Harvard Business School **9-594-116**
May 11, 1994

Designing Channels of Distribution

For many businesses, the successful launch of new products is critical to maintaining market leadership. Unfortunately, empirical data indicate that one-third to one-half of all new products fail to meet a firm's financial and marketing goals.[1] A survey of 183 *Fortune* 1000 firms indicated that nearly half of them had new product failures exceeding 40%.[2] This result is indeed surprising because these failed products had been screened for technical soundness and commercial feasibility. Various explanations have been offered for these failures: insufficient attention to the commercialization process, lack of management support, and poor marketing planning and execution. In this article, we focus on one aspect of the launch decision: the choice of distribution channels. We offer a method to systematically evaluate, plan, and execute the channel choice decision for new industrial products.

The primary question is about channel structure; that is, which intermediary, or intermediary combination, is best suited to take the new product to market? There is an equally important corollary question: How should the intermediary network be managed once it is up and running? This and related management issues are dealt with in greater detail in a later article, "Reorienting Channels of Distribution."

Fundamentally, the approach that we offer is similar to that suggested by Stern and Sturdivant[3] and Rangan, Menezes, and Maier.[4] The starting point is the customer and the building block is the channel function. In our experience the method has worked best when implemented by a cross-functional task force headed by a senior executive reporting directly to the CEO. The new product development team in many cases could double up as the channels task force. It is important for the task force, however, to commission appropriate teams to participate in the various steps, rather than assume all the expertise themselves. We first present a schematic overview of the design method, highlighting its six important steps, followed by an illustrative application.

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[1]Booz Allen & Hamilton, Inc. (1982), *New Product Management for the 1980s* (New York: Booz Allen & Hamilton).

[2]G. Dean Kortge (1989), "Simultaneous New Product Development: Reducing the New Product Failure Rate," *Industrial Marketing Management*, 18(4), 301-306.

[3]Louis W. Stern and Frederick D. Sturdivant (1987), "Customer-Driven Distribution Systems," *Harvard Business Review* (July-August).

[4]V. Kasturi Rangan, A.J. Menezes, and Ernie Maier (1992), "Channel Selection for New Industrial Products: A Framework, Method, and Application," *Journal of Marketing*, Vol. 56, July, 69-82.

Professor V. Kasturi Rangan prepared this note as the basis for class discussion.

The Channel Design Framework

Step 1 consists of identifying homogeneous customer segments. Obviously, customers with similar requirements will need similar channel sources. It is important to keep in mind, however, that a customer is usually an end-user and rarely a channel intermediary. For example, producers of agricultural chemicals should target the farmer and not the dealer. But producers of plastic pellets for making milk bottles should probably focus on the "dairy," not the "consumer," because that is where the product has value in the eyes of the end-user. A dairy, especially a large one, will certainly need to worry about the cost and quality of the milk bottles. In some cases (e.g., a small dairy) the molder who manufactures the bottle might be the more appropriate end-user. In any case, there should be a thoughtful end-user, rather than an intermediary, focus.

While advocating an emphasis on the end-user may appear rather obvious, in our experience this has been a hotly debated issue in several business applications of this approach. Many industrial marketers have long looked upon their distribution channels as "customers" and rarely bothered to look beyond. Yet the primary purpose of the distribution channel is to satisfy customer/end-user needs, and intermediaries are conduits to effect this goal. The recommended method here is not intended to undermine the role of the intermediary, only to view them as a means to an end and not an end in itself.

Step 2 consists of identifying and prioritizing the customer's channel function requirements. A generic list appears in **Table 1**, but it should be treated only as a starting point. Each product-market context is unique, and channel function requirements that best represent customers' reality are most likely to lead to effective channel solutions. This information should be elicited from customers in as fine-grained a detail as possible. For instance, it would be useful to know how keen customers are for a three-year instead of a one-year warranty, and how much they would be willing to pay for it; how sensitive they are for a two-hour instead of a six-hour service response time. **Table 2** provides an example.

In our experience, the data for this step are most effectively gathered simultaneously with **Step 1** (segmentation data). This way, segmentation and channeling strategies are consistent with each other and reflective of customers' needs.

Data gathering in Step 2 has to be based on customer input. For new products, this equates to potential customers, but, depending on the nature of the innovation, these potential users may or may not be able to provide reliable feedback. In these cases, we suggest using a team of experts who have special knowledge of the products and how customers are likely to buy and use them. There are two such groups of experts. First are customer lead users. Eric von Hippel[5] identifies them as "users whose present strong needs will become general in a marketplace months or years in the future. Since lead users are familiar with conditions that lie in the future for most others, they can serve as a need-forecasting laboratory for marketing research." A second group of experts is often found in-house.[6] In the new-product channel context, judgmental projections of experienced salespeople, product managers, sales managers, and product development engineers can compensate for the absence of extensive customer data on purchases and usage behaviors.

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[5]E. Von Hippel, (1986), "Lead Users: A Source of Novel Product Concepts," *Management Science*, Vol. 32, No. 7, 791-805.

[6]Jean-Claude Larreche and Reza Moinpour (1983), "Managerial Judgement in Marketing: The Concept of Expertise," *Journal of Marketing Research*, 20 (May), 110-21.

Table 1 Eight Generic Channel Functions

1. **Product Information**. Customers seek more information on certain kinds of products, particularly products that are new and/or technically complex, and those that have a rapidly changing technological component.

2. **Product Customization**. Some products inherently need technical modification; they require customization to fit the customer's production requirements (e.g., special steel for a maker of surgical instruments). Many times, however, even a standard product may need to fulfill specific customer requirements or factors such as size or grade.

3. **Product Quality Assurance**. A customer emphasizes product integrity and reliability because of product consequences for the customer's own operations; e.g., a standard chemical may be of utmost importance to pharmaceutical manufacturers given the liability associated with a defective final product. This is a measure of the application's importance to the customer.

4. **Lot Size**. This function reflects the customer's dollar outlay for the product. If it has a high unit value or is used extensively, it is likely to represent a significant financial decision for the customer and is likely to lead to a concentrated purchasing effort.

5. **Assortment**. A customer may need a broad range of products and may require one-stop shopping. For example, an electrical contractor may need products that satisfy different electrical codes, depending on the nature of the project. At other times, assortment needs may simply be related to the breadth of the product line (e.g., size) and availability of complementary products (e.g., wires with electrical switches).

6. **Availability**. Some customer environments require the channel to support a high degree of product availability. These are usually customers whose product-usage rate is difficult to predict (e.g., spare parts, because they are required only when a machine breaks down), or customers who will switch to competition rather than wait when the product is unavailable. Notions of demand uncertainty and requirements of buffer inventory are related to this function.

7. **After Sales Service**. Customers need services such as installation, repair, maintenance, and warranty. Often the quality and availability of such post-sales services will influence the initial sale. The nature of this service will obviously differ by industry. For example, in the computer industry the compatibility and availability of hardware and software upgrades may serve as a key purchasing influence.

8. **Logistics**. Transporting, storing, and supplying products to the end user involve levels of complexity. For example, transshipping and transporting hazardous chemicals may require special investments likely to increase handling costs. Moreover, once such investments are in place, governing their effective use will involve additional transaction costs.

Table 2 Example: Channel Function Priorities and Operational Detail

Most Important:

1. **Product Information**. Customers would like complete technical knowledge of product construction. They would prefer the availability of an expert to supervise installation as well as initial use. After the initialization, customers would be satisfied to exchange performance characteristics via computer, seeking assistance only when necessary.

2. **Product Warranty**. Customers would prefer a 3-year warranty and are not willing to pay more than a 5% price premium to receive the same. In case of a product breakdown, they would like it repaired within 4 hours, and in any case not beyond 24 hours. Customers are willing to pay for the labor charges if repaired within 4 hours.

Somewhat Important (but not critical):

3. **Application Engineering**. Customers would like application engineers to visit installations every month to assist in optimizing the system in operation.

4. **Availability of Complementary Products**. Customers would like to source complementary products simultaneously from the same channel source, if possible.

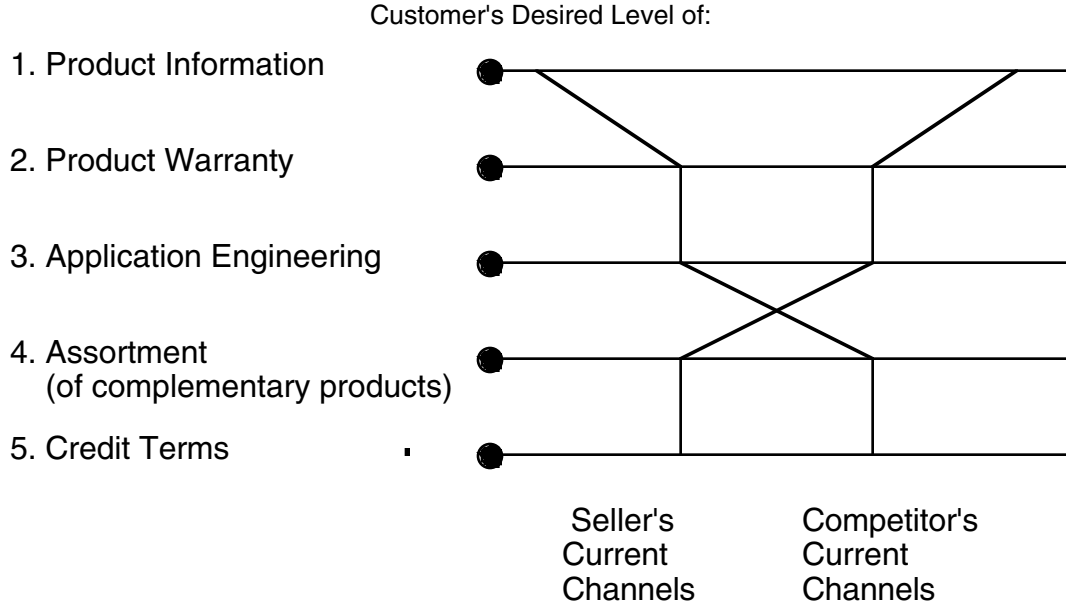
5. **Credit Terms**. Customers would like a 90-day credit term, if possible, but they can live with 30-day credit terms.

Step 3 consists of benchmarking the seller's existing channel capabilities as well as competitors' channels with respect to customers' channel function requirements. Data from Step 2 will serve to prioritize and anchor customers' desired (or ideal) level of channel functions. A supplier executing at that level can therefore be assured of the lion's share of the business. But the supplier's channel capabilities may not match this functional profile. The larger the deviation on the important functions, the lesser the chances of attracting customers. It is a good idea at this stage to also benchmark the channel capabilities of leading competitors. This will provide a comprehensive map of the company's relative channel strengths and weaknesses.

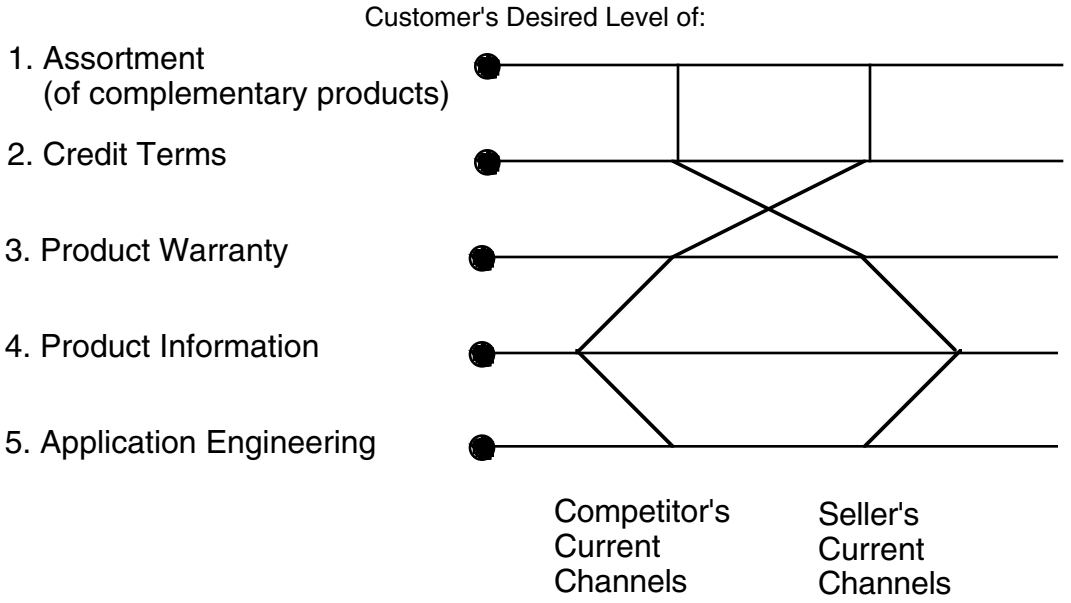
In the example in **Table 3**, the leading competitor uses a direct sales force channel and is therefore able to provide a relatively high level of customer intimacy with respect to product information, product warranty, and application engineering functions; whereas the target firm uses a distributor channel and is therefore able to provide a better level of service with respect to availability of complementary products and credit terms. The firm's relative channel profile for two customer segments is shown. But because the large customers and small customers prioritize channel functions differently, the target company is likely to do poorly with the large customers if it were to sell the new product through its existing channels. On the other hand, it has a stronger profile with small customers because its distributors provide superior "assortment" and "credit terms."

Table 3 Channel Benchmarking

Large Customer Segment



Small Customer Segment



When the various product options in the market are comparable in product functions, features, and price, Step 3 serves as a direct calibration of channel effectiveness. If there are product differences, however, the relative deviations from the customers' channel function requirements will not neatly map onto projected sales/market share. This is why some companies prefer to have product development people on the channels task force. Having the benchmarking and calibration

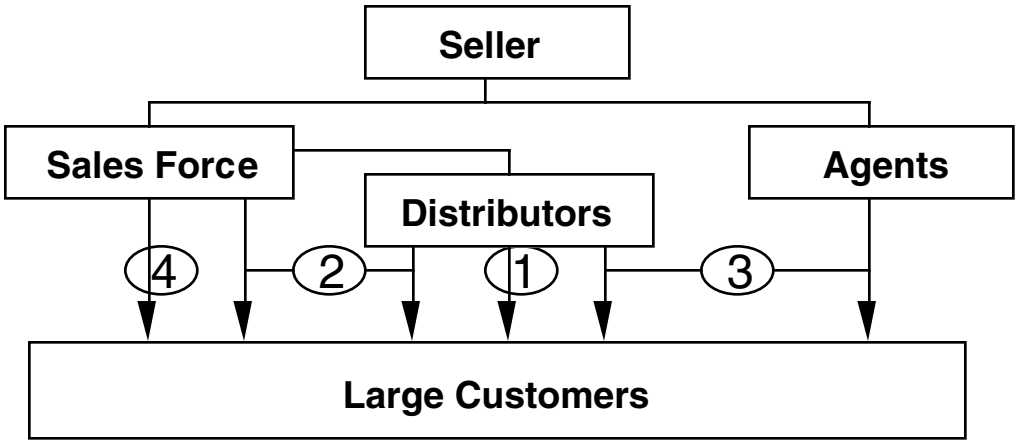
step executed by the same team that identified, clarified, and prioritized customers' channel function requirements ensures measurement consistency and reliability.

Step 4 consists of creatively interpreting the output from Steps 2 and 3 to arrive at the feasible channel options that would satisfy customers' requirements. For example, large customers' needs from **Table 3** could be potentially served by a direct sales force, and small customers by a distributor channel. But it is also possible to serve large customers with a combination of direct sales force and distributors, whereby the direct sales force would handle the product information, product warranty, and application engineering functions, and the distributors would handle the product assortment and credit terms. Usually, various channel alternatives will be available to take a product to market (e.g., agents, brokers, manufacturers' reps, value-added resellers). The role of the channels task force here is to creatively identify channel alternatives with the potential of getting closer to customers' ideal requirements. For the example, in **Table 4,** Option 1 (seller - salesforce - distributor - customer) is the current capability. Options 2 and 3 are hybrid combinations whereby the salesforce / agents perform a set of channel functions, and the distributors supplement the rest. It would be ideal for the salesforce / agents to deliver the product information, product warranty, and application engineering functions, and the distributors to deliver the product assortment and credit function. This way both the large and small customers would be happy. Finally Option 4 is a pure direct salesforce alternative, which would please the large customers.

It is important at this stage not to be restricted by real or imagined constraints. Issues of channel cost or conflict should be strictly deferred to Step 5. For example, one may conclude that under Option 1 the seller's existing distributors would not be able to adequately satisfy customers' product information, product warranty, and application engineering needs. But that should be no reason to rule out the option. If feasible, one should assume that with appropriate investments and training, distributors could rise to the desired level. Such an option should then be considered in the choice set at this stage.

Step 5 consists of systematically evaluating the benefits and costs associated with each option. Revenues, marketshare, marketpenetration, transaction costs, start-up costs, and opportunity costs must all be considered. Channel costs are not only influenced by the depth and extent of channel functions to be performed, but also by competitive behavior that influences the availability of channels. Varying investment strategies for each option from Step 4 will lead to differing customer satisfaction levels and consequently varying levels of outputs (revenue, profits, share, etc.). Investment options that push the profile in **Table 3** closest to the customer's ideal will lead to the best outcomes, but that may come at a huge cost. Thus the options being considered here will have to be a multiple of those from Step 4--varying investment levels for each option. This analysis should be as quantitative and as specific as possible. An estimate of intensity (and number) of distributors, for example, is useful information. Qualitative factors such as channel motivation and level of conflict / cooperation may be considered as well. The appropriate channel, of course, is a sensible tradeoff between output (e.g., revenues) and input (e.g., transaction costs). Companies with multiple product-market segments may draw up a short list of appropriate strategies for each segment rather than prematurely locking in on one. The reason for this becomes clear in Step 6.

Table 4 Generating Alternatives



Option 1 Current method of going to market

Option 2 Salesforce and distributors sharing channel functions among them

Option 3 Agents and distributors sharing channel functions among them

Option 4 Salesforce performing all channel functions

Step 6 consists of elaborating the channel overlaps for multiproduct, multi-market businesses by aggregating the output from Step 5. Channel synergies and dysfunctionalities across product-market segments should be discussed, and trade-offs made within the pool of appropriate strategies. This discussion is likely to be productive and objective if Step 5 data are largely quantitative. Channel designers then have an estimate of the system-wide cost for trading each best option from Step 5. Benefit-cost analysis then becomes more meaningful, and if necessary the company might be better off investing in conflict-resolution mechanisms rather than skipping customer-oriented optimal channels. Strategic long run factors become very important at this stage of the evaluation. The key question is, "Do the channels provide a market advantage? Does it reflect strategy?"

Table 5 shows three different optimal channels for the three different target segments of a company. There are likely to be practical difficulties in the co-existence of these three channels. First, Segments 1 and 2 may be somewhat hard to demarcate, especially with respect to the medium-sized accounts. Second, "dealers" for the industrial and consumer markets may overlap in some cases. But if the company's strategic focus was on the industrial market, and say this accounted for 80% of the market potential, it may make a lot of sense to serve Segment 3 through industrial dealers (channel 2) as well. Again, knowing the potential conflicts between the direct salesforce and dealers for the medium-sized accounts, it may be wise to negotiate "dealer" agreements carefully up front. Alternatively, as shown in **Table 6**, if a hybrid approach was second best for both of the industrial segments, and if the projected decrease in revenues and profits is less than the anticipated conflict costs of the "ideal channel," it may simply make sense to go with the second best solution.

The key to effectively implementing this step is totally dependent on the care used and detail undertaken in the previous steps. In the absence of well-calibrated channel maps and

concrete financial data, this crucial final step could deteriorate into a slugfest of personal hunches, which is exactly what this systematic procedure tries to overcome.

Table 5 Optimal Channels for Three Segments

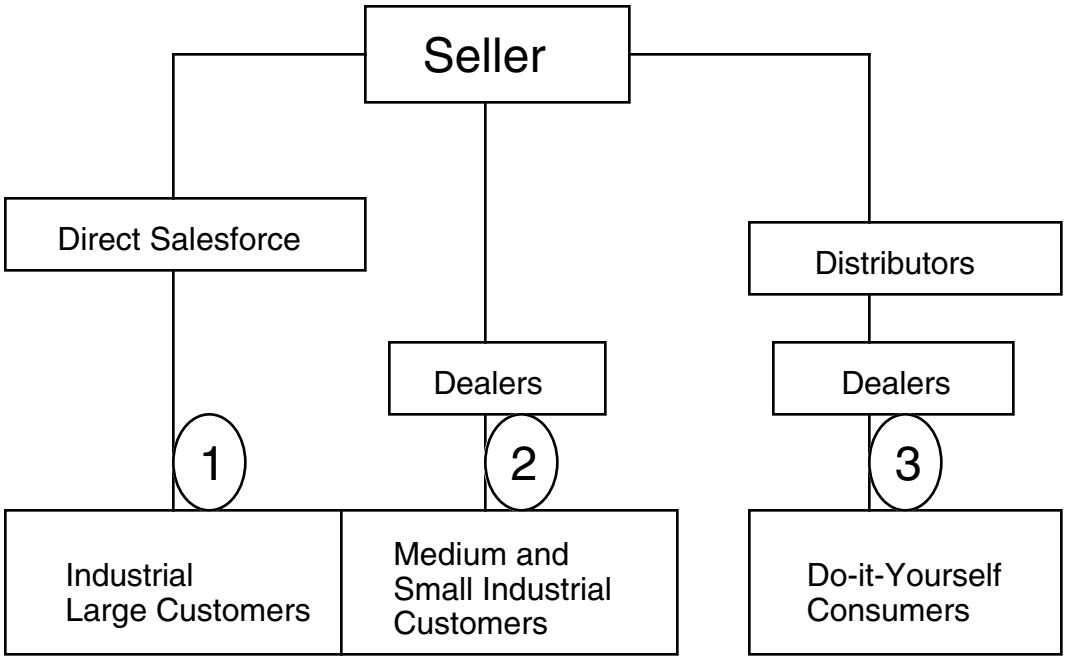
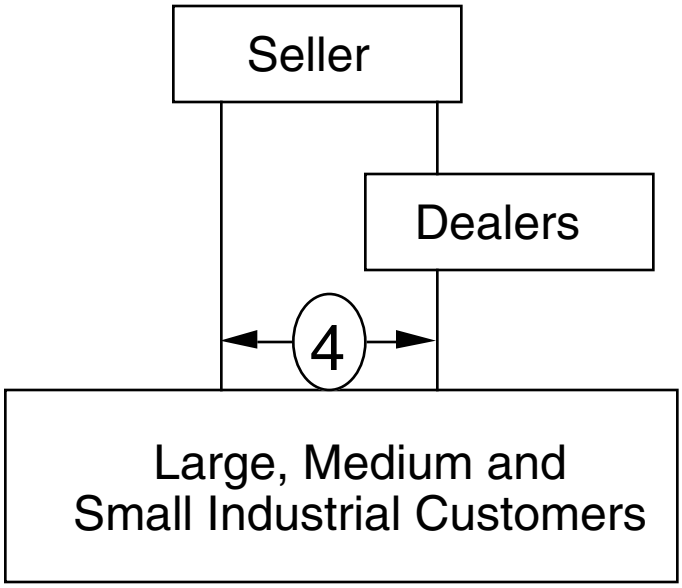


Table 6 The Second Best Option: Hybrid Channel for Industrial Customers



Application: A Description of the Process[7]

What follows is a brief description of how the channel design method was implemented in a division of a large industrial company.

Manufacturing process changes had enabled this company to develop a new product, Scotchfiber (disguised name). Customers used Scotchfiber-type products for a variety of applications such as deburring metal parts; deflashing plastic and paper utensils; cleaning golf balls, tiles, and rubber articles; gripping fabric in textile mills; and containing components for assembly. Management was convinced of Scotchfiber's superiority, especially in the $100 million industrial cleaning and finishing market which consisted of many specialty applications. The new product was to be directed originally only at large industrial users in various industries. Independent market research confirmed that these customers uniformly sought a high level of technical benefits. The product launch team headed by the director for Marketing Operations served as the channels task force.

Scotchfiber was a new product line for this company. Potential customers currently used alternative solutions to address their needs, and Scotchfiber applications had little overlap with the company's existing product lines. About 95% of the company's current products were sold to end users through a network of more than 500 independent distributors with the help of the company's 100 salespeople. Because of the new product's numerous potential applications and the strength of its distribution channels, management was inclined to route Scotchfiber through existing channels, which consisted of general-line finishing distributors.

With the help of the marketing manager, product manager, and two sales representatives, we worked out operational definitions for each of the eight channel functions identified in **Table 1** to reflect the Scotchfiber marketing context. The function "product information," for example, was characterized by the degree of information a customer sought on (1) roll fiber length, fiber property, and construction density, and (2) usage properties, such as the ability to finish irregularly shaped pieces and interiors. The operational definitions for each function were typed on separate cards to be used as the basic interview guide.

We chose 10 potential "customer experts" who were at the leading edge of adopting and using the new product to be key respondents. These lead users were considered the trendsetters in their industry and either had already started to use Scotchfiber in production trials or were in the process of placing the trial order. In addition, we selected 11 individuals from the company who had special knowledge about the product and/or its customer applications. Some of these "producer experts" were intensely involved in Scotchfiber product and application development, and the rest were involved in marketing the product to lead users.

Experts were interviewed individually to obtain their evaluations of customers' anticipated channel function requirements and priorities as they saw them. We chose three years as the time horizon for the new product channel study because the company's top management estimated this to be the time frame in which Scotchfiber could establish itself in the market, if successful.

Combining the experts' evaluations is essential to making a good channel decision because knowledge is generally dispersed in the early stages of the product life cycle. Two broad approaches are used for combining experts' opinions: group-oriented, where experts interact,

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[7]A large part of this section is extracted from V. Kasturi Rangan, A.J. Menezes, and Ernie Maier (1992), "Channel Selection for New Industrial Products: A Framework, Method, and Application," *Journal of Marketing*, Vol. 56, July 1982.

inform, and build consensus, such as the Delphi method,[8] and analytical (statistical), when interaction among the experts is impossible because of physical separation or confidentiality. Because some of the lead-use customers were considering proprietary applications of the Scotchfiber technology, we did not use the interactive Delphi method, but instead chose a mathematical "consensus" method developed by Robert Winkler.[9]

The new product channel profiles were presented to the New Product Launch team which was made up of six members of the division's marketing and sales staff who were responsible for drafting an initial Scotchfiber marketing plan. None had participated as experts in the earlier evaluations. The launch team also benchmarked the capabilities of its existing channels as well as Scotchfiber's indirect competitors. This was done by a subcommittee of the task force aided by a market research firm. Armed with these data, the launch team met several times to reach the following conclusions:

- The anticipated customer requirements on product information, product customization, and product quality assurance for the new product considerably exceeded the current capabilities of the division's general-line finishing distributors.

- The anticipated channel function profile after the product was established (i.e., 3 years) matched that of the division's other products currently being routed through general-line finishing distributors.

- A new class of distributors, fiber specialists, which the company did not currently use, would also be able to satisfy the functional requirement for the established product. However, they would have difficulties fulfilling the first three functional requirements for the new product, but to a lesser degree than the current distributors.

Six channel paths were initially identified as feasible options for taking the product to market (see **Table 7**): two of these were pure options, while the other four were hybrid combinations of salesforce and distributors sharing channel tasks for the new product. Options 5 and 6, however, were eliminated as the group thought both these options would entail very high switching costs and channel conflicts given the required change from one class of distributor to the other. It just didn't make sense to start with fiber specialists and switch to general-line distributors and vice versa. The costs of taking back inventory and any legal fees for rewriting and defending new contracts would far surpass the benefits. Thus the choices for the optimal channel were reduced to four.

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[8]H.A. Linstone and M.A. Turoff (1975), *The Delphi Method: Techniques and Applications* (Boston: Addison-Wesley).

[9]Robert L. Winkler (1981), "Combining Probability Distributions from Dependent Information Sources," *Management Science*, 27 (April), 479-488.

Table 7 Feasible Channel Options

Now (when product is new)		3 Years Later (when product is established)
Option 1	Sales Force	• **General-line Finishing Distributors**
Option 2	Sales Force	• **Fiber Specialist**
Option 3	**Sales Force and General-line Finishing Distributors**	• **General-line Finishing Distributors**
Option 4	Sales Force and Fiber Specialists	• **Fiber Specialists**
Option 5	**Sales Force and General-line Finishing Distributors**	¨ **Fiber Specialists**
Option 6	Sales Force and Fiber Specialists	• **General-line Finishing Distributors**

At this company, new products were assigned sales and profit targets: Line managers were expected to achieve or surpass both. The division's area sales managers and their key sales representatives were contacted for revenue and cost estimates of going to market using each of the four channel options. Instead of estimating variations in sales revenues through each option, area sales managers felt more confident in estimating the intensity of channel coverage each option required for achieving the fixed sales target. Knowing this, the cost of each channel option can be estimated. Distribution costs were disaggregated into seven elements: demand generation (salesforce time, marketing, and advertising); distributor technical training; distributor administrative training; sales support (inventory carrying and customer credit); logistics (order processing, transportation, and warehousing); distribution margin; and opportunity costs (of sales-force time taken away from selling existing products).

Many cost elements, such as logistics, sales support, and distribution margin, can be computed once the channel options and the details of its implementation are known. But others, such as distributor training costs and opportunity costs, are essentially judgments for new products and channels that were obtained from area sales managers and subsequently refined by headquarters' accounting staff. We aggregated the costs for each channel option. Because the sales target was identical for all four options, the optimal channel in this case was the cost-minimizing option. The relative cost numbers are shown in Table 8. Option 3 was the optimal choice.

Table 8 Relative Costs of Feasible Channel Options

		Distributor Training and Maintenance Costs						
	Demand Generation Costs	**Technical**	**Administrative**	**Sales Support Costs**	**Logistics Costs**	**Distribution Margin**	**Opportunity Costs**	**Total Cost Index**
Option 1	High	Low	Low	High	Medium	Low	Medium	102
Option 2	High	Medium	High	Medium	Medium	Medium	High	110
Option 3	Medium	Medium	Low	Medium	Low	High	Low	100
Option 4	Medium	Medium	High	Medium	Medium	High	High	111

In Option 3, the sales force and the general-line finishing distributors together called on end users to establish the product and effect sales. In three years these same distributors would be expected to take on full responsibility for the product line; by then, it was assumed that the

distributors would be sufficiently trained to service and maintain the several applications for the product.

Conclusion

To evaluate the usefulness of the proposed method, we went back to the company a year after the new product launch to obtain information on how Scotchfiber was performing. We interviewed several members of the original launch team and a cross-section of the field sales management and sales reps directly involved in the Scotchfiber marketing effort. A full year after launch, Scotchfiber sales were running 25% ahead of sales targets and profits were running 34% above expected levels.

Although these results pertain to evaluations at the end of the first year of a three-year planning horizon model, management believed the suggested method helped them make a good decision. Without the aid of this method, the company would have distributed the product through its 500 distributors, which, managers thought on hindsight, would have been a mistake. The company's decision makers initially underestimated the channel support required for the new product's launch. Formally incorporating customer judgments, an essential part of the method, helped remedy management misperception.

Our interviews also identified factors such as effective communication between headquarters and field sales as key reasons for Scotchfiber's success. But two of the top three reasons were "involvement of the direct sales force" and "the channel selection process." A key contribution of this research was the process itself. Other than bringing a conceptual framework to the new product channel decision, the research process integrated judgments from three important constituencies:

- lead-use customers (the potential early adapters of the product)
- in-house experts (such as the product manager and distribution development manager)
- line managers (sales reps and sales managers)

The process combined channel concepts with experts' judgments and managers' inputs to arrive at an appropriate channel for the new product. The managers' active participation generated substantial commitment to the method and facilitated its implementation. The very process of systematically focusing on the new product channel problem led to the discovery and improvement of several related (but not central to the method) tasks, all of which magnified the impact. There is a valuable lesson in this: the process of method development and implementation is perhaps as important as the underlying conceptual framework. While the method outlined here may be immediately more applicable to new product markets, the same principles have been used in several channel audits of mature product markets as well. Steps 1 to 3 are particularly useful. Knowing the capability of existing channels with respect to customer's channel function requirements and benchmarking them with competitors' channels provide useful diagnostics. While a structural change may not be feasible in some cases given long-established channel relationships, distribution managers can at least infer specific guidelines on how to manage existing channel networks to enhance their profile to be more in tune with customer needs.