

## MARKET IMPLEMENTATION METHODS

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### Summary

This article highlights the issues faced in attempt to obtain voluntary cooperation from consumers in changing the time, pattern, and amount of energy consumption. Modifying behavior on the use of existing energy-consuming devices and appliances or causing the adoption of technologies which are more efficient than those that would otherwise have been adopted requires skillful planning and execution. This article describes methods that can be used to cause such influences and how to choose from among them.

### 1. Introduction

Among the most important dimensions in the characterization of demand-side alternatives is the selection of the appropriate market implementation methods. Planners

and policy makers can choose from a wide range of methods described in this article designed to influence customer adoption, which can be broadly classified in six categories: customer education, direct customer contact, trade ally cooperation, advertising and promotion, alternative pricing, and direct incentives.

Energy suppliers, utilities, and government entities have successfully used many of these marketing strategies. Typically, multiple marketing methods are used to promote demand-side programs. The selection of the individual market implementation method or mix of methods depends on a number of factors, including:

- Prior experience with similar programs
- Existing market penetration
- The receptivity of policy makers and regulatory authorities
- The estimated program benefits and costs to suppliers and customers
- Stage of buyer readiness
- Barriers to implementation

Some of the most innovative demand-side marketing programs started as pilot programs to gauge consumer acceptance and evaluate program design prior to large-scale implementation.

The objective of the market implementation methods is to influence the marketplace and to change customer behavior. The key question for planners and policy makers is the selection of the market implementation method(s) to obtain the desired customer acceptance and response. Table 1 includes examples of market implementation methods. Customer acceptance refers to customer willingness to participate in a market implementation program, customer decisions to adopt the desired fuel/appliance choice and efficiency, and behavior change as encouraged by the supplier or state. Customer response is the actual load shape change that results from customer action, combined with the characteristics of the devices and systems being used.

<b>Market Implementation Method</b>	<b>Illustrative Objective</b>	<b>Examples</b>
Customer Education	<ul style="list-style-type: none"> <li>• Increase customer awareness of programs</li> <li>• Increase perceived value of energy services</li> </ul>	<ul style="list-style-type: none"> <li>• Bill inserts</li> <li>• Brochures</li> <li>• Information packets</li> <li>• Displays</li> <li>• Clearinghouses</li> <li>• Direct mailings</li> </ul>
Direct Customer Contact	<ul style="list-style-type: none"> <li>• Through face-to-face communication, encourage greater customer acceptance and response to programs</li> </ul>	<ul style="list-style-type: none"> <li>• Energy audits</li> <li>• Direct installation</li> <li>• Store fronts</li> <li>• Workshops/energy clinics</li> <li>• Exhibits/displays</li> </ul>

		<ul style="list-style-type: none"> <li>• Inspection services</li> </ul>
Trade Ally Cooperation (i.e., architects, engineers, appliance dealers, heating/cooling contractors)	<ul style="list-style-type: none"> <li>• Increase capability in marketing and implementing programs</li> <li>• Obtain support and technical advice on customer adoption of demand-side technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Cooperative advertising and marketing</li> <li>• Training</li> <li>• Certification</li> <li>• Selected product sales/service</li> </ul>
Advertising and Promotion	<ul style="list-style-type: none"> <li>• Increase public awareness of new programs</li> <li>• Influence customer response</li> </ul>	<ul style="list-style-type: none"> <li>• Mass media (radio, TV, and newspaper)</li> <li>• Point-of-purchase advertising</li> </ul>
Alternative Pricing	<ul style="list-style-type: none"> <li>• Provide customers with pricing signals that reflect real economic costs and encourage the desired market response</li> </ul>	<ul style="list-style-type: none"> <li>• Demand rates</li> <li>• Time-of-use rates</li> <li>• Off-peak rates</li> <li>• Seasonal rates</li> <li>• Inverted rates</li> <li>• Variable levels of service</li> <li>• Promotional rates</li> <li>• Conservation rates</li> </ul>
Direct Incentives	<ul style="list-style-type: none"> <li>• Reduce up-front purchase price and risk of demand-side technologies to the customer</li> <li>• Increase short-term market penetration</li> <li>• Provide incentives to employees to promote demand-side programs</li> </ul>	<ul style="list-style-type: none"> <li>• Low no-interest loan</li> <li>• Cash grants</li> <li>• Subsidized installation/modification</li> <li>• Rebates</li> <li>• Buyback programs</li> <li>• Rewards to employees for successful marketing of demand-side programs</li> </ul>

Table 1. Examples of market implementation methods

Customer acceptance and responses are influenced by the demographic characteristics of the customer, income, knowledge and awareness of the technologies and programs available, and decision criteria such as cash flow and perceived benefits and costs, as well as attitudes and motivations. Customer acceptance and response are also influenced by other external factors, such as economic conditions, energy prices, technology characteristics, regulation, and tax credits.

By selecting the appropriate mix of market implementation methods, planners and policy makers can augment or mitigate the external influences, taking into account the

customer characteristics, to increase customer acceptance of the demand-side alternative being promoted, thereby obtaining the desired customer response. Figure 1 illustrates the customer characteristics, implementation programs, and other external influences that affect three major customer decisions:

- fuel/appliance choice
- appliance/equipment efficiency
- appliance/equipment utilization

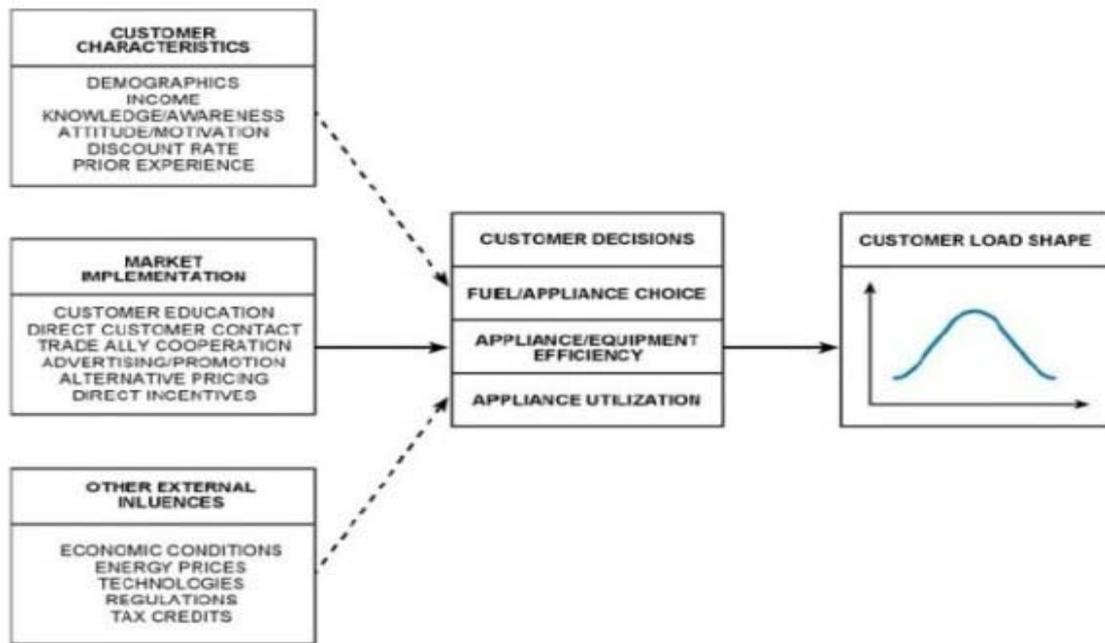


Figure 1. Factors influencing customer acceptance and response

## 2. The Market Planning Framework

The selection of the appropriate market implementation method should be made in the context of an overall market planning framework. Elements to consider in selecting the appropriate marketing mix, illustrated in Figure 2, are:

- Market segmentation—based on the load shape modification objectives, information on customer end uses and appliance saturation, and other customer characteristics (from consumer research), the market can be broken into smaller homogenous units so that specific customer classes are targeted.
- Technology evaluation—based on the applicability of available technologies for the relevant end uses and load shape objectives, the alternative technologies are evaluated and the profitability of specific appliances assessed.
- Market-share analysis—based on estimates of customer acceptance, the proportion of the total potential market that can be served competitively is estimated.
- Selection of market implementation methods—based on the above analyses, and

estimates of potential customer acceptance and response, the appropriate mix of implementation method is evaluated and selected.

- Market implementation plan—based on the selection of the market implementation methods, an implementation plan is developed to define and execute the demand-side programs.
- Monitoring and evaluation—the results of implementation are monitored and evaluated to provide relevant information to improve future programs.

The methods used for market segmentation and target marketing can vary, depending on the customer characteristics and the technologies/end uses being addressed by the demand-side alternative. If a technology offers significant benefits to the customer, there is little or no perceived risk, and the customer is aware of the technology and has a favorable attitude toward it, the technology is likely to be well accepted with little need to intervene in the marketplace. However, if the customer acceptance is constrained by one or more barriers, the market implementation methods should be designed to overcome these barriers. Such barriers may include:

- Low return on investment (ROI)
- High first cost
- Lack of knowledge/awareness
- Lack of interest/motivation
- Decrease in comfort/convenience
- Limited product availability
- Perceived risk

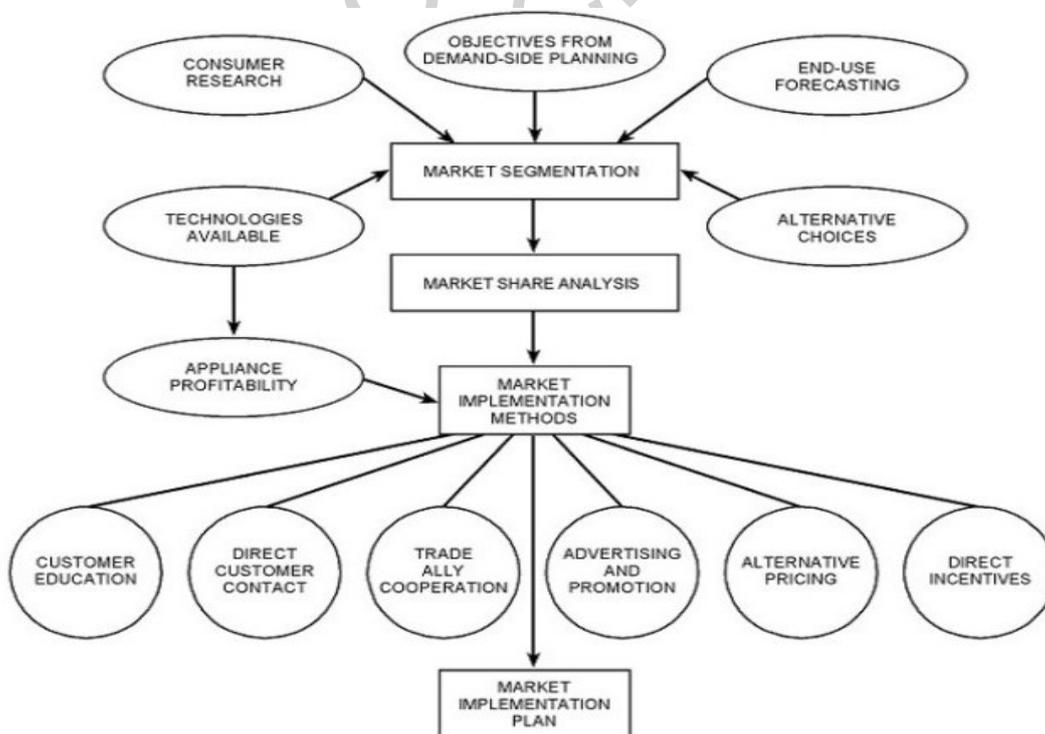


Figure 2. Market planning framework

### 3. Factors Influencing Customer Acceptance and Response

A second important aspect is the stage of "buyer readiness." Customers generally move through various stages toward a purchase decision. The stage that a customer is in will have a bearing on the appropriateness of the market implementation method used. Consumer research can identify where customers are in their decision process. Key questions to consider are:

- Do customers perceive a need to control the cost of energy and are they aware of alternative demand-side technologies?
- Where do customers go to search for more information and guidance on alternatives, and what attributes and benefits are perceived for any given option?
- How much interest is there in participating in a demand-side program, and how can customers be influenced to move toward participation?
- What specific attributes and benefits must customers perceive in order to accept a particular demand-side technology?
- How satisfied are customers who participated in a previous demand-side program?

Table 2 lists the applicability of market implementation methods to overcome barriers to acceptance. Table 3 illustrates applicability to stages of buyer readiness.

Barriers to Customer Acceptance	Market Implementation Methods					
	Customer Education	Direct Customer Contact	Trade Ally Cooperation	Advertising/Promotion	Alternative Pricing	Direct Incentives
Low return on investment (ROI)					H	H
High First Cost, Favorable ROI	M	M		M	M	H
Lack of Knowledge/Awareness	H	H	M	H		
Lack of Interest/Motivation		M	M	H	M	M
Decrease in Comfort/Convenience	M	M			M	H
Limited Productivity Availability		M	H			
Perceived Risk	M	H	H		M	H

Blank – Low

M – Medium

H – High

Table 2. Applicability of market implementation methods to overcome barriers to customer acceptance

Stage of Buyer Readiness	Market Implementation Methods					
	Customer Education	Direct Customer Contact	Trade Ally Cooperation	Advertising/Promotion	Alternative Pricing	Direct Incentives
Need Recognition Awareness	H	M	M	M		
Search for Alternatives/Interest	M	H	H	H		
Purchase/Adoption	H	M	H	M	H	H
Satisfaction		M	M			

Blank – Low

M – Medium

H – High

Table 3. Applicability of market implementation methods to stage of buyer readiness

Answers to these questions are important in formulating a market implementation program. To influence customer awareness and interest, emphasis can be placed on the use of customer education, direct customer contact, and advertising/promotion. If results of market research indicate that customers in the awareness and interest phase prefer reliability, comfort, and cost-competitive technology options, communicating to customers in advertising/promotion programs should be considered. If the results of consumer research indicate that customers in the purchase/adoption phase use a high implicit discount rate and that first costs are a barrier, the use of direct incentives is appropriate. If first costs are not an obstacle, but lowering energy bills is a motivating factor, then financial incentives for a particular demand-side technology may be a key consideration.

In addition, if a significant source of information and influence is found to come from trade ally groups during the stage of customer purchase of replacement or new equipment, a point of purchase and cooperative advertising program with trade allies should be considered. Incentive programs for trade allies may also be a consideration.

A final aspect of the buying process is customer satisfaction. As a program is accepted and increases its market share, word of mouth becomes an increasingly important source of customer awareness and interest. Service after the sale is extremely important and represents a form of marketing. Identifying satisfied or unsatisfied customers is useful in terms of evaluating future market implementation methods.

It must be re-emphasized that market segments can be defined using a number of criteria, some of which may be interrelated. Segmenting demand-side markets by end-use, stage of buyer readiness, perceived barriers to acceptance, and other sociodemographic factors, can suggest the appropriateness of alternative market implementation methods.

Note that the applicability, advantages, and disadvantages of the methods discussed here, as compared to different types of demand-side programs, vary significantly. Typically, planners and policymakers select a mix of the methods most suitable to the relevant demand-side options.

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### **Biographical Sketch**

**Clark Gellings'** 30-year career in energy spans from hands-on wiring in factories and homes to the design of lighting and energy systems to his invention of "demand-side management" (DSM). Mr. Gellings coined the term DSM and developed the accompanying DSM framework, guidebooks, and models now in use throughout the world. He provides leadership in EPRI, an organization that is second in the world only to the Department of Energy (in dollars) in the development of energy efficiency technologies. Mr. Gellings has demonstrated a unique ability to understand what energy customers want and need and then implement systems to develop and deliver a set of R&D programs to meet the challenge. Among Mr. Gellings' most significant accomplishments is his success in leading a team with an outstanding track record in forging tailored collaborations—alliances among utilities, industry associations, government agencies, and academia—to leverage research and development dollars for the maximum benefit. Mr. Gellings has published 10 books, more than 400 articles, and has presented papers at numerous conferences. Some of his many honors include seven awards in lighting design and the Bernard Price Memorial Lecture Award of the South African Institute of Electrical Engineers. He has been elected a fellow in the Institute of Electrical and Electronics Engineers and the Illuminating Engineering Society of North America. He won the 1992 DSM Achiever of the Year Award of the Association of Energy Engineers for having invented DSM. He has served as an advisor to the U.S. Congress Office of Technical Assessment panel on energy efficiency, and currently serves as a member of the Board of Directors for the California Institute for Energy Efficiency and EPRI PEAC. He is Chairman of the Board of PRIMEN, Inc., and Global Energy Partners, LLC.

Mr. Gellings has received distinguished awards from a number of organizations, including The Illuminating Engineering Society, the Association of Energy Services Professionals, and the South African Institute of Electrical Engineers.

Mr. Gellings is a registered Professional Engineer, a Fellow in the Institute of Electrical and Electronics Engineers (IEEE), a Fellow in the Illuminating Engineering Society (IES), a Vice President of the U.S. National Committee of CIGRE' (International Council on Large Electric Systems), and is active in a number of other organizations. He has degrees in Electrical Engineering, Mechanical Engineering, and Management Science.