EVOLVING SUSTAINABILITY IN SUPPLY CHAIN MANAGEMENT

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ABOUT THIS REPORT

As part of the ongoing collaboration between Michigan State University's Eli Broad College of Business and the APICS Supply Chain Council, the Beyond the Horizon research project is investigating how the supply chain management discipline is evolving into the future. Key trends have emerged following interviews with 53 firms around the world. This whitepaper reviews the research findings on current supply chain sustainability practices as well as the methods for implementing improved sustainability practices.

THE NEED FOR SUSTAINABILITY

The term "sustainability" has been used in the context of resource management for almost 30 years, but the definition changes with each expert consulted. One of the broadest definitions of the term comes from a report by the United Nations (UN) 1987 World Commission on Environment and Development (WCED). The UN report defines sustainability as "using resources to meet the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). Although the UN's definition is viewed to be particularly broad, the message is clear— individuals and the organizations they form (nations, corporations, society, etc.) should consider the future when accessing and using resources. For generations, we have collectively had a supply of resources that far exceeded our needs, but evidence suggests that these natural resources are becoming more stressed over time. Without implementing extensive and meaningful sustainability practices, in the future key resources will be harder— if not impossible— to acquire.

In discussing the strain on natural resources, Bell et al. (2012) suggest that although some resources have the capability to regenerate from a sustainability perspective (e.g., trees can be replanted and left uncut long enough to reforest previously cleared regions, restoring sustainability), this is not true in all cases. Oil that requires eons to form underground cannot be replenished in the way trees or fisheries might. When considering that the supply of some resources is finite, the UN's caution is relevant. Care must be taken to manage our resources so as to retain these critical assets for future generations.

SUSTAINABILITY FRAMEWORKS

One of the earliest frameworks for addressing environmental sustainability emerged almost simultaneously in the 1980s in North America and Europe. The simple framework which consisted of three parts, reduce, reuse, recycle, focused primarily on waste reduction and became commonly known as the "three R's". Originally aimed at the general population, firms quickly adopted the three R's concept as a means to reduce cost while also allowing the firm to promote its efforts as being environmentally friendly. Over the years other "R's" have been added to the original list for use in supply chain practices. For example, remanufacture/refurbish and reclamation of components have both been extensively discussed. All of these actions have broad appeal due to their potential cost-saving and waste-reduction prospects.

Corporate responsibility pioneer, Jon Elkington (1994) introduced a somewhat different business practice framework for sustainability, typically referred to as the "triple bottom line (TBL)" and also frequently referred to as the "three P's": people, planet and profit. This framework accomplishes the goals of the older three R approach by maintaining a focus on financial concerns (profit) and environmentally friendly actions (planet), while adding a social dimension (people), as its third component.

The social dimension of the TBL framework has both internal and external aspects for consideration by organizations. Internally, organizations are urged to take action to improve employee conservation of resources in their daily operations. Externally, the framework encourages firms to promote those same conservation practices throughout the supply chain and to support social and economic development more broadly outside the organization. A common difficulty associated with the TBL framework is that it lacks a definitive method to measure success on the social dimension. A greater dilemma arises when weighing the value of certain socially beneficial actions against the sometimes harmful cost and profit impacts of those actions on an organization.

RESEARCH FINDINGS

The research interviews returned a variety of current viewpoints and sustainability procedures. Regardless of current practices, it is clear that efforts to increase sustainability will require further changes in firm operations overall. For example, in discussing their efforts on the social dimension of the TBL framework, several firms cited a focus on their supplier auditing processes. Many firms have expanded beyond traditional quality, technology, and cost-based factors in supplier evaluation and now also assess the sustainability practices of their current and potential partners. Some of the participating firms have embedded employees in foreign countries where there is a high concentration of global suppliers. These embedded employees work directly with those suppliers to oversee operations and ensure compliance with sustainable business processes, among other issues. In part, these efforts have focused on tier one suppliers to ensure compliance with sustainability goals. However, a few respondents also mentioned that monitoring tier one suppliers provides significantly increased visibility into the second and third tiers of the supply chain stages, where more problems actually arise.

Discussions with executives also revealed significant differences in how participating firms view sustainability overall. While primarily reflecting the three R framework, a few participants were very clear in restricting their view of sustainability to a physical and environmental focus. Their efforts would be characterized as "green." These firms focus on carbon emissions and waste reduction, ensuring water quality and sustainable water usage, and other activities directed toward the reduce, reuse, and recycle model.

Other participants, although still focusing primarily on the aspects of physical sustainability, took a broader view. They discussed some less direct but still valuable initiatives, such as increased investment in advanced production technologies and more efficient transportation strategies. One industrial firm took the extreme step of relocating its production facilities twenty miles away in order to escape a heavily populated urban area. This move enabled them the opportunity to limit direct impact on the local population and also provided them the opportunity to introduce new technologies to their heavy manufacturing operations. As a result of the move, the company curtailed it's pollution in the urban and broader environment. Another consideration for executives looking to address sustainability of physical resources the sourcing of raw materials. Several participants raised concerns about the difficulty associated with keeping questionable materials, such as illegally logged timber and conflict minerals, out of their supply chains.

While some of the participating executives restricted their discussions of sustainability to physical environmental impacts, others took a more comprehensive view. Discussions with these executives touched on the physical environment but also extended to include a broad range of human and social issues. These participants directed many of their efforts toward improving working conditions for their own employees and those of their suppliers. They expressed the view that sustainability is an important part of overall corporate social responsibility. They expressed an imperative to maintain a safe work environment, ensure a fair standard of living, and limit worker hours to acceptable levels. Executives had also imposed these conditions on their suppliers and proactively worked to avoid issues such as child or slave labor.

Many executives discussed other aspects of compliance with the social piece of the framework that are not only internally focused but have external benefits as well. For example, several supply chain executives have taken direct actions to hire and retain underrepresented workers such as disabled persons, veterans, minorities, and women. These firms are concerned not only with ensuring that sufficient manpower exists to meet production goals, but also want to provide direct benefit to community interests.

When participants were asked about their motivation for developing more sustainable, socially compliant supply chains, the cost/benefit dilemma discussed previously in relation to the TBL framework became apparent. None of the participants stated any expected direct financial benefit from their sustainability initiatives. In fact, some participants specifically noted that their sustainability efforts resulted in short-term losses to their firms. They anticipated that any direct financial benefit would only come in the distant future, if at all. When asked why they pursued these efforts in the face of negative cost/benefit ratios, they responded that pressure from their consumers, customers, and other stakeholders factored into their decisions to set increased sustainability goals. Essentially, participants reported that because their customers care about sustainability, they must care about sustainability as well.

The role of the Internet in communicating the "voice of the customer" on issues of sustainability is also a significant consideration. Participants expressed that if their supply chains were discovered to be poorly aligned with customer sustainability expectations, they anticipated negative feedback would quickly be shared through Twitter, Facebook, and a host of other constantly emerging social media outlets. Research participants who held these views (and fears) had instituted sustainability plans that are among the broadest in both environmental and social compliance, extending beyond merely meeting government regulations. Their initiatives appeared more focused upon risk avoidance than return on investment. For example, one participant noted, "We comply with all government regulations, but out of concern for our reputation, we actually have higher standards we apply." Another firm, recognizing the importance of reputation, was even more direct about potential customer impact: "We know our consumer will hold us accountable via social media, so we have to pay attention to these issues."

Some of the most forward-thinking participants raised sustainability-related concerns stemming from global expansion. Firms discussed the importance of establishing the right management structures and hiring the right people to ensure compliance with corporate sustainability initiatives. Globalization, by definition, introduces new people into the organization. These new people likely bring with them different sets of cultural norms and values that could necessitate training to keep their work styles in alignment with organizational expectations. Many firms previously considered offshoring as a potential way to address their needs, but this trend has gone beyond simply offshoring of limited operational activities. Global sourcing is now a major consideration for firms and increases supply chain complexity.

While the interviews revealed firms are engaged in sustainability initiatives in their supply chain operations, for many, there is a notable lack of quantifiable, precise goals in those initiatives. Participants' programs were mostly presented in general terms regarding concern for carbon and waste reduction and social issues, but with few, if any, direct mentions of measurable objectives or results. Only one firm described its initiative in these terms: "We've launched a 'zero waste' initiative across our supply chain and our manufacturing facilities. We're really looking to go zero waste into the landfill … and really trying to recycle, reuse, or dispose of [waste] in a different manner. Our initial studies have been very positive. A lot of it is discipline around our cardboard, plastic, and organic waste." While the goal of this firm's initiative is definite, there appeared to be no specific plan for assuring progress toward the goal or timelines to mark progress along the way.

SUMMARY

Overall, discussions with the study's participating global firms show that sustainability is a growing concern for supply chain management executives. Previous efforts have been less impactful when relying on "green washing" of existing operations to attract customers. Activists and customers on social media are ever watchful, and increased attention appears to be motivating supply chains to go beyond cursory improvements to pursue more comprehensive sustainability goals, even when significant expenses can result. Future supply chain managers are advised to continue to broaden their focus from environment-only sustainability programs to corporate social responsibility.

ABOUT ELI BROAD COLLEGE OF BUSINESS

Michigan State University's Eli Broad College of Business prepares students to make business happen through an innovative curriculum and collaborative culture, guided by a distinguished faculty. The hardworking, team-oriented students of Eli Broad College acquire deep knowledge of their chosen disciplines and a broad understanding of how global businesses work, enhanced by study abroad and real-world projects in research centers and experiential labs. The college, consistently ranked among the top business schools, offers undergraduate, graduate, and executive development programs. Broad graduates are ready to tackle business challenges around the world, part of an unparalleled peer and alumni network.

ABOUT APICS SCC

APICS SCC is a nonprofit organization that advances supply chains through unbiased research, benchmarking and publications. APICS SCC maintains the Supply Chain Operations Reference (SCOR) model, the supply chain management community's most widely accepted framework for evaluating and comparing supply chain activities and performance. APICS SCC enables corporations, academic institutions and public sector organizations to address the ever-changing challenges of managing a global supply chain to elevate supply chain performance. APICS SCC is part of APICS, the premier professional association for supply chain and operations management. Visit apicsscc.org to learn more.

REFERENCES

Bell, John E., Chad W. Autry, Diane A. Mollenkopf, and LaDonna M. Thornton. "A Natural Resource Scarcity Typology: Theoretical Foundations and Strategic Implications for Supply Chain Management." Journal of Business Logistics 33, no. 2 (2012): 158-66.

Elkington, John. "Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development." California Management Review 36, no. 2 (1994): 90–100.

World Commission on Environment and Development (WCED). Our Common Future. Oxford: Oxford University Press, 1987.

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