HOW PRODUCT DEVELOPMENT INFLUENCES PRODUCT EVALUATION

Stephen C. Jones*

Tami L. Knotts**

Gerald G. Udell***

Abstract:

New product development and evaluation is a part of the modern marketplace, and the need for independent third-party evaluations of new products is already established. This study examines how these types of evaluators view the similarities and differences between goods at three levels of product development: invention, innovation and commercialization. Using an instrument created by Udell, O'Neill, and Baker (1977), the authors find that 28 of 39 criteria are able to correctly classify almost 95 percent of the study's cases and that these criteria can be grouped into seven factors describing both the potential downside of product acceptance and the skills needed to establish a product on the market. These 28 criteria seem to be assessed in a similar manner by evaluators, at least in part, with stage of development in mind, and the evaluator's ratings indicate commonalities between products at these three levels in terms of product and firm quality.

Key Words: product development, product evaluation, invention, innovation, commercialization.

* Arkansas Tech University, Department of Management & Marketing, Russellville, AR 72801.

** Louisiana State University Shreveport, Department of Management & Marketing, Shreveport, LA 71115.

*** Center for Business & Economic Development, Missouri State University, 901 South National Avenue, Springfield, MO 65897.

Introduction:

New products help form the foundation for long-term firm success. Fox (1974) described the product development process as the "pathway" toward business growth, and the effectiveness of this process has been shown to directly affect company profitability (Antil, 1988). The demand for winning products in the marketplace is strong. Studies indicate that firms and product managers, in particular, are under pressure to move ideas from the concept to commerce stage of development with little to no failures along the way (Antil, 1988; Gupta & Wilemon, 1996).

Product evaluation is the key to successful commercialization; in essence, non-evaluation is associated with product failure (Crawford, 1984). Product evaluation occurs at different points in the product development process. For example, idea screening is an initial assessment of fit between the concept and the company; whereas, market testing is a measure of customer acceptance in a limited area prior to launch. This paper examines product evaluation at three different stages of product development--invention, innovation, and commercialization.

The primary focus of this paper is to understand the role that product development plays in evaluator decision-making, and to examine what factors may differentiate inventions, innovations, and commercialized products from one another. For this study, two evaluation programs were used. Products in the invention stage were submitted by independent inventors to the World Innovation Network (WIN) evaluation program for assessment regarding their feasibility. Innovations and commercialized products were submitted by small manufacturing firms to Wal-Mart as part of a mass retailer screening program, referred to as Support American Made (SAM). All of the products were assessed using the same evaluation instrument. In the remainder of this paper, we provide a more in-depth discussion of the product development and product evaluation literature, followed by an explanation of both evaluation programs. After describing our research methodology, we close with a discussion of the results and conclusions.

Literature Review:

Product Development

Early models of the product development process suggest that new products resulted from a series of sequential activities. For example, Maclaurin's (1953) five steps started with research, then moved to invention, innovation, and financing, and ended with acceptance. Studies by Booz, Allen, and Hamilton (1968) and Fox (1974) described a similar order of activities where the product idea is generated, screened, analyzed, developed, tested, and launched. The stage-gate system, created by Cooper (1988), added a go/no go decision between each step in the development process. While the stages are similar to other linear models, the distinction lies in the different product evaluation decisions that must take place to move the product forward. In his historical account of the linear model's creation, Godin (2005) outlined the original theory of innovation as follows--basic research, followed by applied research and development, ending with production and adoption of the product. Tidd (2006) noted that the last two stages in this progression were critical for commercial success.

Saren (1994) rejected this one-direction, chronological approach and attempted to reframe the product development process as "blocks" of activities that could happen simultaneously, be repeated, and occur either inside or outside of the company. Schoen, Mason, Kline, and Bunch (2005) agreed that previous sequential models were not realistic. These authors proposed an innovation cycle model that included feedback loops connecting basic research (new knowledge) to invention (new and old knowledge) to innovation (invention plus business model). This model supported their argument that the path from invention to innovation was more random in nature. Prebble, de Waal, and de Groot (2008) designed a new commercialization process framework that identified three perspectives needed at each stage of product development. These perspectives--technical/operational, strategic, and commercial--provided a more comprehensive decision-making process to ensure a product's progression from science and business feasibility to market readiness.

The different models described above, linear and non-linear, recognize three major phases in the product development process. According to Kim and Wilemon (2002), the first phase of the process is called the "fuzzy front-end", which involves activities prior to resource investment into the product (e.g.--idea generation, initial screening, etc.). Compared to the first

phase, "development" or phase two involves more commitment from the organization in terms of money, personnel, and top management support. The focus here is on planning and production (Kim & Wilemon, 2002). Grant (2002) labeled these two phases as "invention" and "innovation". He noted that invention was the creation of a new product; while innovation was the application of the invention. In this paper, we use the terms invention and innovation to describe the first two phases of product development. Commercialization is the third and final phase. In their commercialization process model, Prebble et al. (2008) showed product and market readiness as the last hurdle in moving an idea from mind-to-market. These three distinct phases of the new product development process (shown in parentheses) coincide with the major stages outlined by Ernst, Hoyer, and Rubsaamen (2010)--conceptualization (invention), development (innovation), and implementation (commercialization).

Product Evaluation

"Evaluation is at the heart of the new-products process" (Crawford, 1986, p. 48). As a continuous system of analysis, evaluation is meant to coincide with the different phases of a product's development (e.g.--idea screening, product testing, market testing). The overall purpose is to help determine its potential return on investment (Crawford, 1986). Assessing commercialization ability is one goal that evaluation programs may focus on. For example, Bowman-Upton, Seaman, and Sexton (1989) evaluated a program that was meant to assist inventors in determining the likelihood of getting their products to market. The program not only offered a commercial feasibility analysis, but it also provided knowledge about potential problems, tips for attracting investors, and unbiased market information. The results of the program showed that it was relatively good at estimating commercial success, and the participating inventors were satisfied with their feedback. A more recent examination of this same evaluation program found that the evaluators who assessed the products were correct almost 80 percent of the time when estimating the future commercialization potential of new products (Astebro & Koehler, 2007).

Knowing if a new product will make it in the marketplace means evaluators need to be familiar with customer needs. Some studies have focused on product differentiation as a critical factor. Cooper (1979) identified eleven determinants of new industrial product success, with the

most important being product uniqueness and superiority. This feature meant the product was innovative either through new features, better quality, or cost-savings to the consumer. Having a strong understanding of the market was the second most important factor for new product success. This included knowledge of customer preferences, market demand, and competitors. Both of these factors--product uniqueness and market knowledge--help firms establish competitive advantages. In a study of new product selection by channel intermediaries, Rao and McLaughlin (1989) found that several factors help differentiate a product from its competitors and make it more attractive to retail buyers. They associated attractiveness with product uniqueness, profit potential, positive growth, vendor effort, amount and level of competition and any other market or financial characteristic that improves a product's chance to be accepted rather than rejected (Rao & McLaughlin, 1989; Kaufman, Jayachandran, & Rose, 2006).

Kaufman, Jayachandran, and Rose (2006) used the term product attractiveness to point out that new product success is not tied to product features alone, but rather a variety of influences. In their study, they found that when products were moderately attractive, a strong buyer-salesperson relationship influenced new product selection more than when products were very unattractive or very attractive. A previous paper by Jones, Knotts, and Udell (2011) also examined product attractiveness. In relation to stage of development, results showed that new products were more attractive to retail buyers when they were in the innovation stage rather than the invention stage. Retail buyers and evaluators preferred more fully-developed products. In this paper, we add a third stage of development to the analysis. Our goal is to understand the role that all three stages of development--invention, innovation, and commercialization--play in the product evaluation process.

The Study:

The sample firms for this study were participants in one of two separate projects undertaken by the Innovation Institute. The first program evaluated small U. S. manufacturing firms in the 1990s that participated in a mass merchandising screening program developed at a regional Midwest university. The screening program consisted of two assessments: an external review of the firm's submitted product and a self-appraisal of the firm's management practices. For the purpose of the paper, only the product evaluation measure will be examined. Each

product was either rejected from the program or sent on to the mass merchandiser for buyer review based upon the results of these evaluations. The final decision as to whether the forwarded product was placed on-shelf was left entirely to the retailer.

All of the participating firms in this first program were independently-owned manufacturers who wanted to be suppliers for Wal-Mart in their Support American Made (SAM) program. Out of 2113 potential suppliers, 1729 firms (81.8 percent) completed the entire evaluation process. These participants were from all states, and none were dominant in the industry. The products ranged in suggested retail price from inexpensive and/or point-of-purchase to major purchase levels. No racial, ethnic, or other minority data were kept as part of the main database. Products in the program were required to have a working prototype for review, but a fully-commercialized version was not essential. As a result, some products reviewed were at the second stage of development (innovation) and others at the final stage (commercialization).

The second program, WIN, evaluated product ideas from independent inventors and manufacturers that wished for an external, third-party review of the idea before attempting to take the product through further development. These projects were not yet under manufacture and were at the idea level only (invention stage). Some 2297 ideas were submitted for review between 1997 and 2005. As with the first program, these products were largely intended for consumer use.

Methodology:

The evaluation items for the current study are limited to the first 39 found in the original item set introduced by Udell, O'Neill, and Baker (1977). Other studies of this same set of products have focused on outcome variables including the evaluator's assessment of market attractiveness (Jones et al., 2011), quality of firm management practices (Knotts, Jones & Udell, 2010), functionality versus marketability (Knotts, Jones & Udell, 2009), and long-term venture survival (Kim, Knotts & Jones, 2008). Consistently, firms with solid management practices (e.g., strategic direction, financial management, and production quality) and with a quality product were those judged most likely to achieve such goals as success in gaining a spot on a

mass retailer's shelves, in providing the basis for the creation of a new venture, and in securing a loyal customer following.

For this study, our interest was not in attempting to predict future success or failure but rather to examine and describe the critical variables which seemed to vary between products of differing stages of development in these two programs. These stages (idea stage [invention], developed but not on the market [innovation], and developed and on the market [commercialization]) have been used in previous studies of these programs as a means of distinguishing between products for the purposes of discussing success measures (e.g., evaluator quality ratings), but in this study we propose to examine how the independent evaluators assess the firms and products at these different stages. Evaluators have been shown to value products at later stages of development more highly than those at lower stages (Jones et al., 2011), and in this study we look at how they seem to come to that conclusion. To do so, we will first use discriminant analysis in re-classifying products, and then we will use factor analysis to see if the salient items from the discriminant analysis group into useful assessment factors for evaluators.

Results and Discussion:

Cooper (1979) used exploratory factor analysis with his evaluator scale to create 18 underlying factors for new product projects from almost 50 original items. He followed this procedure with a discriminant analysis to try to re-classify projects using the factors themselves and found that eleven of them were able to correctly classify more than 80 percent of cases into success or failure categories. His predictive model and the use of factor analysis and discriminant analysis in arriving at his conclusions are common research methods in this area of study. In fact, in our previous research, we have used a combination of these methods to examine varying factors for these same types of firms and products. Specifically, we have used discriminant analysis to attempt to accurately predict on-shelf success and firm performance with these firms with some level of success (Jones, Knotts & Scroggins, 2005; Jones, Knotts & Udell, 2004; Jones, Knotts & Udell, 2005; Knotts, Jones & Udell, 2003). The results of these studies generally predicted failure much better than success, perhaps because market forces also have a significant role in success after market entry beyond product and firm quality, while these quality factors generally preclude poorer firms and products from a chance at market entry.

Our previous studies with this current set of data have also shown that the independent evaluators did in fact consider certain quality criteria to be critical for success, and stage of development certainly seemed to be of importance to them. Using discriminant analysis with stage of development in this study for categorization is not an attempt to predict stages. That would seem rather pointless since the stage was already apparent, and the evaluator was attempting to predict future success, not to what stage the product in question had been developed. Instead, our interest is in seeing if the same quality criteria ratings could accurately and deductively indicate the stage of development of the product in question rather than use stage of development to inductively describe what the quality criteria would likely be. Essentially, in this study we are reverse engineering the process.

We first entered all 39 quality criteria into the model as independent variables in a stepwise manner and used stage of development as the grouping variable. In this way we would limit the variables used in the analysis to those which actually led to categorization rather than include all variables from the data set. Table 1 shows the resulting categorization matrix. Of the original set, 28 items (seen in Table 2) correctly classified more than 98 percent of idea stage products, nearly 96 percent of second stage products, and more than 85 percent of all on-market products in the study. Again, while not a prediction method, this analysis seems to show that evaluator ratings of these various stages of products do indicate similarities between products at these stages in terms of product and firm quality and that these criteria may be assessed in a similar manner by evaluators, at least in part, with stage of development in mind. In all, nearly 95 percent of all products were correctly classified by the model using these 28 criteria with statistical significance ($p < .001$). Additionally, the model correctly classified cases at all levels rather than just at the lower levels as previous studies had done. This is significant because it indicates that these same criteria work at all three levels with evaluators, and that these criteria are critical in importance at each level of product development.

Table 1. Classification Results[a]						
		Stage of Development	Predicted Group Membership			Total
			Idea stage	Developed but not on market	Developed and on market	
Original	Count	Idea stage	**1371**	21	0	1392
		Developed but not on market	27	**803**	7	837
		Developed and on market	2	105	**622**	729
	%	Idea stage	**98.5**	1.5	.0	100.0
		Developed but not on market	3.2	**95.9**	.8	100.0
		Developed and on market	.3	14.4	**85.3**	100.0
a. 94.5% of original grouped cases correctly classified.						

Table 2 shows the criteria selected in the discriminant analysis. As the second part of the analysis, we were interested in seeing if these criteria could be grouped into a few explanatory factors. Using factor analysis with a Varimax with Kaiser normalization, the 28 criteria grouped into seven factors which explain almost 64% of the variance. We have attempted to describe the factors nominally using common characteristics between the items. The loadings and variance information are also shown in the table. It may be significant that the first two factors (risk/reward and venture viability) account for nearly half of the variance explained by the analysis. Evaluators apparently see these two factors as needing a significant weight in their analysis, and it should not come as a surprise. A product at lower levels of development understandably poses a greater threat of not recovering an investor's funds (risk/reward) and of being unable to sustain the establishment of a firm designed to produce and market it (venture viability). These two alone would cause a potential investor or buyer to step back and reassess the situation. However, a product that is fully commercialized, even at the local level, is much easier for the evaluator to assess as market-worthy on a larger scale using these same two factors.

However, it is interesting that one other risk-type factor (intellectual property), while significant in the analysis, accounted for just seven percent of the variance. Perhaps the risk from patent and licensing weakness is important but less so as a product develops a customer

following. The means for both of these criteria within the factor are actually higher for inventions than for innovations and commercialized products (PER 33: 3.36 vs. 2.62 and 2.45; PER 34: 2.70 vs. 1.99 and 2.02) and the differences are significant ($p < 0.001$ for each set of tests). The perceived risk from loss of product self-identity may actually decrease in the evaluator's mind as it establishes a market presence and identity in the consumer's mind.

The four remaining factors attest to the potential market impact of the project and the effort needed to establish it as a consumer-desired product. Together they account for a nearly identical portion of the explained variance as the first two factors (44.2 vs. 44.7 percent) but describe a very different outlook on product viability. While the first two factors assess the downside potential of a product/venture, these four factors address the qualities needed to establish that product/venture on the market, a glass half-empty versus glass half-full dichotomy.

Table 2. Variables in the Factor and Discriminant Analyses

	Factor	Rotated Component Loading	Rotation Sums of Squared Loadings		
			Total	% of Variance	Cumulative %
INVESTMENT COSTS (PER 08)	Risk and Reward	.843	4.516	16.127	16.127
PAYBACK PERIOD (PER 09)		.870			
PROFITABILITY (PER 10)		.645			
RESEARCH & DEVELOPMENT (PER 12)		.701			
PRODUCT LINE POTENTIAL (PER 18)		.420			
DISTIBUTION (PER 25)		.829			
PRODUCTION FEASIBILITY (PER 06)	Venture Viability	.579	3.451	12.325	28.452
TREND OF DEMAND (PER 15)		-.469			
DEPENDENCE (PER 22)		.478			
NEW VENTURE (PER 35)		-.494			
TECHNICAL EXPERIENCE (PER 37)		.820			
FINANCIAL EXPERIENCE (PER 38)		.730			

MGT/PROD EXPERIENCE (PER 39)		.695			
MARKETING RESEARCH (PER 11)	Marketing Effort	.594	2.432	8.685	37.137
POTENTIAL SALES (PER 14)		.446			
COMPATIBILITY (PER 19)		.550			
VISIBILITY (PER 23)		.640			
PROMOTION (PER 24)		.653			
PROTECTION (PER 33)	Intellectual Property	.787	1.975	7.055	44.192
TECHNOLOGY TRANSFER (PER 34)		.853			
POTENTIAL MARKET (PER 13)	Market Share	-.538	1.921	6.860	51.052
EXISTING COMPETITION (PER 31)		.791			
NEW COMPETITION (PER 32)		.786			
ENVIRONMENTAL IMPACT (PER 03)	Long-Term Effects	.746	1.792	6.401	57.453
SOCIETAL IMPACT (PER 04)		.766			
PRODUCT LIFE CYCLE (PER 17)		.449			
FUNCTIONAL FEASIBILTY (PER05)	Market Readiness	.728	1.738	6.207	63.659
STAGE OF DEVELOPMENT / COMMERCIALIZATION (PER 07)		.621			
Discriminant Analysis: Wilks' Lambda for the 28-variable result is 205.502 (p< .001).					
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 10 iterations.					

It is also interesting to see which criteria did not seem to be as critical to evaluators across stages of development. This is not to say that these criteria are of no importance. On the contrary, they are also useful in assessing product and venture quality. However, this study is examining those criteria which are distinguished by their variance as a whole across these stages within the evaluator's mind. Obviously, from one product to the next, there will be variations in quality in several aspects, but the idea that evaluators see certain criteria distinguishing levels of development is interesting. The criteria which did not find their way into the analysis included: legality, safety, stability of demand, learning, need, service, appearance, function, durability, price and marketing experience. For whatever reasons, these criteria added little to nothing to the explanatory nature of the analysis.

Conclusions:

This study has examined the evaluator's view of product development as an important part of the assessment process, not because the development stage itself is critical, although previous studies have shown its importance in various ways to the product and venture. Rather, in this study we have examined how the development stage is important in the way that an evaluator sees a product: he/she sees an invention differently than he/she sees an innovation or a commercialized product. The evaluator's view of the product class shifts, at least in part, simply as a result of how far along a firm has taken a product's development, and the 28 items identified in the study seem to work as a whole in creating that view. These 28 items are a solid enough unit to correctly classify almost 95 percent of the products in this study, and the factors created from them assess the riskiness of the venture and the efforts needed to establish the product on the market.

However, this study should not be viewed as an attempt to predict or determine development stages or criteria needed for development. This study instead simply asks if professional product evaluators (buyers, investors, etc.) have a "world view" of sorts which is influenced by a product's development progress. The answer would appear to be positive. Entrepreneurs and firms wishing to gain entrance to larger markets or to attract larger investors might infer that these results prescribe further product development. While it is true that further development usually leads to greater chances of success (developing a product and selling it on the market will usually net higher profit than trying to sell an undeveloped idea), this particular study does not arrive at that conclusion. Instead it simply says that products at various stages of development are viewed differently by evaluators using the same set of criteria and that understanding that viewpoint helps one understand the common nature of products at a particular level. Inventions share similar quality characteristics with other inventions, innovations with other innovation, and so forth. Evaluators apparently see these similarities and process their analyses accordingly.

References:

- Antil, J. H. (1988). New product or service adoption: When does it happen? *The Journal of Consumer Marketing*, *5*(2), 5-16.
- Astebro, T. & Koehler, D. J. (2007). Calibration accuracy of a judgmental process that predicts the commercial success of new product ideas. *Journal of Behavioral Decision Making*, *20*, 381-403.
- Booz, Allen, & Hamilton (1968). *Management of new products*, New York: Booz, Allen, and Hamilton, Inc.
- Bowman-Upton, N., Seaman, S. L., & Sexton, D. L. (1989). Innovation evaluation programs: Do they help inventors? *Journal of Small Business Management*, *27*(3), 23-30.
- Cooper, R. G. (1979). The dimensions of industrial new product success and failure. *Journal of Marketing*, *43*, 93-103.
- Cooper, R. G. (1988). The new product process: A decision guide for management," *Journal of Marketing Management*, *3*(3), 238-255.
- Crawford, C. M. (1986). Evaluating new products: A system, not an act. *Business Horizons*, *November-December*, 48-55.
- Ernst, H., Hoyer, W. D., Rubsaamen, C. (2010). Sales, marketing, and research-and-development cooperation across new product development stages: Implications for success. *Journal of Marketing*, *74*, 80-92.
- Fox, H. W. (1974). Toward market acceptance of new products. *S.A.M. Advanced Management Journal*, *April*, 51-59.
- Godin, B. (2005). The linear model of innovation: The historical construction of an analytical framework. *Project on the History and Sociology of S & T Statistics*, Working paper No. 30, Montreal, Canada.
- Grant, R. M. (2002). *Contemporary strategy analysis: Concepts, techniques, applications, 4th ed.*, Blackwell Publishing.

- Gupta, A. K. & Wilemon, D. L. (1996). Changing patterns in industrial R&D management. *Journal of Product Innovation Management, 13,* 497-511.
- Jones, S. C., Knotts, T. L., & Scroggins, W. (2005). The impact of high performance work system practices on small manufacturer performance. *Academy of Entrepreneurship Journal, 11*(2), 21-32.
- Jones, S. C., Knotts, T. L., & Udell, G. G. (2004). The effect of product-related factors on small business failure. *Business Journal, 19*(1-2), 68-72.
- Jones, S. C., Knotts, T. L., & Udell, G. G. (2005). Market orientation in a manufacturing environment: The impact of product-related factors. In S. Carraher (Ed.), *Association for Small Business & Entrepreneurship (pp. 61-77),* Albuquerque, NM.
- Jones, S. C., Knotts, T. L., & Udell, G. G. (2011). Inventions and innovations: Does stage of development matter in assessments of market attractiveness? *Academy of Entrepreneurship Journal, 17*(1), 37-46.
- Kaufman, P., Jayachandran, S., & Rose, R. L. (2006). The role of relational embeddedness in retail buyers' selection of new products. *Journal of Marketing Research, 43*(4), 580-587.
- Kim, J. & Wilemon, D. (2002). Focusing the fuzzy front-end in new product development. *R&D Management, 32*(4), 269-279.
- Kim, K. S., Knotts, T. L., & Jones, S. C. (2008). Characterizing viability of small manufacturing enterprises (SME) in the market. *Expert Systems with Applications: An International Journal, 34*(1), 128-134.
- Knotts, T. L., Jones, S. C., & Udell, G. G. (2003). Small business failure: The role of management practices and product characteristics. *Journal of Business & Entrepreneurship, 15*(2), 48-63.
- Knotts, T. L., Jones, S. C., & Udell, G. G. (2009). Innovation evaluation and product marketability. *Marketing Management Journal, 19*(2), 84-90.
- Knotts, T. L., Jones, S. C., & Udell, G. G. (2010). Leadership in female-owned firms: The case of the health and beauty aids market. *Leadership & Organizational Management Journal, 2010*(2), 65-79.

- Maclaurin, R. (1953). The sequence from invention to innovation and its relation to economic growth. *Quarterly Journal of Economics, 67*(1), 97-111.
- Prebble, D. R., de Waal, G. A., & de Groot, C. (2008). Applying multiple perspectives to the design of a commercialization process. *R&D Management, 38*(3), 311-320.
- Rao, V. R. & McLaughlin, E. W. (1989). Modeling the decision to add new products by channel intermediaries. *Journal of Marketing, 53*, 80-88.
- Saren, M. (1994). Reframing the process of new product development: from "stages" models to a "blocks" framework. *Journal of Marketing Management, 10*, 633-643.
- Schoen, J., Mason, T. W., Kline, W. A., & Bunch, R. M. (2005). The innovation cycle: A new model and case study for the invention to innovation process. *Engineering Management Journal, 17*(3), 3-10.
- Tidd, J. (2006). A review of innovation models. *Imperial College London, Tanaka Business School*. Discussion paper No. 1, 1-16.
- Udell, G., M. O'Neill, & K. Baker (1977). *Guide to invention and innovation evaluation*. Washington, DC: National Science Foundation.

Appendix: Product Evaluation Criteria (Original Instrument Items)	
Societal Impact	Legality Safety Environmental Impact Societal Impact
Business Risk	Functional Feasibility Production Feasibility Commercialization Stage Investment Costs Payback Period Profitability Marketing Research Research & Development
Demand Analysis	Potential Market Potential Sales Trend of Demand Stability of Demand Product Life Cycle Product Line Potential
Market Acceptance	Use Pattern Compatibility Learning Need Dependence Visibility Promotion Distribution Service

Competitive Capabilities	Appearance Function Durability Price Existing Competition New Competition Protection
Experience & Strategy	Technology Transfer New Venture Marketing Experience Technical Experience Financial Experience and Resources Management & Production Experience Channels: Promotional Requirements Channels: Sales & Selling Price