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Residential Energy Efficiency Technical Update Meeting  
Denver, CO  
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## Overview

IBACOS has embarked upon a research effort under the Building America Program to document the change management strategies HVAC companies can use to transition from a “traditional” heating and cooling contractor to one that provides whole house energy upgrades, and create tools to help contractors accelerate that transition.



## Key Research Questions

- What are the business best practices associated with well-run whole house energy upgrade companies?
- What strategies can HVAC companies use to offer whole house energy upgrades to their customers?
- What are transition activities HVAC companies need to undertake to successfully include whole house energy upgrades as part of their service offering?



## Routes to Energy Upgrades

IBACOS project is focused on -

- HVAC w/ subcontracted Shell Work (insulation and air sealing)
- Integrated HVAC and Shell Operation



## Basis for Hypothesis

Residential HVAC contractors may be best positioned to offer whole house energy upgrades

- Existing and ongoing relationship with a homeowner
- Already works on one of the most technically complex systems in the house
- Potential upside from adding energy upgrades to their service offering
  - A new service offering for the thousands of existing customers in database
  - Improved shell with new HVAC = better performance = happier customers = more referrals?



## Literature Search and Industry Interviews

Performed literature search of trade periodicals and previous studies resulted in 150+

- Trade magazine articles
- Reports
- Case Studies

Interviewed HVAC companies who have transitioned to offering whole house energy upgrades



# Findings

- Found fundamental business activities of HVAC and Energy Upgrade companies are not all that different
- Developed process map of HVAC company, highlighting transition areas

Business Planning / Processes	Marketing / Customer Contact	Assessment	Sales	Contract Administration	Production	Customer Service
Training	PR Strategies	Customer Interaction	Proposal	Contracting	Project Planning & Scheduling	Customer Relations
Employee Relations	Advertising strategies	Assessment	Sales Presentation to Customer	Customer Financing	Project Implementation	Warranty Requests Resolution
Procurement	Customer Referral Strategies		Closing	Rebate and Incentive	Quality Assurance	
Subcontracts	Call Management			Accounts Receivable / Payable		
Strategic Planning	Lead Management					

# Transition Points in Existing Process

- IBACOS' work is focused on the specific work activities where the transition will occur.
- Looking at the HOW not the WHY.

<table border="1"> <tr><td><b>Business Planning / Processes</b></td></tr> <tr><td>Training</td></tr> <tr><td>Employee Relations</td></tr> <tr><td>Procurement</td></tr> <tr><td>Subcontracts</td></tr> <tr><td>Strategic Planning</td></tr> </table>	<b>Business Planning / Processes</b>	Training	Employee Relations	Procurement	Subcontracts	Strategic Planning		<b>Business Planning / Processes</b>	
	<b>Business Planning / Processes</b>								
	Training								
	Employee Relations								
	Procurement								
	Subcontracts								
	Strategic Planning								
			Training	Employee Relations					
		<b>Activity</b>	<b>Technical</b>	Job Progression / Growth					
			Safety	Retention					
		Management	Compensation						
		Sales	Referral bonus						
			Quality Management						
	<b>Internal Lead</b>	<i>Leadership Team</i>	<i>Leadership Team</i>						
	<b>External Resources</b>	<i>Training / certification providers</i>	<i>HR / Quality Management Consultants</i>						





## Expert Meeting - March 2011

Expert meeting with HVAC companies, Whole House Upgrade companies, and other industry partners to -

- Review and validate the hypothesis
- Validate transition points and rank value / difficulty to implement
- Seek industry input on how to structure information so it is relevant and useful

Meeting results are published in - Expert Meeting Report: Transitioning Traditional HVAC Contractors to Whole House Performance Contractors, May 2011



# Transition Points in Existing Process

Business Planning / Processes	Marketing / Customer Contact	Assessment	Sales	Contract Administration	Production	Customer Service
Training	PR Strategies	Customer Interaction	Proposal	Contracting	Project Planning & Scheduling	Customer Relations
Employee Relations	Advertising strategies	Assessment	Sales Presentation to Customer	Customer Financing	Project Implementation	Warranty Requests Resolution
Procurement	Customer Referral Strategies		Closing	Rebate and Incentive	Quality Assurance	
Subcontracts	Call Management			Accounts Receivable / Payable		
Strategic Planning	Lead Management					



# Business Planning / Process Activities

Business Planning / Processes					
	Training	Employee Relations	Procurement	Subcontracts	Strategic Planning
<b>Activity</b>	Technical	Job Progression / Growth	Manufacturer Relations	Vendor relations	Company Mission / Vision
	Safety	Retention	Material Inventory	Pricing	Five Year Strategic Plan
	Management	Compensation	New Equipment		One year Operational plan
	Sales	Referral bonus	Equipment maintenance / repair / calibration		Management Objectives
		Quality Management	Pricing		Quality Management
<b>Internal Lead</b>	<i>Leadership Team</i>	<i>Leadership Team</i>	<i>Leadership Team</i>	<i>Leadership Team</i>	<i>Leadership Team</i>
<b>External Resources</b>	<i>Training / certification providers</i>	<i>HR / Quality Management Consultants</i>	<i>Manufacturers</i>	<i>Subcontractors Manufacturers</i>	<i>Management Consultants</i>

# Business Planning / Processes

	Easy	Hard
More Value	<p>Technical Training</p> <p>Value : 4 Difficulty : 2</p>	<p>Equipment Requirements</p> <p>Value : 4 Difficulty : 3</p> <p>Vendor Relations and Strategic Planning</p> <p>Value : 4 Difficulty : 4</p>
Less Value	<p>Equipment Maintenance /Calibration</p> <p>Value : 2 Difficulty : 2</p> <p>Manufacturer Relations</p> <p>Value : 1 Difficulty : 1</p>	



# Marketing / Customer Contact Activities

Marketing / Customer Contact					
	PR Strategies	Advertising strategies	Customer Referral strategies	Call Management	Lead Management
Activity	Newspaper	Newspaper	Community Engagement	Call Scripting	Sales Coordination
	Local TV/ Radio	Local TV/ Radio	Social Media	Inbound Call Process	Lead Database and tracking
	“Local Expert”	Billboards	Direct referral programs	Recurring Call Schedule	Lead Qualification
	Customer Education	Neighborhood Blitz	Newsletter		Scheduling
	Home Shows	Website	Service Tech Referrals		Appointment Verification
		Search Engine Optimization			
<i>Internal Lead</i>	<i>Marketing</i>	<i>Marketing</i>	<i>Marketing</i>	<i>Operations</i>	<i>Sales / Operations</i>
<i>External Resources</i>	<i>PR Agency</i>	<i>Ad Agency / Designer</i>	<i>Ad Agency / Designer / Community Groups</i>	<i>Sales Consultant</i>	<i>Sales Consultant</i>

# Marketing / Customer Contact

	Easy	Hard
More Value		<p>Customer Education and Community Engagement</p> <p>Value : 4 Difficulty : 4</p>
Less Value	<p>Direct Referral Programs, Service Tech Referrals, Call Scripting and Inbound Call Process</p> <p>Value : 2 Difficulty : 1</p> <p>Vendor Relations, Strategic Planning</p> <p>Value : 1 Difficulty : 1</p>	



# Assessment Activities

	Assessment	
	Customer Interaction	Whole House Assessment
Activity	Pre-Audit Preparation Call	Exterior Architectural Features Assessment
	Arrival Process	Interior Building Features Assessment
	On Site Customer Interview Comfort, Energy, Dust, Mold, Moisture, Respiratory, Sound, Other???	Thermal Enclosure Components Insulation, Fenestration / Doors
		Space Conditioning System Assessment
		Plumbing System Assessment
		Electrical System Assessment
		Moisture Assessment
		System Testing
		Home Energy Upgrade Modeling
Internal Lead	Operations	Operations
External Resources		

# Assessment

	Easy	Hard		
More Value		<table border="1"><tr><td>Pre-Audit Preparation Value : 4 Difficulty : 3</td><td>On Site Customer Interview and Whole House Performance Audit Value : 4 Difficulty : 4</td></tr></table>	Pre-Audit Preparation Value : 4 Difficulty : 3	On Site Customer Interview and Whole House Performance Audit Value : 4 Difficulty : 4
Pre-Audit Preparation Value : 4 Difficulty : 3	On Site Customer Interview and Whole House Performance Audit Value : 4 Difficulty : 4			
Less Value	<table border="1"><tr><td>Arrival Process Value : 2 Difficulty : 2</td></tr></table>	Arrival Process Value : 2 Difficulty : 2		
Arrival Process Value : 2 Difficulty : 2				





# Sales Activities

	Sales		
	Proposal	Sales Presentation to Customer	Closing
<b>Activity</b>	Work Scope Development and Approval	Close at Audit Process	Contracting
	Customer Presentation Package	Follow up Sales Process	Identify Financing Needs
	Anticipated Objections	Phased Implementation Sales Process	Rebates / Incentives
	Assessment Report	Overcoming Objections	
	Pricing		
	Subcontracts		
<b>Internal Lead</b>	<i>Sales</i>	<i>Sales</i>	<i>Sales / Operations</i>
<b>External Resources</b>	<i>Subcontractors</i>		<i>Finance Partners</i>

Sales		
	Easy	Hard
More Value		<div><p>Customer Presentation Process and Audit Report</p><p>Value : 4 Difficulty : 3</p></div> <div><p>Phased Implementation Sales Process</p><p>Value : 3 Difficulty : 3</p></div>
Less Value	<div><p>Rebates/Incentives</p><p>Value : 1 Difficulty : 1</p></div>	



# Contract Administration Activities

	<b>Contract Administration</b>			
	<b>Contract Processing</b>	<b>Customer Financing</b>	<b>Rebate and Incentive</b>	<b>Accounts Receivable / Payable</b>
<b>Activity</b>	Contract Review and Approval	Financing Mechanisms	Utility Reporting	Create Account
	Create Work Order	Loan Processing	State or Local Program Reporting	Deposit Payments
	Inventory and Production Management		Tax Credit Reporting	Billing
	Subcontracts			Payment Terms
<b>Internal Lead</b>	<i>Operations</i>	<i>Operations</i>	<i>Operations</i>	<i>Operations</i>
<b>External Resources</b>	<i>Subcontractors</i>	<i>Financial Partners</i>	<i>Program Staff</i>	

# Contract Administration

	Easy	Hard
More Value		<p>Rebate and Incentive</p> <p>Value : 4 Difficulty : 4</p>
Less Value	<p>Loan Processing</p> <p>Value : 1 Difficulty : 1</p>	<p>Financing Mechanisms</p> <p>Value : 1 Difficulty : 3</p>



# Production Activities

	Production		
	Project Planning	Project Implementation	Quality Assurance
Activity	Scheduling <ul style="list-style-type: none"> <li>In House</li> <li>Subcontracts</li> </ul>	Work Scope Procedures	Job Completion Verification (P4) <ul style="list-style-type: none"> <li>Checklists</li> <li>Test results review</li> </ul>
	Inventory / material preparation	Job Safety	Post Installation Field Verification Sample
	Crew Lead Work Scope Review	Customer interaction procedures	Customer Satisfaction Scores
		Job Completion / Test Out	
		Change Orders	Sponsoring Program QA
		Subcontractors	
Internal Lead	<i>Operations / Production</i>	<i>Production</i>	<i>Production / Operations</i>
External Resources			

# Production

	Easy	Hard
More Value	<p>Job Completion Verification</p> <p>Value : 4 Difficulty : 1</p>	<p>Subcontractors</p> <p>Value : 4 Difficulty : 3</p> <p>Work Scope Procedures</p> <p>Value : 4 Difficulty : 4</p>
	<p>Customer Interaction Procedure</p> <p>Value : 3 Difficulty : 2</p>	<p>Job Completion / Test-Out</p> <p>Value : 3 Difficulty : 3</p>
Less Value	<p>Post Installation Verification Sample and Sponsoring Program QA</p> <p>Value : 1 Difficulty : 1</p>	



# Customer Service Activities

	Customer Service	
	Customer Relations	Warranty Requests Resolution
<b>Activity</b>	Customer Appreciation	Customer Care Intake
	Certificate	Scheduling
	Rating Score	Customer Visit Process
	Guarantee	Diagnostics
	Homeowner Manual	Warrantable item Repair / Replacement
	Referral Cards / Lead Generation	Utility Bill Review
	Billing and Collections	Manufacturer Relations
	Utility / Local Program Documentation	Subcontractor Management
<b>Internal Lead</b>	<i>Operations</i>	<i>Production</i>
<b>External Resources</b>		

# Customer Service

	Easy	Hard
More Value		
Less Value		<p>Diagnostics and Repair / Replacement</p> <p>Value : 2 Difficulty : 3</p>





## Highest Priority, Most Difficult to Implement Activities

### Business

- Technical Training
- New Equipment
- Vendor Relations
- Strategic Planning

### Marketing

- Customer Education Process
- Community Engagement

### Assessment

- Arrival Process
- On Site Customer interview
- Whole House Assessment

### Sales

- Customer Presentation Package
- Assessment Report

### Contract Administration

- Utility Reporting

### Production

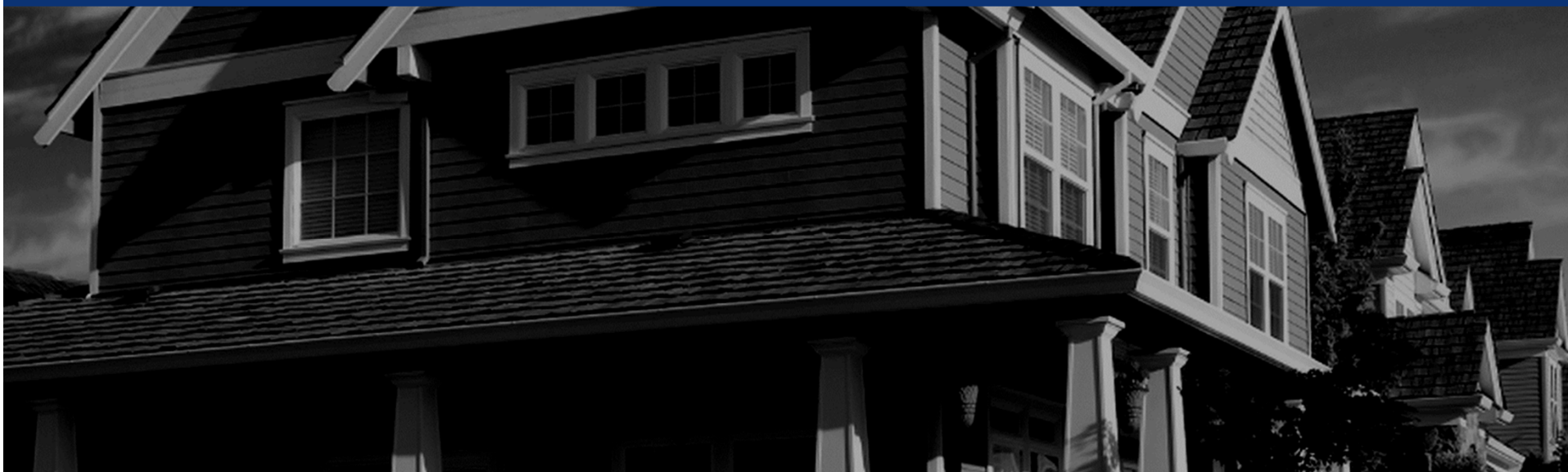
- Work Scope / Procedures
- Subcontractors



## Next Steps

- Characterize these “Highest Priority, Most Difficult to Implement” processes
- Identify the barriers or information gaps associated with these processes
- Work with HVAC companies who are making the transition to understand what they need to overcome these barriers
- Understand how to document and communicate results
  - Manufacturers and Distributors were suggested by experts as a trusted information source for HVAC contractors
  - **Webinars / presentations ☺, white papers ☹**





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