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THE IMPACT OF NEW PRODUCT ANNOUNCEMENT ON FIRM VALUE

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I. INTRODUCTION

The objective of the paper is to test the hypothesis that the stock market value of multinational corporations (MNC's) with well-established global network is positively affected by new product introductions and brand extensions. Because MNC's are different in a variety of ways, the response of each will also vary and as such it is proper to consider each industry separately. Accordingly, we select Procter and Gamble (P&G) as a clinical study. The methodology uses event-study analysis. Due to oligopolistic structure of the MNC's, mutual interdependence will be an issue. To capture this, the paper also investigates the impact of P&G' new product introductions and brand extensions on the stock value on Unilever and Colgate-Palmolive, its major competitors. To the knowledge of the authors such a study for P&G does not exist and thus the research fills in an important void in literature. Such studies can help MNC's assess how they adjust to a dynamically changing global landscape. The findings of the study will shed light on other MNC's determine their business strategy in a globalized world.

The choice of P&G is justified on two major reasons. First, P&G is good example for a typical MNC that has a well-established global network of operations in various product markets with both domestic and international links (Piezebos and Waarts 1994). P&G also has had significant acceleration in its new product introductions and brand extensions over the past 10 years. And second, consumer product companies operate in an extremely competitive environment when it comes to share of market. To gain market share, such companies often resort to cutting their product prices and even undersell their competitors (Wheelen and Hunger 1992). While might help in the short term by building volume, it can hurt the company operating earnings. Perhaps, firms engaged in consumer products perform better if they build market share by developing a continual stream of new, value-added products (Wheelen and Hunger 1992). Introduction of new products and brand extensions offer a way to consumer product firms to succeed.

Development plans for new products are often undertaken aiming at new market which can impact the long-run profitability of the firm. Schmalensee (1982) presents how product quality can create long lasting advantages to pioneering brands (p. 349). Being first in offering a new product, firm can establish a foothold that creates an advantage over its competitors. Regardless of the particular strategic objectives, the presumption is that management has information that it will develop a product, and it perceives that it will be better off with the new product than without it. The focus of this study is not on the new product, per se, but rather the dissemination of information about the product.

A new product announcement may signal the investment community about the future direction of the firm and also its opportunities. In some cases an announcement may confirm an anticipated outcome while in other instances it may bring surprise. Such disclosures likely will influence investor perception of the firm's financial performance, and thus the value of the firm (Doukas and Switser 1992). The question often raised concerns the extent to which it may affect sentiments and subsequent behavior of the shareholders. With the increased emphasis on "value based management" the end game for all business seems to be to maximize shareholder value (Copeland 1994) .The implication is simple: In assessing the value of the firm, management must take into consideration the possible effect of their marketing strategies.

International finance literature predicts that multinational corporations (MNC's) apply the value based concept for arbitrage in financial markets. They do so by shifting factors of production across borders and by transferring resources globally by combining production, research, marketing, and financial units and that such value is determined by the structure of the MNC's network (Malnight 1996). Finance literature predicts that the differences in network structures will have differential impacts on the value of MNC's. MNC will vary by degree depending on the composition of its global network i.e., the degree of their internationalization (Errunza Senbet 1984; Morck and Yeung 1992; and Doukas and Travlos 1988). For a given global network, MNC's will choose the optimal level of intangibles so as to maximize its value. The postulated relationship between market value and the level of investment in intangibles enjoys empirical support. The variation by network structures arise due to trade-off between value-enhancing flexibility and value-reducing agency costs for MNCs and the degreed of multinationality. These studies suggest that the returns to multinationality increase e with the expansion operations to new locations. However, due to increased agency cost, returns decrease with more acquisition or expansion in existing locations. The decrease in market value resulting from expansion in existing locations may be due to overinvestment in "within country" as opposed to "across country" expansion (Doukas 1995). Thus, for MNC with established global network, the more investment in its intangible assets, which mean more new product introductions and brand extensions, the more is value-added to its shareholders.

In terms of the modern financial market theory, stock markets quickly absorb any new relevant company information, or its products, as it becomes available (Fama 1970, 1991). Such information affects future cash flows—positive or negative—and thus its stock price. For example, it may expected that new product introduction are likely to increased a company's earnings and thereby affect the price of its stock (An example can be seen in Microsoft offer to Yahoo early in 2008).

The rest of the paper is organized as follows. The section II is a brief literature review. Section III discusses P&G as a producer of major household items as well as its global context. Section IV describes the data and the methodology. Section V reports the findings and finally Section VI summarizes the paper and offers some conclusions arising out of the paper

II. REVIEW OF LITERATURE

(a) Value Creation of New Product Introduction

Innovation lies at the heart of firm's growth and development. A large body of literature focuses on the value of innovation. Jacobson (1992) argues that innovation provides the firm with a differential advantage over its competitors e.g., reformulation of a product and development of new product and thus can help long term profitability.

Another stream of innovation-related research looks at product characteristic and timing of its introduction to explain the success of new products and the performance (e.g., Bayus, Jain, and Rao 1997). The evidence that emerges from these studies seems to support a positive relationship between innovation and sustainable firm performance. Capon, Farley and Hoenig (1990) reviewed 30 studies that investigated the relationship and reported that about two-thirds of them support a positive relationship between R&D expenditure (a proxy for innovation) and performance. Interestingly, a review of research that relate to innovation reveals the widespread use of surrogate measures such as R&D investment as a proxy for innovation. It is reasonable to examine the impact of innovation on performance using more "accurate" measures of innovation. Number of new products introduced can be a reasonably good alternative but has not received much attention in the marketing literature.

(b) Signaling Purposes of New Product Introduction

According to signaling research, a new product introduction could be directed to various or multiple audiences, such as the investors, consumers, or competitors for signal purposes. Chaney, Devinney, and Winer (1991) investigate the signals effects of new products on stock prices of the firm that introduced the product. They find an overall impact of the announcement of new product to be about 0.75% over a 2-day period. Wind and Mahajan (1987) argue for the use of "marketing hype" in a new product introduction improves the chances of a successful launch. They suggest using a set of "pre-launch" activities (including pre-announcing) to create a favorable marketing environment for the new product. Rabino & Moore (1989) indicate that publication in the form of favorable comments in the Wall Street Journal or other trade journals creates awareness and adds to the credibility that can be used later as a promotional tool. Farrel and Saloner (1986) argues that "pre-announcement" enhances the chances of success with a new technology that otherwise might not be adopted without the signal. Eliashberg and Robertson (1988) take the viewpoint of the signal sender to examine the rationale for pre-announcing new products to consumers and identify conditions that favor such signal behavior.

Household and Personal Products Industry: An Overview

Household nondurable can be defined as consumer product that last only a short time, usually three Months or less. Such products can be divided into two main categories: household products and personal care products. The first type includes items like household cleaning substance, laundry detergents, storage bags, room deodorizers, diapers, etc. Table 1 lists the top three global producers under this category: Unilever, a Netherland giant with $48.7 billion in 1997); Procter & Gamble ($35.8 billion), and Colgate-Palmolive ($10.1 billion in sales for each company).

The US household and personal care products industry is large and extremely fragmented. Yet these three companies make up about two-thirds of the world market. The world market for household and personal products is estimated to be worth around $75 billion (at wholesale price). These firms' primary markets are in the industrialized nations of North America and Europe. Unilever holds 67%, and for Colgate-Palmolive 44% (data from the value line investment survey 1998).

Table I
Sales by the three major Household and Personal Care Producers (Billion $)

Company	*Household*	*Personal care*	*Total sales*	*% of foreign sales*
Procter & Gamble	35.8	10.1	45.9	51
Unilever	48.7	10.1	58.8	81
Colgate-Palmolive	9.1	10.1	19.2	79

Procter & Gamble

Procter and Gamble, a $38 billion MNC operates in over 70 countries. P&G markets a broad range of consumer products to five billion consumers worldwide in five business segments: Laundry and Cleaning, Paper Product, Beauty Care, Food and Beverage, and Health Care. P&G has been devoting sizeable resources to develop new technologies over the years to help keep its products in the leading edge and also give consumers added value. P&G is the global leader in most of its five business segments. It spent $500 million on new manufacturing equipment for its avant-garde diapers in 1998. P&G is committed to enhancing innovations and quicken product introductions by focusing its strategy on goal brands, rather than on geographic regions (Wheelen and Hunger 1992). Thus, P&G has a broad global network that employs its intangibles toward creating more market value mostly to technological improvements, which led to introductions of many new products and brand extensions over the years (olestra, the synthetic fat substitute, low-fat cooking oil).

III. METHODOLOGY AND DATA

The sample used in this study comprises of 19 major announcements of new products and brand extensions by P&G for the period from 1988 to 1999 (Appendix 1) was obtained from the *Wall Street Journal Index* and "http:www.pg.com". The announcement refers to the earliest date on which it was announced in the *Wall Street Journal index*. To control for other news that may affect the P&G stock price and its three major competitors (Unilever and Colgate-Palmolive), the *Wall Street Journal Index* was checked five days prior to the announcement and three days after. In the event such news was found around an announcement date, then that announcement was not included in the final sample. For calculation of daily stock return, the stock prices for P&G, its major competitors (Unilever and Colgate-Palmolive) and S&P 500 index were obtained from Standard & Poor's daily Stock Price and from "*http:www.yahoo.com*".

A la Choi and Parad (1995) and Escbo (1990), the following market model is used to examine whether there was abnormal returns due to the announcements of the new products and brand extensions made by P&G for the period from 1988 to 1999:

$$R_{ij} = \alpha_j + \beta_j R_{mt} + \gamma_{jn} D_{nt} + u_{jt}$$

Where,

R_{ij}: rate of return on security j for event day t

R_{mt}: rate of return on S&P 500 index for event day t

D_{nt}: is a dummy variable (1 day relative to the announcement date, 0 otherwise)

μ_{jt}: the error term of security j for event day t

The estimation period for the model is from day –120 to day +25 relative to the initial announcement date. The abnormal return (AR) for day 0 is the coefficient γ_{jn}. For a sample of *N* announcements, the abnormal return:

$$AR_{(0)} = 1/N\Sigma^{N}_{j} =_{1} AR_{j(0)}$$

To test if the abnormal return is statistically different from zero, the standardized abnormal return (SAR) was calculated using the formula:

$$SAR_{(0)} = 1/N\ \Sigma^{N}_{j} =_{1} (AR_{j(0)} / S_{j(0)})$$

$S_{(0)}$ is the average estimated standard deviation for security *j* at day 0. The *Z*-statistic is used to test the hypothesis that the null hypothesis that abnormal returns equal zero.

$$Z_{(0)} = (N)^{1/2}\ SAR_{(0)}$$

IV. EMPIRICAL RESULT

Table 2 reports the results obtained from regression of fifty-seven equations and the abnormal returns associated with the sample of nineteen new product announcements for the three major companies noted earlier. The table shows a mix of positive and negative abnormal returns associated with the announcements for the companies.

Table 2
Abnormal Returns for PG, UN, and CL, and t-statistics

Event	*Abnormal return (PG) (%)*	*t-Value*	*p-Value*	*Abnormal return (UN) (%)*	*t-Value*	*p-Value*	*Abnormal return (CL) (%)*	*t-Value*	*p-Value*
1	-3.34	-.04	.962	7.23	.807	.421	1.34	.590	.556
2	-7.19	-.75	.450	-3.69	-.438	.662	1.66	.854	.395
3	-7.52	-.82	.413	9.96	1.17	.241	-4.82	-.349	.728
4	1.33	1.28	.20	4.04	.046	.964	1.97	1.27	.205
5	-7.9	-.59	.551	3.96	.482	.631	2.00	.193	.847
6	-1.48	-1.36	.176	-5.31	-.06	.948	1.29	.138	.890
7	-1.52	-1.36	.173	-9.16	-.09	.923	-7.26	-.058	.954
8	-6.56	-.69	.487	-9.17	-.11	.907	6.95	.546	.586
9	8.71	.70	.485	5.57	.618	.537	1.00	1.09	.277
10	1.35	.14	.888	-2.95	-.33	.742	1.90	1.71	.088
11	-6.87	-.75	.455	-4.91	-.67	.499	1.78	1.71	.089
12	1.01	.84	.398	-3.94	-.45	.653	-4.20	-.37	.707
13	-1.64	-.14	.883	-5.57	-.73	.465	-9.87	-.97	.333
14	3.71	.40	.686	-4.44	-.61	.542	3.88	.34	.733
15	1.12	.00	.999	-1.66	-.14	.886	-1.14	-.87	.383
16	1.02	.08	.930	1.83	1.51	.133	-3.23	-.88	.775
17	-9.67	-.69	.489	-1.07	-.73	.464	9.49	.921	.359
18	6.93	.39	.696	2.10	.91	.364	-6.91	-.63	.530
19	8.83	.04	.630	-1.02	-.61	.539	1.83	1.68	.095

Table 3
Standardized Abnormal Return and Z-statistic

Standardized Abnormal Returns (PG)	*Z-Value*	*Standardized Abnormal Returns (UN)*	*Z-Value*	*Standardized Abnormal Returns (CL)*	*Z-Value*
0.009684	0.042212	-0.00674	-0.0293	0.027526	0.119984

As reported in Table 2, none of these abnormal returns are significant. Table 3 reports the standardized abnormal returns and Z-statistics for the whole sample covering the nineteen announcements for each of these companies. The results show no significant abnormal return associated with the PG's new product announcements. The results do not supports the hypothesis that the stock market value of MNC with well-established global network can be positively affected by new product introductions and brand extensions. The results also show that product introductions and brand extensions do not impact stock value of either the P&G's or its major competitors.

VI. CONCLUSION

For MNC with well-establish global network, the more investment in its intangible assets in new product introductions and brand extensions, one would expect, the more value-added to its shareholders. Innovations provide firms with a differential advantage over its competitors which includes reformulation of a product as well as developing new products. It is important to examine the impact on performance using a more "accurate" measure of innovation such as number of new products introduced. We use P&G in the study to investigate the extent to which product introductions announcements affect the sentiment and subsequent behavior of the shareholders as well as those of the major competitors. Our results however, fail to support the null hypothesis of positive effect of new product introductions and brand extensions announcements. However, further study is needed using a larger sample size and perhaps a more improved methodology to ascertain the outcome.

Appendix 1: ***The Sample's New Product Announcements Made by P&G***

Date	*The announcement content*
1/16/1989	P&G is launching this month its new Tide with bleach and has began test marketing a liquid chlorine bleach
6/8/1990	P&G is expecting to unveil several new health-oriented products
9/9/1990	P&G has launched a new disposable diaper product with different absorbing and design features for the four stages of child's early years
7/1/1991	P&G has asked the FAD to approve a low-calorie fat called caprenin that replace cocoa butter in the candy bars and confectionary coatings
6/9/1992	P&G introduced a disposable diaper that its say twice as absorbent as those now in the market
7/27/1992	P&G will introduce its new premium-priced Crest Complete toothbrush across the US in the fall of 1992
10/23/1992	P&G has developed a new version of its Ivory bar soap that wont float
12/3/1994	P&G finally unveiling a new baking-soda version of its Crest toothpaste
2/16/1994	P&G and Syntex will introduce the first nonprescription pain reliever containing a new analgesic ingredient in a bout a decade. The brand called Aleve.
4/19/1995	P&G is jumping into the marketing fray for hormone-replacement products, announced that is joining with Thera Tech inc to develop and market a new transferal hormone-replacement for women
8/24/1996	P&G is planning to test-market two new laundry product lines beginning in Oct 1995.
5/8/1996	P&G is launching Febreze, a new spray that permanently removes garment odors.
6/7/1996	In the biggest overhaul in a decade of its diaper business, P&G plans to lunch "breathable" Pampers diapers, sharply upgrade its Luvs brand
8/23/1996	P&G received approval to market its ulcer drug Helidac, the first of what is called its most promising drug to reach America's medicine cabinets.
1/23/1997	P&G announced introducing a new skin-care aims to clean both sexes.
12/3/1997	P&G announced its marketing a new first-ever testosterone patch designed for women
5/6/1998	P&G announced lunching a new dishwashing liquid that cleans up High Way mess.
5/17/1999	In one of the fastest global product expansions in company history, P&G today announced plans to introduce Dryel and Swiffer in North America, Western Europe, and portions of Asia and Latin America within the next 18 months.
9/8/1999	P&G announced today the introduction of physique, a fundamentally different hair styling line rooted in science and specially designed to help consumers achieve the hair style they want

Source: Wall Street Journal Index; *http://www.pg.com*

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