Segmentation to Enhance Market Penetration:
Are We Slicing Up the Wrong Tree?

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January 30, 2007

Introduction

Markets for energy efficiency, demand response, and innovative pricing programs (DSM programs for the purposes of this paper) could expand significantly with more advanced marketing techniques, including various forms of market segmentation. While almost every adult in the United States is a potential customer for an automobile or breakfast cereal, certainly not everyone is a good prospect for purchasing a Prius or a box of Special K. Toyota and Kellog's know that good marketing dollars would be wasted if they sent advertising and promoting to the wrong customer base. It is much more effective to identify the types of people most likely to purchase a given product or service, find out how to reach them, determine what messages mean the most to them when deciding to buy, and then focus on that segmentation approach.

When promoting DSM programs, utilities and other implementers seem to be underutilizing the tools and associated benefits of segmentation. Data on customers, while sometimes difficult to find or use, is nonetheless plentiful. Companies wishing to segment their customers use both internal and external data. Many simply use internal sales data, prior behavior information, or account type. Some use elaborate geo-demographic segmentation systems; that is really an elaborate term for using demographic data to find customers to sell to. Residential customers are often placed in segments with elaborate descriptors, such as Beltway Boomers, Blue-chip Blues, and Park Bench Seniors.[1] But the bottom line is that segmentation and target marketing can help make marketing dollars go further, can result in happier customers since they don't get bothered with irrelevant offers, and can open up new opportunities for segment specific product, service, and customer solutions.

Barriers to Adoption of Market Segmentation Approaches

Why do many competitive industries use segmentation approaches extensively, while the electric and gas utility business use them sparingly? There are historical, political reasons behind this. Here are some of the top barriers to adoption:

1.   *Public Service:* Utilities are usually seen as public service companies whether they are investor-owned or not. Due to this public orientation, fairness comes strongly into play when decisions about service offerings are made. In many cases, utilities are told by their regulators that if a product or service is offered

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[1] Sample Claritas segment names, from http://www.tetrad.com/pub/documents/pnesegments.pdf downloaded Nov. 8, 2006.

at all, it must be equally available to all customers. This has been the case with DSM programs, new rate offers, as well as for-profit offers. However, segmentation could still be used to offer the same product or service to all in a market, but each segmented group could be targeted in a relevant way with a message that resonates with the different audience members.

2.   *Marketing Costs:* Some utilities make extensive use of very low-cost promotional mechanisms to get the word out on their programs and services. In many cases, this is through a bill-stuffer in the customer's monthly statement. Since the cost is so low per envelop as long as there is no incremental postage cost, many times it's easier (due to the billing/mailing systems) just to send to the entire market sector.

3.   *Privacy:* Utilities and their regulators and often quite sensitive to the privacy of data about customers. In some cases, there is fear that market segmentation will require the inclusion of private data in company records. This becomes an impediment to moving forward with segmented marketing approaches, although privacy issues can usually be dealt with adequately.

4.   *Data:* Several issues arise when dealing with market segmentation and the requisite data. First, many utility systems are unwieldy when it comes to working with the data that already exists. More complications can then be introduced when merging utility data with third party data sources, whether they come from public or private entities. While these barriers are almost always surmountable, they nonetheless create another hurdle that can stop progress.

5.   *Lack of marketing knowledge:* Utilities have not traditionally been focused on marketing to a great extent, and often do have people with particular expertise in segmentation.

Overcoming these and other barriers can have significant rewards as well. In addition to the benefits of lower marketing costs, segmentation can also help customer service representatives better understand the needs of different customers, and can provide marketers with a much more robust set of data for new product developers.

Segmentation Methods

Segmentation can be done in almost an infinite number of ways. Intricate segmentation can get down to segments that are extremely targeted, such as selling Rolls Royces to an ultra high income group in Beverley Hills. More broad brush segmentation might be something as simple as owners vs. renters of homes. The following table lists a sample of some common attributes that can be used as segmentation factors (assuming residential customers, but similar factors can also be used for commercial). They are divided up into three groupings. Column I has factors which should be readily available within utility

billing and customer service databases. Column II contains factors which are primarily measurable and factual. Column III factors include those which are less easily measured, but can provide important insights into future purchasing behavior.

Utility Data	Socio-Economic & /Demographic Data	Lifestyles
▪ Rate/tariff cluster ▪ KWh ▪ KW ▪ Gas/no gas ▪ AC/no AC ▪ Load factor ▪ Years as utility customer ▪ Prior purchases ▪ Payment delinquency ▪ Frequency of outages ▪ Contacts to call center ▪ On-time payments ▪ Location ▪ Feeder ▪ Climate	▪ Income ▪ Family size/makeup ▪ Age ▪ Religion ▪ Ethnicity/language ▪ Own/rent ▪ Home/apartment ▪ Education level ▪ Job type ▪ Political affiliation ▪ Computer usage ▪ Broadband/dial up/none ▪ Automobile types ▪ House size ▪ Credit capability	▪ Buying habits ▪ Use of technology ▪ Recreational activities ▪ Vacation types ▪ Transportation habits ▪ Music and TV programming preferences ▪ Reading habits ▪ Investment approaches ▪ Environmentalism ▪ Loyalty to businesses ▪ Community involvement ▪ Religious involvement

The matrix provides just a sample of the types of factors that can provide valuable insights into potential customer behavior. They can be used in a myriad of combinations. There are a number of third party providers of geo-demographic segmentation systems including Claritas (PRIZM NE), Experian (MOSAIC), MapInfo (PSYTE), Acxiom (Personicx), ESRI (Tapestry).

Utility Endeavors in Segmentation

E Source conducted a quick utility industry survey in the beginning of 2006 regarding utilities' use and interest in market segmentation, with particular emphasis on energy efficiency and demand response programs. The following are some highlights of the survey results, based on 36 responses from primarily large and medium-sized utilities.[2]

- Approximately 40% of utility respondents said that they do not segment their residential customers, choosing to promote to all customers. About 50% conduct some basic segmentation based upon bill size and location. About 25% use data on program participation, income levels, and home ownership to segment customers.

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[2] E Source survey of utilities, January 2006

- Approximately 25% of respondents say they use a third party segmentation system.

- For energy efficiency programs, respondents were most interested in improving segmentation for their comprehensive whole house efficiency programs and their high efficiency HVAC programs.

- In the area of demand response, the highest interest was for air conditioning load management program segmentation.

The survey demonstrates that a significant subset of utilities have utilized market segmentation to a great extent. While not much segmentation work is being done in the DSM arena, there is interest in such work going into the future.[3] Brad Kates, President of Opinion Dynamics, contends that whenever anything is sold, it's useful to study and implement segment-based approaches. Even if marketing ends up being broad and universal, marketers learn a great deal from studying segments and their particular needs. Kates says that while energy efficiency programs are generally aimed at all customers, demand response is best suited for certain customer types and groups. For example, for residential air conditioning programs, it's most useful to have participants whose AC units are actually being used during the peak, as opposed to just any household with central AC. Kates went on to say that California has been creating hard-to-reach segments for special targeting of DSM programs. These include ethnic groups, non-English language segments, lower income groups, and rural customers. These customers are getting special messaging and marketing in order to increase their involvement in DSM.[4]

Portland General Electric (PGE) conducts fairly extensive market segmentation for their residential base. They pull in information from all of their internal systems to start with, including participation information for various products such as green power, web enrollment, balanced payment plans, auto-pay, and area lighting. Then they append purchased data on some basic geographic information (rural, suburban, or urban), as well as demographics such as income, family size, and age. From this data, they analyzed the data through cluster analysis and came up with four primary segments that are quite unique. PGE has also utilized PRIZM from Claritas to assign their customers to a geographic code so they can actually find and market to customers in a unique way.[5]

PGE does not yet use segmentation for targeting energy efficiency, as most of those programs are with the Energy Trust of Oregon. But they have used it to find the best target markets for heat pumps. Through using PRIZM data which included national data on sales of heat pumps, they compared that third party data to one of their own market research studies on heat pump target audiences. They meshed satisfactorily, so they went ahead and assigned indices to customers based upon their potential to purchase heat

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[3] E Source DSM Executive Council meeting information, November 2006
[4] Personal communications, Brad Kates, Opinion Dynamics, May 2006
[5] Personal communications, Rick Weijo, Portland General Electric, April 2006

pumps. Some customers fall well above the norm, and those are the customers who get marketed to first.

PGE has built logit models to help predict future participation in programs with which they have actual user vs. non-user data. They have done this for equal pay and renewable energy programs, for example. The model contains all the data, but gets sorted to find the factors that are predictive. Since they did not have service territory data on heat pumps, they could not build the same type of predictive model, but may be able to do so in the near future.

Progress Energy has made extensive use of market segmentation over the years, starting in the Carolinas in the mid-1980s, and they keep pushing the envelope to understand ways to better serve their customers. They have used Equifax demographic data in concert with internally generated information as well as blending with PRIZM segments on lifestyles. By combining the two sets of third-party data, there is a greater chance that Progress can actually find the customers they want to market to.[6]

Progress also tracks which customers sign up for their specific programs through the various promotional activities. That way the program managers can determine whether one segment is more apt to sign up over the Internet, while another segment might be more inclined to respond to direct mail. They have found, for example, that young people need to be reached by cell phone. Every month Progress updates their data with customers who participate in various programs, including balanced bill, bank draft, e-bill, easy pay, equal payment plan, green power, home wire, Internet use, pay station use, area lights, surge protection, and time of use rates.

For example, Progress has discovered that their equal payment plan appealed primarily to upper income, older people, and also to people that tended to like the bank draft option. One can imagine a "persona" of this customer, a retired person with plenty of money who enjoys travel, but doesn't want to worry about missing a payment. On the other hand, the Balanced Bill product (flat bill, no true-up) appeals to lower income customers, as they see the value in the insurance against unexpected expenses. This type of insight helps Progress's product developers come up with new ideas.

Even with Progress's deep experience in segmentation, they are just starting to look into its use for DSM programs. They note that there are so many different things that DSM can mean and do, it is likely to be a complex endeavor. A customer who buys a few CFLs could be quite different than one that is willing to put $10,000 into energy upgrades. But with the amount of DSM that is occurring around the U.S. today, there should be ample opportunity to start developing such data.

A Segmentation Case Study for Green Pricing Programs

Including cooperatives, more than 600 utilities have green pricing programs in which they sell renewable energy to customers. Some utilities have relatively high participation rates: Sacramento Municipal Utility District and Portland General Electric have over 5%

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[6] Personal communications, John Mills, Progress Energy, April 2006

of their residential customers participating.[7] Many utilities are very interested in boosting participation, and they have discovered that surveys that ask customers about their "intent" to buy green power are not very strong predictors of future sales.

E Source has been working closely with leading utility green pricing managers for years. Utilities were having good response from targeting new customers that had very similar characteristics as those who had actually purchased green power already. In order to expand on this knowledge, E Source embarked on a program to aggregate information about green power buyers from all over the United States, making the database more robust than for any single utility. Several utilities agreed to participate in this experimental program with the hopes of improving their market penetration, lowering their marketing costs per point, and learning more about green pricing markets.

To allow for the green pricing participant data to be most useful, the experiment used the Claritas PRIZM NE geodemographic segmentation system. PRIZM NE provides the benefit of supplying the actual addressses (zip+4 neighborhoods of 6-15 households each) of customers in certain lifestyle segments. So the trick was to gather the data of green pricing participants, determine which PRIZM NE segments they tended to be in, and then market heavily to those particular segments.

E Source reported the detailed results of two of these experiments in a November 2005 report.[8] To acquire residential customers for their Blue Sky green pricing program, Portland, Oregon-based Pacificorp identified a target group and a control group to receive a mailing. The target group consisted of approximately 30,000 residential customers that fell into one of the top three PRIZM NE segments as predicted in the model created from the prior buyer groups as described above. The control group of 10,000 customers were selected randomly and used to compare results with the target group. The results were rather impressive. Compared to the control group response rate of 0.67%, the target group responded at almost double that rate at 1.25%.

A similar experiment was conducted with WE Energies, headquartered in Milwaukee, Wisconsin. The new approach resulted in a cost per acquired customer of about $24, when their prior direct mail campaigns had averaged roughly double that amount, with some efforts costing even more. E Source reports that it is not uncommon to see costs of over $100 per customer signup for a green pricing program's direct response efforts. Part of this reduction in costs was due to a different, simpler marketing letter that was used. But WE Energies also saw a significant increase in their response rate strictly as a result of the targeting. With each group receiving the identical letter, 1.35% of customers in the top PRIZM NE groups signed up compared to 1.02% for the control group (better than 30% improvement). The very top PRIZM NE segment responded at a 1.83% rate, again confirming the usefulness of the predictive nature of this database method.

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[7] From http://www.eere.energy.gov/greenpower/markets/pricing.shtml?page=3, downloaded Nov. 06

[8] Barry Friedman, "Boomers, Bohemians, and Big City Blues: Increasing Residential Marketing Effectiveness with Geodemographic Segmentation" *E Source Report ER-05-17*, (November 2005)

Slicing Up the Right Tree

The experience in competitive industries, coupled with the positive results from utility endeavors into market segmentation, seems to point in the direction of more market segmentation in the future. In particular, using segmentation techniques to improve the efficiency of marketing for energy efficiency, demand response, and innovative pricing programs should hold great promise. Experiments similar to that conducted in the green pricing area should be completed for DSM programs, as well. But it appears that our industry is still in the very early stages and has much to learn. By using existing tools in the marketplace, and by collecting valuable data from customers and integrating all of these methods, we could see significant improvement in our ability to target customers and offer them products, services, and programs that are most likely to benefit the customer and to help utilities meet their aggressive goals.