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United Nations Global Compact

UN Global Compact-Accenture CEO Study

Towards a New Era of Sustainability in the Automotive Industry

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Foreword

There has perhaps never been a better moment to contribute to the debate about how, as we look to economic recovery following one of the most tumultuous periods in our history, we can start to rebuild the global economy in a sustainable way.

The timeliness of this study is matched by its breadth. Nearly 1,000 CEOs, business leaders, members of civil society and academic experts have contributed to what is the largest CEO survey on sustainability of its kind to date. The global geographic and industry coverage of contributing CEOs further provided unique insights into the challenges and opportunities of the coming decade.

It is a decade that, CEOs believe, could usher in a new era where sustainability issues are fully integrated into all elements of business and market forces are truly aligned with sustainability outcomes. The survey and conversations conducted as part of this landmark study make clear that today's CEOs are more convinced than ever of the need to embed environmental, social and corporate governance issues within core business. But they are also convinced that good performance on sustainability amounts to good business overall: the imperative to act has shifted from a moral to a business case. Furthermore, executives see significant progress in executing their plans to integrate sustainability.

Many challenges must be faced, however, before market forces can truly be aligned with sustainable development. For example, CEOs see that engaging with the investor community on new terms, improving the provision of education and skills, and measuring a new concept of value within organizations are critical conditions for change. Yet we also see a strong determination on the part of CEOs to take the necessary actions to meet these challenges.

We hope that this first-hand voice of Global Compact CEOs will help to shape the conversation on corporate sustainability over the coming years, and we believe that we can, together, set out a compelling collective vision for the future of the global economy. As we look ahead, we recognize the scale of the challenges that we face — but also recognize the huge potential of the Global Compact as a unique platform for engaging the economy's most powerful force. If that potential is unleashed, we can build the necessary foundations of a new era of sustainability.



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Introduction

Sarat Maitin and Peter Lacy

CEOs around the world are starting to see the shape of a new era of sustainability coming into view. In the face of rising global competition, technological change and the most serious economic downturn in nearly a century, corporate commitment to the principles of sustainability remains strong throughout the world: 93 percent of CEOs see sustainability as important to their company's future success.

This is one of the most significant findings of a new study from the United Nations Global Compact and Accenture, "A New Era of Sustainability." The report – based on a survey of 766 United Nations Global Compact (UNGC) member CEOs, in-depth interviews with an additional 50 member CEOs and further interviews with more than 50 business and civil society leaders – represents the largest such study of CEOs ever conducted on the topic of sustainability. The study included a representative sampling of major automotive companies around the world – 21 executives from companies including Daimler, Renault Nissan, Tata and Volkswagen.

Although 100 percent of the automotive executives we surveyed believe that sustainability is critical to their future success, with most of them trying to integrate environmental, social and governance issues into their day-to-day operations, they see many challenges ahead in truly embedding sustainability into core business. Most immediately, automotive executives see challenges internally in managing competing strategic priorities and the complexities of integration. Whilst many leading automotive companies believe that sustainability issues are already integrated into their strategic thinking, it is clear that they face significant challenges in embedding these issues into their day-to-day operations, especially throughout their supply chains and subsidiaries.

Beyond their individual companies, too, CEOs believe that much will be required to shape a landscape conducive to more sustainable business. It is readily apparent that uncertainties regarding consumer demand, investor interest in sustainability and future government regulation must be clarified, and that a new debate will be required to articulate new concepts of value and make the case for the benefits that business can bring in meeting societal challenges.

It is becoming apparent that the automotive industry is on the verge of substantial change. Road transportation is a huge contributor to global carbon emissions and is therefore facing mounting pressure from multiple stakeholders to move toward alternative 'clean' powertrain



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technologies. In the near term, improvements to the efficiency of the internal combustion engine should account for the highest market share. In the long run however, the industry could undergo radical change as new technologies (pure electric, hybrid and hydrogen fuel cells) scale up. These have the potential to be 'game changers' and completely disrupt the whole automotive value chain. How such a transition will occur is unclear, and who will be the winners and losers remains to be seen.

As we look towards the next decade, and new waves of growth, it is clear that CEOs are beginning to recognise the scale of the challenge that they face in aligning sustainability with core business, and in creating the environment necessary for sustainable business to prosper. They also recognise, however, that this transition will depend on the economy's most powerful force, business – and that, with immediate and sustained action, individual companies can play a critical role in building the foundations of a more sustainable economy. Nowhere is this more keenly felt than in the automotive industry, and we hope that this is a timely and useful contribution to advancing sustainability in the sector, with a unique insight in the views of CEOs and global leaders on what it will take to reach a new era of sustainability.

Sarat Maitin *Peter Lacy*

Executive Summary

The sustainability landscape is changing

Since the last UN Global Compact CEO study in 2007, CEOs' views on sustainability have undergone a fundamental change. Business leaders worldwide, particularly in the automotive industry, now see sustainability – defined by those environmental, social and governance issues covered by the UN Global Compact's Ten Principles¹ – as central to their business: 100 percent of the automotive CEOs we surveyed and 93 percent of CEOs overall, believe that sustainability issues will be important to the future success of their business.

As CEOs perceive ever-greater links between business performance and their sustainability capabilities, it is clear that the environmental, social and governance issues at the heart of a sustainability strategy are featuring higher on the executive agenda. In our conversations with CEOs and business leaders, we have seen how sustainability is increasingly becoming a key element in how many companies respond to core strategic challenges.

CEOs within the automotive industry are beginning to see sustainability as a top-line opportunity. It has moved from a moral obligation and is now considered as an opportunity for cost reduction, revenue growth, risk

management, innovation, brand value and other intangibles. As competition in the industry becomes fierce, sustainability is starting to play a key role across many business functions and processes, and appears to be the new competitive battleground.

There are many macro forces in play contributing to the changing industry dynamics. Trends such as resource scarcity (leading to rising fuel prices), technological innovation, rising urbanization, changing demographics, new consumer attitudes toward 'mobility', increased regulation, intense competition (and more) are starting to create a market environment where sustainability will become a key component for success in the industry.

The drivers and approaches to sustainability are changing

Automotive executives identify education and climate change as the two most important development issues for their business. Education is especially important: 86 percent of automotive executives rated it among their top three most critical development issues compared to a global average of 72 percent. Education in this context has a broad meaning and encompasses the education of citizens for three purposes in particular. First, to ensure sustained economic development; second, to create a steady supply of talent

to renew their workforce capabilities; and third, to equip current and future leaders and employees – and those from other sectors such as government and civil society – with the ability to manage sustainability issues as part of core business.

Automotive executives tend to see the sustainability agenda mainly from an environmental perspective especially in terms of carbon emissions – as this is where the industry has the biggest impact. Social and governance issues appear to be less of a concern. And the main focus is on the environmental impact of the vehicles themselves, as oppose to the whole production lifecycle. This is where the industry is facing mounting pressure from society and governments. Improvements on the environmental performance of vehicles through fuel energy efficiency are also creating tangible benefits for the end consumer (mainly through cost reductions). This evolutionary change is already in full force, with substantial improvements in the efficiency of the internal combustion engine already underway.

However, the transition needed for the automotive industry to become truly sustainable through the development of alternative powertrain technologies is far more complex. This is creating much anxiety and uncertainty, and leading to a fundamental shift in how the industry approaches sustainability.

Automotive companies understand that the market dynamics are rapidly changing and that the future landscape will be mixed. Nearly all companies are investing in low emission technologies at one level. This is apparent from the plethora of innovative 'green' (hybrid electric, plug-in electric and hydrogen) vehicles that are coming to the market e.g. the Nissan Leaf, GM Chevrolet Volt, Mitsubishi i-MiEV and the Renault Fluence. Even premium brands such as Rolls-Royce and Porsche are developing hybrid models. BMW have just launched a new sub-brand, 'BMW i', which is exclusively dedicated to developing sustainable mobility solutions. This all signals how strongly the industry is focused on innovating low emission vehicles.

Challenges to overcome: From strategy to execution

Our study found widespread agreement among CEOs about what a new era of sustainability would look like: it is one where sustainability is not a separate strategic initiative, but something fully integrated into the strategy and operations of a company. CEOs believe the ideas and commitment are there, but that execution of those ideas is now the real challenge to bringing about the new era of sustainability.

Confidence among business leaders about their progress toward this new era is strong, and their companies are taking concrete steps toward embedded sustainability. Eighty-one percent of CEOs — compared to just 50 percent in 2007 — stated that sustainability issues are now fully embedded into the strategy and operations of their company; 86 percent of automotive executives believed this to be true. Our conversations, however, on the challenges of integration suggest that this confidence may not be fully justified, or may be evidence of a lack of understanding of what full integration will really entail.

While sustainability has clearly become part and parcel of how many businesses operate, it has yet to permeate all elements of core business — that is, into capabilities, processes and systems. Seventy-six percent of automotive executives cite competing strategic priorities as one of the most significant barriers to the full integration of sustainability across their business. The second biggest barrier is the difficulty of implementation, especially across supply chains and subsidiaries. Our research finds a significant performance gap between automotive executives who agree that sustainability should be embedded throughout their subsidiaries (95 percent) and supply chain (86 percent), and those who report their company is already doing so (62 percent and 57 percent, respectively). Furthermore, full integration of sustainability into performance management frameworks and approaches to training and development remains a somewhat distant goal.

Ensuring the right external conditions

How long will it take before the majority of companies worldwide reach this new era in which sustainability is fully integrated across their global business footprint? Fifty-two percent of automotive executives surveyed feel that this tipping point is within a decade away — and 90 percent believe it will occur within 15 years — an optimistic view unthinkable in 2007 and testament to the change taking place.

CEOs acknowledge that a new generation of leadership, and concerted efforts to shape a corporate culture supportive of the goals of sustainability, must underpin success in the new era. In other words, today's business environment provides a multitude of new sustainability challenges to manage, but also significant opportunities for those who can master its dynamics.

However, automotive executives see that progress toward that destination is by no means guaranteed, or irreversible, and will require them to overcome several serious challenges, both through their own actions and in collaboration with stakeholders. These challenges include:

- **Regulatory uncertainty:** Automotive executives spoke of the need for greater clarity around the shape and scope of future regulation. Whilst there are some clear standards — for example the Euro 5 and Euro 6 regulations banning the approval, registration, sale and introduction of vehicles that do not comply with emission limits² — how and to what extent such standards will evolve still remains uncertain.



- **Technological uncertainty:** There are many new technologies being developed in the automotive industry: from highly efficient internal combustion engines, plug-in electric to hydrogen based vehicles. Managing the innovation of multiple technologies is complex, especially considering all the uncertainty around how each will evolve and influence the future markets.
- **Consumer uncertainty:** The consumer may be king when it comes to driving profitable sustainability, but the automotive industry is still unsure of its full effect on consumers. The majority claim that they are concerned with the environmental impacts of vehicles but the extent to how it influences their purchasing decisions is not so clear. It appears that executives do not fully understand consumer values or demands of 'mobility', something which is critical to anticipate the scale and success of sustainable vehicles.
- **Investment uncertainty:** Many CEOs believe that the investment community is not supporting corporate efforts to create value through sustainable products and services by failing to factor performance on sustainability issues into valuation models. Within the automotive industry there are also concerns on how to source the huge capital investments required to develop new technologies and build the necessary infrastructure for the vehicle of the future (e.g. electric/hydrogen stations and networks). This problem is intensified by the lack of certainty around which technologies will dominate the future markets. Investing

in multiple technologies in parallel, especially considering the magnitude of capital required with no clear return on investment is extremely difficult.

This uncertainty is creating a challenging environment in which to develop effective strategies for the creation of sustainable vehicles. A clearer future landscape will be critical as companies and governments around the world try to create the foundations of a viable market to catalyze the effective transition toward low carbon transportation.

Pioneers of the New Era

Even though there are many barriers and challenges in the pursuit of a sustainable automotive industry, leading companies are starting to successfully forge a path towards that goal. The innovations of automotive pioneers show companies addressing some of the key industry challenges whilst starting to create the backbone of a sustainable industry:

- **Production and manufacturing efficiency:** Leading companies are implementing explicit programs improving efficiency in production and manufacturing leading to considerable cost savings, whilst reducing environmental impacts.
- **Product innovation:** The industry is experiencing substantial innovation through improvements in the efficiency of internal combustion engines, the development

of low emission technologies and new approaches to vehicle architecture that uses lightweight materials to reduce overall energy requirements. Advanced computing, communications and networking technologies are also creating new value-added services such as traffic management, and the development of smart logistics for grid management for PEVs (which includes plug-in hybrid electric and all-electric vehicles).

- **New partnerships and collaborations:** Leading companies are engaging in new industry and cross sector partnerships to pool together innovation capabilities, develop new business models with value chain partners and increase interaction with governments and regulators.

- **New mobility concepts:** Automotive pioneers are also looking deeper into the consumer value proposition and instead of seeing the value as 'a vehicle'; they are redefining it as 'mobility' itself. This is leading to the creation of multiple new mobility services such as car sharing, 'pay-as-you-go' and similar concepts, all of which will play an important role in 'intelligent cities' of the future.

Accelerating the tipping point: Business action is needed

In order to overcome marketplace and economic challenges and accelerate a tipping point in the integration of sustainability into core business, CEOs believe that a number of essential conditions need to be put in place. Businesses need to take a leadership role to bring them about, often in collaboration with wider stakeholders such as the UN Global Compact:

1. **Actively shaping consumer and customer awareness, attitudes and needs.** To create a market for sustainable vehicles, executives see the need to increase the provision of consumer information, educating them on the tangible benefits that such vehicles can deliver. Companies need to ensure that consumers have a better understanding of the functionality of PEVs and other low emission vehicles, including the availability of charging and their positive environmental impacts.

2. **New types of industry and cross sector collaboration to overcome structural challenges and create a more positive regulatory environment.** To overcome many of the current challenges in the industry and to prepare themselves for the potential of 'disrupted' value chains, automotive companies need to form new cross sector partnerships. To also avoid the unintended consequences of regulation, build trust and provide a more informed basis for policymaking, automotive executives should adopt a more proactive and collaborative approach with governments to seek out genuine opportunities for sustainable transport.

3. **Generating new knowledge, skills and mindsets for sustainable development.** Although businesses believe that formal educational institutions and business schools need to do more, CEOs also recognize the need to increase their own efforts to engender the right skills and mindsets in their managers and future leaders so that they can effectively manage the transition toward a sustainable automotive industry.

4. **Leading the creation of an investment environment more favorable to sustainable business.** CEOs need to be more proactive in engaging with investors to ensure that the value of sustainability activities can be demonstrated through traditional metrics such as cost reduction and revenue growth. They also need to develop new business investment models to catalyze the huge capital investments required to shift the industry toward low emission vehicles.

5. **Embedding new concepts of value and performance at the organizational and individual levels.** Businesses will need to measure both positive and negative impacts of business on society, track and manage sustainability's impact on core business drivers and metrics, and embed sustainability in individual performance frameworks for managers across their organizations (e.g., through remuneration packages).

Automotive CEOs, along with their peers from all industries around the world, are willing to step up to the challenges ahead. They recognize that — as the Global Compact celebrates its tenth anniversary — our current period is 'the end of the beginning' and not 'the beginning of the end' in the transition to a new era of sustainability.



Automotive CEOs' opinions: By the numbers

100%

100% of automotive CEOs believe that sustainability issues will be critical to the future success of their business.

95%

95% of automotive CEOs believe that sustainability issues should be fully integrated into the strategy and operations of a company.

71%

71% of automotive CEOs cite 'brand, trust and reputation' as one of the top three factors driving them to take action on sustainability issues.

67%

67% of automotive CEOs identify **consumers as the most important stakeholder group** that will impact the way they manage societal expectations.

95%

95% of automotive CEOs see **'accurate valuation by investors'** of sustainability as important to reaching a tipping point in sustainability.

76%

76% of automotive CEOs cite **competing strategic priorities** as one of the most significant barrier to embedding sustainability.

86%

86% of automotive CEOs see **education as the global development issue most critical** to address for the future success of their business.

86%

86% of automotive CEOs believe that companies should **integrate sustainability through their supply chain**; only 57% believe that their company has.

100%

100% of automotive CEOs report that their company will employ **new technologies to address sustainability issues** over the next five years.

Part One

Background and Industry Context

In the course of our survey and conversations with CEOs, we have witnessed a fundamental shift in attitudes toward sustainability since the last United Nations Global Compact survey in 2007. Then, sustainability was just emerging on the periphery of business issues, an increasing concern that was beginning to reshape the rules of competition. Three years later, sustainability is truly top-of-mind for CEOs around the world. While environmental, social and governance challenges continue to grow and CEOs wrestle with competing priorities, sustainable business practices and products are opening up new markets and sources of demand, driving new business models and sources of innovation, changing industry cost structures, and beginning to permeate business from corporate strategy to all elements of operations.

One of the clearest insights arising from our conversations with automotive executives is that the perception of sustainability is changing. For leading companies, environmental, social and governance issues are no longer viewed principally through the lens of risk management, but are increasingly seen as an integral part of core business activities, and a vital element in addressing the key strategic challenges faced by the industry:

Opportunities and threats in emerging markets

Developing nations — particularly Brazil, Russia, India and China — are the biggest growth markets for the automotive industry. Asia is the strongest and fastest growing market with China at the forefront: it is already the world's largest market with passenger car sales reaching 13.8 million in 2010 and some predict that it will triple in size to 40 million, accounting for half of world production by 2020³. This trend will only continue as the emerging market middle class carries on expanding. It is expected to increase from 1.8 billion in 2010 to 4.9 billion by 2030, creating a critical mass of demand for luxury goods such as vehicles⁴. Daimler AG already expects that Mercedes-Benz's sales in India will compete with those of the UK by 2020⁵.

However, these markets also pose some threats for traditional automakers, as many emerging-market multinationals are rapidly growing with increased presence in developed markets. Zhejiang Geely Holding Group, one of the fastest-growing car manufacturers in China, recently completed the acquisition of 100 percent of Volvo Car Corporation from Ford Motor Company. Other emerging markets car manufacturers, such as Brilliance Auto are setting up sales organizations in western markets, further increasing competitive pressures.

The pursuit of alternative powertrain technologies

The automotive industry is under pressure to improve its impact on the environment. Transport accounts for nearly 60 percent of global oil consumption and an estimated 30 percent of global carbon emissions⁶. With oil demand projected to grow by 1 percent per year – reaching 105.2 million barrels per day in 2030⁷ – and the transport sector being the main driver of this growth, the automotive industry is coming under mounting pressure to produce low emission vehicles. Therefore most automakers are heavily focused on improving the efficiency of internal combustion engines as well as the development of vehicles powered by alternative energy sources – electric, hybrid-electric and hydrogen fuel cells. Due to plug-in electric vehicles estimated efficiency gains of 40-60%⁸ over conventional vehicles, they have received much attention from governments and industry. However this does not guarantee that they will become the dominant vehicles of the future. The market landscape will be mixed creating many uncertainties for automakers as they pursue alternative powertrain technologies. It is unclear which technologies are superior, when they will become cost-effective enough to drive significant development, and whether a mainstream consumer market actually exists or not. Questions also persist about when and how the necessary infrastructure for alternative-energy vehicles will be financed and implemented.

Implications of new regulations and subsidies

As many governments around the world try to meet ambitious carbon reduction targets they are increasing their involvement in the marketplace with new regulations and subsidies. This intervention, attempting to incentivize both automakers and consumers, appears to be having an impact. Increased taxation on high-emitting vehicles, especially in the European Union and the United States, is influencing buying behaviors and, therefore, manufacturing. These incentives are inducing consumers to switch toward greener vehicles. This is one clear link between sustainability and the bottom line in the automotive industry, though our research also finds a significant amount of uncertainty about whether regulators can create a stable and consistent means of migrating toward greener technologies, and about whether consumers are truly committed. Subsidies cannot and will not last forever – the market needs to scale up.

Smart cars and the new connected technology environment

Advanced computing, communications and networking technologies are also having an influence on the automotive industry. Telematics – the integrated use of telecommunications and informatics – has been a factor in competitive differentiation in the industry for several years. Today, however, those capabilities are dramatically increasing as technologies grow more sophisticated. Ubiquitous connectivity and location-based technologies offer tremendous opportunities for value-added services. These technologies can also improve the ability of consumers to predict congestion and plot a better course through traffic. More generally, cities will be able to reduce congestion and greenhouse gas emissions by leveraging technology to improve traffic management.

Urbanization and changing attitudes toward mobility

The urbanization of the world's population appears to be an unstoppable phenomenon. According to the United Nations forecast, the proportion of the human populations living in cities is expected to grow from the current 50 percent to nearly 60 percent by 2030 and to almost 70 percent by 2050. This will have a major impact on the automotive industry. The need for car 'ownership' is likely to diminish as new forms of transportation services emerge. In the long term, automotive companies must be aware of these changing dynamics. For many consumers, cars are a means to an end – that of mobility. So if mobility can be achieved through less expensive ends, many consumers will seek that goal – perhaps car sharing, 'pay as you go' schemes, or more reliance on public transportation. These trends will likely have a positive impact on the environment, but with obvious tradeoffs to automakers' current business models.

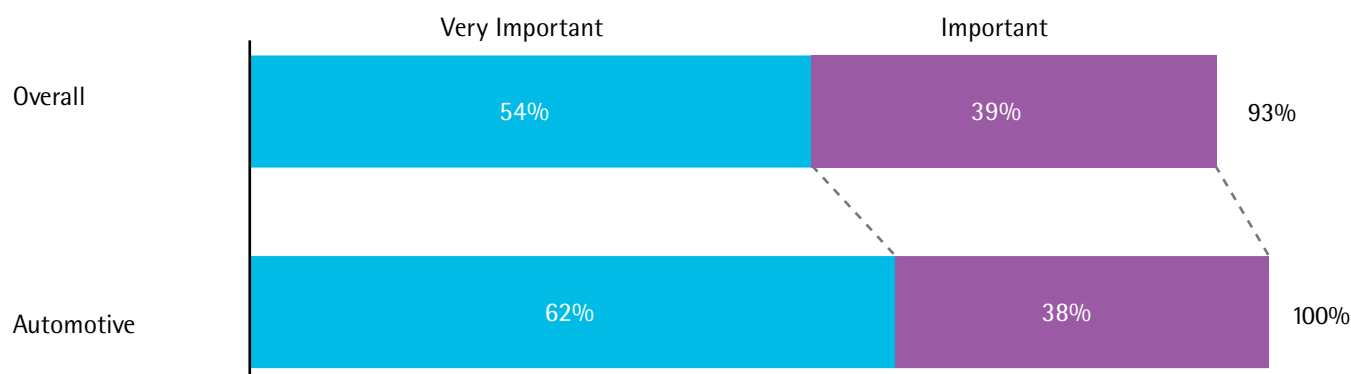
The sustainability imperative in the automotive industry

It appears that there are many macro forces in play that are beginning to create a market environment where sustainability will be a key component for success in the automotive industry. All of these trends discussed, amongst others (e.g. the rising price of fuel) point to the central role that sustainability will play in the sector. CEOs are starting to perceive ever greater links between business performance and sustainability with environmental, social and governance issues featuring higher on the executive agenda. CEOs are realizing that the industry is on the verge of substantial change with the possibility of new entrants changing industry dynamics. The question is: who will be the winners and losers?

Part Two

Sustainability and Automotive: Through the eyes of the CEO

Figure 2.1: How important are sustainability issues to the future success of your business? (Respondents answering 'Important' or 'Very important')



Source: United Nations Global Compact-Accenture CEO Study 2010 (based on 766 completed responses)

Automotive CEOs' belief in the importance of sustainability is stronger than ever, in spite of the recent economic downturn

It is clear from our research that almost all automotive executives recognize the importance of sustainability to their industry. One hundred percent of the executives surveyed affirmed the importance of sustainability to the future success of their business – higher than the global, cross-industry number of 93 percent. Looking deeper into the numbers, the importance of sustainability can be seen to be even stronger in the automotive industry. For example, 62 percent of automotive executives, compared to the global average of 54 percent, stated that sustainability issues will be 'very important' to their future success.

The global economic downturn might have been expected to weaken the commitment to sustainability issues. In fact, it seems to have done the opposite: 90 percent of automotive executives believe that the economic downturn has raised the importance of sustainability as an issue for top management, higher than the survey average of 80 percent. And just 5 percent of automotive executives report that their company has reduced investments in sustainability as a result of the downturn.

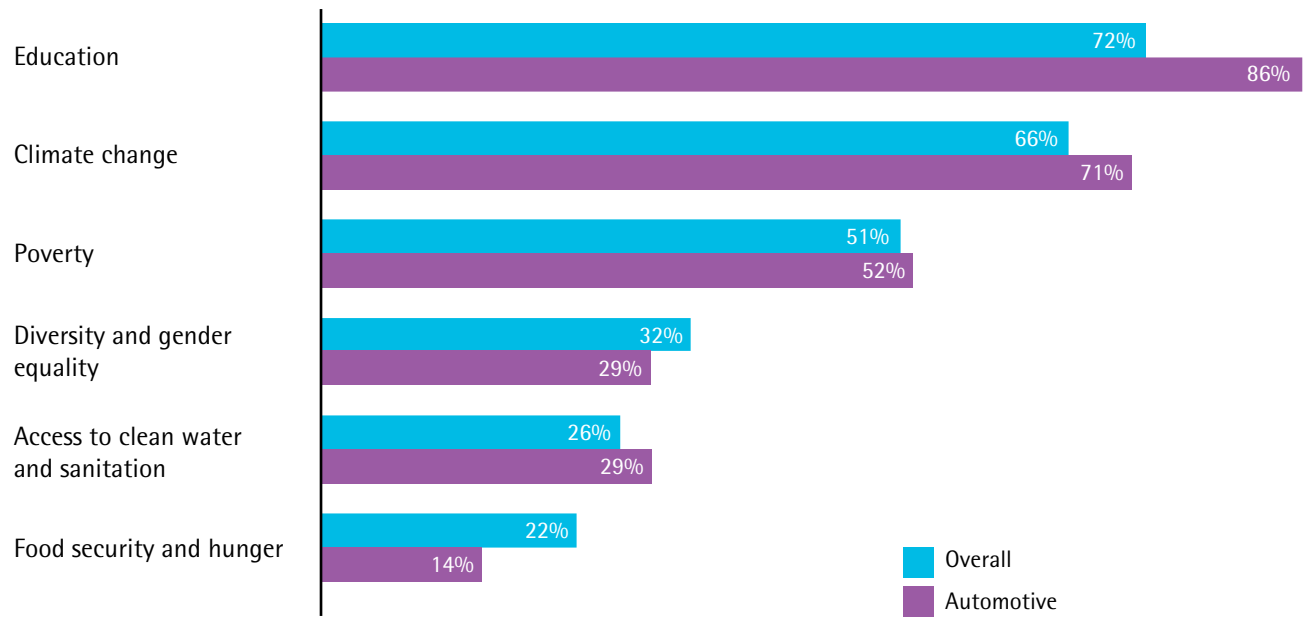
Although some CEOs believe that the downturn has reduced the speed at which they have been able to integrate their strategies for sustainability, or slowed their philanthropic activities, the vast majority agree that the downturn has not derailed their long-term plans to drive a sustainability agenda, and that those projects which have survived and prospered are those which serve both financial and sustainability objectives. This is particularly the case in the automotive industry where creating 'greener', more fuel efficient (and therefore cheaper to run) vehicles is not only meeting changing consumer demand but also serving the sustainability agenda as well.

The breadth of sustainability issues is growing

What do CEOs mean by 'sustainability', and which issues are uppermost in their minds? The breadth and complexity of sustainability issues is growing, and companies making the most progress are working to align sustainability with strategy and link it more closely to business outcomes. As this alignment increases, the scope of sustainability varies significantly by industry, often driven by those environmental, social and governance issues on which a particular industry has the greatest impact.

Automotive executives join their peers from other industries in affirming climate change and education as the two most important development issues for their business. Education

Figure 2.2: Which of the following development issues are the most critical to address for the future success of your business? (Respondents answering 'Important' or 'Very important')



Source: United Nations Global Compact-Accenture CEO Study 2010 (based on 766 completed responses)

in this context has a broad meaning and encompasses the education of citizens for three purposes in particular. First, to ensure sustained economic development; second, to create a steady supply of talent to renew their workforce capabilities; and third, to equip current and future leaders and employees – and those from other sectors such as government and civil society – with the ability to manage sustainability issues as part of core business. Poverty is also mentioned as a concern by a majority of automotive executives, since consumers in emerging economies must rise above a certain income level to think about owning a car. However, due to the automotive industry's huge impact on climate change – and the increasing pressure they are facing on this issue from many stakeholders – it is clear that their environmental impact is the most prominent factor driving their sustainability agenda. The extent to which social and governance issues are a concern is not so clear.

Automotive executives see enhanced reputation and consumer demand as the greatest opportunities of sustainability

The most commonly cited factor motivating automotive executives to take action on sustainability issues is 'brand, trust and reputation', selected by 71 percent of automotive executives as one of their top three factors – roughly equivalent to the survey average of 72 percent (see figure

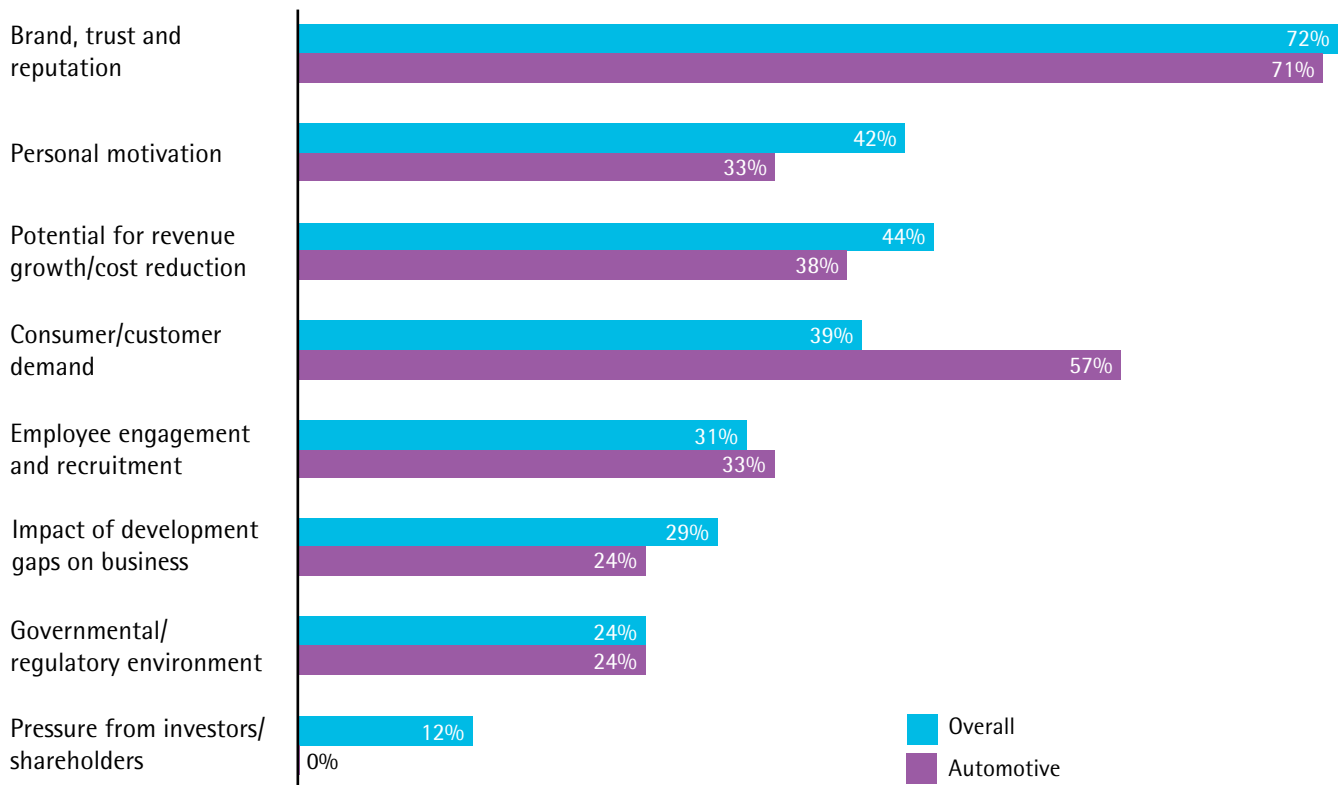
2.3). The focus on brand, trust and reputation as the primary motivating factors could be seen as a reflection of the 'old sustainability' – a marketing-led exercise only tangentially aligned to core business. However, this finding could also reflect the heightened awareness of trust and reputation in the current economic climate, and the growing role of sustainability in shaping the perceptions and purchasing decisions of consumers.

In the wake of the downturn, many companies perceive a challenge in rebuilding trust with stakeholders, and in making the case for business's positive role in society: in the automotive industry, where success depends on long-term, positive connections with consumers, this challenge is all the more pressing. As automotive companies seek to build their brands, consumer trust will be critical – and action on sustainability, improving companies' records on environmental and social issues, is seen as a core element in generating trust.

Sustainability aligned with core business

Elements of a 'new' approach to sustainability – that is, one more driven by the needs of the core business – are noticeable in the automotive industry. The second biggest factor driving the industry to take action on sustainability is "consumer/customer demand" with 57% of executives selecting it in their top three factors, which is considerably

Figure 2.3: Which factors have driven you, as a CEO, to take action on sustainability issues? (Respondents selecting each option as one of their top three choices)



Source: United Nations Global Compact-Accenture CEO Study 2010 (based on 766 completed responses)

higher than the global cross industry average of 39% (see figure 2.3). Consumers are also identified as the most important stakeholder in shaping their action on sustainability with 67 percent of automotive executives selecting them (see figure 2.4). As a leading automotive executive puts it, "The most important enabler is the customer."

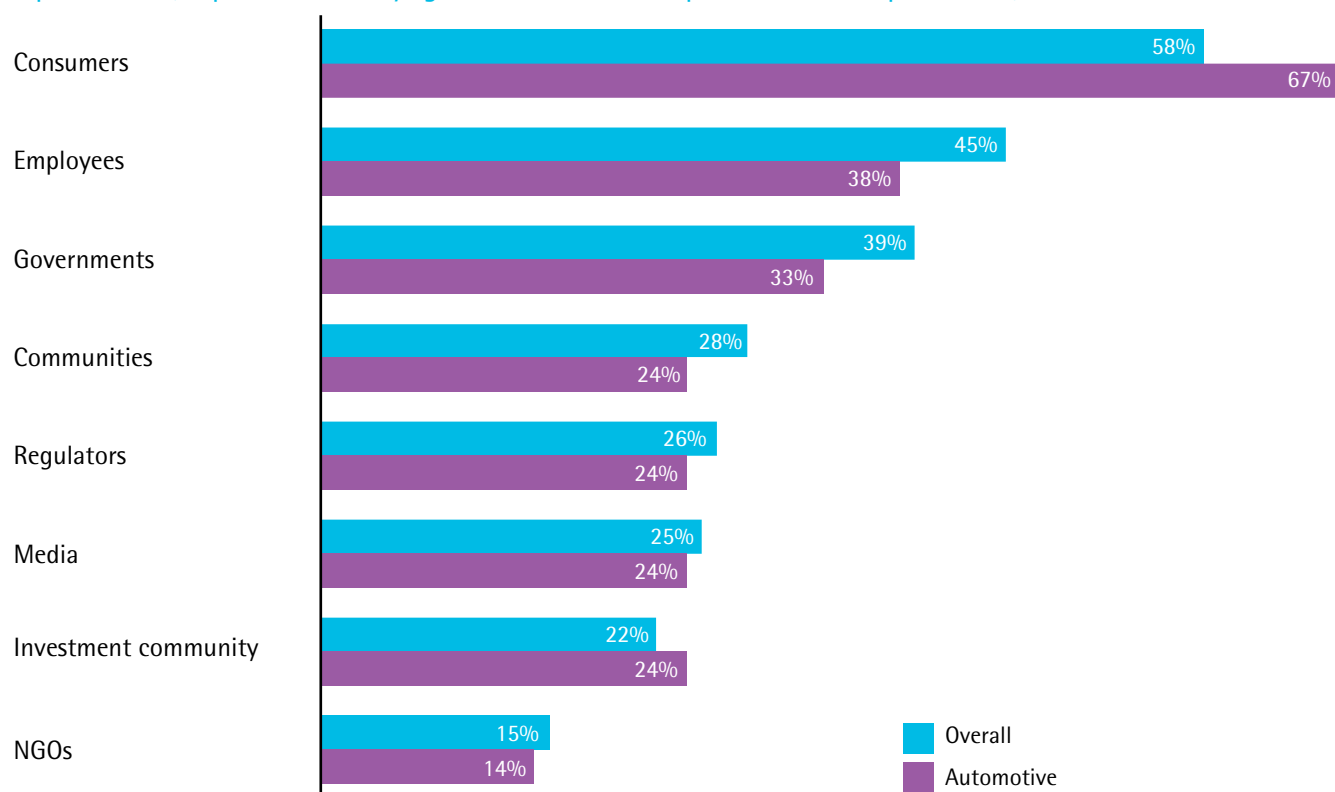
Signs of a rising sophistication in attitudes toward the business value of sustainability are becoming evident in the automotive industry. Businesses are starting to examine closely how their sustainability activity delivers core business value, measured in terms such as revenue growth and cost reduction. As one European business leader pointed out, "If managing a business sustainably is about using resources efficiently, then it serves the cost agenda as well".

Volkswagen for example, is heavily focused on using new technologies – such as solar panels, biomass and hydroelectric plants – in their manufacturing process. With all of their initiatives they have been able to cut back the energy requirements of their production plants worldwide by roughly 177,000 megawatt-hours (MWh) in 2009. That is equal to the annual power requirements of a town with 60,000 inhabitants and represents a reduction in CO2 emissions of no less than 62,000 metric tons.⁹

Beyond cost reduction, however, leading companies are also attuned to the ability of sustainable products and services to drive revenue growth. According to a leading American executive, "The major tipping point for sustainability will be when we all collectively come to the belief that driving sustainability is a part of top line growth... When it becomes equally clear to us that being a responsible company will drive consumption of our products is when sustainability will take off."

In the automotive industry the ways in which a focus on sustainability can galvanize companies and their people to think more creatively is what constitutes much of the top-line growth opportunity – designing cars with reduced environmental impact is prompting new waves of innovation, creating a competitive advantage for those companies who can address new sources of demand, and differentiate their vehicles on the basis of environmental performance. Sixty-seven percent of automotive executives selected "improved innovation" as one of the top three most important opportunities presented by sustainability – considerably higher than the global average of 44 percent.

Figure 2.4: Over the next five years, which stakeholders will have the greatest impact on the way you manage societal expectations? (Respondents identifying each factor in their top three choices; top selections)



Source: United Nations Global Compact–Accenture CEO Study 2010 (based on 766 completed responses)

This is apparent from the plethora of innovative ‘green’ (hybrid electric, plug-in electric and hydrogen) vehicles that are coming to the market e.g. the Nissan Leaf, GM Chevrolet Volt, Mitsubishi i-MiEV, Renault Fluence and many more. BMW have even just launched a new sub-brand, ‘BMW i’, which focuses purely on developing sustainable mobility solutions.

It appears that all automotive companies are exploring low emission technologies at one level. Even premium brands such as Rolls-Royce and Porsche are developing hybrid models. Carl-Peter Forster, chief executive of Tata Motors, which owns the upmarket Jaguar and Land Rover brands, reckons that within ten years up to 80 percent of premium cars will be powered by hybrid engines.¹⁰

The new era of alignment: Embedded sustainability

Many CEOs in the UNGC–Accenture study recognized what a truly business-oriented approach to sustainability in a new era would look like. It is one in which sustainability is not simply one among many programs, but rather sits at the heart of a company’s strategy and operations – an approach we classify as “embedded” or “integrated” sustainability.

Extremely high percentages of automotive executives appear to endorse this integrated approach. Ninety-five percent of these CEOs stated, for example, that sustainability issues and approaches should be embedded in the strategy and operations of the company; an identical percentage also say these issues should be embedded in the strategy and operations of subsidiaries. Perhaps reflecting the complexity of global operations, slightly smaller percentages (86 percent) believe sustainability should be embedded throughout the global supply chain.

Ninety-five percent of automotive executives also say that sustainability needs to be integrated into board-level decision making. As one leading European automotive executive told us, “We have changed the incentives for our board and management, so in addition to traditional economic metrics they now incorporate additional criteria based on consumer and employee satisfaction. We’re trying to move towards greater long-term thinking.” Not surprisingly, 90 percent of automotive executives affirmed that companies should embed metrics to track performance against sustainability objectives, higher than the survey average of 85 percent.

Part Three

Overcoming sustainability challenges on the road to a new era

The challenges ahead: Closing the performance gaps

CEOs are aware that truly embedded sustainability is a vision of the future - it is clearly not a description of the operations and strategy of most companies today. Yet the majority of automotive executives (52 percent) believe that a "tipping point" – where sustainability is embedded within the core business strategies of the majority of companies globally – can be reached within a decade. Given where companies have been on these issues in recent years, this amounts to an optimistic, even enthusiastic, endorsement of the future of sustainability – but with a chastening recognition that many challenges lie ahead.

Put most simply, the principal challenge in reaching the new era is one of execution. Although acknowledgement among CEOs of the importance of sustainability in the automotive industry is universal – at least among those participating in the Global Compact survey – these executives see significant challenges in executing strategies for managing sustainability effectively.

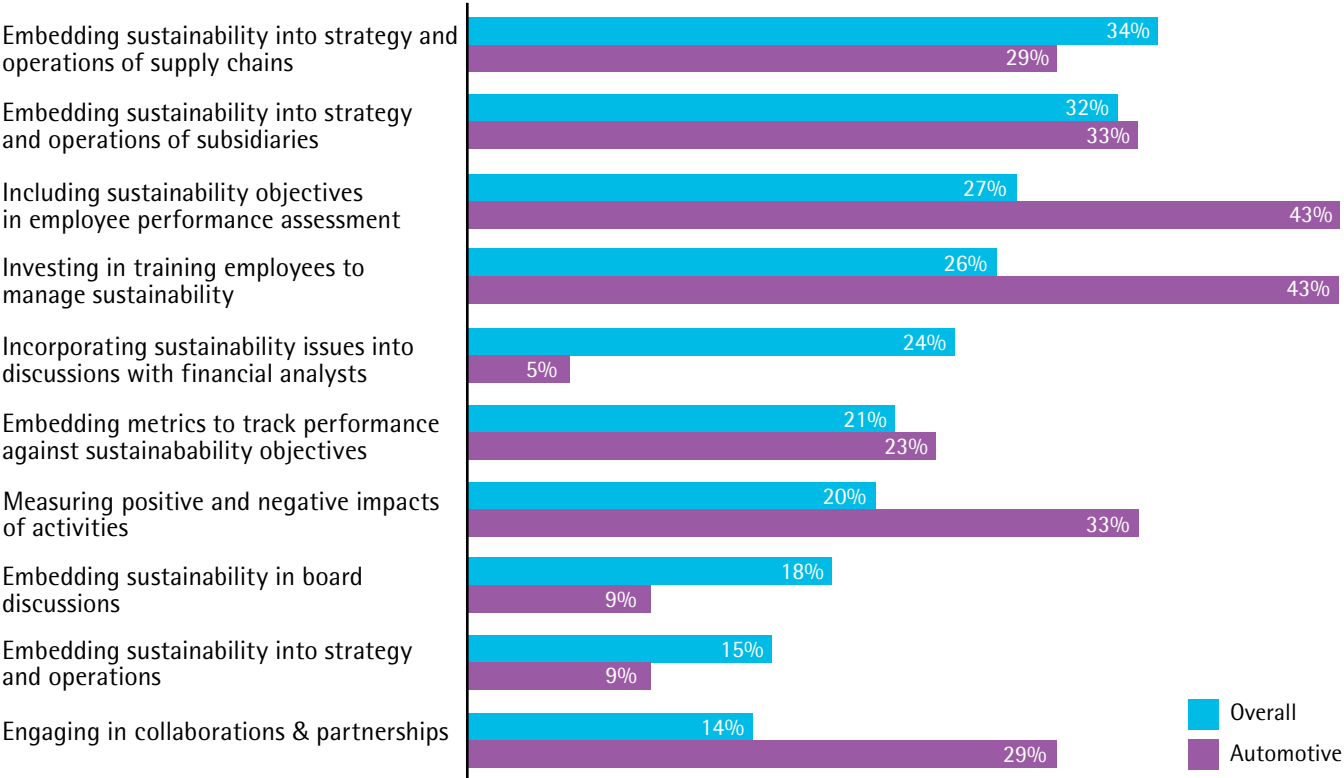
Our study found a significant performance gap between what CEOs believe companies should be doing, and what they report on their own company's performance. Although considerable progress has been made since 2007, the

shift in mindsets towards widespread recognition of the sustainability imperative has raised the bar for companies seeking to execute their strategies and embed sustainability into core business.

For example, while 95 percent of automotive executives say that sustainability issues should be integrated into strategy and operations, only 86 percent say such integration exists in their company – and our conversations with executives on the challenges of integration suggest that even this may be interpreted as overconfidence. On digging deeper into the specifics of integration, greater gaps are apparent: for example, 95 percent say sustainability should be integrated into a company's subsidiaries, but only 62 percent have achieved such integration. Similarly, 86 percent of the executives surveyed believe that sustainability should be embedded throughout the global supply chain, only 57 percent are confident this has been achieved.

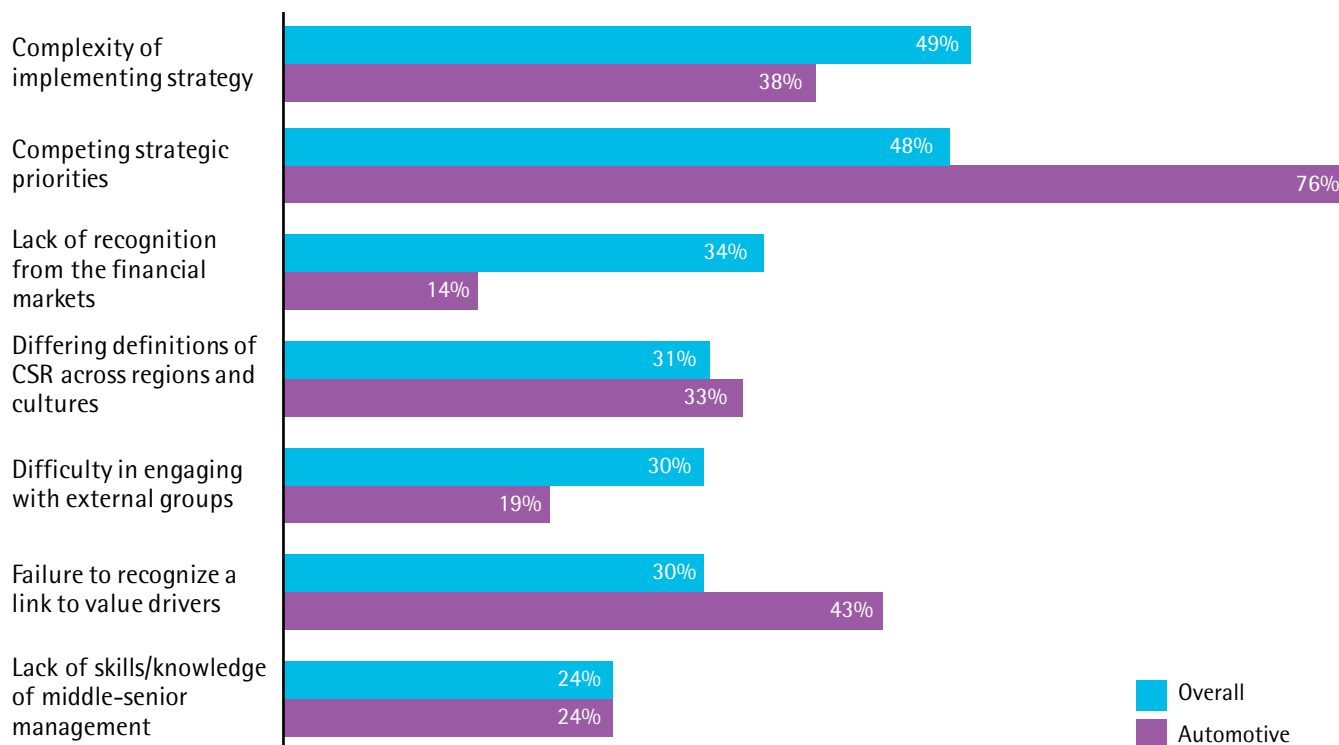
In closing these performance gaps, and trying to fulfill the need of effective execution, CEOs see both internal and external challenges.

Figure 3.1: Performance Gaps between 'companies should' and 'my company does' (Selected performance gaps)



Source: United Nations Global Compact-Accenture CEO Study 2010 (based on 766 completed responses)

Figure 3.2: Which barriers keep you, as a CEO, from implementing an integrated and strategic approach to sustainability? (Respondents selecting each option as one of their top three choices)



Source: United Nations Global Compact-Accenture CEO Study 2010 (based on 766 completed responses)

Internal challenges

Executives face a number of internal challenges to executing a strategy that embeds sustainability across the business: in the words of one emerging market CEO, "currently, the burning issue is how to better incorporate sustainability into daily practice." Foremost among these challenges are the need to balance and prioritize multiple objectives and initiatives, and to push sustainability principles across companies' broader footprint of supply chains and subsidiaries.

Competing strategic priorities

Automotive CEOs report that the most significant barrier to an integrated, company-wide approach to sustainability is the difficulty of managing competing initiatives: 76 percent of automotive executives cite the difficulty of competing priorities facing decision makers – considerably higher than the global average of 48 percent. This finding highlights that executives are confronted with multiple obstacles and emphasizes the challenge of reconciling the need to take a long-term perspective on sustainability issues with a turbulent market environment that often forces companies to make decisions based on near-term pressures.

So although there is widespread understanding in the strategic importance of sustainability issues among automotive CEOs, executives are still struggling to approach sustainability as part and parcel of core business.

"It is not surprising that CEOs highlight competing strategic priorities as a major barrier," said one European business leader. "It shows that sustainability is not yet embedded across all of their priorities." This observation bears witness to the fact that for many automotive companies, sustainability is still regarded as a separate strategy in itself, rather than being embedded across all corporate and functional strategies and business plans.

Demonstrating the business value

The next barrier cited most often by automotive executives is the ability to make a meaningful link between sustainability and business performance. As we shall discuss later, companies sometimes have a difficult relationship with investors and analysts, who do not necessarily reward sustainability-related initiatives with increased valuations. For some executives, this creates a "wait and see" attitude: they intend to proceed cautiously with long-term goals, but in the meantime, they have quarterly performance numbers to hit. This is somewhat surprising as it was the sixth most cited barrier of all global companies, but is the second biggest factor for the automotive industry. This might be due to the uncertainties surrounding the value of becoming a truly sustainable automotive company, which would require a complete shift away from the internal combustion engine toward electric or low emission vehicles. Even though there is a real focus from the majority of global automotive makers

to produce alternative powertrain technologies, there is still much uncertainty surrounding the commercial viability of this market. Making the huge up front capital investment required to develop these new technologies is challenging when the future market landscape is so uncertain. Making a strong business case for billion dollar investments with no clear return on investment is a big barrier.

In 2010, approximately 954,000 vehicles – or 2.2% of the global total sold – employed some type of battery propulsion system, either hybrid electric or pure battery-driven.¹¹ How fast this market will grow is not so certain. There are many different forecasts with varying views on how the market will evolve. There are just simply too many uncertainties to make an accurate prediction.

Managing complexity

Thirty-eight percent of automotive executives cite the complexity that accompanies implementation of sustainability initiatives across different functions as a barrier. Rising concerns about complexity demonstrate how CEOs are shifting their sustainability focus from strategy-setting to execution: of particular issue for many of the executives we spoke to was the challenge of ensuring a consistent, company-wide approach across large and increasingly complex supply chains, as well as through their subsidiaries.

The current problem around technology is a good example of how complexity is playing out in the automotive industry. There are multiple new technologies in development with real uncertainty around which will emerge as the market leader. Due to the breath of new powertrain technologies, the future landscape will be mixed. Most companies are therefore preparing themselves for this by investing in different technologies in parallel.

Such an approach cannot be sustained forever and companies will need to prioritize. Executives must try to understand the interplay and predict the likely market outcomes to make the most optimal investment decisions.

However, as each new technology has its own challenges trying to second guess how the market will mature is extremely complex. For example, PEVs have some major hurdles that need to be overcome to ensure consumer acceptance and economic viability:

- Limited battery life – battery packs might need costly replacements during the vehicles lifetime.
- Extensive time required to recharge battery packs – most packs take a large time to re-charge.
- Supporting infrastructure – the current infrastructure to support battery charging is not sufficient to support mass migration to battery-based technologies.

- Whole life-cycle impact assessments – the environmental impact of vehicle's whole life-cycle is not yet fully understood.

Whilst technological developments are a major source of complexity in the industry, other aspects, such as increased regulation and collaborating with the new value chain partners are also proving difficult to manage.

People and performance

Performance gaps are also apparent with regard to the capabilities and assessment of employees. Ninety-five percent of automotive executives recognize the need to invest in enhanced training of managers to address sustainability issues – but only 52 percent report that their company already does so.

The transition from employees' acknowledgement of the importance of sustainability to the point at which such issues are incorporated in their day-to-day work will be a further challenge. Such a shift may be supported by the incorporation of sustainability objectives into employee performance assessments. Here, too, our survey data shows a gap between ambition and reality: although 76 percent of automotive executives believe that such metrics should be included, just 33 percent report that such performance measures are currently taken into account at their own company.

Building the capabilities of employees, and embedding sustainability metrics in performance assessment, will be a critical step in the journey towards integrated sustainability – but this is clearly an area where automotive executives are currently struggling.

External challenges

As well as grappling with internal challenges of integration, CEOs are also faced with numerous barriers in the external environment that are preventing them from adopting a more embedded approach to sustainable strategies and operations. These barriers cannot be overcome by the business community acting alone; nevertheless, CEOs recognize that companies will need to play an active role in working with a variety of other stakeholders to shape the necessary conditions for sustainability to prosper. The most prominent of these challenges, based on our discussions, relate to the role of stakeholders that include consumers, investors, and regulators.

Understanding consumer and customer demands

Recognizing the supreme importance of the consumer in the industry – and reflecting the transition from sustainability as a risk management issue to one of opportunity for innovation and growth – the majority of CEOs consider consumers to be key drivers of change. However, a

critical question on the minds of CEOs today is whether sustainability issues and interests are actually driving predictable consumer behaviors and desires.

Our research finds mixed responses to this question. Many executives we spoke with expressed skepticism and uncertainty about the extent to which social and environmental concerns influence buying habits, particularly among consumers. Some of the CEOs were unsure whether the perceived values of the younger generation of "ethical consumers" - sometimes called "Generation Y"— would last, or whether environmental concerns would come to be seen as a passing trend.

Across the board, CEOs are uncertain how to interpret consumer demand for sustainable products — consumer survey data appears to conflict with purchasing signals, which in turn are filtered through dealerships. CEOs seemed largely to agree with one business leader from the consumer goods sector, who said, "The holy grail is to be able to say that the impact on purchasing behavior of consumers for sustainable brands is clear. It is not."

Some questions related to consumer demand are particularly vexing to the automotive industry. Do companies lead demand, or are they led? The onus may be on companies to create demand through product offerings, but they must also respond to dealers' needs and demands. And currently, the full extent to which the consumer cares about the

sustainability impacts of vehicles remains uncertain. The majority of consumers claim that they are concerned with the environmental impacts of vehicles but the extent to how it affects their purchasing decision is still ambiguous. It appears that the mainstream consumer is not willing to pay a high premium for it. However, the majority of consumers are definitely attracted to financial benefits of sustainable cars, which is why the market for fuel efficient vehicles is growing at a fast pace. New car registration in the EU15 for vehicles with engine efficiencies below 120gCO₂/km over the last few years has risen dramatically: between 2008 and 2009 it increased 59 percent from just over 2 million to 3.2 million.¹²

It appears that companies need to communicate and educate the consumer around the benefits of sustainable vehicles. Most sustainability metrics may be difficult for the consumer to interpret and contextualize. Companies need to proactively demonstrate relevant and tangible personal benefits to the individual — for example, cost savings, the benefits to local communities (such as increased employment), and reduced carbon emissions.

Consumer demand for PEVs is also uncertain. The high premiums for such vehicles are likely to be a deterrent. However, price is not their only concern. For example, for 100 percent electric vehicles range anxiety, charging time concerns and location of supporting infrastructure need to be resolved before the mass market switches to these

vehicles. Consumers are not willing to lose the freedom of mobility in exchange for sustainable vehicles. However some of these consumer concerns may be unfounded. Range anxiety for example should not be a major problem, as many studies have shown that the range of pure electric vehicles should adequately fulfil the daily needs of an average commuter. Clarifying these myths is the challenge.

Creating a deeper understanding of the consumer, especially in newer, emerging markets is also important. As Carlos Ghosn of Renault Nissan Alliance puts it, "Attention is shifting from the West to the East, from the North to the South: emerging countries have different cultures, different backgrounds and different experiences, and their issues may or may not be similar to those of the developed countries."

Engaging the investor community

It appears that mainstream investors are at present a predominantly absent, if critical, part of the sustainability picture. In our conversations with CEOs, a common refrain related to the lack of interest in sustainability activities from investors and analysts, beyond very occasional requests from the socially responsible investment community. As one business leader put it, "Investors talk a good game about investing in sustainable business, but that potential has yet to be realized."

Within the automotive industry the provision of capital and therefore the participation of the investment community is imperative for the industry to make the huge transition and become fully sustainable. Investment for producing more fuel efficient internal combustion engines is not the major concern. Individual companies can and are willing to make such investments themselves. However, for the automotive industry to become truly sustainable they need to radically change and start producing alternative powertrain technologies. As previously discussed there are currently substantial structural and technological deficiencies in place. PEVs and other new technologies require huge investment and capital expenditure from many players along the value chain to solve these current challenges. This is crucial in order for the industry to achieve the economies of scale required to create a financially viable market. The question is: who are going to make these investments?

One solution to this financing dilemma is that the costs are spread across all stakeholders along the value chain (including utilities and governments). This requires new types of partnerships and collaboration, which are starting to emerge in some markets and regions. It is also clear that government intervention and support is imperative. Those countries which are at the forefront of the 'electric' movement are those where the governments are playing an active role – China and the USA in particular. The R&D spending from the US Department of Energy on developing clean transportation fuels is around \$4 billion per year and China have committed \$15 billion over the next 10 years to support electric vehicle development and deployment.¹³

Achieving more regulatory certainty

Automotive executives expressed a need for clearer regulatory and policy standards, especially regulations that help companies unwind the complexities of international markets. Eighty-six percent of automotive executives surveyed expect governments and policy makers to increase their interventions to drive better environmental conditions.

At the same time, executives are also wary of overreaching regulation, pushing too fast and thus hampering the efforts of business to find the balancing point between business and societal value. Auto executives are about evenly split (52 to 48 percent) in terms of whether they would welcome increased government intervention in the market to drive sustainable outcomes.

From our conversations with CEOs, it is apparent that there is both a belief in the importance of sustainability to future business success, and a determination to integrate sustainability objectives into core business. CEOs' belief in the centrality of sustainability means that their companies are beginning to take substantive, innovative actions to set their companies on the road to a new era of sustainability.

Executives also recognize, however, that the journey will be long and complex, and that they will have to overcome a series of challenges, both internal and external, to reach a tipping point where sustainability is truly embedded in companies worldwide.



Part Four

Pioneers of the New Era

How leading companies are finding the link between sustainability and high performance – and what a more sustainable industry might look like

The future will not be created based only on good ideas or by regulatory fiat, but rather by the innovations of real companies pushing the boundaries of what is possible. As business leaders stressed throughout our conversations, progress in embedding sustainability will depend on businesses being able to forge, understand and communicate linkages with core business challenges and opportunities, as measured through revenue growth, cost reduction, innovation, risk management, brand value and other intangibles.

The innovations of sustainability pioneers in the automotive industry show companies addressing the key challenges of the industry through explicit programs aimed at improving efficiency in production and manufacturing; pursuing innovations to drive differentiation; creating vehicles powered by alternative energy sources; and engaging collaboratively with value-chain partners, as well as with regulators.

Improving production and manufacturing efficiency

As the automotive industry becomes increasingly competitive, carmakers are placing a growing emphasis on lean and efficient manufacturing. Such emphasis is not entirely new as cost reduction has always been important in the industry. However, lean manufacturing is now being driven not only by cost concerns, but also by a new sustainability agenda.

For example, SEAT (a Volkswagen brand) worked with a variety of partners to upgrade an existing 35 kilometer rail line in Spain that directly links their Martorell plant to the port of Barcelona, enabling the company to transport new cars for shipment by rail instead of onroad alternatives. The rail line now runs three trips a day, each trainload holding 170 vehicles, meaning 85,000 cars are delivered to port this way each year.

This transportation innovation has created a more efficient and reliable supply chain, tripling the number of car delivery trips per day. Cost reductions have also been notable, due to 25,000 fewer truck trips being made annually. The new rail line has driven substantial environmental benefits, including a 200 ton reduction in CO2 annually. The rail line also won 'Best Logistics Initiative' of the year at the International Logistics and Material Handling Exhibition in Barcelona. SEAT has created a 'CO2 team' at its manufacturing plant to drive forward further reduction of green house gas emissions throughout their production lines. For example, the company is currently negotiating additional agreements to transport metal parts by rail instead of road as well as developing a commuter line for its employees.

Such initiatives are not only creating environmental benefits, they are also helping automotive companies respond to increased competition in the industry by driving down production costs.

Encouraging innovation in technologies and products

R&D innovation in the automotive industry has at least two goals: The first can be described as evolutionary and aims to improve the efficiency of the traditional internal combustion engine to reduce carbon emissions. And the second, more critical and longer term goal is the pursuit of alternative powertrain vehicles – The 'Game Changers'.¹⁴

The first goal is currently being pursued by creating smaller more efficient vehicles or by reducing the overall energy requirements of such vehicles. BMW, for example, has heavily invested in what it calls 'EfficientDynamics' and Volkswagen in its 'BlueMotion' technologies. Such innovations include modified engine management software to improve engine efficiency, gearboxes with longer ratios in higher gears for economical fuel consumption and technology informing the driver when to change gear for optimum driving efficiency. Such evolutionary innovation is constrained by fewer challenges and is already gaining substantial traction. With Volkswagen and Toyota internal combustion engines already coming close to 50 mpg, improvements to these engines could deliver 100 mpg by 2030.¹⁵ Another related emphasis is around connectivity – connecting vehicles through sensors, internet connectivity and other communications capabilities. As vehicles communicate more commonly with other cars in traffic, drivers can be advised much sooner with real time information of where congestion is to be expected. From the perspective of cities, these embedded services in cars will enable better traffic management to avoid congestion and realize fuel savings.

The second goal of developing PEVs and/or hydrogen-powered vehicles is perhaps the most significant trend being pursued by automotive pioneers and could completely disrupt the industry. Therefore all leading automotive producers are focusing on alternative powertrain technologies at one level or another. The PEV market is still at a nascent stage in terms of the relevant technologies involved. For example, battery technology has not yet reached the point at which it can support consumers' pre-conceived expectations for range (although today's PEVs are able to meet the daily driving requirements of the majority of consumers – a reality they become more comfortable with, once they have experienced driving a PEV) or charging time. Consumers are used to an extremely easy 'use paradigm', and electric vehicles may not be ready for the mass market until they can come closer to matching that paradigm. With uncertainty around battery life, time needed to recharge, lack of an adequate supporting infrastructure, automakers face stiff challenges in making electric vehicles a reality in the mass market.

Nevertheless, a number of industry pioneers are working to overcome these challenges with innovative technologies and approaches. For example, General Motors' new PHEV, Chevrolet Volt, has been able to address concerns about the driving range of the car before recharging. Volt runs on an electric motor (made by Hitachi of Japan), powered by an electric battery (made by LG). When the charge on the battery begins to run out, a petrol-fueled power source kicks

in to produce the electricity needed to recharge the battery. These kinds of innovative, hybrid approaches can begin to address consumer concerns and could at least be a 'stop-gap' technology solution until other innovations arise in the marketplace. General Motors appears confident that this vehicle will be a success and have just announced that they are increasing their 2012 production target by 50 percent to 45,000. This increase is due to high level of consumer interest, with more than 25,000 consumers adding their names to the list of "Volt enthusiasts."¹⁶

Other leading automotive companies are producing 100 percent electric vehicles. The Renault-Nissan alliance is one of these companies who are not only producing such vehicles but are also investing in renewable energy sources to help build, power and recycle them. The new Nissan Leaf is 100 percent powered by compact lithium-ion batteries, delivering the same performance of a 1.6 liter petrol engine, with a driving range of 100 miles. The car is also made from recycled materials, along with the ability for consumers to communicate with it via their mobile phones. It has just been named Car of the Year 2011 – the first electric vehicle to have won this award.¹⁷ Nissan also appear extremely optimistic in its targets, aiming to produce 50,000 vehicles in the first year.¹⁸

Another pioneering innovation is a venture called Better Place, backed by Renault. The program addresses two of the biggest challenges for electric vehicles: range limitations and charging time. It achieves this by introducing quick battery switching capabilities. Better Place's model is one of mass deployment, and the battery-switch process is one component of this model. Ideal for taxis or fleets given its speed and convenience, it addresses range limitations and anxiety, both of which are major barriers to electric vehicle adoption. Charge spots will complement, and indeed outnumber, battery-switch stations to make sure consumers have a wide range of options for charging at their convenience and to suit their needs. It is anticipated that consumers will still do their charging at home or at work more than 90 percent of the time. What Better Place is trying to do with this optionality is to remove all adoption barriers and create a sustainable, customer-friendly model that supports mass deployment of electric vehicles. "It is increasingly recognized that fast charging is not a sustainable method of charging given its detrimental impact on battery life and the strain it places on the grid. Better Place is developing creative ways to get around this problem and still give customers the flexibility they require," says Dr. Michal Wolkin, Director of Energy Storage Technologies at Better Place¹⁹. This optionality will be supported by software for battery and energy management and customer service support to ensure a positive and seamless driving experience.

Some automotive companies are re-inventing the whole production process to reduce weight and develop a vehicle focused on maximizing the potential of electric power generation. BMW for example is using an innovative approach in developing its BMW i3 – previously known as the Megacity Vehicle – with a new construction concept known as LifeDrive architecture. An aluminum chassis houses the powertrain, and the passenger cell consists of high-

strength but lightweight carbon fiber-reinforced plastic (CFRP). Using lightweight materials cancels out most of the extra weight added by the batteries. "This means superior driving dynamics combined with significantly increased range using electric power," explains Klaus Draeger, BMW Board member responsible for development.²⁰

All of the examples show how leading companies are responding to changing consumer demands by developing innovative new vehicles that are not only more environmentally friendly, but also deliver real and tangible benefits to the end user.

Leveraging new kinds of partnerships to drive value and reduce risk

Practically speaking, for sustainable initiatives such as electric vehicles to become a viable part of the automotive industry's growth strategy, new kinds of partnerships – both cross-industry and cross-sector – will be essential. Collaboration is a clear key to high performance in the months and years ahead. In the words of PM Telang, Managing Director of Tata Motors, "We need partnerships, both public-private and also between developed and emerging economies."

Industry partnerships can be seen in such examples as the Renault-Nissan and now Daimler alliances, which was created to share technology and innovations for producing small engines based on low emission technologies.

While existing partnerships may help companies share the capital investments required for producing efficient and low emitting vehicles, even more important are completely new types of cross-sector initiatives and partnerships. These will be especially important for overcoming the current limitations in the infrastructure (for charging, etc.) required to make electric and/or hydrogen vehicles a more viable alternative.

For example, Daimler has partnered with German utility company RWE, with support from the German Federal Government, to make infrastructure advancements. Daimler provides the electric cars while RWE handles the development, installation and operation of the charging infrastructure, the supply of electricity and central system control. The pilot is already in full operation in Berlin, with the aim of expanding to all major German cities and other European countries. The partnership is delivering a truly sustainable, green solution. The system uses highly efficient electric cars and the whole process should emit very low levels of CO₂, as the cars will mostly be powered by renewable energy from RWE.

New materials will also enable the automotive industry to reduce its carbon footprint, so some automakers are looking into innovations with parts producers. BMW, for example, has entered into a joint venture with SGL group, a carbon fiber producer, to develop new, lightweight and more efficient car parts.

Other kinds of fruitful partnerships are being forged between automotive makers and battery producers. Some automotive companies believe that batteries will become the key differentiating component of future vehicles, meaning any company that jumps out ahead in this area may have an advantage difficult to overcome. Automotive companies are therefore starting to forge alliances with the battery producers. For example, Toyota is working with Panasonic in Japan, and Daimler is teaming with Li-Tec in Germany. Automotive producers also need to be aware that battery producers are working to insert themselves into critical points along the value chain. Siemens and General Electric, for example, are heavily investing in developing smart grids charging networks in China.

All of these new types of partnerships and collaboration show how leading companies are responding to the changing industry dynamics. They understand that the shift toward 'green' transportation will create many new challenges and opportunities, and that they must develop new kinds of partnerships to effectively position themselves in this new environment.

Closer engagement with governments and regulators

If the electric-vehicle market is to become structurally and commercially viable, businesses will need to work in concert with governments and regulators. Extremely high capital investments are required to build and maintain the infrastructure for electric vehicles – an investment no single automaker can bear itself.

In fact, many of the innovative collaborations currently in place in the industry (such as Better Place, and the work between RWE and Daimler) have substantial government backing. Automotive pioneers are working to engage with their governments to help share the cost of producing the required infrastructure. Leading automotive companies will need to continue with this collaboration, not only to help share the investment but also so that companies can guide and influence the government on how best to implement the infrastructure upgrades.

In some instances it is governments who are taking the lead and driving the huge changes required for mass movement toward electric vehicles. China and Israel for example see the electrification of transport as a critical step in moving toward a more sustainable future, breaking the inexorable connection between economic growth and oil dependence. China is extremely ambitious and has set the goal to become the number one producer of electric vehicles by 2012. In August 2010 they commissioned 16 state-owned enterprises to grow the electric-vehicle industry. These enterprises, led by State Grid (the world's largest utility), also include the leading companies across energy, finance, retail and infrastructure industries that are committed to building this framework.

Competition at a national level for becoming leaders in the electrification of transport is intensifying. The German Chancellor, Angela Merkel recently launched a "national platform for electromobility", which brings together the worlds of politics, science and industry to strengthen the pioneering role of Germany in electric mobility. BMW are taking an active role in this joint initiative believing in the importance of collaborative approach. As Nobert Reithofer, Chairman of the BMW AG Board put it, "Germany is well positioned to become an international leader in the area of electromobility over the long term. To make this happen, our leaders in politics and industry have to be pulling in the same direction."²¹

This collaborative mindset is critical in providing the right incentives for consumers and producers to encourage the creation and purchase of electric vehicles. In the United Kingdom, for example, the government is currently offering up to €5,700 (US\$8,000) subsidies for green vehicles, and in some EU countries such as Holland, subsidies reach as much as €15,000 (US\$21,500). These initiatives can help the market reach maturity faster by creating demand and driving the economies of scale required for battery and electric-vehicle production (and other alternative powertrain technologies) to become financially viable.

New business models and value propositions for consumers

Another innovation being propelled by some automotive pioneers is to look deeper into the actual consumer value proposition of the automotive industry. Instead of seeing the value as 'a vehicle' some companies are redefining the value as 'mobility' itself.

With that model, other kinds of consumer propositions and relationships come into play – for example, a shift away from a focus exclusively on product buying to one that also includes product leasing. Some consumers are focusing less on the product and more on what the product gives them – therefore bring traditional consumer assumptions into question. Alternative forms of mobility will become more important as people think more freely and positively of car sharing, 'pay-as-you-go' and similar concepts.

In response to these trends, some manufacturers are offering alternative mobility services rather than simply selling cars. Car sharing options or related programs are becoming successful and gaining take-up with many consumers. For example, Car2go is a new mobility concept launched by Daimler. The system is straightforward: smart vehicles are made available for leasing on a pay-as-you-go scheme within the city 24/7. The program was launched in Berlin and has been so successful that Daimler is now launching the initiative internationally.

Peugeot offers a similar service, called 'Mu.' Customers can lease on a short-term basis a variety of vehicles – cars, scooters, even bicycles – using a prepaid card that can be topped up online at any time. The service was first launched in continental Europe and is now present in the United Kingdom as well.²²

BMW's new sustainable sub-brand, BMW i will also heavily focus on developing new mobility services. As Ian Robertson, member of the board of management said; "Mobility requirements are changing in rapidly expanding megacities... Our commitment to car-enabled mobility services, like BMW ConnectedDrive, will be significantly expanded... BMW i aims to provide customized mobility solutions across a seamless network of premium products and premium services." The focus is on smart logistics that will improve usage of existing parking spaces, as well as intelligent navigation systems with local information, intermodal route planning, and premium car-sharing.

Another mobility model created by Better Place offers customers a single point of contact and provides a complete service from the vehicle purchase through to its operation (charging) and maintenance (battery and vehicle). Better Place has disaggregated the cost of the battery from the vehicle purchase cost and offers consumers a contract similar to that of a mobile phone subscription, where they pay a set fee each month for the maintenance and running of the vehicle. As consumers do not own the batteries they do not need to worry about battery life, liability etc, and in turn as Better Place has control they can maintain the batteries optimally. Better Place then recoups its investment and makes profits over the vehicles lifetime.

Another radically new concept is being developed and tested by Daimler. The idea looks something like a cross between Facebook, an internet dating site and a discount-flight broker. 'Car2gether' matches people wanting to hitch a ride with drivers going the same way. In time it will allow cashless payments for the journeys, from which Daimler will take a small cut.²³ We will have to wait and see whether such concepts gain traction and become successful, but it is still interesting that leading automotive companies are exploring new business models that go against their traditional strategy of selling more vehicles.

Leading companies are responding to changing demographics and consumer demand by developing these new mobility concepts, which not only differentiates themselves in the market place, providing new services that increase their customer base but that also generate multiple sustainability benefits.

Assembling the jigsaw: Towards a more sustainable industry

As we have seen, the innovations of individual companies allow us to build a picture of what a more sustainable automotive industry might look like. Across every aspect of the value chain, leading automakers are beginning to go beyond a "business-as-usual" approach, using sustainability as a lens to focus on the critical opportunities offered by the transition to a low-carbon economy.

Despite strong progress, however, CEOs recognize that they must do more, and that to reach a tipping point they must accelerate the journey to a new era of sustainability.

Part Five

Accelerating the journey to the new era of sustainability

The 2010 UN Global Compact-Accenture CEO Study has uncovered a picture of global business, and global attitudes toward sustainability - much has changed since the last study in 2007. Executives demonstrate a stronger commitment to the importance of sustainability principles to their companies, an awareness of both the societal and business value of more sustainable operations and products, and a strong sense of what the next era of sustainability will look like.

Based on our CEO survey and one-to-one interviews, we have identified five principal enabling conditions or "must-haves" that executives believe need to be put in place to accelerate the transition towards a tipping point whereby sustainability is fully integrated into the majority of businesses globally, and examples of the actions that businesses can take in order to begin shaping these conditions.

1. Actively shape consumer attitudes and needs to create a market for sustainable vehicles

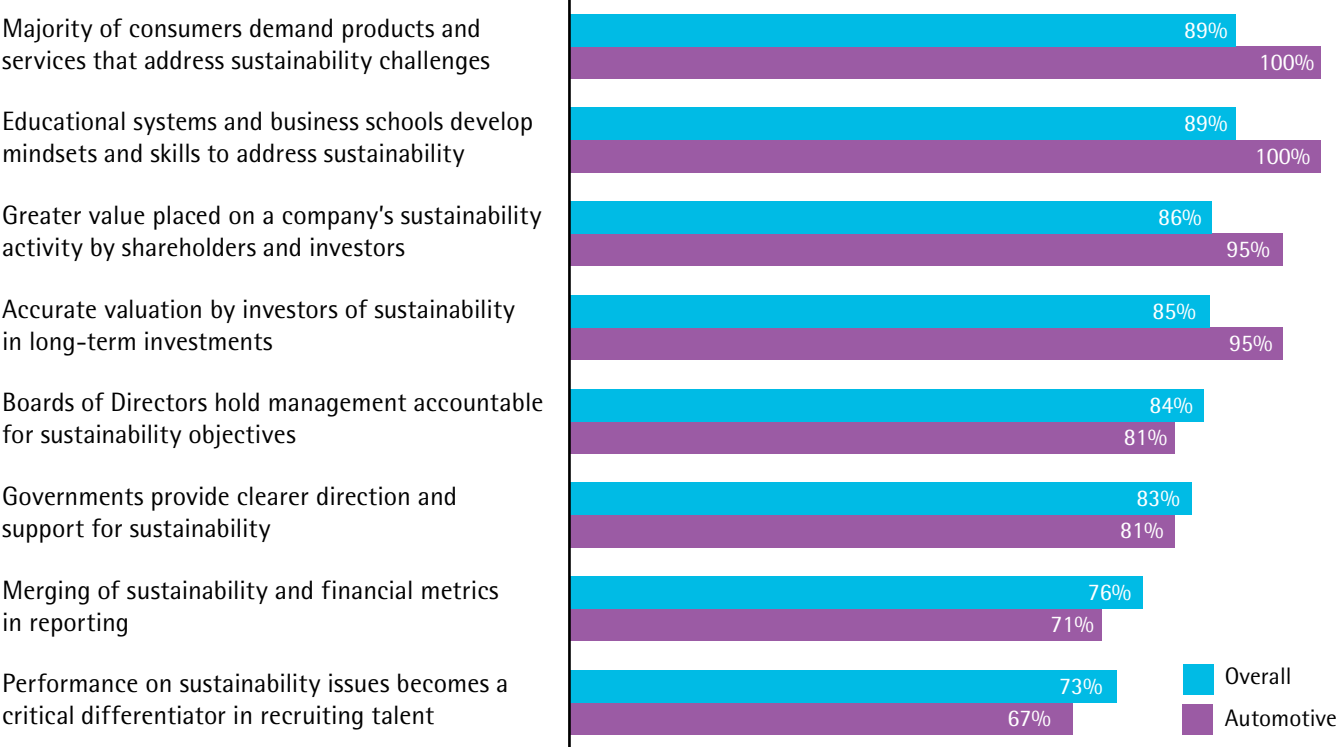
Example business actions:

- Measure and communicate whole-life impact through production, manufacture and consumption at a product level.
- Improve understanding of customer preferences, expectations and behaviors (especially for the PEV market) by increased market research and pilots.
- Improve provision of consumer information and education, particularly through meaningful and accessible metrics regarding sustainability impacts e.g. cost saving from electric vehicles.

One-hundred percent of the automotive executives participating in the Accenture-UNGC study identify the point at which the majority of consumers demand products and services that address sustainability challenges as important to reaching a tipping point.

Some executives we spoke with are trying to shape emerging tastes and preferences for sustainable vehicles. As Carlos Ghosn, CEO & Chairman of the Renault Nissan Alliance put it, "We want to make the most eco friendly choice a good economic solution for consumers as well."

Figure 5.1: How important will the following changes be in order to reach a "tipping point" where sustainability is embedded within the core business strategies of the majority of companies globally?



Source: United Nations Global Compact-Accenture CEO Study 2010 (based on 766 completed responses)

There are two principal actions that CEOs identified as important: measuring and communicating the whole-life impact of products through production, manufacture and consumption; and improving the provision of consumer information and education, particularly through meaningful and accessible metrics on sustainability impacts. As one North American CEO told us, "Consumer information will change behavior." By tracking and highlighting how a particular product impacts environmental or social outcomes, businesses can align better with a consumer's buyer values, as well as differentiate themselves from competitors on the basis of comparable performance data. Some automotive companies are starting to educate their consumers on the benefits of sustainable vehicles. Nissan have a dedicated website explaining all of the benefits of switching to their new 100 percent electric Leaf. It shows the cost savings and other functional benefits of using an electric car. They claim that you can drive 100km for just €1, which would cost about 10 times more with a conventional petrol-powered car. As such vehicles do not have an air filter, clutch, spark plugs or gear box, they state that the chances of breaking down are 3 times lower.

Educating the customer will only be effective if the industry has a concrete understanding of consumer preferences and behaviors in order to develop fit-for-purpose PEVs and other powertrain technologies, that actually cater to consumer requirements and take into account likely

trade-offs consumer are willing to make, if any. Industry players must proactively increase their understanding of consumers as it currently appears that they have not done enough market research to solve such uncertainties.

2. New types of industry and cross sector collaboration to overcome structural challenges and create a more positive regulatory environment

- Engage with governments to adopt collaborative approaches to shape regulation – e.g., joint working groups, industry & cross sector collaboration.
- Develop industry standards that pre-empt formal regulation – e.g., standard electric 'plug-in' on vehicles.
- Engage in innovative value chain collaboration across governments, utilities, OEMs, battery and charging companies to overcome the structural challenges and effectively scale electrification of vehicles (and other low emission powertrain technologies).

To avoid the unintended consequences of unhelpful regulation, build trust and provide a more informed basis for policymaking, businesses can adopt a more proactive and collaborative approach with governments.



Eighty-one percent of automotive executives noted that governments need to provide clearer direction and support for sustainability. At the same time, only 24 percent of auto executives surveyed named regulators as a key stakeholder group helping carmakers manage societal expectations.

Whilst the automotive sector is undergoing substantial change through the development of multiple technologies (PEVs, hydrogen, and highly efficient internal combustion engines) the electrification of the industry highlights the importance of new types of industry and cross sector collaboration. It is described as a 'game changer', due to its potential to completely disrupt the industry by opening it up to three new industries: battery, utility and charging. Previous Accenture research²⁴ concludes that new types of collaboration are critical to develop effective market models, as well as commercial and regulatory frameworks to overcome the following challenges:

- Determination of roles and responsibilities across the value chain to develop profitable business models with clarity between the various players.
- Development of commercial frameworks to support these business models.
- Identification of how PEVs fits into the utilities' regulated industry structure.

- Identification of deployment models for PEV infrastructure.

Industry collaboration is also crucial for standardization and interoperability for the:

- Development of standards across charging infrastructure, connectivity to the electricity network, and cyber security and communications security, to ensure interoperability within and across markets, providing customers with security, ease and flexibility.
- Development of infrastructure payment standards enabling flexible alignment of costs and payment potentially to be included in a customer's utility bill.

3. Generate new skills and mindsets to drive sustainable development

- Invest in enhanced training of managers on sustainability issues.
- Shape educational curricula and partner with academic institutions – e.g., through development of vocational courses.
- Communicate progress on sustainability issues to employees to encourage behavioral change.

All of the automotive CEOs we surveyed identified the point at which educational systems and business

schools develop mindsets and skills needed for future leaders to address sustainability as important to reaching a tipping point in sustainability.

Based on our conversations, automotive executives see the importance of education and skills at three levels.

First, at the broadest level, CEOs believe we need better education systems to support sustainable development outcomes. For example, increasing employment and lifting people out of poverty in a sustainable way depends on providing them with opportunities to acquire a broad education as well as marketable skills. This is especially important to automotive companies as they seek to expand their presence in emerging markets.

Second, executives especially believe that education of a new generation of managers, through universities and business schools in particular, should focus on the broad set of skills needed to manage sustainability issues, especially in collaborating with a more extensive ecosystem of partners, both cross-industry and cross-sector. New skills and knowledge are also crucial for the automotive industry to continue to innovate and design sustainable vehicles as well as production methods and processes. For example, the Renault Foundation actively participates in educating and developing young talent. In collaboration with top university engineering programs they have created specific M.B.A. and Master's-level courses around mobility, electric vehicles and sustainable transport. The Foundation contributes €2.7 million (US\$3.3 million) to its mission every year and, since its creation, has welcomed more than 370 students from nine countries.

Third, although businesses believe that formal educational institutions and business schools need to do more when it comes to sustainability education and the development of more relevant skill sets, they also recognize the need to increase their own efforts to engender the appropriate mindsets in their managers and future leaders. CEOs see a need for their own companies to increase investment in training targeted specifically towards generating the right knowledge, skills and attitudes for every one of their people to integrate sustainability objectives into their roles and responsibilities: 95 percent of automotive executives stated that they should be engaging in additional training to enable their managers to address sustainability issues (higher than the global average of 86 percent), though only 52 percent are currently doing so.

More broadly, it seemed clear from our discussions with executives that often they were faced with a cadre of middle and senior managers that had yet to embrace sustainability or were, in many cases, not incentivized to do so due to the company's existing targets and performance architecture. Training the next generation of managers will require both hard and soft measures to develop the necessary skills and mindsets, but also to embed those within performance management frameworks.

4. Support the creation of an investment environment more favorable to sustainable businesses

- More effective communication with investors on the financial implications of embedded sustainability across the whole value chain.
- Select and track appropriate metrics to measure and communicate sustainability performance.
- Integrate sustainability reporting with financial reporting and investor relations activity, under the remit of the CFO.

One of the most common refrains in our conversations with CEOs related to the importance – but absence – of the investor community as part of the solution to sustainability challenges. Ninety-five percent of automotive executives see "accurate valuation by investors of sustainability in long-term investments" as important to reaching a tipping point in sustainability. However, our conversations with members of the investor community revealed two sides to the story; these insights can help identify the steps needed to ensure that the power of financial markets can be used to drive sustainable outcomes.

Although there is a grain of truth in companies' complaints that the investment community may turn a deaf ear to the value of sustainability, it is equally true that many companies do not do enough to communicate and engage investors in the impact of their sustainability activities: just 57 percent of automotive executives report that they currently incorporate sustainability issues into discussions with financial analysts.

According to Edemir Pinto, CEO of Sao Paulo stock exchange BM&F Bovespa, "CEOs may complain that investors do not value their sustainability activities properly, but they need to tell investors what they are doing: if they don't communicate regularly, investors cannot incorporate these issues into their models." In addition to engaging and challenging investors on the importance of sustainability performance, CEOs need to be more proactive in communicating progress on a regular basis.

This also means, then, that companies must become more proficient at measuring and tracking the impact of their sustainability activity on core business metrics such as revenue growth, cost reduction, risk management and reputation. By doing so, they will be able to educate investors as to the impact of their sustainability activity in terms that can be built into valuation models used and understood by the investment community.

Some automotive companies are actually setting up their own investment firms. BMW for example has just founded a Venture Capital company in New York City, BMW i Ventures, with an investment totaling \$100 million, focusing on funding sustainable mobility and transport start ups.²⁵

5. Embed new concepts of value and performance at the organizational and individual levels

- Devise mechanisms to measure both positive and negative impacts on society and articulate value beyond traditional accounting concepts, e.g. quantifying 'mobility' vs. emissions.
- Embed sustainability issues into the performance and remuneration packages of top executives.

CEOs believe that we are moving towards an era in which businesses will no longer focus exclusively on profit and loss as the primary means of valuation, but rather take into account also the positive and negative impacts on society and the environment. As Hans Vestberg, CEO of telecommunications company LM Ericsson, told us: "We believe that it is not only a company's economic performance that determines its success, but rather successfully combining economic performance with active management of how the business impacts on social and environmental factors." PM Telang, Managing Director, of Tata Motors, put the matter in terms of the responsibility of trust: "The concept of 'trusteeship' is vital, both as a management philosophy and as a principle of governance."

Our conversations with CEOs paint a mixed picture of companies making the link between sustainability and current or future value expressed in terms of revenue, cost, risk and intangibles, let alone measuring and articulating their impact beyond these traditional metrics. "We're getting better and better at tracking the benefits," said one European business leader, "but there's still a lot of work to be done. If you're looking at the cost of materials, or energy costs, then it's very easy... but brand value is more difficult to assess." Although businesses are making some progress, it is clear from the

survey data, as well as from our conversations, that executives are struggling to structure effective performance management across the business on more tangible measures such as carbon, water and waste emissions management, as well as on intangible assets such as the value of trust, reputation and effective stakeholder management.

Beyond the confines of financial performance, executives see a further challenge: although 95 percent of automotive executives believe that companies should measure both the negative and positive impacts of their activities on sustainability outcomes, only 62 percent say that they are doing so already. Although such analyses are often complex and open to differing interpretations, they are likely to become more prevalent as businesses seek to reassert a more expansive role in society, with wider concerns beyond profit and loss within their own business.

The impact of this shift will be threefold. First, it will require businesses to measure their sustainability performance in terms of their positive and negative impact on society. For example, "whole-life impact assessments" can track a company's carbon footprint across production, manufacturing and consumption. Second, it will require businesses to link their performance on sustainability to traditional business metrics and value creation. Third, it will necessitate the embedding of sustainability outcomes within employee performance frameworks and remuneration packages.

Figure 5.2: Creating the conditions for a new era of sustainability

Enabling conditions

1. Consumers who consistently demand sustainable vehicles, creating favorable market conditions.

2. A regulatory environment that provides clear direction on sustainability and a cooperative environment for business.

3. Educational reforms that create sustainability skills and mindsets in executives and workforces.

4. Financial reforms that enable sustainability activity to be incorporated into valuations by investors.

5. New concepts of value and performance that are embedded at both the organizational and individual levels.

Example business actions for automotive companies

- Measure and communicate whole-life impact through production, manufacture and consumption at a product level

- Improve understanding of customer preferences, expectations and behaviors (especially for the PEV market) by increased market research and pilots

- Improve provision of consumer information and education, particularly through meaningful and accessible metrics regarding sustainability impacts e.g. cost savings from electric vehicles

- Engage with governments to adopt collaborative approaches to shape regulation – e.g., joint working groups, industry & cross sector collaboration

- Develop industry standards that pre-empt formal regulation – e.g., standard electric 'plug-in' on vehicles

- Engage in innovative value chain collaboration across governments, utilities, OEMs, battery and charging companies to overcome the structural challenges and effectively scale electrification of vehicles (and other low emission powertrain technologies)

- Invest in enhanced training of managers on sustainability issues

- Shape educational curricula and partner with academic institutions – e.g., through development of vocational courses

- Communicate progress on sustainability issues to employees to encourage behavioral change

- More effective communication with investors on the financial implications of embedded 'sustainability' across the whole value chain

- Select and track appropriate metrics to measure and communicate sustainability performance

- Integrate sustainability reporting with financial reporting and investor relations activity, under the remit of the CFO

- Devise mechanisms to measure both positive and negative impacts on society and articulate value beyond traditional accounting concepts, e.g. P&L and the balance sheet

- Embed sustainability issues into the performance and remuneration packages of top executives

Toward a new era of sustainability: Leading the way

Based on our interviews with CEOs, we are starting to see a future era of sustainability with new opportunities and challenges. The increased complexity of sustainability issues and more diffused networks through which they will have to be managed will take businesses into new, often unfamiliar terrain. CEOs believe, however, that this is a future where the role of business, in the automotive sector and beyond, will be integral to development and imperative to meet societies changing needs and wants. In the words of Carlos Ghosn, CEO and Chairman of the Renault Nissan Alliance, "Society expects more from us, and we expect more from ourselves as well. Society's demands are not static. People's desires and requirements are constantly changing, and a responsible company must be responsive to these shifts."

In the automotive industry sustainability has moved beyond a moral obligation and is now viewed as a top-line opportunity. Leading automotive companies are successfully implementing sustainability across business functions and processes to drive cost reduction, revenue growth, risk management, innovation and brand value. The sector is undergoing a substantial shift, with many macro forces rapidly changing the industry dynamics. Trends such as rising fuel prices, technological innovation, global urbanization,

changing consumer demands, increasing regulation, intense competition (and more) are starting to create a market environment where sustainability will be a key component for future success. Leading companies understand this imperative, with many of them starting to forge the path toward a sustainable industry. It is becoming the new competitive battleground.

The CEOs we spoke to described a situation in 2010 best summarized as 'the end of the beginning' rather than 'the beginning of the end.' Aligning markets and sustainability outcomes will require constant renewal and adaptation from businesses themselves and in collaboration with others. Many challenges and discontinuities lie ahead.

A new era of sustainability is far from guaranteed and will require both leadership and urgency. As one leading European CEO warned: "If you run a business for the long term, sometimes you have to overcome some short term hurdles. I always say that you cannot climb a mountain if it is a smooth surface: tradeoffs are often used as excuses not to do things".

The one critical imperative is the need to act – and act now.

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