

# Engineering New- Product Success:

## The New Product Pricing Process at Emerson

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*Emerson Electric is a diversified manufacturer with \$14 billion in sales. The Emerson Price Improvement Team is an internal consulting group that serves the sixty plus Emerson divisions. The Team's mission is to help divisions to achieve their financial and market objectives, by providing pricing skills, tools, and project assistance which improve a division's pricing practices. This paper discusses an implementation of the Price Improvement Team's New Product Pricing Process at Fisher-Rosemount, a business unit of Emerson. Fisher-Rosemount is the world's leading supplier of process control systems, and measurement instrumentation. One of the eight Fisher-Rosemount divisions planned to introduce a new process sensor at a price of \$2,650. After completing the New Product Pricing*

*Process Fisher-Rosemount increased the planned sensor price 19%, introducing it at a price of \$3,150, resulting in a fifth year operating profit improvement of 11 million dollars.*

*The New Product Pricing Process enabled the division to gain a detailed understanding of customer perceptions of product value; determine a key design specification for the new product; reduced cannibalization of its existing & highly profitable sensor, by positioning the new product to optimize the total product portfolio; predict unit sales, revenue, and profitability for a range of market scenarios; and confidently set the right product price. Achieving optimal revenue and profitability, in a manner consistent with the company's business strategy, is a goal of the process. Equally important, the process ensures that customers receive fair value based pricing, while enabling the supplying company to maintain overall industry price equilibrium. ©2001 Elsevier Science Inc. All rights reserved.*

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# The new product pricing process is the foundation for a set of key marketing activities.

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## INTRODUCTION:

Fisher-Rosemount is the world's leading supplier of process control systems, and measurement instrumentation. A Fisher-Rosemount division was the first to introduce an innovative sensor technology used for highly accurate flow measurement to the industry. This sensor provided the foundation for the company to grow a substantial and highly profitable flow meter product line. In recent years, the division experienced some erosion in its technological leadership and market position. Strong competitors, with new technology, were putting the division under increased price pressure while dampening the company's growth prospects.

The division's first sensor was based on a hardware design that required a bulky enclosure. Since 1988 competitors introduced new sensors, and further refined the instrument to provide a compact enclosure. In 1999, Fisher-Rosemount was 2 years behind the competition in introducing a new sensor with the compact enclosure. The sensor's compact size makes it easy to install in process piping. The compact sensor is also easier to clean making it suitable for sanitary process applications found in Food, Beverage and Pharmaceutical industries. Customers were beginning to demand the compact sensor design and to purchase them from competitors.

Fisher-Rosemount's planned introduction of a compact sensor was designed to protect a strong position in the chemical/petroleum industry, as well as to enable growth

within the food, beverage, and pharmaceutical industries.

Fisher-Rosemount requested assistance from the Emerson Price Improvement Team for the introduction of the new compact sensor. Fisher-Rosemount recognized that decisions relative to this sensor would have far reaching consequences for the company. Understanding the value of the sensor to the customer, as well as its pricing and competitive positioning was important to the success of the product. Equally important was the need to understand the likely effects of cannibalization by the compact sensor on the division's current and successful products

Fisher-Rosemount had identified the characteristics of the compact sensor that were of interest to their customers through interviews with sales persons and major customers in the US and Europe. Fisher-Rosemount then engaged the Emerson Price Improvement Team to define and answer several questions:

- What level of flow accuracy would the new sensor require to be successful?
- How should the compact sensor be priced versus competitive products offered by Competitor A and Competitor B?
- What price to unit volume relationships (price sensitivity) can be predicted under a range of market and competitive scenarios?
- To what extent will the compact sensor cannibalize current sensor products, and what will be the financial impact of cannibalization?
- How will customers perceive the value of the compact and current sensor products, and how should these sensors be positioned relative to each other?

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# What features do customers want, and what are they willing to pay?

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- Does the Chemical process industry place a different value on the compact sensor vs. the Food, Beverage and Pharmaceutical industry?
- What value differences and perceptions exist between customers and prospects within selected countries?

In short, the Fisher-Rosemount division needed a systematic and comprehensive pricing process. This process addresses many of the marketing activities that the Price Improvement Team knows from experience to be required for successful product introduction. This assumption is further supported by literature, that concludes: "... new product development has become a core business activity that needs to be closely tied to the business strategy and a process that must be managed through analysis and decision making"[1]. The Fisher-Rosemount division's challenge was met by applying the Price Team's New Product Pricing Process (NPPP), with Customer Value Research as the focal point. Fisher-Rosemount used the pricing process to confirm and calibrate an overall marketing strategy. The results extended beyond setting a price to include defining the optimum product technical features, set discounting policy guidelines, and input to promotional messaging.

## NEW PRODUCT PRICING PROCESS

The Price Improvement team's New Product Pricing Process is the foundation for a set of key marketing activities required for a successful product introduction. Many managers are intimidated by the challenge of new product pricing. The NPPP provides managers a systematic structure to deal with this task, while promoting a customer based orientation toward product design, product value, market segment selection, and competition. Implementation of the process reduces the risk inherent in a new product introduction.

The pricing process is a vehicle for achieving the company's business strategy and financial objectives. Furthermore, it must be grounded by the characteristics of the market for the company's existing and future products. The pricing process takes place within these boundaries of business strategy and market characteristics.

The understanding and integration of a number of elements is necessary for a successful outcome (Figure 1). The New Product Pricing Process diagram does not have a specific start point or direction of flow by design. By breaking apart the interdependent activities into manageable pieces the New Product Pricing Process ensures all the required elements are considered. The intent is to focus attention on specific areas in each element of the diagram, and revisit and adjust areas when new information or insights are gained later. The ability to confidently set the right price, as well as making a realistic prediction of revenue & profitability, are two objectives of the process. Equally important, the process ensures that customers receive fair value based pricing, while enabling the supplying company to maintain overall industry price equilibrium.

The following areas are included in the NPPP:

- Portfolio Management seeks to understand cannibalization and avoid an introduction that dilutes product line profitability. The introduction of a new product also often presents the opportunity to optimize the pricing of the total product line. Portfolio Management is often a good starting point for the process because the marketing and development teams are familiar with the issues involving their existing product line.
- Value Analysis identifies the attributes that comprise product value. Attributes are often intangible (e.g. brand) and due to company performance in areas like

# Set a price that accurately reflects customers' perception of value.

service and support. Using a method that weighs the attribute by customer importance and ranks the attribute versus competitive suppliers and technologies one can begin to quantify the value of the new product.

- Competitive Positioning recognizes that purchase decisions are not made in a vacuum. The competitive positioning activity uses the value analysis data to map the new product versus competitive suppliers and competing technologies.
- Product Design is included to acknowledge that product features should match customer need. Ideally, the New Product Pricing Process will be implemented early in the product development cycle. An important part of the New Product Pricing Process is to confirm what features customers want in a product and which they are willing to pay for.
- Value Segmentation recognizes that distinct groups of customers may have different value perceptions for the product. Value segments may be defined by application of the product, the industry that is purchasing the

product, or the region it is being sold to.

- Cost is included in the New Product Pricing Process because there is a significant need to understand product and portfolio profitability. The process recognizes that cost must be understood from a perspective of variable versus fixed components, and that product cost will change over time. Cost is also dependent upon the predicted volume demand of the product. Not only must these facets of cost be understood for the purpose of building a believable Number's Story, but there is the constant need to drive the engineering and procurement functions to the lowest possible cost to the product.
- The Number's Story is the activity that transforms all the previously collected data into a profit and loss spreadsheet model. This model integrates price with unit volume predictions into a forecast of revenue and profits for a variety of pricing scenarios..
- Customer Value Research is central to the process. Product design, competitive positioning, and pricing all require a systematic approach to understanding customer needs and perceived value. Customer Value Research encompasses both qualitative and quantitative research methods for understanding customer perceptions of value.

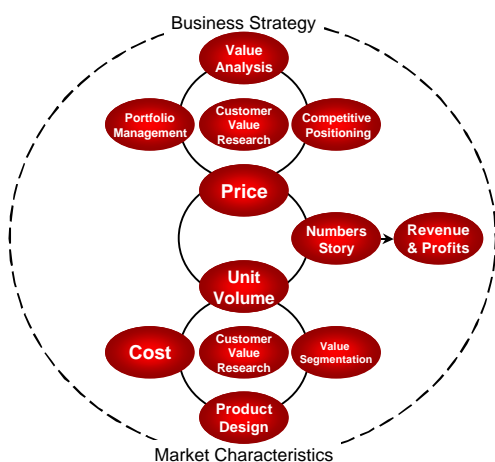


FIGURE 1. New Product Pricing Process

Positioning of products within the company's total product portfolio (Competitive Positioning), and cannibalization by the new product must be evaluated. The Price Improvement Team utilizes a variation of the value map documented in the article, "Setting Value Not Price", by Ralf Leszinski and Michael Marn<sup>1</sup>. Positioning the new product versus portfolio products and competition, even

<sup>1</sup> For more detail on value mapping and price positioning see Leszinski, Ralf and Marn, Michael, Setting Value, Not Price, *The McKinsey Quarterly* 1997 Volume 1, 99-115 (1997)

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# Qualitative research is always required before quantitative research.

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when done internally always proves to be a beneficial exercise that clarifies thought among product team members.

Quantifying the impact of price on unit volume relationships is key to predicting market share, revenue, and profitability. The new product is frequently targeted to several market segments, and it is important to characterize these (Value Segmentation) by differences in value perception and demand.

The process was first introduced at the Fisher-Rosemount division through the Price Improvement Team's New Product Pricing Seminar. This half-day seminar utilizes a case study and interactive exercises, to provide a real world simulation of the New Product Pricing Process in action. Ten people from the division's marketing and R&D departments completed the seminar prior to implementing the process. We think that it is essential that a multifunctional team participate in the seminar to boost team spirit and engage all the various perspectives. We note in the literature that this can literally be the difference between product success and failure. "Projects lacking multifunctional (team) involvement without exception

proved to be failures. Indeed, a frequent correlate of project failure was the use of an under the table, "skunkworks" style of organization, centered within the engineering organization, that restricted or eliminated interaction with marketing"[2].

## GAINING A CUSTOMER PERSPECTIVE: CUSTOMER VALUE RESEARCH

Customer Value Research is the Price Improvement Team's methodology for gaining a customer perspective with the objective of understanding customer perception of product value. Marketing professionals readily accept the idea that price should be based on product value versus cost. The challenge is to set a product price that accurately reflects customer's perception of value. Customer Value Research is the key (Figure 2).

### Step 1: Qualitative Research

Fisher-Rosemount is a technology company that employs engineers and others comfortable with quantitative analysis. Like many such companies solutions that are based on

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## Customer Value Research

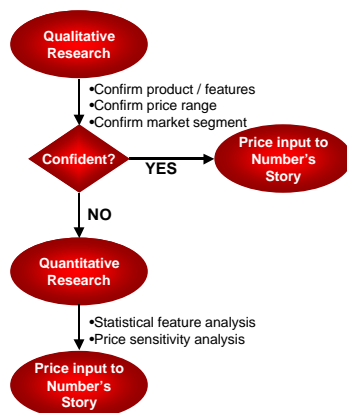


FIGURE 2. Overview of Customer Value Research

# Assistance of a professional researcher is important.

numbers are immediately preferred over those that are not. However, every Customer Value Research project must begin with some qualitative analysis (Figure 3). Qualitative research is a required first step as it establishes a foundation to ensure:

- You are testing the right product (and relevant features)
- You are testing the right prices or price range
- You are testing the right people

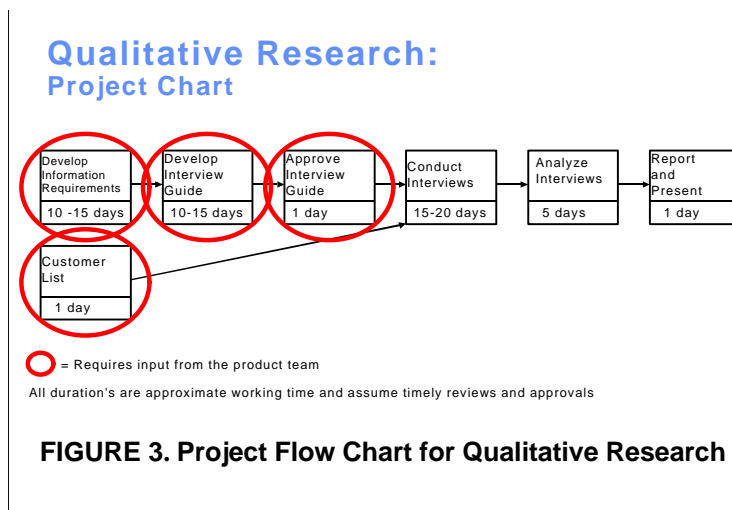
Sometimes qualitative research is the only reasonable Customer Value Research approach. Qualitative methods alone are appropriate when there is less than 200 potential customers, or the product is too complex to capture in a quantitative survey. Qualitative research is always required to provide direction and foundation to a quantitative method.

Good qualitative research begins with the development of an interview guide. An interview guide provides a structure for interviews that require the same questions to be answered by all respondents and provides a means for analyzing the responses. Qualitative research uses the interview guide to perform structured interviews with an adequate number of people. Interviews may begin with people that are employees of the company that have direct

customer contact. Interviews or focus group sessions should also be conducted directly with customers and prospects. It is surprising at how few interviews need to be conducted before the interviewer can predict the responses of the next interview.

An accurate prediction of future responses indicates that sufficient interviews have been completed to provide directional guidance for marketing decisions and a firm foundation for any quantitative research technique that may follow.

Prior to engaging the Price Improvement Team, the division had completed the required qualitative work by interviewing sales people, analyzing and summarizing data collected from routine quality surveys with customers, as well as interviews with some large customers in the US and Europe. The division was confident that flow and sensor enclosure design would be the important features to form the basis for customer trade off decisions. The division had good price information for the devices offered by the two major competitors. Fisher-Rosemount knew the customers to be engineers that could be described as process, control or instrumentation engineers. In short, Fisher-Rosemount was ready to move to a quantitative method that would help



**FIGURE 3. Project Flow Chart for Qualitative Research**

# A rare opportunity to measure the influence of brand.

predict sales for compact sensors when competing against comparable products from Competitor A and Competitor B. As described later, the results from the quantitative research also enabled Fisher-Rosemount to properly position the compact sensor relative to their existing sensor product line.

## Step 2: Quantitative Research

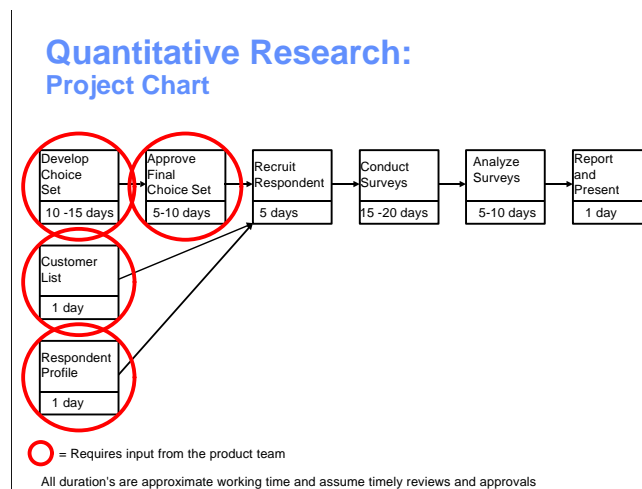
Fisher-Rosemount had done the required work to provide a good foundation for quantitative research. However, a deeper understanding was needed of the value of the compact sensor both in comparison to their product portfolio and with respect to competitive products. Time was of the essence for this project. Results were needed within 12 weeks of project initiation. (Figure 4)

The quantitative research utilized phone-based interviews in the US and Europe that included discrete choice experiments. Discrete choice is one variant of conjoint analysis that is particularly well suited to gathering price sensitivity data. Discrete choice analysis is a statistical procedure that uses the observed choices in a survey to construct a model that can be used to predict the choices that

a consumer will make between alternatives. Discrete choice methods apply when the consumer has to choose between distinct courses of action, such as:

- Have your automobile oil changed by a quick oil change shop, a general auto service shop, auto dealer service or do it yourself.
- Travel by car, train or bus
- Buy brand A, brand B or none at all.

Discrete choice analysis, with some limitations, is an optimum methodology to use for predicting the likely outcome in the marketplace given a competitive situation. Not all competitive situations can be modeled by a discrete choice experiment, and conducting a discrete choice experiment without first using a qualitative method to identify and validate attributes that are meaningful to the respondent is a mistake. The belief that discrete choice analysis can precisely predict market share is misleading. Discrete choice experiment and analysis can be used to predict preference for one product defined by some number of attributes, including price versus another, but cannot directly forecast market share. There will always be some



**FIGURE 4. Project Flow Chart for Quantitative Research**

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# Create a numbers' story to determine an optimum price.

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variables that a discrete choice experiment will ignore. Still, discrete choice analysis provides a solid foundation to base predictions of market share and estimate unit sales at various prices (price sensitivity).

Fisher-Rosemount provided a contact list that facilitated data collection from a respondent pool consisting of one half current customers and one half prospects. Prospects were defined as a company or location that had not purchased the division's sensor for at least two years. The Price Improvement Team is a great believer in obtaining prospect input when doing customer research. It is noted that "... firms relied too heavily on information from current users, rather than focusing on the larger population of potential customers for a new product" [2]. Especially important is the former customer. Keki R. Bhote, in the book "Beyond Customer Satisfaction to Customer Loyalty" makes this point by titling a section of a chapter in the book "If You Do Not Learn from Past Mistakes, You Are Likely to Repeat Them" [3].

Professional interviewers conducted approximately 20-minute phone interviews with 240 respondents in the US and 240 respondents in Europe. Respondents were provided with a small monetary incentive to complete the interview. Respondents could also refer to a web page that provided basic information that defined the attributes (flow measurement accuracy and sensor enclosure design) used to describe the products that were presented for their consideration (Figure 5). A typical choice experiment is shown in (Figure 6).

The assistance of a professional researcher is important. A professional researcher offers expertise that typical product marketing groups often lack including:

- Experience in developing effective interviews including the critical phrasing of interview questions

- Expertise in the statistical methods and software required to analyze data
- Ability to implement interviews without biasing responses by revealing the sponsor

The Fisher-Rosemount project also required interviewers with language skills to administer the interviews for three European countries: France, Germany and UK.

Interviews are computer aided to both guide the interview and collect responses. The products presented for the discrete choice experiments are defined by a software program that ensures random pairings of products from all the possible combinations of attributes. For Fisher-Rosemount's survey, product attributes and price combine to produce hundreds of unique products. Discrete choice analysis software analyzes the observed responses, taking into account the attributes for the chosen product versus the product not chosen. The observed responses are then the basis for determining the relative importance or utility of each attribute that is tested. Ultimately the observed responses are the basis for a model that predicts the preference among products defined by the attributes tested. For example, this model can predict the preference for a Fisher-Rosemount compact sensor with 1% flow accuracy selling for \$3500 versus a similar Competitor A sensor selling for \$2900 versus a similar Competitor B sensor selling for \$3200. The model is also valid for comparing all Fisher-Rosemount sensors defined by various attributes and prices; a useful tool and guide to positioning within the Fisher-Rosemount product portfolio. (See Figures 7 and 8 for examples of simulated market outcomes using model based on discrete choice data).

Since each alternative presented in the choice set was identified by brand name, brand name value was tested and could be quantified. The Fisher-Rosemount division was able to analyze responses to measure brand equity versus

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# The key is measuring price sensitivity.

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Competitor A and Competitor B. One of the interview questions prior to the discrete choice experiments also established the brand currently installed in the respondent's facility. This was a rare opportunity to measure the influence of brand name and brand ownership on the purchase decision. An article published in *The McKinsey Quarterly* reported brand responsible for 18% of the total purchase decision on average, with a range of 3 – 39% noted over 27 case studies from numerous industries<sup>2</sup>. The Price Improvement Team recognizes the tremendous potential of brand on the purchase decision and was pleased to have the opportunity to measure brand value for this specific case. The results showed that brand name and brand ownership were important factors in modeling (predicting) respondent choices.

## QUANTITATIVE RESULTS: US STUDY

The US Study produced several surprises involving items such as brand value, flow accuracy, and industry segmentation. The Fisher-Rosemount division's brand name was highly valued. One half of the respondents would choose a Fisher-Rosemount sensor at a \$1250 premium versus an equivalent Competitor B sensor, or an equivalent Competitor A sensor. Respondents in the US valued flow accuracy. One half the respondents would choose a sensor with flow accuracy of 1% (high accuracy) at a \$750 premium versus an identical sensor with 5% flow accuracy (low accuracy). Finally, the compact enclosure was considered by half the respondents to be worth \$400 versus a traditional design sensor. Specific simulations of choice sets showed that flow accuracy would be key to positioning the compact sensor with respect to the Fisher-Rosemount portfolio and other brand's compact sensors.

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<sup>2</sup> For more detail on the value of brands see Court, David; Freeling, Anthony; Leiter, Mark; Parsons, Andrew J., *Uncovering the value of brands, The McKinsey Quarterly 1996 Number 4*, 176 - 178 (1996)

Comparisons of segments defined by customers versus prospects proved impossible as the division's sensor was reported as installed by over 70% of all respondents. Industry segments defined as chemical/petroleum and food, beverage and pharmaceutical were also tracked and compared. There were no appreciable differences between the industry groups. European data was not available when the US study results were being considered. Everyone involved wondered just how the results would compare between the two world regions.

## QUANTITATIVE RESULTS: EUROPEAN STUDY

There are advantages to conducting these studies in series, allowing the results from the first study to influence and improve the second effort. However, studies in the US and Europe were conducted to some extent in parallel. Time constraints of this project required that the European study be initiated before completion of the US study. The European project was initiated upon completion of an interview guide and the definition of the product alternatives for the US study.

Conducting research in Europe was challenging. European research required interviews be translated from English to German and French. Because the interview subject was technical it was not a standard translation effort. The Fisher-Rosemount European marketing group was enlisted to provide fast turnaround in checking translations for accuracy. Prices were also translated according to currency exchange rates that were current at the time of the interview. Ultimately interviews were conducted with respondents in the UK, France and Germany.

The value of the European data was dependent upon the ability to compare the findings to the study in the US. Every researcher has some flexibility in interpretation and analysis of the raw data. Emerson Price Improvement Team retained the consulting researcher from the US study to ensure that

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# Commitment, training, and resources are critical success factors.

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meaningful comparisons were made between results from the US and Europe.

Of course, it was tempting to try to improve on the effort conducted in the US. Prior to beginning interviews in Europe the Price Improvement Team had preliminary results from the US study and knew brand name and ownership was important. Two extra questions were added to the European interview guide that attempted to further explore the brand equity phenomenon. One additional question asked for unaided awareness of sensor suppliers. Without any assistance the respondent was asked to name all sensor suppliers that they were aware of. Another question asked the respondent to rate their overall satisfaction with any supplier they were familiar with.

European results produced several surprises both analyzed independently of the results in the US and in comparison with the US based study. The biggest surprise in Europe was that the differences in perception of value were not drawn by industry segments or customer vs. prospect segment, but by country. Germany placed more value on the technical aspects of the device. German valuation of flow accuracy and sensor enclosure design was similar to what

was found in the US. Germany, relative to US results showed little value for brand name or brand ownership – two factors that were very important in the US study. The UK and France perceived value in the brand name and brand ownership, but not nearly the value found in the US for product attributes of flow accuracy or sensor enclosure design.

Trade off analysis comparing sensor enclosure design provided another interesting comparison between results in the US versus Europe. The Price Improvement Team found almost 66% of European respondents claimed to have installed compact sensors, with more in the Food, Beverage and Pharmaceutical industry versus the Chemical industry. In the US study less than 10% claimed to have installed compact sensors. Finally, looking at Europe as a whole (which is dangerous as we noted significant differences by country) there is no dominant brand name.

## Methodology Flow Meter Information

The following information may help you in answering our questions. Your interviewer will ask you about your preferences between various pairs of products.

You will be offered the choice of meters whose measurement of **flow** is accurate within either:

- +/- 1%
- +/- 2.5%
- +/- 5%

You will be offered the choice of meters with these types of **enclosure**:

- Compact
- Traditional

FIGURE 5. Background Information for Choices

# The process provided the tools and structure to price the new product.

## TRANSFORMING DATA TO INFORMATION: CREATING A NUMBER'S STORY

Customer Value Research collects data that establishes customer preference for the new product relative to alternative products that might be purchased. In the course of Fisher-Rosemount's Customer Value Research we were also able to confirm and calibrate assumptions in product positioning, technical specifications, brand awareness and equity, and now have guidelines for discount policy. This data has important consequences to many marketing decisions that will affect the new product launch. Ultimately Customer Value Research data is combined with other data to create a Number's Story that will determine an optimum price for the new product.

The Number's Story (see Figure 1 - New Product Pricing Process) is a forecast of new product unit sales and the resulting revenue and profit. Optimally several scenarios are

examined to compare the effects of introducing a product at one price versus another. The key is estimating price sensitivity or, put another way, unit sales as a function of price.

The Customer Value Research derived model predicts customer preference for the new product over a range of prices, and is a foundation for estimating price sensitivity. Customer preference for the new product is evaluated versus other products in the portfolio, and against competitive products. This knowledge of customer preference must be combined with several other data points including:

- Market size
- Market growth
- Relative market presence and barriers to entering new industries

This data must be carefully and skillfully assembled and presented, as it is the foundation for predicting unit sales of the new product at various prices.

To complete the Number's Story a company must add its

### Methodology Sample Choice Set

Please think about your specific application. If you were asked to specify or recommend a sensor, which one of the following products would you specify for purchase?

Choice 1	Choice 2	Choice 3
Fisher-Rosemount Compact Enclosure Flow accuracy within 1% \$3500 price	Competitor A Traditional Enclosure Flow accuracy within 5% \$2600 price	NONE  I wouldn't accept any of these

*Each respondent completed 24 choice experiments*

FIGURE 6. Sample choice set

cost data. Costs often change over time and various cost scenarios should be modeled. Cost data is often not as simple as it is stated here, but often simplifying assumptions can be made, since the objective is a comparison of revenue and profit at several prices.

Finally a decision must be made on which prices to consider for use in a Number's Story. Often there are initial assumptions based on gut feel of the market that will need to be analyzed. Any price that falls within the broad constraint of market characteristics and business strategy can be considered. Ultimately Fisher-Rosemount ran three Number's Story scenarios; each considered the impact on the existing Fisher-Rosemount products and position relative to competitive products. The Number's Story scenarios included:

1. Fisher-Rosemount compact sensor introduction at \$2650
2. Fisher-Rosemount compact sensor introduction at \$3150
3. Fisher-Rosemount compact sensor introduction at \$3450

The Number's Story evaluation established a \$3150 selling price as the best balance between revenue and profits. A compact sensor introduction at \$3150 provides maximum profit and near maximum revenue for the portfolio that included the compact sensor and existing sensors. Revenue

at \$2650 was greater, but through cannibalization diluted profit dollars and margin.

## HEARING THE CUSTOMER

Questions Fisher-Rosemount had at the beginning of this project are addressed below:

**What level of flow accuracy would this new sensor require for success?** Flow accuracy was proven to be a key element for product preference. This attribute was highly valued by the US respondents and German respondents. Simulations of preference within Fisher-Rosemount's portfolio and against competitive products indicated an optimum flow accuracy of 2.5%. This flow accuracy provided the best balance of being best in class among competitive compact sensors, but not leading to excessive cannibalization of Fisher-Rosemount's existing sensors.

**What price and product performance is required for a compact sensor to win versus competitive products offered by Competitor A and Competitor B?** Simulations showed the compact sensor to have a large value advantage in the US. The Fisher-Rosemount division's installed base and brand value recognition is dominant in the US. The division's dominance in the US was not evident in Europe. European results indicate a more even balance between competitors and a more price sensitive environment. The compact sensor must provide some advantage versus

## Discrete Choice Methodology Portfolio Analysis

Product	Enclosure	Accuracy	Price
New Product	Compact	+/- 2.5%	varies
Premium Product	Traditional	+/- 1%	\$3250
Basic Product	Traditional	+/- 5%	\$2200

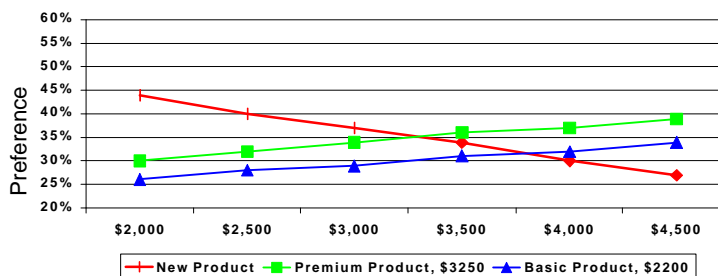
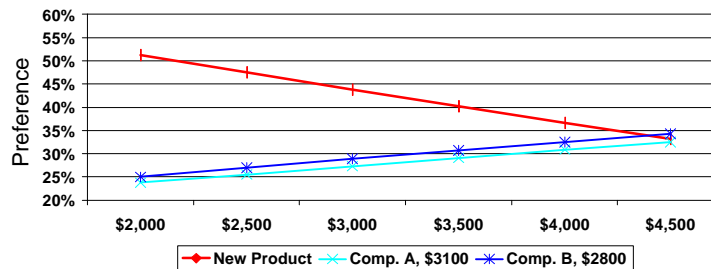


FIGURE 7. Simulated Outcome for Portfolio Products

## Discrete Choice Methodology Competitive Analysis

Product	Enclosure	Accuracy	Price
New Product	Compact	+/- 2.5%	varies
Comp. A	Compact	+/- 5%	\$3100
Comp. B	Compact	+/- 2.5%	\$2800



**FIGURE 8. Simulated outcome for competitive products**

competitive products to be successful in Europe. A market leading flow accuracy of 2.5% provides this value advantage. The ability to study various competitive scenarios and judge the effect of product attributes and price brought focus to product performance requirements.

**How can Fisher-Rosemount be sure introduction of the compact sensor will not cannibalize existing sensor products?** Simulations of preference comparing Fisher-Rosemount's portfolio permitted an analysis of the effects of price and product performance on preference of the compact sensor versus existing sensors. If the compact sensor is introduced at too low a price relative to an existing sensor, or with high level (1%) flow accuracy, cannibalization of the existing sensor is unacceptable. It was clear that the compact sensor should not be priced lower than \$3150 versus an existing sensor at \$3400.

**The Fisher-Rosemount division successfully sells products to the Chemical process industry. Can the compact sensor be successful in the Food, Beverage and Pharmaceutical industry?** The Customer Value Research study specifically tracked results from each industry segment. There were no significant differences in the perception of value between the industry segments.

**What value differences and perceptions exist between customers and prospects within selected countries?** The US and Europe studies provided an excellent means for comparing the two regions. The European study revealed significant differences between countries in Europe. The studies in the US and Europe also, for the first time, quantified the value of installed base and brand. The Fisher-Rosemount division intends to use this knowledge of regional differences, installed base and brand, as a basis for allocation of promotional resources, as well as the development of country by country discount guidelines.

### SUCCESS FACTORS

Several factors contributed to a successful implementation at the Fisher-Rosemount division.

- **Commitment.** Implementation of the process enjoyed widespread support throughout the division. The rigor of a structured quantitative approach appealed to the engineering/technology based orientation of the company
- **Training.** The New Product Pricing Seminar provided division personnel with the training needed to move forward. The participants learned how to apply the process structure and tools to their specific product

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issues. Also, participants expressed the view that the seminar served as an effective team building exercise.

- *Resources.* The division committed adequate resources to the project. The project was given high priority, and benefited from strong project leadership by Fisher-Rosemount and the Price Improvement Team.

## INSIGHTS FOR MANAGERS

The New Product Pricing Process is the framework for a successful pricing and introduction of a new product as illustrated in this case study. For managers the New Product Pricing Process is a checklist for management review of new product introduction. Management checklist includes:

- *Strategy:* Are the conclusions and actions of the product team consistent with the overall division's business strategy and financial objectives?
- *Product Design:* Are product features actually considered valuable by the intended customers? Has the division over engineered the product and included features that add cost, but little customer value?
- *Value analysis:* What product or supplier attributes are considered valuable by customers?
- *Customer Value Research:* Did the product team gain a customer perspective for their pricing and marketing decisions? How did they gain this perspective, who did they talk to, and are their results believable?
- *Competitive price positioning:* Has the value of the product been compared to products from competing suppliers and competing technologies? Is there a price value map to summarize and support the assumptions made by the product team?
- *Portfolio management:* What impact will the new product have on existing products made by the company? Has the effect of cannibalization been realistically assessed and accounted for?
- *Value Segmentation:* Has the available market been analyzed for customer groups that hold similar value for the product? Have non-traditional market segments defined by common application, region or industry been considered?
- *Number's Story:* Can the product team present a believable number based prediction of revenue and profits that will result when the new product is

introduced? Have a variety of price & unit volume scenarios been considered?

## SUMMARY

The Fisher-Rosemount business strategy for the compact sensor release was that it should compliment the existing products, protect the divisions position in the chemical/petroleum industry, and stimulate division growth in the food, beverage and pharmaceutical industries. Marketing's initial assumption was that a selling price of \$2650 would accomplish that goal. There was also uncertainty as to what flow accuracy specification would be required for the product to be successful. The New Product Pricing Process gave division personnel the confidence to introduce the product at a substantially higher price. The process also demonstrated that a flow accuracy of 2.5% would be required for competitive positioning and advantage, especially in Europe where other brands were strong.

The process provided the division with the tools and structure to effectively price the new product. It provided the foundation for a number of key marketing activities that are required for new product success. The process ensured that the division's customers receive fair value based pricing. The division is confident that as a result it will achieve optimal revenue and profitability, while maintaining overall industry price equilibrium.

## REFERENCES

1. Bowen, H.K., Clark, K.B., Holloway, C. A., and Wheelwright, S. C.: Development Projects: The Engine of Renewal, *Harvard Business Review* **72**, 110 – 120 (1994)
2. Bacon, G., Beckman, S., Mowery, D. Wilson, E.,: Managing Product Definition in High Technology Industries: A Pilot Study. *California Management Review* **36(3)**, 32 – 56 (1994).
3. Bhote, K.: *Beyond Customer Satisfaction to Customer Loyalty*, American Management Association, New York, 1996.