

The work presented here is part of the [ESG Investor Briefing Project](#), a collaboration between Global Compact LEAD and the UN-supported Principles for Responsible Investment (PRI) to support companies in enhancing their communication of how ESG strategies and performance translate into financial value. The content of this communication is based on a Value Driver Model, which encourages companies to identify and discuss the financial impact of their sustainability strategies. The forthcoming profile is part of a toolkit that includes a report, presentation slides, and a series of case examples. It draws primarily upon publicly available information. Each case highlights the way the Value Driver Model applies to the profiled company through the Model's S/GPR metrics. For details on the S/GPR calculation, please see "The Value Driver Model: A Tool for Communicating the Business Value of Sustainability".

Boeing: Sustainability through aviation efficiency

This case profiles how Boeing has applied the aspects of sustainability-advantaged growthⁱ, productivityⁱⁱ and riskⁱⁱⁱ (S/GPR) in the Value Driver Model to its business.

Strategic Overview

Customer demand for increased efficiency

Airplane fleets are expected to double in size over the next 20 years. Less than a decade ago, the primary driver of decisions to purchase aircrafts was speed. Today, among the top drivers is efficiency – in terms of minimizing fuel and related emissions and cost. Total global fuel expenditure from aviation is expected to reach USD 214 billion in 2013, up from less than USD 50 billion just ten years ago.^{iv} As the cost of fuel use grows in importance, Boeing stands to drive significant growth and future profitability from continuing its focus on delivering fuel-efficient airplanes. Boeing's backlog increased 27 per cent since 2010, an increase greatly enhanced by Boeing's newer fuel efficient designs, which is further explored in the Growth section below.^v The company hopes to leverage the current and future demand for high efficiency aircraft.

Innovation needed for retiring fleets

Given that 87 per cent of the planes presently in service are forecast for retirement by 2032, plus the expected expansion of the global fleet, advances such as new aircraft – which reduce fuel consumption by up to 20 per cent^{vi vii} – and Boeing's sustainability-advantaged products have the potential to help reduce the Green House Gas (GHG) footprint per passenger mile of air travel in the future.

Solutions needed to offset rising fuel cost

Boeing estimates that up to 40 per cent of the cost of one flight comes from fuel, so more fuel-efficient planes benefit airlines, their passengers, and the environment.^{viii} For Boeing, sustainability strategy and business strategy are integrated. Seeing the business opportunity in producing a new generation of super-efficient aircraft required a long-term vision led from the top, the development of new technologies and sourcing strategies, and the ability to manage new risks.

Anticipated Results

Sustainability-advantaged growth

As consumers seek lower-cost flights and regulators advance emissions standards, airlines and other plane buyers will likely increasingly demand sustainability-advantaged solutions.

It is helpful to calculate the growing percentage of current and forecasted sustainability-advantaged revenue at Boeing, even though the company does not separately calculate this figure.

First, 64 of Boeing's 306 plane deliveries in 2013 are products of sustainability-advantaged design^{ix}, equal to approximately 20 per cent of current deliveries. Looking forward, Boeing expects a long-term demand over the next 20 years of 35,280 new airplanes, almost completely replacing the present fleet in service, with 41 per cent of orders for advanced fuel-efficient designs.^x On a forward-looking basis, Boeing plans to at least double the proportion of planes delivered that utilise their advanced fuel efficient design.

For example, in 2012, Boeing aimed to increase orders for one sustainability-advantaged model from 649 to 1,000^{xi}. As of this writing, Boeing had over 1,400 orders in hand. This represents a much faster new order growth rate for sustainability-advantaged aircraft than business overall. As further evidence of the importance of Boeing's sustainability-advantaged growth (S/G) going forward, roughly 50 per cent of planes on order as of late 2012 came from developing markets.

Looking back, as of the end of 2005, the sustainability-advantaged value of Boeing's backlog was 28.7 per cent, or USD 58 billion out of USD 202 billion, in the value of future orders, as driven by the start of the 787 model experiencing initial sales success. As of June 2013, over seven years later, the value of its more fuel-efficient backlog accounts for the majority of the overall total of almost USD 400 billion^{xii}. This represents a growth rate of sustainability-advantaged orders over four times faster than overall backlog value growth. As consumers continue to seek lower-cost flights, as airlines and other plane buyers demand efficient planes, and while plane orders take years to fill, sustainability-advantaged sales have every chance of driving future profit and revenue growth, while lowering the footprint of aviation.

Sustainability-driven productivity

Coupled with buyer demand, Boeing has advanced sustainability through design and industry collaboration. As a result, sustainability-driven productivity (S/P) has grown. For example, the 787 benefits from lighter-weight construction materials consisting of 80 per cent composite by volume with an emphasis on carbon fibre. Boeing also works in consortium with airline buyers. A forthcoming efficient aircraft resulted from early work with eight major airlines, with each providing input into the development cycle. The company has many other industry collaborations which will maximise the recycling of parts from today's fleet, which is to be largely retired over the next 20 years.

Furthermore, Boeing has worked with air traffic management systems and estimates that updating both onboard and air traffic control software could reduce annual airline fuel consumption by 9 million tonnes annually. While Boeing does not yet monetise savings from these efforts, the company will reduce the cost and footprint of aviation going forward. Boeing works with United States and European authorities to implement these strategies in what can be complicated regulatory and well-established air traffic control environments. Consequently, Boeing anticipates the most potential for these strategies in

China and elsewhere in Asia where fleets and systems are newer. Whether through airplane design and sales or systems such as these, Boeing uses S/P as a key driver. With USD 32 billion in development costs as of 2011 for the 787 alone, Boeing is constantly accounting for industry forecasts as it plans its long-term sustainable business strategy.^{xiii}

Sustainability-related risk

In 2007, Boeing first isolated its largest categories of risk and as a result established five-year environmental performance targets that aimed to cut energy use, GHG emissions, water intake and hazardous-waste generation by one per cent on an absolute basis in its factories and offices while growing its overall business.^{xiv} By 2012, the aforementioned one per cent reduction goals were all met. Original revenue-adjusted goals of reducing GHG and hazardous waste by 25 per cent by 2012 were also met, but missed on energy and water.^{xv} Looking ahead, the company remains committed to water reduction, zero carbon and zero solid waste to landfill as the business continues to grow, plus zero revenue-adjusted hazardous waste growth to 2017.

Boeing's framework for continued progress includes considering environmental performance measures throughout a product's life cycle, starting with design and manufacturing and extending through in-service use and end-of-service recycling and disposal, which it calls Design for Environment. This process analyses and attempts to reduce the environmental footprint at each phase of a product's life.

Since most of an aircraft's lifetime GHG emissions occur in service, Boeing feels it is critical to design and build products and systems with sustainable technologies to reduce the environmental footprint while reducing cost. Boeing's engineers look to make design decisions considering environmental performance measures that:

- Reduce energy use
- Reduce carbon emissions
- Reduce water intake
- Reduce hazardous materials
- Reduce noise
- Increase the use of sustainable materials

Closing Observations

Boeing's sustainability-advantaged revenue also generates value for Canadian communities where the company manufactures aircraft parts. Years lapse between order and delivery of an airplane and Boeing is bolstering local facilities to handle the increased orders. For instance, Boeing Winnipeg recently announced increased production of 22 per cent due to increased orders for more fuel-efficient aircraft, resulting in more local jobs and revenue in the local economy. The company estimates that the Canadian economy receives the benefit of USD 1 billion of revenue from Boeing manufacturing – a trend that should continue with projected production rates.

Boeing's efforts to further its sustainable business practices have coincided with a positive equity evaluation. After reaching less than USD 30 per share in 2009, prompting concerns over plane order

cancellations, Boeing's share price has increased over the last five years.^{xvi} It most recently traded for a five-year high of USD 108, over 300 per cent higher given the expectations of increased future growth. Over the past five years, Boeing has outperformed the S&P 500 by roughly 250 per cent. By positioning itself for a future with potential resource constraints and a developing world seeking increased aviation by driving efficiency, Boeing is seeking maximum profit through sustainability efforts that drive down costs while benefiting the overall footprint of aviation.

Through years of design, strategic planning, consulting with buyers and other external stakeholders, Boeing has become a potential driver of future efficiency, growth and profit that has sustainability in mind. Companies have the opportunity to learn from the progress Boeing has made.

Investors, in recognizing many companies are exploring the Value Driver Model for the first time, could encourage businesses to provide high levels of transparency within a balanced context. The most compelling information for investors is a clearly-explained process by company management on how S/GPR has been determined and relevant metrics and targets have been defined. Absolute or non-contextualised data will not help investors to understand companies' value creation in the short and long term.

Given the carbon-intensive footprint of aviation, Boeing stands as an example of how sustainability progress can be made even in the face of economic growth.

The Dow Chemical Company: Restoring nature, protecting profit

This case profiles how Dow has applied the aspects of sustainability-advantaged growth^{xxvii} and sustainability-driven productivity^{xxviii} (S/GP) in the Value Driver Model to its business.

Strategic Overview

In 2006, the President, Chairman and CEO of Dow Chemical announced the company's 2015 sustainability goals, which included achieving 10 per cent^{xxix} of the company's sales from products that it defines as highly-advantaged from sustainable chemistry. Dow has stated it believes that connecting chemistry and innovation can generate new ways to solve challenges globally across four megatrends deployed via a market-driven strategy:

- Agriculture
- Consumer lifestyles
- Energy
- Infrastructure and transportation

Results

Sustainability-advantaged growth

In terms of its 2015 sustainability goals, Dow's revenue from sustainability-advantaged products has risen steadily to 7.1 per cent in 2012, from 4.8 per cent in 2011 and 1.7 per cent in 2007.^{xx} Given that the company had very small overall revenue growth over the most recent period, its sustainability-advantaged revenue growth (S/G) is sizeable at 67.1 times that most recently calculated.

Sustainability-driven productivity

On the productivity front, Dow estimates USD 9 billion in savings^{xxi} from the sustainability goals it set in 1995, which had an investment of under USD 2 billion. As a result, the company saved USD 7 billion over a 16-year period, equivalent to over USD 400 million a year.^{xxii} Given that its annualised operating income has been just over USD 3 billion per year for last few years^{xxiii}, Dow has over 10 per cent savings from sustainability-driven productivity gains (S/P).

Lessons Learned from Dow Chemical

Measuring its sustainability efforts

Dow's 2015 sustainability goals were the second round of ten-year commitments the company^{xxiv} made in the area of sustainability and it remains to be seen how it will choose to extend its work going forward. The company is considering deploying actions across specific themes.

To measure its efforts in sustainable chemistry, Dow and its stakeholders developed a proprietary Sustainable Chemistry Index (SCI)^{xxv} that looks at a lifecycle basis from “cradle-to-cradle” to determine the impacts of its products both operationally and in use by consumers and others. The company has applied this index within each of its hundreds of specific business units on a business value and performance basis, highlighting opportunities to each business unit leader. For example, the SCI for chlorine differs from the SCI for building materials and from the SCI for agricultural products.

Scoring for the SCI is made on a 40-point basis, looking at eight equally-weighted categories: five under the category of opportunity and three under risk, with each scored between 0 and 5 (5 being the most desirable). Each can be tracked in the following categories^{xxvi}:

Opportunity

- Renewable and recyclable content in products
- Resource abundance and management
- Lifecycle benefits of products
- Manufacturing efficiency (greenhouse gases, waste water, etc.)
- Social needs being met by products

Risk

- Manufacturing or transportation impacts
- Product applications
- Public policy and end of life issues^{xxvii}

No business unit has earned 40, nor 0, but Dow focuses on business units that qualify as highly-advantaged as well as working to maintain the general performance of all units over time. In 2012, the Sustainability Chemistry Index for the company was 22, an improvement over the previous year’s 21.8.^{xxviii}

Embedding sustainability internally

Dow also assists new leaders as they become established within their business units, specifically within the first 90 days of taking their posts. This includes a review with the Vice President of Sustainability and Environmental Health and Safety to explain how sustainability is embedded in the overall business strategy. Sometimes opportunities are clear and in other cases translation is necessary to put environmental and social issues into economic terms that can be applied to business strategy.

Looking forward

Dow has additional sustainability-advantaged initiatives underway at present, including its multi-year collaboration with The Nature Conservancy on valuing ecosystems services^{xxix}.

Closing Observations

Investors, in recognising that many companies are exploring the Value Driver Model for the first time, could encourage businesses to provide high levels of transparency within a balanced context. The most compelling information for investors is a clearly explained process by company management on how S/GPR has been determined and relevant metrics and targets have been defined. Absolute or non-contextualised data will not help investors to understand companies' value creation in the short and long term.

Dow's progress across sustainability-advantaged growth, productivity and risk (S/GPR) was made possible due to the time and effort it spent on measurement and embedding sustainability into its strategy. Lessons learned from its years of work in this area and its efforts in building key partnerships to help successfully implement strategies may be applicable in other company contexts as well. Dow's example provides insight on how sustainability strategies can be translated into additional bottom line and societal benefit.

DuPont: Seeking solutions for a better planet

This case profiles how DuPont has applied the aspects of sustainability-advantaged growth^{xxx}, productivity^{xxxii} and risk^{xxxiii} (S/GPR) in the Value Driver Model to its business.

Strategic Overview

The E. I. du Pont de Nemours and Company, typically referred to as DuPont, has roots that go back as early as 1800. The company is known mainly for its involvement in the late 1900s with fossil-fuel based plastics and chemicals that propelled growth, but also placed a significant burden on the environment through greenhouse gas (GHG) emissions and other health-related impacts from the production and use of its products. Today DuPont has integrated sustainable business strategy with its overall business strategy. DuPont is focusing on three strategic drivers of growth and profitability for the foreseeable future:

- Solving the global challenges of ensuring food security for growing populations;
- Discovering new solutions to meet energy requirements;
- Protecting life through cleaner and safer chemistry and materials.

DuPont enables investors and others stakeholders to track its transformation through reporting its sustainability-advantaged growth, productivity and risk (S/GPR) performance.

Results

DuPont's most recent reports exhibit commitment to sustainability, showing key revenue growth from sustainability-advantaged sources^{xxxiii} (or S/G) in addition to absolute reductions in GHG emissions and total water use from its 2004 baseline, despite business expansion. While DuPont reports many improvements, listed below are key metrics that correspond to the Value Drive Model's growth, productivity and risk categories.

Sustainability-advantaged growth

DuPont has reported two key sustainability-advantaged revenue growth metrics for 2007-2011:

- Revenue from products that reduce GHG emissions rose from USD 63 million in 2007^{xxxiv} to USD 1.9 billion in 2011 – an increase of nearly 3100 per cent.^{xxxv}
- Revenue from products based on non-depletable resources^{xxxvi} doubled from USD 5 billion to USD 10 billion on a revenue base of USD 33.6 billion in 2011 – an increase of 100 per cent.^{xxxvii}

The fact that the sustainability quality of DuPont’s revenue (i.e. the absolute per cent of total revenue defined as “sustainability-advantaged”) has shifted from 17 per cent to 30 per cent during this period sends a signal that the strategy is successful. Computing an S/G rating (which divides the growth rate of these new revenue categories by the growth of the overall business) produces a score of 5.5.^{xxxviii} This means that growth from these new products has been more than five times faster than overall growth.^{xxxix}

Sustainability-driven productivity

For more than two decades, DuPont has been working to improve the resource efficiency of its business operations. Over the 20-year period from 1990 to 2010, DuPont reported aggregate savings of approximately USD 300 million per year from its energy-saving efforts. This equals a sustainability-driven productivity figure (or S/P) of just over nine per cent of almost USD 3.3 billion operating income in 2010.^{xl}

This figure provides evidence of the value of sustainability to business savings.

Sustainability-related risk

DuPont’s sustainability-related risk (S/R) management reporting focuses on key factors that provide insight into current and potential exposure. While DuPont provides a broad base of environmental, social and corporate governance (ESG) data, its reports focus on the several critical variables that offer evidence of its continuous improvement in sustainability-related risk management.

Three key metrics computed from its top-level data on water use, waste, toxicity and process assurance help to provide understanding of DuPont’s potential near and intermediate-term revenue and brand

value at risk from sustainability-related issues:

- **Stressed water intensity of revenue**
Measured in billions of gallons (BG) used in areas designated as water-stressed per billion dollars of revenue. Based on a comparison of 2007 to 2011, stressed water intensity decreased by 14 per cent from .204 to .179 BG/billions of USD.^{xli}
- **Air carcinogen intensity of revenue**
Measured in millions of pounds (MP) of air carcinogen emissions per billion dollars of revenue. Based on a comparison of 2007 to 2011, air carcinogen intensity decreased by 45 per cent from .051 to .023 MP/billions of USD.^{xlii}
- **Environmental risk intensity of manufacturing facilities**
Measures the percentage of manufacturing facilities not certified for environmental performance management processes and systems under the ISO 14001 standard. Based on a comparison of 2007 to 2011, the percentage of non-certified facilities declined from 62 per cent (n=93) to three per cent (n=5) – a decrease of 59 per cent.^{xliii}

Taken together, these factors show an average reduction in key risks of 39 per cent, well above the 25 per cent (or 5 per cent per year) target.

These S/GPR metrics provide valuable assistance in assessing DuPont's near and intermediate potential to achieve value from its sustainability efforts:

S/G = 5.5x

S/P = +9 per cent

S/R = -39 per cent

Lessons Learned from DuPont

Early sustainability efforts

DuPont's history regarding revenue categorisation of sustainability-advantaged products goes back to 1998 under the direction of then Chief Executive Officer Charles Holliday. At the time, he asked a provocative question of DuPont's sustainability efforts:

"We are doing a good job of doing less bad. How do we go about doing more good?"

DuPont recognised that its future strength lay in innovating and creating new products that have the potential to improve the quality of life around the world. Its leadership team inferred that future customer demand and market forces would favour companies that could meet those needs with the next generation of cost-effective solutions that solved key problems without ancillary risks or unintended consequences to the environment or human health.

While some products already met the sustainability-advantaged criteria, management soon recognised that sustainability concepts had to be brought into the research and development (R&D) process at the earliest possible stage. Achieving this goal required developing metrics to assess the "sustainability quality" of the current R&D spending and setting targets for the future.

In 2004, DuPont sold its textiles business, which followed the sale of oil and transportation subsidiary Conoco in 1999 to what is now ConocoPhillips, and focused on a market-facing approach to sustainability-advantaged products in 2006.^{xiv}

Investing R&D spending in sustainability

Beyond reducing its operational footprint, DuPont emphasised how customers and consumers could make more efficient use of its products, but it chose to focus first on R&D spending, which at this time was around USD 1.7 billion per year.^{xiv} DuPont engaged its R&D community on how to maximise this spending, and determined its future spending would be evenly divided between investments in a new generation of sustainability-advantaged products and investments in the transformation of internal production and operating processes to make them more resource-efficient.

Scaling up the transformation in R&D spending required DuPont to develop a categorisation system to specify the range of sustainability-related advantages the company would pursue and to measure how any given product or process rated on each dimension.

In 2006, DuPont engaged a sustainability consultancy to help develop a tool that would define the key performance indicators (KPIs) and metrics required to measure potential new product benefits, and quantify the amount of existing spending that qualified as sustainability-advantaged.^{xlvi} Rather than implement that tool as a separately-managed software product as originally planned, the company embedded these factors into its R&D planning processes, thereby integrating sustainability.

Further, DuPont performed cradle-to-gate analysis of upstream raw materials in potential new products to ensure that savings achieved would not be borne by increased footprints further up the supply chain.

Defining sustainability-advantaged products

In at least one out of 10 sustainability categories listed below, DuPont went on to establish its own standards for what qualifies as sustainability-advantaged products, targeting incremental savings of 40 per cent compared to the footprint of existing products in the marketplace that it sought to replace.^{xlvii} If each product did not meet its target, it could still be included in the “sustainability-advantaged portfolio” if it significantly outperformed the current product in at least one area and was at least comparable in the other nine areas. In all cases, advantages reached double-digit percentages.

DuPont’s 10 categories of sustainability for R&D considerations

- Climate change
- Energy use
- Pollution
- Material use
- Waste
- Disposal
- Ecosystems and biodiversity
- Water
- Toxicological risk
- Use of non-depletable resources

Sustainability-advantaged revenue and savings

In 2007, DuPont set a baseline of 2006 results across these 10 areas of sustainability-advantaged measurements and valuations. It performed its first full analysis in 2008, from 2007 figures. The 2008 analysis classified USD 5.8 billion in sustainability-advantaged revenue with a focus on products that reduce GHG emissions in comparison to the alternatives, as well as those products based on non-depletable resources.^{xlviii}

Towards achieving these measured savings, DuPont performed lifecycle analysis (LCA)^{xlix} to determine how products help to reduce GHG emissions at customer level, and then quantified revenues that drove reductions. DuPont developed its Environmentally Smart Assessment Tool (ESAT), which enables tracking of all ten sustainability factors in the R&D process and “sustainability-advantaged” revenues.

DuPont disclosed savings of USD 6 billion from its energy- and resource-efficiency efforts from 1990 through to 2011¹. While this figure has not been updated since 2011, the company believes that the present-day savings are significantly higher and the next review is expected in the near term.

Communication

With respect to risk, DuPont has focused on comprehensively understanding its own footprint, as well as that of its products and supply chain, while focusing on factors most relevant for its businesses, and then communicating those from the top down. DuPont’s approach to focusing on its critical sustainability-related risks has been to create a consensus view between company management and knowledgeable stakeholders groups, particularly environmental non-governmental organizations.

DuPont’s reporting calls special attention to progress it has made in critical areas such as:

- Water and stressed-water use
- GHG emissions
- Toxicity
- Certification, specifically ISO 14000

DuPont's open approach and sustained progress on reducing these key risks has garnered good relationships with important stakeholder groups.

Closing Observations

Despite the lack of an external standard for overall categorisation of sustainability-advantaged revenues, DuPont has faced little questioning or opposition from stakeholders regarding the validity and accuracy of its approach. While some of DuPont's individual products and businesses can make use of external sustainability standards, its reported total is a product of its own framework. The company believes its success results from its high level of transparency.

Investors, in recognising many companies are exploring the Value Driver Model for the first time, could encourage businesses to provide high levels of transparency within a balanced context. The most compelling information for investors is a clearly-explained process by company management on how S/GPR has been determined and relevant metrics and targets have been defined. Absolute or non-contextualised data will not help investors to understand companies' value creation in the short and long term.

Upon analysing DuPont's progress through a sustainability lens, it is possible to uncover a revenue growth strategy that is not immediately apparent when looking at growth overall. As DuPont continues to make strategic moves to reposition the company – reflected in the recent announcement regarding strategic options for their chemicals business – it will become even more crucial to clearly understand this sustainable business strategy.

While businesses across various sectors will have different timeframes and potential for achieving significant business benefits from sustainability strategy, DuPont's experience is not atypical. Building the capabilities to envision, analyse and execute on sustainability in a manner that delivers business

advantage requires considerable commitment and organisational learning. However, as this case demonstrates, it can also be a source of very significant present and future value. An understanding of the scope for value-creation and the capacity to plan and execute sustainability strategy is fundamental to assess the company value curve. Applying the Value Driver Model to DuPont's current and forecasted goals gives stakeholders a solid understanding of value and gives the company an effective approach to communicating the potential for sustainability-driven results.

Finally, the greatest potential for attracting market interest in sustainability strategy is in the early to middle phases of recognition of a sustainability strategy's business impacts – that is, when sustainability is a differentiator. Early mover advantages for firms are likely to exist provided their sustainability strategies are robust enough to take full advantage of upside opportunities as well as downside risk mitigation. If this is the case, the next several years may well be the ideal time for companies to improve their ability to capture benefits and communicate their strategies to the market.

Philips: Creating value through sustainability

This case profiles how Philips has applied the aspects of sustainability-advantaged growth^{li}, productivity^{lii} and risk^{liii} (S/GPR) in the Value Driver Model to its business.

Strategic Overview

At 122-years-old, Philips has a diversified global business with a history of building value through communities, employees, products and services. For example, its EcoVision strategy, launched in 1998, focuses on the environmental and social dimensions of the company's operations and products, as well as supply chain sustainability.^{liv} The strategy takes into account a full analysis of the company's potential scope of influence, relevance to society, reputational risks and how it compares to its peers in this regard.

The company's three key innovation areas identified as part of the EcoVision strategy include:

- Improving people's lives
Improve 3 billion lives by 2025 primarily through healthcare-related wellbeing and green products.
- Improving energy efficiency of Philips products
By 2015, a 50 per cent improvement for the average total product portfolio compared to 2009.
- Closing the materials loop
By 2015, double global collection of recycled product and materials, and use of recycled content in products, compared to 2009.^{lv}

Results

Philips tackles all three of the Value Driver Model factors: sustainability-oriented growth, productivity and risk.

Sustainability-advantaged growth and productivity

Over the three years leading up to 2012, Phillips' sustainability-advantaged growth (S/G) was 8.7x faster than the overall growth of the company. The company also reported 45 per cent of overall revenue from sustainability-advantaged products, which are differentiated from the existing marketplace.^{lvi} By evolving its product line, the company aims to increase this to 50 per cent by 2015^{lvii} and is working toward 100 per cent over the longer term^{lviii}. The company also has a keen focus on sustainability-driven productivity and risk mitigation that seeks to maximise relevant savings for each of its businesses.

Philips has continuously placed focus on employee quality and the company has built schools for employee families in the past. Presently, its business strategy concentrates on employee engagement and retention, including engaging with employees on the company's sustainability management. Philips has found that employees are excited to see that successful implementation of the company's goals would result in not only an improved bottom line, but additionally a lower global environmental

footprint. The company has also found that some of its younger employees and research and development (R&D) experts have chosen to work at the company due to its sustainability track record.

Lessons Learned from Philips

A shift in focus

After recently divesting from the consumer electronics business, Philips (formerly known as Philips Electronics) now focuses on three areas: healthcare, consumer lifestyle and lighting. Philips' strategy for evolving its business is illustrated by trends in lighting as the company divests out of older, now-defunct technologies such as filament bulbs, and shifts focus to the future of LED.^{lix} Philips recognises that lighting accounts for roughly 19 per cent of the world's carbon footprint, with LED having the potential to create up to 80 per cent energy savings.^{lx} This translates into a smaller footprint and reduced cost of use. Further, the company is working on defining the social benefit of energy savings and the risk management benefits for shareholders. Likewise, Philips was a serious player in early radio innovation and it continues forward with EUR 2 billion devoted to green innovation-related R&D by 2015.^{lxi}

EcoVision

In the late 1970s, the Philips board requested an environmental opportunities analysis of the company's operations, aiming at consuming a minimum of resources and reducing facility emissions. By launching the EcoVision programme in 1998, the company started to examine its products. As a percentage of the group total, green product sales rose to 45 per cent in 2012 up from 39 per cent in 2011. The company has a goal of 50 per cent by 2015.^{lxii} Philips determines products qualify for the "green product" category if they outperform predecessor or competitor products by 10 per cent or more in at least one of the company's green focal areas, such as energy efficiency, hazardous substances, waste and recyclability.^{lxiii} In addition to product sales, the EcoVision programme has also evolved to encompass goals involving, among other things, improving lives through healthcare, supply chain sustainability, investments in innovation, and efficiency, including in the company's own operations.

Sustainability-related risk

Philips' renewed focus on energy efficiency was derived from its understanding that 90-95 per cent of its products' energy intensity can be attributed to the use phase^{lxiv} and 97 per cent of products' energy use comes from lighting.^{lxv} The maximum potential of the company's operational efficiencies from sustainability is small in comparison with this much larger opportunity among lighting consumers collectively. As a result, Philips uses lumen/watt to measure how it can best contribute to productivity and aim towards specific targets in this area, while also attempting to quantify monetary savings on energy during the use phase of its products. In addition to these efficiency efforts, Philips examines risk categories. Early supply chain management efforts included establishing the Supplier Sustainability Declaration Programme, which included audits and trainings, to outline what the company expects from suppliers. By 2012, Philips had reached a 75 per cent supplier compliance rate with the programme. It also looks at country-specific risk via an external provider that helped to identify three countries to

receive extra risk management focus. Philips reports on this and audits facilities there every three years.^{lxvi}

Further efforts

Going forward, the company continues to explore ways to reduce hazardous substances in its processes, as well as closed loop recycling/reuse systems. Phillips has stated it is particularly intrigued by how its products potentially fit into a circular economy concept.^{lxvii}

Philips took a further step in 2012 and undertook a full sustainability audit, moving from limited to reasonable assurance.^{lxviii} The company deploys a number of sustainability boards internally that involve the heads of legal, healthcare management, strategy and markets along with other executive team members. Phillips also engages with key investors and external stakeholders, such as Greenpeace, on an active basis to receive useful feedback that helps shape the company's thinking.

Closing Observations

Philips serves as an example of a generations-old company that is undertaking a lengthy transition primarily focused on sustainability-advantaged products. The company feels it went to great lengths to understand its impacts and prioritised innovation and efficiency efforts to shift the company's business activities for the benefit of both shareholders and all stakeholders. Other companies may benefit from applying the sort of systems-thinking approach that Philips has used throughout its history regarding positive employee relations, such as training and education, while keeping a firm view on what lies ahead.

Investors, in recognising many companies are exploring the Value Driver Model for the first time, could encourage businesses to provide high levels of transparency within a balanced context. The most compelling information for investors is a clearly-explained process by company management on how S/GPR has been determined and relevant metrics and targets have been defined. Absolute or non-contextualised data will not help investors to understand companies' value creation in the short and long term.

Forward-looking companies that anticipate the needs and desires of future consumers and their own employees are well-positioned to be suppliers of choice to the increasing categories of buyers interested in purchasing goods from sustainable companies.

Praxair: Finding value through sustainable practices

This case profiles how Praxair has applied the aspects of sustainability-advantaged growth^{lxix}, productivity^{lxx} and risk^{lxxi} (S/GPR) in the Value Driver Model to its business.

Strategic Overview

Industrial gas company Praxair has used growth, productivity and risk management as key drivers of sustainable value while delivering oxygen, nitrogen, argon, hydrogen and specialty gas products to the market, while at the same time adhering to the company mission statement: “Making our planet more productive”.

Through employee engagement, Praxair attempts to foster a culture that creates value for customers, investors and the business itself. Praxair’s efforts to further its sustainable business practices have coincided with a positive equity evaluation, with the company’s share price^{lxxii} rising from under USD 50 per share during the period just after the 2008 financial crisis to near an all-time high of USD 121 at present. Overall, Praxair’s share price has followed a positive twenty-year trajectory.

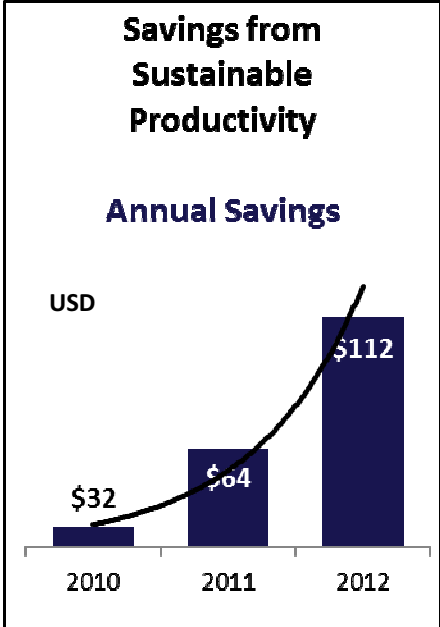
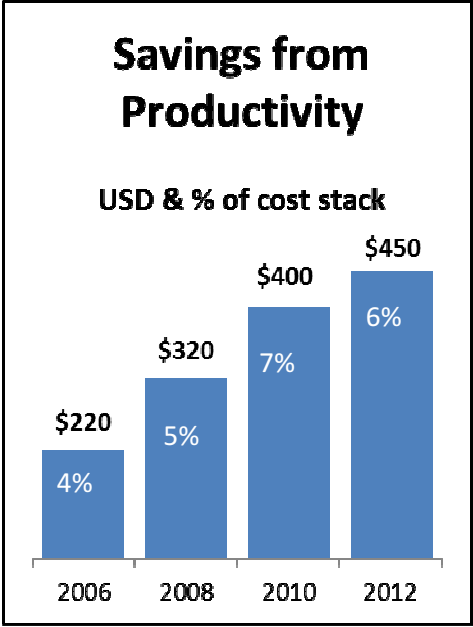
Results

Sustainability-driven productivity

Praxair has focused on a sustainability-driven productivity (S/P) standpoint, reporting USD 112 million in what it calls “sustainable productivity” savings in 2012, up from USD 64 million in 2011 and USD 32 million in 2010. This constitutes a growth rate of over 300 per cent during the past two years.

Sustainability-advantaged growth

Praxair’s sustainability-advantaged growth (S/G) figure is 27 per cent of total revenue in 2012, targeting 30 per cent in 2015. Combined with its S/P figures and its risk management strategy, it is evident that the company is seeking value through sustainability.



Source: Praxair

Lessons Learned from Praxair

Praxair's efforts in sustainability began in 2003 when it created its sustainability principles and a sustainability report aimed at satisfying requests from external stakeholders and standardising its responses to them. In 2010, the Chief Sustainability Officer led Praxair to broaden its culture of productivity to include environmental elements as a means to provide maximum value to investors. Page 3 of the company's 2012 Sustainable Development report states: ^{lxxiii}

"A slowing world economy has created challenges to business profitability. Praxair's productivity is key to continuing to achieve industry-leading Return on Capital (ROC). One crucial contributor to Praxair's ROC has been the outstanding performance of its productivity organisation, which has for several years achieved six to seven per cent savings off its cost stack. Productivity savings often resulted in environmental benefits: reductions in energy, fuel, water or waste. The question was – could environmental actions bring financial savings and would there be other business benefits?"

By 2012 sustainable productivity accounted for 25 per cent of USD 450 million in total productivity savings and had achieved buy-in from the company's productivity team. ^{lxxiv} In the same year, the company delivered over 1,750 projects that saved more than 300 million gallons of water, 800 million kilowatts of electricity and approximately 500,000 metric tonnes (MT) of carbon dioxide equivalent (CO₂e). ^{lxxv} Praxair has worked to make an operational link between productivity and sustainability that directly benefits its ROC. Moreover, Praxair believes that use of corporate standards to measure and report sustainable productivity has improved resource efficiency within its operations and supply chain. Lower production costs have improved Praxair's operational efficiency, which has helped increase operating margin.

Praxair's 2013 submission to the Carbon Disclosure Project (CDP) ^{lxxvi} provides a detailed summary of the related projects that it tracks, which have a payback period of one to three years:

- 30 projects providing permanent reduction in power consumption for lighting retrofits, HVAC controls and building power needs. Combined, these projects avoided emission of 2,500 MT of CO₂e and saved USD 450,000.
- 625 projects providing permanent improvements to energy requirements for turbines, compressors, fans and other primary process equipment, with improvements to heat transfer efficiency and control equipment for process efficiency optimisation. Combined, these projects avoided emission of 400,000 MT of CO₂e and saved approximately USD 63 million.

- 80 projects providing permanent reduction in gasoline and diesel fuel use, or increased fuel efficiency, including route efficiency programmes, on-site tank size optimisation, trailer tank size optimisation and truck modifications such as fairings and skirts for fuel efficiency. Combined, these projects avoided emission of 4,000 MT of CO₂e and saved over USD 3 million.
- 51 projects providing permanent process improvements for CO₂ recovery, vent gas reductions, and reduction of dry ice process losses. Combined, these projects avoided emission of 23,000 MT of CO₂e and saved nearly USD 3 million.^{lxxvii}

As a mature productivity organisation, two of Praxair’s challenges include:

- Maintaining idea flow over time as the most easily implementable projects get executed.
- Sustaining programme momentum and return on investment (ROI) as the administrative burden increases over time.

To overcome these challenges, Praxair measures the percentage of projects that are replicated. “Replication” refers to knowledge that can be leveraged globally: replicated projects are taken to scale with reduced cycle times and higher rates of profitability, since the initial investment has been made and staff members are free to complete additional projects. Praxair’s general productivity programme replication rate is around 29 per cent of projects worldwide but the replication rate for sustainable productivity projects is over 50 per cent.^{lxxviii} In other words, sustainable productivity projects are regularly achieving a multiplying effect, feeding new ideas and adding value to Praxair’s productivity programme – and to the business.

How has Praxair’s sustainable productivity achieved a high level of replication? One facilitator is the focus on linking sustainable productivity to employees’ environmental and social engagement. Praxair actively promotes its brand as helping to meet global and local challenges – making the planet more productive. A range of communications and programmes aim to create a culture of social awareness and environmental stewardship among employees at work, at home and in their communities. In return, the company sees a direct connection to corporate value creation. Employee environmental programmes such as Zero Waste and social programmes such as Community Engagement involve employees’ hearts as well as minds, encouraging operational environmental initiatives while reinforcing the company’s culture of safety and productivity. As a result, the company feels that employees increasingly want their work to be connected to their environmental and social values.^{lxxix}

Sustainability-related risk

Higher levels of employee engagement mean that workers pay more attention, measurably lowering operational risk. A values-driven culture and employee engagement also aid with retention. Praxair reports that:^{lxxx}

“Environmentally engaged employees enhance resource efficiency and boost operating margin, they learn better asset management and create an environment that is safer and more engaged. Overall, business and brand value is being enhanced.”

From a risk perspective, Praxair highlights the following areas of highest concern to stakeholders:

- Integrity and ethics
- Health and safety
- Earnings growth and ROC
- Greenhouse gases and climate change/energy
- Compliance
- Community development efforts

By way of example, Praxair measures the benefit of its community development efforts. It reports that community engagement activities benefit ten people for every Praxair employee – a 10x net social benefit. Other risk trend attributes reported for 2012 include^{lxxxix}:

- Positive impact/attitude of recipients
91 per cent, up from 78 per cent in 2011
- Community projects where volunteers report direct positive impact on recipients' quality of life
80 per cent, up from 73 per cent in 2011
- Number of beneficiaries affected
304,149, up from 140,000 in 2010
- Perceived management effectiveness
73 per cent, up from 58 per cent in 2011
- More positive employee outlook on Praxair
86 per cent, up from 71 per cent in 2011^{lxxxii}

Praxair is deriving solid benefit from its environmental and social programmes. The company draws the same connection between a sustainability-driven culture and business value as does a recent MIT Sloan^{lxxxiii} paper.

Looking forward

Riva Krut, Chief Sustainability Officer at Praxair, echoes the company's focus on value drivers such as S/GPR:

Every day, Praxair employees are taking the initiative to solve environmental challenges, be it designing our largest and most energy efficient air separation units in China, or recycling water

in Brazil, or working with suppliers and customers to eliminate packaging waste in the USA. They are applying business skills to global and local challenges, engaging with colleagues and external stakeholders – and helping drive Praxair’s profitability and growth. Sustainability at Praxair is not just about doing more with fewer resources and at less cost; it is also about growing the business and adding more economic, social and environmental value.^{lxxxiv}

Closing Observations

Investors, in recognising many companies are exploring the Value Driver Model for the first time, could encourage businesses to provide high levels of transparency within a balanced context. The most compelling information for investors is a clearly-explained process by company management on how S/GPR has been determined and relevant metrics and targets have been defined. Absolute or non-contextualised data will not help investors to understand companies’ value creation in the short and long term.

Praxair serves as an example of a company that has gone to great lengths to maximise its productivity in general, and has found sustainability-driven productivity to be a key driver of derivable savings. The company has achieved this level of value through identifying opportunities and scaling them. The steps it has taken may be useful for other companies to adapt and contextualise in their own business models. Likewise, investors may see companies such as Praxair as industry leaders in maximising efficiency as a key driver of value returned to shareholders, and that sustainability-driven productivity can differentiate even mature businesses.

Reckitt Benckiser: Focusing on sustainability through revenue

This case profiles how Reckitt Benckiser has applied the aspects of sustainability-advantaged growth^{lxxxv} and sustainability-related risk management^{lxxxvi} (S/GR) in the Value Driver Model to its business.

Strategic Overview

Consumer goods company Reckitt Benckiser has a strong new focus on growing sales of products it categorises as sustainability-advantaged, with a goal of 33 per cent of its net revenue from this category by 2020.^{lxxxvii} This FTSE 100 index member is a provider of cleaning, healthcare and household products, including brands such as Clearasil and Calgon. The company's efforts to yield more sustainable consumer products address the area of its business that is responsible for the majority of its footprint.

Results

By 2020 the company aims to reach a sustainability-advantaged growth (S/G) figure of well over 10x current numbers if it achieves its 33 per cent goal. Achieving this target could translate into around GBP 4.5 billion of its overall GBP 14 billion expected revenue over the next seven years.^{lxxxviii} To meet its ambitious 2020 sustainability-advantaged revenue target, Reckitt Benckiser must facilitate large growth in this area. The company predicts that its overall business will grow slowly but steadily, between five to six per cent.^{lxxxix}

While Reckitt Benckiser has chosen to focus on sustainability-advantaged revenues more than productivity savings, the company also places an emphasis on health, hygiene, water savings and innovation – all of which are core to its business success and its ability to drive shared societal value. With overall revenue of just over GBP 9.5 billion in 2012^{xc}, Reckitt Benckiser is just beginning to measure revenue from sustainability-advantaged products.

Lessons Learned from Reckitt Benckiser

Reckitt Benckiser performed a complete lifecycle greenhouse gas programme in 2007 – known as Carbon20 – which enabled the company to meet some of its 2020 environmental goals as early as 2011.^{xc}

In addition, during 2011 the company appointed a new CEO with experience serving in a variety of internal senior positions, such as research and development (R&D).^{xcii} This appointment kicked off a business strategy planning process that looked at sustainability through trends affecting both business and society, seeking to answer the question of how Reckitt Benckiser can best play a role in the future.

Sustainability-advantaged growth

Reckitt Benckiser believes sustainability-advantaged revenue increases are very relevant for company valuation by investors and industry analysts. Therefore, the company is planning to develop specific internal goals for its individual businesses, tracking their success and providing milestones. This would also allow the company to manage the growth of this area.

The CEO's business strategy planning process helped lead to the development of the company's Sustainable Innovation Calculator^{xciii}, which derives from the Carbon20 calculator of 2009 and the subsequent sustainability-advantaged revenue goals that will be reported from a 2012 baseline onward, starting with the company's 2013 sustainability report. The Sustainable Innovation Calculator is a streamlined lifecycle analysis (LCA) tool that allows the company to quickly understand the carbon and water impacts of potential products, both during R&D, operational and consumer use phases. The rules and systems involved with the tool were developed with the company's R&D experts in Excel and in partnership with an external provider. Reckitt Benckiser is considering sharing this tool publicly.

As for potential sources of sustainability-advantaged revenue, Reckitt Benckiser has launched a new partnership with Save the Children^{xciv}, focusing on the prevention of diarrhoea, an avoidable illness that is the second largest cause of death globally for children under the age of five. For its part, Reckitt Benckiser is developing new products to help confront this challenge in addition to providing global marketing and expertise to this venture.

Sustainability-related risk

Reckitt's overall goals on sustainability also include 33 per cent reductions of its own water impact and carbon footprint, anticipating changes to come globally and spurring a retooling of product production.^{xcv} For example, the company sees a need to reduce its water footprint in light of its estimate that 64 per cent of the world's population will live in areas of significant water shortage by 2025.^{xcvi}

From a risk and opportunity perspective, the company's materiality map^{xcvii} shows carbon and water to be two key areas of focus for the company, with most used during the manufacture of products and their subsequent use. Hence, the company pushes R&D, and more sustainable product development and sales. Reckitt Benckiser has sought to integrate sustainability into its thinking and purpose, featuring an overall slogan of "Better Business". As such, the company prioritises supply chain impacts, targeted ingredient removal, manufacturing, and health and safety efforts.

Closing Observations

Companies in the consumer goods sector can learn from Reckitt Benckiser's sharp focus on the footprint of its products as a key area of potential improvement. End use of products can often be the majority of the footprint of organisations in many sectors. Companies both large and small can consider such strategies as a way of growing future revenue through attracting new customers wanting to purchase from companies that are mindful of the environmental and societal impacts of the products they actively sell.

Investors, in recognising many companies are exploring the Value Driver Model for the first time, could encourage businesses to provide high levels of transparency within a balanced context. The most compelling information for investors is a clearly-explained process by company management on how S/GPR has been determined and relevant metrics and targets have been defined. Absolute or non-contextualised data will not help investors to understand companies' value creation in the short and long term.

If sustainability-advantaged products continue to shape consumer purchase patterns, consumer goods companies that get ahead of this trend could benefit. Reckitt Benckiser's efforts to further its sustainable business practices have coincided with an attractive equity evaluation. Its share price has nearly doubled over the past five years.^{xcviii} Indeed, its performance during this period was twice as good as the overall FTSE100's performance.

Schneider Electric: Business as a barometer for the planet and society

This case profiles how Schneider Electric has applied the aspects of sustainability-advantaged growth^{xcix}, productivity^c and risk^{ci} (S/GPR) in the Value Driver Model to its business.

Overview

In 1836, brothers Adolphe and Eugene Schneider purchased mining and manufacturing operations near Le Creusot, France. These would one day become the modern-day multinational company Schneider Electric (SE).^{cii} The company now provides energy management services, building efficiency, solar energy solutions and automation processes, offering potential for financial and environmental efficiency savings globally.

Results

Sustainability-advantaged growth

SE already benefits from the dual trends of growing demand for the service it provides and its own specific offerings in these areas, with its most recent reports exhibiting significant growth from sustainability-advantaged revenue (S/G).^{ciii} The sustainability quality of revenue (i.e. the absolute per cent of total revenue defined as “sustainability-advantaged”) has grown from 29.9 per cent in early 2011 to 63.3 per cent by the third quarter of 2013. This, plus the fact that the company’s share price increased by 50 per cent during this period^{civ}, could signal that the strategy has been beneficial for SE’s stakeholders, not least its shareholders. Computing an S/G rating for SE (which divides the growth rate of sustainability-advantaged revenue by the growth of the overall business) produces a score of 7.8. This means that growth from sustainability-advantaged products has been faster than overall growth.^{cv}

The company also focuses increasingly on sustainability-driven productivity (S/P) and deploys a Planet and Society Barometer, which acts as an overarching, public-facing monitor of progress on the most significant areas of risk management (S/R). It is accessible on the company’s website^{cvi} and is featured prominently in ongoing financial reporting.^{cvii}

Lessons Learned from Schneider Electric

Creating a sustainability department

SE’s efforts to create value via sustainability date back at least 12 years, when its sustainability department was first created in spite of what it saw as weak investor signals on the subject. It was also a way of demonstrating SE’s commitment to sustainability, with a desire to create and measure itself against specific key performance indicators (KPIs). SE was first selected for inclusion in the Dow Jones Sustainability Index in 2002 and it launched its NEW2004 (New Energy World) initiative^{cviii} at the same

time. Energy efficiency solutions went on to make up 30 per cent of a EUR 18.3 billion business by 2008.^{cix}

Tracking progress

SE began developing and maintaining its Planet and Society Barometer in 2005. It advanced SE's sustainable development goals of wasting less energy while practicing more environmentally-friendly methods of industrial production and consumption.^{cx} Other aspects of the Barometer include helping the poorest nations gain access to energy while assisting their economic development; areas which could help garner future business for the company if successful. The Barometer has 14 aspects across planet, profit and people, scored on a scale of one to 10. SE improved from a score of three in early 2009 to eight by 2011.^{cxii} Most recently, SE is performing at 6.38 in the face of its goal of eight by the end of 2014.^{cxiii} According to its "Half-year 2013 Results" the company is progressing well towards several 2014 targets after the second quarter of 2013, as below.

| Status of SE's goal | Progress | | Associated value driver |
|---|----------|---------------------------|-------------------------|
| | Exceeded | On track ^{cxiii} | |
| 75 per cent of product revenues gained from green premium-designated products. This goal was adjusted up from 67 per cent. After the second quarter of 2013, the company measured itself at 67.3 per cent, up from 29.9 per cent in the first quarter of 2011. | | x | Growth |
| 1 million households from the "bottom of the pyramid" gain access to energy via SE solutions. This number stands at over half a million after the second quarter of 2013. | | x | |
| 10 per cent reduction of 2011-14 carbon dioxide emissions, which SE aims to achieve through transportation mode selection, supply chain and logistics optimisation, and freight density, among other steps. The company has already exceeded this target, reducing emissions by 29 per cent after the second quarter of 2013. | x | | Productivity |
| 10 per cent savings on energy consumption savings. SE is on track to achieve this, with a 7.4 per cent reduction after the second quarter of 2013. | | x | |

| | | | |
|---|---|---|------|
| Score of 70 by 2014 relative to SE's Employee Engagement Index. It is currently on target for its anticipated goal, with a most recent score of 57 after the second quarter of 2013. | | x | Risk |
| 30 per cent of women in key positions by the end of 2014, up from 23 per cent when first measured, via identification of high-potential employees in 2011. After the second quarter of 2013, it stands at 26 per cent. | | x | |
| 30,000 people at the "bottom of the pyramid" trained on energy management. Its second quarter number in 2013 (21,000+ trained) exceeds the original goal of 10,000. | | x | |
| All industrial and logistics sites to become ISO 14001 certified within two years of acquisition or creation. This goal increased from the previous target of two-thirds of employees to be working in ISO 14001 certified facilities; a goal it surpassed in 2011. | | x | |
| 30 per cent reduction by 2014 in SE's Medical Incident Rate; an indicator of safety, workplace hazards and reduction of injuries. After the second quarter of 2013, this stands at 43 per cent. | x | | |

In addition, SE is pursuing goals in the following areas with varying degrees of progress:

- Percentage of annual growth gained by EcoXpert energy efficiency products and services (directly correlated with the aforementioned S/G calculation).
- Number of employees who endorse SE as a "great place to work".
- Days of training per employee per year.
- Percentage of commodity strategy suppliers who adhere to ISO 26000 guidance and the Global Compact's 10 principles.
- Number of training missions in communities over the first three years of Schneider Electric Teachers, a new program created in 2012.^{cxiv}

Sustainability-driven productivity

In addition to the aforementioned S/P gains, the company is now focused on turning its own operational energy efficiency savings into a figure of tangible revenue saved for disclosure in its next annual report. In light of its multiple lines of business, the company is also working on a sector breakdown to determine how much companies in different sectors stand to save in monetary terms. SE's own internal efforts on productivity could drive further revenue for the business. As a result, an S/P figure should be

forthcoming which analysts and fund managers would be able to relate to savings benefiting the company's bottom line.

Sustainability-related risk

In addition to the aforementioned S/R gains, the company continues to actively measure and report on its established Barometer via its website, while at the same time launching an internal water management plan. The company acknowledges that though this is not as material in terms of future risk to revenue as it might be for a beverage or similar company, it wishes to demonstrate that it is conscious of the most significant global issues regarding sustainability and is acting accordingly. Hence, on these issues it marks its progress through external ranking partners such as CDP, the Dow Jones Sustainability Index and the Global 100 Most Sustainable Companies.

Closing Observations

This case shows how companies such as SE have been driving business success directly through sustainability initiatives. It also demonstrates that concrete productivity savings can help drive further revenue. In addition, establishing key metrics and areas of focus from a risk perspective as SE has done through its Planet and Society Barometer, can provide maximum transparency for the benefit of both internal and external stakeholders.

SE is an example of a company that integrates its thinking, strategy and reporting directly into business terms. Investors, in recognising many companies are exploring the Value Driver Model for the first time, could encourage businesses to provide high levels of transparency within a balanced context. The most compelling information for investors is a clearly-explained process by company management on how S/GPR has been determined and relevant metrics and targets have been defined. Absolute or non-contextualized data will not help investors to understand companies' value creation in the short and long term.

SE's efforts to further its sustainable business practices have coincided with an attractive equity evaluation. In parallel to its progress in S/GPR terms, the company's share price has increased from just over EUR 10 per share in early 2009 to over EUR 61 per share in late 2013.

Swiss Re: Opportunity from Risk

This case profiles how Swiss Re has applied the aspects of sustainability-related risk management^{cxv} (S/R) in the Value Driver Model to its business.

Strategic Overview

Swiss Re, a 150-year-old company that is currently the second largest reinsurance firm globally, seeks to differentiate itself by providing sophisticated advice to help businesses and governments understand how they will need to adapt to the expected effects of climate change. Reinsurers are directly affected by climate risks, as they insure the insurers of properties and facilities exposed to storms such as Hurricane Sandy, which caused over USD 50 billion in damages in the northeast United States in 2012.^{cxvi}

Anticipated Results

Swiss Re foresees the emergence of two types of reinsurers: lean reinsurers who perform simple transactions, and more involved solutions providers. The company endeavours to be one of the latter, and believes these more complex service offerings will help it financially outperform its peers. Indeed, if the effects of climate change increase as is commonly predicted, companies such as Swiss Re are hoping to be best positioned to capture significant revenue gains based on the experience they accumulate.

Lessons Learned from Swiss Re

Sustainability-related risk

Swiss Re has focused on sustainability for over 20 years, dating back to when it first reported on the topic and identified climate change as an emerging risk for the insurance industry. As part of its ongoing research efforts to identify emerging risks to society, Swiss Re found climate effects to be particularly relevant for the reinsurance industry, which comprised the majority of its business. The company set up its sustainability team in 1998. Climate change first became a topic of intense interest in the early 2000s and Swiss Re entered the climate risk management business in 2005. The company worked to simultaneously calculate the business impacts of environmental, social and governance factors. As the company began to develop its sustainability risk framework, political risk was merged into the sustainability team. Swiss Re's sustainability risk offering poses the following questions:

"Societies need to understand how and where they must adapt to climate change. This is a particularly urgent priority for the custodians of national and local economies, such as finance ministers and mayors. These decision-makers ask: What is the potential climate-related loss to our economies and societies over the coming decades? How much of that loss can we avert, with what measures? What investment will be required to fund those measures – and will the benefits of that

Swiss Re's "Shaping Climate-Resilient Development" report^{cxvii} intends to inform Governments of a systematic approach to answering the above questions. Written by the company's Economics of Climate Adaptation (ECA) working group^{cxviii}, the report identifies the potential impacts of climate on economies and isolates actions to reduce impacts at lowest cost. The ECA methodology has been tested in diverse locations globally, representing various climate hazards, economic impacts and development stages.

"Shaping Climate-Resilient Development" profiled several regions around the world and found that climate patterns are already responsible for annualised losses of up to 12 per cent of GDP, likely to increase to 19 per cent of GDP by 2030. At the same time, the report argued that specific, cost-effective adaptation measures are able to prevent anywhere between 40 and 68 per cent of the expected economic losses.^{cxix}

Swiss Re's risk framework establishes a goal of identifying potential risk now and in the future for a particular region in a comprehensive risk management assessment. The framework ranks risks and analyses them by category and affected economic sector in quantified, monetary terms. The framework also uses scenario planning to prioritise potential actions, typically projecting three possible scenarios until 2030 for each case. They develop an inventory of current and possible local adaptation measures, and apply a cost-benefit analysis to each to assist in the development of regional planning.

When assessing risks that emerge across drought, floods, sea level rise and increasingly intense storms, the framework uses three key inputs to calculate potential losses:

- Hazard
Using frequency and severity of scenarios of the most relevant hazards with maps showing vulnerable public, residential, commercial or agricultural assets.
- Value
The risk to these same areas in monetary terms up until 2030.
- Vulnerability
Using vulnerability curves, which show the potential damage for each asset class by levels of severity of the hazards above.

Swiss Re then applies a specific cost-benefit assessment to recommend steps and contribute to regional assessments and plans.

Past efforts

Its most recent work in this area includes contributing to New York City's post-Hurricane Sandy study entitled "A Stronger, More Resilient New York,"^{cxix} aimed at not only rebuilding damaged communities, but also increasing the resilience of the city's infrastructure and buildings. This includes detailing hundreds of steps in anticipation of another USD 90 billion in damages over the coming decades, according to one developed scenario. While the reports make clear that the future effects of climate change cannot be precisely known, Swiss Re has demonstrated how proactive risk management, that can be productive for societies and economies, also benefits its own bottom line.

Closing Observations

Swiss Re serves as an example of a company that worked to find profitable business opportunities via services that address one of its most material business operating risks. Scientists expect multiple degrees of average temperature change, as reported recently by the IPCC^{cxxi}, and this will impact businesses to varying degrees based on where they operate. As the imperative to adapt to climate change effects increases, financial services organisations such as Swiss Re will be better positioned if they anticipate this. A variety of approaches make sense depending on the area of financial services in question, but impacts are almost certain to affect insurance, real estate, infrastructure, fixed income and private and public equity.

Investors, in recognising many companies are exploring the Value Driver Model for the first time, could encourage businesses to provide high levels of transparency within a balanced context. The most compelling information for investors is a clearly-explained process by company management on how S/GPR has been determined and relevant metrics and targets have been defined. Absolute or non-contextualised data will not help investors to understand companies' value creation in the short and long term.

Swiss Re's efforts to further its sustainable business practices have coincided with an attractive equity evaluation. In parallel, Swiss Re's share price has risen from USD 12 to USD 74 over the past four years.^{cxxii} Andreas Spiegel, Head of Sustainability and Political Risk for Swiss Re, stated that: "Knowledge-focused companies such as Swiss Re, providing services and not just reinsurance, have been outperforming peers as a result of this approach."^{cxxiii}

ⁱ (S/G) Relative growth rate of sustainability-advantaged revenue to revenue overall.

ⁱⁱ (S/P) Contribution to operating income from sustainability initiatives.

ⁱⁱⁱ (S/R) Potential for risks to revenue and brand from key sustainability factors.

^{iv} "Airline Industry Stock Outlook - Aug. 2013." *Yahoo Finance*. 7 August 2013.

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^x "Long-Term Market." *Boeing*. 2013. <<http://www.boeing.com/boeing/commercial/cmo>>.

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^{xiii} "2011 Annual Report." (See fifth endnote).

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^{xxvii} Sustainable Chemistry. (See ninth endnote).

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^{xxix} "Ecosystem Services and the Business Case for Nature: The Nature Conservancy - Dow Chemical Company Collaboration." (See first footnote).

^{xxx} (S/G) Relative growth rate of sustainability-advantaged revenue to revenue overall.

^{xxxi} (S/P) Contribution to operating income from sustainability initiatives.

^{xxxii} (S/R) Potential for risks to revenue and brand from key sustainability factors

^{xxxiii} For more on how DuPont defines sustainability-advantaged products, see the 'How DuPont Did It' section. These definitions typically vary by company.

^{xxxiv} "2010 Sustainability Report." *DuPont*. 2010

<http://www2.dupont.com/Capstone/en_US/assets/downloads/DuPont_2010_Sustainability_Progress_Report.pdf>

^{xxxv} "2012 Sustainability Report." *DuPont*. 2013.

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^{xxxvi} Non-depletable resources are essential so that companies can grow or otherwise sustain their businesses indefinitely. For example, it will be harder for companies to operate in regions of the world where fresh water is scarce, whereas this may not be a medium-term issue in other geographical areas.

^{xxxvii} "2012 Sustainability Report." (See sixth endnote).

^{xxxviii} Calculation by S3, comparing sustainability-advantaged revenue growth versus overall revenue growth of the company from 2007 through 2011, using DuPont's sustainability reports, particularly 2012. Note this calculation is pre-2013 sale of the DuPont's performance coatings business.

^{xxxix} This and other thresholds presented here were deemed reasonable by the authors for the purposes of this analysis. They are illustrative and could vary in different company contexts.

^{xl} "Dupont Annual Income Statement." *DuPont*. 2013

<<http://www.investors.dupont.com/phoenix.zhtml?c=73320&p=irol-fundIncomeA>>

^{xli} S3 Derived from DuPont's sustainability reports, particularly 2011-2 sustainability progress reports.

<http://www2.dupont.com/Sustainability/en_US/DuPont_2011_Sustainability_Progress_Report.pdf>

^{xlii} S3 Derived from DuPont's sustainability reports, particularly 2011-2 sustainability progress reports.

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^{xliii} S3 Derived from DuPont's sustainability reports, particularly 2011-2 sustainability progress reports.

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^{xlvi} "DuPont." *Green Order*. 2013. <[http://greenorder.com/dupont.html?CASE_STUDIES=\\$ion=CLIENTS+>](http://greenorder.com/dupont.html?CASE_STUDIES=$ion=CLIENTS+>).

^{xlvii} "2011 Sustainability Report." *DuPont*. 2010.

^{xlviii} Interview with Dawn Rittenhouse, Director of Sustainable Development, DuPont. July 2013.

^{xlix} Lifecycle analysis (LCA) work is usually performed at a detailed level on an individual product basis and as such can become costly if carried out on thousands of individual products. Such analysis considers the upstream raw materials used in product creation, the processes used to create them, and the use phase of end products as well as shipping, etc. Many companies do a "hotspotting" version of LCA, giving them a sense of where the largest impacts are in both a relative and absolute sense, so that they can determine where to best focus their efficiency efforts. There are also uncertainty factors to consider with any footprinting methodologies on products, facilities and companies as a whole.

^l "2011 Sustainability Report." *DuPont*. (See 18th endnote).

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ⁱⁱ (S/G) Relative growth rate of sustainability-advantaged revenue to revenue overall.

ⁱⁱⁱ (S/P) Contribution to operating income from sustainability initiatives.

ⁱⁱⁱⁱ (S/R) Potential for risks to revenue and brand from key sustainability factors.

^{lv} "EcoVision." *Philips*. 2013

. <<http://www.philips.com/about/sustainability/ecovision/index.page>>.

^{lv} "EcoVision." (See first endnote).

^{lvi} "Integrated Annual Report." *Philips*. 2013. <<http://www.philips.com/about/sustainability/integratedannualreport/index.page>>.

^{lvii} "Integrated Annual Report." (See third endnote).

^{lviii} From Presentation, Henk de Bruin, SVP Sustainability Philips, Nomura SRI Conference May 2013

^{lix} Light-emitting diodes (LEDs) are assembled into lamps for use in lighting fixtures which emit white or colored light. LED lamps have a long life relative to incandescent and some fluorescent lamps, though at a higher initial expense.

^{lx} "Energy Efficiency: More Cities Look to LED Lights for Brighter Streets, Lower Energy Needs." *E&E Publishing, LLC*. 22 June 2012.

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^{lxi} "Philips increases sales of Green Products to 39% of total sales and focuses on commitment to Green Innovation." *Philips*. 23 Feb. 2012.

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^{lxii} "Annual Report 2012." *Philips*. 2013.

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^{lxiii} "Definitions and abbreviations." *Philips*. 2013.

<http://www.annualreport2012.philips.com/annual_report_2012/en/definitions_and_abbreviations.aspx>.

^{lxiv} "Life-Cycle Assessment of Energy and Environmental Impacts of LED Lighting Products." *U.S. Department of Energy*. Feb. 2012.

<http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/2012_LED_Lifecycle_Report.pdf>.

^{lxv} "Energy Efficiency." *Philips*. 2013. <<http://www.philips.com/about/sustainability/oursustainabilityfocus/energyefficiency/>>.

^{lxvi} "Supplier indicators." *Philips*. 2013.

<http://www.annualreport2012.philips.com/annual_report_2012/en/sustainability_statements/supplier_indicators.aspx>.

^{lxvii} Philips works with the Ellen MacArthur Foundation on the idea of a circular economy, which they believe has much promise. They see that lighting accounts for roughly 19 per cent of the world's footprint, with LED having the potential to create up to 80 per cent savings, which translates into a lower footprint and reduced cost of use. They are further working on defining the social benefit of energy savings, and the risk management benefits to shareholders.

^{lxviii} "Supplier indicators." (See twelfth endnote).

^{lxix} (S/G) Relative growth rate of sustainability-advantaged revenue to revenue overall.

^{lxx} (S/P) Contribution to operating income from sustainability initiatives.

^{lxxi} (S/R) Potential for risks to revenue and brand from key sustainability factors.

^{lxxii} Any share price movements come from a review of *Yahoo Finance* as interpreted by this research.

^{lxxiii} "Sustainable Development Report 2012 Data Year." *Praxair, Inc*. 2013

^{lxxiv} "Sustainable Development Report 2012 Data Year." (See fifth endnote).

^{lxxv} "Sustainable Development Report 2012 Data Year." (See fifth endnote).

^{lxxvi} "Carbon Disclosure Project." *Praxair, Inc.* 2013.
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^{lxxx} "Sustainable Development Report 2012 Data Year." Page 3. (See fifth endnote)

^{lxxxi} "Sustainable Development Report 2012 Data Year." (See fifth endnote)

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^{lxxxviii} S3 estimate from Reckitt Benckiser sustainability and annual reports 2012.

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^{xcvi} "Our Approach to Sustainability." (See third endnote).

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^{xcviii} "Sustainability Report 2012." (See seventh endnote).

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^{xcix} (S/G) Relative growth rate of sustainability-advantaged revenue to revenue overall.

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