THE CARLYLE GROUP

GLOBAL ALTERNATIVE ASSET MANAGEMENT

CASE STUDY

When, Not If: How Private Equity Is Embracing Sustainability[1]

By Allan M. Holt and Jackie Roberts

Environmental, social, and governance (ESG) risks and opportunities – what The Carlyle Group refers to as 'sustainability' – are as diverse as the portfolio companies in which the firm invests. Private equity professionals increasingly acknowledge that the intersection of sustainability and business presents a seesaw of choices. Carlyle is working to understand how companies can tip the seesaw and take advantage of sustainability issues, generating more opportunities and less risk while creating value for investors.

Today, we at Carlyle feel more confident than ever in our ability to understand, monitor, and manage ESG risks, as well as to harness ESG practices to improve the bottom line. Sustainability is an area that benefits from 'learning by doing', and we are working to make the value creation link more granular in order to create best practices for our firm.

The Road to Improvement

In 2008, Carlyle increased monitoring of environmental and social issues with a new Responsible Investment Policy, and included explicit assessments of relevant environmental and social issues in our investment process in order to implement that policy. Then in 2010, Carlyle published its first annual corporate citizenship report (this was also a first for the industry) detailing ESG activities in our portfolio companies. At that time, we had a handful of case studies that focused primarily on the win-win benefits of operational efficiency. More recently, in 2014, we hired a Chief Sustainability Officer and today, two years on, Carlyle has a trove of case studies that demonstrate the benefits of its sustainability journey. Our annual reports for the last two years include 36 value creation examples from 29 portfolio companies.

Certainly, operational efficiency continues to offer great benefits for the bottom line and environmental improvements. More efficient use of energy or improved water and waste management often require new expertise or an infusion of capital, and Carlyle's ability to bring such resources to the table can help modernise a plant quickly. As Pete Clare, Carlyle's Deputy Chief Investment Officer of Corporate Private Equity and Co-Head of US Buyout, noted in our 2015 Corporate Social Responsibility Report:

> *"We see underinvestment of capital in many companies today. Over the past two years, seven of the 10 investments made by Carlyle's US buyout funds have had a significant business spending component to the investment thesis. We helped expand and improve existing plants, acquire new equipment and develop new products. Across Carlyle, our investments often result in more efficiency for a company and measurable environmental improvements."*

For example, Carlyle exited from RAC, the second-largest UK roadside assistance company, in 2016. When we announced our sale, Carlyle noted:

> *"RAC also delivered substantial reductions in energy consumption per breakdown for its vehicle fleet and through energy efficiency measures implemented at all UK sites, which jointly contributed to operating profit and reduced carbon emissions."*

During Carlyle's ownership, the RAC team rolled out speed limiters, implemented better demand forecasting and re-cut the geographic cells in which patrols operated. The company also upgraded its IT systems and deployed telematics boxes in patrols to better track truck movements. Together, these changes reduced energy use per breakdown at RAC by 10 percent from the time of investment to exit.

1 Please note that throughout this chapter, information provided on company examples without citation may generally be found in the Carlyle Corporate Citizenship Report at: www.carlyle.com/citizenship/overview/archive.

Figure 1: Sustainability Value Drivers

Source: The Carlyle Group

But beyond operational efficiency, many of Carlyle's successes highlight new ways that we are seeing sustainability drive value. And, just as operational efficiency and cost go hand-in-hand, such opportunities seamlessly integrate sustainability into key business imperatives such as customer relationships, brand equity, and strength of the workforce.

Sustainability and the Three C's: A Future-looking Framework

At a 2014 Carlyle investor conference, Louis V. Gerstner, Jr., former chairman and CEO of IBM Corporation and former chairman of The Carlyle Group, observed the simplicity (in his eyes!) of building better companies – every great business success is about three C's: **customers**, **cost**, and **competition**.

To tip ESG management towards value creation, Carlyle increasingly looks for sustainability initiatives that can support these three areas, as well as focus on the core role of employees. Our deal professionals observe that sustainability considerations have grown in importance for the customers, competitors and employees of many of our portfolio companies. Increasingly, portfolio companies see sustainability as a new tool for improving products, addressing customer needs and desires, building their brand to beat the competition, and recruiting and retaining the best workforce, even as efficiency continues to lower costs (see Figure 1). Such opportunities and successes are increasingly discussed at the Board of Directors level too. While an expanded set of value drivers is in its infancy, this chapter shares the breadth of opportunity and lessons learned to date from Carlyle's efforts to make the case for sustainability that goes beyond operational efficiency.

Customer Satisfaction

For a notable segment of our portfolio companies, customer expectations now include a desire for more sustainable products and services in addition to assurances that suppliers are effectively managing their environmental and social performance. We have seen this increased demand in a range of sectors including consumer products, telecoms, business services and the auto and broader manufacturing sectors. Vogue International LLC's sustainability efforts illustrate the role that sustainability can play in customer satisfaction.

In 2014, Carlyle invested in Vogue International, a fast-growing personal care company, which sells its products into the food, drug, and mass channels including at Walmart and Target. That same year, Walmart expanded its Sustainability Index program to personal care products, using this tool to help Walmart understand, monitor, and enhance the sustainability of its products and supply chain. Walmart first developed a packaging scorecard, which it shared with its 60,000 suppliers in 2008, with a spotlight on each company's ability to use less packaging, utilize more effective materials in packaging, and source these materials more efficiently relative to other suppliers. Walmart has continued to build out its extensive supplier scorecard programs, and other retailers such as Target have added their own scorecards. Target's website states:

> *"To keep us on the right track, we've set company goals in each of our four commitments, like bringing guests more of the sustainable products they love and making our business operations and buildings even more efficient—and we're tracking our progress along the way."*[2]

To achieve these goals, retailers like Walmart and Target need support from their suppliers to deliver more sustainable products.

In its first year of participation, Vogue and Carlyle quickly realized that it would be important to perform well on these supplier scorecards and that there was room to improve on Vogue's initial scores, particularly given Vogue's focus on unique and natural ingredients.

Carlyle shared its resources to help Vogue improve its sustainability scores. The Vogue and Carlyle teams developed a range of initiatives with near-term, medium-term,

2 See: https://corporate.target.com/corporate-responsibility/sustainability (accessed June 27, 2016).

and long-term timeframes. Vogue first focused on best practices in governance, and, with Carlyle's assistance, developed sustainability policies for the company and its suppliers, codifying certain practices already in place. The company increased its commitment to transparency through its website, which began disclosing detailed lists of ingredients. To seek healthier ingredients, Vogue developed a plan to integrate sustainability criteria into its product development process and continuously monitor evolving cosmetic science. Vogue also expanded its use of greener packaging labels and started reporting to CDP, formerly known as the Carbon Disclosure Project, which required surveying its own energy consumption and the practices of suppliers.

In addition to facilitating the creation of great products, these initial changes moved Vogue into or near the top quartile on sustainability indexes for Walmart. Even for a fast-growing company, integration of sustainability ensured that Vogue was well positioned with its major customers. As Sandra Horbach, Carlyle Managing Director and Head of the Global Consumer and Retail Team, noted in Carlyle's citizenship report:

> *"The work we did with Vogue resulted in improved sustainability rankings at its key retail partners, such as Walmart, which is important for the brand's positioning as consumers increasingly select personal care brands with a robust sustainability program."*

In May 2016, Vogue founder and CEO Todd Christopher and Carlyle agreed to sell the company to Johnson & Johnson Consumer Inc.

Best Practices in Transparency

Transparency continues to be an important aspect of Carlyle's sustainability efforts and of many portfolio companies. Last year (2015) was notable because customers of a number of our portfolio companies asked for increased transparency on sustainability issues, including as members of CDP. We have seen a particular focus on carbon emissions and, in 2015, 17 of our portfolio companies from a range of sectors submitted reports to CDP, which provides an internationally accepted system to measure carbon emissions and disclose information to improve the management of environmental risk. Some companies also include data about water use. More than 5,500 companies globally disclosed environmental information through CDP in 2015.[3]

Sustainability reporting, including through vehicles such as CDP, is not legally required, but has emerged as a new type of 'private governance' between customers and their suppliers. In certain sectors, this reporting has proven to be particularly important and a strategic opportunity to enhance customer communication and satisfaction.

For example, Carlyle acquired Syniverse Technologies in 2011, which resulted in Syniverse becoming a private company. Syniverse is a provider of technology and business solutions for the global telecommunications industry. Many of its major customers, such as Verizon and Vodafone, request or encourage CDP reporting. For example, Verizon notes on its website:

> *"We hold our suppliers to the same high standards by which we operate. Each year, we conduct a Supplier Sustainability Assessment to evaluate our suppliers' sustainability strategy and CO2 emissions, solid waste management, water use and management, packaging practices, and sustainability in subcontracting…. Our goal was that 55 percent of our supplier spending would be with firms that measure and set public targets to reduce CO2 emissions by the end of 2015. We achieved this goal one year early. We've set a new goal to ensure that 75 percent of our assessed suppliers meet our environmental standards by 2017."*[4]

Since the company began reporting to CDP, Syniverse has achieved an 81 percent improvement in its CDP score. The company also established ten carbon reduction goals, including reducing energy-related GHG emissions 20 percent below 2010 levels by 2015.

Unlike other strategic areas, Carlyle has learned that sustainability goals and supplier expectations are often publicised on customer websites and can be tracked. We also learned that new sustainability data developed in response to certain customer expectations can be built into marketing materials for the entire sales team. And, Syniverse found even more value in employee recruitment.

Customer Satisfaction and Product Innovation

Carlyle professionals have long believed that strong lines of communication between sales teams and research and development teams can create value for a range of companies where product innovation drives growth. In February 2013, Carlyle completed its acquisition of DuPont Performance Coatings and renamed the company Axalta Coating Systems. Axalta is a global manufacturer, marketer, and supplier of coatings to the global transportation, collision repair, and industrial sectors. The company supplies coatings to original equipment manufacturers (OEMs) of cars and commercial vehicles

3 See: www.cdp.net/en-US/News/CDP%20News%20Article%20Pages/Companies-blind-to-climate-risks-in-half-their-supply-chains.aspx (accessed June 29, 2016).

4 See: www.verizon.com/about/responsibility/sustainability (accessed June 27, 2016).

including heavy duty trucks, buses, rail stock, and agriculture, construction, and earth-moving equipment as well as to body shops that refinish damaged vehicles. For all these customers, Axalta provides a range of colors and application systems that offer durability, increased productivity, and provide the vital function of protecting underlying materials from corrosion and wear which result from exposure to the elements. At the time of Carlyle's acquisition, the company served more than 100,000 customers in 130 countries.

In the years just proceeding Carlyle's acquisition, several sustainability concerns affected Axalta's customers, ranging from new goals to reduce air pollution in developing regions such as China to a growing role for green building certifications, including Green Globes and Leadership in Energy and Environmental Design (LEED). Axalta customers in the transportation sector were also working to make vehicles lighter in order to meet tighter fuel economy and CO2 emission standards, often replacing steel with materials such as plastics and high-strength composites.

Given these trends, Carlyle due diligence looked at the ability of Axalta products to meet new customer needs and saw a growth trajectory for the company based on product innovations. Axalta's strong relationship with customers provided its R&D teams with ongoing feedback about emerging customer preferences and many new preferences linked to sustainability improvements.

Just after our acquisition, Axalta announced a major capital investment to expand its capacity to manufacture water-based coatings in China. Water-based coatings, pioneered by Axalta scientists, responded to a growing demand among OEMs to significantly reduce emissions of volatile organic compounds (VOCs), as well as meeting global standards such as the EU's VOC Regulation 2004/42/EC and, more recently, a similar regulation in China that requires all new car plants to be designed only to use water-based coatings. The decision to invest reflected the needs of Axalta's customers in China to meet their goal of growing the transportation industry with sustainable manufacturing that reduces air pollution.

As a second early initiative, Axalta released its first Sustainability Report. Axalta's team worked with Carlyle's Chief Sustainability Officer on telling Axalta's story in a manner that was fact-based, compelling, and emphasized the connection between innovation and sustainability. The sustainability report highlighted environmentally responsible product attributes, application systems, and product benefits. In addition to the new waterborne coatings, other innovations include ensuring that Axalta coatings can be applied seamlessly on a range of different materials, enabling the coatings on the lightweight plastic materials and the adjacent metal to appear identical. Axalta's coatings used in the construction industry can be applied to roof panels and extrusions to reduce localized heat build-up which contributes to the urban heat island effect in hot climates, decreasing energy consumption for air conditioning. Axalta's architectural powder coatings also help architects and building owners earn LEED certification with low solar absorption coatings, which emit negligible ultra-low VOC levels when being applied and give the aluminum and steel used on buildings a distinctive appearance. The coatings help buildings satisfy LEED criteria under the EQc4 Low Emitting Materials credit category.

Not only Axalta's products but the systems by which its coatings were applied evolved in ways that reduced the environmental footprint of its customers. For large automotive OEMs, paint layers traditionally required high temperature ovens to cure each layer before the next coat was applied. Axalta's Harmonized Coating Technologies™ took steps and drying ovens out of the process. These systems accelerated production cycle times, improving customer productivity, and reduced energy use with lower- or no-heat curing. Furthermore, customers saved investment resources by eliminating the installation of expensive ovens.

In November, 2014, Axalta made its public market debut with a successful offering. Carlyle Managing Director on the US Buyout team, Martin Sumner, noted in Carlyle's Corporate Citizenship report:

> *"The work we have done to increase Axalta's sustainability initiatives and transparency has enabled the company to implement best practices in the ESG space as a publicly traded company."*

The Axalta Sustainability Report is also an effective marketing tool, building brand equity for the new company. Ultimately, the lesson learned is that the brand building succeeded because of earlier efforts to understand emerging customer preferences related to sustainability and early insights into larger environmental trends affecting its customers.

An ongoing dialogue with customers may be one of the key drivers in creating value through sustainability and a useful lesson for companies and private equity firms alike.

As another example, in 2011, Carlyle acquired ADA Cosmetics, a European supplier of premium hotel cosmetics and amenities. Headquartered in Kehl, Germany with approximately 270 employees, ADA has established itself as the largest supplier of cosmetics and accessories to premium hotels in Europe, and expanded its offering across Asia and the Middle East.

ADA's hotel customers wanted to provide their guests with sustainable products. ADA understood these emerging preferences early and responded with eco-certifications, a 'Green Collection' product line, which incorporated bulk packaging, and operational efficiency improvements. During Carlyle's ownership, ADA added a fourth new product line, named Fair Trade, to its Green Collection, adding new social attributes to product choices. These changes contributed to a 19 percent sales increase in 2013 for the four lines in the Green Collection, making it the top-performing category. The Green Collection also generated an overall 21 percent increase in sales in 2014. Driven by an understanding of sustainability issues, ADA's product innovations served as an important value component when Carlyle exited the investment in the company in August 2014.

In the telecom sector, customers' interest in sustainability continues to grow; watching these developments helped Carlyle portfolio company, CommScope, Inc., create a new enterprise solution, 'Data Center on Demand', for its customers. Carlyle completed its acquisition of CommScope, a global provider of infrastructure solutions for communications networks, in 2011 by taking the company private. CommScope regularly communicates greenhouse gas (GHG) achievements to its customers through CDP reporting and annual supplier assessments. Last year, the company exceeded its original goal of a 65 percent reduction in greenhouse gas emissions by 2020 against a 2008 baseline by announcing it had achieved a 76 percent reduction in 2015, five years ahead of schedule.

CommScope's new offering, 'Data Center on Demand', rapidly adds flexible, scalable capacity while reducing energy consumption. It enables customers to achieve outstanding power usage effectiveness (PUE) ratings in the range of 1.03 to 1.06, meaning that nearly all of the energy required to power a data center is used by the hardware itself, rather than the building that houses it. By contrast, the PUE for a typical data center is a much less efficient 1.8 to 2.9.[5] CommScope's efficiency efforts save about 40 percent of the energy used for data centers, which benefits customers and the environment.

Brand Equity

Customer satisfaction and brand equity often go hand in hand, but for some portfolio companies, sustainability initiatives particularly enhance brand equity. In December 2009, Carlyle entered into a joint venture called Project Service LLC with Doctor's Associates, Inc., the parent company of SUBWAY Restaurants, and Subcon, Inc., forming a 35-year public-private partnership with the State of Connecticut to redevelop, operate, and maintain Connecticut's 23 state-wide highway service plazas. Investments in highly efficient on-site equipment and new building materials during the service centers' renovations reduced energy use by 21 percent compared to buildings of similar construction.[6] Drought-resistant plants and programmable water heaters at the facilities also reduce water use significantly.

While many environmental improvements were not visible to the customer, solar panels on the service islands above gas pumps provided a unique branding opportunity. In addition to producing 12.5 percent of the service plaza's energy, drivers on the highway can quickly see the new solar panels, which suggest an innovative and quality rest stop experience. The facilities have seen strong food sales, and in May 2016 Carlyle agreed to sell Project Service LLC to John Laing Infrastructure Fund (JLIF), one of Europe's largest infrastructure funds.

Green certifications and ecolabel programs throughout our portfolio can also enhance brand equity. Ecolabel Index, the largest global directory of ecolabels, is currently tracking 465 ecolabels in 199 countries and 25 industry sectors, so the opportunities are extensive.[7] In the commodity sector, brand opportunities frequently emerge as the recent example of certifying a conflict-free supply of raw materials demonstrates.

Carlyle acquired H.C. Starck GmbH from The Bayer Group in 2007, a global provider of specialty metals, advanced ceramics, and electronic chemicals. As of 2015, H.C. Starck was one of the few companies to pass a third consecutive audit under the 'Conflict-Free Smelter Validation Program' introduced in 2010 by the Conflict-Free Sourcing Initiative (CfSI).[8] To be declared conflict-free, H.C. Starck had to prove that it had documented a conflict minerals policy which was integrated into business operations, deployed a system for tracing finished goods back to its mine of origin, and which documented that all purchased materials came from non-conflict sources. The CFSI is an initiative of the Electronics Industry Citizenship Coalition (EICC) and the Global e-Sustainability Initiative (GeSI) and is managed by and housed within the offices of the EICC. Here, using a third-party validator supported the brand and provided needed assurances to customers.

'Greening a brand' can provide direct benefit for sales. As the ADA Green Collection data shows, the new sustainable brands added significant revenues to the company. Ecolabels or fact-based information on packaging

5 Data-Center-on-Demand-BR-107686.pdf (accessed June 29, 2016).

6 www.carlyle.com/sites/default/files/citizenship-report/tcg_ccr_2015.pdf (accessed June 29, 2016).

7 www.ecolabelindex.com/ (accessed June 27, 2016).

8 www.carlyle.com/sites/default/files/citizenship-report/tcg_ccr_2015.pdf (accessed June 29, 2016).

highlight social or environmental features for customers. In this area, our experience suggests that customers will not pay more for a product with sustainability features, but all else being equal, these products win more often. A 2014 Nielsen Global Survey on Corporate Social Responsibility polled 30,000 consumers in some 60 countries and found that 52 percent of global respondents in Nielsen's survey say their purchase decisions are partly dependent on the packaging – they check the labeling first before buying to ensure the brand is committed to positive social and environmental impact.[9] Other consumer surveys suggest consumers will pay a premium.[10] However, Carlyle views such data as simply strong indicators of consumer preferences and an opportunity to seize market share, not a path to higher prices.

Higher prices (or rates) can often be achieved with products and services that provide measurable energy savings. In 2013, Carlyle invested in Interlink Maritime Corp. a company with a fleet of modern eco-designed handysize dry bulk vessels. Most of the new vessels are rated to be approximately 25 percent more efficient than the Energy Efficiency Design Index. Upon Carlyle's acquisition, we worked with the company to execute contracts for new eco-designed vessels to grow the fleet to 28 vessels at scale. Here, because these ships offer significantly decreased fuel consumption, Interlink should even be able to seek a premium for its vessels since charterers are responsible for fuel payments.

Workforce Strength

Carlyle initially struggled a bit with how to capture the range of value creation where sustainability initiatives helped engage employees, especially younger workers. Workforce issues also include the important role employees play in a company's brand and customer relations. 'Workforce strength' captured the range of ways Carlyle works with portfolio companies to invest in the workforce – and the value we believe these investments bring.

Carlyle acquired Yakjin, an ODM/OEM apparel manufacturer, in 2013. Carlyle worked with Yakjin to significantly expand its sustainability efforts, particularly in the social area. One notable outcome of these efforts was expanded channels for labor-management dialogue and new worker benefits in Cambodia; the Labor-Management Dialogue Program at Yakjin was established to facilitate the exchange of ideas and concerns among members of Yakjin Cambodia. Yakjin also strengthened its team by appointing an executive-level manager responsible for all corporate social responsibility who led a materiality assessment including reviewing results from 54 audits conducted by customers and the International Labor Organization. Here, Carlyle brought in a senior labor expert to mentor Yakjin's new executive.

In the US, investing in a strong workforce entails a much different set of possible initiatives. Carlyle portfolio company Booz Allen Hamilton is a good example of how expanding workforce initiatives can increase employee satisfaction. Carlyle acquired a majority stake in Booz Allen's US government consulting business in 2008, when the company separated its US government and global commercial businesses. Booz Allen is a provider of management and technology consulting services to the US government in the defense, intelligence, and civil markets. Carlyle took Booz Allen public in late 2010.

In 2012, Booz developed its five-year 'Way We Work' program, which gives employees greater flexibility to work where they need to, when they need to, with 'centers of gravity' office space closest to key clients. The program's use of expanded 'hoteling' opportunities at various worksites has helped Booz Allen reduce its carbon footprint while improving employee quality of life. When 'Way We Work' was first implemented in 2012, it received Commuter Connections' Telework Award, recognizing the program's success in improving employee commutes, reducing traffic congestion, and lowering Booz Allen's overall carbon footprint. In 2014, the most recent year for which data is available, CO2 emissions from Booz Allen's facilities were roughly 42 percent lower than in 2009. Booz Allen now also tracks emissions per full-time equivalent (FTE), and its first year-over-year data showed that in 2014 carbon emissions decreased almost 4 percent per FTE. Booz promotes the environmental benefits of 'Way We Work' to employees and external audiences, and the program fosters Booz Allen's ability to attract and retain a highly talented workforce.

Earlier, we described how Syniverse committed to increased carbon reporting and goals for reductions initially driven by customer requests. However, two years into its efforts to track and reduce carbon emissions, the India office reported that sustainability questions were an area of discussion as their team worked to recruit young talent. Due to earlier efforts, Syniverse could provide concrete data and examples of their particular focus on reducing carbon emissions. Whether millennials track specific sustainability performance or simply use sustainability initiatives as a surrogate to measure whether a company is innovative is unclear. Even without understanding these nuances, the lesson remains that sustainability may be part of the equation millennials use to choose future employers. Sectors (like telecom) and

9 Nielsen-Global-Corporate-Social-Responsibility-Report-June-2014.pdf (accessed June 29, 2016).

10 For example, a 2012 McKinsey & Company survey found that "Upward of 70 percent of consumers surveyed about purchases in the automotive, building, electronics, furniture and packaging categories said they would pay an additional 5 percent for a green product if it met the same performance standards as a non-green alternative."

companies, in particular, that want to attract young talent can connect sustainability efforts to recruiting.

What the Future Looks Like

Acknowledging that resources are limited and management bandwidth can be a limiting factor, practitioners may be best served by 'stacking' sustainability value. For example, recent low energy prices challenge the ROI of various energy efficiency projects. However, when tied to customer satisfaction and brand, the value proposition shifts. If customers announce that managing the carbon footprint of their supply chain is a priority, then a lighting retrofit project may justify itself based on both emerging customer expectations and cost savings. Sustainability work can then be tailored to give the brand a forward-looking connect, and be of value to employees when presented as part of an overall commitment to sustainability. That rationale for investing in a project is much stronger than just cost savings. Sustainability is an area where strategies and projects are often widely advertised, so companies should be looking at the websites and other public statements of their customers to understand emerging priorities.

Building internal capacity also pays large dividends. From Vogue to Yakjin to others, Carlyle works to mentor key employees within its portfolio companies. We have also learned that sustainability is an area where successful strategies emerge from a variety of areas within the business, and responsibility for this function is often dispersed. When we now gather experts at portfolio companies to interface in areas such as transportation and logistics, real estate and facilities, and information technology, we add sustainability opportunities to the agenda. For example, as part of the Carlyle Information Technology conference, representatives from portfolio company CommScope discussed their 'green data center' solutions with chief information officers and IT leaders from across the portfolio. We invited FedEx's chief sustainability officer to speak to transportation and logistics experts at Carlyle portfolio companies and share its success in moving to greener, more sustainable business processes, winning new customers in the process and enhancing its brand.

Integrating sustainability with business basics is an important lesson for Carlyle going forward, but employees at portfolio companies also note that linking sustainability to business drivers accelerates initiatives and enables a company to build internal capacity across many functional areas. When Carlyle hired its first Chief Sustainability Officer in 2014, the firm sought to bring an expert in-house as a resource for investment professionals and to support portfolio companies. However, we also expect that sustainability literacy will increase across professionals in the firm and that portfolio companies will be best served by building their own internal capacity. We believe this approach—combined with a wider lens looking at customer priorities, brand opportunities, and employee dynamics—has helped increase Carlyle's ability to make progress in this vital area across the firm's global corporate private equity portfolio.

Jackie Roberts joined The Carlyle Group in 2014 as Chief Sustainability Officer. Prior to joining Carlyle, Jackie launched and led the first-ever NGO-Business Corporate Partners at the Environmental Defense Fund as well as previous roles at Harvard Business School and EPA. She holds a B.S. in Chemical Engineering from Yale, an MBA from the Yale School of Management, and a Masters in Environmental Studies from the Yale School of Forestry and Environmental Studies.

Allan M. Holt is a Managing Director of The Carlyle Group and Chairman of US Buyout, the firm's largest investment fund. Mr. Holt has extensive private equity investment experience, most recently as Co-head of US Buyout. Prior to joining Carlyle in 1992, Allan spent three and a half years with Avenir Group, Inc., an investment and advisory company. He was also previously with MCI Communications Corporation, where he managed a group responsible for MCI's multibillion-dollar financial operating and capital plans. Allan is a graduate of Rutgers University and received his MBA from the University of California, Berkeley. He serves on the Boards of Directors of several Carlyle portfolio companies, including HCR Manor Care Inc., NBTY, Inc., Ortho-Clinical Diagnostics, and Veritas Technologies.

About The Carlyle Group

The Carlyle Group (NASDAQ: CG) is a global alternative asset manager with $176 billion of assets under management across 128 funds and 170 fund of funds vehicles as of June 30, 2016. Carlyle's purpose is to invest wisely and create value on behalf of its investors, many of whom are public pensions. Carlyle invests across four segments – Corporate Private Equity, Real Assets, Global Market Strategies and Investment Solutions – in Africa, Asia, Australia, Europe, the Middle East, North America and South America. The Carlyle Group employs more than 1,650 people in 35 offices across six continents.

This Case Study was originally published in Private Equity International's "Value Creation Through Responsible Investment" https://www.privateequityinternational.com/value-creation-through-responsible-investment/