

The Four Dimensions of Sustainability

A Framework for Material and
Consistent Corporate Action

Kevin Moss
Head of Corporate Social Responsibility
BT Americas



Introduction

Reducing impact on climate change is a challenge many companies are trying to tackle. Businesses across the globe need to take a leadership role in reducing their carbon footprint. Those that develop a comprehensive strategy will save money, increase productivity and gain a competitive edge over those that fail to make any changes. The good news is many organizations are up for the challenge, though many are unsure of where to begin among the myriad of activities on the table.

This white paper proposes a Sustainability Framework to facilitate development of a sustainability strategy. The Framework can be used to evaluate the overall scope of current sustainability initiatives, and identify and recommend new actions. It can also be used to provide a structure for critical analysis of an organization's existing sustainability strategy. The approach was developed based on programs at BT and from partners and suppliers that are committed to making a difference.

Figure 1: Four Dimensions of the Sustainability Framework



A Framework for Material and Consistent Corporate Action

The Sustainability Framework may be applied to the economic, social and environmental sustainability of the communities in which companies operate. However, for consistency, this paper's illustrative examples reflect just environmental sustainability. Particularly, the examples are drawn from carbon emissions reduction programs.

The Framework has four broad dimensions of potential actions to achieving sustainability. These dimensions are represented by the four concentric circles shown in Figure 1.

- **Direct Impact** - emissions due to the energy consumed by the company (directly or indirectly) to carry out its activities.
- **Products In Use** - emissions due to the energy consumption of a company's products and/or services once in the hands of the user.
- **Enabled Impact** - impact that a company's products and/or services have on the energy consumption and emissions of the entity that utilizes the product other than the consumption of the product itself.
- **Inform and Influence** - the opportunity to inform or influence stakeholders on environmental issues and impact of these issues on the stakeholder and on the company.

“Greenwash” is a term that is widely used to describe putting a green façade on otherwise environmentally unfriendly activities. But what really constitutes greenwash? This Framework can go a long way toward differentiating greenwash from a simple failure to be perfect! The indication of greenwash is when an organization focuses its positive actions and associated publicity in a dimension of the Framework that is of limited materiality, but takes no action—or even worse, conflicting negative action—in more material dimensions. In contrast, an organization that is taking action in material dimensions but does not yet have a comprehensive program across all dimensions is not guilty of greenwash. It is simply guilty of not being perfect.

Direct Impact

Direct Impact is probably the best known of the four dimensions in this Framework. It is the bulls-eye of the illustration in Figure 1 and represents the direct impact that a company has on environmental sustainability. It comprises the emissions resulting from the energy consumed by the company (directly or indirectly) to carry out its activities. These emissions are defined by the greenhouse gas (GHG) emissions guidelines, which include carbon emissions resulting from on-site power generation, electricity consumption, fuel usage, travel fleet operations and other activities that are directly carried out by the corporation or on its behalf. Quantitative objectives can be set, and there are a growing number of consultancies and software packages that specialize in collecting and presenting this data. Measurable objectives can be set using intensity or absolute targets with many organizations now aiming to be carbon neutral by a certain date.

Partly because of these available structural approaches, Direct Impact emissions are where companies often focus their initial attention. For example, at BT, using UK reporting guidelines, direct carbon footprint was reduced from 1.6 million metric tons to 0.6 million metric tons between 1996 and 2008. This was achieved through a combination of business process change, energy efficiency measures and renewable energy resources.

A significant proportion of that carbon footprint reduction has been enabled by suppliers. This contribution is reflected in the supplier wedge shown in Figure 1. For example, as part of BT's 21st Century Network design, work with vendors enabled an increase in the operating temperature of network data centers and so a reduction in the energy consumed. (See sidebar 'Thinking Out of the Box.')

In another example, PepsiCo has a [comprehensive engagement program](#) with its vendors which includes an annual sustainability summit, support from PepsiCo consultants to develop environmental plans, a vendor questionnaire and a commitment to recognize and reward vendor action on sustainability priorities.

ICT¹ companies tend to have smaller Direct Impact carbon footprints than those in the transport, manufacturing and energy industries, so why focus so much attention on this dimension of action? Direct emissions reductions provide the experience and mandate for a company to actively work with its customers and other stakeholders on ways to reduce their emissions.

Thinking Out of the Box

It may seem counterintuitive, but raising the operating temperature of the equipment in a data center reduces the energy consumed. Data center servers, like any other computer hardware, have specified operating temperature ranges to ensure effective operation, minimize downtime and optimize life span. Operating outside of these ranges invalidates warranties. But these temperature ranges have changed little since the early days of large mainframe computers when data center standards were established and became the norm. As BT worked with vendors to specify its 21CN network design, it challenged vendors on these operating temperature ranges. Many of the selected vendors responded positively, allowing the flexibility to raise the operating tolerances of their equipment by a few degrees without affecting performance and the warranty. One of the most significant components of data center energy consumption is air conditioning, which ensures ambient temperatures within the ranges specified by the equipment manufacturers. By increasing the upper end of those temperature ranges by only a few degrees, air conditioning use, along with energy costs and carbon emissions, can be reduced significantly. The new 21CN network also consolidated many of BT's smaller switch sites in a fewer number of larger sites, also greatly reducing energy needs. BT is now working with IT industry sustainability organizations like Green Grid to achieve broader changes in accepted standards.

¹ ICT – Information Communications Technology. This terminology is employed to reflect the increasing interdependence of the IT and telecommunications industries. Historically separate, both in terms of industry sectors and in terms of functional departments in a business, the increasing interdependence between IT and telecommunications is evident in the increasing overlap between the industry sectors and the merging of traditional IT and communications departments in many corporations. This interdependence is reflected in the use of the terminology 'ICT'.

Products in Use

Products in Use comprises the emissions a company's products and/or services produce once in the hands of end-users. While the products of some industry sectors, such as the food sector, have little or no energy consumption in use and so produce very minor in-life carbon emissions, others produce significant in-life emissions. The fuel or electricity used to power these products is paid for by the end-user and so is the end-user's direct carbon footprint. The user has some control over consumption, for instance switching off a computer rather than leaving it on standby, or driving at a slower speed. However, although the consumption may be significantly influenced by the end-user, the manufacturer is very much complicit in the emissions (or other environmental impact) through product portfolio, design and usage guidance.

For many businesses, Products in Use emissions can be far greater than Direct Impact emissions. The [2006-07 corporate social responsibility report](#) from Ford Motor Company shows that its direct emissions in 2005 were about 8 million metric tons of CO₂. In contrast, Products in Use emissions—through the fuel consumption of their on-road fleet across the world—were about 407 million metric tons. For a telecommunications company selling routers and phones, Direct Impact and Product in Use emissions are of a similar order of comparative magnitude to each other.

Where Products in Use emissions are significant, product producers can take actions to reduce them. For instance, Ford's sustainability report identifies the actions it is taking, such as increasing engine efficiency. Today, enlightened ICT companies are working to reduce the energy consumption of their products by giving the end user more control in reducing consumption through features such as standby mode.

As with Direct Impact, suppliers can also play a significant role in reducing the in-use impact of the products they sell. While many companies outsource their product manufacturing, this does not diminish their responsibility, through specifying energy related design characteristics. For example, early in 2008, BT started a six-month program to replace its entire line of DECT (Digital Enhanced Cordless Telecommunications) phones with a new line of phones that have about half the energy consumption of their predecessors. This was made possible by working with vendors the prior year on product redesign. Hence, in the Framework, the supplier wedge intrudes into both the Direct Impact and Products in Use categories.

For industry sectors with little or no impact in this category, focus should remain on Direct Impact emissions.

Enabled Impact

Enabled Impact is the third concentric circle of the Framework. In contrast to Products in Use impact, which addresses the energy consumption of the product or service itself, Enabled Impact focuses on the effect a product or service has on other aspects of energy consumption and resulting emissions.

For instance, BT completed a study with Forum for the Future in 2004, which showed that the rollout of broadband services increased the propensity of customers to buy and to use a range of other energy-dependent electronic equipment. While that equipment included computers and peripherals not purchased from BT—thus not Product In Use impact—their usage was enabled or even encouraged by the rollout of broadband, hence the term Enabled Impact.

Fortunately, in the ICT sector this increased energy usage is more than offset by a beneficial impact of the ICT industry as a whole. Many papers have been written on the positive Enabled Impact of ICT services². The best known example is using teleconferencing instead of traveling for meetings. While teleconferencing requires electricity to power it and thus has an associated emissions burden, compared to the emissions associated with travel, that burden is small. (See "ICT Sector as an Enabler" for many other examples of enabled benefit in the ICT industry.) Estimates by the Climate Group, GeSi and others of the enabled beneficial impact of the industry range from five to 15 times the burden of the industry. Actions with the enabled dimension are therefore among the most material ways in which the ICT industry can impact global emissions.

There are many examples of products and services with Enabled Impact benefits outside of the ICT sector, ranging from a lubricant that improves the energy efficiency of a production line to a sophisticated process reengineering consultancy service. Opportunities for action in the Enabled Impact dimension tend to fall into one of three categories:

1. **Efficiency improvement of an existing service**
2. **Substitution of a more energy-intensive service**
3. **Environmental services**

² The most recent and probably most comprehensive is [SMART 2020](#) produced by GeSI and the Climate Group in June 2008.

ICT Sector as an Enabler

There are many ways in which ICT services help reduce emissions, and they have the potential to do so much more in the future. Travel substitution is one of the best known, i.e., replacing in-person meetings with teleconferences and enabling teleworking to avoid commuting. Other sophisticated travel reduction opportunities include:

- Installing wireless devices in vending machines to reduce required visits from stocking fleets
- Using GPS to improve vehicle routing
- Congestion control in cities to improve traffic flow
- Using the Internet to provide real-time traffic advice to commuters

Effective IT infrastructures have enabled companies to reduce real estate usage up to 30 percent by creating more flexible workspaces, which can serve more employees. Such 'smart buildings' can also save energy using a range of ICT services. For instance, electronic monitoring and control of a building's environment can enhance the use of natural daylight and external climate. Some systems can also automatically switch off the lights or close the windows.

The Internet and private networks have greatly reduced the quantity of paper used for commercial transactions such as billing and information provision. Smart Grid describes a concept through which user demand, power station supply and pricing are all connected on a more granular, real-time basis to allow great improvements in grid efficiency.

The potential benefits of these and many other examples can be quantified and compared to the carbon burden of the ICT industry (considered to be 2–3% of global emissions). In fact, the recent report from Climate Group and GeSi SMART 2020 concluded that a five-fold benefit could be realized by the industry as a whole by 2020.

Inform and Influence

The outer ring of the Framework is the opportunity to inform and influence the actions of others for the purpose of reducing negative impact on the environment. Unlike actions taken in the other three categories, informing and influencing people cannot be quantified. However, it is equally as important. A company's efforts to inform and influence its stakeholders can help remove the hurdles companies sometimes face due to real or perceived limitations placed on them by shareholders and customers. The wrong actions in this area can also be the test of greenwash.

Inform and Influence can be considered with respect to all of a company's stakeholder groups, including customers, employees, government and shareholders.

Informing the public is probably the most material opportunity media and communications companies have to impact climate change. NewsCorp is one of the [best examples](#) of a media company taking a public stance on this. In addition to commitments to reduce their own carbon footprint, NewsCorp has made a public commitment to:

“Engage our employees, our business partners and our audiences on the issues of energy use and climate change.”

Companies with a well recognized consumer brand name also have a significant opportunity to inform customers and sway public opinion by publicizing their own commitments and activities, providing tools, such as carbon calculators, and even providing marketing incentives for the public to take action.

- BT uses its brand in the UK to engage the general public through a [range of tools](#), including calculators, games and competitions.
- Xerox provides a [calculator](#) that documents the impact of the services it provides, which allows customers to make a quick, Web-based assessment of how-to advice on smart ways to make offices greener.
- Nortel's [energy calculator](#) is a more explicit demonstration of energy savings for competitive differentiation.

For the employee stakeholder, representative engagement efforts include grassroots programs, websites and competitions, among others. Walmart has a [PRP](#) (Personal Responsibilities Program) which includes encouraging employees to put forward ideas for improving sustainability in stores. BT runs a program called Carbon Clubs that engages groups of employees to tackle environmental issues in ways that are meaningful to them.

The most engaged companies are educating their people not only on the actions they can take in the workplace, but about those they can also take at home and in other aspects of their personal lives. At BT, staff are encouraged to take action outside of the workplace through a Living Lightly program. HP provides a subsidy and a [program to encourage employees](#) to install solar panels at home.

Traditionally, most companies have focused their government interactions on activities that are deemed core to their immediate business. As climate change and other areas of sustainability become more top-of-mind, we are seeing that focus broaden. In the UK, for example, a group of prominent companies, including BP, BT, Ford and Barclays, formed a Climate Change Task Force under the auspices of the Confederation of British Industry to present the corporate perspective on climate change to government leaders. According to their report:

“The best question for the business community is whether we can be certain that climate change presents a substantial risk; a risk that will have a profound impact on society and the economy? To this the answer is clearly ‘yes’. And so, as with all substantial risks, it is vital to mitigate the danger.... Any response to the threat of climate change requires three components for success. Politicians must give much greater priority to the subject, and not just on an ad hoc basis. Consumers have to be empowered to make the right decisions and need to be given the facts to make informed judgments. And business must become green to grow.”

This initiative represents a compelling example of the role of business in informing and influencing government in this area.

Informing shareholders is vital to ensure their understanding and support for key actions. For many companies that are active in this area, this is accomplished through the annual sustainability report. The following statement from the 2008 [sustainability report](#) of Omron, a Japanese manufacturer of sensing devices and control systems, makes unequivocal the company’s position on a key sustainability issue and helps inform the views of the shareholder:

“As reported by the Intergovernmental Panel on Climate Change (IPCC), the fight against global warming is considered to be one of society’s most urgent issues. Reflecting this belief...we are determined to promote anti-global warming measures as our most important management objective...”

Companies often state that they can take only as much action as their shareholders and customers will tolerate over and above what government legislation requires. But those same companies are able to inform and influence those stakeholders. In fact they are often expert at doing that through core competencies in marketing, employee communications, government relations and investor relations. Including action in the Inform and Influence category is a critical component of a comprehensive sustainability program.

Conclusion

The Sustainability Framework identifies four discrete dimensions of a holistic approach to sustainability. As the examples illustrate, different industry sectors have different material impacts in each of the Framework dimensions. The biggest impact of a food and nutrition company is Direct emissions—and much of that might be due to supply chain. The auto industry, in contrast, has its biggest impact through Products in Use emissions. A telecommunications company like BT has the greatest impact through its positive impact on Enabled emissions and a media company like NewsCorp, in turn, through its ability to Inform and Influence the public.

Companies should be able to quantify their impact in each of the first three dimensions and map their activities against the materiality of that category. Such an analysis will help identify what organizations should be doing and contrast this with what they are doing in each space. The top priorities and gaps will become evident.

The Framework also serves as a tool for testing whether a company is truly consistent in its approach to sustainability. While action is not required in every category on a specific issue, inconsistent action across the categories of the Framework deserves careful attention. In most cases, a company should consider starting its activities in the Direct Impact dimension to gain knowledge and experience, and work outwards from there. Skipping action within a category may be appropriate because there is no impact in that space, but it may also indicate lack of commitment.

Also important is inconsistency between action in the outer ring of Inform and Influence and action in the three inner rings. Action in Inform and Influence that is intended to improve sales or brand, without equivalent level of action in the three inner categories effectively defines greenwash in the environmental sustainability arena. Companies guilty of this form of misrepresentation present a green façade to their stakeholders, while operating in a manner that pays little or no heed to the actual impact of their actions. Likewise, taking positive action in the central ring(s) while continuing material negative actions in outer rings is counterproductive for the environment and should be called out by stakeholders.

This Framework is intended to provide a consistent model that allows for introspection within a company, comparison with companies within a sector and across sectors and critical analysis from external observers. In so doing it strives to add to the tools available to continually improve sustainability within the business world.

About the Author

Kevin Moss has responsibility for implementation of British Telecommunications' Corporate Social Responsibility (CSR) strategy in North America. Kevin previously oversaw voice and data product management for BT Americas, including product strategy, new product development and geographic expansion across systems, networks, operations and channels. He maintains a blog with his views on CSR and an ongoing commentary on the Four Dimensions of Sustainability at www.csrperspective.com

About BT

BT is one of the world's leading providers of communications solutions and services operating in 170 countries. Its principal activities include networked IT services, local national and international telecommunications services and higher-value broadband and Internet products and services. BT consists principally of four lines of business: BT Global Services, Openreach, BT Retail and BT Wholesale.

British Telecommunications (BT) is a wholly owned subsidiary of BT Group and encompasses virtually all business and assets of the BT Group. BT Group plc is listed on stock exchanges in London and New York.

For More Information

Visit <http://www.bt.com/globalservices>

Offices worldwide

The services described in this publication are subject to availability and may be modified from time to time. Services and equipment are provided subject to British Telecommunications plc's respective standard conditions of contract. Nothing in this publication forms any part of any contract.

© British Telecommunications plc 2009

05/04/2009

