

2 Contractor/Retailer Business Models

2.1 CONTRACTOR/RETAILER DESCRIPTION

The home improvement market includes a range of private-sector entities that currently provide or could offer home energy upgrade services. Most of these entities are remodelers, HVAC (heating, ventilation, and air conditioning) contractors, home performance contractors, or retailers; other actors are present in the sector (such as window installers and insulators), but this analysis focuses on these four main categories. Figure 2-1 provides an overview and description of contractors/retailers. (In the remainder of this report, “contractors” is used to refer to the collective group of contractors and retailers.)

Description of Contractors/Retailers					
	Remodeler Model		HVAC Contractor Model	Home Performance Contractor Model	Retailer Model
Descriptor	General Remodelers	Integrated Design and Build Firms	Trade Contractors	Home Performance Contractors	Retailers
Market Role	<ul style="list-style-type: none"> Represent the majority of the home improvement market 	<ul style="list-style-type: none"> Represent a small segment of the general remodeler market 	<ul style="list-style-type: none"> Represent a large portion of the home improvement market 	<ul style="list-style-type: none"> Represent a small segment of the home improvement market 	<ul style="list-style-type: none"> Primary seller of goods to “do-it-yourself” consumers
Service Offering	<ul style="list-style-type: none"> Offer standard range of home improvement services 	<ul style="list-style-type: none"> Offer services that integrate architects, remodelers, and project managers 	<ul style="list-style-type: none"> Offer specialized products and services such as HVAC and windows 	<ul style="list-style-type: none"> Specialize in energy efficiency services and provide “one-stop shop” for home energy upgrades 	<ul style="list-style-type: none"> Provide goods and services either directly to the consumer or indirectly through network of qualified contractors that operate under the retailer brand
Implications	<ul style="list-style-type: none"> Largest segment of the market, but also the least specialized May require the most additional training to shift from general home improvement to home energy upgrade model 	<ul style="list-style-type: none"> Generally have more control over entire home improvement process than general remodelers Design component of work may offer greater opportunity to work energy efficiency into home improvement projects 	<ul style="list-style-type: none"> HVAC contractors require highly technically skilled staff to start up/operate, which results in a lower marginal cost for them to enter the home energy efficiency market 	<ul style="list-style-type: none"> While larger firms in the related remodeler or trade contractor markets can shift their focus to become vertically integrated energy upgrade providers, small businesses may have more success by only focusing on providing home energy upgrades 	<ul style="list-style-type: none"> In addition to sale of goods, retailers help facilitate the home improvement market by providing home improvement services via partnerships with qualified contractors (e.g., general remodelers)

Source: Booz Allen research

Figure 2-1: Description of Contractors/Retailers

- The **remodeler** business model focuses on the remodeler’s operating environment within the general home improvement market. This model covers general remodelers as well as integrated design and build firms. It highlights opportunities for expansion into the residential energy efficiency market.
- The **HVAC contractor** model reviews the operating environment for contractors whose primary service offering is HVAC installation and repair. It highlights opportunities for expansion into the residential energy efficiency market.

- The **home performance contractor** model walks through the “one-stop-shop” model for home energy upgrades. It illustrates both the opportunities and barriers for becoming a home performance contractor company.
- The **retailer** model demonstrates how energy efficiency services are provided in combination with or through retailers. It examines the long-standing role of retailers as marketing powerhouses and the newer trend toward retailers partnering with various types of service providers such as utilities or HVAC contractors. Consequently, retailers may sell contractor services under their brand name or sell energy efficiency products to “do-it-yourself” consumers directly.

2.1.1 Contractor Comparison

The business model analysis highlights the five critical components that influence each contractor’s delivery of home energy upgrade services. To better understand contractors’ opportunities for expansion, collaboration, and sustainability in the residential energy efficiency market, it is useful to first understand the key similarities and differences among these contractors. This section highlights key points of comparison in the categories of market, life cycle, hurdle rate, and sources of funds.

2.1.1.1 Market

- **Size:** Remodelers, HVAC contractors, and home performance contractors are very similar in size, with the majority of firms employing 1 to 15 people. The majority of retailers, on the other hand, are large, established big box companies, with some smaller franchises.
- **Operating environment:** Each contractor experiences barriers to entry into both the broader home improvement and niche residential energy efficiency markets:
 - **Remodelers** have the lowest barriers to entry into the general home improvement market, as they require only a state license in order to operate legally. Remodelers generally start at the local level and are not seasonal businesses, by nature.
 - **HVAC contractors** experience higher barriers to entry into the general home improvement market because they offer specialized services that require substantive training and certification, particularly for health and safety requirements. HVAC contractors are also characterized by the seasonal and regional nature of their industry.
 - **Home performance contractors** are primarily focused on the residential energy efficiency market, rather than the broader home improvement market. New businesses face slightly higher barriers when entering into the residential energy efficiency market than the general home improvement market because home energy upgrade services require specialized training and equipment.
 - The **retailer** market is saturated, competitive, and dominated by big box stores. Growth is achieved through the addition of new services or through mergers and acquisitions rather than opening new stores.
- **Competitive landscape:** Remodelers, HVAC contractors, home performance contractors, and retailers compete with one another directly when it comes to energy efficiency services, although they occupy different niches of the broader home improvement market. These companies generally compete for the same target demographic group but provide a wide array of services, with limited overlap:
 - Contractors’ general target demographic for home energy upgrades includes homeowners with income of greater than \$60,000 per year, homes between 1,500 and 3,000 square feet, and homes built between 1970 and 1990.

- **HVAC contractors** and **home performance contractors** compete solely in the installation, maintenance and replacement of heating and cooling units.
 - **Remodelers** compete with **home performance contractors** in providing insulation, duct sealing, appliance installation, and other general home improvements that also relate to improving a home's energy performance.
 - **Home performance contractors, HVAC contractors, and remodelers** may also compete with energy efficiency programs that offer free or discounted energy assessments or conduct home energy upgrades directly.
 - **Retailers** primarily compete with other service providers by selling goods and services to “do-it-yourself” homeowners.
 - **All contractors** are concerned with the health and safety issues surrounding their work. Because the misdiagnosis of a health or safety issue can present significant legal risk to the contractor, most contractors prefer to do their own assessments of the home to ensure that no major health or safety risks are missed. Currently, the majority of contractors conduct all phases of the home energy upgrade, from start (assessment) to finish (quality assurance), because this lets them control their risk and deliver their message directly. Many contractors, however, are comfortable with outsourcing quality assurance services to save on labor costs. To date, business models built around only providing assessment services have not typically been found viable, but models are being explored that involve contractors working with third-party assessors that they know and trust.
- **Collaborative landscape:** Contractors and retailers frequently operate in their respective silos in the home improvement and energy efficiency markets. However, there are many opportunities for collaboration with each other and with other actors such as program administrators.
- **Remodelers** and **HVAC contractors** may hire other specialists, such as insulation contractors, as subcontractors on large jobs. **Remodelers** also often subcontract to **HVAC contractors** to provide specialized HVAC services.
 - **Remodelers, home performance contractors, and HVAC contractors** who cannot or do not want to perform a whole house energy upgrade can work together to share loads.
 - **Retailers** and **program administrators** may partner with **remodelers** or **HVAC contractors** by retaining them as certified service providers that do home improvement or home energy upgrade work on their behalf.
 - **Home performance contractors**, though their sector is not as large, collaborate with both **non-utility** and **utility program administrators** to obtain new business.
 - As well as partnering with **remodelers** and **HVAC contractors**, **retailers** may engage **home performance contractors** and **non-utility program administrators** through pilot programs. They may also consider acquiring those **home performance contractors** who can demonstrate the sustainability of their service offering in their market.
 - **Retailers** may partner with **utility program administrators** by offering to market their rebates in-store.

2.1.1.2 The Life Cycle

Remodeler, HVAC contractor, home performance contractor, and retailer businesses experience similar general start-up and growth patterns over time. These patterns can be characterized by a life cycle that includes seed, start-up, growth, established, expansion, and decline/exit stages of a business. Figure 2-2 summarizes the average life cycle of a contractor.

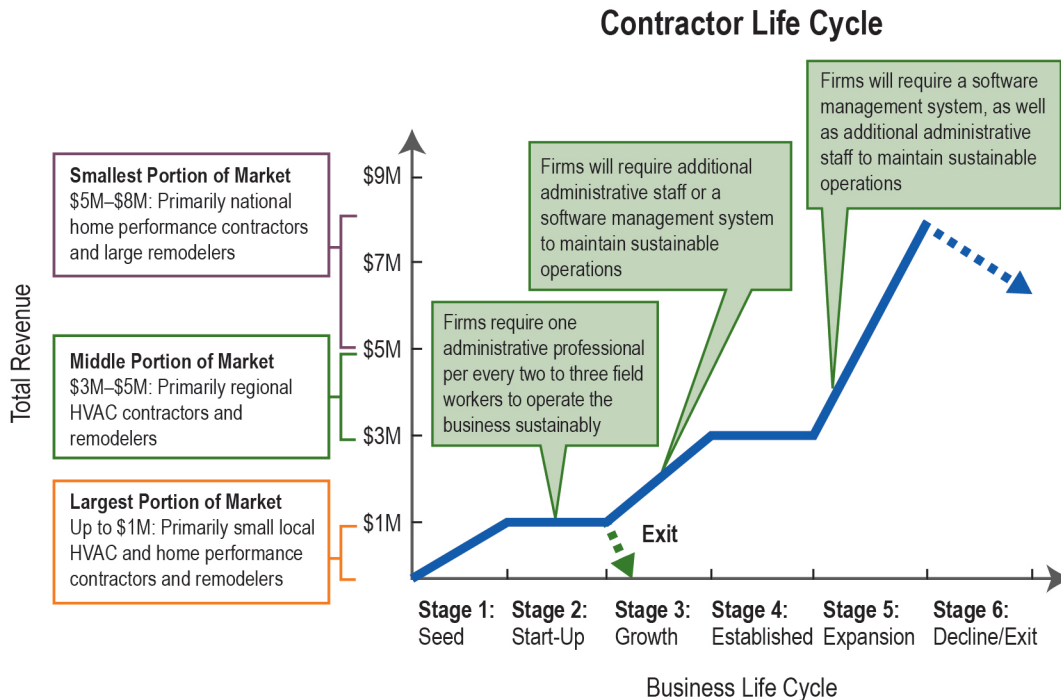


Figure 2-2: Contractor Life Cycle

This life cycle figure highlights the specific areas where potential future expansion is a strategic decision. The key decision points for most contractors revolve around their strategy for growth and the related overhead investment necessary to facilitate this growth. These points occur during the seed, growth, and expansion stages. For example, the growth phase for a remodeler involves the owner moving from the field into the office, establishing a staff member to lead production, and building an effective sales and back office team. In the stages where the life cycle plateaus, firms can remain in the market as successful businesses as long as they control costs and deliver their services efficiently. These points occur during the start-up and established stages. A business with increasing revenue will not always be able to operate sustainably. If costs rise faster than revenues, the firm will be forced to exit the market. Firms must effectively manage investment in new overhead, such as administrative and sales support for field workers, to grow beyond the start-up or established phases into a wider region or market.

A firm’s governance structure influences this decision to grow beyond the local market or to expand service offerings within the market. In order to grow, decision-makers must be willing to adjust their own roles within a company and reinvest in their business, as in the remodeler example described in the paragraph above. This will determine where and when decision-makers invest in additional overhead. Expansion is not mandatory for success, but it is a particularly relevant topic for those businesses seeking to enter the

residential energy efficiency market. On average, it takes a year to complete the expansion from an existing contractor business into home performance services, taking into account the time to develop a business plan, source financing, train employees, acquire a client base, and generate a significant amount of work. Another year is necessary to determine whether the new services are profitable and thus a viable part of the business.

2.1.1.3 Hurdle Rate

When evaluating a potential investment, such as expanding into the residential energy efficiency market, all contractors use a common methodology: profitability analysis. Of all the common elements of the various contractor models, profitability is arguably the most critical. The key metric used by many contractors to evaluate profitability of an investment is the **hurdle rate**: as contractors invest money into their businesses, they must achieve a rate of return at least equivalent to their respective cost of capital on those investments in order to sustain their businesses in the long run.

The hurdle rate has three components: the contractor's **cost of equity**, the **risk premium** (actually part of the cost of equity), and the **cost of debt**, as noted in Figure 2-3.

In essence, to be profitable and stay solvent, a business must make enough revenue to cover its cost of equity and debt, including a suitable risk premium. The hurdle rate will be high for new businesses, which have limited experience managing an energy upgrade services business. If it is not, one of two things is likely true:

1. If the owner is contributing most of the start-up funding as equity, the owner has significantly underestimated the potential risk of operating the business (usually due to limited prior experience with the business model in question).
2. If the owner is borrowing funds from a lender, the lender does not perceive the risk in funding the business to be high (would primarily occur

The **hurdle rate** is the minimum rate of return that a firm requires to consider an investment opportunity. For example, if a company requires a 12 percent minimum rate of return, it will consider all investments with rates of return equal to or greater than 12 percent. All investments with rates of return less than 12 percent will not be considered.

The **cost of debt** is the interest that contractors must pay on borrowed funds to lenders such as credit card companies or banks.

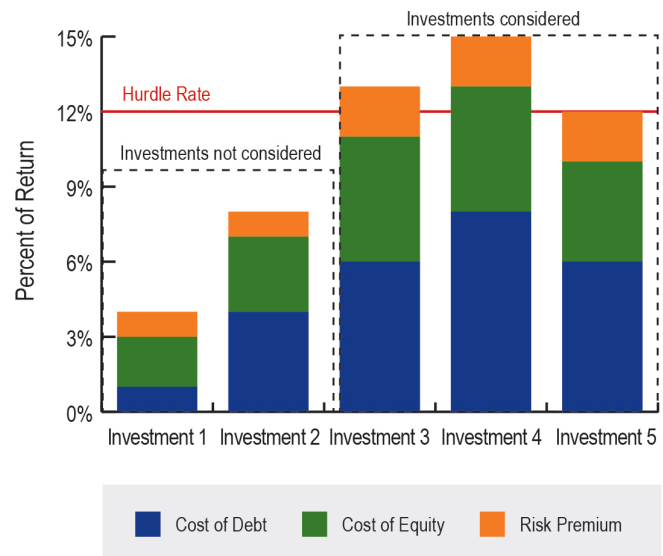
The **cost of equity** represents the compensation, or rate of return, that an investor requires in exchange for bearing the risk of ownership. In the case of contractors, the investor is typically the owner contributing personal funds to start up the business.

The cost of equity includes a **risk premium**, which is the amount of funds needed to cover any unexpected costs that may arise. Risk premiums are set and vary by company.

Lenders also use the concept of the risk premium to set the potential rate on a loan to a contractor. The risk premium represents the bank's estimation of the relative risk of lending money to a specific company in the market.

Example Hurdle Rate Components and Application

The hurdle rate is composed of three components, cost of debt, cost of equity, and risk premium.



Source: Booz Allen research

Figure 2-3: Example Hurdle Rate Components and Application

with large retailers or borrowers who have an excellent track record in starting and running small businesses, or who have put up significant collateral to secure low-cost funding).

For contractors with other lines of business besides home energy upgrades, the hurdle rate is likely to be equal to or greater than the rate of return realized on existing lines of business. This takes into account the concept of the opportunity cost of capital. If a contractor can make more money in another line of business than in home energy upgrades, he or she is unlikely to consider investing in home energy upgrades.

In the scenario outlined in Figure 2-3, only investments 3, 4, and 5 would be potentially viable, as they exceed the business owner's hurdle rate. Those seeking to engage any of the contractor types to promote home energy upgrade services would need to evaluate the potential returns of such services in their local market to determine where they may be able to improve returns or lower costs to contractors to help them reach the rate of return necessary to exceed their hurdle rate threshold.

The contractor descriptions above, along with the hurdle rate concept, lay the foundation for the remodeler, HVAC contractor, home performance contractor, and retailer business model analysis in the following sections.

2.1.1.4 Sources of Funds

As noted above, a primary driver of the hurdle rate for contractors is the cost they incur in securing funding to start or expand their business. There are many options available for businesses to secure capital, outlined in Figure 2-4.

These sources of funds are frequently expensive or difficult to secure. The cheapest and easiest way for many contractors to obtain financing is to use their home as a source of collateral to obtain a loan. This option is more cost-effective than personal credit and easier to secure than Small Business Administration (SBA) or venture capital funding from firms that specifically target contractors. It is also risky, however, because it puts the business owner's personal assets up as security for the performance of the business. A less risky financing option for a small business owner is the creation of a business line of credit. This option is slightly more costly than a home equity line of credit, but it is secured by only the business's assets and revenues and protects the business owner from personal liability.

Larger retailers may be able to secure more traditional debt funding or raise shareholder equity to finance expansion, which differentiates them significantly from their small business competition. This option, correspondingly, is not reflected in Figure 2-4.

Contractor Sources of Funds					
	Sources of Funds	Use of Funds	Avg. Rates	Risks	Benefits
Difficulty to Obtain Low High	Personal Credit Cards	<ul style="list-style-type: none"> Limited amount and expensive source of financing 	<ul style="list-style-type: none"> 10.8% to 16.2% 	<ul style="list-style-type: none"> High: Credit is tied to personal finances 	<ul style="list-style-type: none"> Ease of use creates instant equity in firm through purchase of materials
	Home Equity Loans	<ul style="list-style-type: none"> Potentially cheaper source of funding than credit card, but greater risk as the home is the collateral 	<ul style="list-style-type: none"> 4.7% to 7.4% 	<ul style="list-style-type: none"> High: Credit is collateralized by home; potential for loss of personal assets if business fails 	<ul style="list-style-type: none"> Potentially allows for a greater amount to be borrowed than a credit card Allows for a tax shield, thus reducing the cost of debt
	Business Credit	<ul style="list-style-type: none"> Similar to personal credit, but credit established with a Data University Numbering System (DUNS) number 	<ul style="list-style-type: none"> 7.9% to 22.9% 	<ul style="list-style-type: none"> Medium: Limited downside risk, as business finances and personal finances are separated 	<ul style="list-style-type: none"> Allows for a tax shield, thus reducing the cost of debt
	SBA Loans	<ul style="list-style-type: none"> Offers loans to small business for capital expansion Normally requires business plan and pro forma statements (difficult for a startup) 	<ul style="list-style-type: none"> Tied to the prime rate plus or minus a certain percentage 	<ul style="list-style-type: none"> Medium: Borrowings are normally secured by a source of collateral; collateral is potentially lost if business fails Difficult to obtain typically 	<ul style="list-style-type: none"> Offers a variety of small business loans such as micro loans (up to \$50k) to long-term fixed rate financing (\$1.5M+)
	Venture Capital Firms	<ul style="list-style-type: none"> Tends to offer both debt and equity financing May invest in specific project and not whole firm Mostly results in partial ownership of the firm 	<ul style="list-style-type: none"> 6% to 10% (based on industry interviews) 	<ul style="list-style-type: none"> Low: May take partial ownership in a firm instead of a form of collateral, thereby sharing potential losses 	<ul style="list-style-type: none"> For amounts less than \$1M, emphasis is more focused on vision than standard business plan and pro forma statements

Source: Booz Allen research and industry interviews

Figure 2-4: Contractor Sources of Funds

2.1.2 Conclusion: Summary of Contractor/Retailer Insights

Contractors have a unique opportunity to capture a significant share of the overall residential energy efficiency market. In addition, retailers can be valuable partners in building a sustainable local energy efficiency market. The summary below details important observations on contractors/retailers and those observations' impact on potential expansion into the residential energy efficiency market. Understanding these impacts can help contractors, program administrators, and other actors create and/or sustain a business that promotes energy efficiency.

Summary of Contractor/Retailer Insights

	Observations	Impact on Potential Expansion into Residential Energy Efficiency Market
Market	<ul style="list-style-type: none"> Most remodelers, HVAC contractors, and home performance contractors employ 1 to 15 people. The majority of retailers are large, established big box companies, with some smaller franchises. Because of market saturation, large retailers are increasingly looking for opportunities to expand services rather than physical locations. 	<ul style="list-style-type: none"> Remodelers and HVAC contractors may have difficulty expanding into the residential energy efficiency market without outside help (e.g., business development and additional staff). The size of the potential market for home performance contractors is being evaluated by service providers looking to enter the market. Big box retailers are considering expanding into the energy efficiency market as an opportunity for growth.
Governance	<ul style="list-style-type: none"> A firm's strategic decision-makers directly control the growth/expansion investment strategy. Many firms choose not to expand further when they reach a level of sustainability at which the owner is comfortable. 	<ul style="list-style-type: none"> For a firm to consider expanding into energy efficiency, the owner must first commit to the expansion strategy. This decision can be particularly challenging for remodelers and HVAC contractors who already have profitable base businesses, because they might be reluctant to take on work that requires different skills and equipment.
Financial Model or Structure	<ul style="list-style-type: none"> The methodology most used by firm decision-makers to evaluate potential investments is the hurdle rate analysis. A wide variety of funding sources are available to fund investments that exceed the hurdle rate for a business, but many of them are costly or require personal collateral. Smaller contractors will have a high cost of debt due to the higher risk associated with the startup of a business. Often, the cost of this debt is in the 10 to 20 percent range, or requires the posting of personal assets for collateral (such as in home equity lines of credit). 	<ul style="list-style-type: none"> Firms will only make investments with returns that exceed the desired hurdle rate, so the profitability of energy efficiency as a line of business needs to be established. Taking out a business line of credit can allow a small business to finance its investments without putting up personal assets for collateral. Program administrators can help lower risk to small contractors by providing training or education on getting a business line of credit.
Assets and Infrastructure	<ul style="list-style-type: none"> As firms grow over time, critical investments must be made in overhead infrastructure to support the expansion of the business. This overhead typically consists of administrative support for expanded field work, including additional staff, training, and/or software functionality. These investment points typically come at around \$1 million, \$3 million, and \$5 million in annual revenues, when the business looks to expand service offerings or grow into additional regions. 	<ul style="list-style-type: none"> Expanding a business from a startup or established model into home energy upgrade services will require an additional investment of capital. (An additional \$33,000 to \$50,000 for remodelers, an additional \$45,000 to \$55,000 for an HVAC contractor, and \$78,000 to \$100,000 to start a home performance business). Training staff in new service offerings can be a sizable barrier for smaller contractors due to the time commitments and associated costs required.

Summary of Contractor/Retailer Insights

	Observations	Impact on Potential Expansion into Residential Energy Efficiency Market
Service Offering	<ul style="list-style-type: none"> Each of the four primary service provider types—remodelers, HVAC contractors, home performance contractors, and retailers—occupies a specific niche in the energy efficiency market, offering a diversity of services. These services vary widely among firms, even within the same service provider type. Retailers differ from contractors because they provide goods directly to “do-it-yourself” consumers and contractors, in addition to providing goods and services through contractor partners. Due to the liabilities associated with health and safety risks, contractors often prefer to conduct their own home assessments before doing installation work. 	<ul style="list-style-type: none"> Given the diversity of services offered, the requirements for expanding into the residential energy efficiency market will vary by firm. Models centered around providing third-party energy assessment depend on contractors working with assessors that they know and trust.
Customers and Customer Acquisition	<ul style="list-style-type: none"> As a general rule, most contractors are competing for the same target niche of the market (homeowners with income above \$60,000 per year, homes between 1,500 and 3,000 square feet, and homes built between 1970 and 1990), but provide a wide array of services. Consumers who can afford home energy upgrades can realize large energy savings from these improvements. 	<ul style="list-style-type: none"> Because contractors target a similar demographic, competition within the residential energy efficiency market is high. At the same time, the range of specific services provided means there are opportunities for collaboration between firms. It is important to have potential customers living in the firm’s service area who meet the demographic of the target market (with respect to income level, home size, etc.).