

Solid as Granite: A Coordinated Approach to Productivity, Pollution Prevention, and Energy Efficiency Program Delivery

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ABSTRACT

Contrary to popular perception, manufacturing is a vital part of Vermont's economy. Recently, international and domestic competition have caused a decline in the Vermont manufacturing sector. Given the importance of manufacturing to Vermont's economy and the challenges faced by local manufacturers, multiple state and not-for-profit programs have been created and delivered for the benefit of local manufacturers targeting higher energy efficiency, increased productivity, and improved environmental performance. In the absence of an established structure for cooperation, however, program delivery in the past tended to focus on one goal despite the obvious synergy with the other two.

In response to this challenge, a collaboration of partner programs known as Vermont Industries of the Future (VIOF) was formed in an effort to develop a model for assessing and improving overall manufacturing performance with an industry partner. This paper describes the VIOF approach and the collective experiences of the program partners in working with the Vermont granite processing industry. The lessons learned are condensed into a 14-step model approach designed to address the needs of industry in a comprehensive manner and to allow partnering across multiple service organizations. The model approach is intended as a basis for creating similar initiatives in other regions and industries.

Introduction

Contrary to popular perception, the state of Vermont is home to a diverse array of manufacturing companies. In fact, according to U.S. Bureau of Labor Statistics, the Vermont manufacturing sector accounts for a larger share of total employment (35,800 jobs in a total population of approximately 624,000) than the national average. Vermont manufacturers are facing stiff competition from international as well as domestic companies, resulting in a recent decline in the overall manufacturing sector. National statistics show that Vermont has lost over 20% of its total manufacturing employment since January 2000.¹

Given the importance of and challenges faced by Vermont's manufacturers, multiple state and not-for-profit programs have been created and delivered for the benefit of local manufacturers targeting higher energy efficiency, increased productivity, and improved environmental performance. In the absence of an established structure for cooperation, program delivery in the past tended to focus on one goal despite the obvious synergy with the other two.

In response to this challenge, a collaboration of partner programs was formed in an effort to develop a model for assessing and improving overall manufacturing performance with an industry partner. The following sections describe the resulting model approach – a means to

¹ Vermont seasonally adjusted manufacturing employment decreased from 45,700 in January 2000 to 35,800 in January 2007 according to data published by the U.S. Bureau of Labor Statistics.

address the needs of industry in a comprehensive manner and to allow partnering between service organizations – and recommendations for replicating this model in other regions.

Developing a Model Approach – A Granite Processing Industry Case Study

Vermont Industries of the Future (VIOF)

The effort to develop a collaboration of partners to serve the needs of industry grew out of past involvement with the Industries of the Future program (IOF) administered by the U.S. Department of Energy Industrial Technologies Program (DOE ITP). Specifically, Vermont had received funding to improve energy efficiency practices in the Forest Products sector. While this effort did have a significant impact within its scope, it also revealed the need to pursue a holistic assessment of a company's performance in energy efficiency, process optimization, and environmental performance in order to achieve the maximum impact.

A group of partner organizations seeking to develop such an approach assessed the resources available for collaboration. It was evident that the requisite technical skills already existed within the partner organizations, but 1) a more formal network among the partners was needed to achieve the best results for industry, and 2) a single industry should be engaged to act as a test vehicle for the approach in order to provide useful feedback during its development. The collaboration resulted in a successful proposal for funding through DOE ITP for engaging and serving the granite processing industry, an industry deemed vital to the success of Vermont's economy. The granite industry was identified in a recent report as an industry where employment levels and concentration indicated a competitive advantage for Vermont manufacturers (DED 2002).

The DOE funding resulted in the creation of a formal effort called Vermont Industries of the Future (VIOF). VIOF was created to 1) establish a core group of partners to create an integrated service delivery network, and 2) assist the members of targeted industry sectors to envision and achieve significant improvements in energy management, process efficiency, and environmental performance. The successful integration of all three service areas for the benefit of industry and the persistence of the network beyond the grant funding would constitute success.

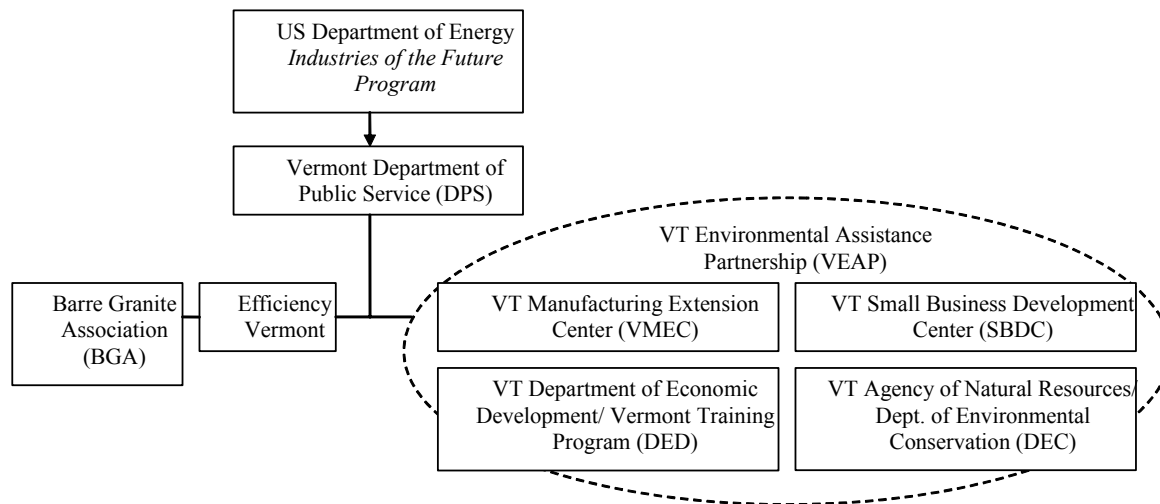
Partner Organizations

The collaborating partners in VIOF were Efficiency Vermont, the Vermont Department of Public Service, and the Vermont Environmental Assistance Partnership (VEAP). VEAP is an existing network between the Vermont Manufacturing Extension Center, the Vermont Small Business Development Center, the Department of Environmental Conservation, and the Vermont Department of Economic Development. VIOF built off and expanded upon the solid foundation of this network. The Barre Granite Association acted as a representative of all members of the targeted industry. Figure 1 is a diagram of participating organizations. Further information on each partner organization and their role in VIOF are provided below. Addresses for partner websites are included in the Additional Resources section.

Due to the absence of a complete network between partner organizations, it became clear that there was overlap in the services provided by each partner. As examples, SBDC frequently provided energy conservation advice to small commercial customers, VMEC routinely provided

compressed air system leak detection assistance as part of the manufacturing process evaluation, and Efficiency Vermont addressed customer process efficiency in the context of reducing energy consumed per unit of production. As a result, the partners discussed how best to partner and support each other in these overlapping activities. In such cases, all partners with requisite expertise participated in the assessments with the customer receiving a single, combined message from the VIOF team.

Figure 1. VIOF Partner Organizations



- The Barre Granite Association (BGA) was established in 1889 and is the prime voice representing granite producers and converters in the Barre, Vermont region. BGA members represent a variety of company sizes, from large employers to small family-owned businesses. The BGA acted as the primary conduit for VIOF outreach to member companies and facilitated VIOF training efforts.
- Efficiency Vermont was created in March 2000 as the nation's first statewide Energy Efficiency Utility program. Efficiency Vermont's role in VIOF was to provide technical support to manufacturers in the evaluation of energy efficiency options, and to provide financial incentives to offset the cost of implementation for measures that would reduce energy consumption.
- The Vermont Department of Economic Development (DED) provided financial support for training activities and expertise on the environmental permitting process as requested.
- The Vermont Department of Environmental Conservation (DEC), a division of the Vermont Agency of Natural Resources, provided volunteer companies with environmental audits through its Small Business Compliance Assistance Program. These audits provided recommendations on improving environmental performance, including addressing issues of non-compliance with pollution regulations. All audits performed were confidential and in no way connected to the enforcement activities of DEC.
- The Vermont Department of Public Service (DPS) acted as the lead agency for the grant proposal and the disbursement of grant funds.
- The Vermont Manufacturing Extension Center (VMEC) acted as a subcontractor to the Department of Public Service in administering the grant objectives. VMEC acted as the lead in coordinating with all partner organizations as well as leading efforts to identify

and implement process improvements and lean manufacturing through on-site assessments and training.

- The Vermont Small Business Development Center (SBDC) provided assistance with on-site energy assessments, energy and environmental performance training, and knowledge of funding sources for implementation.

Scope of Work

The VIOF scope of work provided for the following activities:

- 1) Develop a coordinated approach to the energy, productivity, and environmental needs of companies in the Vermont granite industry,
- 2) Pilot the approach with pre-selected companies of different sizes to gauge effectiveness (anticipated to be a mix of assessment, training, and implementation),
- 3) Modify the approach based on the pilot experience,
- 4) Publish initial success stories in order to reach out to additional companies,
- 5) Perform additional assessments and training with interested companies,
- 6) Publish and distribute success stories and general recommendations to all companies, and
- 7) Extend the modified approach to companies in the Vermont marble industry (if funding and time permit).

The partners collaborated with the Executive Director of BGA to craft an initial approach that would resonate with the BGA membership. Through discussion of the goals of the VIOF effort and the desired characteristics of the member companies, two candidates were chosen. These companies were selected based on 1) “medium” (25-30 employees) to “large” (45-50 employees) company size, 2) operating a complete granite manufacturing operation (raw stone to finished monument), and 3) a perceived willingness to make changes and share their experience with allied companies.

Complete energy, productivity, and waste reduction assessments were completed for the two pilot companies. This experience allowed the partners to better understand the industry and its challenges. At this stage, basic energy and process flow information was documented and shared between the partners. The results of the waste reduction assessment were not shared due to confidentiality. Leaders from both pilot companies attended introductory workshops on lean manufacturing in anticipation of more in-depth training for additional staff.

Ultimately, the opportunities identified with the pilot companies did not result in short term change. This was due to a variety of reasons, including heavy demands on production, the potential sale of one company, the continuing challenges of controlling health care costs, and competition from lower cost foreign imports. In short, the pilot companies received valuable insight into their facilities and processes but were not equipped to make changes due to competing priorities.

The approach was modified in response to the pilot experience. It was clear that staff levels for most granite companies were so tight that freeing time to lead VIOF partners on a facility tour, collecting supporting documentation to inform the assessments, or sending even one staff person to attend a workshop represented a major commitment. VIOF responded by becoming very sensitive to the time constraints of the companies by bringing in partners for service delivery based on the interest of the specific company, focusing on specific concerns or

interests expressed by the company rather than generalized “audits”, and delivering services one-on-one rather than scheduling large public workshops that might be poorly attended.

Outreach activities also changed in response to these pressures. It was originally envisioned that success with the pilot companies would be publicized in order to generate interest across the industry. Once it became clear that a more individualized approach would work better, all of the services available were presented to companies through phone calls, emails, and faxes to BGA members. A presentation at the BGA Annual Meeting and efforts by BGA Trustees promoted VIOF activities through word-of-mouth. Through these efforts, a representative portion of all companies in the industry came forward to express interest in receiving assistance.

The smaller scale, catered services delivered to these companies included energy, environmental, and/or productivity assessments, on-site training, and assistance in implementing specific projects. Some companies hosted formal company-wide Value Stream Mapping training and events, and some completed extensive training and implementation on “5S” practices, workplace layout, and leak detection of compressed air distribution systems. One manufacturer received support from the SBDC and Efficiency Vermont in the preparation of a U.S. Department of Agriculture Rural Development 9006 Energy Program grant application, seeking funding for an energy efficiency project.

VIOF funds were also used to leverage the impact of larger events not specifically targeting the granite industry. These included relocating lean manufacturing workshops intended for a general industrial audience to the Barre area to make training as accessible to the granite industry as possible. The VIOF grant was also used to co-sponsor a “Compressed Air Challenge” training as developed by the U.S. Department of Energy Best Practices program. This event was promoted through direct mailings to manufacturers and compressed air vendors and by canvassing the Granite Industry Distributors Show in Barre.

As the outreach activities were winding down, the emphasis shifted to summarizing the results of the VIOF effort in order to educate the entire industry on opportunities for improvement. This summary would also provide a vehicle to promote the services available through the partner organizations beyond the completion of the grant activities. The SBDC, VMEC, DEC, and DED included information on the VIOF effort in either their internal communications or external newsletters. A DVD of case study interviews with VIOF participants and a supporting brochure were created and distributed to granite, marble, and slate companies and selected suppliers to spread the word on the benefits of working on the “three legs of the stool” (namely energy, productivity and environmental improvements) as well as specific opportunities commonly observed (VIOF 2006a). These media were chosen in response to the partners’ new-found knowledge of how change spreads in the granite industry – word-of-mouth backed up with concise reading material. The most powerful way for VIOF to send its message was to present respected members of the granite industry telling about their own experience.

Further outreach to the marble industry resulted in engagement with a large manufacturer. This company had already worked extensively with Efficiency Vermont and the Agency of Natural Resources, but had never used any lean manufacturing techniques and saw VIOF as an opportunity to look at new ways to structure their work. A series of public workshops was held with their employees as the anchor group. Attendees from the company were very enthusiastic that these techniques would be of great benefit to them and identified many places to implement the ideas immediately.

Results and Outcomes

One of the major accomplishments of the VIOF work was to impress upon the granite industry the importance of addressing energy, productivity, and environmental issues simultaneously. Because their industry is mature and the companies have shown themselves to be survivors, there is a tendency to think there is nothing new to learn. VIOF activities made an impact by showing the value of engaging with the partner organizations in order to ensure the long term survival of their industry in Vermont.

VIOF delivered ten public lean manufacturing workshops, training 77 granite industry employees in lean manufacturing techniques. Additional employees were trained at on-site activities. The “Compressed Air Challenge” further exposed the industry to the opportunities to be found within their compressed air systems. In all, ten companies participated in this grant effort by attending training, completing assessments, and implementing recommended improvements (VIOF 2006b).

The participating companies reported multiple benefits including energy cost savings, reduced compressed air demand and more stable supply pressure, reduced cooling water costs, improved plant layout and work flow, reduced need for floor space, a reduction in the number of paperwork hand-offs, reduced order processing time resulting from getting all information correct the first time, and improved environmental performance through better chemical management and identification of potential waste stream problems. Overall, what companies valued most was developing a long term plan for improvement, and knowing the direction to take their companies in order to be competitive.

The success of VIOF will continue to be presented within the industry. The case study DVD and brochure will be used by the BGA at their tradeshow booth to highlight their value to their members. The message is that today’s competitive challenges are different than the ones the industry has survived, and that the VIOF partner organizations working together can help them stay competitive. All of the participating companies wanted to spread the word to their industry that this approach works.

Lessons Learned

Through VIOF, the program partners learned a great deal about working with the granite processing industry in Vermont. While the examples provided are specific to this industry sector, it is likely that similar issues would arise in any industry encountered.

- Getting attention can be difficult. As described above, the VIOF partners experienced difficulty engaging with companies due to a “seen it all” attitude within the industry. Even after engagement, any meaningful change still requires management support and company officials are frequently addressing many pressing matters simultaneously. In the case of the VIOF work, these matters included labor negotiations and the cost of health insurance coverage for employees – issues beyond the experience of any of the partner organizations. Finally, companies are hesitant to invest time unless they are reasonably certain of the benefits. It was found that the VIOF effort really gathered momentum toward the end of the project as word-of-mouth endorsements had an effect. For this reason, involvement with a trusted industry group (such as BGA) and strong

word-of-mouth support are considered critical to the success of future efforts with other industry sectors.

- Changes within the industry can make outreach difficult. The Vermont granite industry is changing due to foreign and domestic competition. In some cases, small companies are being consolidated into larger companies. In other cases, companies are outsourcing specific operations to concentrate on a market niche. This volatility and diversity make it difficult to craft a message that will resonate with all companies. The partners tended to focus on cross-cutting measures, such as improving front office operations or improving compressed air system efficiency because these activities are present at virtually all companies in some form.
- Gaining access to employees is difficult. In an industry with tight margins, companies keep only the minimum staff necessary to maintain operations. For this reason, VIOF activities were scheduled around peak production or vacation periods such as the weeks leading up to Memorial Day, the Fourth of July, and Labor Day, and during the hunting season. Granite operations in Vermont have historically been seasonal with a one to two month winter shutdown and the partners anticipated offering training during this time. However, some companies laid off their employees during this period while others maintained production and sufficient numbers were not available to run some workshops. In the end, no training date could accommodate the schedules of more than a few manufacturers at a time. The solution was to offer smaller, individualized workshops and assessments whenever possible.
- Some existing processes are difficult to optimize. As an example, granite processing equipment tends to be dedicated to a specific task and located in a fixed position and therefore is not conducive to improved setup techniques or other methods of achieving a flexible process. Another example is a reduction in flexibility due to outsourcing some operations. It is difficult to optimize any process that requires some steps (such as sandblasting or stone cutting) to occur at different facilities under the control of a different company. Again, focusing on cross-cutting measures still offered some benefits.
- Some industry issues cannot be adequately addressed at the individual company level. As described above, labor contracts and health insurance premiums were major concerns within the industry. Other issues identified but unresolved included the need for assistance in marketing, sales and distribution, and supply chain management. These larger issues are probably best addressed at the trade group or industry advocate level (such as BGA) rather than at the individual company level. As for support, additional partners could be brought in to assist with these issues once they are identified.
- Partnering works to everyone's benefit. The client manufacturers benefit by receiving a comprehensive set of resource efficiency assistance that would otherwise be uncoordinated and piecemeal. The partners benefit by 1) eliminating some redundancy in services, 2) improving their own service by learning about complementary measures and obtaining the ability to bring in more resources for the benefit of the customer, and 3) offering services to companies that would otherwise be unaware of what is available. Beyond VIOF, the partner organizations intend to continue exchanging information, offering referrals to partners and customers, and combining efforts through joint service delivery.

Sustaining Benefits

From the beginning, continued collaboration between the partner organizations beyond the formal VIOF effort was deemed a critical outcome. The exercise of planning and delivering the services associated with VIOF went a long way to foster relationships between staff members from the partner organizations. This interaction greatly increased awareness among the partners of the other resources available to industry and the ability of the participants to offer meaningful referrals to client companies for those services. In order to sustain this spirit of cooperation, the following tasks are considered key.

1. Maintain high level contact between partners. At some level and frequency, the partner organizations should continue to meet or otherwise share experiences. This activity reinforces the bonds built through the industry approach and keeps all partners abreast of further opportunities to collaborate.

In Vermont, the ability of the VIOF partners to maintain contact is greatly enhanced by the existence of VEAP as an over-arching network. The regular meetings of this group are an ideal forum for discussions of how best to combine efforts to assist industry and to regroup and reflect upon past efforts. If at all possible establishing a standing forum for sharing ideas, such as VEAP, is highly recommended. As a result of the successful VIOF collaboration, Efficiency Vermont will become a participating member of the VEAP network. This will further improve communication between statewide resource efficiency and economic development organizations.

2. Make referrals to partner organizations, joint service delivery, and distribution of partners' contact information part of everyone's standard practices. The field staff from every partner organization should be informed of the complementary services available and how to access those services. More often than not, a client company would benefit from multiple services but the connection is never made. Improved collaboration between partners has the potential to reduce redundancy in services and allow each partner to dedicate additional resources to their own area of specialty. Teaming up with partners is also very effective for meeting common goals, such as demonstrating the quality of services available to companies considering expansion in the state.

As an example of continued collaboration, a discussion between the authors led to the realization that both Efficiency Vermont and VMEC are focusing on the needs of specific markets. Specifically, Efficiency Vermont has created "Target Market Initiatives" and VMEC has spun off a specialized business unit called the "Process Strategies Group", both of which address the needs of Colleges and Universities, Hospitals and Healthcare, and Government Agencies within Vermont. While outside the realm of manufacturing, this illustrates the potential synergy between the activities of the partners. Continued discussion will reveal how best to combine efforts, whether through referrals or joint visits with customers seeking assistance. Another anticipated task is regular trading of marketing literature between partners for distribution to customers. The partners envision representing complementary organizations during all of their outreach activities in order to fully meet the needs of the client.

Information sharing between organizations is also fostered through staff presentations. Efficiency Vermont frequently hosts informal lunchtime presentations known as "brown bags" in order to keep field staff up to date on new products and

technologies. Using the brown bag forum, VMEC staff presented Efficiency Vermont employees with an overview of the services and activities available through VMEC. Efficiency Vermont intends to return the favor at the earliest opportunity.

3. Expand the approach to additional industry segments. Once the partnership is forged and has successfully worked with a target industry, the next step is to replicate that success with another industrial sector. The model approach can be modified according to the particular needs of the industry and the resources available for the effort. If the impact is measurable and significant, there is every reason to continue reaching out to additional industries that possess an interest in reducing their costs and increasing their competitiveness.

In Vermont, the partners envision applying the lessons learned from the work with the granite industry to another industrial sector. Initial discussions have focused on the food processing sector and the wood products industry. Other issues being discussed include sources of additional funding and additional partner organizations. Potential partners that might address the needs of these sectors include the Vermont Sustainable Jobs Fund and the Vermont Economic Development Authority.

A Model Approach

The model approach for organizing an industry-wide resource efficiency program, as experienced by the VIOF team, can be summarized by the following steps. Although not explicitly stated, obtaining funding for the effort may be the catalyst that allows the approach to proceed beyond the discussion stage.

1. Identify an industry sector. Selecting an industry possessing the following characteristics will greatly enhance the impact of the effort:
 - Has expressed a desire (or need) to improve performance and a willingness to engage with outside entities to do so,
 - Possesses strong leadership in the form of a trade group or industry alliance,
 - Is composed of a large and diverse array of companies,
 - Has a far-reaching economic impact on the local economy, and
 - Employs processes that are both energy and labor intensive.
2. Engage with the industry at the leadership level to determine if the effort is welcome. No approach can succeed without strong, vocal support from the industry itself.
3. Collaborate with industry leaders on a plan to engage individual companies. The effort must command attention over all the other pressing issues faced by the industry. Crafting the plan may involve answering the following questions:
 - What is the industry's primary concern today?
 - What will the industry be concerned with tomorrow?
 - Where does resource efficiency rank as a concern within the industry?
 - How must the industry change from where it is today to be successful tomorrow?
 - How (and how fast) does change spread through the industry?
 - What common challenges must to be addressed by this effort?

- What single message will resonate with the majority of the companies in the industry?
4. Tap into existing industry networks to publicize the effort. Examples include a presentation during an annual industry gathering or an article in a respected industry newsletter. The message will be most effective if it comes from a trusted source. Again, support from well-respected individuals carries the greatest impact.
 5. Designate a single partner organization as the lead. This greatly simplifies partner-to-industry and partner-to-partner communication and clarifies who is ultimately responsible for tracking the progress of the effort and making it a success. The lead is also responsible for bringing the partners together to facilitate frequent communication.
 6. Remain flexible in delivering services. It is difficult to generalize about what methods will work best for a given company. Listening to the customer and responding to their needs always works best. Some variations encountered by the VIOF partnership are provided here.
 - Deliver all services available (most comprehensive) OR allow the client company to select from the services available (catered to customer interest)
 - Deliver services simultaneously (minimize time commitment on the part of the company, achieve fastest results) OR spread contact out over time (avoid overwhelming the company with information)
 - Train all employees in resource efficiency (requires major commitment on part of company, increases likelihood of lasting results) OR train critical decision-makers (less commitment required, plants a seed for future change)
 7. Provide results in a coordinated manner. The approach invariably leads to a plan of action to improve resource use. It is critical that this information be supplied in a coordinated, succinct form that will actually be consulted by the client company. It is also important that the relative importance of measures be communicated across service areas. As an example, is it more beneficial for the company to improve their order entry process or replace their facility lighting in the short term? The partners must coordinate (and combine) their individual customer communications into a single, straightforward whole.
 8. Remain in contact with companies after initial service delivery. It takes time for information to be processed, however it is also easy to put off addressing important issues when the way forward is not clear. Partners should request feedback from the client company and expect to answer questions. Continued engagement builds trust and improves the chances for implementation.
 9. Provide assistance in the implementation of recommendations. The primary goal of this approach is to reduce the overall resource needs of industry and actual implementation of measures is how this gets done. The partner organizations must follow through on implementation to ensure a lasting impact and address the barriers to implementation that will be encountered.
 10. Generate and publicize success as early as possible. As described above, companies are hesitant to invest time unless the benefits of doing so are clear. Publicizing success is the most effective way to generate interest in the effort.

11. Remain in close contact with the leadership to gauge response within the industry. A strong industry partner or trade group is in the best position to qualitatively evaluate whether the effort is gaining traction. If the effort has not proceeded as planned, it is critical that the reasons be evaluated and corrective action be taken. As stated above, no approach can succeed without strong, vocal support from the industry itself.
12. Market the partner organizations, collectively and independently, within the industry. Almost any combined approach will be applied over a finite time period. It is important that the approach be used to foster relationships and establish name recognition for the partner organizations within the industry. This ensures that progress toward reduced resource use, with the assistance of the partner organizations, will continue into the future.
13. Quantify the impact of the effort. While qualitative effects are important, hard facts are the best way to communicate how far-reaching the effort has been. Typical metrics include the number of companies served, the number of employees trained, the amount of electricity or fuel saved, the reduction in processing time or labor hours achieved, or the reduction in waste disposal costs realized. Impressive numbers generate greater interest within the industry and reinforce the commitment to the approach among the partners.
14. Share information with the industry as a whole. Depending on the resources available for the effort and the size of the target industry, only a small portion of the industry as a whole may be touched directly. Crafting and packaging the message in an effective form and ensuring that this message is received throughout the industry will amplify a modest success into a lasting trend toward improvement.

Summary

The health of manufacturers is critical to the local economy, and many state, federal, and not-for-profit programs exist for the benefit of these firms. In particular, programs promoting higher energy efficiency, increased productivity, and improved environmental performance are in place to serve the needs of industry. In the absence of an established structure for cooperation, however, program delivery will tend to focus on one goal despite the obvious synergy with the other two.

This paper has presented a model approach for addressing the needs of industry in a comprehensive manner and to allow partnering between service organizations. This model can be adapted to the characteristics of the target industry, as well as to the strengths of the service organizations composing the partnership. Based on the experiences presented here, partnering works to everyone's benefit. Manufacturers benefit by receiving comprehensive resource efficiency assistance and the partner organizations benefit by eliminating some redundancy in services, improving their own service offering, and reaching a greater number of clients than would otherwise be possible. In Vermont, the authors are confident that the partnership will persist through continued exchange of information, referrals, and joint service delivery.

The authors hope the experiences presented here, along with continued funding from such sources as the U.S. Department of Energy, will enable the formation of similar partnerships in other states and regions. Given the challenges faced by American industry today, a cooperative approach to program delivery is vital to assuring that U.S. industry remains competitive in the future.

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Additional Resources

Barre Granite Association, <http://www.barregranite.org/>.

Compressed Air Challenge, <http://www.compressedairchallenge.org/>.

Efficiency Vermont, <http://www.encyvermont.com/>.

U.S. Department of Agriculture Rural Development 9006 Program, <http://www.rurdev.usda.gov/rbs/farbill/>.

U.S. Department of Energy – Industrial Technologies Program, <http://www1.eere.energy.gov/industry/>.

Vermont Agency of Natural Resources – Dept. of Environmental Conservation – Small Business Compliance Assistance Program, <http://www.anr.state.vt.us/dec/ead/sbcap/index.htm>.

Vermont Department of Economic Development, <http://www.thinkvermont.com/>.

Vermont Department of Public Service, <http://publicservice.vermont.gov/>.

Vermont Manufacturing Extension Center, <http://www.vmec.org/>.

Vermont Small Business Development Center, <http://www.vtsbdc.org/>.

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