

Market Segmentation and Energy Efficiency Program Design

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Abstract

Segmentation – identifying homogenous sub-populations within larger heterogeneous populations – has emerged as an important marketing tool over the past half-century. The technique is a response to the need to effectively communicate with, and motivate to action, an increasingly diverse population of individuals, families and businesses, who rely on a rapidly multiplying set of communication channels.

Attempts to segment energy efficiency markets began in earnest during the 1980s, through such techniques as SRI Consulting Business Intelligence's VALS™ method, which focuses on categorizing populations along psychological traits and demographic characteristics. However, until recently, most utility energy efficiency managers employed marketing approaches that tended towards sectorization, as opposed to segmentation. That is, in part driven by historical customer class definitions, energy efficiency programs have focused broadly on agricultural, industrial, commercial, and retail customers, without a significant tailoring to reflect segments within these sectors. Likewise, energy efficiency programs tend to be based on an engineering economics approach, in which specific technologies are pushed without much attention to what energy users want and how they behave in relationship to energy-using devices.

Over the past decade, utilities have made progress towards identifying segments and crafting programs and marketing strategies based upon them. For example, recent energy efficiency programs focus on wineries and dairies, which may have previously been lumped together as part of agricultural programs; and lodging facilities and food service vendors, which may have fallen into the broad retail category. These programs appear to more effectively reach the segmented populations than previous sector-based initiatives.

It remains to be seen whether utilities will continue to advance in their use of segmentation, and whether these entities are the most effective institutions to lead this effort. The market eco-system in which energy efficient and conservation products are nested is diverse, occupying an expanding number of niches that depend on a widening set of decomposed communication channels. To effectively reach these (sub)segments, a multitude of products, services, and marketing approaches will be needed, as supported by robust data analyses.

In addition, a number of basic elements need to be addressed if segmentation is going to be a fully effective tool to assist California to reach its ambitious energy savings goals. For example, greater thought needs to be given to product definition: is it energy efficiency in general; specific products; or particular product attributes? Likewise, consumers' resistance to prematurely retiring "perfectly good equipment" – which harkens to a previous days' understanding of conservation – needs to be more deeply considered.

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Table of Contents

	Executive Summary.....	5
1.0	Introduction.....	7
2.0	Market Segmentation: A Basic Marketing Concept.....	7
	1.1 Segmentation Emerged from Technological Diffusion Theories.....	9
3.0	When to Apply Market Segmentation.....	11
	2.1 How to Segment a Market.....	12
	2.2 Barriers to Effective Implementation of Market Segmentation.....	18
4.0	Examples of Market Segmentation.....	21
	3.1 Existing Segmentation Models.....	23
5.0	Demand-Side Management Segments.....	25
	5.1 Segmentation as Applied in Utility Ratemaking.....	26
	5.2 Public Policies Dominate Potential Segmentation Strategies.....	26
	5.3 Segmentation Techniques Emerging from Electric Utilities.....	28
	5.4 Utility Energy Efficiency Programs Target Specific Segments.....	35
	5.5 Integrated Approaches to Energy Management.....	35
	5.6 Integrated Approaches in Utility Programs	36
	5.7 New Ways to Understand How Best to Define Segments.....	37
	5.8 Emerging Patterns.....	39
6.0	Conclusion.....	41

Table of Tables

Table 1.	Segmentation Methods	9
Table 2	Sectors are not Segments	19
Table 3	Segmentation Models	25
Table 4	SCE Residential Market Segments	32
Table 5	PG&E Market Segments	34
Table 6	SCE Market Segments	35

Executive Summary

Market segmentation – identifying populations which respond similarly to commodities and marketing messages – can provide a powerful method from which to design and spur the adoption of products, services, and ideas. While there are various approaches to segmenting markets, methods by and large rely on (statistically) examining qualitative or quantitative data to identify the relationships between social, economic, and demographic characteristics, particular goods, services, and ideas and adoption behaviors. Successful segmentation schemes identify the timing of and reasons behind key decision factors related to different commodities for a given population, so that these elements can be matched with products and messages. Market segmentation has been successfully used to speed the creation and adoption of a wide array of consumer products, ranging from automobiles to beverages, as well as part of campaigns to modify a variety of social behaviors, particularly associated with public health (e.g., HIV/AIDS; tobacco use).

While electric utilities are increasingly experimenting with segmentation schemes – with some notable successes – development of effective segments has been slowed by a lack of comprehensive data, particularly related to such hard-to-reach but ubiquitous sectors as small businesses; a tendency to base demand-side management programs on traditional broad industry sectors, such as residential, commercial, and industrial customers; and a energy regulatory process that emphasizes technological solutions to demand-side management that are principally based on engineering economics analyses. However, with encouragement from regulators and as a result of active third-party solicitations, the state’s investor-owned utilities exhibit a greater use of segmentation in their recently proposed energy efficiency programs.

Segmentation schemes tailored to residential customers typically focus on attitudes and motivations. For example, attempts are made to demographically or geographically isolate groups of consumers by whether they are likely to change their products or behaviors as a result of environmental, economic, or social messages. Flex Your Power’s messages, for instance, revolve around photographs of children selling compact fluorescent light bulbs; the underlying theme is that its important to save energy for future generations, and that to do so is child’s play.

Segmentation schemes for businesses also rely on motivating factors, and seek to isolate similar energy end-use technologies, ownership patterns, economic characteristics, and associated behaviors and match these with products and services. For example, the hospitality sector may be useful segmented into independent economy hotels, economy chains, and higher end hotels, and provided with devices that address a specific need (e.g., free, direct installation of sensors that regulate air conditioning in vacant rooms).

Once a segment has been described, product and service development and associated marketing efforts can be tailored to address identified segment-specific problems or needs, or to prompt action to be taken. Examples of potentially successful segments include:

- *Corner markets*: typically independently-owned, with old, inefficient lighting and equipment, low profit margins, and minimal access to capital. This segment might be addressed through direct installation programs that focus on lighting and refrigeration. Marketing is best conducted door-to-door, with easy to read materials and frequent references to neighboring stores that have adopted the measures.
- *Warehouses*: exhibit a variety of ownership patterns, and frequently do not pay, or even see, their utility bills. This segment can be further deconstructed by end-use activities, such as whether the operation is reliant on lighting, refrigeration or battery-powered equipment. Because of split incentives (e.g., the energy bill may be paid elsewhere, or the warehouse operators may rent), energy efficiency measures must be simple and immediately adoptable (e.g., timers for load-shifting battery-powered equipment). Because in many cases there will not be an energy manager, it's a difficult segment to market to, triggering the need for long-term efforts (e.g., three to five years).
- *Low income families*: may not own their homes, have old or inadequate equipment, be poorly educated on energy uses, and have little time to manage their energy use. Efficiency offerings need to provide a direct service, be low- or no-cost, and, directly installed. To the extent that energy programs offer co-benefits (e.g., outdoor sensors, which also increase security) they will be more attractive. Marketing is best done by community-based groups that have a long-term presence in the neighborhood and the necessary language and cultural skills.

As California attempts to achieve the ambitious energy-reducing goals associated with reducing greenhouse gas emissions, regulators and utilities need to pay greater attention to how best to apply market segmentation to the development and fielding of efficiency programs. High benefit-cost ratios estimated by an engineering economics framework that assumes significant adoption rates without clear marketing pathways should be carefully examined. Without a comprehensive approach to developing and marketing energy efficiency measures that is based on well described segments, programs are unlikely to be fully successful.

In addition, energy regulators and utilities should be thoughtful about how fast they move towards integrated approaches to demand-side management. Although in many cases ratepayers will welcome comprehensive energy (and other resource) saving measures, a significant portion of the population may prefer one-at-a-time solutions. In particular, families and small businesses may not have the capacity to adopt multiple measures simultaneously; for segments within these populations multi-year, stepwise approaches to increasing efficiency may be preferably to all at once comprehensive programs. Alternatively, if “whole house” tactics are strongly preferred by policymakers, segment-specific barriers to adoption (e.g., financing; staffing capacity) need to be identified and effectively addressed.