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## Sustainability

Using sustainability to drive business innovation and growth

**BY PETER CAPOZUCCA AND WILLIAM SARNI**  
**> ILLUSTRATION BY JON KRAUSE**

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# Sustainability

## 2.0

Using sustainability to drive business innovation and growth

BY [PETER CAPOZUCCA](#) AND [WILLIAM SARNI](#) > ILLUSTRATION BY [JON KRAUSE](#)

**F**or a useful perspective on how many leading organizations are approaching sustainability as a core business strategy, think back to when the World Wide Web was new. Initially, organizations established a website, providing static content and little to no interaction with their customers or employees. It was a trendy thing to do. As the Web evolved, so did organizations' view of the technology. They adopted a strategy that integrated applications and practices to foster greater collaboration and information sharing among employees and customers. Now, the Web is transforming how organizations conduct business, ranging from improving efficiency to creating new, innovative products and services—all with an eye toward improving the bottom line.

Adoption of sustainability may be following a similar path.

At first, organizations were just trying to be good corporate citizens, focusing on energy conservation and offering “green” products. It felt good to do, but it wasn’t central to the business. More recently, many business leaders have begun to view sustainability as a more integral component of their business strategy, identifying opportunities and risks as a way to enhance revenue, margins and brand value. Organizations with a broader, more strategic plan for sustainability will not only drive innovation across their enterprise—including transforming key processes—but may also influence what their customers want and how their suppliers operate.

## UNDERSTANDING INNOVATION

Sustainability assumes greater relevance in the context of innovation. While it is valid to discuss sustainability as an important driver in value creation, differentiation of products and services will ultimately play a greater role in shaping a company’s prospects in the market. Increasingly, that differentiation is the product of sustainability-driven innovation.

Efforts to drive innovation can either be sustaining, providing an incremental advantage within the current competitive landscape, or they can be disruptive. (Perhaps confusingly for readers, our topic of *sustainability-driven* innovation is a different concept than *sustaining* innovation, which, along with disruptive innovation, is a category defined by Clayton Christensen.<sup>1)</sup> Both types of innovation are important because they add value to the company, but disruptive innovation opens up new roads that organizations may not have considered. Either type may be driven by sustainability concerns.

Because innovation in business is generally intended to confer an advantage of some sort, it can be useful to view innovation in terms of those advantages—foremost among which are cost leadership, quality/performance and speed to market.

Some examples:

- **Cost leadership:** Calling cards are an example of a sustaining innovation that increased the convenience associated with making long distance or international calls. However, Internet telephony is a disruptive innovation that is redefining the cost equation for the entire telecommunications industry.
- **Quality/performance:** Compact fluorescent light bulbs (CFLs) are an incremental innovation that use less energy than traditional light bulbs. But new light emitting diode (LED) bulbs are a more significant sustaining innovation. They are even more energy efficient than CFLs, deliver higher-quality illumination, last much longer, are cooler to the touch and contain no mercury.

- *Speed to market:* DVD-by-mail was disruptive, increasing competitive pressures on local video stores through the creation of a new channel (or, perhaps more accurately, repurposing a channel that dates back to the 1840s). Now on-demand streaming video is giving DVD-by-mail a taste of its own medicine, being disruptive both to DVD-by-mail and the video store models.

## SUSTAINABILITY-DRIVEN INNOVATION

In many cases, sustainability can be a game changer. Sustainability can drive innovation by introducing *new design constraints* that shape how key resources—energy, carbon, water, materials and waste—are used in products and processes. It can also suggest areas where innovation can pay off especially well. These five resources are ubiquitous throughout an organization’s supply chain, and the potential to boost efficiency and cut costs across these resources is significant. In the past they often were not treated as primary design constraints. That’s now changing, and how a company attempts to overcome these new design constraints, delivering similar levels of performance and cost at lower levels of resource usage, may be key to its prospects. Choices made with regard to these constraints may well determine whether a company is pursuing a disruptive or sustaining (again, using Christenson’s categories) path in regard to innovation.

For instance, major beverage bottlers require about five ounces of crude oil—a significant cost component—to manufacture a single 16-ounce plastic water bottle. Of course, crude oil is a major risk factor in production cost control, subject to price volatility due to the turmoil that often surrounds oil-producing countries. Similarly, its production, transport and use entails some level of environmental risk. With this in mind, one major bottled water manufacturer was able to decrease the amount of plastic in each of its bottles by approximately 40 percent. By mitigating a key supply chain risk factor, the manufacturer realized significant cost savings and also cushioned itself from crude oil price shocks. While sustainability concerns certainly entered into the equation, the benefits accrued in more than one column of the “triple bottom line” ledger.

In another example, a company that designs and manufactures equipment to clean and maintain indoor and outdoor surfaces proactively eliminated the need for chemicals in one of its cleaning machines. These chemicals resulted in environment-related operating costs, as well as potentially negative consumer perceptions. The company’s cleaning technology electrically converts water into a cleaning solution, resulting in improved performance, reduced operating costs, improved safety and a lower environmental impact. The technology improved productivity

by eliminating the need for chemicals training, purchasing, storing, handling and mixing.

The focus on reducing waste and use of key resources—or finding substitutes—can be a powerful driver for developing innovative products and operating models if all the risks and opportunities are appropriately considered. Examples of how a sharper, broader sustainability strategy could drive innovation include:

- *Commodity and raw material availability and use:* How are environmental disturbances affecting raw goods? Are nonrenewable resources being depleted too quickly?
- *Energy consumption and cost:* Will price volatility in carbon-based fuels continue? Can we use energy more efficiently while still maintaining or increasing production?
- *Emissions and waste:* Waste equals wasted profits. How can we reduce the amount of materials we waste in our processes? How will new taxes on packaging or waste disposal affect our business?
- *Water availability and quality:* How might increasing water scarcity, particularly in emerging markets, affect our manufacturing process and revenue continuity? Will we have to rethink production as we face stricter regulations?
- *Demand for sustainable products:* Do consumers and our suppliers care about the sustainability attributes of our products? Will they pay more for “greener” offerings?

## CUTTING RESOURCE USE WITHOUT LOSING PRODUCTIVITY

Sustainability-driven innovation goes beyond designing green products and packaging solely on their inherent virtue. It entails improving business operations and processes to become more efficient, with a goal of dramatically reducing costs and waste. It’s also about insulating a business from the risk of resource price shocks and shortages. Taken together these enhancements can deliver business benefits that go far beyond the bottom line—whether it’s improving your overall carbon footprint, enhancing your brand image or engaging your employees in a more profound way.

Developing and enacting a broad strategy to manage energy and resources and drive process innovation involves several steps. Briefly, these include:

*Rigorously evaluate energy and resources use—look beyond current pricing and consider volatility and availability.* Collect and consolidate data from the different silos across your enterprise (direct and supply chain use, across the

business units). This helps establish an internal baseline for measuring and monitoring the impact of your energy and resource strategy, supports external benchmarking and makes it easier to define goals that support your overall business strategy. It also shifts the focus from individual sustainability projects to broader programs that treat energy and other resources such as water as strategic assets.

*Identify key areas for improvement—not all sustainability initiatives are created equal in terms of potential to create business value.*

Some business operations require more resources than others. For instance, it takes more energy to melt sand into glass than to freeze ice cream. It's not a question of which operations use the most resources, but which ones use more than they should. Track and analyze data across the facilities and processes to compare apples to apples. Then you can identify and prioritize areas with the most potential for improvement and return on investment. Not all sustainability initiatives are the right ones to invest in—some initiatives can create both top-line value and bottom-line savings while others may only reduce operating costs.

*Prioritize projects—don't follow the leader, but instead prioritize projects based upon your individual company strategy.* With many sustainability projects competing for limited

dollars, you need to prioritize and pay close attention to sequence and timing. For example, instead of assuming that the cost of a particular resource will rise uniformly across the entire enterprise, look at current and anticipated costs for individual locations. Also, consider benefits beyond the bottom line, such as increasing your brand value.



Major beverage bottlers require about five ounces of crude oil—a significant cost component—to manufacture a single 16-ounce plastic water bottle. Crude oil is a major risk factor in production cost control, subject to price volatility due to the turmoil that often surrounds oil-producing countries.



*Measure key performance indicators and results against target: establish meaningful targets for improvement with verifiable data.* Use baseline data and your investment plan as reference points to verify that you are getting the results you expect. Make sure employees understand how their behavior affects their use of a particular resource and what they can do to help implement and sustain improvements. Aggressively scale the most effective improvements across the enterprise in order to increase return on investment.

## DRIVING INNOVATION IN THE SUPPLY CHAIN PROCESS

Many organizations focus their efforts on internal operations to cut costs, but this alone may not address one of the most significant savings opportunities: the supply chain. While many organizations recognize they could save money by asking suppliers to cut their operational costs, many leaders are going a step further to realize even more savings, closely examining their supply chain from end to end to reduce inefficiency and waste.

Suppliers that use too much energy, water or materials, or produce more waste and carbon than necessary, are spending too much and passing those costs along. Initiatives to reduce energy, carbon, water, materials and waste typically have rapid payback periods and may be among the lowest risk projects an organization can undertake.

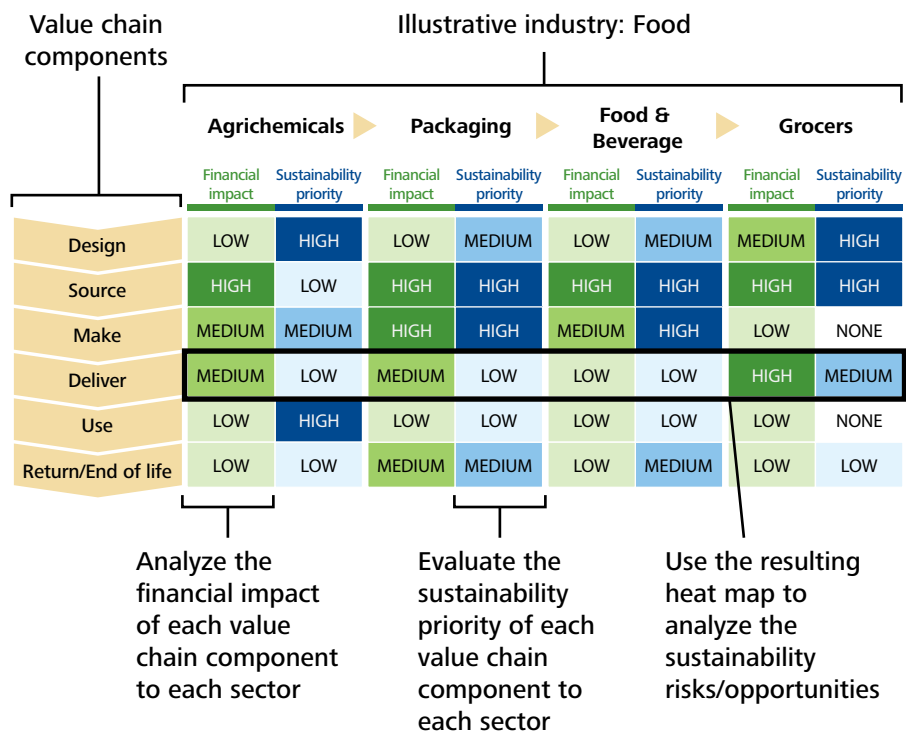
How can a business identify the sustainability design constraints created by its supply chain partners and other external factors? For example, could business leaders have anticipated that sustainability would be thrust into the spotlight because of the action of a retailer two steps downstream? What imperative will this create for companies to develop innovative products, services or operations? Is there a reliable and useful way to proactively identify potential risks and opportunities before they put the company in a reactive position?

One approach that can provide insights is the use of what we have referred to as a “heat map.” This tool can be applied to both operations and supply chains, and includes activities such as design, source, make, deliver, use and return/end of life. To develop this matrix view, companies can layer in the financial impact and sustainability priority of each component for each sector. By combining these two elements visually (figure 1), companies can see where opportunities and risks may exist for themselves—as well as for their supply chain partners—and use that information to help drive and enhance their sustainability strategies.

Figure 1 shows how a packaging company in the food industry can use a heat map to uncover strategically important opportunities and risks, some of which may operate as design constraints within the innovation process. Looking down-



Figure 1. Illustrative heat map for a food industry company



stream, the packager may see that food and beverage companies have made public statements regarding product safety and lowering energy costs for refrigeration. These should spark questions for the packager, such as: *Can we design or improve tamper-evident packaging? Can we produce more cube-efficient packaging to reduce transportation requirements for frozen goods?* Extending this exercise from source materials upstream to consumers downstream paints a highly detailed portrait of the sustainability opportunities and challenges that packaging companies may soon face.

These innovations can help organizations dramatically improve their business performance by rooting out energy, carbon, water, materials and waste inefficiencies that could provide significant savings for all involved.

DEVELOPING A BROAD SUSTAINABILITY STRATEGY

Financial and sustainability analysis can reveal surprising and often valuable insights. Some of the most important include:

Lesson 1: Dig deeper

The methodology described above and its output—the heat map—are designed to evaluate a company’s sustainability opportunities and risks throughout its extended supply chain. This approach can help uncover issues posed by a

company's partners. It also drives innovation. Just as importantly, the heat map can be used to develop a holistic sustainability strategy. Additional analyses that can help a company improve its sustainability strategy include:

- Examining critical inputs (such as materials and energy) and outputs (for example, components, finished products, greenhouse gas emissions and water pollutants) across each node of the supply chain to provide a picture of the positive impact sustainability efforts could have across a company.
- Identifying the bottom-line impact that sustainability issues (such as energy price fluctuations) have on a business.
- Helping companies understand how current and future laws and regulations might affect operations.
- Uncovering the sustainability priorities of a company's key customers and competitors.
- Measuring customer sustainability priorities against product attributes and brand positioning.

### *Lesson 2: Collaborate where it makes sense*

When drawing a heat map for their company's market, most leaders are especially attuned to places where there are consistently high sustainability priorities across neighboring sectors. For example, if areas of potential collaboration occur in the product design phase, a company may have opportunities to jointly focus on innovation to design products that are sustainable from end to end. This type of collaboration may result in cost savings and improved compliance with regulatory mandates.

### *Lesson 3: Follow the money*

Investigate issues where high financial impact aligns with high sustainability priority. Companies in the consumer packaged goods industry, for example, might reap relatively larger financial benefits by improving sustainability performance across their entire value chain—think beyond the manufacturing footprint.

### *Lesson 4: Mind the gap(s)*

Discrepancies between financial impact and sustainability priority may indicate that companies are giving too little or too much attention to one sustainability priority over another. For example, one manufacturer initially focused on the presumed large impact that proposed carbon legislation would have on its business.

Further analysis revealed that the proposed legislation posed virtually no financial risk. Instead, it suggested that the company should focus on its global sourcing approach. Although it sourced from a number of low-cost countries, the company did not have effective practices in place to monitor working conditions and product safety associated with these goods. The investigation helped align priorities with the most significant financial benefit.

*Lesson 5: Look over the horizon*

Sustainability strategies should address current issues but leave room for future opportunities and risks as well. Although the heat map provides a current-state snapshot of an industry and company, leaders should keep in mind that the future landscape could look quite different. For example, companies may not currently view water as a sustainability risk or even a financial risk. However, population growth and pollution could create a situation where this critical resource may become significantly limited, which in turn could affect the ability to run operations to meet your revenue plan.

THE BIGGER PICTURE OF SUSTAINABILITY

Very often, there are significant opportunities for organizations to use sustainability to drive innovation and improve how they do business. A methodical analysis can highlight areas ripe for attention. Taking it a step further, that analysis may yield even greater benefits if it is extended beyond the company’s own walls through collaboration with suppliers, customers and alliance partners. Changes to each link in the supply chain can affect everything upstream and downstream and create financial benefits for everyone involved.

To reach this new frontier, leading organizations are taking a hard look inside their operations and across their supply chains, assessing where they are, prioritizing initiatives, and then formulating a broad sustainability strategy to foster product and process innovation to achieve their goals. They are also adopting metrics that more accurately measure their progress and improve their image in the marketplace. Companies that achieve this vision have the opportunity to enhance revenue and brand value, engage effectively with key stakeholders, manage risk and reduce costs. **DR**

*Peter Capozucca is a principal with Deloitte Consulting LLP.*  
*William Sarni is a director with Deloitte Consulting LLP and its Enterprise Water Strategy practice leader.*

Endnotes

1. Clayton Christensen, *The Innovator's Dilemma*, Harvard Business Press, 1997.