SUPPLY CHAIN SUSTAINABILITY
UNCOVERING THE TRIPLE BOTTOM LINE
Sustainability practices are evolving and becoming more integrated with other traditional supply chain and operations processes. APICS wanted to learn more about sustainability practices at organizations and in August and September 2011, invited more than 9,000 supply chain professionals to share their perspectives and insights. APICS conducted a survey to investigate the differing levels of experience and maturity that go into sustainability practices, and what those practices bring to organizations. The survey results reflect an approximate four percent margin of error at a 95 percent confidence level.

This report was developed by APICS Supply Chain Council, an organization that advances supply chain and operations management and innovation through research, education 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. For more information, visit apicsscc.org.

APICS SCC research reports are based on practitioner surveys that explore trending topics in supply chain and operations management. They include survey results, analysis, tips and best practices to keep you and your organization informed of insights and innovations in supply chain and operations management.
TABLE OF CONTENTS

Executive Summary 5

APICS Research 20

Additional Resources
These programs and publications provide resources and detailed information about the topic.

APICS Risk Management Certificate Program
apics.org/risk

A full version of this report is available free to APICS Supply Chain Council affiliates and sponsors and APICS members. Log in to the website to access additional analysis and insights on this topic. If you aren’t an APICS member, join APICS today. Nonmembers may also purchase the full report.

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SUPPLY CHAIN SUSTAINABILITY
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Sustainability:

The APICS Dictionary, 14th Edition, defines sustainability as “activities that provide present benefit without compromising the needs of future generations.”
EXECUTIVE SUMMARY

In 2011, APICS conducted a survey of supply chain and operations management professionals around the world to investigate the differing levels of experience and maturity that go into sustainability practices, and what those practices bring to organizations.

The survey revealed the following sustainability trends:

- The concept of sustainability is not consistent from senior management to the shop floor. A senior manager views sustainability in a strategic way, considering issues such as organizational planning, alignment, goals, options and priorities. On the shop floor, it is more difficult to distinguish sustainability from the day-to-day tactics and key performance indicators that define ongoing tasks.

- Successful supply chain sustainability requires good supply chain strategy and the capability to implement it.

- Triple bottom line supply chain sustainability, or TBL, is a measure of sustainability that includes social, environmental and financial performance measures—people, planet and profit—and helps ensure that there is a long-term supply of people, natural resources and profit.

- Triple bottom line sustainability tends to see differences in priority, but most often people and profitably are placed ahead of planet.

- The most essential ingredient for success is senior management leadership. Senior managers have a powerful influence on the adoption rate of supply chain sustainability practices, the method of practice, and how effectively the practice is integrated in the supply chain and across the organization.

Sustainability is Evolving

Sustainability is becoming better defined vertically within an organization, and better defined horizontally in terms of metrics, measurements and standards globally across industries. Sustainability is becoming more integrated with other traditional supply chain operations processes due to related innovation, new technologies, new processes and stakeholder preferences. Lean management and sustainability are a natural combination, but there will be further innovation in the way service standards or supplier performance integrates with sustainability.
Advancing Sustainability at Your Organization

To advance sustainability at your organization, take the following steps:

- Clarify, define and execute a consistent definition of sustainability that spans all employee levels, from senior management to the shop floor.

- Align supply chain strategy and tactics to support the business unit or organizational strategy in terms of sustainability, including long-term decisions, measurements, investments and process improvements.

- Advance supply chain maturity practice through continuous improvement. Prioritize the most impactful changes, investments, metrics and standards when making decisions, and make sure sustainability remains as visible as it needs to be across the supply chain.

Uncovering the Triple Bottom Line

More and more, business people are talking about something called triple bottom line sustainability, or TBL, a framework comprised of three pillars: social, environmental and financial, or the three Ps: people, profit and planet. Corporate social responsibility is colliding with government regulation and customer desire and pressing decision makers to consider how their supply chain actions influence these three areas. As the United Nations Secretary-General Ban Ki-moon said, “We can and must shape a future where robust markets, sustainable development and a healthy planet become the new status quo.”

“We can and must shape a future where robust markets, sustainable development and a healthy planet become the new status quo.”

U.N. Secretary-General Ban Ki-moon

The practice of supply chain sustainability—incorporating triple bottom line results into supply chain decisions—ultimately relies on the values of supply chain practitioners, their organizations, and their supply chains to define and develop specific sustainable activities. Increasingly, well-defined standards, industry best practices and published guidance are combining to advance supply chain sustainability around the world.
Sustaining and Maximizing Your Supply Chain

The APICS Dictionary, 14th Edition, defines sustainability as “activities that provide present benefit without compromising the needs of future generations.” Sometimes the idea of sustainability is expressed as, “Take care of yourself, take care of others, and take care of the planet.”

In practice, supply chain sustainability interacts with almost every supply chain component, whether in simple or complex supply chains. Supply chain sustainability practice should be a consideration in decisions involving strategy, tactics, goals, processes, trade-offs and outcomes in all levels of supply chain management. In fact, senior management is by far the best single influence to supply chain sustainability practice. The customer is the second largest influence, and employees are the third largest influence. Triple bottom line sustainability may intersect with risk or strategy practice in addressing long-term uncertainty in the availability of people, markets and resources necessary for lasting business success.

Supply chain sustainability is still a relatively new idea. Variation in levels of adoption, maturity, metrics and management differ by nation, industry and company. Within supply chains, partner relationships are often insufficiently integrated for optimal interaction. Nonetheless, supply chains designed to combine rising profit and falling customer costs, while resulting in higher living standards and lower environmental costs, are creating new best practices.

In the past, the desirable outcomes of more profit and higher living standards for people (based on falling costs or more availability of goods and services) sometimes came at the expense of rising costs to the planet or in rising costs to people in other ways (inadequate employee standards or customer service, for example). That is not an ideal bargain. To achieve rising profit and higher living standards, and at the same time reduce environmental and customer costs, requires excellence in supply chain and operations management practice. In other words, it takes the very best of supply chain practice to advance people, planet and profit.
The Sustainability Push
Survey respondents revealed that the motivations for incorporating supply chain sustainability practices into an organization’s overall strategy are increasing. These motivating factors include:

- Brand management and reputation
- Cost reduction
- Revenue growth
- Customer demand
- Employee recruitment
- Government regulation
- Investor or shareholder expectations

Respondent organizations were compared by sustainable business practices implemented for different lengths of time. The study uncovered one essential ingredient for success: senior management leadership. Senior managers influence the adoption rate of supply chain sustainability practice, the method of practice, and organizational and related supply chain strategy integration. Senior managers also provide vital leadership through such means as business values, mission statements and organizational strategy. Organizations that have practiced sustainability longer tend to identify these areas as most critical when compared to other organizations with less sustainability experience.

However, gaps may develop between senior managers and supply chain professionals, and these disparities may inhibit supply chain sustainability maturity. The reason is that individual business units sometimes are most responsible for adherence to sustainability policy compared to individuals, teams or departments.
Consider the following table, which summarizes the responses from supply chain practitioners regarding the most and least critical elements to achieve maturity in supply chain sustainability.

<table>
<thead>
<tr>
<th></th>
<th>Early adopter</th>
<th>Middle adopter</th>
<th>Recent adopter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Senior management leadership</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Most critical</td>
<td>85.5%</td>
<td>73.6%</td>
<td>65.9%</td>
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<td>13%</td>
<td>20.9%</td>
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<td>2.2%</td>
</tr>
<tr>
<td><strong>Business values and mission statement</strong></td>
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<td>Most critical</td>
<td>72.9%</td>
<td>65.2%</td>
<td>46.3%</td>
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<td>22.9%</td>
<td>31.3%</td>
<td>42.6%</td>
</tr>
<tr>
<td>Least critical</td>
<td>4.3%</td>
<td>1.8%</td>
<td>8.8%</td>
</tr>
<tr>
<td><strong>Organizational sustainability strategies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most critical</td>
<td>71.2%</td>
<td>57.5%</td>
<td>48.9%</td>
</tr>
<tr>
<td>Somewhat critical</td>
<td>24.7%</td>
<td>38.7%</td>
<td>44.4%</td>
</tr>
<tr>
<td>Least critical</td>
<td>4.1%</td>
<td>1.9%</td>
<td>5.38%</td>
</tr>
</tbody>
</table>
Creating Links

Triple bottom line sustainability suggests that people, planet and profit are the ultimate supply chain considerations. Of course, people and the planet are both the sources and consumers of produced goods and services. In supply chain terms, production and consumption result in goods and services that provide short- and long-term profitability and prosperity. Therefore, the supply chain and its operations management intersect with triple bottom line standards.

Consider the following definitions from the APICS Dictionary, 14th edition:

**Value stream:** the processes of creating, producing and delivering a good or service to the market. For a good, the value stream encompasses the raw material supplier, the manufacture and assembly of the good, and the distribution network. For a service, the value stream consists of suppliers, support personnel and technology, the service “producer” and the distribution channel. The value stream may be controlled by a single business or a network of several businesses.

**Value stream mapping:** Drawing the current production process/flow and then attempting to draw the most effective production process or flow.

Consider the following: If supply chain sustainability adds new considerations, does the map of the supply chain consider the value of sustainability in determining the effective production process or flow?

**Value chain:** The functions within a company that add value to the goods or services that the organization sells to customers and for which it receives payment.

Consider the following: Are the people and planet resources included in the definition of value chain? Does the operation of the organization and its supply chain add value to people and planet resources in terms of sustainable activity? Can this integration lead to sustainable profit performance?

**Value perspective:** A quality perspective that holds that quality must be judged, in part, by how well the characteristics of a particular product or service align with the needs of a specific user.

Consider the following: If society itself was defined as a user, do the characteristics of the product or service align to the sustainable needs of society?
**Value engineering or analysis:** A disciplined approach to the elimination of waste from products or processes through an investigative process that focuses on the functions to be performed and whether such functions add value to the good or service.

*Consider the following: Does a current value stream’s transformation of raw materials, human skills, distribution to market and consumption miss opportunities to eliminate waste or add value? Can suitable alternatives produce better results?*

How people, planet and profit integrate as active considerations in the supply chain depends on the values demonstrated by an organization and its supply chain. These values stem from the organization’s mission statement, strategy, management, owners, partners and customers. An organization’s values create expectations, goals, tactics, roles and functions that demonstrate strategy and tactics on an ongoing basis.

**Defining Roles**

Sustainability strategy calls for the identification of an upper limit of investment (where efforts become unprofitable) and a lower limit (where efforts are ultimately unprofitable and harmful). However, perspectives on these ranges may vary across an organization or supply chain.

An organization or business unit strategy identifies a successful compromise between upper and lower limits that balances a number of things, including customer, partner and stakeholder expectations and values. In addition, the organization’s mission statement and its subordinate strategies—including supply chain, marketing and new product development tactics—should be taken into consideration.

Functional supply chain and operations managers who have been at the forefront of lean management also see themselves as practicing sustainability. Where lean and sustainability are viewed as synonymous, supply chain operations managers are more likely to report longer involvement in sustainability than senior manager management counterparts. Therefore, sustainability is not always a top-down initiative. It can be driven by practice as opposed to strategy.
Different levels of management create inherent differences in perspective. Senior managers tend to rank the people part of the triple bottom line highest because senior managers must accomplish their tasks primarily through strategic engagement of people. In contrast, a functional manager accomplishes his or her tasks through more tactical engagement of people, as well as through processes -sustainability practice among all stakeholders.

Supply Chain Strategy and Risk Management
Supply chain sustainability depends on the strength of an organization’s overall strategy and supply chain strategy. How well does supply chain strategy assist organizational strategy? Do tactics, plans, goals and priorities align to supply chain and organizational strategy?

Sustainability and risk management are topics of growing maturity. Supply chain sustainability and risk management bond when viewed from a long-range perspective. Triple bottom line sustainability is seen as a form of long-term risk reduction, helping to ensure that an organization and its supply chain have a long-term supply of people, profit and resources (planet) with which to operate many years into the future.

Supply chain risk is growing in maturity and strategic importance because of the increasing view that a risk-optimized supply chain will capture market share from less optimized competitors when experiencing the same risk event. A risk-optimized supply chain balances risk and reward. Supply chain sustainability becomes a risk-reward consideration. In addition, as sustainability practices seek more lean and less resource-intensive operations, risk reduction gained by reduced use of resources is a shared goal of supply chain risk and sustainability.
Practical Policies and Procedures
The three aspects of the triple bottom line can be measured concretely. People, profit and planet tend to be the order of importance and policy in triple bottom line measurements:

- Sustainability with respect to people can be measured by the reduction in lost workdays due to injury or illness; safety improvements made or reduction and safety fines or warnings issued; education options and opportunities; “upskilling” and mentoring offered.

- Profit sustainability can be measured using level of efficiency; utilization of assets and lean tactics; tangible codestiny investment and relationship development in supply chain partnership; charitable or in-kind contributions for joint benefit of an organization; and people or planet per unit, quarter, fixed amount or profit.

- Planet sustainability can be measured by the energy source and amount of energy used; water use and amount; recycling, treating and reprocessing of natural resources; and standards attained.

While there continues to be differences of opinion regarding how to measure the impact of sustainable business practices, in addition to the above there should be:

- A defined level of transparency in the measurement and reporting of sustainable practices

- Improvements in supply chain relationship in order to enhance shared sustainable values

- A level of integration among people, planet and profit development in organizational strategic goals and priorities

- An early-middle-late adopter business culture in terms of sustainable practices

It may seem like a challenge to define and collect hard and soft triple bottom line sustainability measurements. Measurements are difficult because wide variation exists in what to measure and how measurement is expressed as a baseline over time. Care is necessary to evaluate all consequences, as improvements in one area may bring undesirable outcomes in other areas. One way to simplify this is measurement convergence.
If your organization practices Lean Six Sigma operation, sales and operations planning (S&OP), supply chain risk, supply chain strategy, and data collection and reporting for regulatory compliance, it may already be collecting useful sustainability measurements in reports or as part of key performance indicators. It is important to determine the opportunity to converge or align measurement collection and reporting with triple bottom line sustainability. Where there are missing sustainability measurements or data, you may find that an existing person or process would capture and report missing data as an improvement in its own practice.

In addition, traditional business reports such as financial reporting may be able to create a report category or database that covers spending on anticorruption efforts, safety, education, energy and charitable donations as sustainability-related expenses. Human resources departments also may be able to create or add reports in terms of people measurements. Other groups or departments with useful sustainability-related data may include logistics, distribution, customer service, maintenance, repair and overhaul (maintenance, repair and operating), and research. Codestiny works across the supply chain. The triple bottom line becomes a shared value and strategy among all supply chain partners.

**Sustainability Best Practices**

As with other supply chain practices (such as lean), triple bottom line supply chain sustainability is a journey. The journey advances toward increasing core competencies, innovation, continuous improvement and shared best practices. People, planet and profit stand as the key considerations for success, an ideology that aligns with APICS’ formal definition of sustainability.

Despite challenges and complexities, triple bottom line supply chain practice leads to progress. Creating rising profit and higher quality standards along with falling customer and environmental costs requires the combined efforts of all stakeholders, starting with senior management and continuing through every level of the supply chain.

Evaluate sustainability at your organization by considering the following best practices:

**Examine strategy and execution capability:** Sustainability is a component of many business unit strategies, but like all strategy, it is challenging to execute. Supply chain strategy must execute business-unit strategy. Ensure that the execution of supply chain strategy is improving.
See sustainability horizontally: Examine end-to-end mapping and management of the supply chain. Ensure mapping and partner relationships involve effective shared standards, measurements, goals and priorities. These really matter to sustainability. Sustainability has many nonstandard elements involving each supply chain partner and involving people, planet and profit.

See sustainability vertically: Consider “top to shop”—senior management and the shop floor do not implement sustainability in the same way. The closer one moves to the shop floor, the less clear sustainability becomes. The reason is that the shop floor is the domain of the tactical. Processes, functions, KPIs, repeated actions and orders tend to be well defined and optimized. At the senior management level, sustainability is strategic. It involves planning, alignment, goals, options and prioritizing. This is a very different environment than the tactical floor. Connect shop floor tactics to sustainable strategy. Make the connection clear and as shop tactics evolve and improve, they will incorporate the strategies of sustainability.

Improve customer service: People, planet and profit are indeed consumers of professional supply chain and operations management expertise and focus. Serve them with the same strategic best practices required of good customer service. Consider proactive support, communication and focus as a priority with stakeholders who represent people, profit and planet, such as employees, customers, communities, finance staff, shareholders, public officials and more. This strategy means more than simply performing a sustainability-friendly task in isolation, such as reducing energy used by one percent. It suggests the tasks be communicated and integrated as value-added support for stakeholders and their goals.

Innovate: Sustainability demands innovation. While big innovations make news, don’t overlook the small innovations. At this stage of supply chain sustainability practice, even a small idea can grow into an entire family of innovations. Even a small idea can become part of a broader package that combines to deliver sustainable goals. Even the smallest innovation or idea is part of our chain of practice and improvement. Manufacturing has long relied on small continuous innovation implemented over the years to add up to stunning advances.
Global Sustainability Resources
A variety of resources support the practice of supply chain sustainability, with guidance available across all levels of senior management and supply chain management. Three examples are:

- United Nations (UN) Global Compact
- International Organization for Standardization (ISO) 26000 and ISO 14000, which belong to the ISO’s family of management and leadership standards
- Global Reporting Initiative (GRI)

UN Global Compact
The UN’s 10 principles, established in 2001, define a commonly adopted set of core values among global enterprise organizations. The UN Global Compact asks companies to embrace, support and enact, within their sphere of influence, a set of core values in the areas of human rights, labor standards, the environment and anticorruption. These include the following categories and principles:

- Human Rights
  - Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights, and
  - Principle 2: Make sure that they are not complicit in human rights abuses.

- Labor
  - Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
  - Principle 4: The elimination of all forms of forced and compulsory labor;
  - Principle 5: The effective abolition of child labor; and
  - Principle 6: The elimination of discrimination in respect of employment and occupation.

- Environment
  - Principle 7: Businesses should support a precautionary approach to environmental challenges;
- Principle 8: Undertake initiatives to promote greater environmental responsibility; and

- Principle 9: Encourage the development and diffusion of environmentally friendly technologies.

**Anticorruption**

- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

Corporate sustainability is defined by the UN Global Compact as “a company’s delivery of long-term value in financial, social, environmental and ethical terms.” In conjunction with the UN Global Compact, the UN proposes its “Blueprint for Corporate Sustainable Leadership,” which target senior management and consists of the following broad steps:

- Implement the 10 principles into strategies and operations

- Take action in support of broader UN goals and issues

- Engage with the UN Global Compact

**ISO 26000 and ISO 14000**

ISO 26000:2010 (guidance on social respect responsibility) and ISO 14000 (environmental management) belong to the ISO’s family of management and leadership standards. The ISO 26000 standard, launched in November 2010, offers guidance on social responsibility practices. According to the Corporate Sustainability and Reputation website csridentity.com, ISO 26000 is important because “sustainable businesses for organizations means not only providing products and services that satisfy the customer, and doing so without jeopardizing the environment, but also operating in a socially responsible manner.”

ISO 26000 does not define requirements; rather, it provides voluntary guidance, and therefore is not certifiable. Nonetheless, ISO followed its standards development processes involving global stakeholders and complex issues in order to develop direction in this area.

The ISO website states that ISO 26000:2010 “provides harmonized, globally relevant guidance for private and public sector organizations of all types, based on international consensus among expert representatives of the main stakeholder groups, and so encourage the implementation of best practice
in social responsibility worldwide." ISO also states that this standard "draws upon best practice developed by existing public and private sector social responsibility initiatives."

The ISO 14000 family of standards seeks to minimize harmful effects on the environment by an organization’s activities and to achieve continual improvement of its environmental performance. The ISO 14000 series addresses various aspects of environmental management and offers a certifiable standard, where an authorized, independent certifying body issues a certificate or written assurance confirming that an organization’s management system conforms to the requirements.

ISO 14001:2004 and ISO 14004:2004 cover environmental management systems (EMS). ISO 14001:2004 provides the requirements for an EMS, while ISO 14004:2004 furnishes EMS guidelines. Other standards and guidelines in the family "address specific environmental aspects including labeling, performance valuation, lifecycle analysis, communication and auditing." ISO 14000 applies to a range of organizations and maturity levels by encouraging organizational commitment to regulatory compliance and continuous improvement, instead of specifying certain levels of environmental performance.

Regarding the 14000 series, the ISO website states:

- ISO 14001:2004 gives the generic requirements for an environmental management system. The underlying philosophy is that whatever the organization’s activity, the requirements of an effective EMS are the same, which has the effect of “establishing a common reference for communicating about environmental management issues between organizations and their customers, regulators, the public and other stakeholders.”

- Because ISO 4001:2004 does not lay down levels of environmental performance, the standard can be implemented by a wide variety of organizations, whatever their current level of environmental maturity. However, a commitment to compliance with applicable environmental legislation and regulations is required, along with a commitment to continual improvement for which the EMS provides the framework.
**GRI**

The GRI is a network-based organization that produces a comprehensive sustainability reporting framework that is widely used around the world. Based in Amsterdam, GRI is a not-for-profit organization supported by grants from government, foundations and corporate sponsors. It has strategic partnerships with the UN Global Compact, ISO (in development of ISO 26000), and the Organization for Economic Cooperation and Development.

The reporting framework sets out the principles and performance indicators that organizations can use to measure and report their economic, environmental and social performance. According to globalreporting.org, “the framework enables all organizations to measure and report their economic, environmental, social and governance performance—the four key areas of sustainability.”
APICS SUPPLY CHAIN COUNCIL RESEARCH

For more insider information explore APICS research topics at apics.org/research.

Reports are available on:

- Chronic disruption
- Project management
- Remanufacturing
- Risk management
- Supply chain strategy
- And other topics

If you have comments or questions, contact askapics@apics.org.
ABOUT APICS SUPPLY CHAIN COUNCIL

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