Corporate Sustainability – Getting Small Manufacturers on Board

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ABSTRACT

Small and medium-sized enterprises (SMEs) are vital to the economies and social structures of the United States (U.S.) and the world, often functioning as innovators and engines of growth for both rural and urban communities. However, these smaller manufacturers typically lag behind large manufacturers in adopting sustainable practices. SMEs face several barriers, including limited financial and personnel resources and, for many, a lack of knowledge and awareness of the benefits of sustainability.

This paper explores the potential for growth in sustainable practices by SMEs. Best practices from SMEs aggressively pursuing sustainability will be highlighted, as will the role of large manufacturers in mentoring their suppliers and other smaller companies. The roles that can be played by non-profits and government agencies will also be discussed. The current and potential impact on SMEs of sustainable supply chain initiatives and sector-specific sustainability initiatives in the manufacturing sector will then be closely examined.

A substantial opportunity may exist in leveraging the outreach of sector-specific trade and technical associations to create tailored sustainability or corporate social responsibility (CSR) programs to help SMEs embed sustainability into their organizations. In Italy, a trade association's pilot program has created streamlined sector-specific CSR reporting specifically for small steel manufacturers. This model could be replicated in the U.S. Further, such a model could expand for much more than just CSR reporting, and could transform trade associations into knowledge bases and communication hubs for sector-specific SME sustainability best practices, information exchange, training, standards, and other resources.

Introduction

Sustainable development and sustainability have been in the business lexicon for a number of years. Many corporations worldwide are working to become more sustainable and to regularly report on their activities. A suitable definition of sustainability relevant to corporations in the manufacturing sector comes from the International Institute for Sustainable Development (IISD 2001):

> *Adopting business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining and enhancing the human and natural resources that will be needed in the future.*

Corporations use a number of terms and phrases to frame their sustainability efforts. The terms corporate sustainability, corporate social responsibility (CSR), and corporate responsibility are often used interchangeably, and phrases such as the *triple bottom line* and *people, planet, and profit* facilitate communication between corporations and the public. Essentially, corporate sustainability is the inclusion of social equity, economic, and environmental factors when considering an organization's overall performance.

Sustainability programs, activities, and reporting are becoming more common for large manufacturers. However, small manufacturers are much less likely to have sustainable practices in place due to limited financial and personnel resources (UNGC 2013). While it may be expedient to dismiss the small enterprises as insignificant players in the global marketplace, it is important to note that SMEs account for about 70% of global pollution and between 50-60% of employment (Hillary 2000; Raynard and Forstater 2002).

Sustainable Practices in Manufacturing

The public often views manufacturers, and the manufacturing sector as a whole, negatively due to the environmental impacts of their processes and the harsh working conditions existing at some facilities in parts of the world. Companies committing to sustainable practices can significantly reduce their environmental impact and enhance employee well-being while maintaining or improving their profitability (Kiron et al. 2013). Sustainable practices within the manufacturing sector could include any activity that meets the needs of the organization while sustaining resources for the future and ensuring social equity. However, the nine best practices identified in Table 1 are the most commonly cited areas in the manufacturing sector.

Table 1. Common Sustainability Best Practices for Manufacturers (Tutterow 2014)

Best Practice	Description
Energy efficiency	Setting energy reduction goals (with >25% over 10 years being a common target), benchmarking, performing energy assessments
Hazardous substances	Setting reduction goals and measuring improvement; particularly for volatile organic compounds, sulfur dioxide, nitrogen oxide, organic lead, chlorine, polyvinyl chloride, and batteries
Greenhouse gas emissions	Setting reduction goals, reporting direct and indirect emissions and measuring greenhouse gas (GHG) emissions intensity, although many companies report on certain facilities only
Water	Setting water intensity (per unit of production, e.g.) reduction goals, mapping water flows, new technology adoption, and employee and community education; companies with facilities in water-stressed countries tend to be more active in goal-setting and water efficiency activities
Recycling & waste	Measuring waste generation and waste sent to landfills, tracking reclaimed or recycled materials, setting goals of zero waste to landfills, educating employees, launching community recycling programs, and partnering with other organizations
Sustainable supply chains	Developing policies and standards that set expectations for suppliers, developing guidance, and sharing sustainability best practices
Community outreach	Volunteerism, charitable donations, often targeting education, veterans' programs, and environment
Employee wellbeing & safety	Diversity and gender inclusion, reporting incident rates, workforce development, and wellness programs for employees and families
Benchmarking against sector leaders	Using ratings such as the Dow Jones Sustainability Indices to compare company performance, reviewing sustainability reports of peers

Pursuing Corporate Sustainability

A number of factors contribute to companies choosing to adopt sustainable practices. In the U.S., greenhouse gas (GHG) and other emissions reductions and energy cost savings are often factors motivating companies to improve their operations. Drivers for these actions may include environmental regulatory compliance and financial incentives for investing in energy efficiency. While these drivers do promote certain sustainable practices, the drivers for broader corporate social responsibility do not exist in the U.S. Federal and state governments are not imposing regulations or laws compelling companies to be socially responsible, and there certainly are no utility incentives for CSR.

Despite the lack of incentives or penalties, a significant number of companies are setting sustainability goals, implementing plans, preparing sustainability reports, and trumpeting their successes. A survey of large corporations (manufacturing and non-manufacturing) found these to be the most stated benefits of the pursuit of sustainability (Kiron et al. 2013):

- Improved brand reputation
- Better innovation of product/service offerings
- Improved perception of how well the company is managed
- Increased competitive advantage

Other factors often cited include reduced costs due to materials or waste efficiencies, business growth, revenue creation, risk management, and employee engagement (Tutterow 2014). It is important to note, however, that large corporations' sustainability efforts tend to be driven by external factors such as brand or image enhancement, or by customer demand. However, some major retailers such as Walmart and Target are now asking their suppliers to assess and disclose the environmental and social impacts of the products they provide to these retailers. Such requirements can lead to improved sustainability practices by manufacturers large and small.

Small businesses, including small manufacturers, which embrace sustainability tend to be driven more by internal rather than external drivers. A survey of SMEs found that the principal driver for them is the "personal values of the company's founders and/or leaders (Young 2013)." Seventy-five percent of respondents cited company leadership as the driving force for striving to be sustainable. Secondary factors influencing small enterprises include customer demand, downstream pressure, the potential for cost reductions, and opportunities in the form or new products or services.

An important conclusion drawn from this survey and other literature is that external drivers, such as brand reputation, do not necessarily translate from large companies to SMEs as motivating factors. When engaging with SMEs, large manufacturers and other stakeholders must keep in mind that the motivations for SMEs will not always align with the motivations for large companies.

While enticements such as regulations and financial incentives do lead to more sustainable organizations, the driving forces for broader CSR efforts do not exist. This is particularly true in the manufacturing sector SMEs, where most are still not adopting any sustainable practices (UNGC 2013).

Barriers to Pursuing Corporate Sustainability

A survey of a broad cross section of companies inquired about the barriers seen when making the business case for CSR (Kiron et al. 2013). The top obstacles identified are:

- Difficulty in quantifying intangible effects of sustainability actions
- Competing priorities
- Difficulty capturing comprehensive metrics
- Lack of a model or framework

Even organizations with sustainability-related plans and strategies in place can find challenges to becoming more sustainable. Table 2 lists the three primary barriers for both large and small companies based on a survey of the United Nations Global Compact members (UNGC 2013)[1]. This survey, along with another survey of a broad swath of companies globally, found that even organizations making a commitment to sustainability face hurdles in turning their strategies into action (BSR 2013).

Table 2. Common barriers to turning sustainability commitments into action

Barriers for large enterprises	Barriers for small enterprises
Extending the strategy through their supply chain	Lack of financial resources
Implementing the strategy across business functions	Lack of knowledge
Competing strategic priorities	Extending the strategy through their supply chain

Clearly, SMEs face a number of barriers, including those with sustainability-related goals and strategies in place. For small manufacturers not pursuing sustainability, the primary barriers are:

- Limited resources (financial, personnel, and time) to develop and implement a sustainability program
- Lack of customer demand
- Lack of an internal champion
- Lack of knowledge
- Lack of management commitment
- Lack of appropriate metrics to quantify benefits and costs
- Complexity of management system-based sustainability programs

Breaking Down the Barriers

Effectively bringing to scale small manufacturers' engagement in sustainability efforts will require awareness-building and education. Most importantly, any programs or activities seeking to engage SMEs will need to focus on their internal drivers, establishing the business case and turning the owners or senior leadership into internal champions for adopting sustainable practices.

[1] Global Compact members commit to ten principles related to human rights, labor, environment, and anti-corruption, and to report on their progress in these areas.

Role of Large Manufacturers and Sustainable Supply Chain Initiatives

Large manufacturers active in CSR can have significant influence on SMEs. They can lead by example, making their efforts and successes known to the public through their reporting and media outreach. They can serve as mentors for small manufacturers in the communities in which they are located, or share their knowledge through trade and technical association councils and local industry councils, such as those organized by county economic development commissions or chambers of commerce. Trade and technical associations can serve as resource organizations providing CSR information relevant to the associations' sectors, and can create sustainability benchmarks suitable for SME members.

Large manufacturers have great potential to leverage their influence through participation in membership organizations such as the Global Environmental Management Initiative (GEMI) and the World Business Council for Sustainable Development (WBCSD). These organizations pool member contributions to develop best practices, tools, and other resources that benefits organizations large and small.

Those large manufacturers participating in voluntary CSR programs or otherwise providing GHG emissions reports in accordance with GHG protocols have incentive to work with their suppliers, many of which are small manufacturers. Organizations providing Scope 3 (corporate value chain) emissions reporting for the GHG Protocol report the emissions of their supply chain, which often greatly exceed their direct and indirect (Scopes 1 and 2) emissions. Therefore, large manufacturers looking to reduce their combined emissions need to work with their suppliers to improve their processes and reduce emissions.

Supply chain initiatives can be effective in introducing small manufacturers to sustainability. Global organizations such as the U.N. Global Compact and GEMI have programs to help organizations engage their suppliers in sustainability. The CDP Supply Chain Program was designed to facilitate disclosure from the supply chains of participating CDP supply chain members. Review of the data from the suppliers that report to CDP has found that suppliers are not reducing emissions as much as anticipated. In response, CDP has created Action Exchange, a pilot program offering suppliers incentives to take action. In this pilot, suppliers will receive, at no cost, emissions-reductions recommendations based on their past CDP survey responses. In addition, they will be connected to a select group of solutions providers capable of providing services or products customized for their needs.

Large manufacturers and retailers all have supply chains comprised of suppliers large and small. Many of these large organization have requirements, policies, or codes of conduct for their suppliers. Increasingly, large organizations are adding sustainability to their requirements or expectations, sometimes in the form of sustainability scorecards. These scorecards are used to benchmark and measure the sustainability efforts of their suppliers, and to establish supplier goals and targets. Working collaboratively with industry through the Sustainability Consortium, Walmart first created their scorecards in 2009, and in February 2015 launched its Sustainability Leader Badge, to be placed on the product packaging of about 10,000 products across 80 categories (Boynton 2015). These will be products manufactured by the suppliers scoring in the top 12% of all suppliers participating in Walmart's supplier sustainability scorecard surveys. This initiative is certain to generate a degree of awareness among many SMEs, and is a program that may be replicated by other retailers and even large manufacturers.

Sector-Specific Supply Chain Initiatives and Trade Associations

Large manufacturers have formed several sector-specific sustainable supply chain initiatives with the intent of engaging their suppliers on many aspects of sustainability. The chemical, pharmaceutical, aluminum, electronics, and aerospace sectors all have initiatives for their suppliers. One example is the Electronics Industry Citizenship Coalition (EICC), which developed a Code of Conduct for suppliers to the electronics sector, along with a carbon reporting template and other resources. Recently, EICC teamed with CDP's Supply Chain Program to more effectively engage suppliers to the electronics industry (SB 2015). The collaboration will minimize redundancy in reporting and take advantage of CDP's scoring methodology and benchmarking capacities. EICC is encouraging its members to join the CDP Supply Chain Program. Suppliers that participate by reporting to CDP will gain access to no-cost training and guidance. EICC's environmental reporting module will be used by suppliers for reporting GHG emissions.

Understanding and interpreting GHG reporting protocols can be a challenge for smaller manufacturers. An alternative reporting process has been proposed for SMEs by researchers at Politecnico di Milano in Italy (Arena and Azzone 2012). Rather than the "one-size-fits-all set of global indicators, and individual subsector organization can determine the most relevant subset of indicators from within the Global Reporting Initiative framework for that network organization's members or constituents. The next step is to create a matrix of key processes vs. key sustainability issues. From this matrix, indicators are identified and methods of measuring each indicator are determined based on a cost/benefit analysis. Third party experts hired by the network organization would perform each step of this process.

The process was piloted with success among SME steel manufacturers in Italy. The framework allowed for quicker and less expensive reporting relative to other approaches, and appears to provide flexibility for modification as needed over time. This framework should be applicable in the U.S., and U.S.-based industrial sector trade and technical associations could be appropriate network organizations.

Other examples of active sector-specific programs include:

- WBCSD's Cement Sustainability Initiative, which includes large and small manufacturers as members.
- The International Aerospace Environmental Group (IAEG) is working to harmonize voluntary health and environmental standards for aerospace companies and their suppliers. A new working group within IAEG is developing a roadmap that will lead to consolidating CSR-related surveys to suppliers (A. Fuge, Project Manager, Northrop Grumman, pers. comm., February 27, 2015).
- The Automotive Industry Action Group (AIAG) is another example. IAG is a nonprofit organization that creates standards and best practices in several areas, including CSR. A new initiative within AIAG is Supply Power, created to provide training to personnel from suppliers to the automotive industry. Suppliers joining AIAG can receive a sustainability assessment at no cost (AIAG 2015).

Sector-based collaborations such as these can be valuable to the organizations involved. In particular, SMEs that may lack a grounding in sustainable practices, metrics, and reporting can benefit from the training, tools, and other resources tailored to their sectors.

Regional and State Initiatives

Another avenue for engaging small manufacturers is to reach out to them directly. This is happening regionally in Wisconsin and North Carolina.

The Wisconsin Manufacturing Extension Partnership (WMEP) established the state-level Profitable Sustainability Initiative (PSI) in 2010 with funding from both a state and a federal grant. The initiative was piloted with 50 small manufacturing organizations in Wisconsin. Over 200 manufacturers across the state have now reduced their operating costs by approximately $20 million annually on projects with simple payback periods averaging about 12 months (R. Bertram, Director of Sustainability Services, WMEP, pers. comm., March 3, 2015). Savings result from energy performance improvements, water conservation, waste reduction, and productivity improvements.

PSI works with SMEs to increase company profitability based on structured diagnostic, assessment and implementation processes. The program emphasizes return on investment while considering a spectrum of sustainable manufacturing indicators. These indicators are adopted from the Organisation for Economic Co-operation and Development's (OECD) Sustainable Manufacturing Toolkit (OECD 2011). Figure 1 shows these eighteen indicators, broken into the areas of inputs, operations, and products manufactured. Companies in the PSI program determine which of these indicators are most relevant to them, and use an online portal designed by PSI as a way to set up key performance indicators, set goals, and track progress toward these goals.

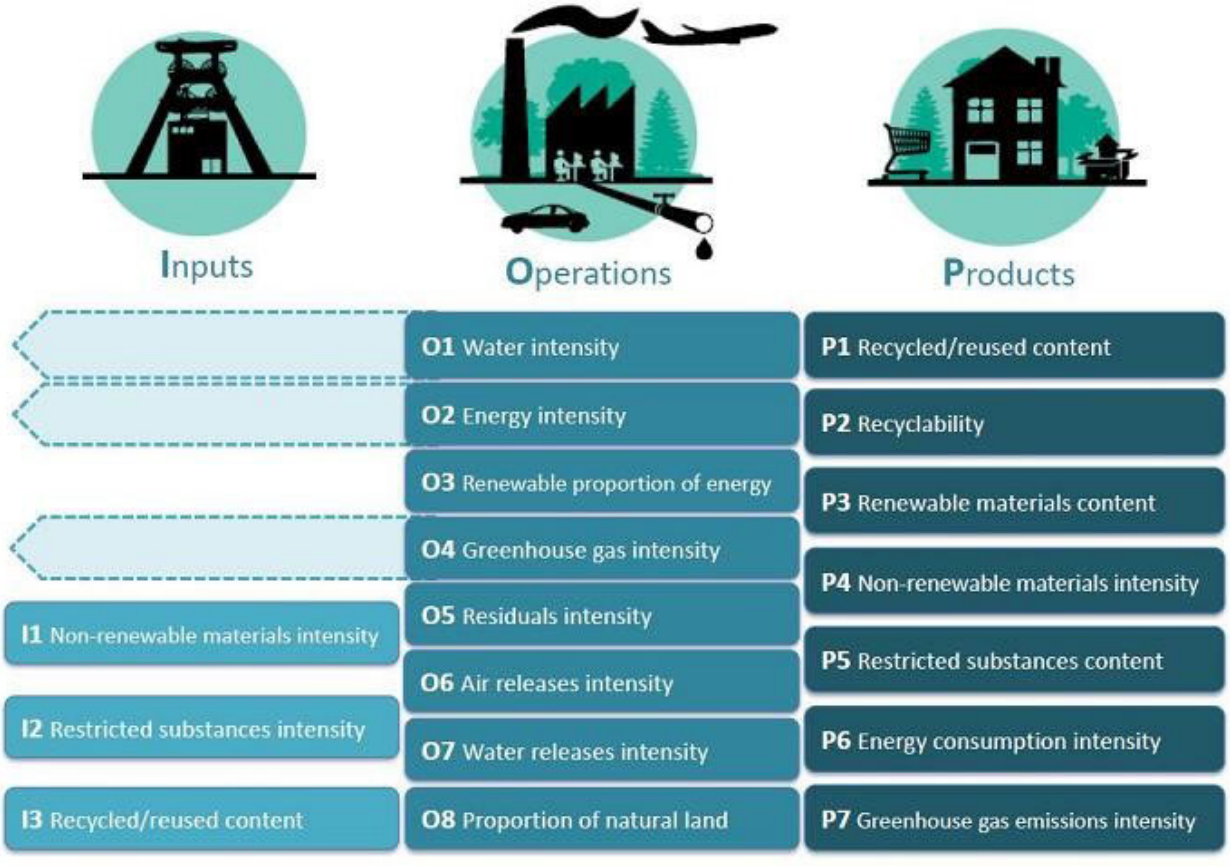

Figure 1. OECD Sustainable Manufacturing Indicators. *Source:* OECD 2011.

The initiative is taking the lessons learned from working with over 200 manufacturers to create tailored roadmaps, either by individual subsectors or company size, to more effectively engage SMEs in the state. As PSI evolves into a self-sustaining business model, the program is beginning to enlist large corporations to engage their supply chains in PSI and sustainability.

In North Carolina, the Industrial Extension Service of North Carolina's Manufacturing Extension Partnership (NCMEP) created the E3[2] NCMEP eCar project, a state-wide sustainable manufacturing program (Mangum 2015). Using seed funding from the National Institute of Standards and Technology's (NIST) MEP program, NCMEP set out to create a model that could be replicated by other states or regional groups. The project, now rebranded as the NCMEP Discovery Suite, offers assessments and guidance to small manufacturers for a modest cost share.

The NCMEP Discovery Suite assists SMEs in the areas of lean manufacturing and quality, business performance, environment, safety, and health, energy, and greenhouse gas emissions. NCMEP partners with the North Carolina State University Industrial Assessment Center, the North Carolina Occupational Safety and Health Bureau of Consultative Services, and the nonprofit Advanced Energy to provide the assessments and related services. The initiative also partners with community groups such as local Chambers of Commerce and community colleges to identify particular communities and manufacturers that can best benefit from the program offerings. As of May 2015, the initiative has benefitted 52 small manufacturers within the state with very positive reviews (Mangum 2015).

Both the Wisconsin and North Carolina initiatives can be replicated in other states or regions. Along with leaders from Wisconsin and Alabama, leaders of North Carolina's NCMEP Discovery Suite created a "playbook" of best practices and resources for use by any MEP in the U.S. Similar programs have been piloted to lesser degrees in Alabama, Arkansas, Mississippi, Ohio, Texas, and Virginia.

Conclusions

Recent growth in the number of sustainable supply chain initiatives, as well as the number of suppliers participating in these initiatives, represents significant progress in awareness of the importance of SMEs, and in particular, small manufacturers. Industry groups, nonprofits, and a growing number of large manufacturers see the importance facilitating supplier engagement in sustainable practices. While these organizations are offering certain "carrots and sticks" to encourage supplier participation, suppliers may only see the "sticks" in such top-down approaches.

The localized approach piloted by the Wisconsin PSI program and the North Carolina NCMEP Discovery Suite represents more of a "bottom-up" approach to engaging suppliers. Supplier participation is strictly voluntary, and the suppliers receive one-on-one attention from local and state-based entities. Such interaction fosters development of internal champions. As surveys have shown, internal drivers such as improved productivity, improved profitability, and internal champions are more effective than external drivers for embedding sustainability into SMEs. These initiatives offer a significant incentive in the form of cost-share, but also focus on the financial and productivity-related benefits of sustainable practices. Localized approaches also

[2] E3 is a technical assistance framework supported by six U.S. federal agencies, and seeks to improve the profitability and competitiveness of SMEs through assessments and resources focused on energy efficiency, water use, pollution prevention, GHG emissions, waste, and productivity.

allow tailoring and simplifying the resources and services provided, along with tailoring the data collection, reporting and documentation requirements.

A likely path forward for scaling sustainable practices to small manufacturers lies in a marriage of the top-down (supply chain initiatives) and bottom-up (state/regional initiatives) approaches. The Wisconsin PSI is evaluating a form of supply chain engagement as it refines its business model, and the most prominent sustainable supply chain initiative, the CDP Supply Chain Program, is piloting tailored approaches through its Action Exchange and collaboration with EICC on supplier engagement for the electronics industry's suppliers. As these initiatives mature and lessons are learned, a robust framework should emerge that is deployable by the spectrum of stakeholders in SME sustainability.

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