Pathways to Scalability

How Will Home Retrofitters Keep Pace with Explosive Demand?

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The U.S. Department of Energy is calling for American homes to be retrofitted at a rate of 10 million per year by 2020. Right now, in 2009, we are starting from an annual total of roughly 250,000 residential retrofits nationwide. Our industry has a long way to go.

To keep pace with this unprecedented spike in demand, industry leaders will have to identify and pursue effective business practices that, in combination with appropriate public oversight and incentives, will allow us to scale our activities in short order.

The road ahead is sure to challenge old ways of doing business. Creativity, ingenuity and thinking outside the box will be key. But we also must stay connected to the lessons we have learned from years in the field dealing with real houses and real customers. No matter how you slice it, this job demands dedicated people, hard work and a focus on never cutting corners.

The bottom line: There is no silver bullet.

Past Performance, Future Results Looking at the state of the home performance industry today, nobody can argue that we've been a screaming success. Nor have we proven that the integrated whole-house model for which I am an advocate can scale. On the other hand, we have never been faced with the pressing issues and rapidly evolving regulatory environment that are now driving us forward.

For years we have been asked to compete based on quality in a market that is defined by the lowest bid. The major factors that are reshaping the market—climate change, economic recovery and dependence on foreign oil—have never been explicitly linked to our customers' value proposition. But with global economic, political and environmental concerns looming large, any business model that cannot produce significant widespread reductions in fossil fuel consumption is doomed to fail.

Various scenarios have been proposed to address the scalability problem, many coming from people with little or no actual field experience, or from people experienced in weatherization and other sectors that do not translate directly to the broader home performance market. While I wholeheartedly embrace the need for change, I am acutely aware of the dangers inherent in fundamentally reinventing our industry overnight. The stakes are high, folks, so let's approach each new business model with a healthy dose of caution.

Weighing the Options Success in our industry is tied to four simple metrics, and any business model we pursue must be capable of delivering high marks in all four areas. They are:

- **Service:** Are we solving real problems for our customers?
- **Public Good:** Are we saving energy and reducing residential carbon emissions?
- **Sustainability:** Did we make a profit while conducting quality work?
- **Scalability:** Can we grow our business and the industry to meet future demand?

With those factors in mind, let's examine at five of the most prominent strategies that have been proposed:

►**Third-Party Rater**: In this model, homeowners hire an independent rater to analyze their home and draw up a set of recommendations. Homeowners then have the option of managing the remediation work themselves, or hiring a vertically integrated home performance contractor to complete the job.

The goal here is to isolate the auditor's role from the implementation phase, so homeowners can feel confident that the rater's recommendations have not been influenced by the contractor's profit motive. Using third-party raters also can bring prices down by allowing homeowners to seek competitive bids from multiple contractors.

While this approach makes sense in theory, there is programmatic evidence that the model delivers low customer adoption rates and provides little accountability for results.

Here's why:
First, HERS Raters are generally not qualified to provide accurate cost estimates or make specific recommendations about equipment and feasibility. In many cases, the contractor must perform a second audit to develop an actionable work scope and a realistic cost estimate—and the final scope can differ significantly from the independent rater's original recommendations. Due to the resulting confusion and long sales cycle, homeowners have been shown to undertake retrofitting work at significantly lower rates than can be achieved with more integrated models.

Additionally, when homeowners seek bids for single-measure jobs from low-bid specialty contractors, there is less accountability for the quality of installation, and separately implemented upgrades are less likely to function at peak efficiency. All too often this translates into retrofits that fall short of expected results.

►**Neighborhood Blitz**: This model targets whole neighborhoods with homes of similar age and type. Contractors design standard remediation packages, and retrofits are implemented without the need for individual audits.

The benefits are obvious: Homeowners don't have to schedule an audit or make difficult decisions about their retrofit, while contractors save time and money through job standardization. The trouble with this cookie-cutter approach is that inconsistencies from job site to job site make standardized pricing unrealistic in most cases. Even if we had massive incentives and easy financing, the contractor still has to sell the project to each client, and homeowners will expect the contractor to understand and solve their problems, not on average, but every time.

Theoretically, book pricing can make sense in a fully subsidized program where clients pay nothing out of pocket and the contractor can average costs over a large number of homes (i.e. WAP). But in the real world, homeowners who need relatively minor improvements will balk at paying the same price as a neighbor whose house requires significantly more work.

►**Test and Fix**: This model combines a home performance audit with some basic remediation in a single contractor visit. The idea is that while workers are testing a home, they can seal air leaks, install insulation and implement other easy fixes that can be completed on the spot.

One of the reasons Recurve was founded was to promote the benefits of addressing a home's most glaring inefficiencies before investing in higher-cost improvements like solar energy or high-efficiency HVAC systems. Fixing simple problems as you find them might seem like a fast and affordable way to upgrade a home, but does it really make sense to reach for low-hanging fruit before taking stock of the whole tree?

In a market-based environment, the Test and Fix model requires homeowners to make a financial commitment before the contractor can assess the scope of the work—or estimate what the final cost will be. This puts us in the difficult position of going in blind and selling the service up front at a rate that covers a day of construction and testing, and does not create a situation where time and budget constraints get in the way of generating real, measurable results. If we don't solve our customers real problems sufficiently that they notice and value the results, we will lose that customer for life (and leave the majority of energy savings on the table).

There are logistical concerns as well. Anything more complicated than swapping incandescent bulbs with CFLs will require the contractor to set up the house for dirt and dust control, locate electrical and gas cut-offs, pay attention to combustion safety and other issues, and carry an extensive inventory of materials to every job site.

►**Program-Run Audits**: In this model, a government program or public utility performs all home audits and hands the results off to private contractors for remediation. In some cases, the audit reports include cost estimates that stipulate how much a contractor can charge for each task.

One obvious red flag here is the assumption that program auditors will have adequate training and expertise not only to assess the house, but also to prepare a reasonable work scope with no serious omissions for the contractor to uncover in the course of the retrofit. If the official audit report turns out to be flawed or incomplete, or if the third-party estimates don't reflect the true cost of implementation, the contractor will have a hard time making changes or getting adequately compensated for the job.

Remember: It is the retrofitter, not the program or independent auditor, who signs a contract and is held accountable for the results. And because this approach effectively turns contractors into a commodity, the most successful contractors will be those who cut corners and slash costs while providing the bare minimum of service required by the program. Adoption rates in such programs are shown to be extremely low, and the private sector has no incentive to invest in building a sustainable business or improving the quality of service. The market becomes completely reliant on a program for scale.

► **Home Performance**: The process begins with systematic testing and analysis of the home, and a walk-through with the homeowner to discuss specific concerns. Based on this information, the contractor develops a customized solution that will deliver measurable results in terms of comfort, energy efficiency and indoor air quality. A trained retrofitting crew then implements the plan to exacting installation standards, with follow-up testing to ensure that the installation meets the targeted goals. A percentage of jobs are then re-tested by a third party to ensure that quality and standards are maintained.

Through testing of a variety of models over the last five years, Recurve has come to believe that rigorous application of this Home Performance model is the only truly effective way to tackle our current building performance crisis. At first glance, other approaches might seem easier or cheaper, but cutting too many corners or allowing ourselves to get mired in institutional inefficiencies will threaten the long-term stability of our industry and seriously compromise our ability to guarantee bankable energy savings for millions of American homes. In simpler terms, we have found that every half-solution results in either unhappy customers, lower then targeted gross profits, and missed opportunities to deliver savings.

Using the lessons of applied building science, we can be certain that our work solves real problems and achieves real energy savings in every home we touch. The net result: quality solutions and happy customers.

The Right Tools for the Job While experience has shown that the Home Performance approach is a reliable way to generate measurable energy savings for consumers and reasonable profits for contractors, the question of scalability remains unanswered. It's clear that modifications and refinements will be necessary as we move forward, but in my view, the basic model is not broken. Before we scrap it and place our bets on new and untested strategies, we must first give our current model the tools it needs to grow, and give the market a chance to step up.

Specifically, the home performance industry will require three additional components to succeed on a large scale:

►**Incentives:** First, we must launch a performance-based incentive system with enough bite to trigger rapid transformation of the nation's residential construction industry. This is the best way to promote widespread adoption of building-science-based home retrofit methods among traditional contractors.

►**Financing:** In today's tight credit markets, many homeowners are not able to get financing for home performance upgrades—even when paybacks are clear. Dedicated financing programs for cost-effective energy efficiency improvements will jump-start consumer demand for our services.

►**Standards:** Finally, contractors and consumers alike can benefit from regulatory policies designed to assure quality and propagate widespread adoption of industry best practices. We should leverage the federal Home Performance with ENERGY STAR program as a standard model, including third-party verification, and equip the Department of Energy and the Environmental Protection Agency with adequate resources to prescribe, promote and implement a viable market for home performance retrofitting. Additionally, we should mandate national contractor and auditor certification through the Building Performance Institute (BPI) or other independent accreditation agencies for contractors and diagnostic energy auditors, and the Residential Energy Services Network (RESNET) for raters.

A regulated, performance-based market for home retrofitting, with incentives and financing to encourage adoption is the only economically sustainable solution that will deliver real results and can scale to meet this enormous problem we face.

There is no silver bullet, but given hard work and the right set of market-based tools, the Home Performance Industry will meet the challenge and deliver on the promise to meet our climate and energy goals, while creating a sustainable industry providing good jobs and stimulus in our communities.