

Chemical Executive Series

Sustainability Strategies for High
Performance in the Chemicals Industry

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Introduction

The business implications for “sustainability” continue to evolve. The move toward a low-carbon economy is a primary focus of consumers and policymakers; so, by extension, sustainability is becoming an integral part of what it means to be a high-performance business. The focus on carbon reduction intensifies as it intertwines with other macro themes such as economic recovery, energy security, domestic job creation and the push to reinvigorate technological innovation as a cornerstone of progress. Going forward, companies will need to effectively embed sustainability and climate change factors into the way they develop strategy, drive innovation and align their operating models.

The American Chemistry Council (ACC) represents member chemistry businesses and the \$689 billion¹ chemistry enterprise. Accenture collaborated with the ACC to conduct an online survey of 27 ACC members on the topic of sustainability. The survey targeted C-level executives of leading global chemical companies and asked questions about integration, governance, metrics, alliances and progress in sustainability initiatives.

Accenture analyzed the survey data and supplemented it with the analysis of sustainability reports from chemical companies that fall within three business models (see next page for category definitions). In addition, our analysis included findings from

Accenture's High Performance Business research and our extensive consulting experience. As a result of our analysis, this white paper addresses three main points:

- Sustainability's value proposition for chemical companies.
- Accomplishments and current initiatives in the area of sustainability.
- How companies monitor and drive progress—with stakeholders, customers, employees and partnerships.

Three business models to achieve high performance in chemicals and life sciences

Accenture has identified three distinct business models along the value chain within the chemicals and life science industries. These business models highlight differences in approaches and strategies, and were used to analyze survey results and secondary research.

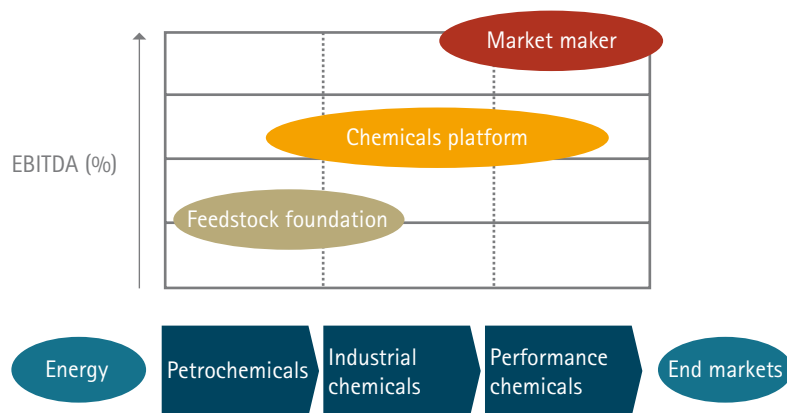
Feedstock foundation companies produce the essential building blocks for "downstream players" in the chemicals industry and end markets. They are focused on adding value to feedstock—through smart locations (feedstock, growth), large-scale and leading (process) technology.

Chemicals platform companies can be characterized as a platform of businesses, technologies, capabilities, markets and products—loosely targeted at some mega trends (health, energy, housing, etc.). A portfolio of business units—with more or less independence—is actively managed for growth and synergy.

Market makers typically are focused on selected (no chemical) end markets and technologies. They tend to have high growth with products that represent a limited share of customer cost and value chain. Market makers drive innovation based on understanding

product performance and acting on pervasive end-market trends—not just customer inputs. They will make significant investment in brand and distribution.

Figure 1. Value chain positioning and profitability.



Chemicals industry value chain

Source: Accenture High Performance Business research



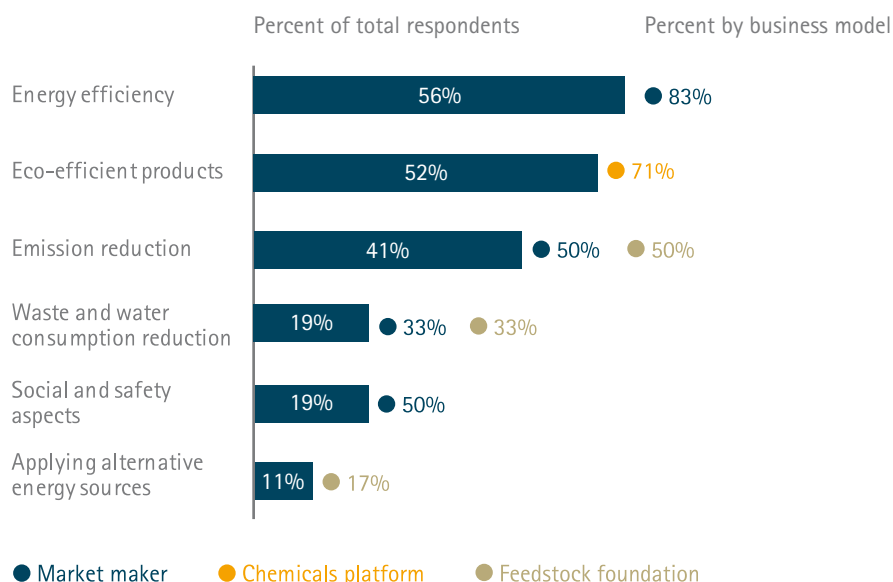
Current status of chemical companies' sustainability: Highlights from Accenture and American Chemistry Council research

Public and environmental awareness are key value drivers, while reduced energy and water consumption are primary initiatives

The majority of survey participants named public awareness and environmental awareness as the sustainability "value proposition," in particular for chemical companies with a strong end-market focus. Safety aspects and lower costs are named as lesser priorities, as is business continuity.

High and volatile energy costs make energy-saving activities attractive and good business. Consequently, climate change and resulting regulations are high on the agenda for chemical companies because

Figure 2. Sustainability accomplishments.



Sources: 2009 ACC survey of 27 companies' sustainability practices; Accenture analysis

Figure 3. Current focus of sustainability initiatives.

		Feedstock foundation	Chemicals platform	Market makers
Reporting	Global Reporting Initiative (GRI)/GRI related			
Environment and safety management	Climate protection	Production focused	Production, product focused	Product focused
	Energy, water, waste	Production focused	Production, product focused	Product focused
	Product stewardship			
	Sustainable supply chains			
Corporate responsibility	Governance and integrity			
	Employee focused	Operational focused	Social and performance focused	Social and performance focused
	Occupational safety			
	Health protection	Local, close to production sites	Local and global activities	Strongly client-site focused
	Social commitment	Local, close to production sites	Higher-level education activities	Strong focus on support of client education and infrastructure

Partially in place Fully in place

Source: 2009 Accenture analysis of 26 companies' sustainability reports

they have a major linkage to energy consumption and energy-linked feedstock. The role of the customer as a driver for sustainability initiatives is seen as increasingly important, particularly in more consumer-oriented end markets.

For all respondents, improving energy efficiency is a key accomplishment—either in the form of direct energy reductions or applying alternative-energy sources (such as biomass renewable raw materials). Feedstock foundation companies, with their significant carbon footprint, are clearly leading the way (see Figure 2).

Of the companies surveyed, chemicals platform companies are focused on products (such as improved solar panels, photovoltaic or battery technologies) that help reduce the carbon footprint. As one company stated, “our products save three times more greenhouse gas emissions than

are caused by production and disposal of all our products.”

Emissions reduction is another area in which progress is being made by many companies—with a balanced representation of companies along the value chain. Yet the respondents suggest there is a more limited focus on waste and water-consumption reduction—only one in five companies cited significant progress or focus in this area. In a separate category, the survey revealed that companies were nominally focused on the social and safety aspects of sustainability as well.

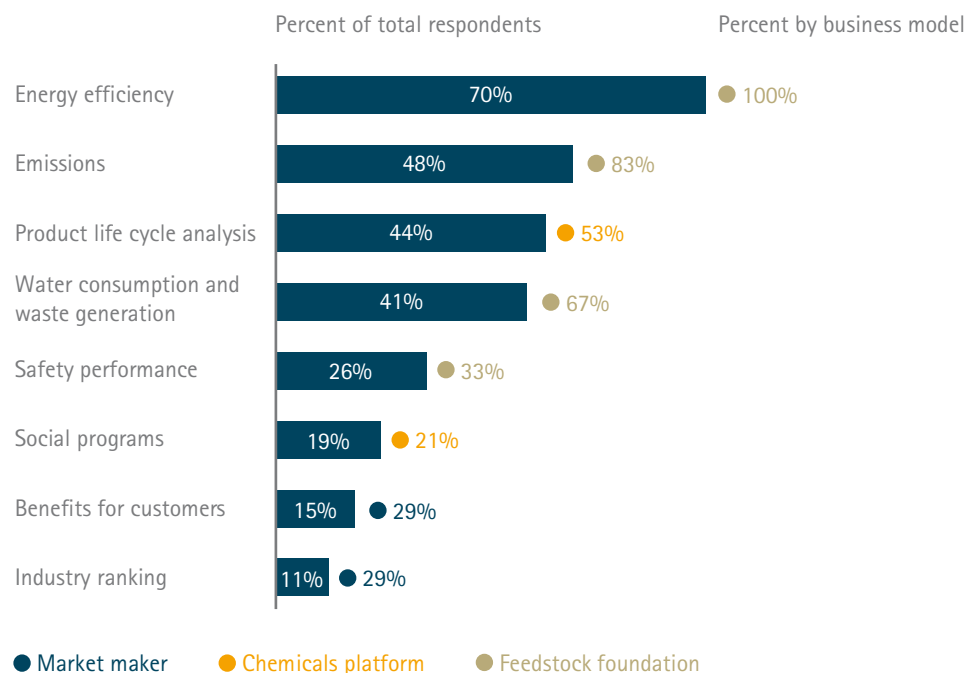
Business alignment of sustainability efforts varies by business model

In our analysis of the three business models within the chemicals industry, we learned that sustainability is well integrated and

broadly covered by the chemicals platform companies—spanning products and clients (see Figure 3). Chemicals platform companies have been highly active for more than a decade regarding sustainability and they focus on the whole spectrum from suppliers to production to customers.

On the other hand, feedstock foundation companies scored lower in overall integration because their petrochemical initiatives roll up into larger corporate initiatives. Market makers ranked in the middle; they have a strong focus on clients and value sustainability to a high degree. Market makers serve clients with sustainable products and support clients to achieve sustainable growth.

Figure 4. Reporting areas.



Sources: 2009 ACC survey of 27 companies' sustainability practices; Accenture analysis

Driving and measuring progress

Measurement can be a strong predictor of ultimate outcomes in sustainability initiatives

Sustainability reporting typically covers corporate responsibility and environment, health and safety. The survey also yielded detailed insight into which metrics companies are using to measure progress of their sustainability initiatives (see Figure 4). The popularity of the metrics appears to be aligned with the prevailing business models.

Overall, the strongest focus areas are on energy efficiency and emissions, with product life cycle analysis and water consumption and waste generation as secondary priorities overall. Because measurement is a key area of sustainability initiatives, we have summarized the top findings by business model:

- Market makers respond to client and customer initiatives and, therefore, focus reporting on the sustainable value potential of a product in a certain segment.
- Feedstock foundation companies heavily focus their measurement on their own operating model. They see sustainability as an extension of operational excellence.
- Chemicals platform companies combine the market maker and feedstock foundation approaches for a more holistic and integrated way of reporting at the operational and customer level.

Sustainability governance

All respondents have implemented an oversight structure to help drive and govern sustainability initiatives. This structure is mostly implemented within the line organization (about 60 percent). One-third of companies also have implemented a corporate responsibility committee. An additional 15 percent of companies have introduced a "sustainability lead" role.

Overall, respondents feel that, as a result of the selected governance structure, their sustainability initiatives are well integrated with the business direction and strategy—scoring an average of 3.7 out of a possible 5. Some respondents suggest that the multitude of players involved within an organization sometimes leads to confusion regarding ownership and business alignment.



Leveraging a portfolio of stakeholders

Engaging customers

The majority of the participating companies see opportunities for increasing demand for their products and services through sustainability initiatives (see Figure 5). Market makers see the highest demand driven due to sustainability. Key drivers of this new demand are “eco-efficient” products. Another opportunity area is to work with customers and extend the level of collaboration. Accenture also notes that customers are able to identify new markets for existing products.

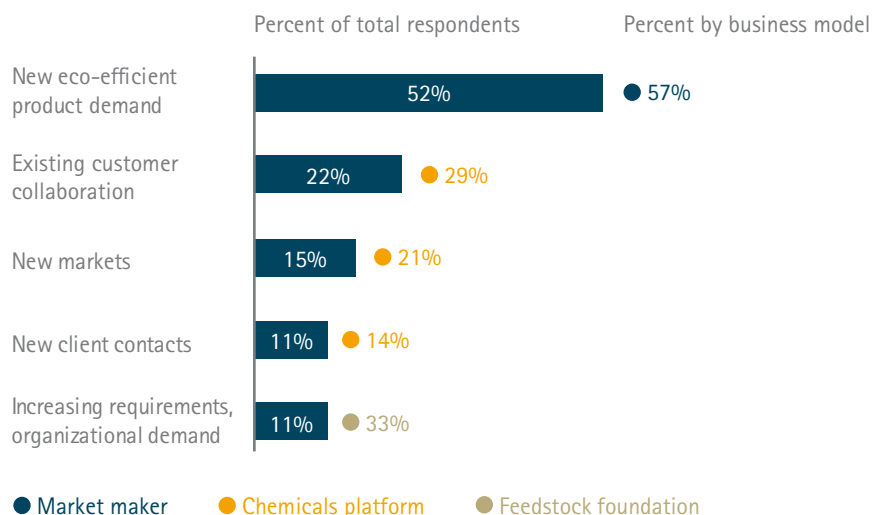
Partnering with organizations and institutes

Partnering is a popular approach to address the challenges of sustainability. Our survey revealed that 85 percent of companies use partnerships to drive sustainability initiatives. However, the degree of partnering declines along the value chain. Some suggest not leveraging partnerships as much as they could have. For new initiatives being planned, there are no real partnership activities yet. Market makers favor partnerships with associations or universities or nongovernmental organizations (NGOs), whereas other companies focus more on their “trading partners” (see Figure 6).

Engaging the organization's employees

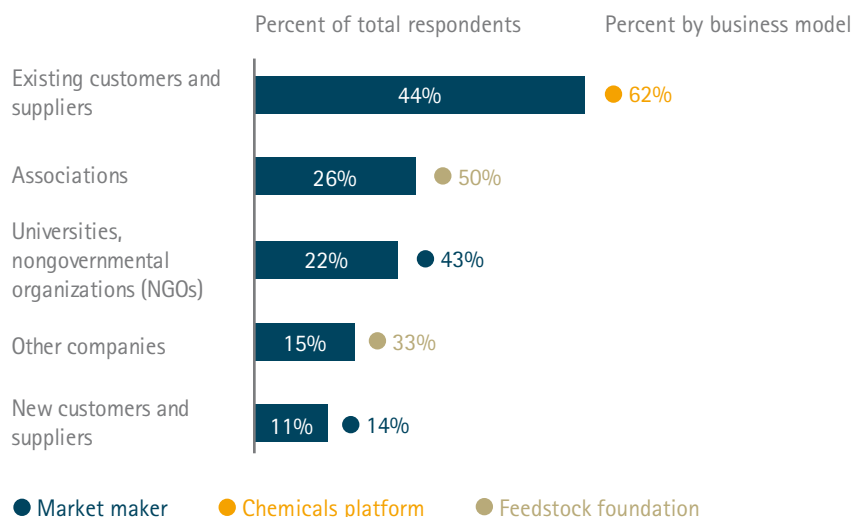
Nearly all (93 percent) of the participating companies respond that they engage their employees with sustainability activities through a combination of internal communication and training in sustainability initiatives. But to date, only one-quarter of respondents actively leverage employees in achieving progress. This dichotomy suggests a significant area of opportunity—to accelerate sustainability momentum in the organization and increase employees' engagement overall.

Figure 5. Engaging customers.



Sources: 2009 ACC survey of 27 companies' sustainability practices; Accenture analysis

Figure 6. Leveraging partnerships.



Sources: 2009 ACC survey of 27 companies' sustainability practices; Accenture analysis



Looking to the future: Sustainability strategies to achieve high performance

Based on results from the American Chemistry Council member survey and drawing from our own proprietary research and consulting experience, Accenture recommends five sustainability principles that can help chemical companies manage today's short-term challenges and position for high performance in the long term.

Growth: Go where the money is

The growing market for sustainable products and services provides an area where companies can capture additional market share and attract investor attention. In fact, some companies are finding energy offerings to be their primary source of stabilizing growth.

Some chemical company initiatives we observed from our research include:

- Increasing the availability of low-carbon power through expanding solar-silicon capacity, with a research and development pipeline having 35 percent of projects dedicated to outcomes that will benefit the environment.
- New fiber and coating products in response to an increasing demand for wind and solar power.

- Improved lithium battery technologies.

In the United States, President Barack Obama's administration is dedicating more than \$150 billion in green infrastructure investments over the next 10 years.² And two recent Accenture studies confirm that despite the downturn and loss in purchasing power, consumers continue to prefer "sustainable" products. Companies also are spending much more on environmental products and services, for instance, marking their choice for "green" buildings.³ In other words, businesses can still capture growth despite the downturn. Both the private and public sectors hold significant opportunities for companies—as long as these firms continue to invest in sustainability-related offerings.

Profitability: Align cost reduction with sustainability action

More firms are finding that initiatives that reduce environmental impact also reduce operating costs. These initiatives include: dramatically cutting back on water consumption within production plants through the smarter application of products; reducing the environmental impact of the value chain (while also reducing costs by lowering energy intensity); and reducing the environmental impact of inbound and outbound packaging as well as improving the recyclability of certain products. One large company is driving for a significant reduction of its environmental and cost footprint by achieving leadership in energy efficiency and greenhouse gas emissions.

Positioning for the future: Build intangible assets

In this challenging economic environment, the higher the valuation of a company's intangible assets, the higher the company's market value. The key is connectivity—the type that can be gained by developing relationships with the entities most likely to have credibility and expertise in this new competitive environment. Increasingly, more companies have come to this conclusion. In response, they are linking arms with stakeholders and competitors to enhance and demonstrate the transparency of their sustainability actions and impact, to influence the direction of public debate about sustainability and to prepare themselves for upcoming environmental regulations.

Fortunately, these relationships require only nominal financial investments, which means companies across all industries can pursue them. In particular, companies can derive many benefits from relationships with NGOs, including access to needed sustainability expertise, enhanced reputation through association and other benefits. A growing number of companies also are partnering with competitors and other organizations to influence or shape future environmental regulations.

Longevity: Ensure relevance in a sustainability-conscious world

There are two paths companies can choose to stay current—innovation and acquisition. For companies seeking to capitalize on demand for sustainability products and services, the current downturn has provided an attractive opportunity to acquire quality assets at below-market prices. Market indices, including sustainability indices, lost between 30 and 40 percent of their value in 2008.

Many companies are using life cycle management to ensure they are making the right longer-term trade offs. In addition, focusing a company's innovation engine on the challenge of sustainability has proven to yield enviable payoff.

Consistency: Win the loyalty of consumers and employees

Accenture believes chemical companies should make extra efforts to remain aligned with sustainability's ongoing evolution while they attract and retain customers and boost employee engagement to ensure predictable results period after period. More than 80 percent of consumers say they are either "somewhat" or "extremely" concerned by climate change, and a similar proportion think it will "certainly" or "probably" directly impact their life.⁴

This durability is translating into continued consumer demand for green practices, products and services. This continued demand will be particularly strong if companies also can meet consumers' multiple needs in challenging economic times to reduce costs through, for example, reducing the energy usage of products and improving their carbon and environmental impacts.

Employees, both current and potential, also are casting a more interested eye toward companies' efforts to attend to sustainability; recent surveys suggest employees are beginning to assess companies' sustainability strategies in employment decisions. Some employees are going as far as making career choices based on the level of companies' sustainability efforts. In fact, a number of executives recently told Accenture their companies' sustainability strategies are playing a critical role in their ability to attract, engage and retain top talent.⁵

One company mentioned an initiative to conduct self-audits and develop sustainability improvement plans, that are shared with employees. Others are engaging employees in corporate initiatives that increase productivity but with larger social benefits for the greater good.



Conclusion: Much achieved; more to come

Since 1987, when sustainability was defined as "meeting the needs of the present without compromising the ability of future generations to meet their need,"⁶ the chemicals industry has made significant progress. Our research also suggests areas that can help sustain and accelerate the industry's momentum toward a low-carbon environment:

Look deep into your company's own strategy and beyond for opportunities.

Companies should not only align sustainability on top of their existing strategy, but embed it within the strategy. For example, Wal-Mart is effectively driving sustainable business practices throughout its entire supply chain.⁷ GE's ecomagination unit is creating some of the most innovative products and services by focusing its entire strategy on sustainability and is establishing GE as a leader

in this space.⁸ Companies like Xcel Energy that are leading the charge on smart grids and smart cities will be best positioned for long-term success in their industries.⁹

Embrace sustainability reporting standards such as the Global Reporting Initiative (GRI) and the Carbon Disclosure Project (CDP).

GRI comprises international, multi-stakeholder efforts to develop globally applicable frameworks for voluntary sustainability reporting. GRI guidelines, first published in 2000, subsequently updated in 2002 and then again in 2006 (GRI G3), are some of the most widely accepted guidelines for developing sustainability reports. Overall, about 60 percent of survey respondents use a GRI or GRI-related reporting framework. The independent not-for-profit Carbon Disclosure Project

(CDP) has become the de facto standard for companies to disclose information about their carbon emissions, and is a highly respected source of valuable information not only for companies themselves but for other stakeholders. Over time, entities like these will evolve to provide insightful analysis and other value-added services in addition to simple repository functions.

Leverage partnerships to improve future positioning.

The move toward sustainability and the low-carbon economy is presenting many new opportunities for collaboration on three fronts: to develop innovative new products and services, to drive sustainability through the extended supply chain, and to help inform and shape policy. By way of example: leading utilities and automobile companies may find valuable collaboration as consumers move

Figure 7. The four drivers of the sustainability imperative.

<p>Technology-driven</p> <ul style="list-style-type: none"> • Disruptive technologies • Access to new technology is critical • Innovation/R&D is a key capability 	<p>Policy-driven</p> <ul style="list-style-type: none"> • Regulation is the main driver of action • Regulatory management is the key capability in the shorter term
<p>Customer-driven</p> <ul style="list-style-type: none"> • Consumers drive the agenda • Growth in low-carbon products and services • Customer communication and insight is critical 	<p>Business innovator-driven</p> <ul style="list-style-type: none"> • New business models disrupt existing industry • New entrants to the industry value chain • Potential for disintermediation (e.g., virtual utilities)

toward plug-in vehicles; Wal-Mart is collaborating with its suppliers to reduce the environmental impact and carbon footprint of its entire supply chain;¹⁰ the steel industry is developing its own perspective of the impact of carbon pricing on the global steel market, and using that insight to educate and inform policymakers.

Take a more structured approach toward understanding the drivers of the sustainability imperative.

Accenture believes that by actively managing four main drivers, chemical companies can build distinct competitive advantages that contribute to high performance (see Figure 7).

Intensify employee engagement.

Most companies are only starting to involve their employees but appear not to have fully captured the opportunity of engaging and mobilizing their workforce in the drive for sustainability. Particularly for segments in which people are the main asset, the ability to attract and retain the best and brightest and the most innovative thinkers is critical. Existing employees value a company's efforts on sustainability and see it as a factor that enhances their commitment to the company. New hires are using sustainability as an increasingly important selection factor. Through Accenture's research, our experience and the experience of our clients, sustainability is increasingly becoming a key employee-engagement factor.

Accenture believes chemical companies can create economic value and cultivate social and environmental benefits with sustainability initiatives. Sustainability enables companies to:

- Grow revenue through new or differentiated products and services.
- Reduce cost through resource efficiency and lower emissions.
- Manage regulatory, operational and market risk.
- Build intangible assets—brand, reputation and networks.
- Innovate through new technology, operating models and collaboration.

Leading chemical companies are realizing that embedding sustainability into their strategic planning, operating model, business processes and innovation engines can help them achieve high performance.

The five elements of high performance

Pursuing sustainability is not only admirable but advantageous; it encourages behaviors consistent with the five dimensions Accenture associates with high-performance businesses. The Accenture High Performance Business research program has carefully analyzed more than 6,000 companies, including more than 500 high performers. The methodology to the Accenture High Performance Business research scrutinizes corporate performance over five key dimensions, grading each on a curve against competitors in a carefully considered peer set. The five key dimensions are: growth, measured by revenue expansion; profitability, measured by the spread between the return on invested capital and the cost of capital; positioning for the future, measured by the portion of share price that cannot be explained by current earnings (what Accenture calls "future value") and by the portion of the industry total that each company's future value represents; longevity, measured by the duration of superior performance in total returns to shareholders; and consistency, measured by the percentage of time that a company's performance has been greater than median performance in terms of profitability, growth and positioning for the future.

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⁴ Accenture End-Consumer Observatory on Climate Change, January 2009

⁵ Accenture Executive Survey on Climate Change 2008

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⁷ Sustainability 2.0 – Goals video, Wal-Mart, <http://walmartstores.com/Video/?id=1224>.

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About the Author

David Abood is the executive director for the Accenture Resources Climate Change practice. He has 18 years' experience leading business and technology change initiatives from strategy through solution design, planning and implementation. In his current role, he works with clients in a wide range of industries, as well as with government agencies, to understand and address the business opportunities and risks associated with climate change across Accenture's span of capabilities. Mr. Abood plays a lead role in incubating several of Accenture's new business initiatives related to climate change, and provides counsel to a number of nonprofit organizations in this area. He is also deeply involved in Accenture's internal sustainability initiatives focused on corporate citizenship and employee engagement.

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About the American Chemistry Council

The American Chemistry Council (ACC) represents the leading companies engaged in the business of chemistry. ACC members apply the science of chemistry to make innovative products and services that make people's lives better, healthier and safer. ACC is committed to improved environmental, health and safety performance through Responsible Care®, common sense advocacy designed to address major public policy issues, and health and environmental research and product testing. The business of chemistry is a \$689 billion enterprise and a key element of the nation's economy. It is one of the nation's largest exporters, accounting for ten cents out of every dollar in U.S. exports. Chemistry companies are among the largest investors in research and development. Safety and security have always been primary concerns of ACC members, and they have intensified their efforts, working closely with government agencies to improve security and to defend against any threat to the nation's critical infrastructure.

About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with more than 176,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US\$21.58 billion for the fiscal year ended Aug. 31, 2009. Its home page is www.accenture.com.

