Sustainability is Free – The Case for Sustainable Supply Chain Management

Dr. Dale S. Rogers
Fondation Professor, Logistics & Supply Chain Management

Chapter 1: Introduction

In 1979 Philip B. Crosby published the book *Quality is Free*. For many of his readers, this little book turned a light on. It contained the revolutionary idea that quality did not add cost to a product. Instead, building quality in to a product or process was, at the very least, a breakeven propositon. He wrote that making quality a sure thing was really an exercise if "getting people to do better all the worthwhile things they should be doing anyway." This is a good description of sustainability. And, like quality all those years ago, it seems like building sustainability into products and processes is »free.»

At the time that Crosby wrote *Quality is Free*, the careers of company managers usually moved through a specific function such as manuafacturing or sales and they were not likely to have much experience with quality issues. While ignorance of quality management was the norm in 1979, it is unlikely to be the case today because of how quality is woven into the fabric of the organization. Nearly every successful firm around the globe is working to build in quality to all of its products and processes.

While quality is understood today to be a critical competitive variable and something a firm has to «do» to be allowed to stay in the game, many managers do not have a very good understanding of sustainability. It is also probable that like quality, sustainability will be an integral part of the firm over the next several years. And, sustainability will be a critical part of every firm and every supply chain.

Having a sustainable supply chain is a lot more difficult than just having a sustainable company. Although you could argue that in order to have a sustainable company you have to have at least one or two sustainable supply chain. Sustainable supply chain means that there are several companies working together working in concert to deliver products and services to the ultimate consumer in a favorable manner to both the companies that populate the supply chain, and to the consumer who believe that those companies working together to bring that consumer value.

We have developed a model of the key elements in the sustainable supply chain. This model is depicted in Figure 1 below.

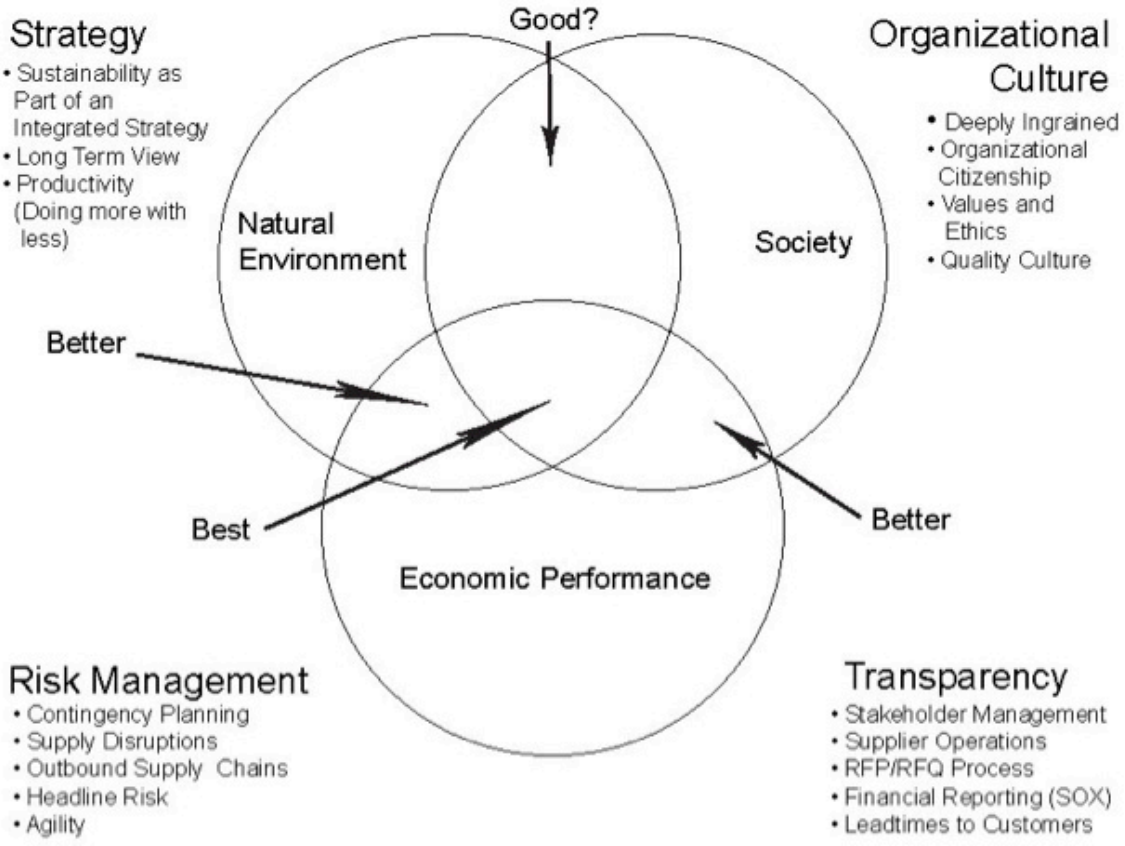


Figure 1

The Sustainable Supply Chain

Adapted from Carter and Rogers (2008)

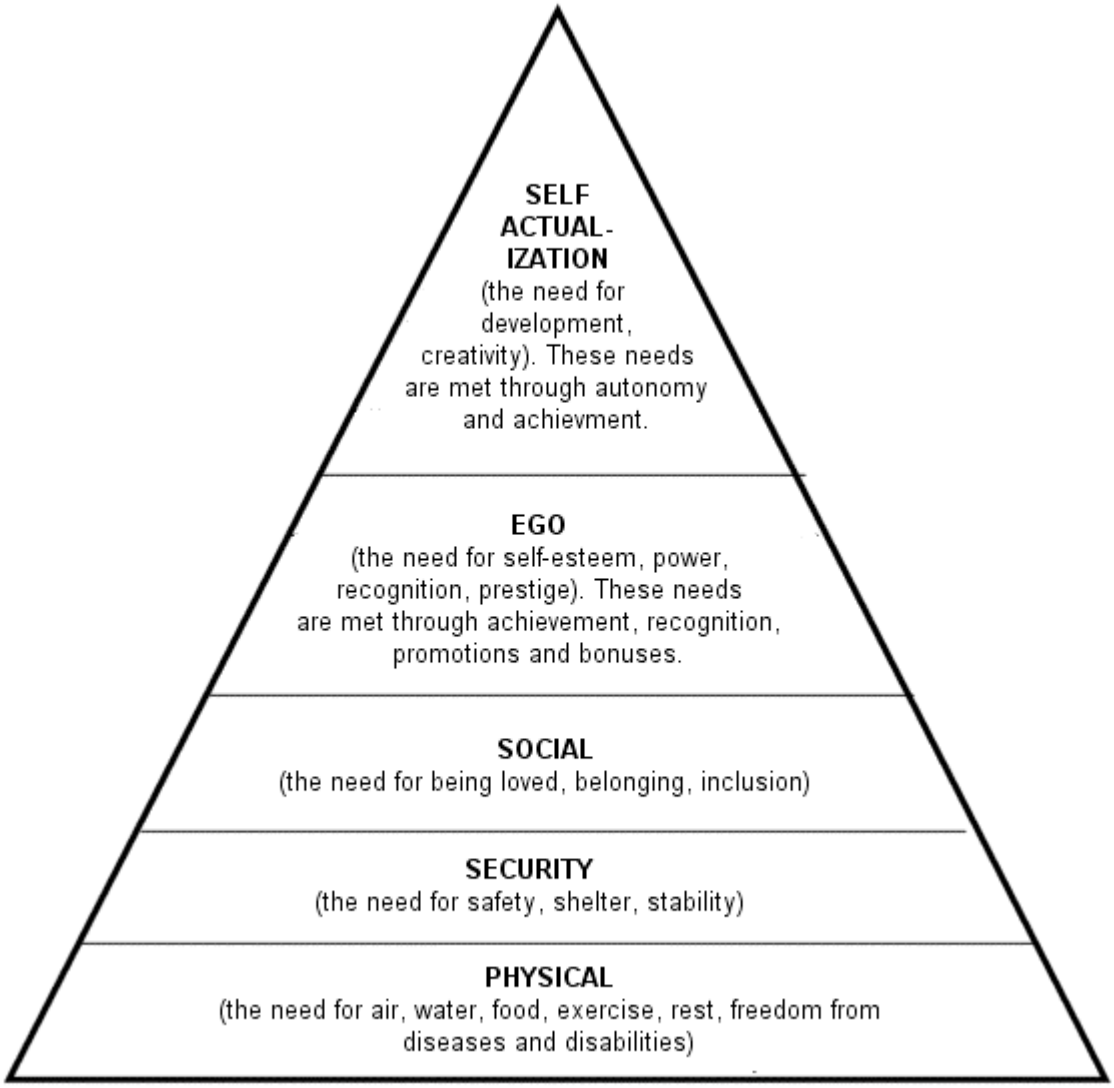
Included in the model above is the triple bottom line. The triple bottom line is a theoretical device that depicts three areas that need to be measured both in the firm and across the supply chain. The triple bottom line consists of the natural environment, society or social responsibility, and economic performance. The athletic footwear, apparel and equipment company, Nike, uses the triple bottom line and titles the various circles depicted above as "planet," "people," and "profits." The firm needs to consider its performance in each of these areas and not just focus on one of them.

It is clear that economic performance is the primary focus of most companies. Milton Friedman said that the primary social responsibility of business is to increase its profits. Clearly, a company cannot stay in business very long without profitability. However, short-term profitability should not be the only measuring stick applied to a firm or its supply chain partners. To achieve longevity it must also do the "right thing." The firm needs to operate with respect to the environment and natural resources. But, thinking environmentally and using fewer resources can also lower costs in both the short run and long-run. So, it is not enough to just think about economic performance or the environment, it is much better to think about the junction of both.

The same idea holds true for the "society" or social responsibility. The firm needs to consider issues such as their role in the community or how they develop employees as important to their future success. However, go these efforts cannot come without you some regard for the impact on profitability in the long-term. Perhaps, the firm and its partners across the supply chain should look at you the triple bottom line model as similar to Maslow's Hierarchy of Needs. In 1943, psychologist Abraham Maslow developed the concept of the hierarchy of needs in a paper "A Theory of Human Motivation" (Source: Maslow, A. H. (1943). A Theory of Human Motivation, Psychological Review 50, 370-96.) THis hierarchy is depicted in Figure 2.

Figure 2

Maslow's Hierarchy of Needs



Maslow’s hierarchy of needs is often displayed as a pyramid. The lowest levels of the pyramid are made up of the most basic needs, while the more complex needs are located at the top of the pyramid. Maslow's theory suggested that humans need to fulfill basic needs before moving on to other needs. This is similar to the triple bottom line. For a firm to survive it must generate revenues in excess of costs. But, once it can do that, it should consider its impact on "people" and the "planet."

The best spot for a company to operate from is in the nexus of Figure 1. The firm should try to move towards the intersection of environmental or green performance, society or social responsibility, and good economic performance. It is at this nexus of that the firm and its supply chain will be best positioned to thrive in the long term.

Achieving success in each of the portions of the triple bottom line is enhanced the parts of the Sustainable Supply Chain model we call "enablers." These enablers are:

1. Strategy
2. Organizational Culture
3. Transparency
4. Risk Management

Each of these enablers are discussed briefly below.

Strategy

Sustainability must be part of an integrated strategy. It is preferable to include sustainability at the top level of strategy development which will then be infused throughout the corporation, and hopefully, throughout the supply chain. In the U.S., the large retailer, Walmart, is attempting to integrate environental and social responsibiity issues into all areas of the company. Walmart intends to infuse a regards for the environment and social responsibility into all parts of the company and its suppliers. They plan to achieve "zero waste" from all operations before 2025. While it remains to be see if they can achieve this lofty goal, it is currently a large part of their corporate strategy.

The group chief executive of one of their suppliers, Patrick Cescau of Unilever said, "We have come to a point now where this agenda of sustainability and social responsibility is not only central to business strategy but will increasingly become a critical driver of business growth...how well and how quickly businesses respond to this agenda will determine which companies succeed and which will fail in the next few decades." (Marc J. Epstein, (2008) *Making Sustainability Work: Best Practices in Managing and Measuring Corporate Social, Environmental and Economic Impacts*, Greenleaf Publishing Limited, Sheffield, UK) Dr. Donald J. Bowersox, emeritus professor at Michigan State University, coined the term "operational continuity" as a way to

describe the concept of strategic sustainability. The goal of any company is to attain longevity. operational continuity is the goal of longevity.

In the *New Age of Carbon (no link: http://www.amrresearch.com/content/View.aspx?compURI=tcm:7-43922&title=The%20New%20Age%20of%20Carbon)*, Dr. Stephen Stokes and Kevin O'Marah of AMR Research suggest that firms need to build a portfolio approach. Dr. Stokes advocates addressing the "Organizational Metabolism" of the firm as part of its strategy. They write "There is no silver bullet for emission reduction or energy efficiency. Leading companies like Coca-Cola, Procter & Gamble, Dell, and Dow Chemical are adopting approaches that integrate a range of actions." Source: Stephen Stokes, Kevin O'Marah, (Monday, June 29, 2009) *The New Age of Carbon*, AMR Research, Boston, MA. The reason why a portfolio approach makes sense is that any measurement should not be considered only by itself. Instead, the firm needs to take an integrated approach to the total costs and benefits of environmental or socially repsonsibile actions. This idea is very similar to the «Total Cost Concept» that was developed in the logistics field over 40 years ago.

A firm may ask itself the question, "How do we choose between sustainability and profitability?" That is the wrong question. Today, companies have to choose both options - they are not separate. It is like asking "Should my company choose quality or profitability?" At some point, profitability is dependent on quality. A reasonable strategic question might be: "How do we build in affordable sustainability that will best enhance the lasting profitability of this firm and its critical supply chains?"

A sustainable supply-chain strategy is not just taking long-term view of the firm and its supply chain, is also working to increase productivity within the supply chain. This productivity should not come at the expense of the environment or key stakeholders such as employees and suppliers. Productivity is doing more with less. It does not have to be taking advantage of powerless entities in the supply chain. It can be reducing costs or resources needed to operate.

Organizational Culture

The culture of sustainability within the firm and across the supply chain should be deeply ingrained. An historic example of sustainable supply-chain management deeply embedded into a culture is Henry

Ford and the Ford Motor Company. When Mr. Ford first developed his amazing manufacturing facilities in River Rouge, Michigan, he built in many sustainable mechanisms. In 1919, he not only built a state-of-the-art assembly line for Model T automobiles, he designed the industrial park with a "zero waste" philosophy in mind. In addition to the assembly plant, he also built a steel plant where raw iron ore would come in and very quickly be turned into steel, which next door would become an automobile. He brought his friend Harvey Firestone into the park to fabricate tires out of Brazilian rubber. The boxes Ford specified for receipt of parts were designed so that the wood used in making the boxes could be reused for the floorboards in the car. Mr. Ford use the leftover wood to start up a new business Kingsford Charcoal with his brother-in-law. As much as possible, he worked to reduce waste. Many years later, his River Rouge plants became the inspiration for Taichi Ohno of Toyota when Mr. Ohno was developing the Toyota production method. In the case of both Ford and Toyota, the dry being idea built into the culture was to reduce waste. That idea has always been part of Toyota's culture, and is once again a key tenet of the Ford Motor Company sustainable philosophy. In the days of the model T, three days after receiving iron or, rubber and assorted parts, a finished automobile would be produced. While that achievement would be difficult to replicate, the River Rouge Ford plant is still operating in a sustainable fashion. It is a good example of an organizational culture embracing the sustainability idea.

That idea of sustainability can resonate through the supply chain. The culture that Mr. Ford built became adopted by Firestone. Today, if a customer emphasizes careful use of resources and embraces its stakeholders, that can deeply effect its suppliers. As one Fortune 500 purchasing managers said "I can do more to improve sustainability with one purchase order than 1,000 protestors can do with all their efforts."

Transparency

A third enabler of the sustainable supply chain is transparency. Consumers from around the world are demanding that the companies they purchase from embrace sustainability. As implied above, purchasing managers are building in sustainability requirements into their Requests For Proposal. Pressure from consumers and other stakeholders such as suppliers, customers, and downstream channel partners, NGOs, governmental bodies, and trade associations is increasing increases, firms have had to open up their operations to greater public scrutiny. Increasingly, stakeholders demand that

corporate practices up and down the supply chain be transparent and easily visible. In the long run, it is simpler and cheaper for a company to operate with transparency concerning economic, social, and environmental issues. The impetus for transparency is driven by stakeholder requirements that firms embedded in any supply chain become easier to understand. Greater transparency allows stakeholders to see further along an organization's supply chain. A supply chain where information moves transparently up and down the supply chain facilitates coordination and management of manufacturing and logistical activities.

Transparency into supply operations can help managers up and down the supply to avoid wrongdoing that thrives in dark corners of the supply chain. Illuminating blind spots in the supply chain can reduce risk and smooth out bottlenecks. Maintaining the secrecy of corporate wrongdoings has become very difficult and extremely risky.

Transparency includes not only reporting to stakeholders, but actively engaging them as well. Firms utilize stakeholder feedback to modify operations and make them more sustainable. This input improves supply chain processes. Transparency can be improved through vertical coordination across a supply chain as well as horizontal coordination across networks. For example common auditing procedures adopted by an industry coalition can allow a single, effective supplier sustainability audit to be performed, which increases transparency and supplier sustainability while lowering transaction costs for both the supplier and the multiple buying organizations that might do business with that supplier. As noted by Nike, "Transparency across the industry of our respective contract factories will promote greater collaboration, sharing of monitoring information and reinforcement of remediation expectations across the industry. This could also decrease the burden on suppliers dealing with contradictory audit requirements by multiple buyers," (Nike Corporate Social Responsibility Report 2004, p. 29).

Risk Management

In a recent study, IBM found risk management to be the second greatest threat to global supply chains after supply chain visibility. (IBM Global Services, 2009) One could look at the entoe discipline of supply chain management in a risk management context. An argument could be made that supply chain visibility is actually part of a risk management strategy. Part of a good risk management

strategy is to reduce "blind spots" in the supply chain. Avoiding supply disruptions is part of a risk management strategy.

Risk management also includes contingency planning for supply-chain events such as product recalls, or planning end-of-life product disposition. In United States, several states are developing "e-waste" laws which govern end-of-life disposition for consumer electronic products. These laws which carry large penalties for inappropriate disposal of items such as computers or monitors are currently being written and refined. Companies are trying to adjust the air reverse logistics operations to ameliorate the increased risk of improper disposal.

Reducing "Headline Risk" is another part of a risk management strategy. If a firm or one of its suppliers operates unsafely and employees are hurt or killed, that oversight reflects negatively on all of the entities up and down the supply chain. The customer must examine its own operations and the rest of its supply chain to make certain that operations are safe, business transactions are ethical and beyond reproach, and they are not going to read about themselves having a disastrous moral lapse in the newspaper.

in 1989, one of Nike suppliers was reportedly using children in one of its manufacturing plants. Almighty itself was not guilty, the negative publicity and public review lasted a very long time. Nike could argue that they were not guilty. However, their arguments resounded hollowly because a member of their supply chain was acting improperly. Following the incident, they changed the way they managed the supply base so that they can make certain they never suffered a similar embarrassment.

As these words are being written, commentators from all over the world are picking apart Toyota for their problems with the braking system in some of their automobiles. For Toyota, the headline risk they are suffering is unbearable, and has a clear negative impact on their sales and profitability. They have gone from being the automobile company most respected around the world, to something much less than that.

Another part of risk management is agility. Agility in this context means responding quickly and confidently when a serious problem arises such as the difficulties Toyota is having with car braking systems. The firm and its suppliers needs to imbue part of the

operation with agility. Quick response to a serious problem can head off a deadly crisis..

2008 and 2009 were the toughest years ever for the economy in many parts of the world. Demand at many firms is off by 40% or more. Strangely, this recession has moved faster around the globe than any previous downturn. Ironically, the global supply chain for products, services and financial flows has facilitated the rapidly spreading recession. Supply chain risk management strategies are critical in the firm's success.

Conclusion

There is much more work to be done around the concept of sustainability and the sustainable supply chain. Like quality, we believe that sustainability is not just a short-term fad. Companies in Brazil and around the world must learn about what sustainability concept really means, and embrace it for themselves and their supply chain partners. It is not something that a successful firm will be able to ignore for very long. Increasingly, companies are going to be asked to be sustainable and to incorporate sustainable ideas up and down their supply chain.

