



MINT~RC

*MANAGEMENT OF INNOVATION  
AND NEW TECHNOLOGY  
RESEARCH CENTRE*

**NEW PRICING PRODUCT DESIGN  
FOR COMPETITIVE ADVANTAGE**

by

Ken Deal, Ben Long and Bryan Scott

Management of Innovation and New Technology  
Research Centre

WORKING PAPER NO. 81  
1998



**McMASTER**  
• U N I V E R S I T Y •

**MICHAEL G. D'GROOTE  
SCHOOL OF BUSINESS**

Innis

~~ReB~~

HD

45

.W657

no.81

**NEW PRICING PRODUCT DESIGN  
FOR COMPETITIVE ADVANTAGE**

by

Ken Deal, Ben Long and Bryan Scott

Management of Innovation and New Technology  
Research Centre

WORKING PAPER NO. 81  
1998

The Working Paper series is intended as a means whereby a researcher may communicate his or her thoughts and findings to interested readers for their comments. The paper should be considered preliminary in nature and may require substantial revision. Accordingly, this Working Paper should not be quoted nor the data referred to without the written consent of the author. Your comments and suggestions are welcome and should be directed to the author.

**MCMMASTER UNIVERSITY LIBRARY**

Ken Deal, Ben Long, & Bryan Scott

# *New Pricing Product Design for Competitive Advantage*

## **ABSTRACT**

Electricity is the last of the major utility sectors to be deregulated in North America. One of the key challenges for the electric industry is shifting from making electric service universally available in a monopoly-dominated market to a competitive market focusing on improving market efficiencies and providing meaningful customer choices. In this transition, the pricing approach is changing from the sterile rate "engineering" approach to the development of pricing products designed to retain existing customers and to acquire new customers. The current customers of monopolies are not willing to wait for change - they are demanding meaningful alternatives to the way they purchase electricity.

Early efforts to respond the challenge of developing new pricing products for deregulated markets have focused on the high-risk/high-yield customers that are likely to be targets of new competitors. The responses of utilities have been focused on making "special contract" agreements with large industrial customers. More progressive utilities have offered Real Time Pricing as a transition product and are using it as a platform for other pricing products. Primarily, utilities are studying the results of competitive markets abroad and using the open access pilots in the northeast and California to test new pricing products.

Being proactive and preparing to respond to changing market conditions during this time of transition is the key driver for forward thinking utilities that want to be dominant players in the new markets. Conducting research targeted toward gaining insight on customers' preferences for a variety of new pricing features became the purpose of this study. This paper presents the results of research conducted to assist with the design of a new pricing product, SelectChoice<sup>™</sup>, that will allow commercial and industrial customers to buy electricity today in forms found in current competitive markets. The research was designed as a conjoint analysis study of the sensitivity of small commercial to light industrial customers to pricing and contract options. The results will be used to shape not only the SelectChoice<sup>™</sup> pricing product, but also will provide information to be utilized in the development of other pricing and service products.

# *New Pricing Product Design for Competitive Advantage*

Electricity is the last of the major utility sectors to be deregulated in North America. One of the key challenges for the electric industry is shifting from making electric service universally available in a monopoly-dominated market to a competitive market focusing on improving market efficiencies and providing meaningful customer choices. In this transition, the pricing approach is changing from the sterile rate “engineering” approach to the development of pricing products designed to retain existing customers and to acquire new customers. The current customers of monopolies are not willing to wait for change - they are demanding meaningful alternatives to the way they purchase electricity. Early efforts to respond have focused on the high-risk/high-yield customers that are likely to be targets of new competitors. The responses of utilities have been focused on making “special contract” agreements with large industrial customers. More progressive utilities have offered Real Time Pricing as a transition product and are using it as a platform for other pricing products. Primarily, utilities are studying the results of competitive markets abroad and using the open access pilots in the northeast and California to test new pricing products.

Being proactive and preparing to respond to changing market conditions during this time of transition is the key driver for forward thinking utilities that want to be dominant players in the new markets. Conducting research targeted toward gaining insight on customers’ preferences for a variety of new pricing features became the purpose of this effort. This paper presents the results of research conducted to assist with the design of a pricing product, SelectChoice™, that will allow commercial and industrial customers to buy electricity today in forms found in current competitive markets. The results will be used to shape not only the SelectChoice™ pricing product, but also will provide information to be utilized in the development of other pricing and service products.

## **Background**

Central and South West Corporation (CSW) is an electric utility holding company with four U.S. operating companies located in Texas, Oklahoma, Louisiana, and Arkansas. CSW is developing the ValueChoice™ suite of electricity products that will be offered to customers as an alternative to conventional rates and services.

The mission statement of CSW for Pricing Product Development is to develop pricing products to

offer choices today that simulate future competitive products. This process was initiated with the development of CSW's Real Time Pricing (RTP) programs. Targeted towards the very largest customers with the ability to manage their usage, RTP provides subscribers with hourly prices posted a day ahead. RTP has been very successful for CSW. The Pricing Product Development team turned its attentions to the commercial and small industrial customer segments.

CSW began investigating new ways of generating revenue in the commercial market sector. The SelectChoice<sup>SM</sup> product has been developed specifically for those customers who want to know, in advance, the price of energy when it will be consumed. One of the key benefits of this product is that customers are able to choose among nine different product options rather than the typical one format. The product offers several peak and off-peak price combinations and alternative blocks of hours of the day to which the peak prices apply. The alternatives are similar to those in Exhibit 1.

<b>SelectChoice<sup>SM</sup> Design Grid</b>	<b>On-Peak Price</b>		
	<b>8.0 cents/kWh</b>	<b>9.7 cents/kWh</b>	<b>11.8 cents/kWh</b>
	<i>Off-Peak Prices</i>		
<b>3:00 p.m. – 7:00 p.m.</b>	3.35 cents/kWh	3.25 cents/kWh	3.15 cents/kWh
<b>2:00 p.m. – 8:00 p.m.</b>	3.30 cents/kWh	3.15 cents/kWh	3.00 cents/kWh
<b>1:00 p.m. – 9:00 p.m.</b>	3.20 cents/kWh	3.00 cents/kWh	2.80 cents/kWh

Exhibit 1

The purchase plan choice would involve three choices: the time period during which the On-Peak Price would apply; the On-Peak Price of 8.0 cents/kWh, 9.7 cents/kWh or 11.8 cents/kWh; and the Off-Peak prices that would be forced by the first two choices. Naturally, these choices can be made in any order, two choices could be made freely with the third fixed based on the first two. The Off-Peak prices are lowest at 2.80 cents/kWh when the On-Peak price is the highest, 11.8 cents/kWh, and the On-Peak window is the widest, from 1:00 p.m. to 9:00 p.m.

The product was also comprised of several other attributes. These included:

- Length of contract;
- Method of setting the rate during the contract period;
- Whether bills could be aggregated or not;
- CUP adjustment; and others.

## **Purpose and Benefits of Project**

The specific objectives of this project were to:

1. Determine the attribute that has the greatest appeal;
2. Understand why a firm would choose SelectChoice<sup>SM</sup> over the standard pricing;
3. Measure the response of the target market to various options intrinsic to the SelectChoice<sup>SM</sup> product;
4. Understand the effect of pricing on the likelihood of customers to convert to the SelectChoice<sup>SM</sup> product;
5. Determine how the product can be changed to provide enhanced value to customers.

The information provided by this research provided much of the insight needed by CSW to assess the potential of the SelectChoice<sup>SM</sup> product, to adapt the design of the product to better meet the needs of customers and to adapt its personal selling and direct-mail efforts to coincide more closely with the desires of its customers for information and, of course, to improve the contribution of this product to the overall business position of the organization.

Based on the findings from this study, Central and South West Corporation was able to refine the design of the SelectChoice<sup>SM</sup> product to gain the maximum advantage in the market. The design team at CSW was able to better understand the ways in which the features of the product could be altered to take advantage of the strongest desires of customers within the key segments of the target market.

## **Research Methodology**

The problem of wanting to better understand the ways in which customers make decisions is pervasive in marketing. Models of the customer decision-making process have captured the imagination of marketers since the times of Howard and Sheth's (1969) verbal model of consumer behavior and Bass's (1969) mathematical model of the diffusion of durables. Many others have followed this path in developing increasingly more sophisticated representations of how customers identify problems and opportunities, obtain information, assess alternative solutions, make decisions, buy products and alter their attitudes based on product usage after purchasing.

Buying electricity for commercial and industrial companies can be a very complex and demanding process. While some customers are willing to commit substantial resources to the buying process, others want simplified arrangements that can still save money. While no model of the choice and buying process is accurate, some are better than others. The buying process for commercial decision makers can be quite long with several stages that precede the actual buying behavior.

Most models of buying behavior include components that address the fact that there are typically

several different attributes of the product or service that differentially influence the final purchase decision. Also, each attribute has two or more possible levels that can be designed into the product or can be presented to customers as alternative selections. In most cases, it is neither wise nor possible to present all of the many possible variations to customers. Consequently, the product designers must determine the product configuration(s) that have the greatest opportunities for market success. This decision can be done by the designers based on their expertise alone or based on a thoughtful combination of that expertise with the opinions of customers.

## **The Research Process for New Electricity Pricing Products**

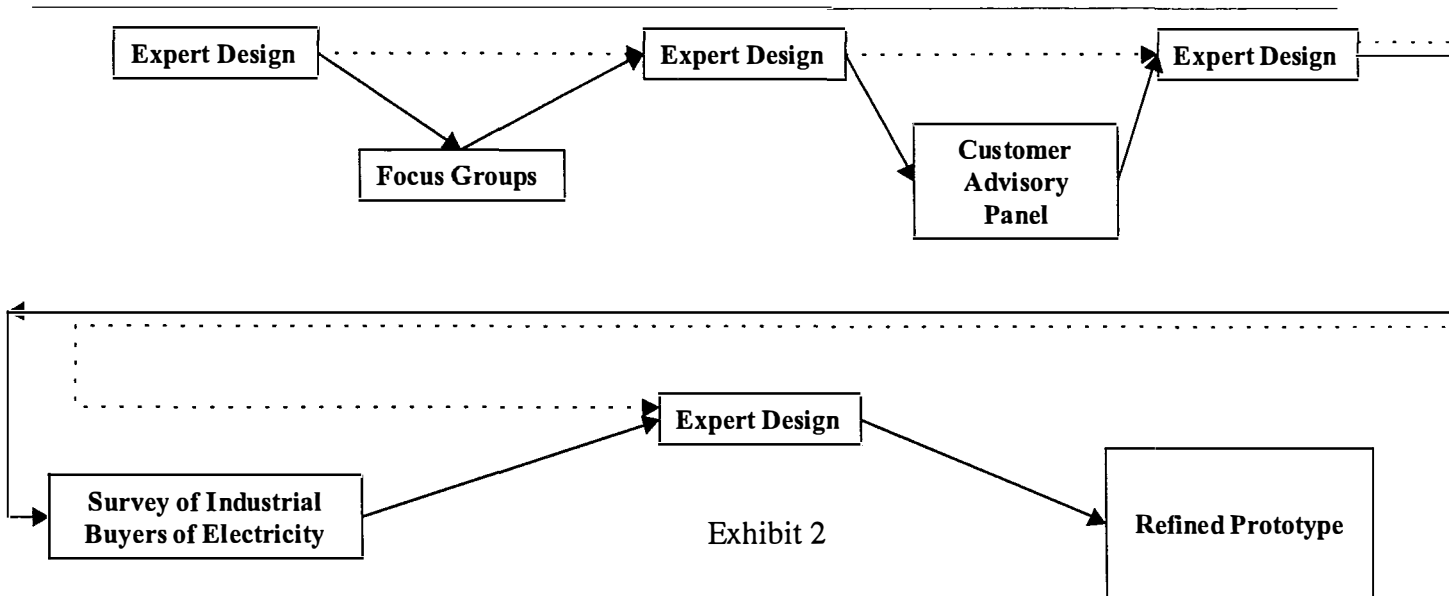
The development of effective new pricing products for the industrial buying of electricity is a challenging process of two supporting disciplines ... design of the products by design experts and refining those products based on information from customers. The market information is best captured through complementary qualitative and quantitative research studies. The qualitative research can be executed as in-depth personal interviews, focus groups or customer advisory panels. Survey research of large numbers of customers is effective for testing whether the product is likely to have general appeal to the market and specific appeal to important targeted market segments.

It is suggested that the stages of the pricing research process for commercial and industrial customers of electricity are the following.

1. Expert Design of First Generation Prototype
2. Qualitative Input from Focus Group or In-Depth Personal Interviews
3. Design Expert Refines First Generation Prototype
4. Customer Advisory Panel Input
5. Design Expert Refines Second Generation Prototype
6. Survey of Customers
7. Design Expert Refines Third Generation Prototype
8. Customer Advisory Panel Input
9. Final Revision of Fourth Generation Prototype by Design Expert

The Design Expert might or might not be one person. Often this task is performed by a design team with a design manager. New products can only rarely be effectively designed based only on customer research. Customers are often very good at indicating what they don't like about products but are typically not able to cast far enough into the future to design truly innovative products that have high probabilities of market success.

The Customer Advisory Panel type of qualitative research input can be extremely helpful when the



panel members are given specific tasks, managed to work at those tasks and facilitated to supply the required deliverables. Management of this process within realistic boundaries is an extremely important function. Customer advisory panels are sometimes imposed or strongly encouraged to utilities by regulatory bodies. The development of a set of expectations that meet the needs of the operating utility company and satisfy the regulators or intervenors is critical. A process needs to be specified that can be executed during a reasonable period of time and that does not work to a set of expectations that exceed the needs of the utility and unrealistically encourage the external participants.

## Using Conjoint Analysis for Pricing Research

Conjoint analysis provides a process, a survey methodology and an analytical technique to better understand the ways in which customers make decisions regarding purchase of the product. 'Conjoint' was originally intended to mean that customers' preferences for the several attributes of the product are obtained jointly rather than individually. Elicited in this way, the task is more similar to the way in which buyers are thought to evaluate the holistic value of products to themselves or their organizations prior to selections. Although customers undoubtedly think about the individual attributes such as price, contract length and so on, the end decision is made in ways that reflect the overall benefits that the individuals and the organizations intend to extract from the item. The overall assessment is affected differently by each of the constituent attributes.

For example, when buying electricity for commercial and industrial usage, there are several attributes that influence the total cost and, perhaps, consumption of the product. These can include the following:

1. Energy charge, cents/kWh
2. On-Peak period



3. Off-Peak period
4. Length of contract
5. Method of adjusting the prices during the contract term
6. Other options, such as combining accounts, etc.

There are at least two challenges to deciding on the design of the pricing product: 1) which attributes to include in the product; and 2) what levels of the included attributes to fix or to include as selection options.

### ***Deciding on the Attributes and Attribute Statements***

Initially, the six attributes listed above plus several others were included in the design task. After several attempts at crafting questions, some of the attributes were judged to be too difficult for many of the respondents to understand without lengthy explanations that would make the process confusing and difficult for the respondents and longer and more expensive for the company. Consequently, the attribute list was shortened to the diagram presented below.

Naturally, Off-Peak Hours and On-Peak hours are related to one another as are specific price levels and whether the electricity is being used during the On-Peak or the Off-Peak periods, as shown in the exhibit.

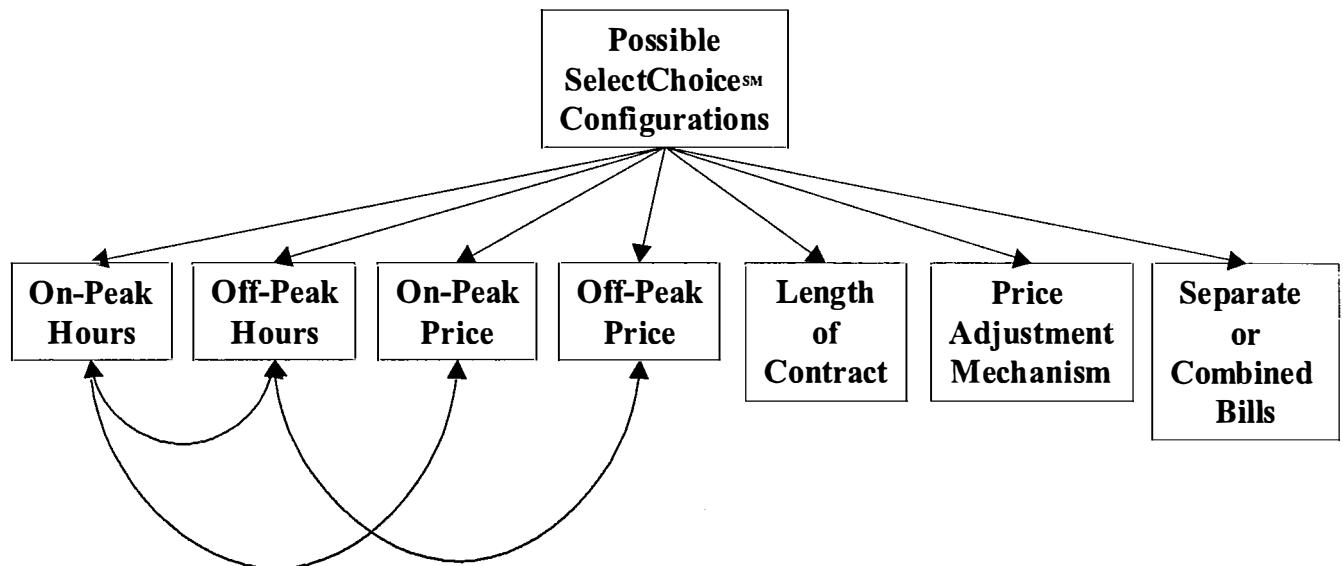



Exhibit 3

The original Design Grid of 9 cells or levels was reduced to the four cells shown in Exhibit 4. It was felt that this simplification would not substantially reduce the directional nature of the information

while reducing the size of the task and the length of the interviews. In many conjoint studies, it is felt that no more than three price levels are necessary to provide enough information for estimating price utilities. Because of the structure of the Design Grid, four cells were necessary to capture the relevant information in this study.

SelectChoice <sup>SM</sup> Design Grid	On-Peak Price		
On-Peak Hours	8.0 cents/kwh	9.7 cents/kwh	11.8 cents/kwh
	Off-Peak Prices		
3:00 p.m. – 7:00 p.m.	3.35 cents/kwh	3.30 cents/kwh	3.20 cents/kwh
2:00 p.m. – 8:00 p.m.	3.25 cents/kwh	3.15 cents/kwh	3.00 cents/kwh
1:00 p.m. – 9:00 p.m.	3.15 cents/kwh	3.00 cents/kwh	2.80 cents/kwh



Select Choice Design Grid	8 ¢ / Kwh On-Peak	12 ¢ / Kwh On-Peak
3pm - 7pm On-Peak Window	3.5¢ Off-Peak <b>A</b>	3.0 ¢ Off-Peak <b>C</b>
1pm - 9pm On-Peak Window	3.0 ¢ Off-Peak <b>G</b>	2.5 ¢ Off-Peak <b>I</b>

**Exhibit 4**

While length of contract and method of fixing the prices during the contract period are two separate attributes, the two are related in such a way that they can be presented to customers as one attribute. The diagram below shows the relationships between the levels of the two attributes.



**Exhibit 5**

These Contract Options, i.e., length of contract and a pricing commitment, produced the following six alternative configurations:

- 1 year contract, no guarantee;
- 1 year contract where the annual bill under SelectChoice<sup>SM</sup> would be guaranteed to be no higher than the account would have been charged under their prior arrangement;
- 3 year contract with prices fixed and where a 2% premium would be charged for the fixed prices;
- 3 year contract where the price would be indexed to the natural gas prices;
- 5 year contract with prices fixed and where a 5% premium would be charged for the fixed prices; and
- 5 year contract where the price would be indexed to the natural gas prices.

Whether customers desired to combine accounts or maintain separate bills is a distinct attribute. There are several ways in which this option can be presented to decision makers. While more detailed descriptions were considered, it was felt that a relatively simple and direct statement would be most appropriate for the survey.

### ***Designing the 'Conjoint Experiment'***

A particularly critical stage of a survey that uses conjoint analysis is the design of the 'experiment'. In most applications of conjoint analysis, there are several attributes, each of which have several levels. Naturally, there are many combinations of attribute levels representing different possible product configurations that could be presented to respondents. Many researchers prefer to reduce the number of product alternatives presented to respondents to reduce fatigue and errors that are thought to be related to long question sequences. However, some researchers tend to think that this is not such a serious problem. [Louviere, et al (1993)]

This study was conducted in two phases where material was faxed or mailed to respondents and they were then interviewed on the telephone to elicit their answers to the questions. During the first phase, customers were asked if they were interested in maintaining a separate bill or whether they might be interested in combining their account with another for billing purposes. Customers who were interested in combining their account with another were asked this question again during the second phase of the study where this attribute was considered to be one of three attributes of the experimental design. Those who wanted to maintain separate bills were not asked this question during the second phase.

The experimental design phase produced 24 'cards' or product options for each customer to rate on a scale that ranged from '0', meaning 'does not at all suit your needs', to '10', meaning 'ideally suited to your needs'. The 24 design cards for the 'keep bills separate' group covered all combinations of the Design Grid and the Contract Options, i.e., 4 grid cells multiplied by 6 contract options. The 'interested in combining bills' group also provided ratings for 24 product options. However, the design included 24 of the 48 possible combinations of Design Grid (4 levels), Contract Options (6 levels) and Billing Options (2 levels). Conjoint analysis typically elicits product assessments on fewer than all combinations of levels of attributes. The assessments of those combinations not expressed by respondents are simulated through the conjoint process.

The actual setup for the pricing product options is shown in Exhibit 6. Each respondent was faxed three questionnaire sheets that contained 24 product options. Some contained the 'Combined Bills?' attribute as shown in the exhibit while those who said that they were not interested in this facility during the first interview received cards that did not contain that alternative. The interviewers spoke through each of the 24 options with each respondent, eliciting their rating from 0 through 10 for each card.

**How Well Do These Pricing Options Meet Your Needs?**

Does Not at All Suit Your Needs   0   1   2   3   4   5   6   7   8   9   10   Ideally Suited to Your Needs

Option #	On-Peak Window During Which Peak Prices Apply	On-Peak Price, cents	Off-Peak Price, cents	Contract Length and Prices During Contract	Combined Bills?	Ratings
1	1:00pm-9:00pm	8	3.0	3 years, Prices Fixed at initial level with 2% Premium	Yes	<input type="text"/>
***						
17	3:00pm-7:00pm	12	3.0	1 year, No guarantee	Yes	<input type="text"/>
***						
21	1:00pm-9:00pm	12	2.5	5 years, Prices Indexed to natural gas prices	Yes	<input type="text"/>

Exhibit 6

## Field Methodology

This study was designed and executed as a quantitative field survey utilizing telephone interviews and faxed questionnaire components to elicit the information needed to satisfy the objectives of the project. Qualitative research, such as focus groups, was not part of this study. However, CSW had prepared a pilot project that involved several workshops with commercial and industrial customers. These workshops helped the product designers and researchers to understand the level of comprehension that customers would have of the features. Still, the design of the questionnaire involved a substantial amount of adjustment of questions to ensure clarity when read by respondents.

The scope of this study was current commercial and light industrial customers in the regions served by CSW's operating companies in Oklahoma, Arkansas, Louisiana and Texas.

The sample lists provided by CSW furnished a total of 1698 customers. Of these, 782 were recruited and answered the questions in the recruiting questionnaire. Incorrect telephone numbers were found in 243 listings. By the termination date of December 15, 1997, 47 numbers were still 'alive', including two respondents where the telephone was not answered or was busy and 26 calls that were intercepted by voice-mail. Five hundred customers refused to participate in the survey or terminated at some point. The overall response rate was 46% among the total list provided and 54% among those listings that had accurate telephone numbers.

Following the initial recruiting interview, the SelectChoice<sup>SM</sup> Grid and option sheets for the conjoint exercise were faxed to the customers. Interviewers then attempted to recontact the customers to elicit their Grid preferences and ratings of the 24 options in the conjoint exercise. Three hundred thirty seven (337) usable questionnaires remained after the conjoint exercise was completed and the data was cleaned.

In general, the customers of CSW's operating companies cooperated very well with the survey. Many seemed very interested in the research and took it quite seriously. They understood that CSW was genuinely attempting to get valuable customer feedback on a product that would provide real benefits to commercial and industrial users of electricity.

## **Sample Description**

The sample was distributed as well as possible among the four CSW operating companies, SIC segments and the geography served by CSW. The geographic and sector division of the 782 person recruited sample was distributed over the regions of Oklahoma, Arkansas, Louisiana and Texas served by the four CSW operating companies. While every attempt was made to represent the operating companies as evenly as possible, the sample resource and customers' willingness to participate produced the distribution shown in the chart.

Many SIC codes were represented in the sample. For analysis purposes, it was necessary to group many code segments together that were too small to analyze separately. While the Government, Colleges & Universities, General Merchandise and Transportation groups of SICs were important to observe in some analyses, when split by other variables the components were sometimes too small to provide reliable estimates.

The sizes of the customer accounts were measured by revenue, annual kiloWatt-hours of electricity used and average monthly kiloWatts used. All three dimensions varied dramatically among the sample companies.

The sample was broken down in many ways to better understand the distribution of the customers among the several key dimensions of the study. The two main grouping variables for much of the segmentation analyses were Operating Company and SIC Segment. Because of variations in geographic concentrations of industry segments, there were natural differences in the industry profiles for the four operating companies.

## **Questionnaire Design**

This project was designed to provide a sensitive and robust process for assessing the responses of customers to various formulations of the SelectChoice<sup>sm</sup> product. The questionnaire was constructed so that estimates of relative importance of product attributes and their affect on purchase intentions could be obtained from the respondents.

The basic structure of the questionnaire elicited this information via a conjoint analysis approach for retrieving critical preferences. Using this method, the data was translated into respondent utilities for each of the key product attributes. These utilities were combined to produce estimates of the alternative impact on preferences of various combinations of the levels of the several key attributes. Impact estimates allowed Central and South West Corporation to design the SelectChoice<sup>sm</sup> product to provide the maximum balanced benefits to customers and to enhance CSW's business position in the most positive manner.

Conjoint analysis provides for the elicitation of information from respondents that reflects their relative preferences for the levels of the attributes of the product. These attributes often include infor-

mation about the product's price. The analysis of this wealth of information has furnished the basis for more effectively designing the product, including its price.

The following steps were followed in contacting and questioning the respondents.

1. A letter from the Pricing Solutions Manager was faxed to those on the sample lists provided to MDR, the research firm, by CSW.
2. An interviewer called each prospective respondent to identify that the listed name was the most appropriate contact within the organization and to determine whether the account administrator might like to combine the bill for that account with that of any others of that organization or with any accounts of any other organization and receive one summarized bill. Seven hundred eight two customers provided usable answers to this first interview.
3. Each respond who agreed to the next stage of the study was faxed or mailed 7 pages for the conjoint part of the study. These pages included instructions for answering the questions and explanations of terminology and components of the design grid and the option sheets.
4. The Design Grid provided to the respondents was a reduced form of the Grid that was an integral part of the SelectChoice<sup>SM</sup> product (formerly S~TOU). Earlier Grids were comprised of 9 cells, whereas the Grid used in this study was reduced to the 4 key cells of Exhibit 4 to reduce the complication for respondents.
5. Design Options were arranged on three sheets of paper. The participants were asked to rate each option on a scale that ranged from a low of zero to a high of 10. Conjoint studies typically ask respondents to rate or rank combinations of levels of the attributes that are tested. For those who said in the initial part of the survey that they would like to combine their account bill with those of other accounts, three attributes were tested. These were:
  1. Design Grid Cell (see Exhibit 4);
  2. Contract Options, i.e., length of contract and a pricing commitment, (see Exhibit 5);  
and
  3. Billing Preference, i.e., whether they wanted to have a combined bill with other accounts or to maintain a separate bill.

Those customers who had said during the initial interview that they were not interested in combining accounts reviewed just two attributes. These were attributes 1 (the Design Grid) and 2 (Contract Options) above and were not presented with attribute 3. Three hundred thirty seven customers fulfilled the requirements for the second interview and their responses were used for the conjoint analysis.

Exhibit 6 shows three of the 24 pricing options presented to those customers who said initially that they were interested in the possibility of combining their bill with that of another organization.

The faxes encouraged customers to write their answers on the faxed sheets prior to the telephone call. When respondents were called for the first of the two interviews, several questions were asked about respondents' knowledge of the pricing of the electricity that was used by their account. Inter-

viewers then asked respondents to rank the four cells of the Design Grid along with their current service.

During the second interview, customers were asked to consider each of the twenty four Design Options and provide their rating on the zero ('does not at all suit your needs') to 10 ('ideally suits your needs') scale. This completed the interview with respondents.

## **Project Timing**

The interviewing began on October 20, 1997 and was completed on December 15, 1997. Many of the respondents were very eager to complete the survey. However, their schedules often precluded them from speaking with the interviewers until they had the needed 15 to 20 minutes of uninterrupted time.

Since many respondents worked in small to medium sized businesses, there were many activities demanding their time during their busy workdays. It often took interviewers several days to reach the customer for the initial interview and then several more days, and sometimes more than a week, to procure the main interview.

## **Key Findings**

The key findings provide information on which the market for SelectChoice<sup>SM</sup> can be better understood and which can be used to adjust SelectChoice<sup>SM</sup> to better appeal to the market overall and to specific market segments.

As mentioned earlier, the main questionnaire contained three key components:

1. Knowledge of Billing Practices for Electricity;
2. Preferences for the Design Grid vs. their Current Arrangement; and
3. Conjoint elicitation of Preferences for Design Options.

Because of the nature of this article, only the conjoint analysis will be discussed in the following sections of this paper.

Considering the four alternative cells of the design grid, cell A has the highest utility, followed by cell G, cell C and I. Only minor differences arose between the utilities of the Separate group and the Combine group. The A and G cells both include the lower of the two On-Peak rates of 8¢ per kiloWatt hour. Cell A (4 hour On-Peak period) is preferred to Cell G (8 hour On-Peak period) and Cell C (4 hour On-Peak) is slightly preferred to Cell I (8 hour On-Peak).

## **Design Option Preferences**

Conjoint analysis, the main analytical tool for this study, estimates the utilities (preferences) of customers for the main attributes of the product. The study questionnaire was designed specifically so customers would provide their preferences in a manner that would allow for this analytical technique to be used.

The essential output of conjoint analysis is estimates of the relative preferences for the levels of each of the attributes tested. This information has allowed CSW to refine the SelectChoice<sup>SM</sup> product to more closely appeal to the desires of its customers and to adapt SelectChoice<sup>SM</sup> to provide product variations that are more closely aligned with the needs of customers in the key market segments.

Preferences were obtained overall, for those who stated that they wanted the opportunity to combine the bill for their account with those of other accounts within their organization or with accounts outside of their organization and for those who desired to maintain a separate bill. These two groups were asked questions that reflected these preferences.

Market segmentation is a tremendously powerful marketing practice and one of the essential tools for effective marketing. To provide information on which CSW can make more astute decisions regarding segmentation of its market, the sample was analyzed by the several partitioning strategies.

## **Overall Preferences**

The sample was split into two key groups, those who indicated in the initial questionnaire that they would prefer to combine the bill for their account with others if that option were available and those who preferred to keep the bill for their account **separate** from others.

Those who preferred separate bills were asked to state their preferences for two attributes, the cells of the Design Grid (see Exhibit 4) and the length and nature of the contract, i.e., the Design Options of Exhibit 5. Those who preferred to combine the bill for their account with those of another were asked to state their preferences for Design Grid cell, Design Option contract type and for whether their Billing Preference was to combine their bill or to keep it separate from others. Although this latter point was asked in the initial questionnaire, it was important to this study to estimate the intensity of this preference and to determine the relative importance of this option for combining (aggregating) accounts relative to the grid cell and contract type.

Considering the four alternative cells of the design grid, Exhibit 7 shows that cell A has the highest utility, followed by cell G, cell C and I. Only minor differences arose between the utilities of the Separate group and the Combine group. The A and G cells both include the lower of the two On-Peak rates of 8¢ per kilowatt hour. Cell A (4 hour On-Peak period) is preferred to Cell G (8 hour On-Peak period) and Cell C (4 hour On-Peak) is slightly preferred to Cell I (8 hour On-Peak).



## Overall Utilities for SelectChoice<sup>SM</sup> Grid Cells

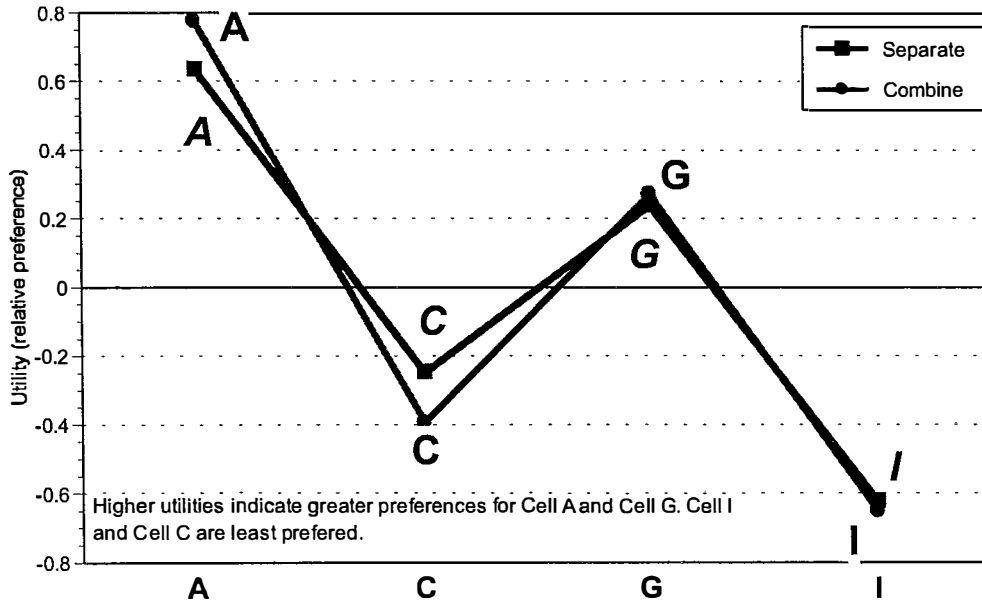


Exhibit 7

The utilities shown in Exhibit 8 for the length and type of contract were found to apply to each of the two main groups of respondents. The key finding of the study is the relative preference for the annual bill guarantee. CSW had planned to eliminate the guarantee for reasons of administrative convenience. However, the study persuaded CSW to continue to offer the guarantee. By far, the most preferred contract option is the one year contract with the bill guarantee.

## Overall Utilities for SelectChoice<sup>TM</sup> Contract Options

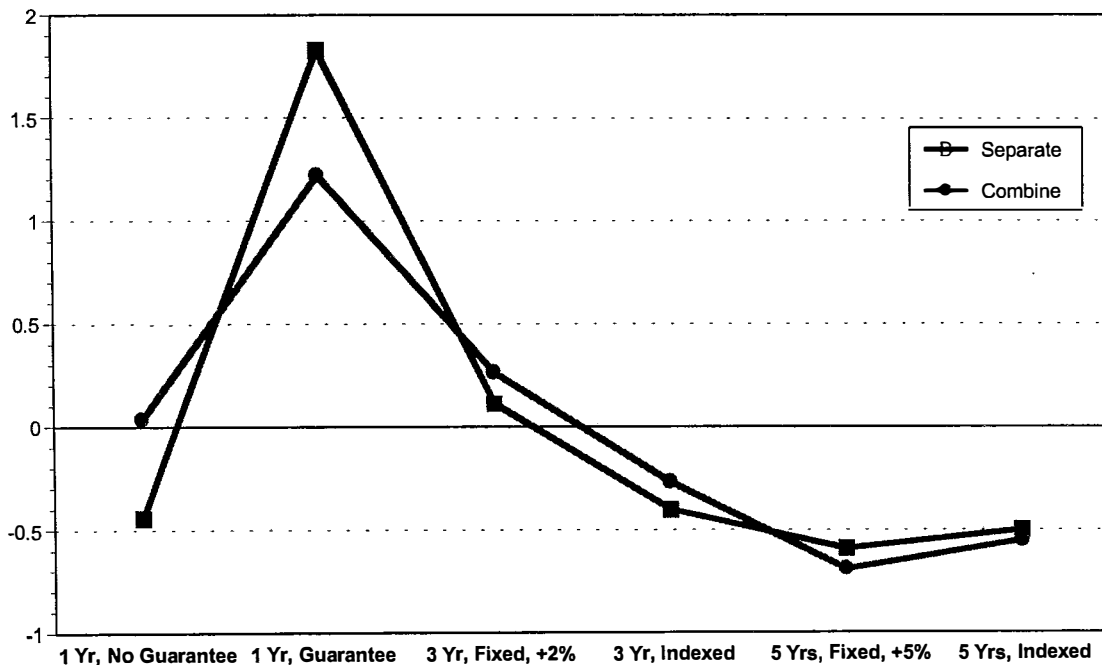


Exhibit 8

Another very important finding is that customers are more willing to pay a premium of 2% for the certainty of fixed prices than they are interested in indexing the price of electricity to natural gas prices during that three year contract period. Once again, the comfort of fixed prices for the three-year contract term and the guarantee during the one year contract term are more preferred than are other options.

The five-year contracts are least preferred among the six contract options. It is interesting that there is a very slight preference for indexing during the five-year contract over the fixed price option. The 5% premium for fixed prices during the five-year contract might be equal to or slightly past the point of marginal dispreference for customers.

Naturally, customers would most like to have the benefits of fixed prices with no premium. The general shape of the utility diagram provides an indication of customers' relative preferences and dispreferences for price premiums. The utilities indicate that the point of marginal dispreference lies somewhere between the 2% premium charged for three year contracts and the 5% premium for 5 year fixed contracts, although the analysis does not allow for a direct calculation. A premium beyond 2.5% to 3% would probably cause a substantial drop in interest for SelectChoice<sup>SM</sup>.

## Importance of Product Attributes

The complete SelectChoice<sup>SM</sup> product is comprised of two attributes for those who preferred to keep their bills separate from others, Design Grid and Design Options, and three attributes for those who were interested in combining bills, Design Grid, Design Options and Billing Options. Each of the attributes in the study have a somewhat different level of impact or importance in contributing to the customer's assessment of the SelectChoice<sup>SM</sup> product. Attribute importances are shown in Exhibit 9.

### The Relative Importance of the SelectChoice<sup>SM</sup> Design Attributes

<i>Product Design Attributes</i>	Separate Bills	Combine Bills
Design Grid	39%	38%
Design Options	61%	52%
Billing Options	Not Applicable	10%
Total	100%	100%

Exhibit 9

The relative importance of these factors should be considered then designing the SelectChoice<sup>SM</sup> product overall and when adapting and positioning the product to the market segments. For example, the survey found that respondents' preferences for the Design Grid were fairly even between Separate Bills and Combining Bills groups. Also, the Billing Options attribute contributes only 10% of a customer's assessment of a particular variation of the SelectChoice<sup>SM</sup> product. Design Options has been found to have a 52% impact and the Design Grid contributed 38% of the influence on the customer's choice of a SelectChoice<sup>SM</sup> option. Consequently, while the Billing Options attribute might sway some customers to favorably consider one particular SelectChoice<sup>SM</sup> configuration option, it is unlikely to have a major impact and greater emphasis should be placed on preferences for the Design Options and the Design Grid.

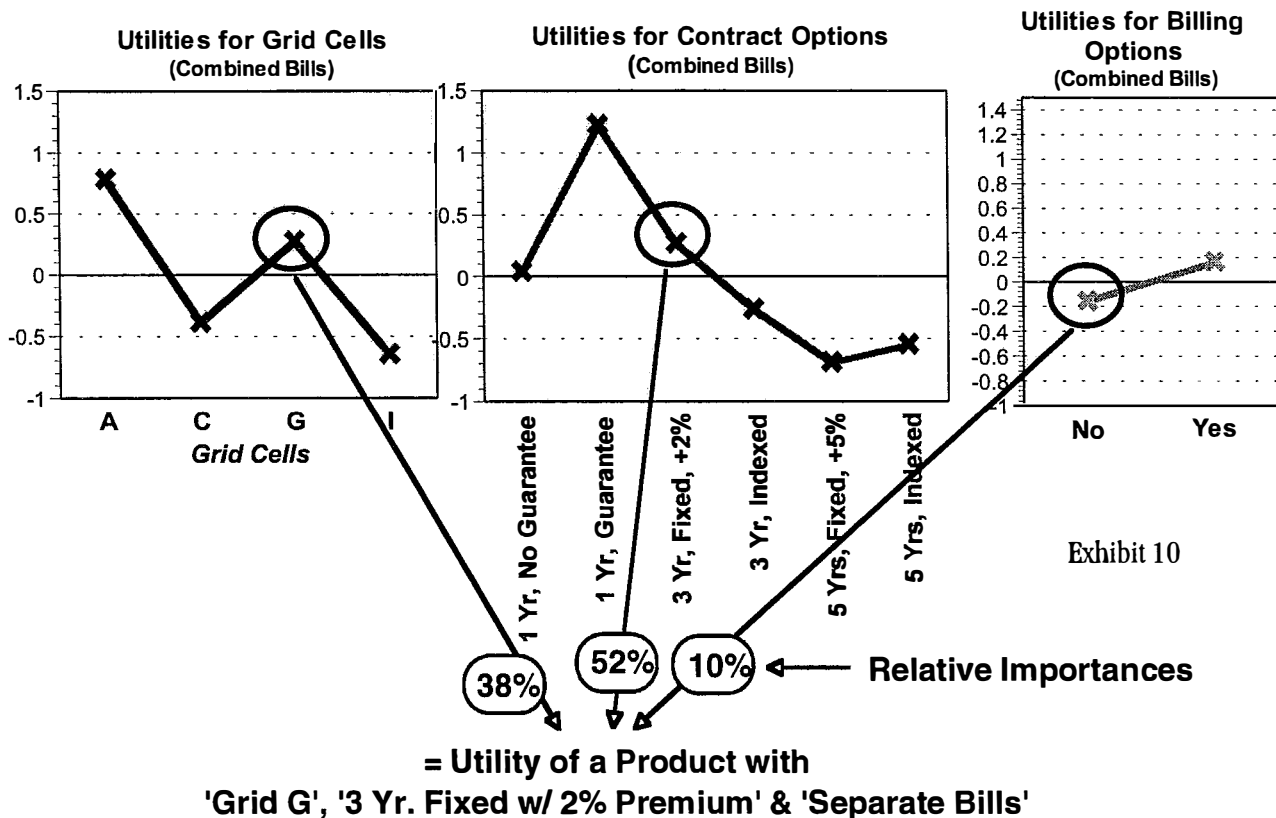


Exhibit 10

Simulations were executed to identify the estimated preferences for various combinations of attributes, which are product alternatives, in different market segments. The utility or preference for a product is a combination of the utilities of the levels of the separate attributes weighted by the relative importances. The geographic regions, SIC sectors and sizes of organizations as measured by their usage provide the three segmentation bases used in this study. The pattern of utilities for the segments within the three bases generally follow the distribution of the overall utilities seen earlier. However, there were some significant differences in the pattern and degree of preference and some of these differences might lead to interesting and important variations in product design and marketing strategies among the segments.

## **Conclusions – Impact of research on product development**

The word is out ... energy customers can demand alternative ways for buying electricity and natural gas. The pressure from commercial customers for new pricing schedules and contract options continues to grow. Customers are very willing to take the time to explore the benefits from the most intriguing options.

CSW found that it was a weak strategy to try to force-feed a single solution to all customers—even if it was a superior option to the standard tariffs. Several large national chains were requesting discounts – they wanted the “same pricing” as large industrial customers. “After all, when you consider all of our sites in combination, we are as large or larger than any industrial customer”. Commercial customers began stating that CSW needed to “take care of them now” or they wouldn’t deal with the company after open access was attained. CSW chose not to interpret this as a threat, but as a competitive reality. CSW wanted to offer these customers an alternative to both the standard tariffs and to deregulation (direct retail access).

The initial program participation included several national chains and over 200 customers subscribed within 10 months. The customers range from a five kilowatt (5 kW) “chicken farm” to a 3,000 kW university and a 13 MW industrial customer.

Another significant result has been that CSW has strengthened its competitive position. The program has been used to retain customers who have choices among electric suppliers and energy sources. Customers have used SelectChoice<sup>SM</sup> to increase electric purchases and to take advantage of higher peak prices and shift usage to lower cost periods. A small industrial customer that uses approximately 500 kW changed work shifts to avoid peak price periods during the heat of the day and moved operations to lower cost periods. Another customer replaced propane heat for a chicken house with electric heat and increased purchases from 5 kW to 50 kW. Generally, however, the trend has been to increase purchases in lower cost periods. The result has been an increase in profitable off peak sales for CSW.

The research prevented CSW from making a serious mistake: that of withdrawing the first year guarantee. The findings have also encouraged CSW to continue its efforts to market the program to customers. CSW has expanded the pilot programs in several areas to make it available to more customers. Introducing SelectChoice<sup>SM</sup> has convinced the product development team that combining test marketing (introducing a pilot program) and market research provides accurate information upon which to make better decisions to launch new products or institute product changes. The combination of test marketing and conjoint analysis has provided worthwhile results for CSW.

There are a few areas of inconsistency between the conjoint analysis and the test marketing. The most obvious was that no customers subscribed to cell G in the pilot program, while several customers (10%) subscribed to cell C. In fact, cell C is the second most preferred option, next to cell A. Further investigation is required regarding subscribers’ preference or lack of preference for cell G.

As a result of the success with SelectChoice<sup>SM</sup>, CSW plans to begin research on products for the

most challenging of all of its market segments: residential and small commercial customers.

## REFERENCES

Bass, F. (1969), "A New Product Growth Model for Consumer Durables," *Management Science*, Vol. 15 (January), pp. 215-227.

Louviere, J.J.; Oppewal, Harman; Timmermans, Harry; and Tara Thomas (1993), "Handling Large Numbers of Attributes in Conjoint Applications: Who says Existing Techniques Can't Be Applied? But If You Want an Alternative, How About Hierarchical Choice Experiments?", presented at the 1993 Advanced Research Techniques Forum of the American Marketing Association, Monterey, California (June).

Howard, John A. and Jagdish N. Sheth (1969), *The Theory of Buyer Behavior*. New York: John Wiley.

Ken Deal is Associate Professor of Marketing at McMaster University, Hamilton, Canada and President of Marketing Decision Research Inc. (MDR), Burlington, Canada.

Ben Long is Manager of Pricing Solutions at Central and South West Corporation.

Bryan Scott is Design Manager at Central and South West Corporation.

MANAGEMENT OF INNOVATION AND NEW TECHNOLOGY  
WORKING PAPER SERIES

1. R.G. Cooper and E.J. Kleinschmidt, "How the New Product Impacts on Success and Failure in the Chemical Industry", February, 1992.
2. R.G. Cooper and E.J. Kleinschmidt, "Major New Products: What Distinguishes the Winners in the Chemical Industry", February, 1992.
3. J. Miltenburg, "On the Equivalence of JIT and MRP as Technologies for Reducing Wastes in Manufacturing, March, 1992.
4. J.B. Kim, I. Krinsky and J. Lee, "Valuation of Initial Public Offerings: Evidence from Korea", February, 1992.
5. M. Basadur and S. Robinson, "The New Creative Thinking Skills Needed for Total Quality Management to Become Fact, Not Just Philosophy", April, 1992.
6. S. Edgett and S. Parkinson, "The Development of New Services Distinguishing Between Success and Failure", April, 1992.
7. A.R. Montazemi and K.M. Gupta, "Planning and Development of Information Systems Towards Strategic Advantage of a Firm", April, 1992.
8. A.R. Montazemi, "Reducing the Complexity of MIS Innovation Through Hypermedia and Expert Systems", May, 1992.
9. M. Basadur and Bruce Paton, "Creativity Boosts Profits in Recessionary Times - Broadening the Playing Field", June, 1992.
10. Robert G. Cooper and Elko Kleinschmidt, "Stage-Gate Systems for Product Innovation: Rationale and Results", June, 1992.
11. S.A.W. Drew, "The Strategic Management of Innovation in the Financial Services Industry: An Empirical Study", July, 1992.
12. M. Shehata and M.E. Ibrahim, "The Impact of Tax Policies on Firms' R & D Spending Behavior: The Case of R & D Tax Credit", July, 1992.

13. Willi H. Wiesner, "Development Interview Technology: Implications for Innovative Organizations", July, 1992.
14. Isik U. Zeytinoglu, "Technological Innovation and the Creation of a New Type of Employment: Telework", August, 1992.
15. John W. Medcof, "An Integrated Model for Teaching the Management of Innovation in the Introduction to Organizational Behaviour Course", October, 1992.
16. Min Basadur, "The Why-What's Stopping Analysis: A New Methodology for Formulating Ill-Structured Problems", October, 1992.
17. Stephen A.W. Drew, "Strategy, Innovation and Organizational Learning an Integrative Framework, Case Histories and Directions for Research", November, 1992.
18. Stephen A.W. Drew, "Innovation and Strategy in Financial Services", November, 1992.
19. Scott Edgett, "New Product Development Practices for Retail Financial Services", November, 1992.
20. Robert G. Cooper and Elko J. Kleinschmidt, "New Product Winners and Losers: The Relative Importance of Success Factors - Perception vs. Reality", November, 1992.
21. Robert G. Cooper and Elko J. Kleinschmidt, "A New Product Success Factors Model: An Empirical Validation", November, 1992.
22. Robert G. Cooper & Elko J. Kleinschmidt, "Stage Gate Systems: A Game Plan for New Product Success", November, 1992.
23. Min Basadur, "Optimal Ideation-Evaluation Ratios", March, 1993.
24. Christopher K. Bart, "Gagging on Chaos", March, 1993.
25. Yufei Yuan, "The Role of Information Technology in Business Innovation", July, 1993.
26. Isik Ural Zeytinoglu, "Innovation in Employment: A Telework Experiment in Ontario", July, 1993.
27. John Miltenburg and David Sparling, "Managing and Reducing Total Cycle Time: Models and Analysis", August, 1993.
28. R.G. Cooper, C.J. Easingwood, S. Edgett, E.J. Kleinschmidt and C. Storey, "What Distinguishes the Top Performers in Financial Services", September, 1993.
29. B.E. Lynn, "Innovation and Accounting Research", September, 1993.

30. Min Basadur and Peter Hausdorf, "Measuring Additional Divergent Thinking Attitudes Related to Creative Problem Solving and Innovation Management", November, 1993.
31. R.G. Cooper and E.J. Kleinschmidt, "Determinants of Time Efficiency in Product Development", December, 1993.
32. Christopher K. Bart, "Back to the Future: Timeless Lessons for Organizational Success", February, 1994.
33. Ken R. Deal and Scott J. Edgett, "Determining Success Criteria for New Financial Products; A Comparative Analysis of CART, Logit and Discriminant Analysis", February, 1995.
34. Christopher K. Bart and Mark C. Baetz, "Does Mission Matter?", February, 1995.
35. Christopher K. Bart, "Controlling New Products: A Contingency Approach", February, 1995.
36. Christopher K. Bart, "Is Fortune Magazine Right? An Investigation into the Application of Deutschman's 16 High-Tech Management Practices", February, 1995.
37. Christopher K. Bart, "The Impact of Mission on Firm Innovativeness", February, 1995.
38. John W. Medcof, "Transnational Technology Networks", April, 1995.
39. R.G. Cooper and E.J. Kleinschmidt, "Benchmarking the Critical Success Factors of Firms' New Product Development Programs", April, 1995.
40. John W. Medcof, "Trends in Selected High Technology Industries", July, 1995.
41. Robert C. Cooper & E.J. Kleinschmidt, "Benchmarking Firms' New Product Performance & Practices", September, 1995.
42. Min Basadur and Darryl Kirkland, "Training Effects on the Divergent Thinking Attitudes of South American Managers", November, 1995.
43. Min Basadur, "Organizational Development Interventions for Enhancing Creativity in the Workplace", November, 1995.
44. Min Basadur, "Training Managerial Evaluative and Ideational Skills in Creative Problem Solving: A Causal Model", December, 1995.



45. Min Basadur, Pam Pringle and Simon Taggar, "Improving the Reliability of Three New Scales Which Measure Three New Divergent Thinking Attitudes Related to Organizational Creativity", December, 1995.
46. N. P. Archer and F. Ghasemzadeh, "Project Portfolio Selection Techniques: A Review and a Suggested Integrated Approach", February, 1996.
47. Elko J. Kleinschmidt, "Successful new product development in Australia: An empirical analysis", February, 1996.
48. Christopher K. Bart, "Industrial Firms & the Power of Mission," April, 1996.
49. N. P. Archer and F. Ghasemzadeh, "Project Portfolio Selection Management through Decision Support: A System Prototype," April, 1996.
50. John W. Medcof, "Challenges in Collaboration Management in Overseas Technology Units," April, 1996.
51. Susan L. Kichuk and Willi H. Wiesner, "Personality and Team Performance: Implications for Selecting Successful Product Design Teams," May, 1996.
52. Susan L. Kichuk and Willi H. Wiesner, "Selection Measures for a Team Environment: The Relationships among the Wonderlic Personnel Test, The Neo-FFI, and the Teamwork KSA Test, " May, 1996.
53. Susan L. Kichuk and Willi H. Wiesner, "Personality, Performance, Satisfaction, and Potential Longevity in Product Design Teams," June, 1996.
54. John W. Medcof, "Learning, Positioning and Alliance Partner Selection," June, 1996.
55. Scott J. Edgett, "The New Product Development Process for Commercial Financial Services," July, 1996.
56. Christopher K. Bart, "Sex, Lies & Mission Statements," September, 1996.
57. Stuart Mestelman and Mohamed Shehata, "The Impact of Research and Development Subsidies on the Employment of Research and Development Inputs," November, 1996.
58. Mark C. Baetz and Christopher K. Bart, "Developing Mission Statements Which Work," November, 1996.
59. Fereidoun Ghasemzadeh, Norm Archer and Paul Iyogun, "A Zero-One Model for Project Portfolio Selection and Scheduling," December, 1996.

60. R. G. Cooper, S. J. Edgett, E. J. Kleinschmidt, "Portfolio Management in New Product Development: Lessons from Leading Firms," February 1997.
61. R. G. Cooper, S. J. Edgett, E. J. Kleinschmidt, "Portfolio Management in New Product Development: Lessons from Leading Firms -- Part II," February 1997.
62. C. K. Bart, "A Comparison of Mission Statements & Their Rationales in Innovative and Non-Innovative Firms," February 1997.
63. R. Bassett, N. P. Archer and W. G. Truscott, "Data Webs: An Evaluation of an Innovative Information Management Tool that Integrates Databases with the World Wide Web," April 1997.
64. S. Taggar, "Intelligence, Personality, Creativity and Behaviour: The Antecedents of Superior Team Performance," April 1997.
65. R. Deaves and I. Krinsky, "New Tools for Investment Decision-Making: Real Options Analysis," May 1997.
66. J. W. Medcof (ed.), "Trends and Events in Selected High Technology Industries," May, 1997. (On the WEB only)
67. C. K. Bart, "Product Innovation Charters: A State-of-the-Art Review," May, 1997.
68. John W. Medcof, "Strategic Contingencies and Power in Networks of Internationally Dispersed R&D Facilities", August, 1997.
69. John W. Medcof, "Research Intensity and the Identification of High Technology Industries," September, 1997.
70. Christopher K. Bart and John C. Tabone, "Mission Statements in the Not-for-profit Health Care Sector: A State of the Art Review," September, 1997.
71. Elko J. Kleinschmidt, "In-house and Partnership New Product Development in Austria: An Empirical Analysis on Outcome and Explanatory Factors," October, 1997.
72. Robert G. Cooper, Scott J. Edgett and Elko J. Kleinschmidt, "R&D Portfolio Management Best Practices: Methods Used & Performance Results Achieved," January, 1998.
73. Christopher K. Bart and Simon Taggar, "A Model of the Impact of Mission Rationale, Content, Process and Alignment on Firm Performance," March, 1998.
74. Christopher K. Bart, John Parkinson and Simon Taggar, "The Implementation of Strategy: Behavioural vs Budgetary Approaches and the Effect of Participation," March, 1998.

75. John W. Medcof, "The Resource Based View and the New Competitive Landscape: Characterizing Positions of Dynamic Capability," May, 1998.
76. F. Ghasemzadeh and N. P. Archer, "Project Portfolio Selection Through Decision Support," June, 1998.
77. Y. Yuan, N. Archer, and R. Bassett, "The Impact of Electronic Commerce Innovations on Marketing Management," June, 1998.
78. Kenneth S. Chan, James Chowhan, Stuart Mestelman, Mohamed Shehata, "Value Orientations and Income and Displacement Effects," July 1998.
79. Min Basadur, Laurent Lapierre, "Predicting Creative Problem Solving Behaviors within Teams," September, 1998.
80. Min Basadur, "Simplex: Modelling the Phases and Stages of the Innovation Process in Open-System Organizations, October, 1998.