

Advocating a Sustainable Approach to Market Transformation

Phil Welker and Lawrence Orsini, Portland Energy Conservation, Inc.

ABSTRACT

Achieving sustainable transformation of an entire market segment requires clearing financial and relationship hurdles at several steps in the energy efficiency supply chain. Many interventions fail to achieve persistent results because they don't address the full range of market actors and more importantly, don't adjust mid-stream strategies to lock in new business roles as the market responds.

An effective strategy will target early-adopters with easy-to-adopt new technologies and aggressive incentives. As increased participation adds volume, contractors and manufacturers can be effectively encouraged to create targeted buying groups. With these second-round higher volumes of projects in play, affected contractors will lower their installation costs, creating additional volume. These resulting economies of scale then make it possible to persuade manufacturers to further discount new technology pricing. Incentives can be reduced as prices decline. The outcome is bigger delivery capacity in the market that is embedded in new market roles and relationships. Utility efficiency programs play a larger ongoing role in this approach, building market relationships that have durable value and can be mined for savings over and over again.

This presentation will use examples from successful programs to illustrate a broad framework for an ongoing approach to sustainable market transformation. We will make the case that influencing the lifecycle of an entire market segment in correct sequence can lead to widespread technology adoption and higher levels of persistent energy savings.

Problem Statement

Achieving lasting market transformation is more complicated than it looks. Transforming a market certainly requires that market actors gain experience with new energy efficiency measures, as happens when many programs provide incentives at various points upstream in a chain of market actors. But lasting transformation requires the chain of market actors to reorganize themselves around those measures in a coordinated way that provides more profitability than the existing practices.

This means that the relationships and decisions that occur between the actors in the chain must change in a sequence that adds some value and creates the potential for additional value for each associated actor in turn. The relationships (a period of experience with the other) form the basis for the decision-making belief that there is predictability in the reorganized behavior of the market actors. Understanding the different decisions and appropriate timing can yield a truly transformed market that will stabilize with a higher level of efficiency delivery.

For this paper we will examine a chain of market actors supplying energy-using equipment to a retail store market segment that faces aggressively competitive pricing (high product differentiation is not possible). This type of market might include Do It Yourself stores (such as an Ace Hardware), food and convenience stores, some household appliance stores, etc. These are "mass market" stores where the ability to differentiate products is low as opposed to

specialty retailing such as luxury automobiles or high end furniture. The actors include: retailer, contractors, suppliers/distributors, and manufacturers. Each of these actors has different business motivations, faces unique barriers to adopting more efficient equipment, and each has slightly different strategies for business success in their strata of this market.

Please be aware that these relationship chains are unique for every market, and indeed for nearly every business. Examining an example is intended to make that very point. The implications for our model are that understanding these unique chains opens possibilities for more flexible program interventions to achieve greater effect. We assert that market actors will adapt, but that phenomenon will happen within a set of changing market conditions. Anticipating and even predicting that adaptation based on involvement with market actors can be leveraged by a program that plans for phases of market change.

How the Supply Chain Currently Works

Retailer

The retailer in a highly competitive market segment that faces aggressively competitive pricing is generally motivated to increase revenue and profitability through a strategy of cost control and reducing operating expenses; competitive advantage comes from being a more economical (cheaper) shopping choice. This type of retailer faces barriers in adopting new energy efficient technologies and practices including low awareness and comfort level with new technologies (there are not a lot of internal resources for none business critical functions), reservations about potential equipment downtime needed for installation (the business cannot afford disruption) and a lack of familiarity or relationships with the appropriate program and/or contractor (the press of business affords little time for longer term service relationships). The majority of decisions around store operations and equipment are based on proven experience with a technology – is there a track record of reliable performance – and will it fix a problem. Ultimately, the retailer is motivated to only call a contractor when there is an equipment problem that needs to be fixed immediately.

Contractor

The contractor in this chain of market actors is generally motivated to grow market share (find more customers rather than go deeper with existing customers) and increase profitability (find the right balance of cost and margin for products). Since, for our retailer in this case, most transactions are immediate problem-solving cases, fast response times, short service times and price are major drivers to serve this customer. The contractor must increase product line and product knowledge to realize a competitive advantage by being a cheaper, faster, and more knowledgeable resource for these retailers. The contractor faces barriers in recommending and installing new energy efficient technologies that include; low awareness and familiarity with new technology (focused on repair and compatible replacement technology versus upgrade/up-sell technology applications), and frequently, retailer relationships that only engage when there is an immediate repair need. In general decisions are based on if the new technology can be confidently sold and serviced (call backs eat up margin), will result in increased profit and secondarily will facilitate a relationship that will result in additional business with the retailer.

Supplier

The supplier/distributor is generally motivated to increase margin and volume and thus recruits new contractor customers and stocks profitable product lines to gain a competitive advantage by having in-demand inventory and exclusive contracts. The supplier/distributor faces barriers in supplying new technologies that include the potential for inventory management problems when an inconsistent supply chain results in demand volume not matching inventory supply. For the supplier/distributor, inventory decisions are based on assessing the demand volume from contractors and matching that volume with inventory. As a result, they stock the inventory that contractors consistently buy.

Manufacturer

The manufacturer is generally motivated to realize increased market share and volume to boost production efficiency and economies of scale. When the volume doesn't materialize and suppliers/distributors don't stock new products, the manufacturer will be reluctant to adopt new energy efficient technologies. Manufacturer decisions are based on volume. They manufacture products that they know (predict actually, but again, with high certainty) the supplier/distributor will stock and that contractors will buy.

A chain of market actors like this generally finds a "balance point" where the decisions of each will yield fairly predictable results in relation to the others. Retailers seek prompt, low cost repairs; contractors are under pressure for quick inexpensive solutions and can only up-sell within the competitive constraints of immediate speed and price; suppliers/distributors tend to constrain inventory to the most predictable, high turnover products; and manufacturers are even more careful to keep the product pipeline stable and predictable. There's not much pressure here to change things. In fact the opportunity to innovate is often overwhelmed by the need to minimize risk and work within the bounds of the market norms.

Short term disruptions in the chain can cause change, but often in only some of the players for as long as the intervention is maintained. Incentives can be offered to introduce better products or practices and get the players familiar with them. But if the players don't create new *predictable* expectations in each other - a new pattern of interaction - the market will change very slowly, or the change will not persist.

Spurring lasting change will often require a more orchestrated set of interventions than lowering price for a time through incentives to get the players familiar with new technologies. They also need to see simultaneous potential for *reliably* changed patterns of decisions in their cohort market players. Then they will see the change to new measures or practices as a new business opportunity where they judge they have a high expectation of repeatable success. The players will often quickly organize to take advantage of these kinds of opportunities.

Why Many Interventions Fail to Achieve Persistent Results

The complex interactions in any chain of market actors requires an adaptive, orchestrated approach that selects and meets a sequence of immediate needs that can then be leveraged into opportunities for adjacent market actors. This second round of opportunities for adjacent actors will reveal needs that can create yet another round of opportunities for another group of adjacent

market actors. Many market transformation efforts do not persist because they fail to follow and leverage these opportunities between the players.

In many cases program sustainability is adversely impacted by a short run intervention approach that does not anticipate adapting to the changes it may create, but instead exits. This can lead to boom and bust scenarios where the market responds dramatically to high incentives and then the bottom drops out when a utility program ends and incentives disappear. For example, when CFLs were first introduced into the market many programs implemented an aggressive, short-term coupon which in a majority of cases covered 100 percent of the product cost. The market took advantage of the promotional opportunity, but there was no market organization so the norms of market behavior expectations stayed the same. As a result, when the coupon was pulled the market went away. There were short-term savings, but no long-term effect because the technology was no longer financially viable causing participation to decline. At this point the new technology is no longer financially viable and participation declines. The market did not organize around a business potential and the norms of market behavior expectations stayed the same.

Failure to fully address relationship issues for market participants also misses the opportunity to create an infrastructure within a given market that can more quickly and efficiently act on successive measure opportunities. The introduction of electronically commutated motors (ECMs) into the California market is an example of this issue. At the time of this example, there was only one manufacturer of the motors in the United States. In that region, there was only one contractor firm with the technical expertise to install the technology. Large retailer chains initially adopted the technology but because the distribution infrastructure and relationships were not properly developed and the volume of supply was not there, prices were too high for the mid-level market. Because the program did not fully address all the market dynamics, adoption stalled and the program lost momentum.

It can be worse, not addressing the full range of market actors and not adjusting as the market responds can stunt program growth and ultimately reduce delivery capacity. This point can be illustrated by imagining a short run lighting program. If incentives are offered only for the most widely-used type of lighting in a particular market, rapid increases in volume for these lights may drive down manufacturing costs and consequently contractor costs (Yay?). But in this situation, the contractors' primary objective becomes to maximize promotional revenue from program incentives - so they cherry pick the highly incented opportunities while financially stranding as much as 30 percent of total store lighting opportunities. In addition, the urge to maximize profit often results in rushed installation practices which can cause equipment problems. Problems alienate the retailer from future program offers and the energy efficiency market as a whole. When an area's big opportunities are all snapped up, the market busts, the contracting firms lay off workers, and delivery capacity in the market shrinks. While this lighting program can capture large amounts of kWh, if it is not designed to promote a deeper relationship with the end-user it may cause enough unpredictability that the players actually become reluctant to engage in further projects.

The Opportunity

The opportunity exists to create sustainable market transformation through better, longer-lasting market engagement and partnership. Only by systematically creating relationships that allow for the influence of the lifecycle of an entire market segment in the correct sequence with

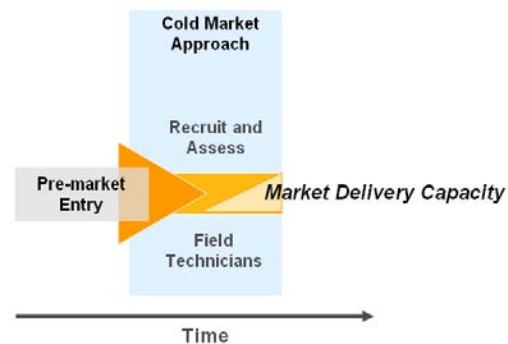
an adaptive strategy, can we spur widespread technology adoption and higher levels of persistent energy savings. Under this approach the program becomes a meta-player in the supply chain, creating a business case for change. Stages of building this meta-relationship are based on the market players and a sequence of changes that build upon each other to reshape markets.

Let’s walk through the logical steps to create sustainable market transformation in our highly competitive retail business scenario. We can think about the process in four stages: Cold Market Entry, Warm Market Success, Partnership with Market Actors, and Transformation Leverage.

Cold Market Entry

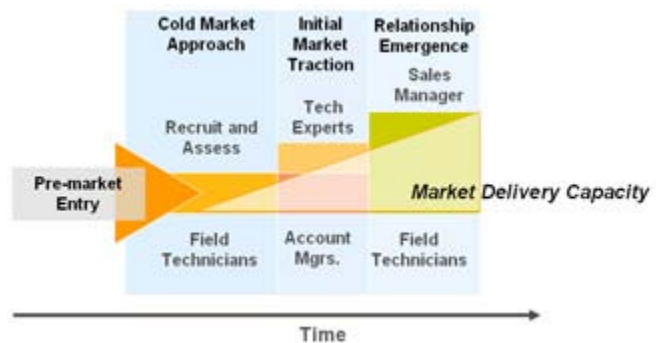
In this first stage the program begins in a ‘cold’ market - characterized as one where there is identified potential for savings from a new energy efficient technology but there are no established program relationships with market players and consequently little to no program penetration. To help bridge cold market financial hurdles, initial incentives are set at aggressive levels. Program representatives introduce themselves to retailers in an informational mode, to inform them about energy efficiency savings, potential program assistance and assess their energy use. Participants are recruited with initial efficiency measures that are low cost and low hassle to the customer to minimize perceived risk and avoid business disruption. The program staff assistance and follow up at this stage is important, to ensure the process is easy and verify that measures are installed and performing. Success this stage establishes credibility and some trust, but decisions will still be made in the old frame.

At the same time, the high initial incentives cause contractors to focus on the promotional opportunity to increase sales. The relationship the program staff are developing with the customers begins to overcome the barrier contractors can face in creating a deeper, repeat-business relationship. A high touch, highly incented initial approach can form the building blocks of nascent market relationships.



Warm Market Success

In this second stage, retailers and contractors are familiar with the program and mobilize to maximize promotional opportunities. As retailers see savings and build trust with the program, they simultaneously build trust with contractors, they begin to bridge the decision hurdle and are more receptive to newer technologies. They will consider measures that were previously off the table because they have new predictability that the investment and the process will be a success. As contractors connect with more receptive retailers and become more familiar with the technologies, they bring the



program to other existing clients which will further expand program reach. Functioning relationships result in fewer stranded opportunities and each opportunity in turn creates a new set of opportunities for market actors.

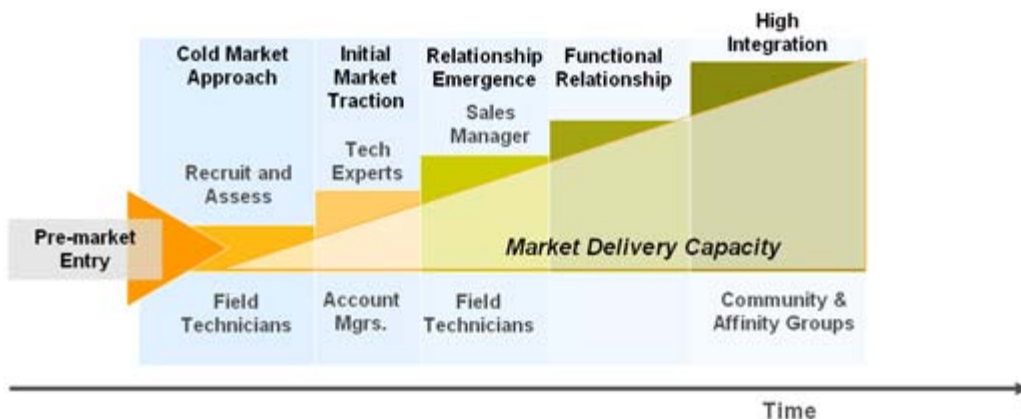
With this increased level measure adoption and the formation of relationships, program delivery costs begin to decrease as technical field staff can shift some of the routine customer relationship tasks to office staff. Technical field staff begin to manage the process for deeper more expensive measures, which will often require site specific technical specification or engineering and reviewing bids for custom work (provided by contractors). This is possible because of both the customer assistance function of the program and the emerging relationship experience. The program at this stage can be successful and productive, but the conditions for lasting market change are yet realized.

Partnership with Market Actors

In this third stage, the program can help market actors work together to adopt strategies (adjusting business models) to extend and hold market share. Retailers can form buying groups for bulk purchase and implementation of specific technologies and contractors will adjust pricing based on volume of projects. Contractors can create a business focus on these opportunities and staff up to serve and expanded territory. Distributors can launch a change over in inventory with a special pricing discount.

Purchasing for aggregated projects can represent concrete market potential for manufacturers. As market players are requesting the technology, it costs the manufacturer less to go to market and their volume increases. As a result, they can also be persuaded to discount new technology pricing, to further increase volume, manufacturers may begin to offer incentives on top of utility incentives.

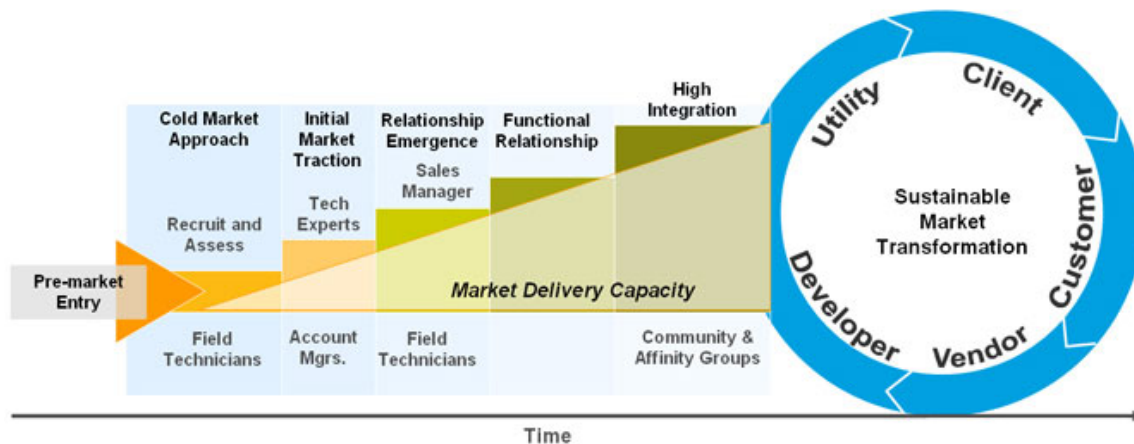
With high integration of all market actors, there is bigger delivery capacity in the market. Resulting economies of scale make it financially viable for suppliers/distributors to offer new technologies at reduced pricing which also increases adoption. At the same time, program incentives can be reduced on adopted technologies and shifted to new technologies being introduced to the market.



Transformation Leverage

In this final stage, there is high confluence of new decisions by the market actors who organize (rebalance their market) based on a new pattern of predictability in their market relationships. This new balance of market function will be one that will continually generate new opportunities and relationships for greater technology adoption and energy savings. As retailers continually realize energy savings and have confidence in the new technologies they become proactive and approach the program with technical opportunities. This savings cycle finances the next new technology which generates even more savings and profitability for a cascade effect.

During this time retailers and contractors are bringing new ideas and success stories to their market associations which generate more momentum and program participation. The project volume and cycle of continuous new opportunities results in an increased base of trained contractors. Increased volume also encourages suppliers, contractors and manufacturers to drive down costs further. At this point sustainable market transformation becomes an existing business function that continually leverages relationships to uncover new energy savings opportunities. These partnerships exist (like all successful partnerships) because there is recognized leverage for all the parties and they expect that leverage to yield generally repeatable results going forward, even if the specific opportunities are not yet known.



A Pacific Northwest Program Case Study

Sustainable market transformation is illustrated by a PECEI program in the Pacific Northwest. A utility in Washington State awarded PECEI a two-year energy savings contract directed at a highly competitive and hard to reach market: grocery stores. The intent was to cost-effectively capture energy savings from equipment retrofits.

To break into this cold market, program design was critical. With no relationships or market traction, the program team knew they had to gain the trust of grocers with proven energy savings. In addition, with industry-wide net profit at a slim 1-4 percent a year, measures had to be cost-effective and deliver proven value, fast. To meet these needs, the program was designed to inform and guide retailers through the energy efficiency process with in-depth and on-site consultations.

In this ‘consultative sales process’ highly-skilled field staff would perform site-specific no-cost energy audits, coordinate the installation of no-cost or low-cost measures, and then provide continuing education on additional energy saving opportunities. This education and guidance was designed to be provided in a cyclical fashion. Field staff would return regularly to consult with the grocers and in that way take on the role of energy expert. Incentives on the initial measures – replacement of door gaskets, refrigeration strip curtains and CFL walk-in lighting – were set at aggressive levels to encourage adoption.

With the program design in place, the program team focused on identifying grocery stores within the utility territory, both the national and regional grocery chains and independently owned stores, and key grocery industry associations.

With the market defined, the program deployed two field staff. The two together made an effective team: one was an HVAC specialist with project management and technical acumen while the other was a seasoned sales professional. Their initial focus was on making grocery and contractor connections and leveraging the consultative program design. With a high touch approach they were able to begin forming relationships with one of the largest privately-owned grocery store chains in the Pacific Northwest, as well as many independent and smaller stores.

This initial relationship with the large grocery chain led the program to develop a relationship with a contractor that the chain trusted and employed on a regular basis. As the program became more tightly integrated with the contractor, they were able to leverage that relationship to reach the contractor’s other existing grocery clients. By walking in the door with a trusted ally, the team generated immediate grocer trust that would have taken years to build had they walked in alone.

With the groundwork laid for transformation, the program began to grow and deepen interactions with grocers. As low-cost and no-cost measures provided proven results in the form of energy bill savings, grocers became receptive to newer technologies which propelled contractors to expand into new product offerings. As a result, the contractors increased their ability to perform energy efficiency upgrades and started growing their expertise in energy efficiency. The contractors began expanding their business beyond installing only strip curtains and door gaskets to additional measures such as night covers, refrigeration control systems, anti-sweat heat controllers and walk-in electronically commutated motors (ECMs).

Refrigeration controls represented a large opportunity. The program leveraged relationships with national accounts – large, multi-state stores – to encourage adoption in the market. As these large corporations began installing controls, smaller grocers followed and more opportunities opened up for the contractors.

With a growing volume of controls projects, the program put together a controls buying group. A Request for Proposal (RFP) outlining equipment and installation prices for approximately 60 grocery stores was sent to local contractors. By incenting the market, the program targeted the contractors who offered efficient install and could leverage the buying discounts they were already receiving from suppliers. This lowered equipment cost and increased efficiency, driving the market to a higher standard overall. Discounts on new technology also increased adoption.

During this time several PECEI programs across multiple states were incentivizing walk-in EMCs, anti-sweat heater controllers and case LED lights. As a group the programs approached a national supplier of refrigeration motors. The aggregated volume of projects motivated the

supplier to bundle these products together and offer them at a significant cost savings. The volume of the projects made the price negotiable, making the technology even more cost-effective for the grocers.

Concurrently, the program was encouraging adoption of refrigeration night covers and grocers were responding. Contractors saw an opportunity and bought a six-month supply from a local manufacturer, depleting his stock. The increased volume motivated the manufacturer to purchase bigger lots of aluminum to produce more night covers. Increased buying volume led to a drop in purchase cost and the manufacturer added two additional production lines. By decreasing manufacturing costs and increasing capacity, the manufacturer was able to lower the night cover price point in the marketplace.

At this point of high confluence the program began to realize sustainable market transformation, illustrated in particular by the durable relationship with the large privately-owned chain. This relationship has delivered proven results. In a two-year span, the chain completed many projects both large and small in 24 stores resulting in annual energy savings of 1,416,571 kWh, and annual energy bill savings of approximately \$300,000.

But this was only the beginning. Now instead of waiting for the program to introduce opportunities, the chain is generating their own opportunities. For example, education from program field staff alerted the chain to incentives on refrigeration cases. When remodeling a store, the chain approached the program to learn more about the technology and incentive levels. As a result, they replaced several hundred feet of old cases with new high efficiency cases, thereby reducing their energy bill by over \$2,000 per month. The chain is also asking field staff to participate in the design process for new stores to ensure energy saving technologies are incorporated from the very beginning.

The market now boasts bigger delivery capacity that is embedded in new market roles and relationships. The program plays a larger ongoing role because it has built market relationships that have durable value and can be mined for savings over and over again.

Conclusion

Sustainable market transformation is possible when there is a strong focus on systematic relationship development coupled with an adaptive program approach that adjusts as the market responds. When energy efficiency programs play a larger ongoing role that focuses on building relationships and going deeper with measures, new opportunities are continually revealed. The cascade effect of opportunities building on opportunities can move the market towards widespread technology adoption and higher levels of persistent energy savings.

Indeed, as technologies reach the adoption tipping point where they are so widely adopted that they may be included in standards, incentives for those measures can cease altogether. New measures can then be more easily adopted using the existing relationships. In order to gain these benefits, market transformation (and resource acquisition) programs need to be recast as market-engagement strategies as opposed to market exit strategies.