>	1	2
<b>Stayed the same</b>	40	38
<b>Increased</b>	17	16