SDGs & Sectors: A review of the business opportunities

A Report for the Business & Sustainable Development Commission

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Introduction & overview

Introduction

The Global Commission on Business and Sustainable Development asked Corporate Citizenship to undertake an analysis of the Sustainable Development Goals (SDGs) by sectors to identify the business opportunities and risks.

The aim of the analysis is to highlight the business relevance of the SDGs and the potential scale of the opportunities & risks.

The report will act as a briefing for the Commissioners and inform thinking as the Commission's research programme gets underway.

The SDGs provide a comprehensive vision for a sustainable and equitable society. They also provide clear touchpoints with businesses, sectors and value chains.

At the macro level business has a stake in realising the vision set out in the SDGs. Establishing peaceful, stable, prosperous communities that live within the environmental limits of the planet is good for everyone.

But a closer look at the SDGs reveals potential business opportunities at the sector and company-level too.

Overview of findings

This report outlines our principal findings. In Section 1 we have mapped those Goals that most strongly impact on industrial sectors, while identifying those that have cross-cutting or enabling relevance. Sections 2 and 3 summarise our sector analysis using our four-part business opportunity lens - covering innovation and market development, efficiency and cost savings, reputation management, and risk reduction - and illustrated the business case from secondary research sources.

The implications are set out in Section 4 and can be summarised under three headings (Section 4). In brief, these are:

- **Growth nexus:** Consumer goods, Consumer services and Healthcare are most strongly correlated with the delivery of specific SDGs – such as SDG 3 on health – and these have the most powerful growth-related drivers, principally related to innovation and efficiencies. The scope for engagement by the Commission is likely to be most positive and productive here.

- **Risk nexus:** Oil & Gas, Basic Materials, Industrials and in some cases Utilities are also strongly correlated with delivery of specific SDGs – such as SDG 7 on affordable and clean energy – but (at least at present) here the risk aspects are more powerful than the positive growth drivers. Engagement may need to focus on systemic change and coalition building.
- **Enablers:** The third grouping of sectors – including Financials, Technology and Telecommunications – have relevance across almost all SDGs. Their business drivers are balanced towards the opportunity for growth and innovation. Here engagement is likely to be most productive when focused on specific opportunities at goal and target level.

The bulk of our analysis is contained in some 40 pages of detailed appendices that identify the main business opportunities and risks for the 10 industrial sectors across the 17 Goals and 169 targets.

Methodology

Industry sector identification

We reviewed a range of sector classifications to identify the one that was most suitable for this report.

The sectors we have used for our analysis are drawn from the Industry Classification Benchmark (ICB). This is an industry classification taxonomy launched by Dow Jones and FTSE in 2005 and now owned by FTSE International. It is used to segregate markets into sectors within the macroeconomy. The ICB uses a system of 10 industries. Although the 10 are referred to as 'industries' in the ICB taxonomy, in this research report, we will refer to these as 'sectors' or 'industry sectors'. The classification provides three further levels of detailed segmentation into supersectors, sectors and subsectors. This opens the potential for further, more detailed analysis, outside the scope of this report. A listing of the supersectors, sectors, subsectors and definitions can be found at www.icbenchmark.com.

Value chain linkages

The ICB industry sectors can be overlaid across the broad categorisation of the economy into primary, secondary and tertiary sectors (see page 5). This reveals that each sector is closely linked to the others. For example, Consumer Goods relies heavily on raw materials such as paper and board produced by the Basic Materials sector and the packaging produced by the Industrials sector. Consumer Goods companies, in turn, rely on retailers in the Consumer Services sector to get their products to the consumer. Each sector therefore represents a component in the value chain of another sector – whether upstream or downstream.

Industry Classification Benchmark: 10 industry sectors

Oil & Gas: oil & gas producers, equipment, services, distribution as well as alternative energy, fuels and renewables.

Basic Materials: chemicals, forestry, paper, metals & mining

Industrials: construction, aerospace, defence, packaging, electronics, industrial engineering, industrial transportation and waste disposal

Consumer Goods: automobile, food &beverage (including farming and fisheries), durable and non-durable household goods, leisure goods, clothing and footwear

Healthcare: health care service providers, medical supplies, pharmaceuticals and biotechnology

Consumer Services: food, drug and general retail, media, travel & leisure

Technology: hardware and equipment, software and computer services

Telecommunications: fixed line and mobile telecommunications

Utilities: electricity (generation and distribution), gas distribution, water and multi-utilities.

Financials: banks, insurance and real estate investment services

The Global Goals for Sustainable Development / the SDGs

Section 1: Sustainable Development Goals & Sectors – mapping the linkages

On the following page we have mapped the 10 industry sectors across the primary, secondary and tertiary sectors of the economy. We have indicated the SDGs with highest relevance to each sector.

The diagram also shows the flows along the value chain, demonstrating the complexity of interdependencies between sectors.

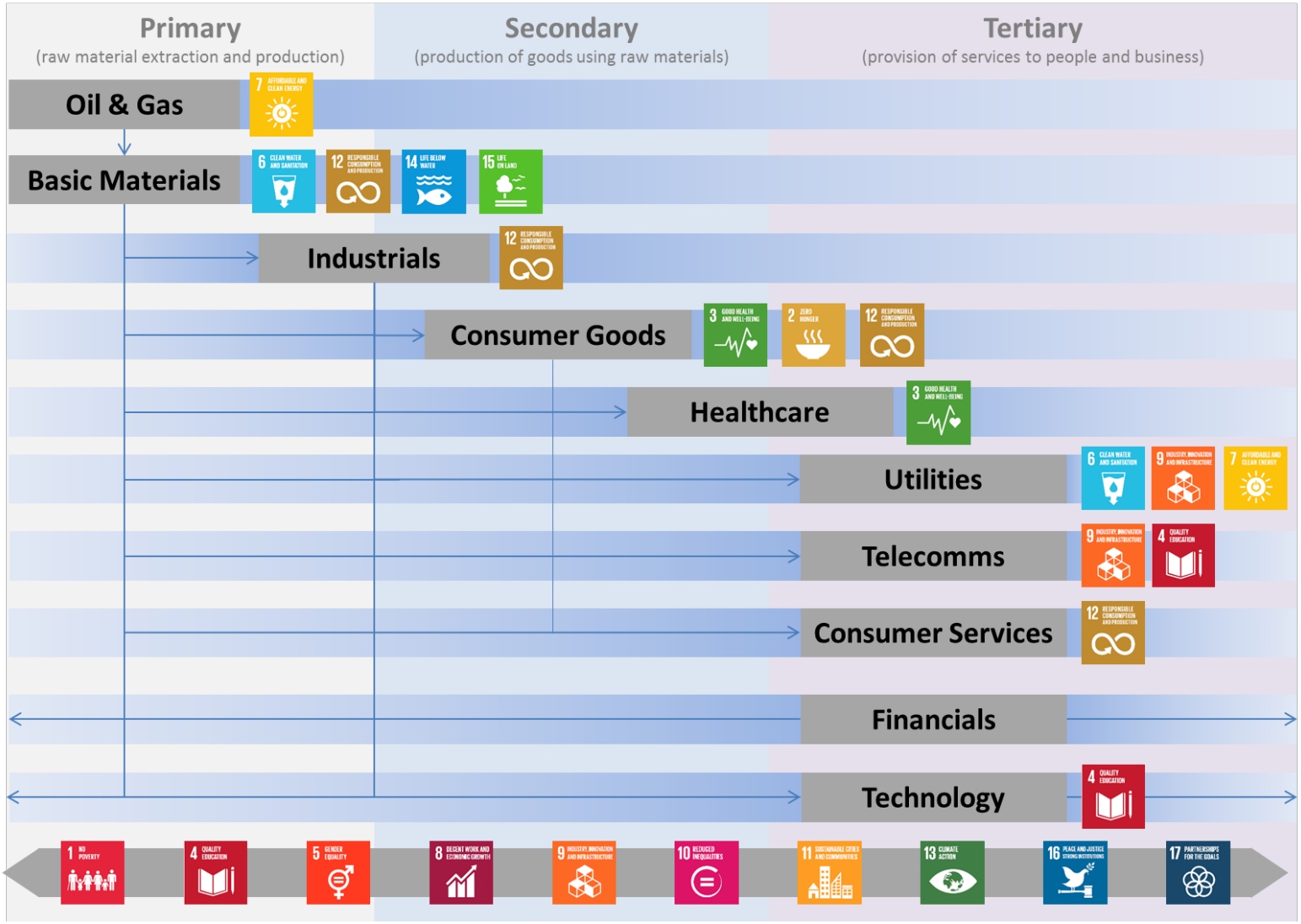
SDGs & Sectors: The sectors lens

The relevance of sectors to SDGs falls into three main categories:

- Sectors with strong linkages to a single SDG
- Sectors with linkages to two or more SDGs
- Sectors that act as enabler across all SDGs

From an SDG lens we find a similar pattern. Some SDGs link closely to certain sectors, others describe impacts and issues that are relevant across all sectors. There are also some SDGs that require broader systems-based transformation. These are listed along the bottom of the diagram.

SDGs & Sectors: mapping the high-level linkages



i) Sectors with strong linkages to a single SDG

Certain sectors have strong linkages with a specific SDG. This is either because the sector is explicitly referred to as part of the delivery of certain targets, or the services / products provided by the sector has a large impact in the achievement or non-achievement of an SDG.

Because of the clear linkage or explicit reference to these industries, there will be a high level of expectation placed upon businesses in these sectors.

Healthcare: Health care companies will need to play a prominent role in the delivery of **SDG 3** (to achieve good health and well-being for all), working alongside government and civil society organisations.

Oil & Gas: **SDG 7** which aims to achieve affordable and sustainable energy for all, will be heavily influenced by the investment choices of energy companies. The Oil and Gas sector (which in the ICB classification also includes alternative energy) will be crucial to delivering this SDG.

ii) Sectors with touchpoints across SDGs

There are some sectors that have strong relevance across two or more SDGs.

Consumer goods, Consumer services and Industrials: To deliver responsible consumption and production as set out in **SDG 12,** stakeholders will look to the Consumer Goods and Industrials sectors. Farming, fisheries & plantations (listed under **Consumer Goods**) will be expected to play a large role in **SDG 2** to achieve zero hunger and **SDG 14** to protect the marine environment.

Basic materials: Parts of the economy dealing with extraction and production of raw materials are closely linked to the delivery of **SDG 15** which is about protecting the natural environment on land. However these are also relatively large users of energy, water and waste, so **SDG 12** on responsible consumption and production will also be highly relevant.

Utilities: This sector will be front and centre in infrastructure development to achieve universal access to affordable energy, clean water supplies and waste management as set out in **SDGs 6, 7 and 9**.

iii) Cross-cutting sectors

Finally, there are some sectors that are enablers across almost all the SDGs.

This includes **Financials**, whereby financial access, resources & investment are key enablers of many of the SDGs.

Telecommunications and **Technology** similarly can play a role in addressing challenges as diverse as healthcare access, pollution monitoring, smart agriculture to financial inclusion.

SDGs & Sectors: the SDG lens

Using the SDGs as a starting point, there are a small number of SDGs which have close correlation with a single industry (as outlined above). The majority have relevance across sectors and some operate at a much broader systems level.

- **SDG 6: clean water and sanitation**. While **Utilities** and **Consumer Goods** will be key in delivering this SDG, there are aspects of this Goal (such as water pollution, water use efficiency, protecting water-related eco-systems) that are crucial for primary sectors such as **Oil & Gas** and **Basic Materials**, as well as **Industrials**.

- **SDG7: providing sustainable and affordable energy.** While closely linked to **Oil & Gas** (which includes renewables) and **Utilities**, this goal will also be relevant to sectors such as **Industrials**, **Consumer Goods**, **Telecommunications**, **Technology**, **Healthcare** and **Financials**. All companies rely on energy to differing extents and will be looking to improve efficiencies both in their own operations as well as downstream in people's homes.

- **SDG 8: decent work and employment.** This goal will be relevant to companies in all sectors. Labour force productivity, innovation and technological upgrades, training, labour rights and worker safety are issues that almost all companies need to think about.

- Similarly **SDG 9 on innovation and infrastructure** and **SDG 12 on responsible production and consumption** will highlight opportunities for many sectors.

Finally, we have a set of SDGs that have low relevance to a particular sector of the economy. They operate at a much more complex systems-level, often requiring a combination of the right policy and legal frameworks as well as supporting action by business, and civil society: such as the **SDGs 1 (poverty), 4 (education), 5 (gender equality), 10 (reducing inequality), 11 (cities), 13 (climate action), 16 (peace & justice) and 17 (partnerships)**.

Section 2: The business opportunity lens

Having mapped the high-level linkages of sectors and SDGs we can look closer at the way in which the targets contained within the SDGs provide opportunities and risks for business.

We have identified a dual set of motivations for business when considering engagement with the SDGs: those that **positively drive growth**, by providing opportunities for innovation, market development, cost saving, efficiency and brand building. Another set of motivations are what might be called **potential growth 'limiters',** where the SDGs outline risks to be managed and negative impacts to be reduced, mitigated or eliminated. If not managed properly, these might negatively impact growth.

The business drivers

1. Innovation & market development

The SDGs essentially highlight and address the huge gaps in development that exist across the globe – whether it be lack of access to finance, clean water, food or education. These 'development' gaps also represent unmet market needs.

As governments direct their policy and resource towards meeting these needs, businesses can benefit from analysing which of these may present opportunities for innovating new products, services and business models.

None of these challenges are "new news" and as such there are numerous examples of companies already creating value through addressing these unmet needs.

2. Efficiency & cost savings

Many of the SDG targets aim to tackle the pressures on the environmental system and encourage economic growth within planetary limits.

The impact of limited natural resources will increasingly be felt by businesses through rising costs and volatile supply. The impacts of climate change will exacerbate this effect.

Doing more with less will become an imperative for every business – helping to save costs in the short-term and reduce risk in the long-term.

3. Reputation management

Some SDGs clearly point to the elimination of the negative impacts that result from the activities of the private sector: pollution, environmental degradation, bribery, corruption, forced labour, child labour.

Tackling these issues is vital to building and maintaining trust with key stakeholders and maintaining a company's licence to operate.

Neglect of these issues, whether in your own operations or further along the value chain can strike a damaging blow at reputation, sometimes undermining the viability of a business.

4. Risk reduction

The SDGs aim to tackle many issues which pose significant risks to 'business as usual' over a longer time frame. These might be risks in the supply chain or financial, regulatory or technological risks, to name a few. Businesses can minimise their vulnerabilities by understanding the way the Goals impact on their sector and value chain.

The SDGs will also increasingly shape the regulatory environment for business. Businesses that respond proactively will increase their resilience in a challenging operational and regulatory context.

On the following pages we use this business opportunity lens to analyse each industry sector. For each sector we translate relevant SDGs into opportunities and risks and provide some key facts that illustrate the opportunity or risk.

Section 3.1 Oil & gas – summarising the business opportunity

The opportunity	SDG	Illustrating the opportunity
Innovation & market development - Diversify to increase focus on renewables, shifting away from carbon-intensive fuels. - Drive R&D in clean and sustainable energy (including renewables and cleaner types of fossil fuels)		- The share of renewable energy in global power generation expected to reach over 26% by 2020 from 22% in 2013 (IEA) - Renewables attracted a record $329.3 billion of investment in 2015, despite plummeting oil prices. (Bloomberg) - Investment in renewables in developing countries, at $131.3 billion, was up 36% in 2014 comparted to 2013 (Frankfurt School UNEP Collaboration Centre)
Efficiency & cost savings - Operational efficiency can significantly reduce costs.		- Global energy efficiency investment will reach $5.8 trillion by 2030. Yearly energy efficiency investment will total around $385 billion (IRENA)
Reputation management - Support infrastructure development - Prevention of spillages and other adverse environmental incidents - Proactively manage operational health and safety		- Approximately 706 million gallons of waste oil enter the ocean every year (Water Encyclopedia) - During 2003–2013, the number of work-related fatalities in the oil & gas extraction industry increased 27.6%, with a total of 1,189 deaths in the US (Backline Safety)
Risk reduction - Reduce risk of divestment by institutional investors and reduce exposure to carbon pricing / taxation through diversification		- Based on one IMF economist's calculation, carbon tax of between $12 to $129 a ton could add more than $40 to every barrel of oil. (WSJ)

The SDGs provide opportunities but also many risks that need to be managed and mitigated if the sector is to maintain its licence to operate. SDG 7 sets out a vision for a world reliant on sustainable and affordable energy. COP21 signalled the turning point for accelerating climate action on a global scale. The implications for the Oil & Gas sector are significant. With time horizons for exploration and development that span over 20 years, the sector needs to act now.

SDGs 14 and 15 aim to protect land-based & marine eco-systems and create a "land-degradation neutral" world. This requires the sector to do more to reduce and mitigate its environmental impacts. Given the high-risk nature of certain jobs related to the sector, SDG 8 targets on health & safety will also be relevant. Often operating in areas affected by conflict the sector needs to consider SDG 16: Peace, Justice and Strong Institutions.

Section 3.2 Basic Materials

The opportunity	SDG	Illustrating the opportunity
Innovation & market development - New products and services that address environmental & health challenges (e.g. lower impact chemicals, recycling technologies, certification)		- 95% of chemical executives say they'll innovate around technology over next 3 years, and over 50% expect breakthrough / radical advances. (PwC) - The global market for FSC certified wood is currently worth over $5 billion…certified products are now carried by major retailers. (GreenBiz) - Energy requirement for recycling iron is some 20% lower than for mining & processing it. For copper the energy saving is approximately 60% and for aluminium even 90%. (The Business of Mining)
Efficiency & cost savings - Operational efficiency can significantly reduce costs.		- With energy accounting for 20 to 40% of operational costs, energy savings has become a critical focus for mines, particularly in today's challenging business environment. (Energy and Mines)
Reputation management - Manage potential negative social & environmental impacts associated with the sector (health effects of chemicals, labour rights, child labour, health & safety, pollution etc)		- Addressing chemicals, waste, and pollution problems can promote, rather than inhibit, economic growth. Enacting solutions now can avoid longer-term economic constraints. (Global Alliance on Health and Pollution)
Risk reduction - Promote sustainable management of depleting natural resources (e.g. forests)		- Independent certification for … sustainable management of timberlands has led to … measurable improvements in the protection of forests, wildlife, and stakeholder rights … as well as to the long-term economic viability of forestry operations. (GreenBiz)

"Basic materials" includes a range of sectors: chemicals, forestry & paper, industrial metals and mining.

This sector feeds almost all other sectors further down the economic value chain. With the focus on extraction and production of raw materials, these companies have a high impact on the natural environment. The sector also often operates in areas of conflict or jurisdictions where there is poor enforcement of labour, environmental or business integrity standards. It is therefore exposed to greater risk from malpractice with regards to bribery & corruption, child labour, poor health & safety, worker exploitation, as well as pollution.

Sustainability certification and product innovation offer some opportunities, but the balance of drivers leans towards mitigation and management of negative externalities.

3.3 Industrials

The opportunity	SDG	Illustrating the opportunity
Innovation & market development - Develop 'green' products (packaging, construction, transport) - Design new business models for sustainable production patterns (leasing, circular models) - Design energy-efficiency and renewable energy into buildings - Develop less carbon-intensive production technologies		-More than £5.2 billion…of construction contracts for 1,095 renewable energy projects were awarded [in the UK] in 2014, which includes solar power projects worth over £1.7 billion. (WMN) - Shifting to a circular model could generate a $706 billion economic opportunity, of which a significant proportion is attributable to packaging…After a short first-use cycle, 95% of plastic packaging material value, or $80–120 billion annually, is lost to the economy. (Ellen MacArthur Foundation)
Efficiency & cost savings Operational efficiency can significantly reduce costs. Develop transportation efficiencies		- Greenhouse gas emissions by the plastics sector are expected to grow to 15 percent of the global annual carbon budget by 2050 so recycling can play a key role helping governments and global brands with GHG reduction. (GreenBiz)
Reputation management - Manage negative environmental impacts and supply chain risks, in particular sub-contractors (human trafficking, forced labour) - Address transparency concerns within construction & defence		- 32% of plastic packaging escapes collection systems, …reducing the productivity of vital natural systems… and clogging urban infrastructure. (Ellen McArthur Fdn) - The construction industry is a major source of pollution…around 4% of particulate emissions, more water pollution incidents than any other industry
Risk reduction More regulation on sustainability performance (construction, transport, infrastructure, extended producer responsibility)		Shifting financial responsibility for collecting and recycling used packaging in the U.S. from taxpayers to producers with the implementation of an EPR policy would incentivise producers to reduce the amount of packaging they create. (Waste Management World)

"Industrials" encompasses heavy industry in the form of construction, aerospace / defence, packaging, electrical equipment, industrial engineering, industrial transportation, waste disposal and business support services.

A fairly diverse group of companies means that each sub sector will have its particular SDG relevance and linkages. There are some broad themes however at the high level. This sector feeds many other companies downstream in the value chain.

Growing demand for 'greener' products from downstream companies looking to tackle their own impacts, will create innovation and growth opportunities. Packaging in particular is a key focus for Consumer Goods and Services companies.

Given the nature of the industry however, there are particular negative impacts to be managed. On the social side, the well-being of large numbers of unskilled workers. This in addition to the significant environmental impacts of the sector.

3.4 Consumer goods

The opportunity

Innovation & market development
-Developing affordable and nutritious food and improving access for bottom of the economic pyramid.
-Designing new business models to ensure sustainable food production
-Develop pro-poor business models and partnerships in the value chain

Efficiency & cost savings
Improve productivity & yields upstream in agriculture and farming
Operational efficiency will generate costs savings

Reputation management
- Manage negative environmental and social impacts and supply chain risks

Risk reduction
- Resilience of agricultural systems
- Regulation / taxation (sugar/fat tax, extended producer responsibility, emissions standards)

SDG

Illustrating the opportunity

- In just 10 years, the organic food and beverage industry has grown from $1 billion to more than $26 billion (Organic Trade Association)
-The total value for green and eco chemicals products to be over $70 billion worldwide by 2015 and over $1 billion in India (EAI)
- Raising women's income has disproportionate benefits for alleviating hunger, so assisting women farmers is a particularly effective way to reduce poverty and enhance food security. (WRI)

A 2006 analysis of agroecological methods based on 286 projects in 57 countries in the developing world, showed that projects increased crop yields by 64 per cent on average while improving water efficiency and carbon sequestration and reducing pesticide use (CID)

- Nearly 60 percent of child labor takes place in agriculture. (ILO) Economic burden of poor occupational safety and health practices is estimated at 4 per cent of global Gross Domestic Product each year. (ILO)
- Only 13% of annual e-waste (over 50 million tons) reaches the waste stream. Less than 1% of e-waste is recycled safely in developing countries. (UNIDO)

Research by the British Medical Journal found that sales of sugary drinks in Mexico fell by 12% following the introduction of a sugar tax in 2014 (Telegraph)

Sub-sectors include: automobiles, food & beverage, personal & household goods, farming & fisheries, clothing & footwear.

The sector is characterised by complex supply chains that increasingly extend across the globe. Direct impacts (environmental and social) are often dwarfed by the wider value chain impacts. This sector is therefore a key driver of change both upstream and downstream in the economy.

Often comprising consumer-facing brands, this sector is particularly exposed and therefore can drive demand for more sustainably sourced commodities and materials. It also innovates to tackle impacts in consumer use. This sector can play a powerful role on number of challenges such as malnutrition, sanitation, health, sustainable farming among others.

3.5 Healthcare

The opportunity

Innovation & market development
- Develop models (such as circular) to increase access to existing products & services, including by leveraging technology
- Develop new products & services to increase access for those at the bottom of the pyramid.
- Preventative health care

Efficiency & cost savings
For health care manufacturers , operational efficiencies, clean technology and re-fits can save costs

Reputation management
- Managing negative impacts
- Contribution to R&D
- Public private partnerships to deliver health care access

Risk reduction
- Supporting healthcare infrastructure (capacity, systems, skills & facilities) to enable market growth
- Protecting biodiversity to protect source of pharmacological ingredients

SDG

Illustrating the opportunity

- $87.7 bn is the size of the base of the pyramid healthcare opportunity (WRI)
- The total BOP health market in Asia (including the Middle East) is estimated to be $95.5 billion, accounting for the spending of 2.9 billion people (WRI)

Global energy efficiency investment will reach $5.8 trillion by 2030. Yearly energy efficiency investment will total around $385 billion (IRENA)

In 2013 GlaxoSmithKline's third-quarter sales of pharmaceuticals and vaccines in China tumbled 61 percent hit by a bribery probe in the country

In the United States alone, about 57% of the 150 most prescribed drugs have their origins in biodiversity (AMNH)

This sector includes healthcare providers, medical equipment & supplies, pharmaceuticals and biotechnology.

One of the few sectors with a direct correlation to a single SDG.

This sector has been under scrutiny for some years, so the opportunities and risks presented by SDGs are not new. Sector will need to find new models to deliver affordable healthcare and medicines to the 'bottom of the pyramid'. It will also need to contribute to potential 'growth limiters', by supporting capacity and infrastructure in emerging markets.

3.6 Utilities

The opportunity	SDG	Illustrating the opportunity
Innovation & market development - New technologies to meet the needs of developing markets -Provide access to basic services to those at the bottom of the pyramid as well as growing middle classes - New solutions for challenges of growing demand & rapid urbanisation		- 884 million people in the world do not have access to safe drinking-water (UN) …about 1.2 billion people have no access to electricity… (UN Foundation) - Nearly $1 trillion… required to achieve universal energy access by 2030… (IEA) - In China alone, we estimate, the market for the current membrane technology used to clean wastewater will grow by more than 30 percent a year over the next two decades. (McKinsey)
Efficiency & cost savings - Improve efficiencies of operations to save cost		- Global energy efficiency investment will reach the $5.8 trillion mark by the year 2030. (IRENA) - The World Bank estimates the cost to utilities of water lost before reaching the consumer at approximately $14 billion per annum. (Water Intelligence)
Reputation management - Manage negative impacts related to the sector		- Globally, more than 45 million cubic metres [of water] per day are lost through leakage.(Water Intelligence)
Risk reduction - Risk of regulation (affordability, customer service, water quotas) - Speed and scale of urbanisation - Eco-system degradation will impact on sector's ability to provide services		- In Chile…authorities allocate fresh-water rights among companies strictly, closely monitor their usage of water, and pressure them to use less of it (McKinsey)

Utilities sector includes providers of electricity (generating and distributing), gas, water and multi-utilities.

Utility companies are at the forefront of providing access to basic services, which SDGs 6, 7 and 11 make reference to. There is a strong efficiency driver for this sector.

Rapid urbanisation and outreach to sparse rural populations will challenge companies to develop new cost-effective solutions.

Financing partnerships will be crucial to scaling up to meet the needs of growing populations.

3.7 Telecommunications

This sector includes fixed line and mobile telephony.

This sector has opportunities for growth in itself, but also has an opportunity for innovation and growth in tacking a wide range of social and environmental deliverables outlined in the SDGs.

The power of mobile to enable access to finance has already been proven. There are further opportunities in education and healthcare.

There are risks too, associated with the mining and extraction of raw materials as well as e-waste.

The opportunity	SDG	Illustrating the opportunity
Innovation & market development - Act as enabler: digital learning, access to finance, access to internet, access to health care information and services etc - Solutions to enable access to mobile telephony for bottom of the pyramid (e.g. through frugal innovation) - New products / services delivering mobile financial services		- While only 1% of adults worldwide use a mobile money account, 12% of adults in Sub-Saharan Africa do. (Yahoo Finance) - For 2017 the number of mobile phone users is forecast to reach 4.77 billion. (Statista) - By 2020, the mobile education (mEducation) market size is estimated to reach $70 bn (Accenture) - Among end customers, 90% of women feel empowered with access to mobile technology, but 200 million fewer women than men own mobile phones. (Accenture)
Efficiency & cost savings - Develop more energy-efficient products for own industry - Adopt circular economy principles including modular electronic products (e.g. Fairphone) - Reuse and recycle e-waste		- Both base stations and smartphones regularly waste 70% of the energy consumed as heat. (WEF) - A report from United Nations University (UNU) found that the world produced 41.8 million metric tons of e-waste in 2014 - an amount that would fill 1.15 million 18-wheel trucks.(United Nations University
Reputation management - Manage negative environmental and social impacts and supply chain impacts (labour standards, conflict minerals etc)		- In 2014 approximately 40,000 children worked in mines across southern Democratic Republic of Congo, many of them mining cobalt, according to UNICEF. - No mobile phone manufacturers can guarantee that they do not use gold mined by children…Worldwide, it is estimated that at least 1,5 million children are working in the gold mine industry (Danwatch/Ethical Consumer)
Risk reduction - Combat potential abuse of mobile telephony -Regulation / taxation (extended producer responsibility, electronics waste, privacy, data protection)		Twitter is to train prosecutors in England and Wales to better fight online abuse, as the internet is increasingly used as a weapon by perpetrators of domestic abuse, rape and sexual violence against women. (Guardian)

implified.

3.8 Consumer services

The opportunity	SDG	Illustrating the opportunity
Innovation & market development - Access to affordable goods and services for those at the bottom of the pyramid (retail) - New models to encourage sustainable consumption & production (retail, tourism) - Opportunity to engage and raise awareness of sustainability (media)		-Expenditure on medicines is rising far faster in the growth economies than it is elsewhere. By 2020, the BRIC economies alone will account for 33% of the world's GDP (PWC) -International tourist arrivals are expected to reach 1.8 billion by 2030. (sustainable tourism)
Efficiency & cost savings Operational efficiency will generate costs savings		Global energy efficiency investment will reach $5.8 trillion by 2030. Yearly energy efficiency investment will total around $385 billion (IRENA)
Reputation management - Manage negative environmental and social impacts and supply chain risks		If the current rate of food loss and waste were cut in half—from 24 percent to 12 percent—by the year 2050, the world would need about 1,314 trillion kilocalories less food per year.
Risk reduction - Resilience of agricultural systems - Regulation / taxation (sugar/fat tax, extended producer responsibility, emissions standards)		Considering a projected population of 9 billion in 2050, feeding the world will be a major challenge. Putting in place a more sustainable food supply systems is clearly an urgent need. (UNEP)

This sector includes: food and drug retailers, general retailers, media, travel & leisure.

This sector sits further downstream from Consumer Goods and thereby shares many of its opportunities and risks. Shops and retail outlets are also an important part of local communities and can therefore contribute to very localised expression of global challenges, whether related to health, education, nutrition or the environment.

Often highly visible household names, companies in these sectors continue to face consumer pressure and high level of reputational risk from the extended value chain.

3.9 Financials

The opportunity

Innovation & market development
- Developing new products & services for under-banked, including women in particular and small and medium-sized enterprises
- Finance national development priorities (infrastructure, energy, pro-poor investments)

Reputation management
- Financing sustainability to future-proof from shocks.

Risk reduction
- Support efforts by government and other agencies in tackling financial crime
- Regulatory requirements increasing

SDG

Illustrating the opportunity

Underbanked: 2 billion people, 320 million micro / small businesses. Valued globally at 2.1-$2.6 trillion (CARE International)
In India some drip irrigation projects could help farmers reduce costs by up to 50 percent… Investors could capture a share of this value either as lenders or as equity holders in companies active in the drip irrigation value chain. (McKinsey)

US$ 57 trillion is needed by 2030, for infrastructure investment. Currently there is a finance gap to meet this demand of US$ 500 billion per year (S&P, 2014).

1 in 5 banks have experienced enforcement actions by a regulator – failure to curb illicit business practices may lead to personal liability. (PWC)

This sector includes: banks, insurance providers, and real estate investment services and trusts.

This sector is a key enabler across almost all SDGs. Unlike other sectors, this sector is explicitly mentioned and called upon to support the priorities within the SDGs.

Expanding access to finance is in itself a huge opportunity. And with public budgets under pressure, large-scale investments in poverty reduction, infrastructure, technology and industry will increasingly come from private sources. There are already indications of the returns that new types of investment can offer. Developing a strong data-backed business case for these types of investment will be crucial in engaging this sector.

3.10 Technology

The opportunity

Innovation & market development
- Act as enabler: digital learning, access to finance, access to internet, access to health care information and services, sustainable / smart cities
- Support diverse monitoring / management systems: crisis management, water management, smart working etc.

Efficiency & cost savings
Develop more energy-efficient products for own industry
Expand on new ICT solutions for clients to reduce energy consumption
Reuse and recycle e-waste

Reputation management
- Manage negative environmental and social impacts and supply chain impacts

Risk reduction
- Combat potential abuse of technology
-Regulation / taxation (extended producer responsibility, electronics waste, privacy, data protection)

SDG

Illustrating the opportunity

- 2.7 billion poor people who have no access to affordable financial services (Ehrbeck) While only 1% of adults worldwide use a mobile money account, 12% of adults in Sub-Saharan Africa do. (Yahoo Finance)
- Internet connectivity could generate $2.2 trillion of economic growth and more than 140 million new jobs. If everyone had access to the internet, the opportunities opened up to them could lift 160 million people out of extreme poverty. (One.org)
- 90% of farmers confirm that ICTs improve food security and sustainability …But …60% do not have sufficient access … and therefore cannot take advantage of its positive impacts on agriculture and food production. (One.org)

- Smart grid technologies …could globally reduce 2.03 GtCO2e, worth EUR 79 billion (Smart 2020)
- By the year 2020 ICT applications could help reduce global carbon emissions by 15%, which is significantly higher than the industry's own contribution to carbon output. (Global Information Society Watch)These 15% of emissions savings possible in 2020. have a value of over EUR 600 billion in energy savings. (The Climate Group)

- Mining rare earth elements, used in all smart phones, requires extractors to separate them from the radioactive elements thorium and uranium, with which they are always found. Managing the radioactive waste is a huge problem… allowing radiation harm to nearby residents or workers. (Electronics Take Back Coalition)

Twitter is to train prosecutors in England and Wales to better fight online abuse, as the internet is increasingly used as a weapon by perpetrators of domestic abuse, rape and sexual violence against women. (Guardian)

This sector includes: Software developers, computer service providers, technology hardware and equipment.

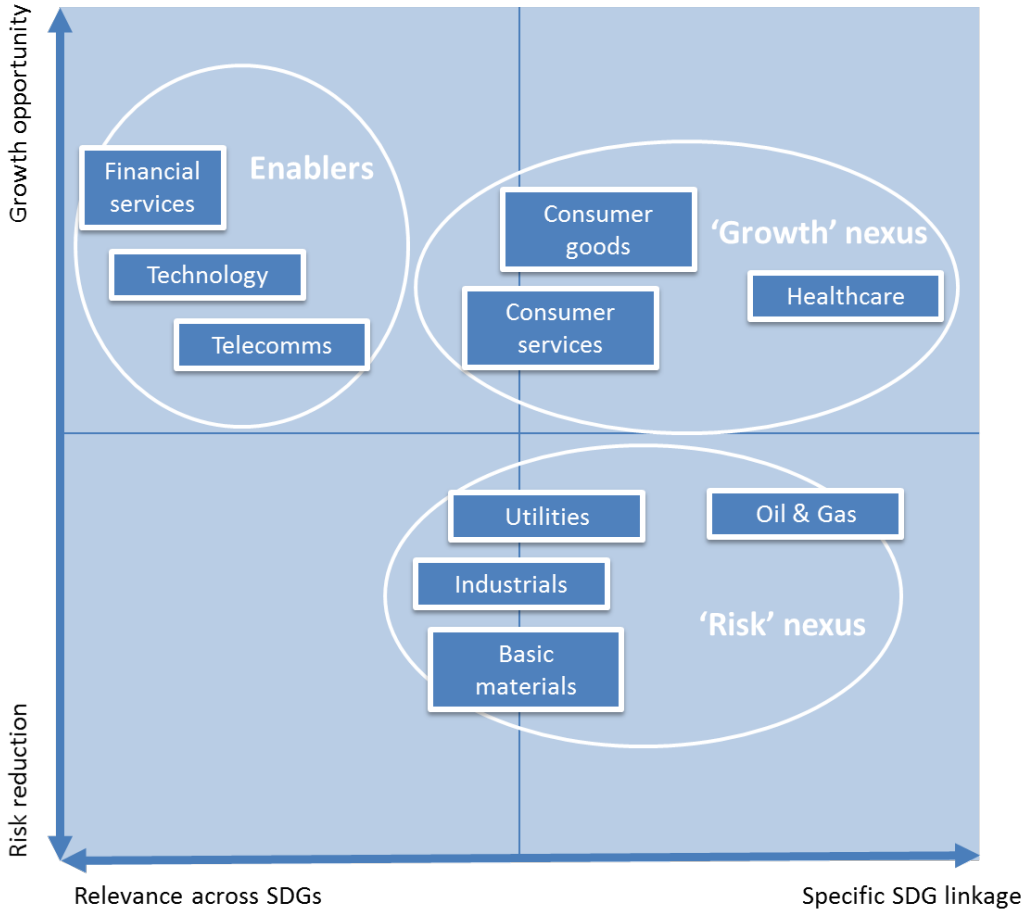
This sector is another enabler across almost all SDGs. There are opportunities for innovation and market development in both developed and emerging markets and technology can play an important role in solving most of the challenges outlined in the SDGs.

Expanding access to basic technology services (internet etc) is the most direct opportunity for the sector. Using technology to deliver other SDG goals offers further opportunities.

However, there are risks and negative impacts that do need to be managed. Technology can also be misused and the sector will need to work closely with others to manage issues as diverse as online abuse, terrorism and money laundering.

4. Implications for sectors

“Triple nexus”: primary business drivers for sectors



Implications for sector engagement

What emerges is what we have termed a ‘growth nexus’, a ‘risk nexus’ and a group of ‘enablers’ – which provides both opportunities and challenges for the Commission as it looks to engage with companies on the SDGs.

The ‘growth’ nexus: There are sectors which are strongly correlated with the delivery of certain SDGs and these have the most powerful growth-related drivers, principally related to innovation and efficiencies.

These include the **Consumer goods** and **Consumer services** sectors as well as **Healthcare**. Unsurprisingly, in many cases, we find among these sectors some

of the current sustainability leaders, who have already seen the opportunity and are proactively engaging, perhaps not yet under the SDG mantle, but through a long-standing appreciation of the sustainability agenda. The scope for engagement by the Commission is likely to be most positive and productive here.

The 'risk' nexus: These sectors are also strongly correlated with delivery of specific SDGs, but at present at least, the risk aspects are more powerful than the positive growth drivers. Unsurprisingly these include high-impact industries such as **Oil & Gas**, **Basic Materials**, **Industrials** and **Utilities**.

These sectors and parts of the value chain may, as a result, be more difficult to engage. We can expect these companies to address some micro-aspects of the SDGs but perhaps shy away from the bigger and most material challenges related to their sector. Engagement may need to focus on systemic change and coalition building.

The enablers: There is a third group of sectors, which have relevance across multiple SDGs and for whom the business drivers are balanced towards growth and innovation. These sectors are **Financials** and **Technology** and **Telecommunications**. We can expect to see these sectors take a positive stance, but engagement is likely to be most productive when focused on specific opportunities at goal and target level.

APPENDIX 1 – USEFUL SOURCES PER SECTOR

Basic Materials:

- Columbia Center on Sustainable Investment with the World Economic Forum, United Nations Development Programme (UNDP), and the UN Sustainable Development Solutions Network (SDSN): Mapping Mining to the Sustainable Development Goals: A Preliminary Atlas

Industrials:

- UN Global Compact and KPMG: SDG Industry Matrix: Industrial Manufacturing

Consumer Goods/Consumer Services:

- UN Global Compact and KPMG: SDG Industry Matrix: Food, Beverage and Consumer Goods

Healthcare:

- UN Global Compact and KPMG: SDG Industry Matrix: Healthcare and Life Sciences

Technology:

- ITU, United Nations specialized agency for information & communication technologies (ICT): ICT for a Sustainable World.

Financials:

- Master Card Center for Inclusive Growth – Inclusion Hub: Financial Inclusion and the SDGs
- United Nations Secretary-General's Special Advocate for Inclusive Finance for Development (UNSGSA): Driving the New Development Agenda: What Is the Role of Financial Inclusion?
- UN Global Compact and KPMG: SDG Industry Matrix: Financial Services

APPENDIX 2: DETAILED SECTOR ANALYSIS AGAINST SDG TARGETS AND SUPPORTING FACTS.

1. Oil & Gas

The opportunity	Relevant SDG / targets	Illustrative facts
Innovation & market development Diversify core oil & gas business to increase focus on renewables, shifting business models away from carbon-intensive fuels. Drive R&D in clean and sustainable energy (including renewables and cleaner types of fossil fuels)	7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix 7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	- The slump in oil prices that's brought upheaval and cost-cutting to the traditional energy industry spared renewables such as solar and wind, which raked in a record $329.3 billion of investment last year. (Bloomberg) - The share of renewable energy in global power generation rising to over 26% by 2020 from 22% in 2013 (IEA) - The cumulative $7.4 trillion invested in renewable energy to 2040 represents only around 15% of total investment in global energy supply (IEA) - [Renewable energy] investment in developing countries, at $131.3 billion, was up 36% in 2014 compared to 2013. (Frankfurt School UNEP Collaboration Centre) - Despite a sharp decline in private investment in energy, transport, and water infrastructure in developing countries in the first six months of 2015, investment in renewable energy projects, mainly solar, rose to nearly half of the total investment (World Bank) - Brazil's oil giant Petrobras, whose investments in deep-sea oil in the South Atlantic have made it the most indebted company in the world (Green Biz)
Efficiency & cost savings Operational efficiencies can significantly reduce costs.	7.3 By 2030, double the global rate of improvement in energy efficiency 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	- According to IRENA's report, global energy efficiency investment will reach the $5.8 trillion mark by the year 2030. By that point, yearly energy efficiency investment will total around $385 billion (CleanTechnica) - Most of the potential for saving energy lies with end users. In addition to producing oil and gas, the industry also uses oil and gas in its own operations, and efficiency can significantly reduce the industry's impact. (World Petroleum)
Reputation management Supporting downstream infrastructure development programmes	8.8 Protect labour rights and promote safe and secure working environments for all workers (…) 9.1 Develop quality, reliable, sustainable and	- According to the Africa Infrastructure Country Diagnostic (AICD), the infrastructure need of Sub-Saharan Africa exceeds US $93 billion annually over the next 10 years. To date, less than half that amount is being provided thus leaving a financing gap of more than US $50 billion to fill. (AFDB)

The opportunity	Relevant SDG / targets	Illustrative facts
Prevention of spillages and other adverse environmental incidents Proactively manage operational health and safety Consider the role that can be played in promoting the rule of law and strong institutions	resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds 15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements 16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all 16.5 Substantially reduce corruption and bribery in all their forms 16.6 Develop effective, accountable and transparent institutions at all levels 16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels	- It is estimated that approximately 706 million gallons of waste oil enter the ocean every year (...). Offshore drilling and production operations and spills or leaks from ships or tankers typically contribute less than 8 percent of the total. (Water Encyclopedia) - According to SEC oil and natural gas companies spent nearly $400 billion on exploration and development in 2013. That is a lot of money tied to adverse environmental impacts that could go into sustainable energy alternatives instead. (Surfrider Foundation) - The Centers for Disease Control and Prevention determined that "during 2003–2013, the number of work-related fatalities in the oil and gas extraction industry increased 27.6%, with a total of 1,189 deaths." [in the US] (Backline Safety) - Australia's National Offshore Petroleum Safety and Environmental Management Authority last year ruled that BP's plans to drill four wells in the Bight's Ceduna Sub-basin did "not yet meet the criteria for acceptance under the environment regulations." (Platts – McGRAW HILL FINANCIAL)
Risk reduction Reduce exposure to carbon pricing / taxation and changes in national subsidies through diversification	12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions…including by restructuring taxation and phasing out those harmful subsidies	- The U.S. Interagency Working Group on the Social Cost of Carbon in 2013 suggested a range of $12 a ton to $129 by 2020. Based on one IMF economist's calculations, that could add on the high end more than $40 to every barrel of oil. WSJ

2. Basic Materials

The opportunity	Relevant SDG / targets	Illustrative facts
Innovation & market development New products and services that address environmental & health challenges (e.g. lower impact chemicals, recycling technology, certification)	1.1 By 2030, eradicate extreme poverty for all people everywhere (…) 12.2 By 2030, achieve the sustainable management and efficient use of natural resources 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation 9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending 9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities	- Mining areas have enjoyed stronger poverty reduction and social development performance than non-mining areas. (International Council on Mining and Metals) - Each ton (2000 pounds) of recycled paper can save 17 trees, 380 gallons of oil, three cubic yards of landfill space, 4000 kilowatts of energy, and 7000 gallons of water. This represents a 64% energy savings, a 58% water savings, and 60 pounds less of air pollution. (Forest Justice) - 95% of chemical executives say they'll innovate around technology over the next three years, and over half expect breakthrough or even radical advances. (PwC) - The global market for FSC [Forest Stewardship Council] certified wood is currently worth over $5 billion and certified wood and paper products are now carried by major retailers. (GreenBiz) - For chemical companies, business model innovation is strongly focused on the customer; 88% of chemical respondents looking to innovate around the business model (PwC) - Technical solutions that offer more profit to small-scale players through improved, clean technology transfer can contribute to poverty reduction. (Global Alliance on Health and Pollution) - Even though separating joined and mixed materials poses a challenge for recycling, the total energy requirement for recycling a ton of iron is some 20% lower than for mining and processing it. For copper the energy saving is approx. 60% and for aluminium even 90%. (The Business of Mining) - Re-use of mine-influenced water is now recognised as best practice worldwide, and the majority of major miners have embodied this principle within their codes of conduct. (Mining Magazine) - With increasing regulatory and treatment requirements, it is not unreasonable to project that, in the near future, recycling rates for North American mines will average between 30% and 70%. (Jes Alexant, mine-water treatment leader for Stantec) - Companies can also introduce paper procurement policies that set

The opportunity	Relevant SDG / targets	Illustrative facts
		ambitious targets to maximize use of recycled wood, pulp, paper and fiber in their products and ensure that any virgin fiber used is certified by a third party certification system such as the Forest Stewardship Council. (Greenpeace)
Efficiency & cost savings As large users of water and energy, operational efficiencies can achieve significant cost savings	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity 7.3 By 2030, double the global rate of improvement in energy efficiency 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities 12.2 By 2030, achieve the sustainable management and efficient use of natural resources	- The Tangshan steel works in northeastern China overcomes water shortages by recycling mine wastewater using a membrane-based water treatment technology. (Water World) - In many parts of the world, efficient use of water resources is an increasing challenge for mining companies; however, recent improvements in paste technology are helping to minimize these challenges. (Golder Associates) - In areas of water stress, a reduction in water usage across a mining operation benefits the local community and the site (through reducing costs and improving operational efficiencies) (International Council on Mining and Metals) - With energy accounting for 20 to 40% of operational costs, energy savings has become a critical focus for mines, particularly in today's challenging business environment. (Energy and Mines)
Reputation management - Manage potential negative social & environmental impacts associated with the sector (labour rights, child labour, health & safety, pollution etc)	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	- Addressing chemicals, waste, and pollution problems can promote, rather than inhibit, economic growth. Enacting solutions now can avoid longer-term economic constraints, such as mental disability and cognitive impairment of children and rising health care costs from illnesses associated with toxic exposures. (Global Alliance on Health and Pollution) - According to Amnesty International's report on mining in DRC, children as young as seven and adults work in perilous conditions (Amnesty International) - Mineworkers wearing full safety clothing of helmet, gloves, boots, protective padding etc will be able to address many dangers before and

The opportunity	Relevant SDG / targets	Illustrative facts
	6.b Support and strengthen the participation of local communities in improving water and sanitation management 8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour… 8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution 15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally 15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species 16.5 Substantially reduce corruption and bribery in all their forms	after an accident. (Mining Safety) - The role that companies can play in providing water to local communities, whether by working in partnership with non-governmental organization (NGO) providers or by supplying water directly from their own facilities, has the potential to be significant. (International Council on Mining and Metals) - Desalination plants built for mines may also be used to supply clean drinking water to local communities that may have limited access to potable water. (International Council on Mining and Metals) - Transparency of revenue flows linked to Canadian mining projects in Africa will lead to longer-lasting business agreements and a more stable operating environment, as well as benefitting local communities. (Africa Progress Panel) - Supply chain human rights issues are becoming a focal point of increased legislation and legal risks likely to affect the Canadian mining industry, requiring effective management and due diligence to manage such issues as part of broader enterprise risk. (Canadian Mining Journal) - In 2015 a number of shareholder resolutions were filed in Canada demanding companies conduct human rights assessments in relation to their supply chains. (Canadian Mining Journal)
Risk reduction - Promote sustainable management of depleting natural resources (e.g. forests)	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals 9.1 Develop quality, reliable, sustainable and	- Some revenue received from the mining industry via taxes, dividends, and/or royalties could potentially be converted from an annual income flow into a lump-sum capital stock through the use of a securitization approach. This could allow the funding of stand-alone transformational infrastructure

The opportunity	Relevant SDG / targets	Illustrative facts
	resilient infrastructure 12.2 By 2030, achieve the sustainable management and efficient use of natural resources 15.2 By 2020, promote the implementation of sustainable management of all types of forests	supporting either the mining sector or another government priority sector, such as schools and hospitals. (World Bank) - Advancing technology is enabling new uses of wood and its core chemical components in composites, films and chemically processed speciality cellulose. In the future such uses could add significantly to the volume of wood that needs to be extracted from forests or grown in plantations. (WWF) - Independent, third-party certification for environmentally and socially sustainable management of timberlands has led to vital, measurable improvements in the protection of forests, wildlife, and stakeholder rights worldwide as well as to the long-term economic viability of forestry operations. (GreenBiz) - Companies can make an impact by introducing zero deforestation policies and cleaning up their supply chains. That means holding their suppliers accountable for producing commodities like timber. (Greenpeace) - [There is an] encouraging tendency towards a reduction in rates of deforestation and carbon emissions from forests, as well as improved information that can inform good policy. Presently national forest inventories cover 81 per cent of global forest area, a substantial increase over the past 10 years. (UN) - Responsible pulp and paper operations can bring many benefits to forests, local economies and people, particularly in rural areas. (WWF)

3. Industrials

The opportunity	Relevant SDG / targets	Illustrative facts
Innovation & market development - Develop green products - Design new business models for sustainable production patters - Design energy efficient construction materials - Develop new production technologies, which are less carbon intensive - Decrease transportation needs within supply chain	8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors 9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all 9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets 9.a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States 9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities 11.6 By 2030, reduce the adverse per capita	- From structures that take advantage of natural light to renewable energy features such as rooftop solar panels, smart windows that block out UV rays, and ultra-energy-efficient HVAC systems and water heaters, architects are going the extra mile with their renewable energy building designs. (Energy Digital) - From the production of materials to the building process itself, the construction industry is responsible for a large part of energy consumption: According to a recent study by the U.S. Department of Energy, the country's building sector is responsible for 40 percent of primary energy consumption. (Energy Digital) - More than £5.2 billion worth of construction contracts for 1,095 renewable energy projects were awarded [in the UK] in 2014, which includes a record amount of solar power projects worth over £1.7 billion. (Western Morning News) - Global infrastructure investment needs are growing, with around US$50 trillion required for investment in roads, water, electricity, telecommunications and rail in OECD countries between 2005 and 2030 - To support a future global population of 9 billion people an estimated US$ 5 trillion per year needs to be invested in global infrastructure (World Economic Forum) - There is emphasis placed on the use of renewable energy in construction, use and upkeep of the built fabric to reduce CO2 emissions and avoid toxicity. (Lafarge Holcim Foundation) - Leading cement producer Cemex found that a carbon intensive part of its supply chain was the use of fossil fuel in kilns, which accounted for up to 44% of its carbon footprint. At its Rugby site, Cemex replaced up to 60% of its fossil fuel consumption with waste-derived fuel. (Carbon Trust) - Natural stone, for example, produces minimal emissions during the production process but the transportation from the source to manufacturing site can be the largest cause of emissions, e.g. in

The opportunity	Relevant SDG / targets	Illustrative facts
	environmental impact of cities, including by paying special attention to air quality and municipal and other waste management 11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials	transporting from quarries in India. In such cases, managing the transportation process is crucial to managing supply chain emissions. (Carbon Trust) - Emissions from the manufacture of materials will become far more significant, perhaps as much as 40% of emissions by 2050. Whilst materials efficiency in design, substitution strategies, and alike will have a role, there will also be a necessity to develop entirely new production technologies for a world that cannot afford carbon intensive industry. - Shifting to a circular model [by consumer goods] could generate a USD 706 billion economic opportunity, of which a significant proportion is attributable to packaging. (Ellen MacArthur Foundation) - In 2013 an automotive manufacturing company and a chemical company signed a memorandum of understanding to launch a joint research project into the use of natural rubber from guayule in the production of tyres. The guayule is a non-edible shrub that needs little water and no pesticides (UN Global Compact)
Efficiency & cost savings - Operational efficiency can significantly reduce costs. - Develop transportation efficiencies	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally 6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity 7.3 By 2030, double the global rate of improvement in energy efficiency 8.4 Improve progressively, through 2030, global	- The U.S. construction industry is looking to reduce the amount of energy that goes into each building project by using low-impact building materials. (Energy Digital) - In terms of commercial construction, roughly 90 percent of all energy used during the lifespan of a building goes to its operation and utilities. (Energy Digital) - Practical steps can reduce infrastructure spending by 40 percent—an annual saving of $1 trillion—by boosting productivity. (McKinsey) - The Energy Performance of Buildings Directive requires all new buildings [in the EU] to be nearly zero-energy by the end of 2020. All new public buildings must be nearly zero-energy by 2018. (European Commission) - After a short first-use cycle, 95% of plastic packaging material value, or USD 80–120 billion annually, is lost to the economy. (Ellen MacArthur Foundation) - If Network Rail is to continue to support growth for the long term, it needs a transformative sustainability strategy to ensure good progress is made in

The opportunity	Relevant SDG / targets	Illustrative facts
	resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities 9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending 12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, 12.2 By 2030, achieve the sustainable management and efficient use of natural resources 12.5 By 2030, substantially reduce waste	its area of the rail industry. (The Guardian) - Using new technologies, such as using lightweight carbon-fiber for the fuselage and wings, instead of aluminum sheeting, Boeing was able to reduce the airplane's weight. It also increased the fuel efficiency of its new engines, yielding an overall reduction of fuel consumption of almost 30% (Inhabitat) - Greenhouse gas emissions by the plastics sector are expected to grow to 15 percent of the global annual carbon budget by 2050 so recycling can play a key role helping governments and global brands with GHG reduction. Increased recycling can reduce GHG emissions. (GreenBiz)

The opportunity	Relevant SDG / targets	Illustrative facts
	generation through prevention, reduction, recycling and reuse 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	
Reputation management - Manage extensive supply chain risks, in particular sub-contractors associated with human trafficking and forced labour - Address transparency concerns within construction and defence sectors	8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value 8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms 8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment 10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in	- A staggering 32% of plastic packaging escapes collection systems, generating significant economic costs by reducing the productivity of vital natural systems such as the ocean and clogging urban infrastructure. The cost of such after-use externalities for plastic packaging, plus the cost associated with greenhouse gas emissions from its production, is conservatively estimated at USD 40 billion annually — exceeding the plastic packaging industry's profit pool. (Ellen MacArthur Foundation) - The construction industry is a major source of pollution, responsible for around 4% of particulate emissions, more water pollution incidents than any other industry, and thousands of noise complaints every year. (Sustainable Build) - Amnesty International finds Qatar's construction sector rife with abuse, with workers employed on multi-million dollar projects suffering serious exploitation. (Amnesty International) - As the pace of construction gathers speed, the government of Qatar and FIFA have been increasingly criticized over their inaction to protect construction workers and prevent violations of international labour standards and human rights. Companies participating in World Cup construction projects face an elevated risk of being complicit to human rights abuses.[iv]. (Sustainalytics) - Transparency International said that results from a survey of more than 3,000 global business executives from 28 major economies had identified the public works contracts and construction sector as being the most "bribery-prone" of the 19 industry areas it had asked the executives to rate. - Strengthening transparency and accountability in public infrastructure yields

The opportunity	Relevant SDG / targets	Illustrative facts
	accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution 14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss 16. Promote peaceful and inclusive societies for sustainable development 16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children 16.4 By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and	domestic and international benefits. For countries, participation in Construction Sector Transparency Initiative promises multiple benefits such as improving the use of funds in public infrastructure, better and more reliable infrastructure, freeing savings to extend social and economic services, and raising investor confidence. (Construction Transparency) - Most of Europe's recent high-profile terrorist attacks have connections to the Belgian arms market. (Financial Times) - A key way to ensure that gun companies have the right incentives would be to repeal the Protection of Lawful Commerce in Arms Act. (Newsweek) - The international arms trade is among the most corruption-prone sectors, as arms deals tend to be surrounded by high levels of secrecy due to commercial and national security. Illicit arms transfers have devastating consequences for international humanitarian law, human rights, and sustainable development, as well as for efforts to combat violent organised crime and terrorism. (Transparency International) - A large construction, mining, and military equipment manufacturing company developed a demining machine for anti-personnel landmines capable of clearing 500 square meters of land per hour. Given the erratic demand for demining machines and the very limited resources of the machine's target customers, this is not a machine designed to make significant profits for the company but it paved the way for an entirely new set of corporate values and goals at the company. (UN Global Compact)

The opportunity	Relevant SDG / targets	Illustrative facts
	combat all forms of organized crime 16.5 Substantially reduce corruption and bribery in all their forms	
Risk reduction - Greater regulatory requirements on sustainability performance (construction, transport, infrastructure) - Mandatory extended producer responsibility could dramatically increase costs for industry		- The McKinsey Global Growth Institute has estimated that rates of environmental degradation are unsustainable for the long-term functioning of the global economy. Existing and future investment, therefore, must be greened to avoid dangerous levels of climate change and adverse environmental impacts that could erode the benefits from new green developments (World Economic Forum) - Shifting financial responsibility for collecting and recycling used packaging in the U.S. from taxpayers to producers with the implementation of an EPR policy would incentivise producers to reduce the amount of packaging they create. (Waste Management World) - The primary sustainability challenge identified by the majority of companies across the different subsectors [within Construction and Real Estate sector] is climate change. In particular companies are concerned about their CO2 emissions from the use of natural resources. There are also a number of companies paying a lot of attention to supply chain analysis in the reporting of climate footprints. (Global Reporting Initiative) - The UK Environment Agency and other government bodies are putting increasing pressure on construction companies to reduce pollution and conform to environmental regulations. (Sustainable Build)

4. Consumer goods

The opportunity	Relevant SDG / targets	Illustrative facts
Innovation & Growth Developing affordable and nutritious food and improving access for bottom of the economic pyramid. Designing new business models to ensure sustainable food production Develop pro-poor business models and partnerships in the value chain	1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters 2.1 By 2030, end hunger and ensure access by all people (…) to safe, nutritious and sufficient food all year round 2.2. By 2030, end all forms of malnutrition… 2.4 By 2030, ensure sustainable food production systems (...) 3.4 By 2030, reduce by one third premature mortality from non-communicable diseases… 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all 17.16 Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries	- By 2020, more than half of global GDP growth is expected to come from countries outside of the Organisation for Economic Co-operation and Development; over half the world's urban population also will be in emerging economies. (McKinsey) - In just ten years, the organic food and beverage industry has grown from $1 billion to more than $26 billion, according to the Organic Trade Association (Business Opportunity) - Increasing demand for eco and green chemical products. The total value for green and eco chemicals products to be over $70 billion worldwide by 2015 and over $1 billion in India (EAI) - "Sanitation is an excellent economic investment, yielding an average return of US$5.50 for every dollar invested." (UN) - Roughly 2 billion people are employed in agriculture, many of them poor. Women make up the majority of agricultural workers in many developing countries. Raising women's income has disproportionate benefits for alleviating hunger, so assisting women farmers is a particularly effective way to reduce poverty and enhance food security. (WRI) -
Efficiency & Cost Savings Improve productivity & yields upstream in agriculture and	2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women (…)	- Agricultural production needs to increase by at least 60% over the next 40 years to meet the rising demand for food. (OECD) - Five hundred million smallholder farms worldwide are supporting around

The opportunity	Relevant SDG / targets	Illustrative facts
farming Operational efficiency will generate costs savings	2.4 By 2030, ensure sustainable food production systems (…) that increase productivity and production (…) 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally 7.3 By 2030, double the global rate of improvement in energy efficiency 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation (…) 8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	two billion people, or one third of humanity. (OXFAM) - By 2030, water supplies will satisfy only 60 percent of global demand on average. (McKinsey) - Global food demand will continue to increase for at least another 50 years. 2050 would require raising overall food production by at least 70 %. (UN SDSN) - The UN FAO is, for example, expecting a 100-percent increase in demand for water by 2030. (UN FAO) - Carbon Trust analysis of energy efficiency measures identified in over 2,000 organisations showed an average internal rate of return of over 40%, which compares with 10-15% returns from 'typical' business investments. (Carbon Trust) - "In three example sectors (Food and Drink manufacturing, Fabricated Metal Products and Hospitality and Food Services) the potential gross benefits from improving resource efficiency (based on the average benefit achieved by individual companies) are similar for all three example sectors, between 10% and 17% of turnover" (EU Commission) - At current rates of change, the World Economic Forum (WEF) estimates it will be 118 years before women around the world can expect equal pay. (WEF) - Average full-time salary for a working woman is $11,102 a year – little more than half the male average of $20,554. This almost matches men's average income in 2006, which the WEF estimated at $11,351 (women's pay then was $6,117). (WEF) - About 1/3 of all food produced worldwide, worth around US$1 trillion, gets lost or wasted in food production and consumption systems. This means that about 1 in 4 calories intended for consumption is never actually eaten. (WRI) - In 2014 alone, more than 135 million metric tons of scrap metal, paper, plastic, glass, textiles, rubber, and electronics, valued at more than $80 billion, were manufactured (ISRI) - Fisheries contribute approximately US$274 billion to global GDP. The World

The opportunity	Relevant SDG / targets	Illustrative facts
		Bank estimates that if fisheries were managed optimally they could deliver an additional $50 billion each year. (PCFISU) - A 2006 analysis of agroecological methods based on 286 projects in 57 countries in the developing world, showed that projects increased crop yields by 64 per cent on average while improving water efficiency and carbon sequestration and reducing pesticide use (CID) -
Reputation management Manage negative environmental and social impacts of the sector	3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate 8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms 8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment 12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses" 12.4 By 2020, (…) significantly reduce their [chemicals] release to air, water and soil in order to minimize their adverse impacts on human health and the environment 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from	- There are 168 million children worldwide trapped in child labor, accounting for almost 11 percent of the overall child population: 1 100 million boys and 68 million girls. Around half are engaged in hazardous work. (UNDP) - Nearly 60 percent of child labor takes place in agriculture. (ILO) - "In 2011 (based on 2008 data), the ILO estimated that over 2 million people died from work-related diseases and over 320,000 from work-related accidents. 317 million suffered non-fatal occupational accidents (requiring at least four days of absence from work), and more than 900,000 workers died from exposure to hazardous substances (International Labour Office, 2011a)." (ILO) - Economic burden of poor occupational safety and health practices is estimated at 4 per cent of global Gross Domestic Product each year. (ILO) - Only 13% of annual e-waste (over 50 million tons) reaches the waste stream. Less than 1% of e-waste is recycled safely in developing countries. (UNIDO)

The opportunity	Relevant SDG / targets	Illustrative facts
	land-based activities, including marine debris and nutrient pollution 15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems	
Risk reduction Reduce systemic risks, such as resilience of agriculture systems. Stay ahead of regulation.	2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems (…)	- Agricultural technology investment. Total demand is expected to rise 70 percent by 2050. To succeed in sustainably increasing food production, major innovations are required that increase agricultural productivity and improve the efficiency and resiliency of the entire food system. (Kauffman Foundation) - Despite no longer owning a sugar company, Tate and Lyle's share price took a tumble immediately after the announcement of a surprise sugar tax in today's Budget speech.(City am) - Research by the British Medical Journal found that sales of sugary drinks in Mexico fell by 12% following the introduction of a sugar tax in 2014 (Telegraph)

5. Health care

The opportunity	Relevant SDG / targets	Illustrative facts
Innovation & market development - Develop models (such as circular) to increase access to existing products & services, including by leveraging technology - Develop new products & services to increase access for those at the bottom of the pyramid. - New solutions for preventative health care	2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons 3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births 3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases 3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being 3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all 3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines 5.6 Ensure universal access to sexual and reproductive health and reproductive rights	400 million people globally lack access to one or more essential health services.(WHO) - $87.7 bn is the size of the base of the pyramid healthcare opportunity of which $56.7 billion is the size of the pharmaceutical market. (WRI, The Next 4 billion) - Undernutrition, including vitamin and mineral deficiencies, contributes to about one third of all child deaths, and impairs healthy development and life-long productivity.(WHO) - In Africa (except in Nigeria and South Africa) bottom of the pyramid households spend between 51% and 87% of their health budget on pharmaceuticals.(WRI, The Next 4 Billion, 2014) -
Efficiency & cost savings	6.4 By 2030, substantially increase water-use	- Global energy efficiency investment will reach $5.8 trillion by 2030.

The opportunity	Relevant SDG / targets	Illustrative facts
For health care manufacturers, operational efficiencies, clean technology and re-fits can save costs	efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Yearly energy efficiency investment will total around $385 billion (IRENA)
Reputation management Programmes and initiatives to aid access help build vital relationships with key stakeholders and licence to operate Management of negative impacts is vital to maintaining trust and licence to operate Healthcare companies have an opportunity to build trust and relationships through contribution to R&D in local markets	3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally 9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	- Every year 100 million people are pushed into poverty because they have to pay for health services directly. (WHO) - In 2013 GlaxoSmithKline's third-quarter sales of pharmaceuticals and vaccines in China tumbled 61 percent hit by a bribery probe in the country

The opportunity	Relevant SDG / targets	Illustrative facts
	12.4 By 2020, achieve the environmentally sound management of chemicals and wastes throughout their life cycle (…) and significantly reduce their release to air, water and soil to minimize adverse impacts on human health and the environment 16.5 Substantially reduce corruption and bribery in all their forms 17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	
Risk reduction Supporting healthcare infrastructure (capacity, systems, skills and facilities) can be an enabler of market growth Protecting biodiversity to protect key source of pharmacological ingredients	3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all 3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States 3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks 15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	- In the United States alone, about 57% of the 150 most prescribed drugs have their origins in biodiversity (AMNH)

6. Utilities

The Opportunity	Relevant SDG / targets	Illustrative Fact
Innovation & market development	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all 6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix 7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries… 11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	- 884 million people in the world do not have access to safe drinking-water. 2.6 billion people lack access to basic sanitation, 40% of the world's population. (UN) - In China alone, we estimate, the market for the current membrane technology used to clean wastewater will grow by more than 30 percent a year over the next two decades. (McKinsey) - Global electricity production from renewable sources plus hydro power will increase by nearly 60 percent between 2011 and 2017, when it will reach almost 6,400 terawatt hours (TWh) per year. (Siemens) - Renewable energy industries have experienced faster growth rates than most other industries. (IEDC) - 2015 was the highest ever for installation of renewable power capacity, with 64GW of wind and 57GW of solar PV commissioned during the year, an increase of nearly 30% over 2014.(Bloomberg) - Premature deaths from airborne particulate matter is the largest threat and are projected to more than double from today's levels to 3.6 million people a year by 2050 if no policy action is taken. (OECD) - Worldwide, about 1.2 billion people have no access to electricity and the development benefits it brings, and 1 billion more have access only to unreliable electricity networks. (UN Foundation) - Total investment of nearly $1 trillion ($979 billion) would be required to achieve universal energy access by 2030, an average of $49 billion per year (from 2011 to 2030). We found that an additional $30 billion per year on average was required to provide universal access to electricity by 2030. (IEA) - [in 2015] There was $20bn of asset finance in clean energy technologies such as smart grid and utility-scale battery storage,

The Opportunity	Relevant SDG / targets	Illustrative Fact
		representing an 11% rise on 2014 (Bloomberg) - EU countries have agreed to invest a total of €150 million for 20 cross-European energy infrastructure projects, mainly in Central Eastern and Southern Eastern Europe, and the Baltics. (EU) - China needs about $1.8 billion a year in capital to reduce leakage in municipal water systems. With a 22 percent rate of return, these investments could be an attractive solution for municipal utilities (McKinsey)
Efficiency & cost savings	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater (…) 7.3 By 2030, double the global rate of improvement in energy efficiency 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes…	- Globally, more than 45 million cubic metres per day are lost through leakage…The World Bank estimates the cost to utilities of water lost before reaching the consumer at approximately $14 billion per annum. These costs increase when factoring in water leakage after reaching the end user.(Water Intelligence) - According to IRENA's report, global energy efficiency investment will reach the $5.8 trillion mark by the year 2030. By that point, yearly energy efficiency investment will total around $385 billion (CleanTechnica)
Reputation management	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally 6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by	- By 2030, water supplies will satisfy only 60 percent of global demand on average. New products and services under development (McKinsey) - Biodiversity increases productivity in different sectors, enhances people's enjoyment of nature, reduces ecological and associated health risks, and improves resilience in the face of shocks. (IUCN) - Approximately 2.7 billion people rely on traditional biomass for cooking and heating and about 1.3 billion have no access to electricity (Engie)

The Opportunity	Relevant SDG / targets	Illustrative Fact
	paying special attention to air quality and municipal and other waste management 12.2 By 2030, achieve the sustainable management and efficient use of natural resources 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks (…) 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution 15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services (…)	
Risk reduction - Risk of regulation (affordability, customer service, water quotas) - Speed and scale of urbanisation - Eco-system degradation will impact on sector's ability to provide services.	7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums 12.1 Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability	- 70 million people each year are entering an income bracket equivalent to between US$ 6,000 and US$ 30,000 in purchasing power parity terms. This phenomenon may continue accelerating to 90 million new middle-income consumers per year by 2030. (saiplatform) - Assuming continued economic and population growth, by 2030 water supplies will satisfy only 60 percent of global demand (exhibit) and less than 50 percent in many developing regions where water supply is already under stress, including China, India, and South Africa. (McKinsey) - In Chile … authorities allocate fresh-water rights among companies strictly, closely monitor their usage of water, and pressure them to use less of it; for example, the country's third-largest copper mine, Xstrata's Collahuasi operation, was asked to reduce its rate of

The Opportunity	Relevant SDG / targets	Illustrative Fact
	information into their reporting cycle	water extraction to 300 liters a second by 2010, from 750 liters now. (McKinsey) - Ecosystem degradation affects businesses that rely on natural resources for raw materials, waste assimilation or indirect support for production processes. Loss of ecosystem services can also undermine a healthy workforce (IUCN)

7. Telecommunications

The opportunity	Relevant SDG / targets	Illustrative facts
Innovation and market development Business models that enable businesses to integrate new-generation technologies and services New products / services that enable access to mobile telecoms for bottom of the pyramid (e.g. through frugal innovation) New products / services delivering mobile financial services Develop mobile applications to contribute to diverse SDGs (health, well-being, women's empowerment etc) e.g. Now available in over 60% of developing markets, mobile	1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, (…) appropriate new technology and financial services, including microfinance 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro, small- and medium-sized enterprises, including through access to financial services 9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets 10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status	- For 2017 the number of mobile phone users is forecast to reach 4.77 billion. (Statista) - Worldwide, more than 2.5 billion adults do not have an account at a financial institution. (World Bank) - By 2020, the mobile education (mEducation) market size is estimated to reach $70 bn (Accenture) - Among end customers, 90 percent of women feel empowered with access to mobile technology, but 200 million fewer women than men own mobile phones. (Accenture)

The opportunity	Relevant SDG / targets	Illustrative facts
financial services (MFS) are firmly established in the financial sectors of the majority of the developing world *e.g. Vodafone mPesa mobile money service* *e.g. CleanSpace air quality monitoring app*	12.1 Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	
Efficiencies & cost savings - Develop more energy-efficient products for own industry - Expand on new ICT solutions for clients to reduce energy consumption - Reuse and recycle e-waste - The ability to offer integrated services (mobile, fixed-line voice, broadband and TV) and high data speed are crucial for future growth With minimal investments in physical infrastructure, businesses today can provide innovative services	12.2 By 2030, achieve the sustainable management and efficient use of natural resources 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	- Both base stations and smartphones regularly waste 70% of the energy consumed as heat. (WEF) - A report from United Nations University (UNU) found that the world produced 41.8 million metric tons of e-waste in 2014 - an amount that would fill 1.15 million 18-wheel trucks.(United Nations University)

The opportunity	Relevant SDG / targets	Illustrative facts
customized to consumer needs. One such example is mobile education (mEducation).		
Reputation management Communicate commitments to high labour standards in the value chain, including eliminating the use of conflict minerals (e.g. IBM) Adopt circular economy principles in product development, including modular electronic products (e.g. Fairphone)	8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle 12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities	- In 2014 approximately 40,000 children worked in mines across southern Democratic Republic of Congo, many of them mining cobalt, according to UNICEF. - New research from Danish organisation DanWatch has found that no mobile phone manufacturers can guarantee that they do not use gold mined by children…Worldwide, it is estimated that at least 1,5 million children are working in the gold mine industry (Ethical Consumer)
Risk reduction - Combat potential abuse of mobile telephony -Regulation / taxation (extended producer responsibility, electronics waste, privacy, data protection)	12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle 16.4 By 2030, significantly reduce illicit financial and arms flows 16.a Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime	Twitter is to train prosecutors in England and Wales to better fight online abuse, as the internet is increasingly used as a weapon by perpetrators of domestic abuse, rape and sexual violence against women. (Guardian)

8. Consumer services

The Opportunity	Relevant SDG / targets	Illustrative facts
Innovation & market development Access to affordable goods and services for those at the bottom of the pyramid (retail) New models to encourage sustainable consumption and production (retail, tourism) Opportunity to engage and raise awareness on sustainable development (media)	2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round 3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all 4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education 4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university 4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development 4.a Build and upgrade education facilities that	- Expenditure on medicines is rising far faster in the growth economies than it is elsewhere. By 2020, the BRIC economies alone will account for 33% of the world's GDP (PWC) - Women's access gap to mobile and the Internet ranges from 16%-40% (UN-WOMEN) - Nearly 25 percent fewer women than men have access to the Internet, and the gender gap soars to nearly 45 percent in regions like sub-Saharan Africa (Intel) - Residential fixed-broadband services cost about 30 percent of average monthly Gross National Income (GNI) per capita in developing countries – compared to just 1.7 percent of average national income in wealthy countries. (WB) - By 2030, UN-HABITAT estimates an additional 3 billion people, about 40% of the world's population, will need access to housing. This translates into a demand for 96,150 new affordable units every day and 4,000 every hour. (UN-Habitat) - To achieve Europe's targeted 80% CO2 reduction by 2050 compared to 1990, oil consumption in the transport sector must drop by around 70% from today, implying a revolution in transport fuels and the way we travel. (EU) - International tourist arrivals are expected to reach 1.8 billion by 2030. (sustainable tourism) - Travel and tourism represents approximately 9.5% of total global Gross Domestic Product (GDP) in 2014. (sustainable tourism) -

The Opportunity	Relevant SDG / targets	Illustrative facts
	are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all 11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums 12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	
Efficiency & cost savings Operational efficiencies can deliver cost savings	12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products 12.1 Implement the 10-year framework of programmes on sustainable consumption and production (…) 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	- Global energy efficiency investment will reach $5.8 trillion by 2030. Yearly energy efficiency investment will total around $385 billion (IRENA)
Reputation management Manage negative social and	2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in	- About 795 million people are undernourished globally. Economic growth is a key success factor for reducing undernourishment.

The Opportunity	Relevant SDG / targets	Illustrative facts
environmental impacts associated with the sector and its industries.	vulnerable situations (…) 2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age (…) 4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education (…) 4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education 3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate	(FAO) - Leading causes of death in under-5 children are preterm birth complications, pneumonia, birth asphyxia, diarrhoea and malaria. About 45% of all child deaths are linked to malnutrition. (WHO) - The systematic exclusion of girls and women from school and the labor force translates into a less educated workforce, inefficient allocation of labor, lost productivity, and consequently diminished progress in economic development. (WB) - An estimated 59 million children of primary school age and 65 million adolescents of lower secondary school age – of whom girls remain the majority – were still out of school in 2013. In addition, many of those in school are not acquiring basic knowledge and skills. (UNESCO) - If the current rate of food loss and waste were cut in half—from 24 percent to 12 percent—by the year 2050, the world would need about 1,314 trillion kilocalories less food per year. That savings is roughly 22 percent of the 6,000 trillion kcal per year gap between food available today and that needed in 2050. (WRI) - The value of food lost or wasted annually at the global level is estimated at US$ 1 trillion. (FAO)
Risk reduction Manage regulatory risk	8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products 11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage 14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans	- The global travel and tourism industry creates approximately 11% of the world's employment (direct & indirect) in 2014. (sustainable tourism) - Ecosystem-based fishery management will contribute to the stability of employment and economic activity in the fishing industry. (NMFS) - Rapidly increasing food and commodity prices, reflect further the inter-linkages of economic and environmental challenges. Considering a projected population of 9 billion in 2050, feeding the world will be a major challenge. Putting in place a more sustainable food supply systems is clearly an urgent need. (UNEP)

9. Financials

The opportunity	Relevant SDG / targets	Illustrative facts
Innovation & market development Developing new products and services to boost financial inclusion for under-banked. This includes for individuals, women in particular, small and medium-sized enterprises Investment in sustainability opportunities	1.4. By 2030, ensure that all men and women…have access to financial services, including microfinance. 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers (…) including through (…) other productive resources and inputs (…) financial services 5a. Undertake reforms to give women… access to… financial services… 8.3. …encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services 8.10. Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all 9.3. Increase the access of small-scale industrial and other enterprises…to financial services, including affordable credit 10.c By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances 17.16 Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries	- More than 2 billion people in the world lack access to basic financial services, like savings accounts, loans or insurance products. (finca.org) - 2 billion unbanked people, 320 million unbanked or underbanked micro and small businesses, and a total credit gap to micro, small and medium enterprises (MSMEs) globally at $2.1-2.6 trillion.(CARE International) - Shifting payments—whether salaries, pensions, social benefits, procurement, etc.—from cash to electronic is one such step. For example, in Mexico, the government is saving $1.3 billion annually—or 3.3% of its total expenditures on wages, pensions, and social transfers—by making payments electronically.(UNCDF) - It is estimated that by increasing their capacity to serve smallholders, financial institutions would support over 2 billion of the world's poorest people who depend on agriculture for their livelihoods (Business Call to Action/ Dalberg) - Small and medium-sized enterprises (SMEs) with female ownership represent 30 percent to 37 percent of all SMEs (8 million to 10 million women-owned firms) in emerging markets. These businesses have unmet financial needs of between US$260 billion and US$320 billion a year. (World Bank) - The financial sector is uniquely placed to channel finance to energy-saving opportunities and address the current investment gap. Our aim is to make sure the financial community can tap into this potential by forging links with the most up-to-date expertise and technology. (EBRD) - Over 50% of respondents to a WTO and OECD survey stated that access to trade finance is one of the greatest obstacles to participation in value chains. According to estimates from the Asian Development Bank for 2013, the annual global gap in trade finance amounts to USD 1.6 trillion. Increasing the availability of trade finance by 5% could raise production and the number of jobs by 2% (World Bank)

The opportunity	Relevant SDG / targets	Illustrative facts
		- Overall, approximately 70 percent of all MSMEs in emerging markets lack access to credit. While the gap varies considerably between regions, it's particularly wide in Africa and Asia. The current credit gap for formal SMEs is estimated to be US$1.2 trillion; the total credit gap for both formal and informal SMEs is as high as US$2.6 trillion. (World Bank) - Between October 2007 and June 2011 the secured transactions reform work supported by the WBG in China cumulatively facilitated US$3.58 trillion accounts receivable financing, of which US$1.09 trillion went to SMEs. (World Bank) - Remittances from migrant workers constitute a key source of finance for developing countries: in 2013, they stood at more than $ 410 billion, more than three times the size of official development assistance (World Bank, 2013).(deliver2030.org) - "Remittances to developing countries are expected to reach $435 billion in 2015, registering a modest growth rate of 2% from last year. This represents a significant slowing in the growth of remittances from the rise of 3.3% in 2014 and of 7.1% per year from 2010 -13. Global remittances, sent home from some 250 million migrants, are projected to grow by 1.3% to $588 billion. Slowing remittances this year will affect most developing regions, in particular Europe and Central Asia where flows are expected to decline by 18.3% in 2015. " (Business Standard) - Global flows of remittances are expected to recover in 2016 to reach $610 billion, and then rising to $635 billion in 2017. The global average cost of sending $200 remained at about 7.7% in the second quarter of 2015. (Business Standard)
Reputation management Investing in sustainability opportunities and national priorities	5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life 7.3 By 2030, double the global rate of improvement in energy efficiency 7.a (…) and promote investment in energy	- Women hold only 14% of board seats and 2% of CEO positions in the financial services despite making up 60% of its global workforce (Guardian) - To eliminate hunger by 2030, much more investment will be needed, than what is expected in what may be described as a business as usual scenario. An average of US$267 billion per year during 2016-2030, i.e. 0.3 percent of world economic output in 2014, is required to fund social protection and additional targeted pro-poor investments, of which rural areas would

The opportunity	Relevant SDG / targets	Illustrative facts
	infrastructure and clean energy technology 9a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial (…) support (…)	receive US$181 billion annually (FAO) - The transition to a sustainable energy future will require, on average, $550 billion investment in renewable energy per year until 2030 (IRENA) - In India, for instance, some drip irrigation projects could help farmers reduce the cost of certain inputs (such as fertilizer) by up to 50 percent, depending upon the crop. Investors could capture a share of this value either as lenders or as equity holders in companies active in the drip irrigation value chain. (McKinsey) - By one estimate a total of US$ 57 trillion is needed by 2030, or US$ 3.4 trillion per year, for infrastructure investment. Yet there is currently a finance gap to meet this demand of US$ 500 billion per year (S&P, 2014). (International Institute for Sustainable Development) - Developing countries need $1.6-2.5 trillion annually between 2015-2030. The infrastructure investment gap is also huge at up to $1.6 trillion (UNCTAD) - At today's level of investment – public and private – in SDG-related sectors in developing countries, an average annual funding shortfall over 2015-2030 of some $2.5 trillion remains.(UNCTAD) - At the moment, investment in infrastructure with private involvement runs at about $180 billion a year to developing countries — less than one-fifth the additional investment needed to meet the SDGs. (Center for Global Development)
Risk reduction Investing in technology and establishing new partnerships (remittances)	16.4 By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime	- 1 in 5 banks have experienced enforcement actions by a regulator – failure to curb illicit business practices may lead to personal liability. (PWC Economic Crime Survey)

10. Technology

The opportunity	Relevant SDG / targets	Illustrative facts
Innovation & Growth - Provide access to digital learning technologies for those in need - Providing access to the Internet for those at the bottom of the pyramid - Enable services such as mobile banking to alleviate poverty - Develop new business models to provide information on sexual and reproductive health needs for women and girls - Increased ICT within healthcare brings huge impact on the ability to treat diseases - Develop solutions for sustainable, smart cities - Develop and provide access to ICT solutions such as early warning systems or ICTs for crowdsourcing and improve monitoring systems - Through monitoring, crowdsourcing, open data and optimisation of ICT tools for peace, improve crisis management and support humanitarian organisations	1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, (…) appropriate new technology and financial services, including microfinance 2.a Increase investment (…) in rural infrastructure, agricultural research and extension services, technology development (…) in order to enhance agricultural productive capacity in developing countries (…) 3. Ensure healthy lives and promote well-being for all at all ages 3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, 4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes 5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all 7.3 By 2030, double the global rate of improvement in energy efficiency 8.5 By 2030, achieve full and productive	- More than a third of the poorest children [in the UK] do not have the internet at home and a similar number do not have a computer (BBC) - Just one unwanted computer, when refurbished by an organisation such as Computer Aid, is enough to help educate 60 pupils to a vocational level in IT, which will significantly help in improving their job prospects. - "There is tremendous potential for innovative delivery channels to reach the 2.7 billion poor people who have no access to affordable financial services." (Tilman Ehrbeck, chief executive officer at the Consultative Group to Assist the Poor) - A big game changer for the unbanked is the rise in mobile banking. Now those living in rural areas, away from bank branches, can participate in the system. While only 1% of adults worldwide use a mobile money account, 12% of adults in Sub-Saharan Africa do. (Yahoo Finance) - According to mobile industry group the GSMA there are now 65 mobile money systems operating around the globe, with a further 82 about to be launched. - According to mobile industry group the GSMA there are now 65 mobile money systems operating around the globe, with a further 82 about to be launched. (BBC) - Broadband Internet is failing to reach billions of people living in the developing world, including 90 per cent of those living in the poorest nations, according to a new United Nations report (UN New Centre) - Internet connectivity could generate $2.2 trillion of economic growth and more than 140 million new jobs. If everyone had access to the internet, the opportunities opened up to them could lift 160 million people out of extreme poverty. (One.org)

The opportunity	Relevant SDG / targets	Illustrative facts
- Provide improved ICT systems for governments to expand e-transparency - Improve and expand smart water management systems and develop new products to enhance sustainability, efficiency and accessibility of WASH services - Provide solutions for and facilitate smart-working	employment and decent work for all women and men 9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020 10.c By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries 14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss 16. Promote peaceful and inclusive societies for sustainable development (…) 16.6 Develop effective, accountable and transparent institutions at all levels 17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology	- 90% of farmers confirm that ICTs improve food security and sustainability in their region. But at the same time 60% do not have sufficient access to ICTs, and therefore cannot take advantage of its positive impacts on agriculture and food production. (One.org) - The improvements in health care could help save the lives of 2.5 million people, and 2.5 million HIV/AIDS patients could increase their life expectancy thanks to better monitoring and adherence to treatment. (One.org) - ICT could have a huge impact on the ability to treat disease and improve the health of African populations. However, only 2% of healthcare spending is currently on ICT. (Bearing Point Institute) - Self-generated income from ICT businesses can give women greater power to close the gender wage gap, as it is a means of production that allows for some control and determination on the price that women can sell their labour. (UN Women) - Using ICT (particularly mobile phones) to address the sexual and reproductive health needs of women and girls in hard-to-reach places is in its infancy. However, ICT and health offer enormous business potential and many mobile phone companies are exploring possible business models. (Institute of Development Studies) - City investments that include a large ICT component can enable the designing of smarter cities that offer a better quality of life for their residents while being more sustainable and cost efficient. (PwC) - Crowdsourcing was used extensively in the response to the 2010 Haiti earthquake, allowing local people, mapping experts and other stakeholders to communicate what they saw and heard on the ground, and to produce information that could be used by humanitarian workers. (SciDev.Net) - Innovative ICTs are being developed and rolled out, playing an

The opportunity	Relevant SDG / targets	Illustrative facts
	and innovation and enhance knowledge sharing on mutually agreed terms 17.18 By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts 17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries	important role in disseminating information to organisations in charge of responding to warnings and to the public during a disaster. But their capacity to make an impact is limited by the lack of systematic and consistent monitoring. (SciDev.Net) - By extension the marine sector also has a stated interest in the development of next generation technology to drive cost-effective and sustainable management of marine resources for enterprise development. (Euroscom) - UNDP has documented cases where indigenous peoples are embracing technology as a way to help preserve the environment and threatened wildlife. (ITU, United Nations) - In light of the increasing complexity of humanitarian operations, the technological advancement of the ICT tools being used and the massive information overload facing most humanitarian organisations, the development of effective training programs for relevant personnel must also be a ley priority for leadership within the UN family and other relevant humanitarian organisations. (ICT4Peace) - For poor communities, there can be particular benefits of e-transparency: saving money in dealings with government, improving the equality of treatment and participation of all members of the community, and improving the planning and implementation of relevant development projects. ICTs have a particular contribution to make because of the way they can cut costs, open up access to information, automate corruptible processes, and disintermediate corrupt staff. (eGovernment for Development) - UNDP is expanding the International Network of Social Innovators for Human Development, in partnership with Motorola Solutions, with the aim to tie together local knowledge and solutions by connecting social innovators with policy-makers at the national and global levels, and by fostering South-South cooperation

The opportunity	Relevant SDG / targets	Illustrative facts
		through these exchanges (The UN Non-Governmental Liaison Service) - Information and communication technologies (ICT) have the potential to enhance water sustainability, efficiency and accessibility — for example ICT can also be incorporated to increase efficiency in irrigation, saving up to 70 per cent of water in some networks. (International Telecommunication Union) - Sun Microsystems' 'openwork programme' provides opportunities for teleworking. On average each employee benefits from a 2-hour reduction in commute per week. Over one year, this reduction results in 2 tonnes of carbon savings (including rebound effects) (Forum for the Future) - In total, ICTs could deliver approximately 7.8 GtCO2e of emissions savings in 2020. This represents 15% of emissions in 2020 based on a BAU estimation. 1 In economic terms, the ICT-enabled energy efficiency translates into approximately EUR 600 billion of cost savings (Smart 2020) - Smart grid technologies were the largest opportunity found in the study and could globally reduce 2.03 GtCO2e , worth EUR 79 billion (Smart 2020)
Efficiency & Cost savings - Develop more energy-efficient products for own industry - Expand on new ICT solutions for clients to reduce energy consumption - Reuse and recycle e-waste	9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities 9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research	- The Fujitsu Group is working to quantitatively visualize – and also expand – the contribution to GHG reductions from the ICT used by customers. Between FY 2009 and FY 2012, this ICT usage has contributed to a cumulative reduction of 12.23 million tons of CO2 emissions. (Fujitsu) - While the prognosis on the ICT industry's own future contribution to climate change is worrying, there is still the overriding positive prospect that ICTs themselves can facilitate innovations and social and economic restructuring globally to help reduce overall global carbon emissions. Already there are estimates that by the year 2020 ICT applications could help reduce global carbon emissions by 15%, which is significantly higher than the industry's own

The opportunity	Relevant SDG / targets	Illustrative facts
	and development workers per 1 million people and public and private research and development spending 12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	contribution to carbon output. (Global Information Society Watch)These 15% of emissions savings possible in 2020. have a value of over EUR 600 billion in energy savings. (The Climate Group) - Between 30% and 60% of the electricity consumed in server rooms is wasted - but integrated planning using current and emerging technologies can reduce power consumption in data centers by 50-80% and required floor space by up to 65%. (GreenIT) - Businesses are missing out on generating a new revenue stream by overlooking the monetary value of reusing old ICT. IT refurbisher Remploy E-cycle reported 80 per cent of IT directors do not take advantage of selling their old equipment. It estimates that 100 end-of-life computers could provide £7,500 revenue. (Engineering and Technology Magazine)
Reputation management Manage negative impacts (social and environmental) of the industry	8.5 By 2030, achieve full and productive employment and decent work for all women and men (…) 8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, (..) 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	- Since 2010, after a scandal when 14 Foxconn workers committed suicide, the Taiwanese company has sought to change the public perception of harsh working conditions at its factories in mainland China. Foxconn's reputation was not helped by an audit by a labour rights group this spring that found continued violations at Foxconn's Apple factories. (Financial Times) - Samsung will do 30% less business with a Chinese supplier after evidence of child labour was found at its factory in China (BBC) - Major electronics brands, including Apple, Samsung and Sony, are failing to do basic checks to ensure that cobalt mined by child labourers has not been used in their products, said Amnesty International and Afrewatch (Amnesty International) - The natural environment in the region [DRC] has suffered to a great extent by the uncontrolled mining in the Democratic Republic of the Congo during the coltan boom since the year 2000. Numerous mines are situated in the Kahuzi-Biega National Park, where some of the last gorillas of the DRC can be found. Their habitat is being progressively destroyed by deforestation for new

The opportunity	Relevant SDG / targets	Illustrative facts
		mining sites and the endangered apes are also being hunted for their flesh. (Reset.org) - Mining pollutes the water of surrounding communities through cyanide contaminated waste ore and other abandoned mine waste including toxic metals and acid, which often get released into lakes, streams and the ocean, killing fish and contaminating drinking water. (Electronics Take Back Coalition) - Mining rare earth elements, used in all of our smart phones, requires extractors to separate them from the radioactive elements thorium and uranium, with which they are always found. Managing the radioactive waste, once it's separated from the rare earths, is a huge problem, often managed badly, allowing radiation harm to nearby residents or workers. (Electronics Take Back Coalition) - Samsung Electronics has admitted for the first time that it uses tin in its products that's destroying tropical forests, killing coral and wrecking the lives of communities in Indonesia (Friends of the Earth)
Risk reduction Work with others to manage the potential abuses of technology	16.4 By 2030, significantly reduce illicit financial and arms flows 16.a Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime	- Twitter is to train prosecutors in England and Wales to better fight online abuse, as the internet is increasingly used as a weapon by perpetrators of domestic abuse, rape and sexual violence against women. (Guardian)

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