

**Customer Retention  
in a Competitive  
Electric Services Market**

**By**

**Siegfried Guggenmoos, B.Sc.(Agr.), P.Ag.  
*Ecological Solutions Inc.***

*(780) 467-6389*

*ecosync@compusmart.ab.ca*

### ***Proprietary Notice***

The information contained in this document, including technical knowledge, developed knowledge, ideas, techniques, methodologies and "know how", is confidential. The information is to be used solely internal to the purchasing organization and is not to be disclosed to anyone outside the organization without written authorization from Sig Guggenmoos, President of Ecological Solutions Inc. This document may not be duplicated in whole or part without the written authorization of Sig Guggenmoos of Ecological Solutions Inc.

## Customer Retention in a Competitive Electric Services Market

### "Secure" Disappears From Electric Industry Lexicon

The winds of change are blowing a gale through the electrical utility industry. While some utility executives are promoting the coming changes as an unprecedented opportunity, this enthusiasm hasn't gripped utilities as a whole. Media coverage, labour leader and utility employee comments paint a picture of an industry beset with fear and uncertainty. The adjective "secure", which historically described careers and investments in electric utilities, has been dropped from the industry lexicon. In spite of a pool of conflicting emotions, utilities need to respond quickly and effectively as events threaten to overtake them.

### Customer Gains Choice to Leave - Retention Strategies Required

The Washington International Energy Group's *1997 Electric Industry Outlook* reports that 86% of electric industry executives believe customer choice of supplier is inevitable. "Loss of customers" has emerged as the most important industry issue.

Over the last few years there have been numerous introductions of experimental choice in the electricity supplier. Nowhere do we hear customers clamouring for a return to the monopoly. In fact, some utilities first out of the gate agreed to leave the supplier choice option in place in the test areas until regulation catches up to extend this choice throughout their service area. And the largest experiment went live in early 1998 in California, by-passing the traditional utility pilot.

Utilities are faced with a new reality: they'll have to compete for customers. While "heritage" utilities are in an enviable position to any start-up, as they already have customers and service territories, they will also lose, since there is only one direction to go from full market penetration. Any comfort in the ability to fish neighbouring utility waters is dampened by the reality that where there was once one supplier, there may soon be ten or more. Most of these competitors will start with no customers. Thus heritage utilities need, first and foremost, a defensive strategy for customer retention. A primary focus on customer retention over customer acquisition is an economically sound choice, as it's well known in retail marketing that it costs less to retain an existing customer than to acquire a new one. Where regulators have mandated the shedding of a percentage of customers to begin the competitive market, retention of the remaining customers becomes even more critical.

To date competition is among generators. It has little impact on the wires company, provided a reasonable delivery system use rate exists. Whether this rate will be reasonable remains to be seen. Of greater significance, however, is the potential for the future loss of customers from the grid through the application of emerging distributed generation (DG) technologies. How will utilities deal with a decreasing customer base while regulators prevent the abandonment of the existing infrastructure?

This article explores issues of customer retention with a specific focus on customer demand for reliability. Line clearance or vegetation management (VM) will be used to illustrate the potential failure of utilities to deliver on customer expectations. It's likely that VM is the single largest cause of face to face interaction between utilities and customers. The issues presented are particularly relevant to utilities operating a distribution system.

### **The Asset is Customers**

Traditionally, electric utilities in a monopoly market have been engineering companies focused on resolving the technical challenges to delivering safe, reliable electricity to everyone who requested service. Customer service may have received some attention. Though, to be brutally honest, it didn't go far beyond lip service because it has been defined by the utility, not the customer. Given the monopoly, there's been no need for consulting the customer. After all, where was he going to go?

Customer choice radically changes this utility paradigm. Generation plants, poles, wires and engineering capacity are no longer a utility's chief assets. Now it's the existing customer base. Suddenly, building and maintaining relationships, marketing and customer service emerge as the pillars of the electric utility of the future. When electric utilities examine their competencies they may well find a shortage of skills in these areas. Ironically many have cut staff from their vegetation management group, instead of recognizing it as a resource, rich in customer relations experience. Who in the company has more direct contact with customers, while routinely building customer, stakeholder relationships under adverse conditions?

Utilities have historically had solid relationships with large industrial customers, local politicians and bureaucrats. Within the scope of the regulatory framework, utilities have made new agreements with large industrial customers to retain clearly identifiable future revenue and profit.

What, however, has been invested in relationships with wholesale, small commercial and residential customers? Small commercial and residential customers are presently limited by economies of scale from generating to meet their own needs. A \$70 per month residential customer represents a present value profit of only \$742 over ten years at 12% profit and a 6% discount rate. However, multiplied by the millions comprising these customer classes, these revenue streams are seen to be very significant. These revenues are at risk of being lost with the advent of customer choice. The emerging technologies, which will provide DG at the household level will drastically change the degree of competition and in the process, eradicate the old concept of a service territory.

Direct marketing guru, Dan Kennedy, reports that the reason provided by 68% of people for switching suppliers of a service or commodity is the perceived indifference of the current supplier.

Given heritage utilities had been prevented from marketing, efforts to create a new image may meet

resistance through the weight of public perception established over many years. The competitors' message, free of this history, will sound refreshingly new. In the longer term however, both heritage utilities and new market entrants need to provide services, which address customer needs and expectations so as not be perceived as indifferent.

### **Electricity... Commodity or Service?**

On the gross scale electricity is simply another commodity. One doesn't need to know how to grow coffee or pork bellies to be successful in commodity trading. A certain detachment from the production end is advantageous. This mentality is useful for bulk sales agreements. It is, however, completely meaningless at the retail level.

Residential and commercial customers aren't interested in a kilowatt. They're interested in the result: security, comfort, convenience, increased productivity, recreation or entertainment. The customer will determine the value of the result.

What's the point of security lighting or an electric smoke detector if the power source isn't reliable? Convenience is being able to microwave dinner at precisely the moment the customer chooses. Going around the house re-setting blinking clocks is an annoyance. The fact that the power is on 99.99% of the time doesn't remove this annoyance. The customer is left seeking resolution to a problem he perceives to originate from a lack in the service you provide. It doesn't matter what might be in a service agreement should you have one. From the customer's viewpoint, he's paying for electricity to be available to his house all the time. While he may be forgiving around major natural events disrupting service, service interruptions without apparent cause lead to the conclusion that whatever price he's paying for electrical service is too much.

For the commercial customer a loss in electric service brings the modern office to a virtual standstill, impacting productivity and effectiveness.

Viewed from the retail customer side, there appears to be very little elasticity in the demand for reliable service. Simply put, service interruptions erode value.

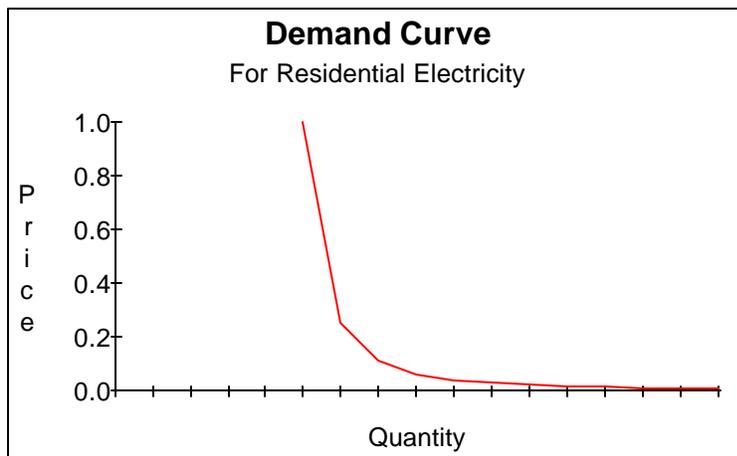
### **To Determine What the Customer Wants to Buy, Stand in His Shoes**

To understand the importance of standing in the customer's shoes, utilities need only consider the elasticity of the demand for reliable power. That the thought that "customers must accept lower levels of reliability in a competitive market" should broadly emerge in early re-structuring discussions is symptomatic of an industry disconnected from its customers. This response is focussed solely on the utility. Can you honestly say the customer is demanding reductions in reliability? What evidence exists that the customer is willing to make trade offs between price and reliability? What is the elasticity in the demand for reliable service?

While the new competitive environment will definitely require ongoing improvements in effectiveness, any action, which jeopardizes service reliability at the retail level, will be self-defeating. Yet, contrary to delivering more reliable service, the industry as a whole has been slashing operating and maintenance budgets in the last decade. These budget reductions can be applauded if they are genuinely being driven by the discovery of new economical ways of providing the same or a better service. If, however, budgets are set at levels, which result in compromised service, is that in anyone's best interest? It isn't in the best interest of your customers and therefore, isn't in yours. Utilities must make the commitment to finding ways to deliver 100% reliability to demonstrate they are hearing and responding to their customers. Failure to do so will lead to a number of consequences. Public utility commissions will become increasingly critical of service reliability. Utilities will find themselves under the microscope and hamstrung by interventions. However, more importantly, deteriorating reliability will accelerate the adoption of DG technologies not as back up to the grid but freedom from it.

What does the demand curve for electricity look like? There are probably at least two based on customer class: one for commercial and residential customers, and another for large industrials. *Figure 1* shows a conceptual model for commercial and residential customers. The demand for electricity is

**Figure 1**



Conceptual model of residential demand for electricity

limited and hence even drastic reductions in price will not significantly increase consumption - in other words the demand is inelastic. In contrast, the demand curve for industrial customers can be expected to be flatter or more elastic. The residential customer's demand for and supply of electricity converge at the current consumption level. After all, the price of electricity is not a customer consideration when adding computer technologies to the home or office. The inelasticity

in demand suggests that only large changes in price would affect consumption and therefore, only large reductions in price have the capacity to favourably impress customers.

A December 31, 1997 LA Times article reports that in California where electricity rates have been 30% to 50% above the U.S. national average, small business owners are ignoring the freedom to choose a new electricity supplier. Scott Hauge, chairman of the California Small Business Association says "For most small businesses, this issue isn't even on the radar screen. It's not affecting their businesses one way or another right now. And it's so complex that many are just ignoring it." The choices offered have failed to impress small business owners. It would be a reasonable speculation that residential customers

are also ignoring the highly touted advent of choice.

In Pennsylvania, where customers were shifted to alternate suppliers to start the competitive market, when wholesale electricity prices rose in late 2000 and the deals offered by the alternate suppliers disappeared, customers began returning to their heritage utilities (Few Pennsylvania Residents Look to Change Electricity Providers By David DeKok, The Patriot-News, Harrisburg, Pa. Oct. 4, 2001).

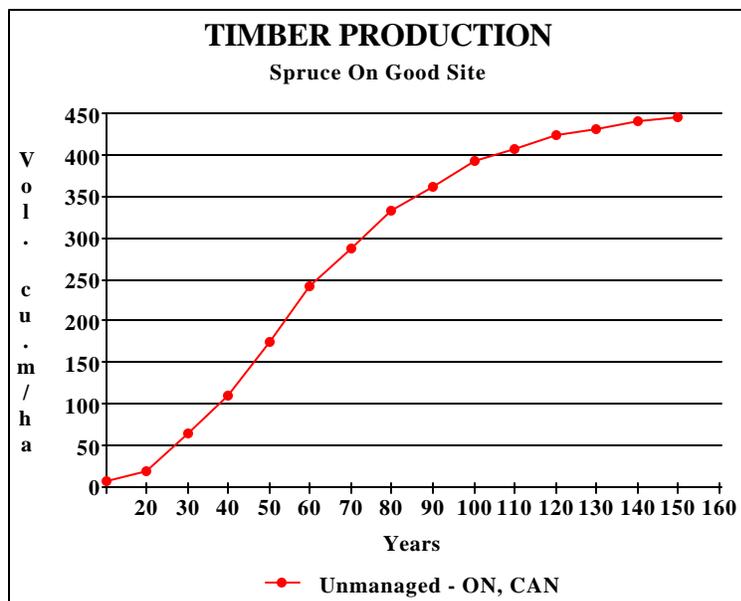
Does reduction of maintenance contain the capacity for producing price reductions large enough to influence and retain the customer? When those price reductions are attained through cost cutting in transmission and distribution operating expenses won't the competitive advantage be short lived?

### Trees Got You Out On A Limb?

It's false economy to defer any maintenance operations that are influenced by biological processes. Biological processes are generally characterized by geometric, not linear, progression. An example of a formula for a geometric progression is the familiar formula for compounding interest,  $P_1 = P_0(1+r)^t$ .<sup>1</sup> VM is a good example because most utilities have to deal with trees and vegetation is dynamic. When it comes to deferred tree work, the rate of change, r, has been shown to be 20% to 30%. Using the formula  $\$1(1+r)^2$ , the deferred dollar of work in two years time would cost, at r = 25%, \$1.56. Deferring VM work doesn't make good business sense. It also jeopardizes the customer's need for

reliable and safe service.

**Figure 2**



Development of Tree Biomass  
Adapted from Provincial Yield Tables

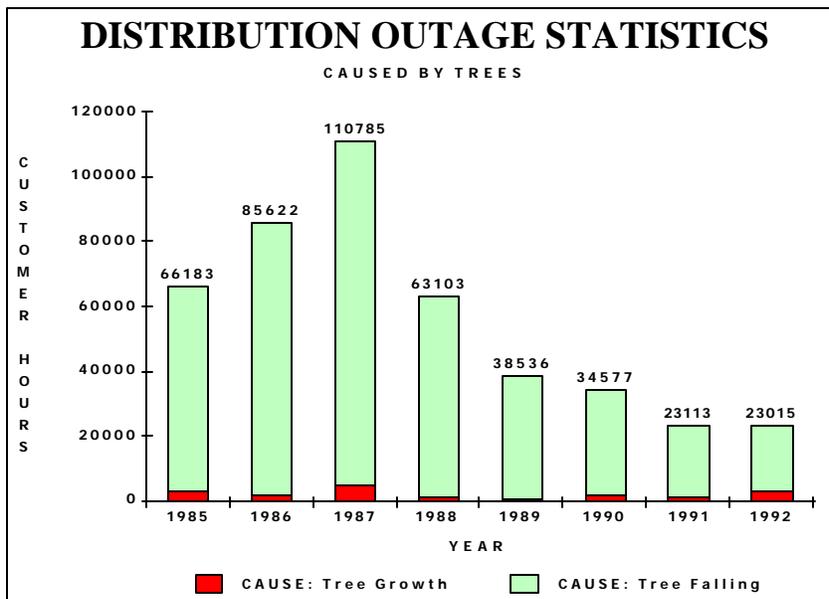
VM has potentially enormous impacts on reliability and safety. It's not uncommon for trees to account for 20% to 50% of all unplanned distribution outages. Furthermore, every tree caused outage is a public safety hazard and as such, a liability to the utility.

What if trees are your major source of outages? Aren't you simply at the mercy of nature? Far from it. While it's unrealistic to expect total elimination of tree related outages on an overhead

<sup>1</sup> P<sub>0</sub> equals initial principal; r equals the interest rate; t equals the compounding terms

system, for most utilities drastic reductions are possible. Incredibly, you can have the simultaneous benefits of maximum reliability and minimum maintenance costs. How? Recognize and accept two inescapable ecological principles. First, nature will work to replace the vegetation you remove. That means there is no end to VM. Vegetation cannot be eliminated but it can be managed. Second, tree problem growth is exponential, or more precisely, it follows an S curve. It's simply how forests grow (Figure 2).

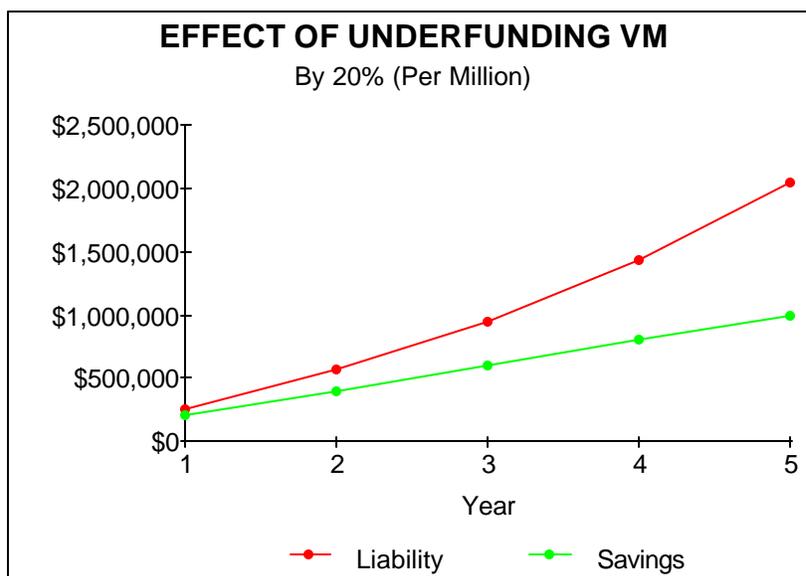
**Figure 3**



Source: Electric Power & Light, February 1995

A mismanaged vegetation program will result in exponentially expanding outages and costs. A properly managed program removes the annual increment finding the point at which you get the biggest return in increased reliability for each dollar invested. The system can be stabilized and brought to equilibrium at this point of minimum maintenance costs. Your ongoing VM requirement is a financial liability. You can invest in actions which 1) buy down this liability (Figure 3); 2) you can stabilize and manage the liability; or, 3) you can take action which ignores the underlying ecological principles and have the workload mushroom.

**Figure 4**



When the VM program is underfunded, the portion of the annual tree growth increment not removed begins compounding. The impact on future maintenance needs is generally not perceptible for years. Figure

4 reveals a program underfunded by 20% rather than saving money ultimately costs twice as much in five years. Tree related outages will draw increasing attention five to ten years after the VM budgets were initially reduced. Without an ecological framework, the loss of reliability will not appear to be related to a funding problem, when, in fact, it is.

### **The Impact of Underfunding VM - The Light At The End Of The Tunnel May Be A Train**

Many utilities, in their efforts to lower service costs in preparation for deregulation, have created a reliability problem, which is set to emerge just as competition begins. What will be the customer reaction? Reliability reduction may be attributed to a decrease in service that began with deregulation. The customer will pressure regulators for guarantees in service reliability. Providing the availability of DG, some customers will pay the premium and leave the grid. A customer feeling the need to take action to assure a reliable electricity supply will not be very receptive to purchasing DG from the company that is the cause of the need for change. Paradoxically, a successful branding strategy could act as lightning rod for discontent where there are quality of service issues.

A customer focused strategy would be to strive to deliver 100% reliability. Achieving this would likely mean the replacement of overhead facilities. Until you find a viable method, you'll need to deal with your tree liability. Swift action in the form of assessing the extent of the tree liability, formulating a plan to address and manage it prior to the introduction of retail competition, will position you to include these costs in distribution rates. The alternative is that your shareholders will pay for any perceived shortcomings in reliability after competition is introduced.

### **Marketing... nothing to it. Just offer the lowest price, right?**

Retail marketing concepts have not been part of the traditional utility's intellectual holdings. Yet it is competence in retail marketing that will determine future success. New entrants into the industry may be extremely well versed in this area. Successful strategies will be based on a solid understanding of customer needs. The market is segmented, needs vary and hence multiple strategies may be necessary. Delivering to the needs of the different customer classes may result in conflicting and incompatible messages. Customer profiles will need to be developed and decisions made regarding which customers will be courted and which will be ignored. Utilities that attempt to be "all things to all people" risk losing it all, as they will not distinguish themselves in any specific market.

Success in retail markets is a matter of delivering to specific customer needs. The product that best matches the need(s) is valued. Identifying customer needs comes first and foremost from listening to the customer. This gives the heritage utilities a strong advantage. Not only do they have an existing customer base but also through their employees, they participate in the customers' communities; they have an infrastructure system to maintain, putting them in contact with, and making them visible to, the customer. These face to face encounters with customers provide opportunities to hear customer expectations. Other means such as market surveys and interpretations of demographic trends are also critical to

understanding the customer and will be particularly useful in charting the original course in the deregulated world.

Utilities have been shifting away from face to face encounters by developing call centers and internet services. While the application of such technologies holds the potential to provide better customer service, customer dissatisfaction is higher. A recent RKS Research & Consulting survey (Energy Central, April 14, 2000) of U.S. households reports residents give electric suppliers high marks for technical competence but register negative or no opinions on such areas as economic development, flexible service, billing options and communications. Of the residents who have had on line contact with their energy providers only one half have had satisfactory experiences. "These low scores add up to lost opportunity for electric utilities, as well as encouragement for competitors," said Charleen Heidt, RKS vice president. How could this happen? It suggests utilities are still too internally focussed. When the implementation of technical solutions arises from a desire to reduce costs the focus is internal and not where it needs to be - on customer needs and values.

The value of face to face meetings should not be underestimated. Not only do such encounters provide any opportunity to listen but also to provide information to the customer. What results, is a dialogue and a relationship. It doesn't matter if it is a company employee or a contractor. The representative puts a face to company and makes the relationship real. The effects of this relationship can be quantified.

A study by Portland General Electric, examining customer satisfaction with tree trimming found, of customers receiving crew contact prior to the work, 75% indicated being "more than satisfied" versus 33% for the customer group not contacted in advance. Further, all the customers contacted prior to work indicated performance met or exceeded expectations while 67% of the customers without crew contact felt performance was below expectations.

At the International Society of Arboriculture meeting in Toronto in 1990, TransAlta Utilities revealed a customer satisfaction rating of 96% for VM work versus a background customer satisfaction rating of 91% for the company as a whole. How could TransAlta experience the highest ratio of tree removals (75%) ever seen in the utility VM business and obtain a 96% customer satisfaction rating? A contractor representative met each affected property owner face to face prior to the tree work.

These findings show the value of having a tangible relationship with the customer:

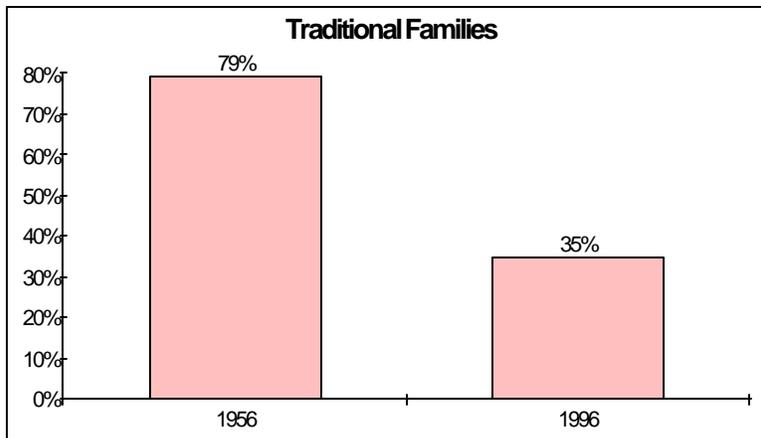
- Face to face encounters provide an opportunity to clarify and agree on expectations.
- Face to face encounters provide an opportunity to educate the customer on utility issues.
- Involving customers in decisions increases their satisfaction.
- Involving customers in decision making results in a far higher rate of cooperation.

People value being in relationship. From this recognition should flow action that increases customer satisfaction and thereby, customer retention.

## Using Demographics to Reveal Value

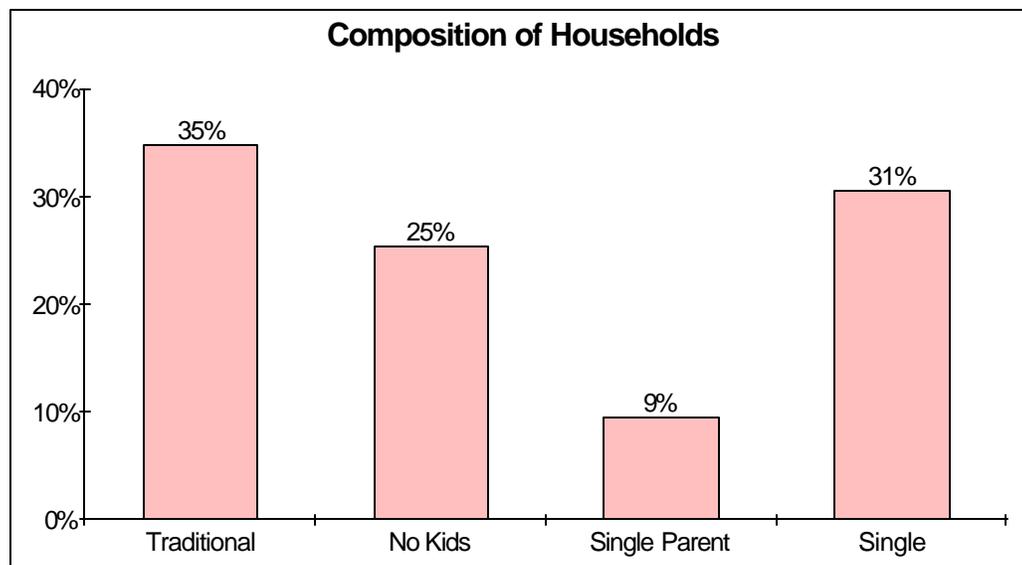
Can we assess customer values from a distance? For example, what can we learn from demographic trends? The structure of society has changed dramatically in the last 40 years. The make up of households has shifted. The traditional family of mom, dad and the kids, once making up most households, no longer predominates (*Figures 5 & 6*). Instead more people are single, more will either not have children or have delayed having children and the number of single parent households has increased.

**Figure 5**

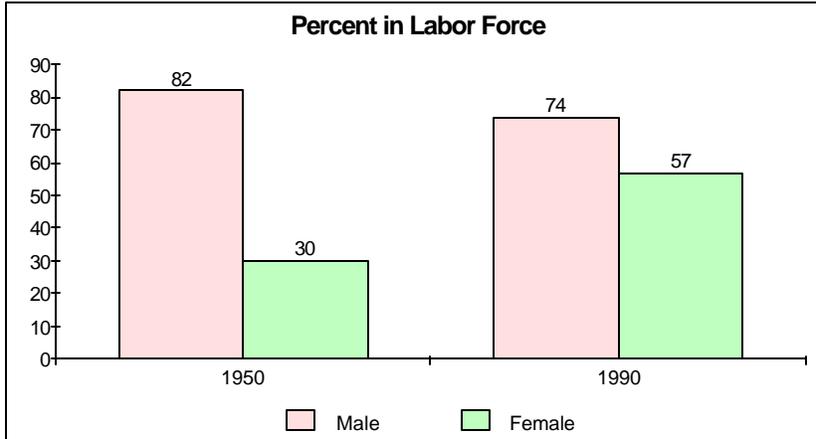


Source: US Census Bureau

**Figure 6**



Source: US Census Bureau, 1996

**Figure 7**

Source: US Bureau of Labour Statistics, 1994

There has been a shift in the make up of the labour force (Figure 7). The participation of women in the workplace has essentially doubled in 40 years. Many products and services have been successfully introduced; exploiting a fact imbedded in these shifts, that time has become a scarce commodity. Fast food outlets and restaurants in general have and continue to spring up. Lawn care, maid services, "Quick Lube"s,

carpet cleaning, one-hour photo and eyewear, even dog sitting/walking businesses have flourished. There is an enormous market for convenience, that is, anything that liberates consumers from low priority time commitments. Products, which deliver greater convenience, can be expected to sell - at a premium.

### Creating and Using Value to Capture Market Share

Value is based on comparison and can be created in numerous ways. Some companies such as Wal-Mart, Costco, Price Club, etc., have chosen to focus on price. They have created value for the customer by offering bulk items at low prices. Others, such as Toys-R-Us, Home Depot, Staples provide the customer with a massive assortment. Faced with such a comprehensive range of choice, why bother to go anywhere else? Starbucks, which sells its coffee at twice the price of the local convenience store or corner gas station, has swept North America by offering convenient access to premium quality. Nordstrom has become known for its outstanding customer service.

You'll need to decide on your strategy - one that responds to the diverse needs of your customers while distinguishing your service from the others. To distinguish your service you'll want to consider which approaches are options for the new entrant to the market. Competing reactively, head to head on similar features makes it difficult to distinguish your service because you have to clearly beat the competition in their profiled area of strength. Wouldn't you rather sell something that you know the customer values but the competition cannot provide?

As a heritage distribution utility having current market penetration, you are better positioned to add value to the community. Generally, the heritage utilities have been generous in supporting community events. You just haven't made a big deal of it, being satisfied with a printed acknowledgment or the

tasteful, unobtrusive inclusion of your logo. It's time to get noticed, to leverage this investment. You have the customers and the resulting revenues. While you may see it as undesirable, it is none the less, easier to dedicate a percentage of revenues to customer retention than it is to equity finance the speculative capture of market share. New entrants need to focus on marketing that effectively introduces them and their products to the customer. Since the customer already knows you and your product you can feature the value of not only your product but also of your viable company to the customer community.

You will control reliability. You have an option to exercise this control in a way that supports what customers value. In the move to a competitive market so intensely focused on price, it's quite conceivable that customer valued service attributes will be dropped. You, as the heritage utility, are likely to bear the ire of the customer should you leave him to fend for himself in regaining these valued service attributes. Or, you can proactively seize the opportunity to advocate on behalf of customers. Effectively advocating on the behalf of your customers will necessitate providing regulators with solid evidence that your actions serve customer expectations and do not constitute a barrier to competition.

You have the infrastructure, thereby controlling many of the possible customer interactions. The new entrant's customer interactions will be limited to billing activities and marketing. Neither of these are activities are particularly endearing.

Clearly the new market entrant is limited in the domains where it can compete effectively. The strongest possibility is competition on price. This creates pressure for the heritage utility to cut prices. However, if price is all that distinguishes you in the market, business longevity will be tough. Someone will always come along with a lower price. Think of the impact this price competition has had on the airline industry where they're pushing each other head long into bankruptcy. No doubt your price has to be in the same ballpark but is it necessary to beat the competitor's price?

### **Price is Only One Component of Value**

As stated earlier, the heritage utilities have an enormous advantage in being closer to the customer and should already know the customers' needs. Yet, rarely is this the case. The negative impact of operating an imposed monopoly is that utilities haven't learned to listen to the customer. In a monopoly, when you fail to meet the customer's need, her focus shifts entirely to price. In a free retail market such failure is met by the customer going elsewhere. Given choice, as presented in a competitive market, the customer buys on perceived value, not on price. Luxury carmakers exist on the basis of this truth. Utilities must recognize both the need to create value and that value goes beyond price if they are to be successful in the deregulated, competitive market.

### **Customer Value Surveys**

Over the years numerous customer survey results indicate that reliability is of utmost importance. A 1996 report released by Ontario's Municipal Electric Association to a commission studying how to

introduce competition to Ontario's electric industry, found that out of 21 issues the public gave top priority to safety and reliability of supply. Choice in supplier was rated last in importance. In a 1993 TransAlta Utilities survey, 98.8% of customers rated reliability the number one service indicator, while cost was rated 6th. The Energy Center of Wisconsin's executive summary of a 1995 public opinion survey for the Public Service Commission of Wisconsin states, "Across all customer segments reliability is very important. Participants report that they are accustomed to electricity being there when they need it, and that this is important." With the ever increasing array of electrical devices in the home and office, do you expect that the public's demand for safe, reliable service will diminish?

There are also survey results that determined price to be the most important service consideration. The Energy Center of Wisconsin's public opinion survey states, "Most residential and small/medium commercial and industrial customers rate price as the most important aspect of electric service." Yes, it's another customer perspective.

So what's most important, reliability or price? The contradiction simply arises from the fact that the customer hasn't had the opportunity to value electricity due to the lack of competition and product differentiation.

An examination of the trend in backup generation serves to clarify values placed on price and reliability.

An October, 1999, Utility Spotlight article reported the findings of an RKS Research & Consulting survey:

- One in ten affluent U.S. households have backup generation.
- Another ten percent of customers show a high interest in backup generation.
- Interest in backup generation is directly proportional to "power inconveniences".

From the Milwaukee Journal Sentinel Jul. 12, 1999

- Home standby generator sales are up over 200% from a year earlier.
- The demand for 1500 kW to 2000 kW backup generation is high.
- Buyers cite recent power failures and summer spot shortages.

The cost of electricity generated by the backup system during times of need may be two to three orders of magnitude above the cost of electricity from the grid. Clearly for these customers reliability is valued much higher than a few cents per kilowatt-hour.

The lack of reliability is the primary motivation for small commercial enterprises exploring DG. A few recent announcements serve to illustrate the point.

San Jose Mercury News, California, Jul. 7, 1999

- Antiquated lines couldn't run electronic fingerprint machines or air-condition the whole New York Central Park police station. A fuel cell was installed and on May 1st they cut themselves off the

New York power grid.

- McDonald's is testing microturbines for possible use around the world  
"The arches will glow in a sea of darkness" McDonald's corporate engineer Tony Spata

Energy Central, April 19, 2000

- A 660 kW power plant will be installed at the West Lincoln Memorial Hospital in Grimsby, Ontario. It will be installed by mid-2000. Administrators will use it as an alternative to the local utility, reducing costs and increasing power reliability.

Do these customers represent a small percentage anomaly or are they the early adopters in a new trend? Will it become a trend as the cost of DG approaches the local utility rate? Once again, it's critical to explore the elasticity of the demand for reliable service before taking any action that could negatively impact reliability.

### **When it's all vanilla, you compare price**

Due to regulation, customers have received relatively standard and similar electric service wherever they live. Currently the customer is unaware of differences in electrical service and hence, all the focus is on price. This may change quickly with the advent of choice. For example, D. Louis Peoples, CEO of Orange & Rockland Utilities Inc. speaking to the press in Washington in September, 1997 stated some of the lessons learned from 15 months of their customer choice pilot program: customers are concerned about "attributes beyond price, such as one-call service, reliability and recourse for problems". Large commercial and industrial customers were said to be anxious to participate in any program that reduces cost as long as reliability is ensured by the local utility. Concerns beyond price are deterring people from switching suppliers. Orange & Rockland's experience would suggest that with the introduction of choice, price is no longer the primary concern.

### **Good Grief! Give Them Choice, They Won't Take the Lowest Price.**

If, when given a choice, customers become increasingly concerned with "one-call service, reliability and recourse" there are further implications to Orange & Rockland's experience. At the present probably few customers understand what choice in electricity supplier will mean to them. Ultimately, will it mean more than getting a different bill? The electricity is delivered over the same infrastructure, likely with the same or lower levels of maintenance provided by the heritage utility's crews. You can see conflicts to delivering on a "one-call service" demand if the customer chooses an alternate supplier. The demand for one-call service favours the owner of the infrastructure.

The new supplier cannot control reliability. While we speak of deregulation, we understand that we're really talking about re-regulation not its elimination. You can expect that the alternate suppliers will vigorously demand on behalf of their new customers, reliability. Put yourself in their shoes. After having

invested in gaining market share, wouldn't you advocate on behalf of your new asset, the customer?

Should reliability be deemed inadequate, and this is a determination future regulators will have to make, do you think that your arguments for higher distribution rates for increased reliability are going to carry the day? Consider this: is it possible that you'll be penalized through a lowering of distribution rates, being perceived as having profited excessively under the past agreement for the level of service provided? We are already beginning to see mandated levels of reliability. As this idea catches on with public utility commissions we can expect a rapid escalation in the punitive aspects of such regulation.

### **The Economics of Customer Retention**

Due to the regulatory structure for electricity delivery, capital investment and operating costs have been recoverable. Under a monopolistic, mandated requirement to serve there is no need for breakeven analysis. The costs are simply assigned to all the subscribers of the service. Customer choice in electricity supplier and DG makes breakeven analysis relevant for generators and distributors of electricity.

In a free market, competition and innovation exert a downward pressure on the price of a product or service. There is a point where costs are adequately dispersed over the units of a product or service that customers see value in it. Achieving the acceptable price range may require distinct value attributes and/or the lowering of fixed costs through innovation or production scale. In the long run, the price of commodities is lowered through technical innovation. A product or service with distinct value attributes may well be based on a displacing technology. The internal combustion engine displaced the Pony Express service.

Since the introduction of a competitive electricity market, we've witnessed enormous variability in the price of electricity, constrained supplies and even blackouts. With the emergence of these business risks arises the search for means of eliminating or controlling these risks. More control and decision making is flowing to the customer. Increasingly commercial and municipal customers will look to self-owned generation to eliminate escalating or uncontrolled prices, increase reliability and create a marketable commodity that brings down their average electricity costs.

A 2001 Primen survey of over 600 North American businesses with 10 kW to 5 MW requirements found that 10% are strong candidates for DG and half of those are currently evaluating baseload applications. The interest in alternatives to grid supplied power was highest in California (21%). Of note is the finding that the interest in alternatives to grid supplied power is primarily driven by reliability concerns. However, the need to contain energy costs is another key driver.

This market for DG will facilitate achieving economies of scale, further increasing the competitiveness and appeal of DG. It's also likely the existence of a DG market will lead to further innovation and product range. While such a shift should accelerate the maturing of the competitive market to the point

where supply can match demand, thereby decreasing price volatility, for customers entirely dependent on the grid it removes only one potential cause for loss of service.

If DG can match the reliability of other home installations such as the furnace for central heating, hot water heaters, etc. it will become a displacing technology to the overhead distribution system. At present there are technological and capital cost barriers to the adoption of DG in the residential market. The market or demand is, however, growing.

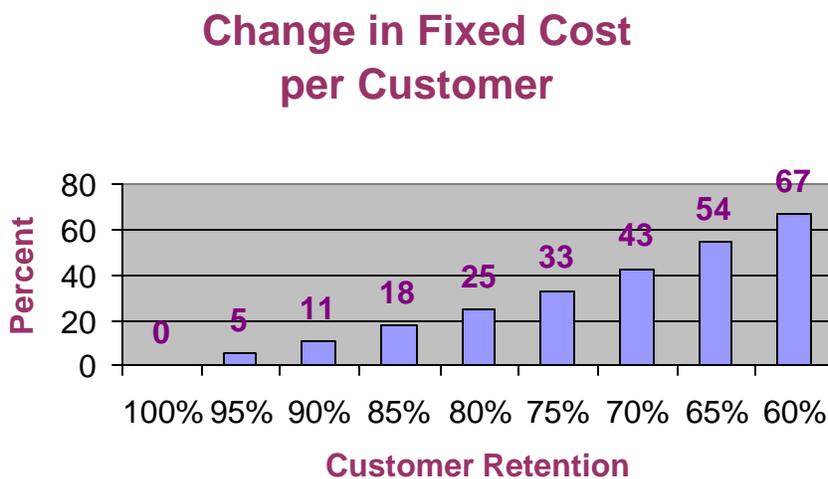
A January 29, 2001 Business Wires Features article is revealing. It reports an RKS Research & Consulting survey found for households with greater than \$50,000 in annual income:

- greater than 50% indicated their power consumption has increased in the last 5 years
- 31% are interested in self-generation and 20% of these wish to be free of the power grid
- 75% said "doesn't matter which company supplies... electricity, as long as delivery is reliable"

The increase in electricity consumption reveals the trend of increasing reliance on and importance of electricity in the home. The interest in self-generation may be construed as an attempt to escape utility rates. No such argument can be made for the better than 6% of households that wish to be free of the grid. This desire is clearly linked to a perception that the grid is vulnerable to service disruptions, and hence unreliable. The shift to DG will not be driven by regulators but by the convergence of customer demand and technical capacity.

There is considerable utility effort being expended on the technical issues of having DG connected to and supplying excess electricity to the grid. While this issue will need to be resolved, it should not obscure the fact of a growing demand for freedom from the grid, a demand that will impact utilities regardless of whether or not competition has been introduced to the market. Ultimately, utilities will need to provide DG technologies. Customer retention will be an important transition strategy.

**Figure 8**



Customers leaving the grid will not only negatively impact the bottom line for utilities but also serve to accelerate the switch to DG. Utilities will be faced with dispersing unchanged fixed costs over a shrinking customer base. *Figure 8* reveals a 30% loss in customers would necessitate a 43% distribution charge increase to maintain the same level of

profitability.

It's unclear how regulators will deal with this issue. Utilities will be faced with uneconomic lines yet may be prevented from abandoning such lines as long as some customers wish to continue service. No doubt the remaining customers will seek regulatory intervention to protect them from ever increasing rates.

It will be akin to what the railroads faced on the Great Plains. Grain shipment growth was not as robust as anticipated and the introduction of the internal combustion engine and an improved road network made many rail lines uneconomic. While economics might favour line abandonment, stakeholder intervention may prevent it. This remained an issue in Canada through the 1970's and 1980's as regulators forced the retention of uneconomic grain lines on the two national railways.

Customer retention during the transition to DG may serve to forestall expenditures on regulatory proceedings likely to limit rather than contribute to profitability.

### **Strategies For An Emerging Future**

In a certain sense it would be simple if the lowest price automatically got the business. You'd know what you have to do. But it's not that simple. You know from the telephone business that effectively communicating the lowest price is exceedingly difficult. Consumers are still confused after years of being taunted with media ads and dinnertime telephone solicitations. And indications out of California are that the choices offered in a competitive electricity market are equally confusing.

Clearly utilities face an enormous challenge in determining what will be a successful response to the changing business environment. While some of the challenges such as the issue of stranded costs are rather unique, others such as marketing to customers are not.

While the challenge of surviving the shift to a competitive market may appear an enormous uphill struggle, in twenty years it will be seen as simply the first plateau. The challenges ahead are equally daunting. It has been illustrated that customers buy based on value; that from the customer's framework she is buying security, comfort, convenience, recreation and increased productivity. Just like the value of stocks, the value of electric service is based largely on perception and is vulnerable to sudden re-assessments. If the customer is buying convenience then it follows that only a commitment to a 100% reliable service has any chance whatsoever of matching what you are selling with what the customer is buying. From this recognition of the customer demand for reliability, the future of electrical services becomes clear. DG offers the potential to remove weather; bird, rodent and tree related risks to reliability.

In the not too distant future, we can expect that each house will supply its own generation. A household electricity supply installation will be viewed like a furnace, air conditioning and the hot water system. How will utilities maintain a legacy distribution system, which satisfies customers when the customer

base truly shrinks through DG? Companies which already have appliances in the home, and thereby a reputation for reliability, will be exceedingly well positioned to sell DG into it. Once the technical issues surrounding DG are resolved, it won't be long before the economic barriers fall. Utilities will have a brief window of opportunity to facilitate the transition to this new future before economies of scale bring DG within reach of the average household. By deploying its capital to more quickly get the customer to where he will ultimately go, a utility can get a head start on the broader competition. A reputation for reliability and service will be critical to customer uptake. Not participating, in what to the heritage utility will be cannibalistic action, simply leaves a less crowded field for others. Without utility support for the switch to DG the transition may take longer. It will not, however, change the outcome.

Running with "Lowest Price" is one way to play, but it's not the only game in town. It begins to emerge, it's not a standard race but a relay, with the outcome depending on the depth of the runners in reserve and making smooth transitions.