



cutting through complexity

KPMG INTERNATIONAL

A New Vision of Value

Connecting corporate
and societal value creation

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CONTENTS

FOREWORD	4
INTRODUCTION: about this report	6

01	EXTERNALITIES: the age of internalization is here	9	02	THREE KEY DRIVERS: increasing the rate of internalization	15
-----------	--	----------	-----------	--	-----------

03	KPMG'S TRUE VALUE METHODOLOGY: building corporate and societal value	39	04	CASE STUDIES: applying the KPMG True Value methodology in practice	57
-----------	---	-----------	-----------	---	-----------

Step 1: Assess the company's 'true' earnings

Step 2: Understand future earnings at risk

Step 3: Create corporate and societal value

42 Underground gold mine, Witwatersrand, South Africa 60

48 Brewery, Maharashtra, India 69

51 LDPE plastics plant, Texas, US 76

Holcim/Ambuja Cement Limited, India 83

05	AN AGENDA FOR CHANGE: accelerating progress towards a new vision of value	89	BIBLIOGRAPHY	106
			ACKNOWLEDGMENTS	110
			ABOUT KPMG'S TRUE VALUE SERVICES	114

FOREWORD

RECONNECTING WITH WHAT WE VALUE



John Veihmeyer
Global Chairman,
KPMG International

Companies have always created societal value in the course of doing business. They provide people with the goods and services they need. They contribute taxes to the economy. They create jobs and wealth, and by doing so, they have played a significant part in helping to lift hundreds of millions out of poverty.

Yet that positive contribution to society comes at a price. In the course of doing business, companies also draw on the natural resources of the planet and can have negative effects on people and the environment.

As a result, the role of business is increasingly being scrutinized, debated and challenged. This is happening all the more as the world globalizes and people become wealthier and more connected. As a business community, we need to be aware of this trend and respond to it.

We also need to be aware of the social and environmental megaforces at work, including our growing global population, the increasing scarcity of water and other resources, and changing weather patterns.

A company's creation, or reduction, of societal value increasingly has a direct impact on the drivers of its corporate

value, namely revenues, costs and risk. It is the phenomenon that we at KPMG describe as 'the disappearing disconnect' between corporate and societal value creation.

Berkshire Hathaway's Chairman Warren Buffet described it well in a recent company report: "Today our world is changing faster than ever before –economic, geopolitical and environmental challenges abound. A company must invest in the key ingredients of profitability: its people, communities and the environment."¹

Yet this investment entails far more than corporate philanthropy, CSR projects or 'green' initiatives—worthy and important though these may be. To do well in today's business environment, you increasingly have to measure, understand and proactively manage the value you create, or reduce, for society and the environment as well as for shareholders.

To do so, companies need to better understand their so called 'externalities'. That is because what was 'external' is rapidly being internalized, whether through regulation such as taxes or pricing, changing market dynamics including resource shortages, or more frequent and impactful stakeholder pressure.

¹ <http://www.jm.com/content/dam/jm/global/en/general-documents/sustainability/2011JMSustainabilityReport.pdf>
Retrieved 25 August 2014.



What executives need is a method to understand and quantify their externalities and the likelihood they will affect their company's earning capability and risk profile in the future.

As the old adage goes, what you can't measure, you can't manage. KPMG firms—with their experience in accounting, tax and other business advisory services—can help. In this report, we introduce a methodology, called KPMG True Value, to help businesses combine financial earnings data with monetized externality data and quantify the likelihood and potential impact of the latter coming to influence the former.

Ultimately, we need a standardized approach to measure societal value creation. While there is still work to be done, I believe we have broken new ground in providing a way for executives to better understand externalities and the opportunities and risks of internalization and to take more informed decisions that help build both corporate and societal value.

As corporate and societal value creation become increasingly interlinked, I hope this report provides executives with useful food for thought and a means to explore the implications for their own organizations.

INTRODUCTION: ABOUT THIS REPORT

Value creation is the goal of all companies, but corporate value creation is not always aligned with value creation for society as a whole.

Historically, externalities have had little or no impact on the cash flows or risk profiles of most companies. Companies have not been fully rewarded for their positive externalities and have also not paid for much of the damage they cause through negative externalities such as carbon emissions or the social effects of poor working conditions.

For this reason, externalities have been largely excluded from the measurement of corporate value. But this disconnect between corporate and societal value is disappearing.

Globalization, digital connectivity, the financial crisis, population growth, the explosion of the global middle class, climate change and other economic, social and environmental megafactors are transforming the operating landscape for business.

As a result, externalities are increasingly being internalized, bringing new opportunities and new risks with significant implications for corporate value creation in the 21st century. In short, externalities are now part of every company's value creation story.

Business leaders and investors need to understand these new dynamics and their consequences in order to unlock value creation opportunities. They need to identify and quantify externalities, recognize what is driving internalization, and understand the potential effects on corporate value. Equipped with this understanding they will be in a stronger position to develop effective response strategies that protect and create value, both for shareholders and for society.

Readers of this report will learn:

- how new regulations, growing stakeholder influence and changing market dynamics are driving the internalization of business externalities at an increasing rate
- how companies can protect and create both corporate and societal value in the age of internalization using the KPMG True Value methodology
- what is needed from investors, business leaders and policy makers in order to achieve closer alignment between the creation of corporate and societal value.





TERMS USED IN THIS REPORT

The following terms are used widely in this report. While there is a general understanding of these terms in the business and financial worlds, precise definitions vary and are debated. In this report, they are taken to mean the following:

CORPORATE VALUE

Shareholder value (i.e. market capitalization) and/or enterprise value (i.e. total business value)

SOCIETAL VALUE

Economic, social or environmental value created or reduced for society in the course of doing business

POSITIVE EXTERNALITY

An economic, social or environmental benefit that a company creates for society for which it is not directly or fully rewarded in the price of its goods and services

NEGATIVE EXTERNALITY

An economic, social or environmental cost that a company inflicts on society for which it does not directly pay a price

INTERNALIZATION

Processes through which a company's externalities become internalized (i.e. through which a company is more fully rewarded for the societal benefits it creates and/or pays for more of the costs it inflicts on society). Regulation, such as pricing, is one driver of internalization, with direct effects on corporate value creation. However, other interconnected factors, including stakeholder action and market dynamics, are also at work (see page 15).



A woman in a yellow sari is walking on a dirt path, carrying two large pots on a yoke across her shoulders. The path is dusty and leads towards a hill in the background. The scene is partially covered by a large orange diagonal overlay.

01

EXTERNALITIES: the age of internalization is here

Externalities have existed for as long as business itself. Throughout history, companies have both created benefits for society for which they have not been fully compensated (positive externalities) and have imposed costs on society for which they have not fully paid (negative externalities).

Yet, although externalities have always existed, they have (until relatively recently), not been included in considerations of corporate value creation in any systematic way. The reason for this is straightforward: it is simply because externalities have, for the most part, had little or no impact on the key drivers of corporate value: revenues, costs and risk. They have, in short, been external. Societal value creation and corporate value creation have been largely separate concepts.

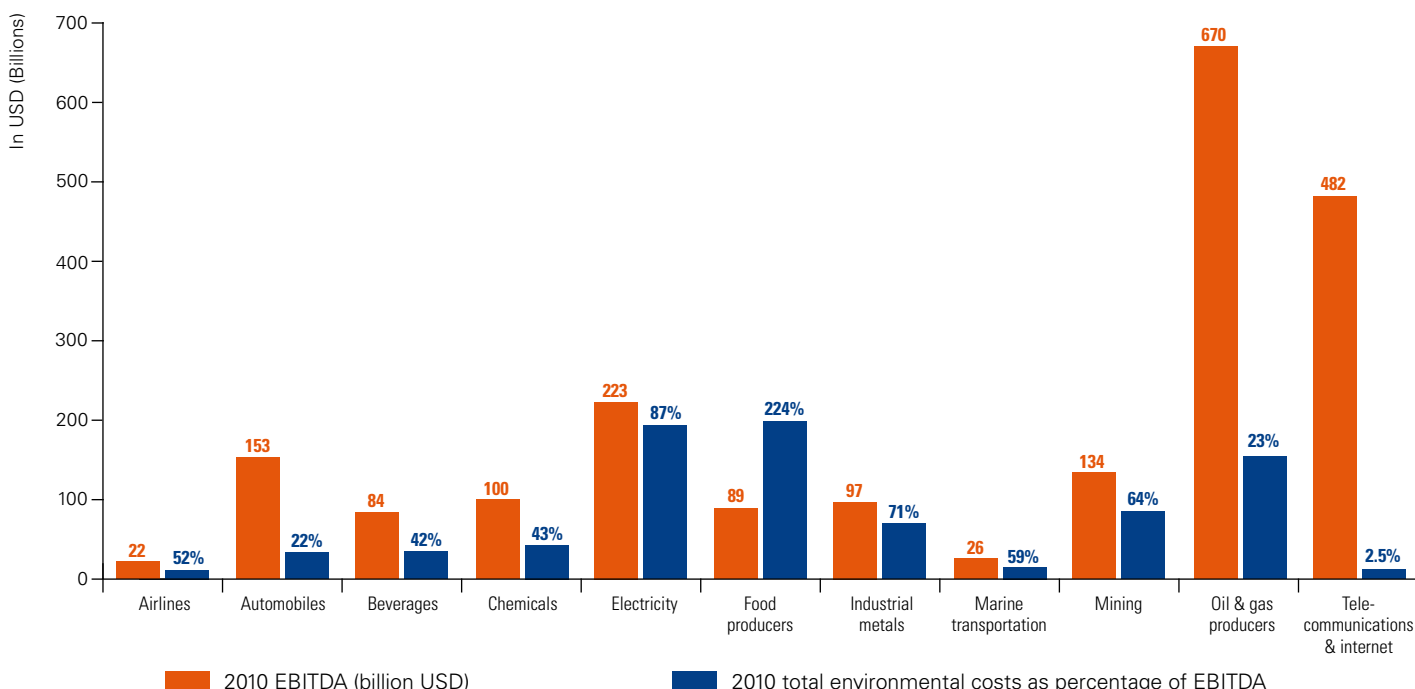
But this is changing for a number of reasons. Firstly, the effects of negative externalities such as pollution, carbon emissions and ecosystem damage are becoming impossible to ignore as

population growth and wealth growth drive consumption ever higher. An example of this is the extreme level of air pollution in many Chinese cities, which a senior Chinese scientist has described as being “at an unbearable stage”.¹

Secondly, public awareness and understanding of corporate externalities is growing as more information becomes available and that information, thanks to digital connectivity, spreads more widely and rapidly than ever before.

Public awareness is growing partly due to the growing number of studies that quantify corporate externalities. One of these is KPMG’s 2012 report *Expect the Unexpected*, which found that the cost of environmental damage caused by 11 key industry sectors in 2010 was equivalent to 41 percent of their pre-tax profits. Some sectors, such as food producers, would have no profits left if they had to pay the full cost of their negative environmental externalities and took no mitigating actions.² (See Figure 1).

Figure 1 / Negative environmental externalities across 11 sectors



Source: KPMG (2012). *Expect the Unexpected: building business value in a changing world*.

¹ <http://www.hngn.com/articles/25180/20140225/adviser-tells-china-to-cut-coal-use-air-pollution-on-unbearable-stage.htm>. Retrieved 21 July 2014.

² KPMG (2012). *Expect the Unexpected: building business value in a changing world*.



Thirdly, a number of factors are at work that are internalizing corporate externalities at a rapid rate. Companies are finding that by increasing their positive externalities and decreasing the negative they can actually grow revenues, cut costs and reduce risk.

These drivers of internalization include greater levels of regulation, which can offer financial incentives for companies to create positive externalities or impose direct costs on them for their negative externalities.

Actions taken by stakeholders such as workers, communities, NGOs and consumers over negative corporate externalities are also becoming more frequent, high profile and impactful. Such actions can have direct implications for cash flows and risk and as a result are driving more companies to look closer at their externalities and how they can be managed better.

Market dynamics, such as changing operating environments, resource pressures and market disruptions are also bringing new opportunities and risks related to externalities.

These drivers of internalization have always existed. What is different today is that companies are seeing a rapid

acceleration and intensification of these drivers on multiple fronts.

This trend means that companies in all sectors are finding that their externalities have increasing implications for their corporate value creation. The disconnect between corporate value and societal value is disappearing.

In the following section of this report we analyze the drivers of internalization in more depth. (See page 15).

We then go on to present a practical approach that businesses, and their investors, can use to understand their externalities, anticipate the effects of internalization on corporate value and develop response strategies that protect and build corporate value while also enhancing societal value creation. (See page 39).

We conclude the report by exploring how the current dynamics between companies, their investors, policy makers and society are holding back alignment between corporate and societal value creation and what can be done to accelerate progress. (See page 89).

EXTERNALITIES THROUGHOUT THE VALUE CHAIN

All companies create externalities, both positive and negative, at all points in their value chain: upstream in their supply chain, through their own direct operations and downstream through the use and disposal of their products and services.

The example in Figure 2 illustrates - in simple terms - some of the externalities that could be created by an electronics company that sources electronic components from suppliers, assembles them into devices such as tablets, laptops and mobile phones and then sells them on to retailers and institutions such as schools and hospitals.

Supply chain (upstream)

The company might create positive externalities by buying components made with metals that have been recycled from discarded mobile phones that would otherwise have gone to landfill. At the same time, it might create negative externalities if its suppliers' factories discharge hazardous chemicals that affect the health of local communities.

Company operations

Positive externalities would be created if the company invests in education and training for its workforce, thereby creating a more skilled society. Negative externalities would be created if workers were injured in accidents on the assembly line.

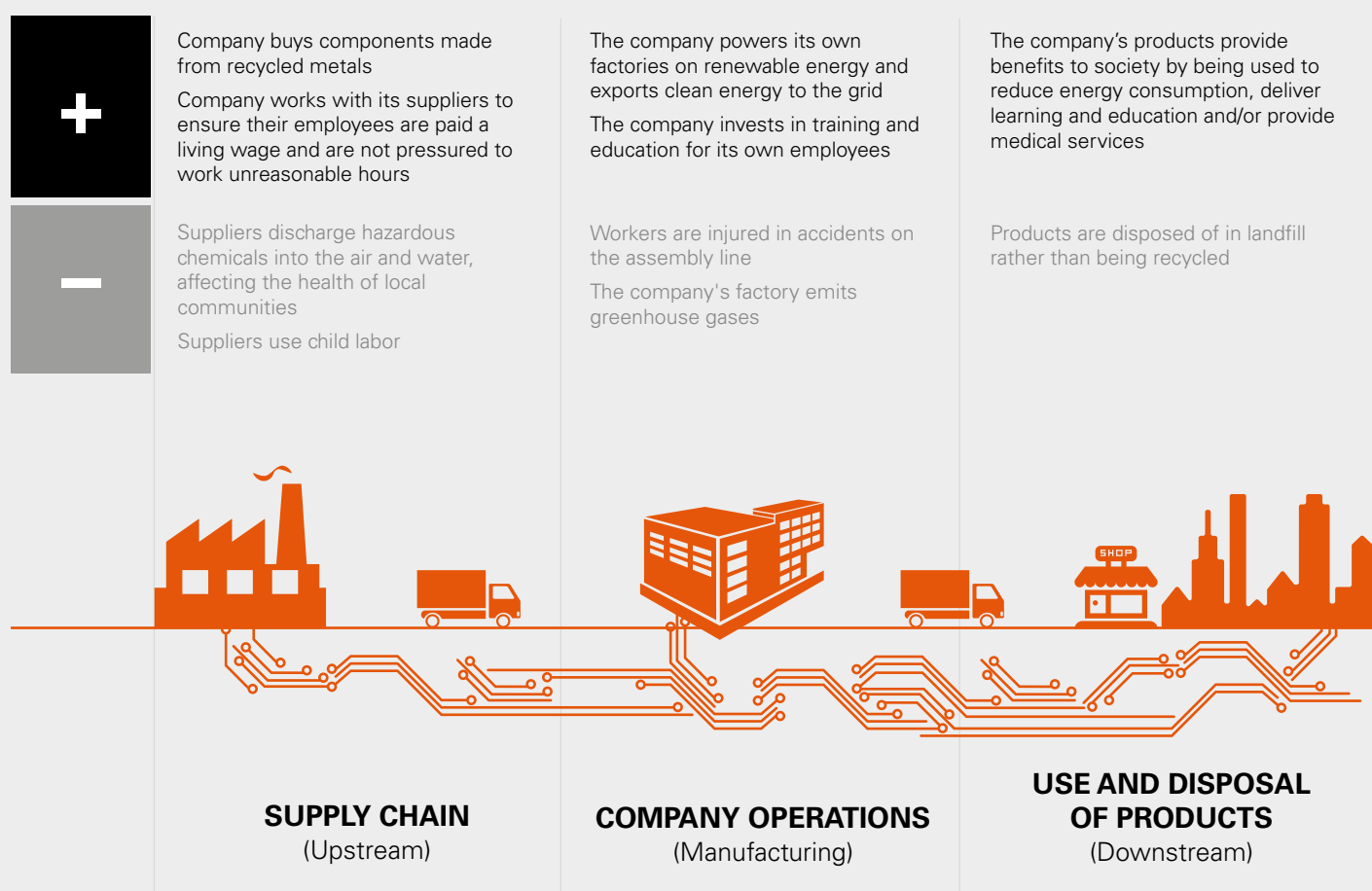
Use and disposal of products (downstream)

The company's products could create positive externalities, for example: if they were used for energy efficiency, education and learning or medical purposes. On the other hand, if the devices the company manufactures are disposed of in landfill sites rather than being recycled, this would create negative externalities because of the detrimental effects on land use and potential ground and water pollution.

A more in-depth discussion of one of the externalities of the electronics industry can be found in KPMG's 2013 report *Business case analysis for responsible electronics manufacturing*, which analyzes the business case for investing in improving working conditions in the electronics manufacturing industry in the Pearl River Delta, China.¹

¹ KPMG, IDH and INFAC (2013). *Business Case Analysis for Responsible Electronics Manufacturing*. The report can be downloaded from kpmg.com/sustainability

Figure 2 / Externalities throughout the value chain: example of electronics manufacturer



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation*.
 Icon source: Freepik, font generated by flaticon.com under CC BY.





02

THREE KEY DRIVERS:

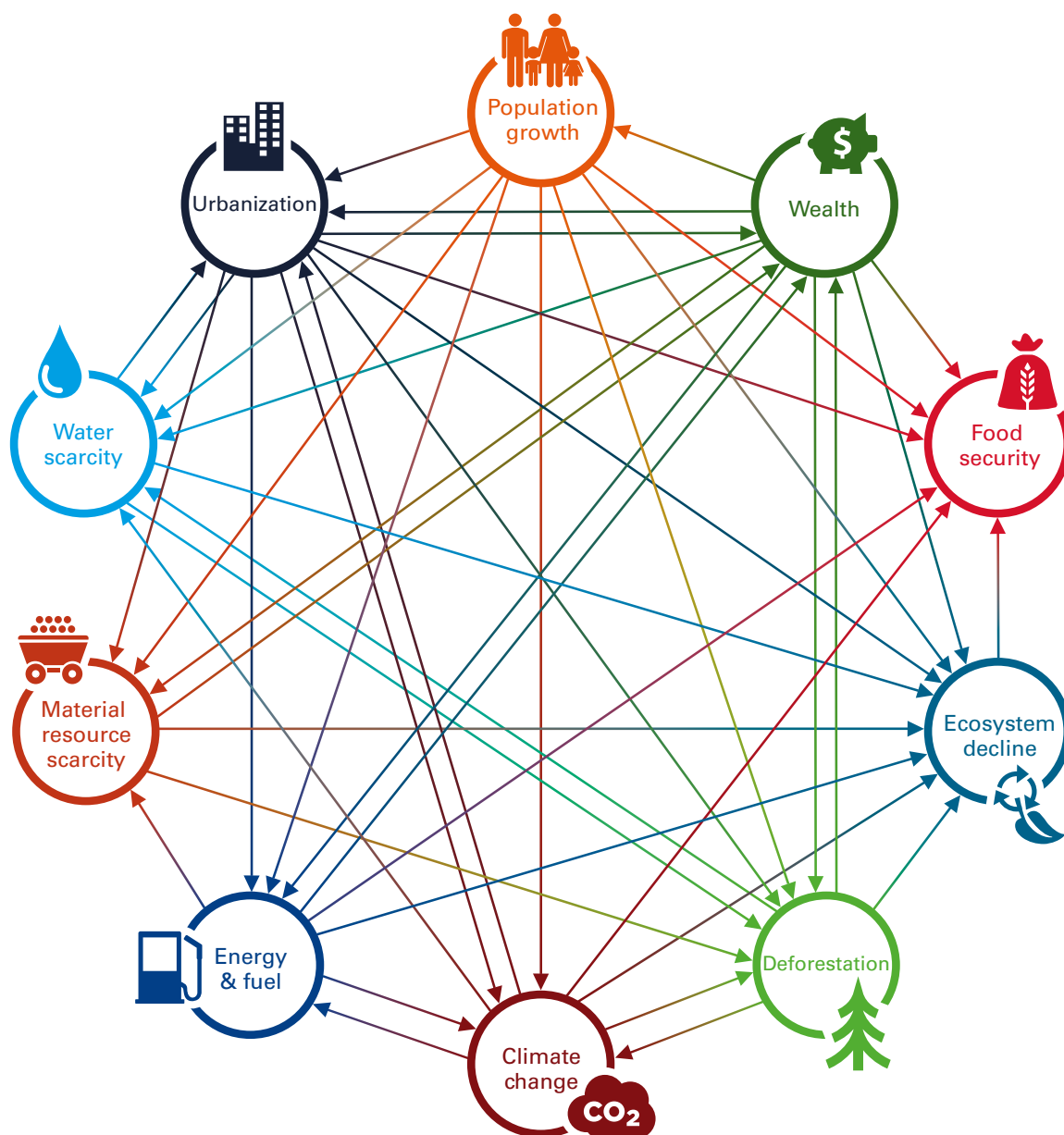
increasing the rate
of internalization

Companies today are seeing an acceleration in the rate and intensity of internalization with direct implications for the cash flows and risk profiles that drive corporate value creation.

Underlying this trend is the system of social and environmental megaforces that KPMG introduced in its 2012 report *Expect the Unexpected: building business value in a changing world*.

The global population is not only growing rapidly but is also increasingly affluent and urban. This pattern is driving the consumption of energy, fuel and other resources ever higher and resulting in scarcity challenges around food, water and material resources. At the same time, the climate is changing, ecosystems are declining and forests are disappearing. The impacts of this complex and interconnected system of megaforces have significant implications for the entire global community and, specifically, for businesses. (See Figure 3).

Figure 3 / Interconnected system of social and environmental megaforces



Source: KPMG (2012). *Expect the Unexpected: building business value in a changing world*.



Social and environmental megaforces do not function in isolation from each other or in predictable ways. They act as a complex and unpredictable system, feeding, amplifying or ameliorating the effects of others. Figure 3 shows just some of the relationships between the megaforces.

While the megaforces are the underlying cause of much internalization, the actual drivers of internalization fall into three broad categories:

1. REGULATIONS & STANDARDS:

such as government legislation, tax instruments and pricing mechanisms. A growing number of reporting and disclosure regulations and certification standards are also increasing corporate transparency, which is driving internalization indirectly.

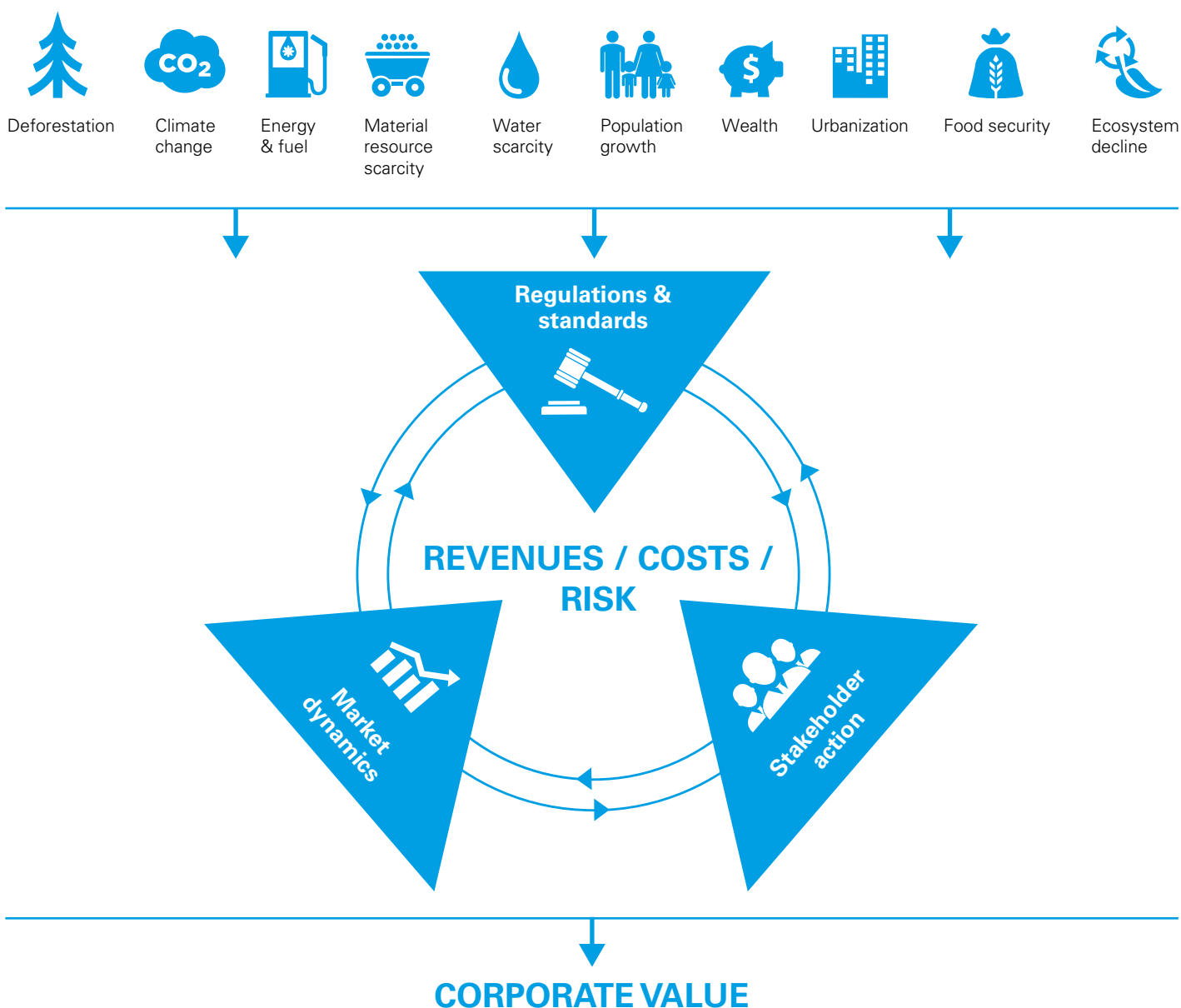
2. STAKEHOLDER ACTION:

awareness of corporate externalities is growing and stakeholders - such as NGOs, civil society groups, communities and workers - are increasingly acting to protect their interests.

3. MARKET DYNAMICS:

resource scarcity, extreme weather events and new or transformed markets are driving internationalization by disrupting historical patterns of supply and demand.

Figure 4 / Three drivers of internalization



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation.*

Negative externalities are generally internalized more directly than positive ones, often through regulatory action prompted by stakeholders who have a direct interest in making companies pay for their negative externalities.

While internalization can bring risks to corporate value creation such as decreased earnings, higher costs of

capital and reduced license-to-operate, there are also opportunities to create value, for example, through increased revenues or decreased costs. Businesses that anticipate new regulations, stakeholder actions and market dynamics will invest ahead of the curve to benefit from reduced risk exposure and potentially higher earnings as a result.

THE DRIVERS OF INTERNALIZATION ARE INTERCONNECTED

Just as the megaforges underlying them are interconnected, so are the three drivers of internalization. For example, stakeholder pressure (such as public protest) can encourage regulators to create or strengthen legislation which, in turn, changes market dynamics. Market dynamics (such as

resource shortages) can trigger stakeholder pressure such as community unrest, which can prompt authorities to legislate. Figure 5 illustrates the interconnections between the drivers of internalization in the cocoa and chocolate sector.

DRIVERS OF INTERNALIZATION IN THE COCOA AND CHOCOLATE SECTOR

Some cocoa production has been criticized for its negative externalities. When chocolate companies pay low prices for cocoa, it can increase the likelihood that farmers will use child labor to cut costs and stay in business.

Low incomes can also prevent farmers from investing in soil quality, replacing old trees and tackling pests and diseases, which in turn reduces productivity. Over the past 15 years, however, action has been taken, driven by the interplay between the three drivers of internalization:

1) Stakeholder action: NGOs, the media and government organizations have called for chocolate manufacturers and traders to remove child labor from their cocoa supply chains. This stakeholder action has led to government regulations and industry-wide initiatives to improve sourcing practices and invest in cocoa certification schemes.

2) Regulations and standards: The Harkin-Engel protocol was introduced in the US in 2001 as a response to stakeholder pressure and required companies to use external standards to mitigate the use of child labor in the cocoa supply chain.¹ This was followed in 2012 by the Abidjan declaration, a roadmap of action, agreed to by governments

of cocoa-producing countries, major confectionery companies and cocoa traders.²

Independent certification standards have also emerged, creating internationally-accepted guidelines for sustainable cocoa production. Many manufacturers have committed to use only certified cocoa in the future.

3) Market dynamics: Megaforce effects on market dynamics are also prompting confectionery companies to address the externalities of cocoa production. Climate change threatens to reduce cocoa supply from key producing countries at the same time as population growth and increasing wealth boost global demand.³

Some companies fear that cocoa may become a scarce raw material and business continuity may be threatened as cocoa prices soar.⁴ These dynamics are one reason why companies are investing USD800 million in improving farmer productivity and embedding sustainable production practices.⁵

1 <http://responsiblecocoa.com/about-us/the-harkin-engel-protocol>. Retrieved 25 August 2014.

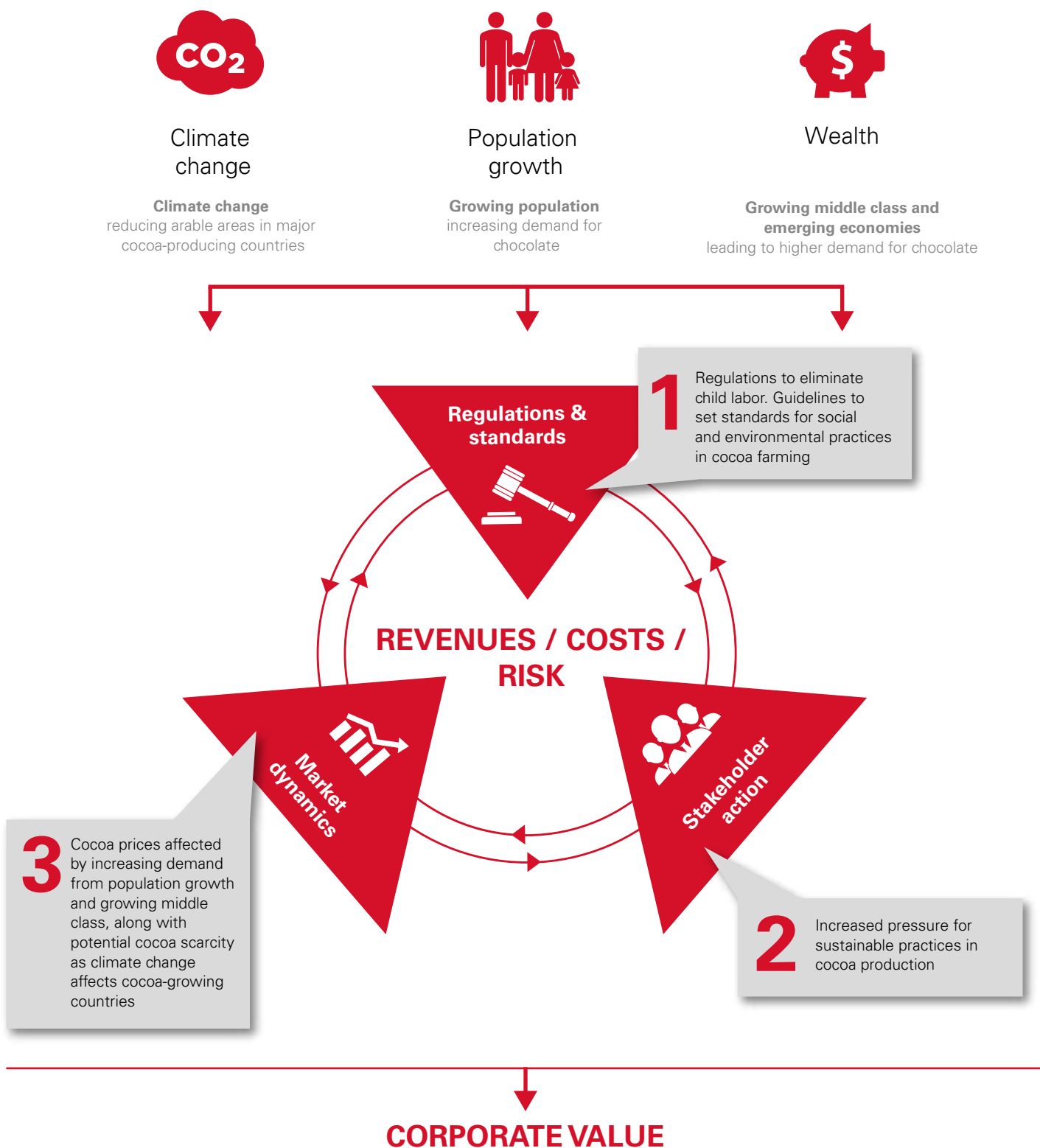
2 <http://www.icco.org/about-us/icco-news/206-abidjan-declaration-climaxes-the-world-cocoa-conference.html>. Retrieved 25 August 2014.

3 The Climate Change, Agriculture & Food Security Partnership and the International Center for Tropical Agriculture (2011). *Predicting the impact of climate change on the cocoa-growing regions in Ghana and Côte d'Ivoire*.

4 <http://www.confectionerynews.com/Commodities/Cocoa-shortage-by-2020-unless-industry-acts-now-warns-Mars>. Retrieved 30 July 2014.

5 KPMG (2014). *A Taste of the Future: the trends that could transform the chocolate industry*.

Figure 5 / Drivers of internalization in the cocoa sector



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation.*

REGULATIONS & STANDARDS

Legislation and other forms of regulation – such as industry self-regulation – increasingly require companies to pay more of the costs they impose on society (negative externalities) and also improve the rewards companies receive for providing benefits to society (positive externalities).

Table 1 / Key types of regulations and standards driving internalization

DRIVERS OF INTERNALIZATION	EXPLANATION	EXAMPLE
Government regulations and product standards	National, regional or local regulations and industry-specific performance standards designed to change corporate behavior	Laws that limit branding and promotion of tobacco products Product standards such as energy efficiency standards for appliances and emissions standards for cars
Pricing	Mechanisms that put a direct cost on negative externalities	Carbon pricing mechanisms
Subsidies	Removal of subsidies that support the creation of negative externalities or the introduction of subsidies which incentivize the creation of positive externalities	Removal of fossil fuel subsidies
Taxes	Fiscal incentives that encourage positive externalities, penalties that discourage negative externalities	Tax incentives for renewable energy or electric vehicles
Disclosure regulations	Requirements for companies to be transparent about their value creation	Reporting requirements on conflict minerals in the US
Certification standards	Industry collaboration and voluntary action to address externalities and improve societal value creation	The Roundtable on Responsible Palm Oil



Government regulations and product standards

New forms of regulation aimed at increasing societal value can impact a company's capability to create corporate value, for instance, by requiring companies to change the way they make or sell products or how they re-invest their profits. Recent examples include:

- a requirement by the Indian Government for all large companies, irrespective of sector, to invest in corporate social responsibility (CSR) programs. The 2013 Companies Act mandates companies to reinvest 2 percent of after-tax profits on CSR⁶
- a potential ban on the advertising of alcohol products in South Africa where the Cabinet has approved a draft bill. The public health costs of alcohol-related harm in South Africa have been estimated at approximately ZAR38 billion (USD3.5 billion) a year⁷
- a requirement in Australia for tobacco products to be sold in plain packaging without branding. Ireland has announced its intention to be the second country to implement this policy and the governments of New Zealand, France and the UK have also signaled that similar laws will be introduced.^{8,9}

These types of regulations have clear implications for corporate value creation in the food, beverage and tobacco industries, potentially cutting revenues and increasing risk as well as changing the nature of products, markets and reputations.

Industry-specific performance standards, such as standards for vehicle CO₂ emissions or the energy performance of buildings, are also proliferating.

Pricing

Pricing mechanisms are the most direct, and perhaps most familiar regulatory driver of internalization. When there is a direct price on a negative externality, companies have no choice but to internalize the cost of that externality, at least in part.

Carbon pricing, for example, was once limited to a handful of Western-European countries, but has spread to become an international policy tool. Carbon pricing mechanisms, whether trading systems or taxes, now cover around 20 percent of the world's emissions and will cover approximately 50 percent if China, Brazil, Chile and other emerging economies go ahead with their proposals.¹⁰

6 <http://www.mondaq.com/india/x/302204/Corporate+Commercial+Law/Corporate+Social+Responsibility+Now+A+Mandated+Responsibility>. Retrieved 21 July 2014.

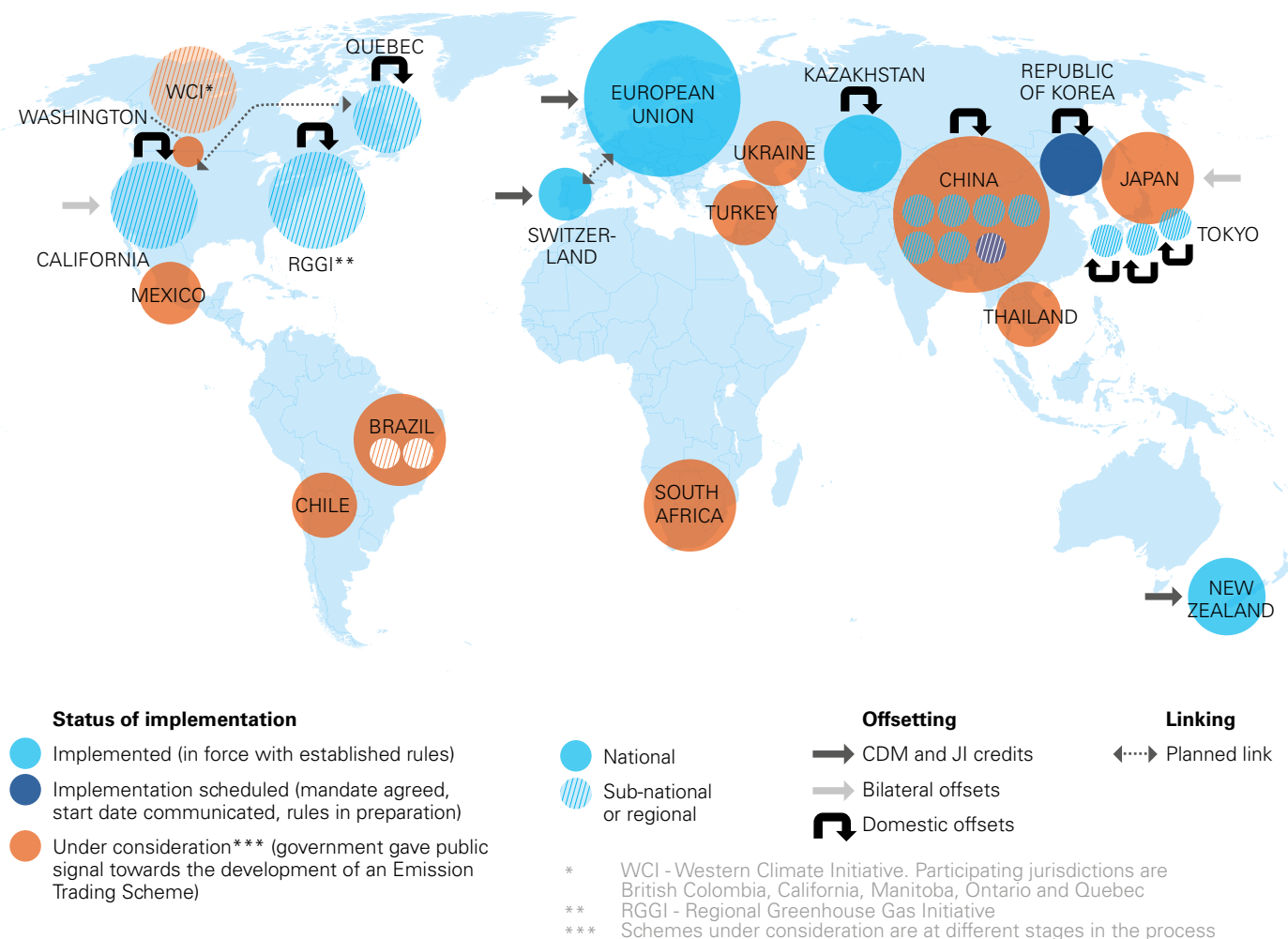
7 <http://www.bdlive.co.za/national/health/2013/12/24/departments-to-assess-effects-of-mooted-alcohol-ad-ban>. Retrieved 15 June 2014.

8 www.theguardian.com/society/2014/jun/26/plain-cigarette-packaging-regulations-announced. Retrieved 10 June 2014.

9 <http://health.gov.ie/blog/press-release/minister-reilly-aims-for-a-tobacco-free-ireland-by-2025>. Retrieved 10 June 2014.

10 Carbon Finance at the World Bank. 2013. *Mapping Carbon Pricing Initiatives*. This estimate does not reflect the repeal of Australia's carbon tax in July 2014.

Figure 6 / Map of existing, emerging and potential emissions trading schemes



Source: World Bank Group and Ecofys (2014). *State and Trends of Carbon Pricing 2014*.

Pricing is also increasingly used as a tool to address water scarcity. Mechanisms include direct cost increases or indirect methods such as restrictions on permits for water withdrawal, which in turn increase water costs. Examples include a recently-introduced pricing system in China's water-stressed capital, Beijing, that puts the greatest cost burden on businesses and industrial users of water. Funds generated through the Beijing pricing system are channeled into city-wide water efficiency programs.¹¹

The European Union is also exploring water pricing in the agricultural sector, which accounts for approximately one-quarter of all water use in the EU and up to 80 percent in the drier southern EU states.¹² Given predicted levels of global

water scarcity, it is likely that further water pricing mechanisms will be introduced around the world and that businesses will increasingly be required to pay more of the cost of using scarce water resources.¹³

11 <http://www.reuters.com/article/2014/04/29/china-environment-water-idUSL3N0NL3ZN20140429>. Retrieved 1 May 2014.

12 http://ec.europa.eu/environment/water/quantity/water_agri.htm. Retrieved 20 April 2014.

13 The Water Resources Group (2012). *Background, Impact and the Way Forward*. If current trends continue, by 2030 increasing water scarcity could cause annual grain losses equivalent to 30 percent of current world consumption.

Subsidies

Businesses in some sectors have traditionally been protected from bearing the cost of negative externalities by government subsidies. Removing subsidies has a direct impact on corporate value creation as businesses have to operate in less favorable financial conditions.

In some sectors where externalities can be high, such as the oil sector, businesses have had their value to society distorted by subsidies, although such subsidies have also helped to protect vulnerable consumers from the full price of energy or fuel.

Worldwide, subsidies for the production and consumption of fossil fuels were estimated to be USD544 billion in 2012.¹⁴ However, governments around the world are now beginning to remove fossil fuel subsidies: in 2009, leaders of the G20 agreed to phase them out and a number of countries including Brazil, France and India have already taken action to do so.^{15,16} This has implications for oil and gas companies as they may lose government funding that currently lowers the cost of production and the cost of energy for consumers.

Subsidies can also drive the creation of positive externalities. For example, the feed-in-tariff policy, a form of subsidy first introduced in 1990, has led to significant growth of renewable energy in countries like Germany. The tariff incentivizes energy producers to invest in renewable technology, such as solar and wind power, and is thought to have played a significant part in Germany reaching the point of generating 27 percent of its energy needs from renewables in the first quarter of 2014.¹⁷

Taxes

Governments worldwide are increasingly using tax incentives and penalties to encourage positive corporate externalities and discourage negative ones, for example, there are some 200 green tax incentives and penalties in place across 21 countries, according to the KPMG *Green Tax Index 2013*.¹⁸

Examples of tax incentives and penalties that address corporate externalities include:

- a groundbreaking 10 percent tax on sugar-sweetened beverages in Mexico, which can be seen as an attempt by the government to tackle the negative externality of public health problems. Around one-third of the population in Mexico is obese and 14 percent of the population has diabetes¹⁹
- the US wind energy production tax credit (PTC), which has been widely credited with playing a key role in the development of the US wind energy industry by improving the returns for investors and enabling wind power to compete in the market. Between 1992, when the PTC was first implemented, and the end of 2011, US wind power capacity grew 30-fold to account for 4 percent of the country's total power generation capacity²⁰
- the landfill tax in the UK, introduced in 1996, which puts a price per ton on material sent to landfill. It has been credited with achieving a 38 percent reduction in waste to landfill by 2013 and increasing UK recycling rates from 7 percent to 43 percent in the same period.²¹

Disclosure regulations

Worldwide there is an increasing amount of regulation that requires companies to be more transparent about their societal value creation. While this does not directly drive internalization of externalities, it does make it easier for stakeholders to scrutinize corporate externalities, which can in turn encourage companies to address them.

A 2013 study by the Global Reporting Initiative (GRI), in collaboration with KPMG and other partners, identified 180 corporate responsibility reporting initiatives across 45 countries. Close to three-quarters of these (72 percent) are mandatory, a significant increase since 2006 when 58 percent of reporting policies were mandatory.²²

An important example of new disclosure requirements is the EU Commission's directive on non-financial reporting, adopted in April 2014. It requires nearly 6,000 public entities (both listed and non-listed) to report on environmental, social, employee and human rights issues.²³

14 International Energy Agency *World Energy Outlook*. (2013).

15 <http://www.reuters.com/article/2009/09/26/us-g20-energy-idUSTRE58018U20090926>. Retrieved 17 July 2014.

16 <http://www.iisd.org/gsi/analysis-g-20-and-apec-progress>. Retrieved 17 July 2014.

17 <http://thinkprogress.org/climate/2014/05/13/3436923/germany-energy-records>. Retrieved 29 July 2014.

18 KPMG (2013). *The KPMG Green Tax Index 2013*.

19 <http://www.theguardian.com/world/2014/jan/16/mexico-soda-tax-sugar-obesity-health>. Retrieved 10 June 2014.

20 KPMG (2013). *The KPMG Green Tax Index 2013*.

21 <http://www.businessgreen.com/bg/opinion/2257821/lessons-from-the-quiet-success-of-the-landfill-tax>. Retrieved 29 July 2014.

22 KPMG, UNEP, Global Reporting Initiative and Unit for Corporate Governance in Africa (2013). *Carrots and Sticks: sustainability reporting policies worldwide*.

23 The directive was adopted on 15 April 2014 and requires companies to report on their 'environmental, social and employee related matters, respect for human rights, anti-corruption and bribery matters'. See here for more details: http://ec.europa.eu/internal_market/accounting/non-financial_reporting/index_en.htm. Retrieved 2 May 2014.



Disclosure regulations sometimes focus on specific elements of societal value creation. For example, the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act requires US companies to report whether or not their products contain minerals sourced from conflict-ridden areas in Africa. As a result, many US companies have disclosed information and taken action. These include Hewlett-Packard, which published a list of smelters in its supply chain and has committed to achieve a conflict-free supply chain, and Intel which, in 2013, announced that all its microprocessors were produced with conflict-free minerals.^{24,25}

Certification standards

Businesses, industry organizations and NGOs have initiated voluntary certification schemes as a form of self-regulation. Examples include:

- the Roundtable on Sustainable Palm Oil (RSPO), which started in 2004 to promote sustainable palm oil production; since the standard for sustainable palm oil was set in 2007, significant progress has been made, with more than 9 million tons of palm oil, or 14 percent of the world's total production, certified sustainable²⁶
- the Electronic Industry Citizenship Coalition (EICC), which sets responsible supply chain standards for its members, requiring electronics companies to protect the wellbeing of workers, communities and the environment²⁷
- the Forest Stewardship Council (FSC), which brings together 800 global businesses, NGOs, forest owners and managers, and timber processing companies to promote responsible forest management; around 180 million hectares, equivalent to 7 percent of the world's forested area, are FSC certified²⁸
- the Marine Stewardship Council (MSC), which promotes sustainable fishing practices with certified standards; almost 200 fisheries have been certified to the MSC standard, representing 7 percent of wild caught seafood worldwide.²⁹

24 <http://www.triplepundit.com/2013/04/hps-conflict-free-supply-chain-initiative-industry-first/>. Retrieved 10 May 2014.

25 <http://www.bbc.com/news/technology-25636001>. Retrieved 2 May 2014.

26 <http://www.panda.org/?206572/RSPO-has-much-to-celebrate-much-to-do-at-critical-10th-Anniversary-meeting>. Retrieved 15 June 2014.

27 <http://www.eiccoalition.org/>. Retrieved 31 July 2014.

28 <http://www.greenpeace.org/international/en/campaigns/forests/solutions/alternatives-to-forest-destruction/>. Retrieved 15 June 2014.

29 <http://www.msc.org/documents/msc-brochures/annual-report-archive/annual-report-2012-13-english>. Retrieved 15 June 2014.

STAKEHOLDER ACTION

With the advent of digital technology and social media, people are more aware of what companies are doing and have channels through which to voice their opinions and take action. Furthermore, as wealth and living standards increase, people feel more empowered to stand up for their own interests. Other social trends, such as plummeting trust in business and increasing anger over financial inequality, are also increasing public scrutiny of companies.

As a result, many companies are responding to stakeholder action by doing more to understand and address their externalities and societal value creation.

Table 2 / Key stakeholder groups driving internalization

DRIVERS OF INTERNALIZATION	EXPLANATION	EXAMPLE
Workers	Worker action to protect rights, wages, safety and working conditions	Labor disputes that have halted production, for example, in the mining sector
Communities	Communities protest against business operations, new developments or socially unacceptable business practices	Community protests that have forced companies to abandon planned projects; consumer boycotts
NGOs & civil society	NGOs mobilize mass action to bring about corporate behavior change	International campaigns targeting sectors including oil & gas, apparel, timber, paper and fisheries
Buyers	Corporate buyers exert pressure on suppliers to improve social and environmental policies	Proliferation of supplier requirements related to societal value, supported by auditing programs

Workers

Labor disputes and resulting production stoppages can be costly. Recent examples include:

- a five-month strike in 2013/14 by platinum miners in South Africa over wages and benefits: the action cost three major mining companies more than USD2 billion in lost revenue and affected 45 percent of the global platinum supply, according to reports.^{30,31}
- a 2013 campaign to raise the minimum wage in the US retail and fast food sectors.

Companies that support their workers have an opportunity to enhance their reputation and increase employee engagement which has been found to result in improved workforce satisfaction, higher levels of customer service and increased revenues. Starbucks, for example, pays for a large proportion of its employees to attend distance learning courses and ultimately earn college degrees.³²



Communities

Social license-to-operate is crucial to the creation of corporate value. A business is not an island: community protest can cut production, prevent projects from going ahead and deter investors from providing capital. Examples of community action affecting corporate value creation include:

- a 2013 protest in Romania against proposals to open Europe's largest open-pit gold mine, which constituted the biggest civil movement in Romania since the 1989 revolution that overthrew the communist regime; thousands of people demonstrated against the relocation of families, loss of ecosystems and use of cyanide in the extraction process. In November 2013, Romania's parliament rejected revisions to the mining law that would have permitted the mine.³³
- in China, reports of community protests against industrial development have become increasingly common. One of the latest examples is the shelving of plans for a large-scale waste incinerator in Yuhang after protests by local people turned violent.³⁴ It has been reported that there are some 90,000 protests each year in China over corruption, pollution, illegal land grabs and other grievances.³⁵

Investing in projects that strengthen social license-to-operate creates positive externalities which can be internalized not only through reduced risk but also through strengthened brand value and increased customer and employee loyalty.

30 <http://online.wsj.com/articles/south-africa-platinum-strike-continues-as-union-rejects-latest-offer-1401867774>. Retrieved 6 June 2014.

31 <http://www.bbc.com/news/business-27981977>. Retrieved 10 June 2014.

32 <http://chronicle.com/article/Starbucks-Will-Send-Thousands/147151/>. Retrieved 6 June 2014.

33 <http://www.independent.co.uk/news/world/europe/gabriel-resources-gold-plans-suffer-setback-as-romanian-parliament-rejects-mining-law-8999817.html>. Retrieved 6 June 2014.

34 <http://www.reuters.com/article/2014/05/11/us-china-protests-idUSBREA4904320140511>. Retrieved 6 June 2014.

35 <http://www.reuters.com/article/2014/05/10/us-china-protests-idUSBREA4904320140510>. Retrieved 21 July 2014.

NGOs and civil society

NGOs and civil society campaigners are increasingly pressuring companies to address their externalities and improve their societal value creation. Often, campaigners seek to influence other stakeholders, such as consumers or regulators, in order to mobilize public opinion. Examples of civil society action with implications for corporate value creation include:

- in recent years NGOs have encouraged IT and internet companies to power their data centers with renewable energy. A number of the best known technology, social networking and internet search brands have since made significant commitments in that direction³⁶
- a 2013 campaign against a number of corporations that had been criticized for avoiding taxes on British sales³⁷
- pressure from NGOs as well as communities, unions, governments and progressive peers led to more than 100 global apparel brands signing a legally-binding agreement to improve worker safety in Bangladesh, following the tragic collapse of the Rana Plaza factory in 2013.³⁸



Buyers

Buyers at many global brands are responding to pressure from civil society and governments by introducing requirements for their suppliers to address their own externalities. Many are increasing their monitoring of supplier compliance with social and environmental policies and working closely with their suppliers to help them improve. Efforts are going deeper into the supply chain, beyond primary suppliers to suppliers of raw materials at the start of the value chain. Examples include:

- IBM has required first-tier suppliers to establish social and environmental management systems and to cascade this requirement to their suppliers³⁹
- Hewlett-Packard has implemented a Supply Chain Responsibility (SCR) program that requires its suppliers to meet strict social and environmental criteria and an audit program to assess supplier progress⁴⁰
- buyers in some sectors work together to set consistent expectations for suppliers' social and environmental performance; these initiatives include the Electronic Industry Citizenship Coalition (EICC), the Pharmaceutical Supply Chain Initiative (PSCI) and Together for Sustainability (Tfs), the chemical industry's initiative for sustainable supply chains.

36 <http://greenpeaceblogs.org/2014/04/01/9-victories-greener-internet>. Retrieved 26 August 2014.

37 <http://www.bbc.co.uk/news/magazine-20560359>. Retrieved 29 July 2014.

38 <http://www.nytimes.com/2013/05/14/business/global/hm-agrees-to-bangladesh-safety-plan.html>. Retrieved 6 June 2014.

39 <http://www.ibm.com/ibm/environment/supply/evaluations.shtml>. Retrieved 29 July 2014.

40 <http://www8.hp.com/us/en/hp-information/global-citizenship/society/supplychain.html>. Retrieved 29 July 2014.

MARKET DYNAMICS

Market dynamics can be seen as drivers of internalization in that they offer companies financial incentives to increase their positive externalities and reduce their negative ones. For example, companies can profit by tapping into new markets for products and services that create societal value, such as low-carbon technologies. At the same time, market dynamics such as commodity scarcity are increasing the cost to companies of behavior that reduces societal value. Some companies are anticipating these market dynamics and investing ahead of the curve to develop new markets and gain competitive edge. They are also addressing their own negative externalities to reduce exposure to legislation, stakeholder action and commodity price rises. In effect, the opportunities and risks of these market dynamics are encouraging companies to internalize their own externalities.

Table 3 / Key market dynamics driving internalization

DRIVERS OF INTERNALIZATION	EXPLANATION	EXAMPLE
Scarcity & pricing	Many commodities are increasingly scarce, which affects corporate profitability as prices rise or production is halted because key inputs are unavailable	Megaforces including water scarcity and climate change can affect supplies of crop-based commodities such as grain and cotton; population growth and wealth increase demand for commodities of all kinds, putting stress on supply
Extreme weather	More frequent occurrences of extreme weather can impact company operations and disrupt supply chains and distribution networks	Storms and floods can put production facilities out of action
New markets	The need to increase positive and reduce negative externalities, along with the increasing scarcity of resources, is giving rise to markets for new products and services	New markets are developing for products that use energy and resources more efficiently and improve quality of life in a changing world



Scarcity & pricing dynamics

As commodities become more scarce, companies can struggle to secure the supplies they require to satisfy customer demand and supplies that are available are inevitably more expensive. This market dynamic has clear implications for corporate value creation.

The supply of some agricultural commodities will face particular pressure in coming years. Global crop production needs to double within the next generation to satisfy increasing demand for food and biofuels.⁴¹ At the same time, the climate change megaforce is increasing uncertainty in terms of both supply and price for many key agricultural inputs, such as soy and sugar.⁴² The water scarcity megaforce

is also affecting commodities, including sugar and cotton. Sugar is especially susceptible to drought and global sugar prices reached a 28-year high in 2010, partly because drought in India had drastically reduced yields in previous years.⁴³

Beyond agricultural commodities, there are scarcity issues around some minerals and metals. For example, there is a high risk of shortages of rare earth metals used in the manufacturing of low-carbon technologies. One of these metals, dysprosium, is in especially high demand, with the EU alone expected to require 25 percent of predicted world supply to 2030 to meet its demand for hybrid and electric vehicles and wind turbines.⁴⁴

41 Ray, D.K. et al (2013). *Yield Trends Are Insufficient to Double Global Crop Production by 2050*. PLoS ONE, 8(6).

42 Intergovernmental Panel on Climate Change (2013). *Climate Change 2013: Summary for Policymakers*.

43 Ceres (2010). *Murky Waters? Corporate reporting on water risk*.

44 http://ec.europa.eu/dgs/jrc/index.cfm?id=1410&dt_code=NWS&obj_id=18230&ori=RSS. Retrieved 2 May 2014.

SCARCITY IN ACTION: MARKET DYNAMICS OF WILD FISH

Companies and health organizations alike have been promoting the health benefits of omega-3 fatty acids for many years, with the result that consumer demand for products containing omega-3s is increasing by 7 percent every year.⁴⁵

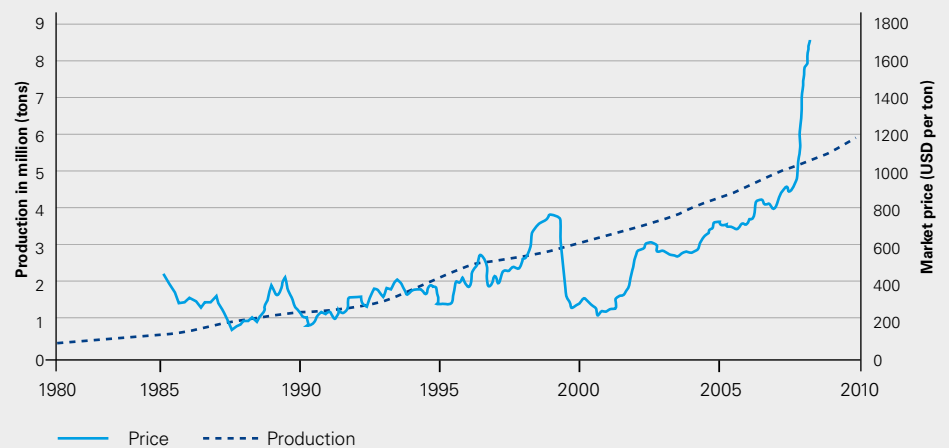
Fish oil from wild-caught fish is the main source of omega-3s, accounting for over 80 percent of worldwide production. Until recent years, inexpensive wild fish species were abundant but as the wild fish stock becomes over-exploited, supply is struggling to keep up with demand and prices spike.⁴⁶

As a result, fish oil containing omega-3s could become an economically unviable input for many products, presenting a financial risk to companies who currently produce and market omega-3 products. This can be seen as the

internalization of the negative externality of the over-exploitation of fish stocks.

Conversely, the scarcity situation and resulting price effects offer value creation opportunities for companies that develop secure supplies of alternatives to omega-3 that can satisfy current consumption levels and future demand. This can be seen as internalization of the positive externalities of the public health effects of the product and the reduction in the negative externality of the over-exploitation of fish.

Figure 7 / Market dynamics in action: wild fish production and price



Source: World Ocean Review (2013). *World Ocean Review 2: The Future of Fish – the fisheries of the future*

⁴⁵ <http://www.nutraingredients.com/Consumer-Trends/GOED-chairman-Serious-omega-3-supply-issues-lie-ahead-as-demand-rockets>. Retrieved 2 May 2014.

⁴⁶ World Ocean Review (2013). *World Ocean Review 2: The Future of Fish – The Fisheries of the Future*.

Extreme weather

The impacts of increasing extreme weather on corporate value creation can be seen as an indirect internalization of the negative externality of carbon emissions and climate change. Natural disasters are occurring more frequently and with greater severity, and insured losses from weather-related events are now 15 times higher than they were 30 years ago.^{47,48} (See Figure 8)

Insurers face the risk that claims will exceed levels predicted by models and premiums will not be set correctly. Insured companies face the risk that extreme weather will disrupt production, resulting in lost revenue and an inability to meet demand.

A weather event in one country can have far-reaching effects for companies with a globalized supply chain. For instance, the 2011 Thailand floods forced several Japanese car

manufacturers to close their Southeast Asian manufacturing hubs, reportedly resulting in a loss of USD500 million per month.⁴⁹

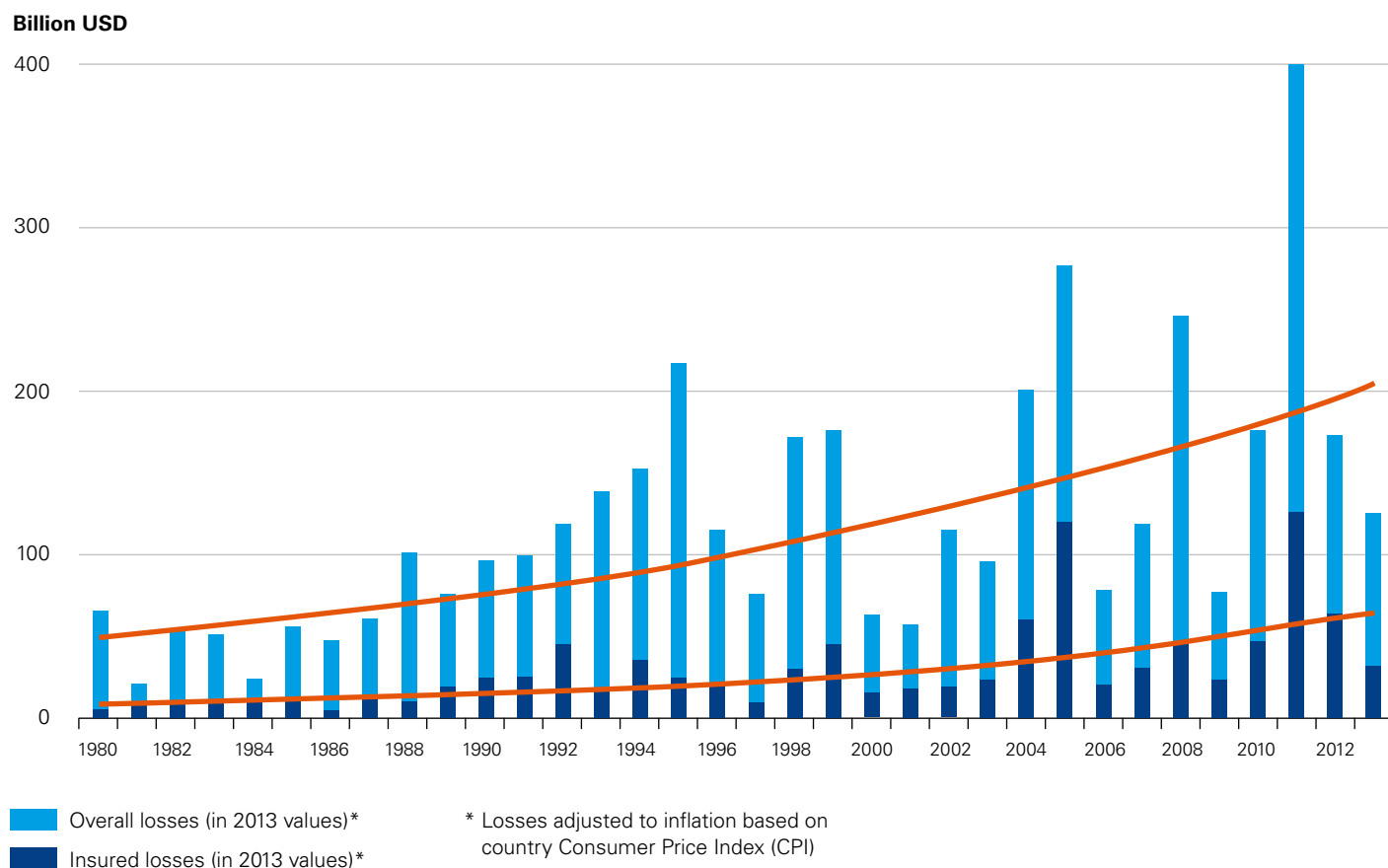
Conversely, increasing extreme weather also creates new market opportunities for some companies, for example, engineering and construction firms with the capability to design and deliver effective flood defenses.

47 Intergovernmental Panel on Climate Change (2012). Managing the Risks of Extreme Events and Disasters to Advance; *Climate Change Adaptation: Summary for Policymakers*.

48 Allianz (2012). *Sustainability Factbook 2012*.

49 <http://www.bloomberg.com/news/2011-10-20/worst-thai-floods-in-50-years-hit-apple-toyota-supply-chains.html>. Retrieved 21 July 2014.

Figure 8 / Increasing losses due to natural disasters and extreme weather



Source: © 2014 Münchener Rückversicherungs-Gesellschaft, NatCatSERVICE

New markets

New markets can be seen as an indirect driver of internalization in that they offer companies the opportunity to profit from products and services that mitigate negative externalities, or create or increase positive ones.

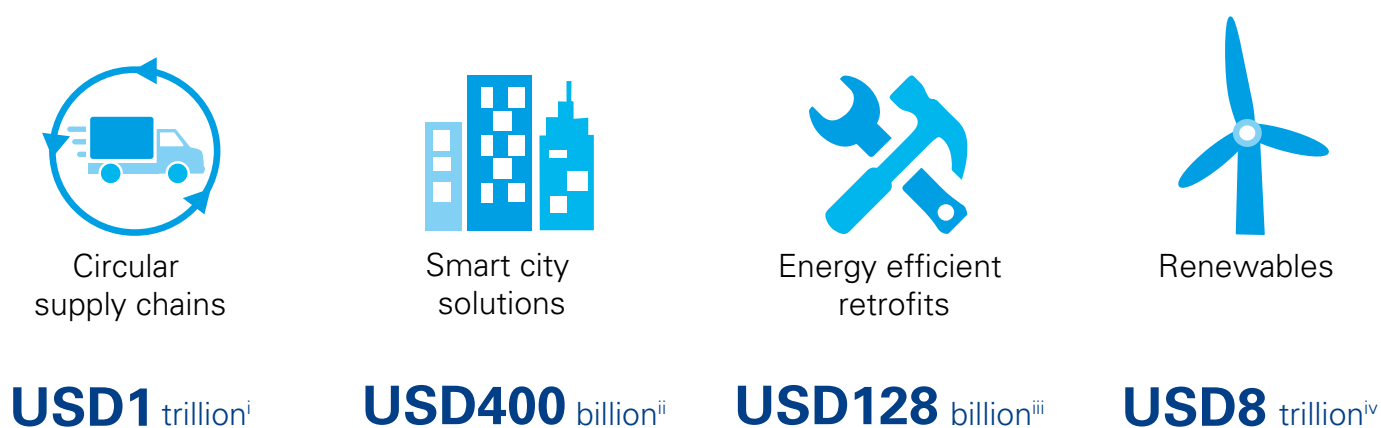
As the megaforces present major social and environmental challenges, there is vast corporate value creation potential in new markets that focus specifically on societal value creation. Such value creation opportunities have been highlighted in many recent reports.

For example, circular supply chains could generate over USD1 trillion a year by 2025 and create 100,000 jobs within the next five years, according to the World Economic Forum and Ellen Macarthur Foundation.⁵⁰ Similarly, the global market for smart city solutions and the services required to deploy them has been valued at over USD400 billion by 2020.⁵¹ The worldwide market for energy efficient retrofits of commercial and public buildings is expected to grow by almost 90 percent to USD127.5 billion by 2023, and it is predicted that over USD8 trillion of asset finance will be spent on renewables to 2030.^{52,53} (See Figure 9).

Businesses are increasingly aware of these value creation opportunities and, in some cases, act themselves to create or accelerate the development of new markets. An example is the German car retailer, BMW, which not only invested ahead of the curve in electric vehicles, but is also developing premium car-sharing services in cities.⁵⁴

- 50 World Economic Forum and Ellen Macarthur Foundation (2014). *Towards the Circular Economy: Accelerating the scale-up across global supply chains*.
- 51 UK Department for Business Innovation and Skills (2013). *The Smart City Market: Opportunities for the UK*.
- 52 Navigant Research (2014). *Energy Efficiency Retrofits for Commercial and Public Buildings*.
- 53 Bloomberg New Energy Finance (2013). *Global Renewable Energy Market Outlook 2013*.
- 54 KPMG (2010). *The Transformation of the Automotive Industry: The Environmental Regulation Effect*.

Figure 9 / Commercial opportunities from societal value creation



Source:

- i World Economic Forum and Ellen Macarthur Foundation (2014). *Towards the Circular Economy: Accelerating the scale-up across global supply chains*.
- ii UK Department for Business Innovation and Skills (2013). *The Smart City Market: Opportunities for the UK*.
- iii Navigant Research (2014). *Energy Efficiency Retrofits for Commercial and Public Buildings*.
- iv Bloomberg New Energy Finance (2013). *Global Renewable Energy Market Outlook 2013*.

In other cases, companies proactively push for regulation that creates the right market dynamics to create corporate value from increased positive and reduced negative externalities. For example, Philips created an alliance with NGOs, retailers and others to put energy efficient lighting firmly on government agendas and lobbied through organizations such as the European Lamp Companies Federation (ELC).

This action, in part, led to legislation banning incandescent lights in Europe and the US.^{55, 56} Swedish retailer, IKEA, showed it was possible to transform its product portfolio and stay ahead of the regulatory curve by becoming the first major retailer to drop incandescent bulbs from its portfolio in 2011.⁵⁷

These investments have paid off, with LEDs and LED-compatible lights now making up 29 percent of Philips total lighting sales and 51 percent of IKEA's lighting product sales in 2013.^{58, 59}

Brands that adopt societal value creation as their key brand attribute are also seeing increasing success. An example of

this is the Fairtrade movement: sales of Fairtrade products grew by 500 percent, to around USD6.5 billion between 2004 and 2102.⁶⁰ European chocolate producer, Tony's Chocolonely, is another example. The company was founded in 2005 with the goal of reaching a 100 percent "slave-free" chocolate industry. Its revenues increased 63 percent between 2012 and 2013, a growth rate 10 times higher than the 6 percent industry average.^{61, 62}

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- 55 <http://www.theguardian.com/environment/2012/aug/31/lightbulbs-incandescent-europe>. Retrieved 14 July 2014.
- 56 <http://energyblog.nationalgeographic.com/2013/12/31/u-s-phase-out-of-incandescent-light-bulbs-continues-in-2014-with-40-60-watt-varieties/>. Retrieved 14 July 2014.
- 57 http://www.ikea.com/us/en/about_ikea/newsitem/IKEA_pulls_the_plug_on_incandescent_light_bulbs_press_release. Retrieved 21 July 2014.
- 58 Philips (2013). *Annual Report 2013*.
- 59 Ikea (2013). *Sustainability Report 2013*.
- 60 <http://www.statista.com/statistics/247491/estimated-retail-sales-of-fairtrade-products-worldwide/>. Retrieved 31 July 2014.
- 61 Tony Chocolonely (2013). *JaarFAIRslag 2013*.
- 62 KPMG (2014). *A Taste of the Future: The trends that could transform the chocolate industry*.

MARKET DYNAMICS AT WORK: STRANDED ASSETS

Market dynamics can drive the internalization of externalities in complex and unpredictable ways. An example of this is the much-debated risk of asset stranding in the oil and gas industries.

The International Energy Agency (IEA) has confirmed that two-thirds of existing fossil fuel reserves cannot be burned and emissions released if the international community is to meet its goal of limiting global temperature increases to less than 2 degrees centigrade above pre-industrial levels.^{63, 64}

This finding has the potential to transform the energy market, either by accelerating the development of effective carbon capture and storage solutions or by bringing into question the value of the fundamental resources or assets the industry relies on. If companies are unable to exploit their fossil fuel reserves, the market for their product effectively

ceases to exist and those assets become 'stranded'.

This is a significant challenge for investors, including pension funds, because the valuation of energy companies is tied closely to their proven energy reserves, which could lose much or all of their value if they become 'stranded' in the future.

One effect of the debate over asset stranding is that global investors are starting to query energy companies' business plans, encouraging a better assessment of the financial risks posed by current investments in high-carbon assets.⁶⁵

63 United Nations Framework Convention on Climate Change (2009). *The Copenhagen Accord*.

64 International Energy Agency (2013). *World Energy Outlook: Redrawing the Energy-Climate Map*.

65 <http://www.carbontracker.org/site/investors-challenge-fossil-fuel-companies>. Retrieved 14 July 2014.



MOMENTUM IS GROWING TOWARDS A NEW VISION OF VALUE

A great deal of work is being done to explore the nexus between corporate and societal value creation, as pressure grows on companies to understand and manage their externalities more effectively.

The message to chief executive and chief financial officers is that momentum is building around this issue and that companies are advised to understand the implications for their own business models.

The landscape of initiatives around value creation is somewhat fragmented. See tables 4 and 5 for some of the programs in progress today. Many of the current initiatives aim to help companies measure their social and environmental impacts and some focus primarily on negative impacts.

While this is a valuable first step, KPMG has identified a need for an approach that is better balanced and helps enable companies to go further.

This means valuing positive externalities as well as negative, and – importantly – understanding the risk of those externalities being internalized and how that internalization might affect value creation. Such a tool also needs to provide a lens through which investments can be assessed for their potential to create both corporate and societal value.

In order to address this need, we have developed the KPMG True Value methodology and piloted it with a number of member firm clients. It is our contribution to the ongoing value creation debate. In the next section of this report we present the KPMG True Value methodology and illustrate it in action through a number of case studies.

CURRENT INITIATIVES ON CORPORATE AND SOCIETAL VALUE CREATION

Table 4 / Current initiatives on corporate and societal value creation

MEASUREMENT AND MANAGEMENT		
1	B Impact Assessment ⁶⁶	Standards, benchmarks and tools enabling companies to assess, compare and improve their social and environmental impacts over time
2	Environmental Profit & Loss (EP&L) Statement: ⁶⁷ First-ever EP&L in 1990 by IT company BSO/Origin (Eckart Wintzen) Followed by Puma (Jochen Zeitz) in 2010	Pioneering development of a means of placing a monetary value on the environmental impacts along the supply chain of a business
3	KPMG True Value: ⁶⁸ KPMG	A three-step methodology that enables companies to i) assess their 'true' earnings including externalities, ii) understand future earnings at risk and iii) develop business cases that create both corporate and societal value
4	Natural Capital Protocol: ⁶⁹ Natural Capital Coalition (formerly TEEB for Business)	A harmonized framework for valuing natural capital in investor decision - making
5	Redefining Value: ⁷⁰ World Business Council for Sustainable Development (WBCSD)	A work-program that aims to help WBCSD member firms to standardize tools to measure and manage their impact on society and the environment
6	Shared Value: ⁷¹ Shared Value Initiative	A management strategy focused on creating business value by identifying and addressing social problems
7	Social Return on Investment (SROI): ⁷² SROI Network	A framework based on generally-accepted accounting principles used to help manage and understand an organization's social, economic and environmental outcomes
8	Total Impact Measurement & Management (TIMM): ⁷³ PwC	A new language to assist companies in understanding the overall impact of their activities
9	True Price ⁷⁴	A social enterprise that helps organizations – multinationals, SMEs, NGOs, governments – quantify and value their economic, environmental and social impacts, particularly on a product level

⁶⁶ <http://bimpactassessment.net/>

⁶⁷ <http://about.puma.com/puma-completes-first-environmental-profit-and-loss-account-which-values-impacts-at-e-145-million/>

⁶⁸ kpmg.com/newvision

⁶⁹ <http://www.naturalcapitalcoalition.org/about/how/natural-capital-protocol.html>

⁷⁰ <http://www.wbcds.org>

⁷¹ www.sharedvalue.org

⁷² <http://www.thesroinetwork.org/>

Table 5 / Business organizations working on reporting standards

REPORTING & DISCLOSURE		
1	Integrated Reporting: The International Integrated Reporting Council (IIRC) ⁷⁵	The IIRC aims to develop a new approach to corporate reporting that communicates the full range of factors that materially affect the ability of organizations to create value over time; it is supported by over 100 companies as well as over 35 global investor organizations
2	Natural Capital Accounting workstream: ⁷⁶ EU Business and Biodiversity Platform	The Natural Capital Accounting workstream aims to develop a decision-making framework and set of principles to help companies determine what form of natural capital accounting to adopt, and identify the best practice guidance and tools available to support them
3	Sustainability Accounting Standards: ⁷⁷ The Sustainability Accounting Standards Board (SASB)	SASB's mission is to develop and disseminate sustainability accounting standards that help publicly-listed companies disclose material sustainability factors in compliance with the US Securities and Exchange Commission requirements; it is developing sustainability accounting standards for more than 80 industries in 10 sectors
4	Sustainability Measurement and Reporting System (SMRS): ⁷⁸ The Sustainability Consortium	The SMRS is a standardized framework for the communication of sustainability-related information throughout the product value chain: it aims to help companies improve decision-making about product sustainability and design better products
5	The Prince's Accounting for Sustainability Project (A4S) ⁷⁹	A project founded by the Prince of Wales to develop systems, tools and guidance to enable the accounting and finance community to integrate measures of environmental health, social wellbeing and economic performance into financial decision-making, accounting and reporting

73 <http://www.pwc.com/totalimpact>74 <http://trueprice.org/>75 <http://www.theiirc.org/>76 http://ec.europa.eu/environment/biodiversity/business/workstreams/Workstream1-Natural-Capital-Accounting/index_en.html77 <http://www.sasb.org/>78 <http://www.sustainabilityconsortium.org/what-we-do/>79 <http://www.accountingforsustainability.org/about-us>





03

KPMG'S TRUE VALUE METHODOLOGY:

building corporate and
societal value

Externalities, both positive and negative, are increasingly being internalized with significant implications for corporate value creation – both in terms of impact on earnings and changing company risk profiles.

The question is, how should companies respond to this trend? Developing a more comprehensive understanding of a company's externalities is a useful first step, but does not in itself equip the company to protect and build its corporate value. In order to do that, companies also need to understand which forces of internalization are most likely to affect them and what the potential impact of that internalization is likely to be. Once companies have a clearer view of their exposure to internalization, they will be in a stronger position to develop strategies that capture value creation opportunities and reduce risk. KPMG has developed the KPMG True Value methodology in order to support companies through this process.

In this section of the report, we explain the KPMG True Value methodology and demonstrate its potential by applying it to three hypothetical case study businesses: a gold mine in South Africa, a brewery in India and a plastics plant in the US. We also provide a real-life case study of the KPMG True Value methodology in use at Holcim subsidiary Ambuja Cement Limited.

INTRODUCING THE KPMG TRUE VALUE METHODOLOGY

KPMG's True Value approach is a three-step process: (See Figure 10)

1. ASSESS THE COMPANY'S 'TRUE' EARNINGS

by identifying and quantifying its material externalities

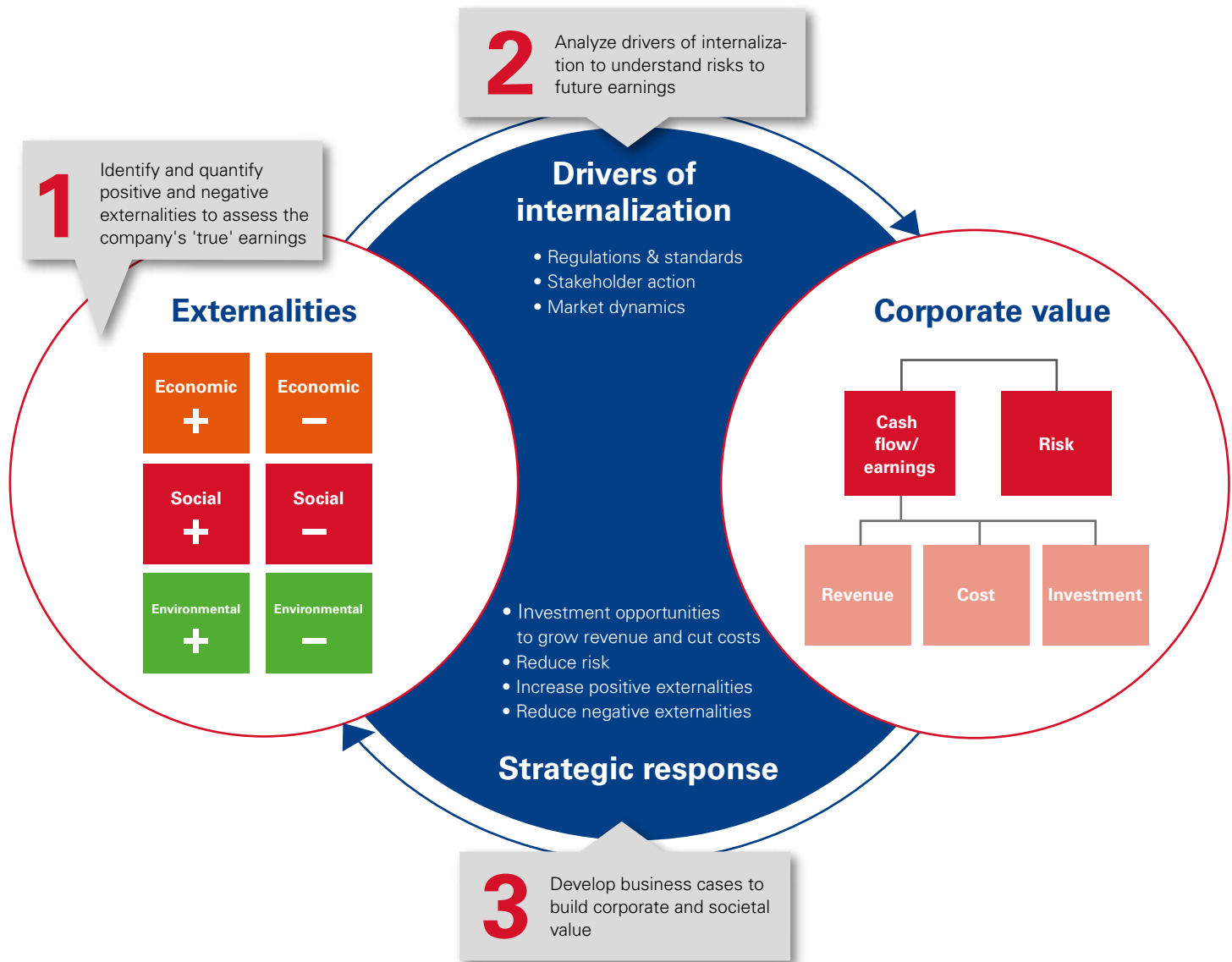
2. UNDERSTAND FUTURE EARNINGS AT RISK

by analyzing exposure to the drivers of internalization

3. CREATE CORPORATE AND SOCIETAL VALUE

by developing business cases that capture value creation opportunities and reduce risk



Figure 10 / KPMG's three step True Value methodology

Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation*.

WORKING TOWARDS A STANDARDIZED APPROACH

We fully support the work being done by the World Business Council for Sustainable Development (WBCSD), International Integrated Reporting Council (IIRC), Natural Capital Coalition (NCC) and others to achieve a standardized approach. We offer KPMG's True Value

methodology as our contribution to that exploratory process. Having piloted the methodology with clients of KPMG member firms, we believe it can provide a useful catalyst for new thinking within companies about corporate and societal value creation.

KPMG TRUE VALUE

STEP 1

Assess the company's
'true' earnings

Benefits:

Provides a clearer view of the
company's externalities

Enables a more balanced conversation
with stakeholders on value creation,
exploring positive as well as negative
societal value created

Provides a strategic lens of corporate
and societal value creation

The first step in KPMG's True Value methodology is to identify the company's positive and negative externalities and to monetize them, i.e. to quantify them in financial terms.

We then combine that information with the company's financial earnings data to provide a holistic view of the company's corporate and societal value creation.

Identifying externalities

KPMG has developed a framework to identify a company's externalities (see Table 6). In this framework,

externalities are classified as either economic, social or environmental, and as either positive or negative. This framework is a guideline designed to capture the most significant externalities for companies in most sectors; the framework can be amended to add further externalities relevant to specific companies.

Table 6 / Framework to identify and quantify material externalities

EXTERNALITY TYPE	EXTERNALITY	FURTHER DESCRIPTION
EC+: Positive Economic	Taxes	Contribution to the economy via taxes of all kinds
	Shareholder dividends	Contribution to societal wealth via returns to shareholders
	Interest on loans	Contribution to health of the financial services sector via loan interest
	Wages	Provision of sustainable incomes and quality of life for workers
EC-: Negative Economic	Avoided taxes	Loss to the economy by not paying fair share of taxes
	Corruption	Contribution to inefficiency in economies
S+: Positive Social	Infrastructure	Provision of infrastructure (such as roads, energy generation) that deliver improved quality of life and economic opportunity
	Healthcare	Provision of healthcare, for example to workers or communities, or via health and fitness products and services. Creates value for society through improved health and life quality
	Education	Provision of education, for example to workers or communities, or via educational products and services. Creates value for society through improved earning capacity and life quality
S-: Negative Social	Low wages	Failure to provide workers with a sustainable livelihood and good quality of life through underinvestment in living wages or through poor working conditions. Use of child labor
	Health & safety	Damage to health, injury or death caused by underinvestment in health and safety safeguards
	Pollution	Damage to the health of workers and communities through air, water or noise pollution
E+: Positive Environmental	Renewable energy	Displacement of carbon intensive energy and greenhouse gas (GHG) savings through generating renewable energy (for company operations and/or supplying to the grid)
	Land stewardship	Reforestation and other regenerative practices that improve ecosystems and habitats
	Recycling	Avoidance of waste to landfill or incineration by reusing waste materials (whether produced by the company or sourced from elsewhere)
E-: Negative Environmental	Waste	Environmental damage caused by gaseous, liquid or solid waste. Includes GHG emissions resulting from landfill and incineration of waste
	Ecosystems	Degradation of ecosystem services
	GHGs and energy	Contribution to climate change and the resulting costs for society and the environment through energy use and GHG emissions.
	Water	Damage to ecosystems and communities by withdrawing water in areas of water shortage
	Raw materials	Usage of raw materials for production process resulting in environmental damage and resource scarcity

ACKNOWLEDGING ECONOMIC VALUE-ADD

There is a rich tradition of companies publishing value-added statements in their annual reports. These statements cover the wages, taxes, dividends and interest paid by the company¹.

We recognize that economic value-add does not adhere strictly to accepted definitions of externalities because it is reflected in financial statements and it represents direct transactions between the company and certain stakeholders.

However, we have chosen to include value-add as a positive economic externality in our methodology because its components, i.e. wages and tax create wider societal value through a multiplier effect.²

¹ See for example Arangies, G. et al. (2008): *The value-added statement: An appeal for standardisation*. Management Dynamics, 17 (1), pp. 31-43.

² Throughout this report, for simplicity we use a multiplier of 1 for economic value-add externalities. In practice, this multiplier can differ for countries and sectors.

A NOTE ON MONETIZATION

Monetization provides a common metric through which a company can more easily understand, compare and contrast the magnitude of its various externalities. Furthermore, given that the ultimate goal is to develop strategies that create both societal and corporate value, then there are clear advantages in using the same metrics to express both. Perhaps most importantly, the use of financial metrics to quantify externalities enables social and environmental factors to be brought into decision making in terms that business managers are already familiar with.

There are challenges in seeking to quantify externalities in financial terms. For example, it is not an exact science and the results should therefore be considered as an indication or approximation. Additionally, monetization cannot fully express ethical aspects of externalities such as human rights or health and safety. However, while we acknowledge the limitations of monetization, we believe that it is the method that currently offers the most potential to bring considerations of societal value into corporate decision making.

Looking to the long term: the goal of double-entry accounting for all capitals

Monetization is becoming more widely accepted as an approach to help companies understand, measure and manage their externalities, thanks partly to the increasing number and reliability of data sources.

The concept is not perfect, and the data is not yet as reliable as that used for financial reporting.

However, monetization does offer a useful means to draw comparisons of scale between a company's various externalities and identify which of them are most material both to the business and to society.

We believe it is the best approach available right now and for this reason, monetization forms the starting point of KPMG's True Value methodology as well as initiatives from other organizations.

However, monetization is not necessarily the ultimate solution. We might end up with a more complex and

multi-lensed approach to evaluating business performance, in which case the goal must be to develop a standardized approach that aligns more closely with the elegance of the double-entry financial accounting system.

The double-entry system, in which every debit must have a credit and every credit a debit, continues as the basis of financial accounting even though standards have been added over time to define particular debits and credits.

That is why we should aim, eventually, to adopt the same system when accounting for societal value creation. The International Integrated Reporting Council's (IIRC) framework gives us a good point of departure in that it identifies six types of capital (or 'stores of value') that a company requires in order to create corporate value: financial capital, manufactured capital, intellectual capital, human capital, social and relationship capital, and natural capital.



Some of these capitals are already measured in accepted currencies, for example, financial capital is obviously measured in financial currency as is manufactured capital, i.e. the physical assets and inventory that a company owns (or, technically, stewards on behalf of the real owners, namely the shareholders).

However, developing a currency that accurately expresses the value of the other capitals is more complex.

Take, for example, human capital or the stock of employee knowledge and capabilities that a company has access to but is actually owned by the employees in question. In an ideal world, there would be an accepted way to measure the value of that human capital that takes into account the experience, skills, values and motivation of employees.

A profit and loss account for human capital would be able to demonstrate whether the company has either increased or devalued its stock of human capital over the year by increasing or devaluing the experience, skills, values and motivation of its

people. Similar standard currencies would need to be further developed for the other capitals - that would be accounted for as liabilities when a company depletes natural resources or generates air emissions.

For example, a currency for natural capital will need to take into account the accessibility, resilience and quality of the natural assets a company uses such as the air, waterways and ecosystems. Again, a profit and loss account in that currency would show whether the company has increased or decreased the stock of natural capital. A currency for social and relationship capital will need to value the strength and resilience of customer loyalty, consumer approval, and community license-to-operate among other relationships. This is important because until we achieve such a system it will continue to be possible for businesses to report reductions in their environmental and social impacts while continuing to deplete stocks of human, natural and social capital.

Ultimately, a new vision of value must be one in which a company's management accounts for its

stewardship not only of financial, manufactured and intellectual capital, but also of human, social and natural capital. Globally agreed measurement standards are needed to enable the comparison of one company's stewardship with another's. Once clarity is achieved on what the currency for each capital should be, methods can be explored to translate each of them into financial currency for ease of comparison and management.

The challenge is both complex and fascinating. We know where we need to get to but it will take time. While the basics of bookkeeping have remained constant, the details have evolved over hundreds of years. In comparison, accounting for societal value creation can be considered relatively new.

While our sights are ultimately on a double-entry accounting system for all six capitals, we believe that KPMG's True Value methodology, using monetization of externalities as a foundation, provides a solid start in helping companies to understand and act upon the disappearing disconnect between corporate and societal value creation.

CONSIDERATIONS IN QUANTIFYING EXTERNALITIES

The following factors should be considered when using this framework to identify and monetize a company's externalities:

Scope

The methodology can be applied to the entire company or to specific operating units or projects. Similarly, it can be applied only to the company's direct operations or can be expanded to cover upstream externalities in the supply chain and downstream externalities related to the use and disposal of the company's products and services.

Materiality

Only those externalities that are material to the company, its stakeholders, society and the environment should be included.

Baseline

A suitable baseline for assessment should be defined. This will include the time period for which externalities are to be calculated.

Data

The most appropriate data for quantification must be selected from both within the company and from outside sources. Similarly, the most relevant quantification methods must be selected from a range of options, including company valuation techniques, economic impact analysis and environmental economics.



EXTERNALITY QUANTIFICATION

methods and data sources

Prominent economists, including Arthur Pigou, Ronald Coase and Elinor Ostrom, have explored the concept of externalities throughout the 20th and 21st centuries. Governments also employ the concept when assessing the social costs and benefits of policy options.

There is now a wide range of disciplines, tools, techniques and data sources that are becoming more well established and enable us to estimate the value of social and environmental externalities. Techniques include economic impact analysis, environmental economics and healthcare economics.

Data sources include The Economics of Ecosystems and Biodiversity (TEEB)* for environmental externalities and the World Bank, Organisation for Economic Co-operation and Development (OECD) and Social Return on Investment (SROI) Network for social externalities. These sources provide price data for social and environmental externalities. Multiplying these prices with volumes data from within companies enables us to calculate the value of the externalities. Reporting of these volumes, such as the amount of GHG emissions, water usage, occupational health and safety data and community investment is common practice for most companies in integrated or sustainability reporting processes.

* Please note that TEEB is now known as the Natural Capital Coalition.

BUILDING A 'TRUE' EARNINGS BRIDGE

The financial earnings reflected by conventional company reporting are key drivers of corporate value creation. However, this reporting does not provide a view of the externalities the company generates in the course of doing business.

By combining financial and monetized externality data, we can form a broader view of the company's value creation that includes both corporate and societal value. In KPMG's True Value methodology we do this by presenting the information in a 'true' earnings bridge. (See Figure 11)

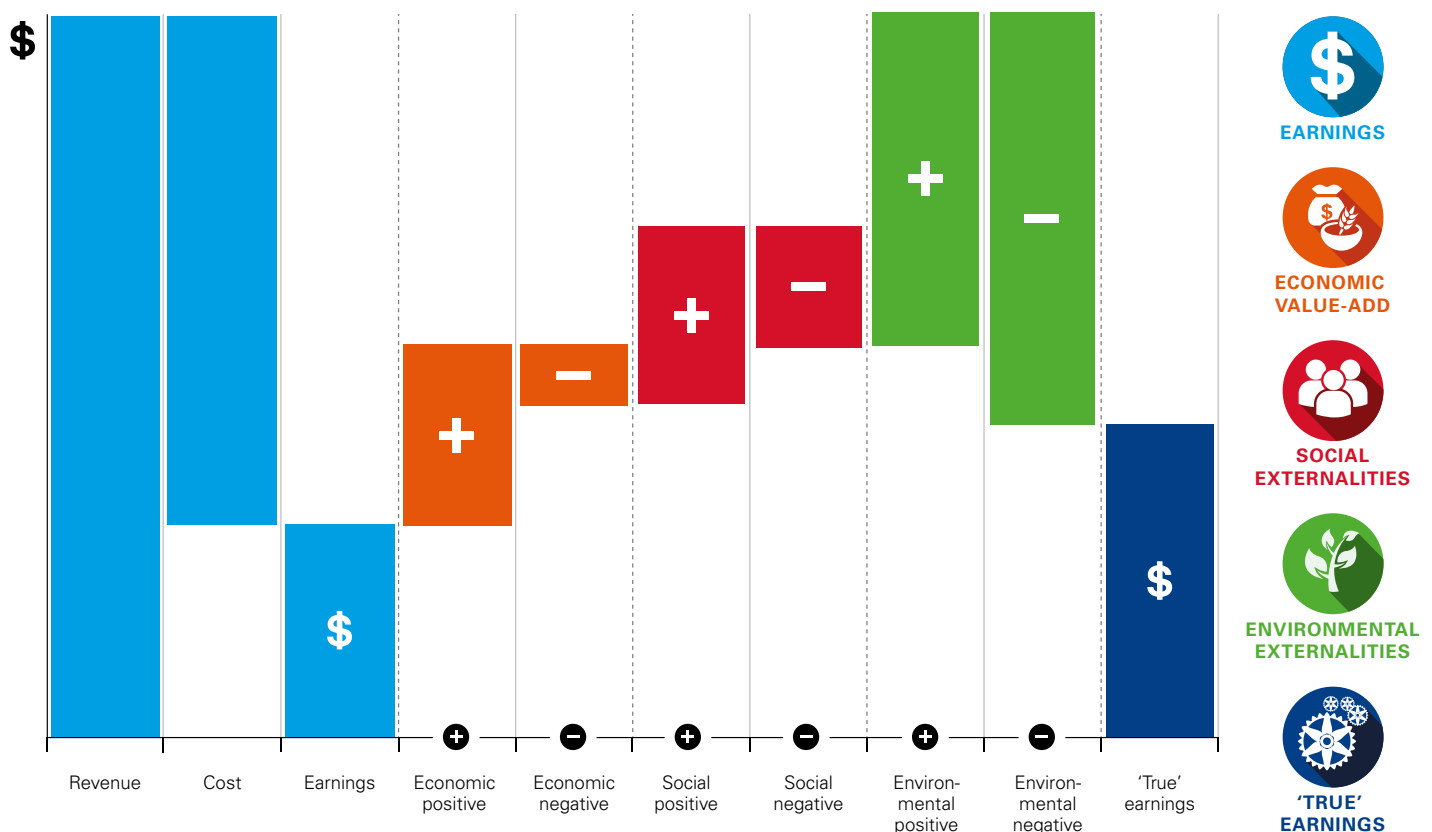
The 'true' earnings bridge helps business managers to visualize the company's most significant positive and negative externalities and understand where the company's actions may be creating or reducing societal value.

By looking through this lens, a company can gain insights into opportunities to increase its societal value creation.

The 'true' earnings shown at the far right hand side of the bridge illustrate what the company's 'true' earnings would be if all of its significant positive and negative externalities were fully internalized. However, the actual likelihood and extent of internalization for each externality will be influenced by how the drivers of internalization play out for that particular company.

The next step of the KPMG True Value methodology is to assess the risk of internalization of each of these externalities and the potential impact on the company's earnings.

Figure 11 / A generic 'true' earnings bridge



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation.*

KPMG TRUE VALUE

STEP 2

Understand future
earnings at risk

Benefits:

Enables understanding of the company's exposure to internalization of its negative externalities

Quantifies potential risks to earnings through reduced revenues, increased costs or increasing investment requirements

Provides information to guide risk-reduction strategies

The next step is to understand how the externalities identified in Step 1 may be internalized by the three drivers of regulations and standards, stakeholder action and market dynamics and the extent to which those drivers could affect earnings.

Table 7 shows some of the key ways in which the drivers of internalization present risks to earnings, either by increasing a company's costs, reducing revenues or changing investment profiles.

Table 7 / Forces of internalization: key risks to earnings

FORCE	RISKS TO EARNINGS	EXPLANATION
Regulations and standards	Taxes/fines/compensation	Government may apply taxes or fines to negative externalities, for example, water scarcity taxes
	Lost production	Production may be interrupted if legislation is contravened, for example, a plant shut down due to the discovery of child labor
	Increased cost of permitting	More stringent regulation on permits can increase costs for the permit process and subsequent mitigation measures can cause delays, resulting in additional costs - for example, a mining company operating in areas with high levels of biodiversity might need to delay its activities due to difficulties in securing permits
Stakeholder actions	Lost production	Stakeholder pressure such as consumer boycotts, community protests or labor unrest may halt production
	Increased cost of production	Production costs may increase due to stakeholder pressure, for example, community protests may block a permit for a new site, resulting in resources having to be sourced from farther afield
	Revenue loss	More stringent sustainability criteria set by customers may result in lost revenues if competitors are better able to meet those criteria
	Cost of capital	The cost of capital may change due to a ratings change or changing investor perceptions of risk
Market dynamics	Lost production	Shortages of key inputs may halt production
	Increased cost of production	Cost increases of key inputs, such as scarcity, may increase the cost of production
	Insurance fees	Insurance fees may increase if insurers perceive increased risk, for example, from extreme weather



This step begins with the 'true' earnings bridge from Step 1, in which the company's material externalities have been identified. We then perform a risk analysis on these externalities by overlaying the drivers of internalization as set out in Table 7. This risk analysis should be performed with a medium to long-term view, because, in general, the drivers of internalization intensify over time and therefore the risks of internalization increase as the time horizon extends.

Where we find that there is a high risk of internalization, we can get a clearer view of the potential impact on the company's earnings by using financial modeling techniques and appropriate sector and location-specific scenario assumptions. For example, in the case studies that follow, we have modeled risks on a scenario timeline of 2030 and assumed economic, political, social and environmental conditions that we believe are reasonable for South Africa, India and the US run on in that year. (See page 62)

It is likely that most companies will seek to protect and create corporate value by reducing risk and by unlocking opportunities for future growth. Those that anticipate and prepare proactively are more likely to protect corporate value than those that react to internalization as it happens.

Some internalization happens with notice, such as regulations and taxes, but some happens unexpectedly, such as supply failures or community action. The third step in KPMG's True Value methodology provides guidance for companies to act on the information gained in the first two steps.

KPMG TRUE VALUE

STEP 3

Create corporate and
societal value

Benefits:

Provides a more complete view of the potential value creation of an investment

Quantifies the Net Present Value (NPV) of investments, including likely internalization of externalities

Provides insights to make balanced investment decisions on the basis of both corporate and societal value

In the previous two steps of the KPMG True Value methodology we have set out how companies, and their investors, can better understand externalities, anticipate drivers of internalization and assess earnings at risk.

Step 3 helps companies to build business cases for investments that create both corporate and societal value in the most cost effective way possible. Managing for both corporate and societal value creation can increase resilience and reduce volatility in long-term earnings.

Identifying potential investments

This step begins by identifying potential investments that can deliver both corporate and societal value creation. There are two broad approaches to achieve this.

- **Invest in reducing negative externalities** which can reduce the risk of costs resulting from regulatory changes, stakeholder action and changes in market dynamics. This can include adapting the supply chain, changing operations or shifting the focus of key markets, including changing customer behaviors.

- **Invest in increasing positive externalities** which can yield returns in the form of regulatory tools such as tax incentives, stakeholder action such as labor stability and market dynamics such as competitive advantage and brand enhancement. Investments can include developing new products and services and identifying new operating models and routes to market.

These two investment approaches are not mutually exclusive and can be implemented simultaneously.

In the following example, we look at potential investments for a soft drink producer. We have assumed that the company has applied the first two steps of the KPMG True Value methodology. Through this process it has identified its water withdrawal and the negative health effects of its sugary beverages as the two externalities with significant potential to affect its future earnings and corporate value.

Table 8 / Potential value creation of investments for a soft drink producer

INVESTMENT	CORPORATE VALUE CREATION	SOCIETAL VALUE CREATION
Rainwater harvesting and distribution technologies Improved water efficiency at the plant Water recycling technologies Product innovation that use less water (e.g. syrups that are reconstituted with water at the point of sale)	Direct financial returns Reduction in water costs (offset against investment costs) Returns from internalization of externalities Avoid future government charges related to water scarcity such as taxes, price increases or quotas Secure competitive advantage by inviting stricter regulation on water usage Avoid or reduce production stoppages caused by insufficient availability of water supplies Avoid or reduce production stoppages caused by community protest over competition for water supplies	Decrease negative environmental externalities Reduced negative effect on local groundwater supplies Increase positive social and environmental externalities Improved health and wellbeing of local community from increased water supplies provided by company's rainwater harvesting investment
Development of healthier beverages	Direct financial returns Increased sales by introduction of new products Returns from internalization of externalities Avoid or reduce exposure to future government action such as "soda taxes" Competitive advantage by acting early to anticipate governments, moves to limit high-sugar beverages Avoid exposure to stakeholder campaigns against high-sugar beverages	Decrease negative social externalities Reduced contribution to public health problems of obesity and diabetes

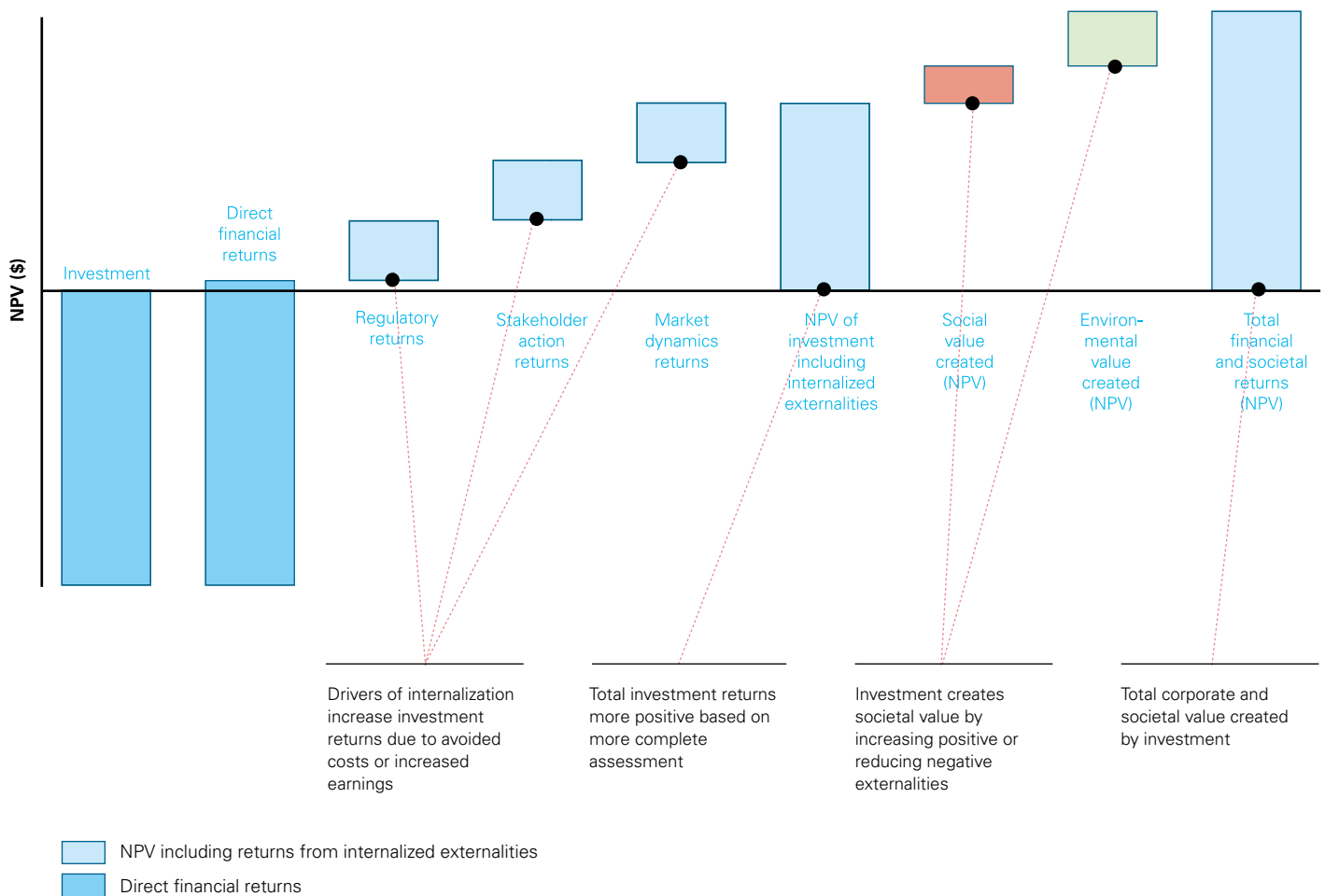
CALCULATING THE TRUE VALUE BUSINESS CASE

Once possible investments have been identified, the Net Present Value (NPV) for each business case can be calculated to include the direct, financial returns to the business, the potential future returns through the drivers of internalization and the additional value created for society.

This provides a more complete view of the potential value creation of an investment. (See Figure 12)



Figure 12 / True value NPV calculation



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation.*



By understanding how investments might enhance future earnings, the company is in a stronger position to undertake projects that create long-term corporate and societal value. Companies that restrict their NPV project calculations to direct financial returns only would not invest in many projects which offer broader value creation opportunities. A note of caution is required here. It would be unwise for a company to undertake projects based on loose assumptions of potential future returns through forces of internalization.

A rigorous process is advised, including extensive data analysis and sensitivity testing to accurately determine the parameters under which the project is likely to deliver acceptable total returns and to provide the confidence level required to make the investment. Some companies may have already integrated some form of internalization into their investment decision-making process, such as carbon costs, landfill taxes or changing societal expectations. The KPMG True Value methodology builds on this and aims to provide a more complete approach to help companies prepare for the future.

COMPARING THE TRUE VALUE OF POTENTIAL INVESTMENTS

Companies can compare the True Value business cases of potential investments by developing a Marginal True Value Curve. (See Figure 13).

Such a curve provides a comparative view of the returns provided by each project, both with and without the likely internalization of externalities. It also demonstrates the relative societal value creation of each potential project, enabling companies to select projects on the basis of their societal as well as corporate value creation.

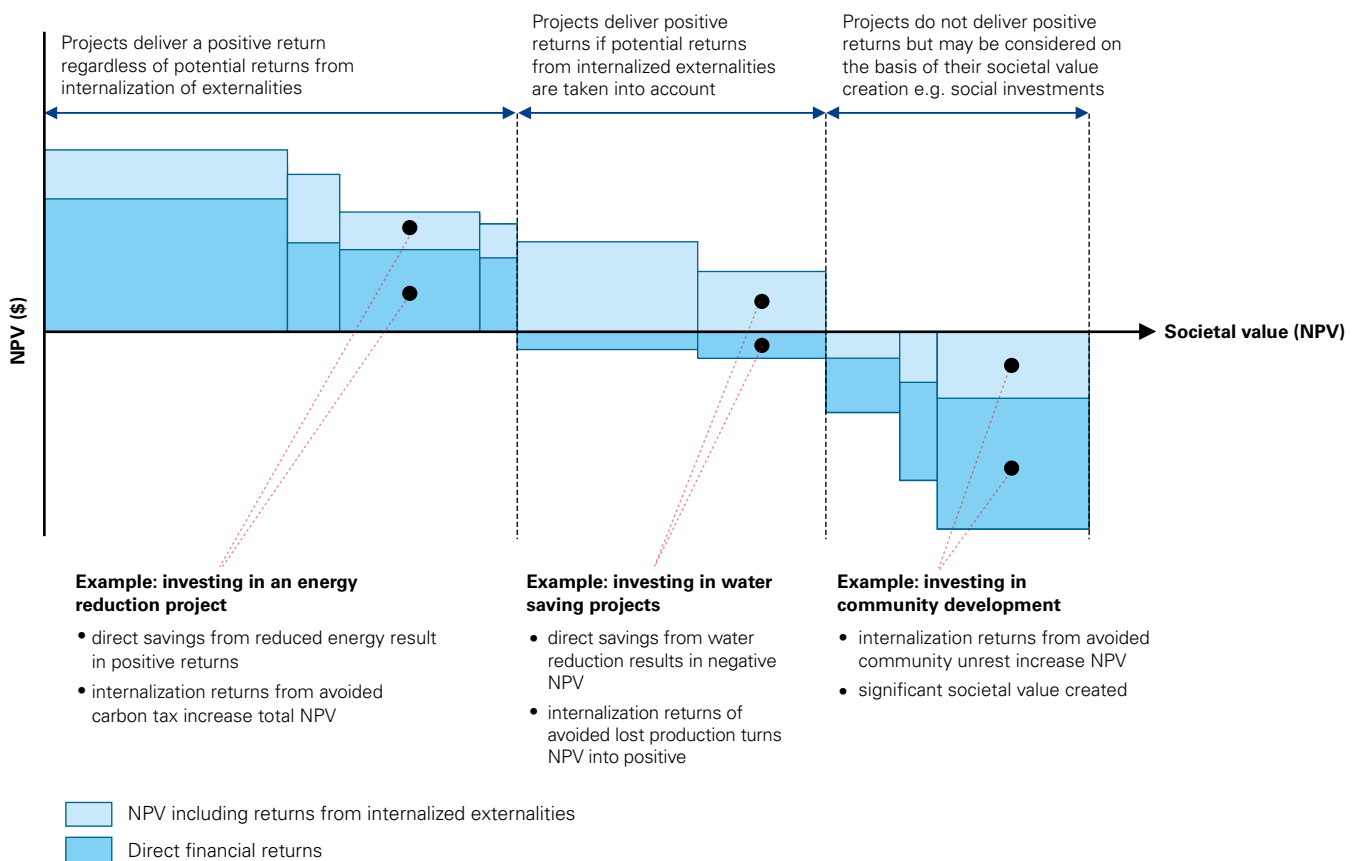
Projects plotted in a Marginal True Value Curve will broadly fall into three categories:

- those that deliver positive NPV in terms of direct financial returns, regardless of any future benefit from the internalization externalities
- those that will deliver a positive NPV if the likely future returns from internalized externalities are taken into account
- those that are unlikely to deliver positive NPV, even when internalized externalities are taken into account, but may create significant societal value.

The Marginal True Value Curve enables companies to prioritize projects according to a range of criteria, whether the objective is to maximize corporate value, societal value or both. This tool can also be used, for example, to ensure that projects implemented under mandatory CSR or social investment legislation (seen, for example, in India) deliver maximum corporate and societal value.



Figure 13 / Marginal True Value Curve



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation*.





04

CASE STUDIES: applying the KPMG True Value methodology in practice

The extent to which the internalization of externalities can affect earnings, corporate value and response strategies depends on the business in question, its sector and geographic location. No two business will have exactly the same asset base, type or degree of exposure to risk or response options.

In order to illustrate this, and to further develop the approach and test its versatility, KPMG sector teams have applied the KPMG True Value methodology to three hypothetical businesses: a gold mine in South Africa, a brewery in India and a plastics plant (low-density polyethylene) in the US.

In addition, we have piloted the methodology with KPMG member firm clients, including Ambuja Cement Limited (ACL), an Indian subsidiary of global cement company Holcim. A case study on our KPMG True Value work with ACL can be found on page 90 of this report.

For each of the three case studies we have followed the three-step process explained in the previous pages:

- 1. Assess the company's 'true' earnings** by identifying and quantifying its material externalities
- 2. Understand future earnings at risk** by analyzing exposure to the forces of internalization
- 3. Create corporate and societal value** by developing business cases that capture value creation opportunities and reduce risk.

For the risk analysis of forces of internalization, we have set a timeline of 2030 and made economic, political, social and environmental assumptions relevant to each country. These are detailed in each case study. We have modeled only one set of scenario assumptions in this report for illustrative purposes. These assumptions could be varied and the model rerun to produce multiple scenarios for comparison.

NOTES ON THE CASE STUDIES:

- The operating models and earnings before interest, taxes, depreciation and amortization (EBITDA) margins we have used for these case studies are based on knowledge of similar companies and the economic, social and environmental issues they face. The businesses are, however, hypothetical and are provided as illustrative examples only.
- For clarity we have applied the 2030 scenarios to the companies' current operating models, assuming that the companies have not yet acted to mitigate financial impacts.
- Costs such as carbon prices have been modelled at 2014 equivalent levels in real terms.
- The level of sales and the prices of the companies' products in each sector have been assumed to remain constant in real terms, e.g. we have assumed that the companies absorb cost increases and lost production rather than passing them on to customers.
- In a more wide ranging exercise we would apply a range of scenarios that would explore additional variables such as increased revenue driven by growing demand for the companies' products and a broader range of financial key performance indicators (KPIs) that are based on the balance sheet (here we modeled the income statement only).



KEY FINDINGS:

Internalization of externalities could render the gold mine and brewery financially unsustainable

We have constructed a 'true' earnings bridge for all three companies to compare their financial earnings with their 'true' earnings if their externalities were fully internalized.



The plastics plant in the US delivers 'true' earnings roughly equivalent to its financial earnings, but both the gold mine and the brewery have 'true' earnings significantly less than their financial earnings.

In the next step we analyzed the likelihood of material externalities being internalized and the likely extent of internalization. We then modeled the potential impact on earnings using a 2030 scenario. This exercise suggests that drivers of internalization could render two of the case study businesses – the Indian brewery and the South African gold mine – financially unsustainable.

The brewery goes from a positive EBITDA margin of 5 percent into a negative margin of -4 percent in our models. Likely internalization of environmental externalities (GHGs, energy and water) account for the bulk of this potential EBITDA impact.

The mine sees its EBITDA margin drop to a level at which it would be unable to service the debt on its capital investment. Internalization of social externalities (wages and health & safety) together account for the greatest potential impact on the mine's EBITDA margin. By contrast, the EBITDA margin of the US plastics plant is better protected because it is less exposed to internalization of externalities due to its location and country specific conditions. We modeled a potential dip in the EBITDA margin due primarily to price increases of its key feedstock, driven by increasing demand, although in reality it is likely that the plant would be able to pass on some or all of these costs to its customers.

In order for the companies to act on this potential loss of EBITDA margin, we have estimated the business case for several initiatives to build both corporate and societal value and have shown the results in Marginal True Value Curves.

CASE STUDY 1: UNDERGROUND GOLD MINE, WITWATERSRAND, SOUTH AFRICA

KEY FACTS AND ASSUMPTIONS

LOCATION

South Africa was ranked as the fifth-largest gold producer in the world.¹ In 2014 the country accounted for just 6 percent of global production - the country's worst year for production since 1905.² The industry's recent decline is due to numerous factors, including increasing pressure on the cost-base due to rapidly rising input costs, and prolonged labor disputes that have led to long periods of lost production.

PROCESS TYPE

Underground mine: gold mines in South Africa are typically underground due to the depth of the deposits.

PRODUCTION VOLUMES

500,000 tons of ore, translating to approximately 881,850 ounces of gold.

EBITDA MARGIN

This mine currently generates an EBITDA margin of approximately 29 percent. The 'break-even' EBITDA margin is considered to be 23 percent, which the mine requires in order to service the debt on its initial capital investment.

¹ <http://www.forbes.com/sites/kitconews/2014/06/20/worlds-largest-gold-producing-countries-south-africa>. Retrieved 31 July 2014.

² <http://goldinvestingnews.com/36495/2012-top-gold-producing-countries.html>. Retrieved 9 June 2014.

STEP 1 / Assess the company's 'true' earnings

True earnings

In this hypothetical case, the gold mine's 'true' earnings are approximately half of its financial earnings.

Material positive externalities

The most material elements of the mine's positive externalities are economic in that the mine is a significant source of jobs and tax revenues. The mine's positive externalities in terms of its financial contributions to local infrastructure, education and healthcare services are also significant. The mine generates some positive environmental externalities

from renewable energy generated on site, which avoids some emissions that would have otherwise occurred through conventional power generation. It also generates positive environmental externalities by the reuse of waste materials from the production process.

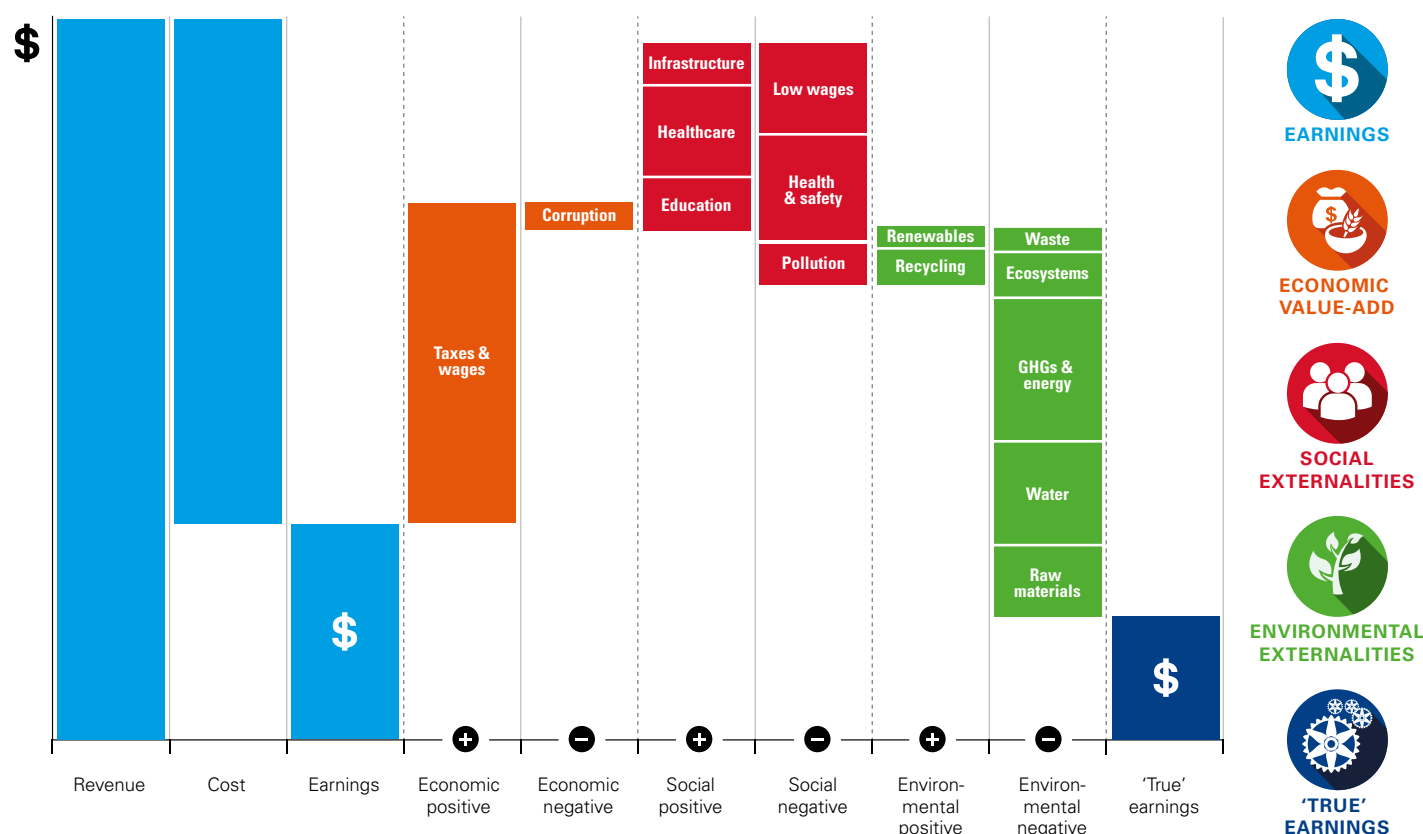
Material negative externalities

Elements of negative externalities for attention include the impact of low wage levels on workers, many of whom are migrants and do not earn living wages and experience poor living conditions. Health and safety is also an issue, with

some deaths and injuries during the year as well as ill health among workers due to silicosis, a lung disease caused by the inhalation of silica dust. High investments are required by the mine to reduce or eliminate these negative external externalities. Corruption is also an issue within the mining sector in South Africa.

The most material negative environmental externalities are GHG emissions and the mine's pollution of water resources, due to acid water drainage from mine operations.

Figure 14 / 'True' earnings bridge for gold mine in South Africa



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation.*

Downstream externalities

This value bridge could be extended to include the downstream externalities of the gold that the mine produces. In

the mine's case, the gold could create societal value when used in components for medical, clean energy and water purification technologies.

These positive externalities could be modeled in a full lifecycle analysis of the mine's externalities and value creation.

STEP 2 / Understand future earnings at risk

In Step 2 we assess to what extent internalization of the externalities could affect the mine's earnings. We do this by assessing how likely it is that the various

externalities will be internalized through the three forces of internalization and whether that internalization poses a high, medium or low risk to earnings.

Table 9 shows the full analysis for the gold mine.

Table 9 / Gold mine: internalization risk assessment

EXTERNALITIES	DRIVERS OF INTERNALIZATION			RISK OF INTERNALIZATION
	REGULATIONS & STANDARDS	STAKEHOLDER ACTION	MARKET DYNAMICS	
Corruption		Labor unrest over bribery and corruption		●
Infrastructure, healthcare and education spending outside of company	Government mandates increased investment in local communities	Increased investment in local communities forced by community action		●
Education of employees	Government imposes or increases minimum level of investment in employee education	Labor unrest over low levels of employee education		●
Low wages	Government mandates wage increases for workers	Labor unrest over pay or working conditions		●
Health & safety	More stringent health and safety regulations	Labor unrest or consumer protest over unsafe working conditions		●
Pollution	Increased taxes or fines for groundwater pollution	Community protest over pollution		●
Renewable energy to grid	Government imposes renewable energy targets			●
Recycling	Government imposes recycling targets			●
Waste	Government imposes or increases waste taxes			●
Ecosystem services	Government imposes more stringent environmental rehabilitation requirements		Critical ecosystems fail, resulting in loss of production	●
GHGs and energy	Carbon tax imposed		Increases in fuel and electricity costs Increasing power outages Extreme weather events lead to lost days of production	●
Water	Increased provision for post-closure water liabilities	Community protest over acid mine drainage	Water shortage increases water price	●
Use of raw materials			Cost increase of mining spare parts due to price rise of nickel, steel and copper	●

● Low ● Medium ● High

GOLD MINE: SUMMARY OF INTERNALIZATION RISKS

Externalities identified as at high risk of internalization are:

- Current low wages (social negative) – labor unrest or government action could increase wage costs
- Investment in community healthcare, infrastructure and education investment (social positive) – compulsory investment levels could be increased by government legislation

- Use of raw materials (environmental negative) – scarcity of raw materials could increase the costs of metals for spare parts
- GHGs and energy (environmental negative) – exposure to carbon tax, increased fuel and electricity prices, extreme weather impacts and instability of power supply could increase costs of the mine company.

Externalities identified as at medium risk of internalization are:

- Water (environmental negative) – although the Witwatersrand is a water-stressed area, water scarcity

is not generally an issue for the underground gold mines in this region due to their access to ground water reserves. The contamination of water from acid mine drainage could, however, be a risk for internalization

- Health and safety (social negative) – more stringent health and safety requirements could be imposed for the poor working conditions in the mine
- Ecosystem services (environmental negative) – stringent environmental legislation could create significantly higher costs.





SCENARIO ASSUMPTIONS

In order to model the financial value at risk, we set the following scenario assumptions based on a 2030 timeline.

Low wages

- In 2030, South African workers have intensified their demands for fair wages and wages have risen by 50 percent in real terms.
- Ongoing labor unrest over pay and working conditions results in 48 days of production stoppages during the year.

Healthcare, infrastructure and education

- The South African government has increased the mandatory community investment spend for mining companies to 6 percent of after-tax profit from the current requirement of 1 percent.

Raw materials

- The price of metals used to manufacture mining equipment has increased by 10 percent in 2030. Market conditions allow suppliers of mining equipment to pass 30 percent of that additional cost on to the mining company.

GHGs and energy

- South Africa has continued to experience significant electricity and fuel price increases. In 2030, electricity prices have increased by 84 percent³ from present-day levels, and liquid fuel prices have increased by 77 percent.
- Supplies of power in South Africa are still constrained in 2030 as new power capacity has struggled to keep pace with demand. Power outages result in 10 days of lost production for the gold mine.
- South Africa is experiencing more frequent and more severe storms. Underground mine operations are relatively sheltered from the worst effects, but still suffer from five days of lost production during the year due to adverse weather conditions.
- The South African government has implemented a moderate carbon tax which is charged at ZAR146 (USD14) per ton of CO₂-equivalent in 2030.

In Figure 15, we have modeled the potential impact of internalization on earnings under the scenario assumptions outlined above.

3 The Department of Energy of the Republic of South Africa (2011). *Integrated Resource Plan for Electricity 2010-2030*.

POTENTIAL EFFECTS: EBITDA MARGIN COULD DISAPPEAR

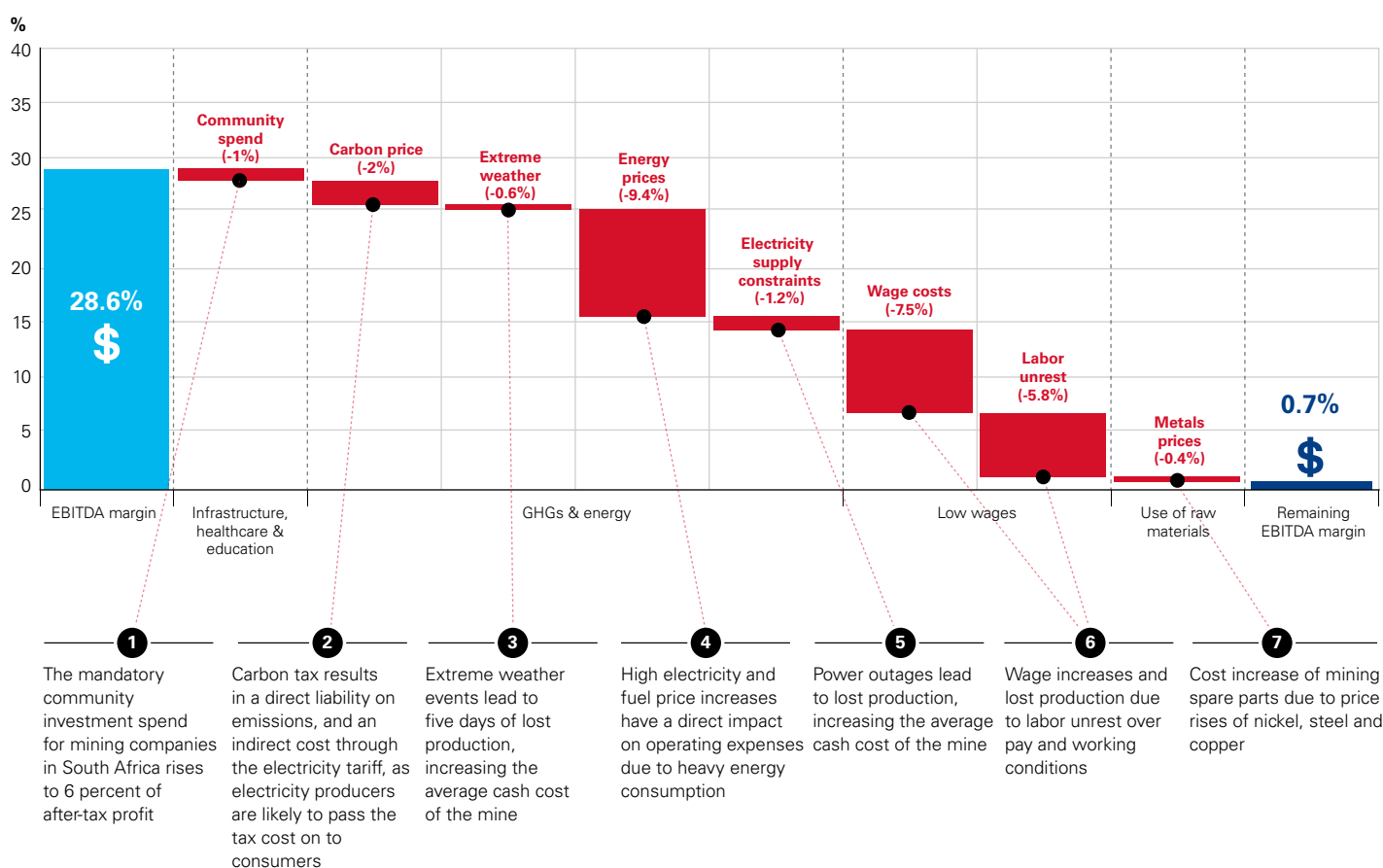
The biggest impacts to the mine's bottom line come from increases in electricity prices, wage increases and unrest in the labor force.

The cumulative effect of externalities being internalized could almost wipe

out the gold mine's EBITDA margin in a 2030 scenario, reducing it from 29 percent to less than 1 percent. The break-even EBITDA margin for a mine of this type is considered to be 23 percent, due to the high-capital intensity of the operations.

This suggests that, assuming that increases in gold prices do not compensate for the increased costs and lost production, in this scenario, the mine's operations could become financially unsustainable unless effective action is taken.

Figure 15 / Effects of internalization on gold mine's EBITDA margin



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation.*

STEP 3 / Create corporate and societal value

The mine could consider various investments which would increase direct financial returns, reduce its corporate value at risk, increase returns

from positive externalities and simultaneously increase its societal value creation. The natural focus would be to address the biggest impacts on

EBITDA from Step 2: energy prices, labor unrest and wage costs. This helps the mine to address the potential impacts of carbon and energy prices.

Table 10 / Potential investments for the gold mine

INVESTMENT	CORPORATE VALUE CREATION	SOCIETAL VALUE CREATION
Increase on-site generation of renewable energy	Direct financial returns Reduction in energy costs (offset against investment costs) Surplus energy sold into grid Returns from internalization of externalities Avoid costs of carbon tax and expected increase of energy price by producing energy on site: reducing external energy demand Receive subsidies from the government to produce renewable energy	Decrease negative environmental externalities Decrease in contribution to climate change and its associated social and environmental impacts Increase positive environmental externalities Surplus of clean energy is delivered to the grid
Improve working conditions and increase wages of workers	Direct financial returns None as this investment increases costs Returns from internalization of externalities Avoid production stoppages through reduced risk of labor disputes and unrest Avoid costs of workers on sick leave	Decrease negative social externalities Decrease negative impact on health and safety of workers Increase positive economic and reduce social negative externalities Increase in wages to living wages improves worker livelihoods
Increase community spend to manage, anticipate and avert community disputes	Direct financial returns None as this investment increases costs Returns from internalization of externalities Reduction in risk of production stoppages caused by community protests Enhance brand value and reputation	Increase positive social externalities Increase in wellbeing of communities

INVESTMENT	CORPORATE VALUE CREATION	SOCIETAL VALUE CREATION
Improvements in energy and carbon efficiency	Direct financial returns Reduce energy costs Returns from internalization of externalities Avoid costs of carbon tax and expected increase of energy prices	Decrease negative social and environmental social externalities Decrease in contribution to climate change and its associated social and environmental impacts
Replace current metal spare parts with alternative materials that are less vulnerable to scarcity and are longer lasting	Direct financial returns Avoid costs if alternatives are more cost effective in the longer term Returns from internalization of externalities Avoid cost increases of metals	Decrease negative environmental externalities Decrease impacts of metal mining equipment usage if alternative has a better environmental or social footprint
Invest in development of products and services that require gold to deliver social and environmental benefits (such as medical and clean energy equipment)	Direct financial returns Increased market demand for gold	Increase environmental and social positive externalities Increase the downstream societal value of the company by improving wellbeing of people using the medical and clean energy equipment

BUSINESS CASE CALCULATIONS

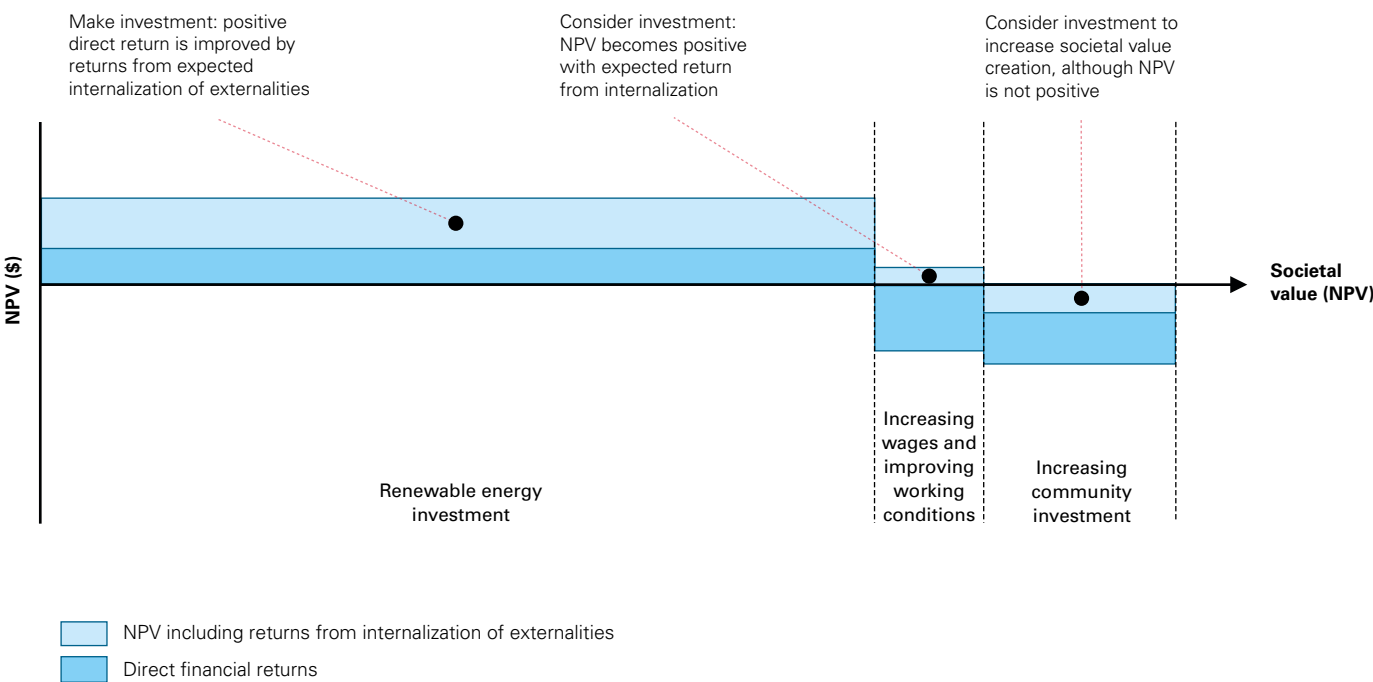
We have estimated the business cases for three of these potential projects and plotted them in a Marginal True Value Curve to illustrate how the methodology might be applied in this case. (See Figure 16).

- In this hypothetical case, increasing on-site generation of renewable energy delivers a positive direct return in NPV terms. The NPV increases when the likely internalization of externalities is taken into account: payment from the government for the energy produced, avoided carbon tax and avoided increase in energy price. This project also creates societal value through reduced CO₂ emissions and clean energy exported to the grid. In this example, this project creates the most societal value (shown by the width of the graph).
- Increasing wages and improving working conditions has a negative NPV in terms of direct financial returns. However, when expected returns from internalization are included, such as reduced labor unrest and reduced sick leave, the

expected NPV becomes positive. The initiative creates societal value through increased wages and improved working conditions for miners.

- The third potential investment is increased community spend. The NPV is not positive even when the expected internalization of reduced community disputes and brand enhancement is factored in. However, the project would create societal value that may provide the company with competitive advantage, for example, by enhancing relationships.

Figure 16 / Marginal True Value Curve for potential gold mine investments



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation.*

CASE STUDY 2: BREWERY, MAHARASHTRA, INDIA

KEY FACTS AND ASSUMPTIONS

BREWERY LOCATION

Maharashtra State is a major beer producing area in India due to the high-quality water sources and proximity to local markets. Recent monsoon seasons have been record breaking. Climate projections for Maharashtra indicate an increase in severe monsoon rainfall events, which can severely damage crops and reduce transport access across the region. Outside the monsoon season, Maharashtra is expected to be a water-stressed area. India currently has a relatively small beer market, but the beer industry in Maharashtra is seen as a growth sector due to a growing young population, urbanization, rising income levels and tourism.

TYPE OF FACILITY

Integrated: the production process encompasses the value chain from brewing to bottling, packaging and distribution.

ANNUAL PRODUCTION VOLUMES

500,000 hectolitres of beer.

EBITDA MARGIN

The brewery generates an EBITDA margin of approximately 5 percent of sales.

STEP 1 / Assess the company's 'true' earnings

True earnings

In this hypothetical case, the 'true' earnings of the brewery are 30 percent lower than its financial earnings. (See Figure 17).

Material positive externalities

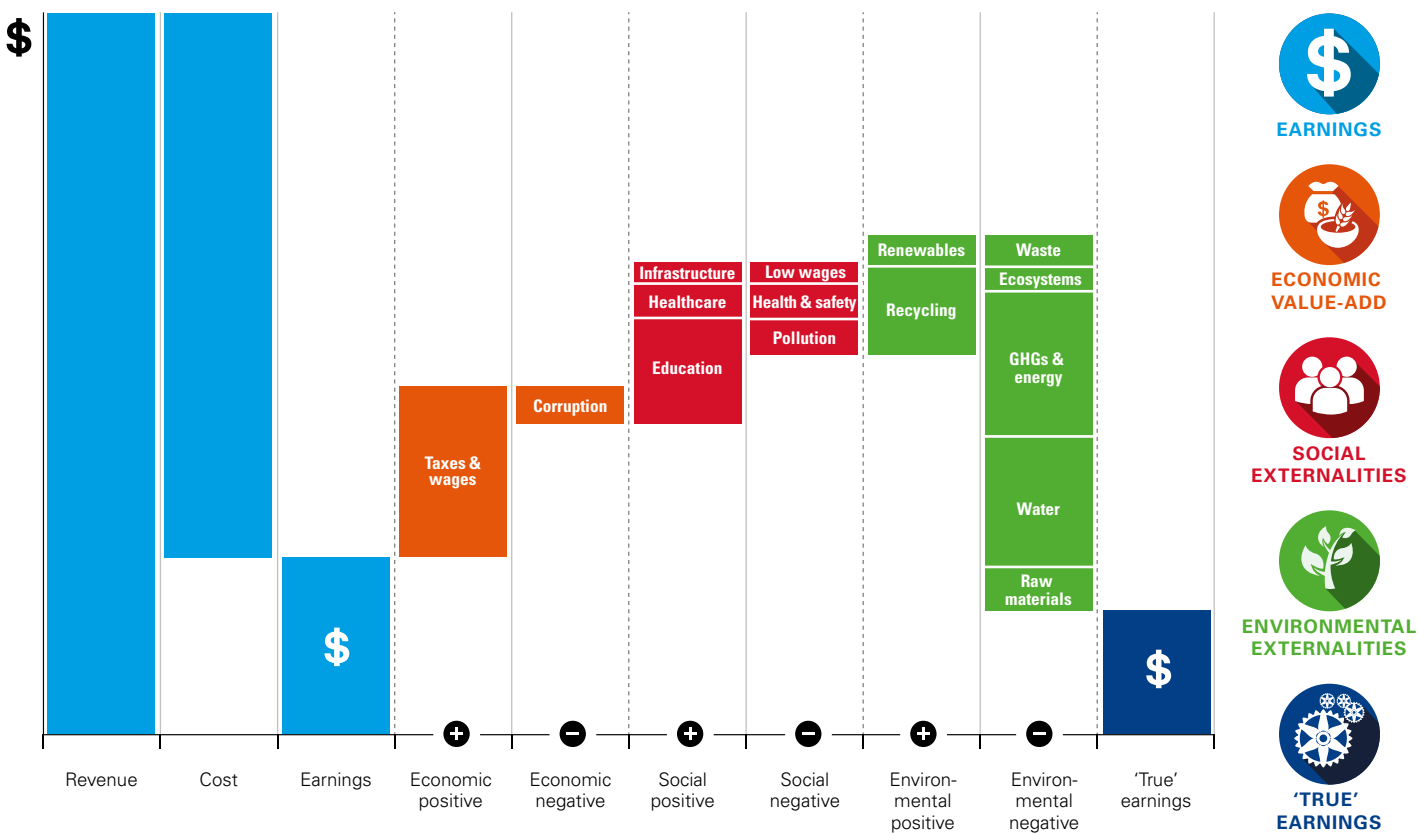
The brewery's material positive externalities (aside from its economic contributions in the form of wages and

taxes) come from its education of barley farmers, which enables them to be more productive and results in increased farmer income and quality of life. Positive environmental externalities are also generated by the brewery's use of agricultural waste as biomass to generate clean electricity, with the excess being supplied to the grid.

Material negative externalities

The brewery's most material negative externality is its GHG emissions. The second most material negative externality is its impact on scarce water resources, both through water used to irrigate the barley crop and the water required to brew the beer.

Figure 17 / 'True' earnings bridge for brewery in India



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation.*

Downstream externalities

This value creation bridge could be extended to include the downstream externalities of the brewery's key

product: beer. These are most likely to be in the form of negative social externalities such as health effects of alcohol

consumption and alcohol-driven social problems.

STEP 2 / Understand future earnings at risk

In Step 2 we assess the extent to which internalization of the externalities identified in Step 1 could affect the brewery's earnings. We do this by assessing the likelihood that the

various externalities will be internalized through the three forces of internalization (regulations and standards, market dynamics and stakeholder pressure) and whether

that internalization poses a high, medium or low risk to earnings.

Table 11 shows the full analysis for the brewery.

Table 11 / Brewery: internalization risk assessment

EXTERNALITIES	DRIVERS OF INTERNALIZATION			RISK OF INTERNALIZATION
	REGULATIONS & STANDARDS	STAKEHOLDER ACTION	MARKET DYNAMICS	
Corruption		Labor unrest over bribery and corruption		●
Infrastructure, healthcare and education spending outside of company	Government mandates increased investment in local communities	Increased investment in local communities forced by community action		●
Education of employees	Government imposes or increases minimum level of spend for employers on employee education	Labor unrest over low levels of employee education		●
Low wages	Government mandates wage increases for workers	Labor unrest over pay or working conditions		●
Health & safety	More stringent health and safety regulations	Labor unrest or consumer protest over unsafe working conditions		●
Pollution	Increases in taxes or fines for pollution	Production halted by community unrest due to pollution		●
Renewable energy to grid	Government imposes renewable energy targets			●
Recycling	Government imposes recycling targets			●
Waste	Government imposes or increases waste taxes			●
Ecosystem services	Government imposes more stringent environmental rehabilitation requirements		Critical ecosystems fail resulting in loss of production	●
GHGs and energy	Carbon tax imposed		Increases in fuel and electricity costs Increasing power outages Scarcity of power (supply constraint) Scarcity of fossil fuels Increases in fuel costs Extreme weather events lead to lost days of production	●
Water	Government imposes water taxes		Water shortage increases water price	●
Use of raw materials			Cost increase of agricultural inputs	●

● Low ● Medium ● High



BREWERY: SUMMARY OF INTERNALIZATION RISKS

Externalities identified as at high risk of internalization are:

- Use of raw materials (environmental negative) – increases in costs of agricultural inputs can lead to increased costs
- GHGs and energy (environmental negative) - exposure to increased electricity prices, instability of power supply and possible carbon taxes could increase costs
- Water (environmental negative) – increased risk of water scarcity can affect production at the brewery, as water is one of the major ingredients for producing beer. Water scarcity could reduce or even stop production.

There are no externalities identified as medium risk of internalization.

SCENARIO ASSUMPTIONS

Once we have identified the externalities that are most likely to be internalized, we can look more closely at how the brewery's earnings could be affected should the internalization occur. In order to model the earnings at risk we set the following scenario assumptions based on a 2030 timeline.

Raw materials

- The price of barley has increased by 20 percent due to increasing competition in India for agricultural land, damage from extreme weather events and increased demand for barley as a feed for livestock. The growth of India's middle class is fueling a rise in demand for meat and dairy products, which increases demand for crops and puts pressure

on agricultural land. Food prices are a significant issue in India and perceptions that the brewery's use of barley is pushing up food prices for people could result in community unrest.

GHGs and energy

- India has adapted its carbon pricing policy from a tax on coal to a tax on carbon emissions, reaching INR1,186 (USD20) per ton.
- The cost of bottles has increased as the brewery's suppliers pass on the costs of carbon pricing.
- In 2030, Indian electricity prices have increased by 61 percent in real terms over 2014 levels, having a direct impact on the brewery's cost base.

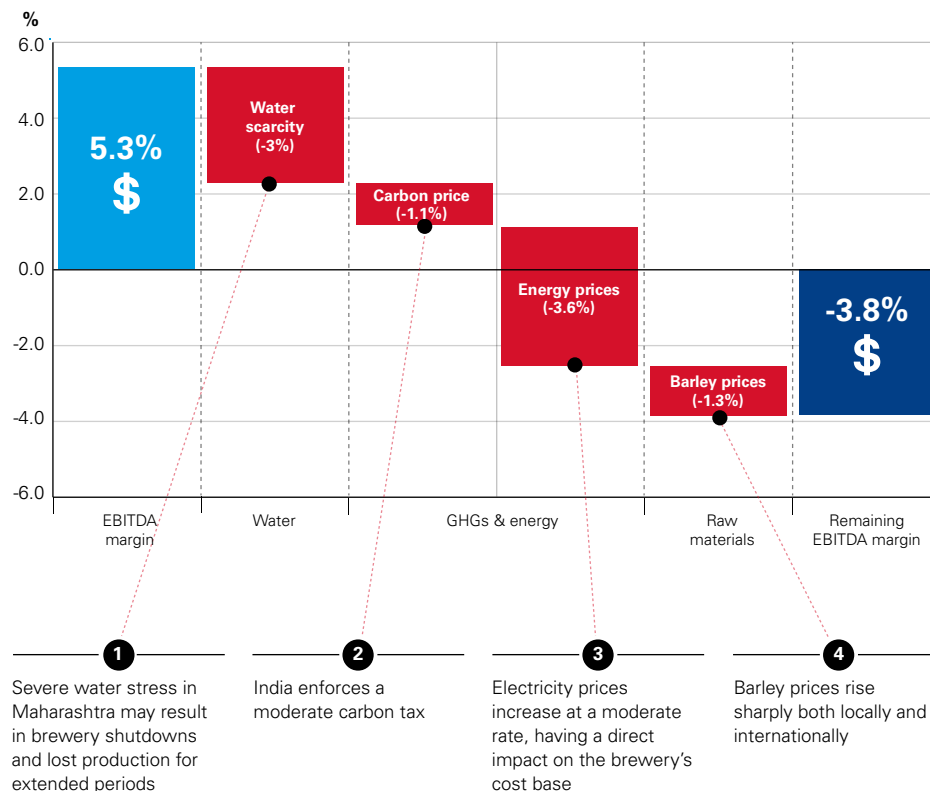
Water

- The brewery suffers 14 days of lost production during the year 2030 due to water shortages. Severe water shortages occur in Maharashtra out-side of the monsoon season and have caused beverages plants to shut down temporarily, or even permanently. In addition, community and NGO pressure is growing over industrial use of scarce drinking water supplies.

POTENTIAL EFFECTS: FROM POSITIVE TO NEGATIVE EBITDA MARGIN

In Figure 18, we have modeled the potential impact of internalization on EBITDA margin under the scenario assumptions outlined above. The risks associated with the brewery's externalities being internalized could result in a drop of EBITDA margin from around +5 percent to -4 percent. The greatest impact on EBITDA margin is seen from lost production due to water scarcity, and increases in the cost of electricity and barley.

Figure 18 / Effects of internalization on brewery's EBITDA margin



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation.*

STEP 3 / Create corporate and societal value

The brewery could consider various investments which would increase direct financial returns, reduce its corporate value at risk, increase returns from positive externalities and

simultaneously increase its societal value creation.

The natural focus would be to address the biggest impacts on EBITDA margin

from Step 2: increased electricity price and water scarcity. This helps them address the potential impacts of energy prices and production stoppages.

Table 12 / Potential investments for the brewery

INVESTMENT	CORPORATE VALUE CREATION	SOCIETAL VALUE CREATION
Increase combustion of agricultural waste to generate energy	Direct financial returns Reduction in energy costs (offset against investment costs) Returns from internalization of externalities Reduction in exposure to carbon tax, energy tax and price rises	Reduce negative environmental externalities Decrease GHG emissions and associated social and environmental impacts Reduce negative environmental and social externalities Decrease waste produced and associated social and environmental impacts
Installation of a heat exchanger	Direct financial returns Reduction in energy costs (offset against investment costs) Returns from internalization of externalities Reduction in exposure to carbon tax, energy tax and price rises	Reduce negative environmental externalities Decrease GHG emissions and associated social and environmental impacts
Generation of biogas from residues of brewing and waste-water treatment process	Direct financial returns Reduction in energy costs Returns from internalization of externalities Reduction in exposure to carbon tax, energy tax and price rises	Reduce negative environmental externalities Decrease GHG emissions and associated social and environmental impacts
Shared initiatives with local farmers to replenish water resources and to grow drought-resistant barley that requires less water	Direct financial returns Reduction in water costs by using less water Returns from internalization of externalities Reduce potential costs of increased water and barley prices due to drought	Improve positive environmental externalities Increase availability of water for communities and therefore improve livelihoods

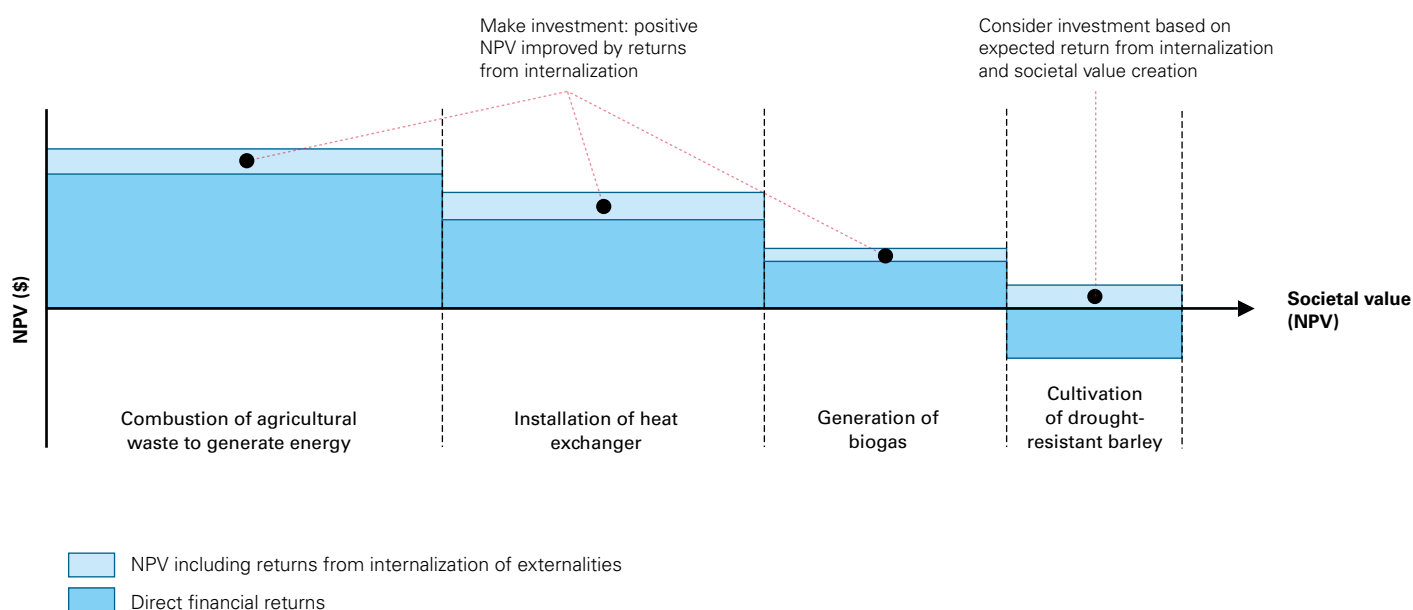


BUSINESS CASE CALCULATIONS

We have estimated the business cases for four of these potential projects and plotted them in a Marginal True Value Curve to illustrate how the methodology might be applied in this case. (See Figure 19).

- Three initiatives (combustion of agricultural waste for energy, installation of a heat exchanger and the generation and usage of biogas from residues of brewing in the waste-water treatment process) have a positive NPV in terms of direct financial returns. Internalization of externalities is expected to increase the NPV due to avoided energy taxes, carbon tax and energy price rises.
- These initiatives also create societal value because of the energy saved and reduction in GHGs and other emissions. Societal value creation is shown on the horizontal axis.
- The shared initiative with local farmers to replenish water resources and to grow drought-resistant barley has a negative NPV due to the high investment costs. However, the NPV becomes positive if returns from the forces of internalization are factored in because the company avoids increases in water and barley prices. This initiative also creates significant societal value by reducing water usage, and thereby increasing water availability for local farmers and communities.

Figure 19 / Marginal True Value Curve for potential brewery investments



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation*.

CASE STUDY 3: PLASTICS PLANT (LDPE), TEXAS, US

KEY FACTS AND ASSUMPTIONS

SUB-SECTOR

Low-density polyethylene (LDPE) is a commonly produced polymer used in the production of a wide range of plastic products such as trays, milk and juice containers, packaging wraps and computer hardware, such as disc drives and CDs.

PLANT LOCATION

Brazos River Basin, Texas – one of the world's major polyethylene producing areas due to its proximity to sources of feedstock from the local oil and gas industry. Ethane feedstock in the form of natural gas is available in such abundance that this region currently benefits from one of the lowest cash costs of production for polymers in the world. Diminishing water supplies and rapid population growth are critical issues in Texas, as reservoirs are limited and have high evaporation rates. Rising temperatures will lead to increased demand for water and energy.

PROCESS TYPE

Tubular reactor following the typical structure of an LDPE plant: compression, reaction, separation and extrusion.

PLANT ANNUAL PRODUCTION VOLUMES

700,000 tons of ethylene, of which 60 percent is converted into polyethylene. The remaining 40 percent is used in the production of other products.

EBITDA MARGIN

The LDPE plant generates an EBITDA margin of around 36 percent of sales.

STEP 1 / Assess the company's 'true' earnings

True earnings

In this hypothetical case, the LDPE plant has 'true' earnings almost equal to its financial earnings.

Material positive externalities

The most material element of the LDPE plant's positive externalities (aside from economic contributions) is the skills training provided to plant workers.

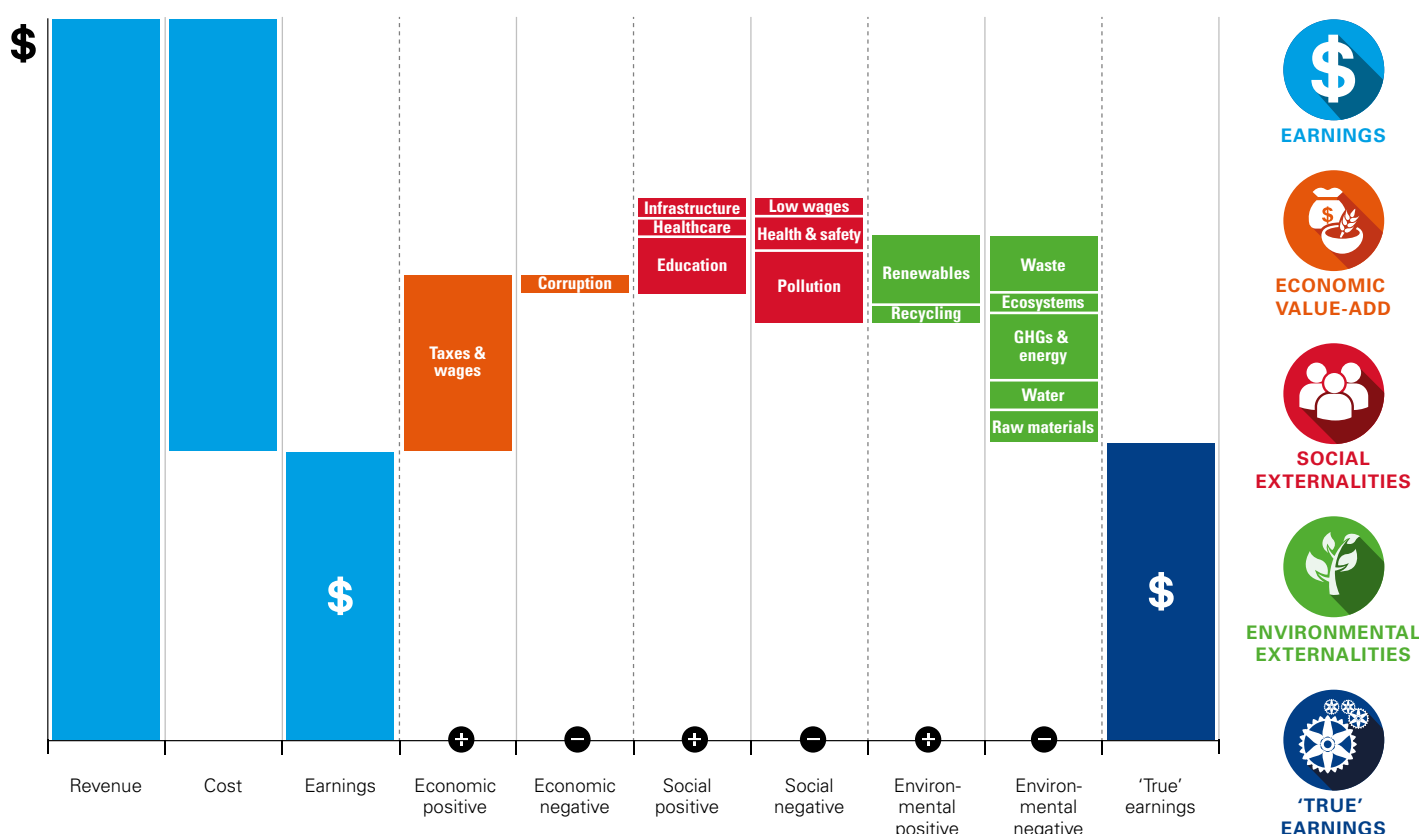
There is also a significant contribution of positive environmental externalities through the use of waste-heat recovery for energy generation, which allows the plant to create a surplus of energy which it can deliver to the grid.

Material negative externalities

The most significant element of negative externalities is pollution from

the production of polyethylene (such as SO_x, NO_x and dust emissions) which can affect the health of the communities surrounding the plant. The carbon intensity of this LDPE plant is also relatively high due to the energy used in production. Since the plant recycles its water, water usage is relatively low and therefore does not constitute a material negative externality.

Figure 20 / 'True' earnings bridge for LDPE plant in the US



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation.*

Downstream externalities

This value creation bridge could be extended to include the downstream externalities of the LDPE plant's key product: polyethylene plastic. In the

plant's case, positive downstream externalities would include the use of polyethylene in other products such as components for renewable energy equipment, medical products and

insulation materials. Negative downstream externalities would include the effects of plastic waste on the environment, such as birds and sea creatures.

STEP 2 / Understand future earnings at risk

In Step 2 we assess the extent to which internalization of the externalities identified in Step 1 could affect the LDPE plant's earnings. We do this by assessing

the likelihood that the various externalities will be internalized through the three drivers of internalization (regulations and standards, stakeholder action

and market dynamics) and whether that internalization poses a high, medium or low risk to earnings. Table 13 shows the full analysis for the LDPE plant.

Table 13 / LDPE plant: internalization risk assessment

EXTERNALITIES	DRIVERS OF INTERNALIZATION			RISK OF INTERNALIZATION
	REGULATIONS & STANDARDS	STAKEHOLDER ACTION	MARKET DYNAMICS	
Corruption		Labor unrest over bribery and corruption		●
Infrastructure, healthcare and education spending outside of company	Government mandates increased investment in local communities	Increased investment in local communities forced by community action		●
Education of employees	Government imposes or increases minimum level of spend for employers on employee education	Labor unrest over low levels of employee education		●
Low wages	Government mandates wage increases for workers	Labor unrest over pay or working conditions		●
Health & safety	More stringent health and safety regulations			●
Pollution	Increased penalties for health effects of emissions of LDPE plant	Production halted by community unrest due to unacceptable production methods which produce pollution		●
Renewable energy to grid	Government imposes renewable energy targets			●
Recycling	Government imposes recycling targets			●
Waste	Government imposes or increases waste taxes			●
Ecosystem services	Government imposes more stringent environmental rehabilitation requirements		Critical ecosystems fail resulting in loss of production	●
GHGs and energy	Carbon tax imposed		Increases in electricity costs Increase in power outages/ scarcity of power Scarcity of fossil fuels Increases in fuel costs	●
Water	Government imposes water taxes		Water shortage increases water price	●
Use of raw materials			Increase in cost of ethylene feed-stock due to extreme weather events and as a result of carbon pricing	●

● Low ● Medium ● High

LDPE PLANT: SUMMARY OF INTERNALIZATION RISKS

There are no externalities identified at high risk of internalization.

Externalities identified as at medium risk of internalization are:

- Use of raw materials (environmental negative) - extreme weather events, such as cyclones and hurricanes in the Gulf of Mexico, could cause some lost production due to disruption of the plant's supply chain, infrastructure and services impacting supplies of ethylene feedstock
- GHGs and energy (environmental negative). A future US carbon price is expected to be passed on in the prices of electricity and ethylene feedstock, as well as being applied to the company's own operations
- Water (environmental negative) – there is a risk of water shortages in Texas; however, increased water pricing does not have a high impact on the LDPE plant because water is relatively easy to recycle in the LDPE production process and so the plant is reasonably well protected from shortages.

Externalities assessed as having a relatively low risk of internalization include health and safety (social negative) – although the plant does have incidents and accidents, current health and safety standards fulfill the highest modern standards and, therefore, there is a low risk of internalization.

Scenario assumptions

Once we have identified the externalities that are most likely to be internalized, we can look more closely to understand how the LDPE plant's earnings could be affected should the internalization occur. In order to model the earnings at risk, we

set the following scenario assumptions based on a 2030 timeline:

Raw materials

- Ethylene feedstock prices have increased by 10 percent in real terms since 2014 due to increased demand.

GHGs and energy

- In 2030, Texas has experienced more moderate electricity and fuel price increases compared with other regions, due to ample security of supply and the abundance of natural gas due to shale development in the Permian and Eagleford basins. 2030 electricity prices are modeled here at an increase of 57 percent in real terms from 2014 prices.
- The US government has implemented a moderate carbon price which, in 2030, stands at today's equivalent of USD33 per ton. The LDPE plant itself has negligible direct carbon emissions as the bulk of the carbon in the production process remains contained within the final product. The plant does, however, face an indirect carbon cost due to the carbon intensity of electricity and the ethylene feedstock used in production. For this case study we have assumed that utilities pass on part of their carbon costs in electricity tariffs. Ethylene feedstock production and LDPE production businesses are generally integrated within the same groups and so we would expect the

full cost of the carbon price to be passed on in the cost of the feedstock.

- In 2030 the Brazos River basin is experiencing increasingly frequent and severe storms, but the LDPE plant operations are relatively sheltered from damage due to the plant's design specifications. We have, however, assumed five days of lost production due to storm damage to the plant's supply chain. Supply chain impacts will include damage to oil and gas production and delivery infrastructure and impacts on natural gas and electricity markets in the US.

Water

- In June 2014, most of the Brazos River basin was classified as suffering either severe or extreme drought.⁴ In 2030 the pattern of drought is expected to have continued or worsened. The LDPE plant is protected because water is relatively easy to recycle in its production process, but there could be some impact on earnings from prolonged water shortages. For the purposes of this case study we have assumed five days of lost production due to water shortages in the year 2030.

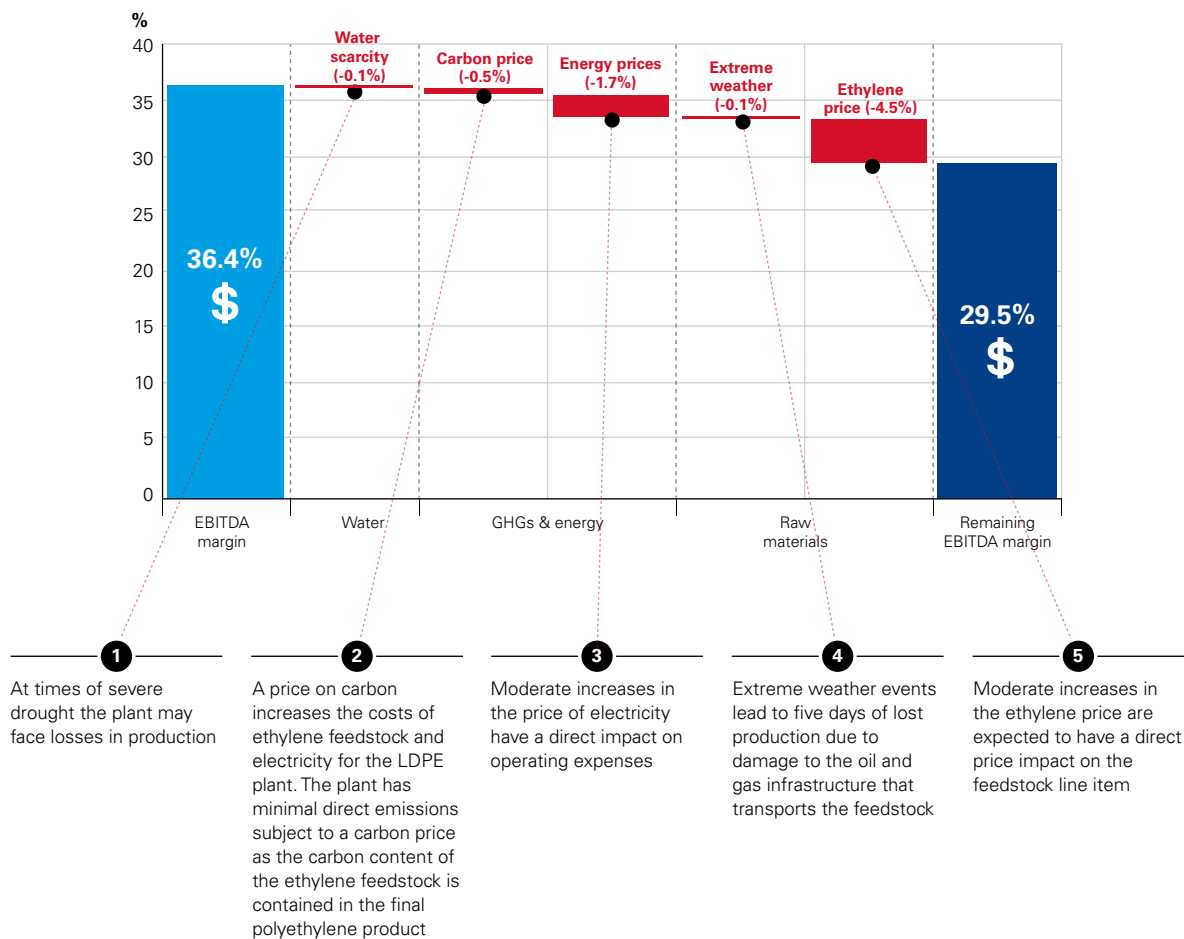
⁴ <http://www.brazos.org/DroughtStatus.asp>. Retrieved 9 June 2014.



POTENTIAL EFFECTS:
EBITDA MARGIN ERODED BUT NOT DESTROYED

In Figure 21, we have modeled the potential impact of internalization on EBITDA margin under the scenario assumptions outlined above. The plant’s gross EBITDA margin could be eroded by 7 percentage points from 36.4 percent to 29.5 percent, primarily because of the increased ethylene price driven by market dynamics such as an increase in demand.

Figure 21 / Effects of internalization on LDPE plant’s EBITDA margin



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation.*

STEP 3 / Create corporate and societal value

The LDPE plant could consider various investments which would increase direct financial returns, reduce its corporate value at risk, increase returns from positive externalities and

simultaneously increase its societal value creation. The natural focus would be to address the biggest impacts on EBITDA margin from Step 2: increased electricity price and increased ethylene

price. This helps the plant address the impacts of energy prices, carbon tax and increased costs of feedstock.

Table 14 / Potential investments for the LDPE plant

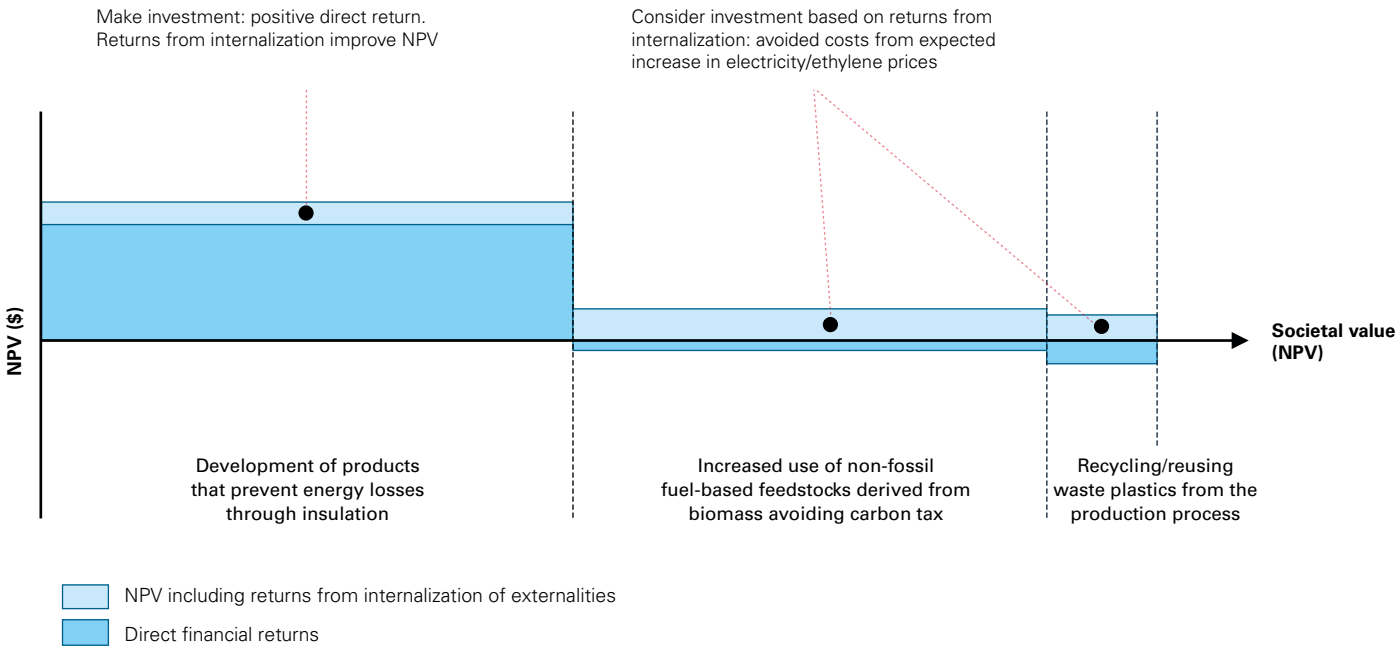
INVESTMENT	CORPORATE VALUE CREATION	SOCIETAL VALUE CREATION
Increased use of non-fossil-based feedstock derived from biomass	Direct financial returns Potential reduction in feedstock costs in the longer term Returns from internalization of externalities Avoid cost increase of ethylene feedstock	Reduce negative environmental externalities Decrease usage of natural resources and its associated social and environmental impacts
Recycle/reuse waste plastics from the production process	Direct financial returns Reduce costs by reducing amount of feedstock required Returns from internalization of externalities Avoid cost increase of ethylene	Reduce negative environmental externalities Decrease in waste and decrease in use of raw materials
Improve water efficiency of the plant or use of alternative water supplies including groundwater development and purchasing water rights	Direct financial returns Reduction in water usage results in reduced water costs Returns from internalization of externalities Prevent costs of plant shutdowns resulting from water scarcity	Reduce negative environmental externalities Decrease water scarcity level in area, therefore creating positive environmental externalities
Diversify energy sources toward renewable sources	Direct financial returns Potential reduction in energy costs Returns from internalization of externalities Reduction in exposure to carbon tax and price rises of electricity	Reduce negative environmental externalities Decrease in contribution to climate change and its associated social and environmental impacts

BUSINESS CASE CALCULATIONS

We have estimated the business cases for three of these potential projects and plotted them in a Marginal True Value Curve to illustrate how the methodology might be applied in this case. (see Figure 22).

- The development of new products which prevent energy losses has a positive NPV due to the extra sales it creates. Internalization returns from received innovation subsidies increase the NPV. The new products
- create significant societal value (shown by the width of the column) because of the energy saved as a result of their use.
- Two initiatives (increased use of biomass as a feedstock and recycling of waste plastics from the production process) have a negative NPV in direct financial terms. However, the expected internalization returns from avoided increase in ethylene feedstock costs result in a positive NPV and these initiatives also create positive societal value, due to decreased use of raw materials.

Figure 22 / Marginal True Value Curve for potential LDPE plant investments



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation.*

HOLCIM SUBSIDIARY AMBUJA CEMENT TAKES A BROADER VIEW ON VALUE



KPMG's True Value methodology has been developed, piloted and refined with a number of clients of KPMG member firms including Ambuja Cement Limited, a subsidiary of global conglomerate Holcim.

Ambuja is one of India's leading cement manufacturers. The company has been operating for over 25 years and sustainability is at the core of its operations and philosophy.

At Ambuja, sustainability and business go hand in hand. In the company's most recent Sustainable Development report, Ambuja's Chairman Narotam Sekhsaria emphasizes the fact that his company has a strong social responsibility and argues that sustainability is one of the most powerful answers to society's challenges.

He also understands that a positive interaction with the company's broader operating environment is critical to future-proofing the company's profitability.

It is the ambition to secure long-term corporate value that is behind the company's drive to review its operations through the KPMG True Value approach. Ambuja started its true

value project in 2012 with support from KPMG as its knowledge partner. The project's aim was two-pronged: firstly to take into account the company's effects on society and the environment, and secondly to maximize future profitability.

In line with KPMG's True Value methodology, Ambuja went through three steps:

1. Assess Ambuja's 'true' earnings
2. Understand future earnings at risk from the drivers of internalization
3. Identify strategic initiatives to create corporate and societal value.

"Ambuja Cement is proud to be the first company to estimate its True Value."

Ajay Kapur, CEO Ambuja

STEP 1 / Ambuja delivers positive 'true' earnings

Ambuja has been recognized as one of the pioneers of sustainability and corporate responsibility in India. By continuously reducing the resource intensity of its manufacturing process and investing in the communities in which it operates, Ambuja has made significant strides towards its long-term ambition of leaving no trace behind.

The 'true' earnings bridge, which combines the company's financial profits with its monetized positive and negative externalities, fits neatly into this ambition. The calculation of Ambuja's 'true' earnings showed that, on balance, Ambuja generated net-positive socio-environmental value in 2012, that is to say its 'true' earnings were greater than its financial profit alone. (See Figure 23).

Examples of Ambuja's positive externalities include:

- Harvesting more water than it uses in its manufacturing ('Water Positive'), through check dams, river linking,

and turning former quarries into manmade lakes or wetlands

- Using waste from other industries in its manufacturing process, avoiding the need for landfill disposal
- Supporting income-generating activities for members of the local community

Examples of Ambuja's negative externalities include:

- Emissions of greenhouse gases
- Other emissions such as fine particles
- Extracting groundwater

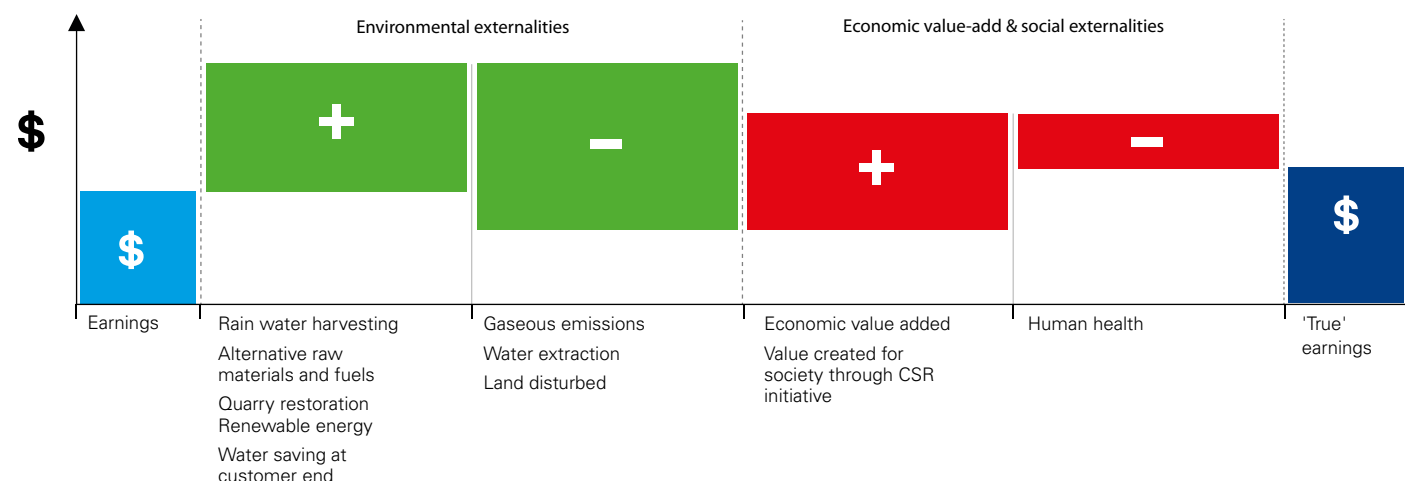
To ensure that this new approach to understanding company performance was broadly supported, and to generate ideas for improving the 'true earnings' of the company over time, senior staff across the company were involved throughout the process.

AMBUJA CEMENT FOUNDATION'S SOCIAL RETURN ON INVESTMENT

Ambuja invests in the communities in which it operates through the Ambuja Cement Foundation. The Foundation's activities range from helping farmers increase their incomes by promoting agriculture-based livelihoods, micro-irrigation and water resource management to providing healthcare and education for the families living around the company's production sites.

Inspired by the KPMG True Value methodology, Ambuja asked KPMG to help it develop a 'true' earnings calculation for the Foundation. The results confirmed the Foundation's important contribution to the company's CSR strategy: for every rupee spent in 2012, 8.5 rupees of socio-environmental value were created.

Figure 23 / Ambuja's 2012 'true' earnings exceeded its financial earnings alone



Source: Ambuja Cements Limited (2014). *Sustainable Development Report 2013*.



STEP 2 / Impact of internalization on profitability assessed

The calculation of Ambuja's 'true' earnings in Step 1 formed the starting point for a strategic discussion about the company's future profitability.

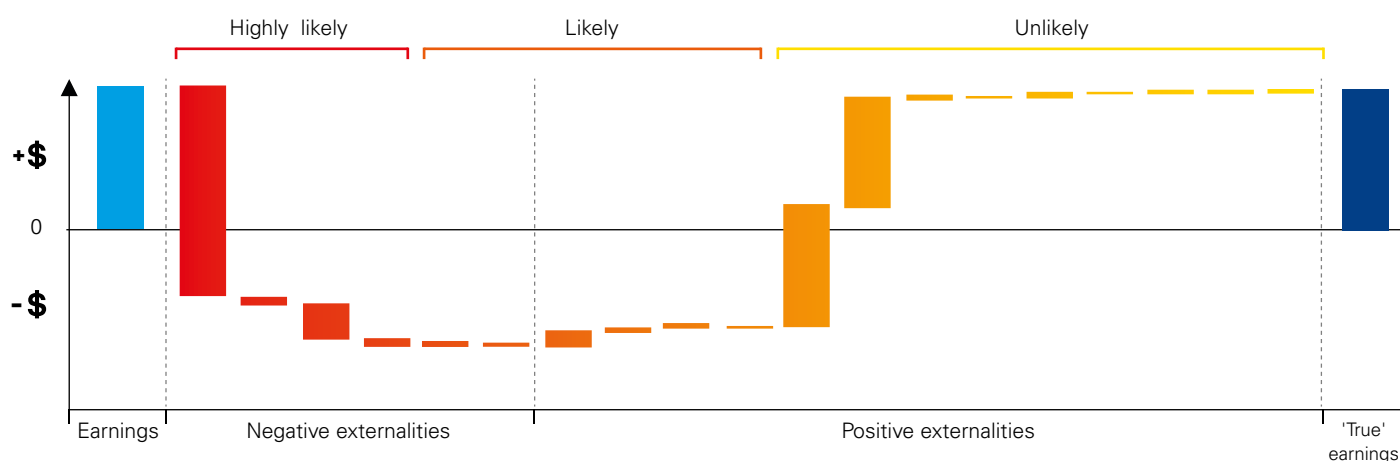
Detailed analysis of each of the company's key externalities revealed

that the negative externalities were more likely to be internalized than the positive externalities. (See Figure 24).

Drivers of internalization for Ambuja include increasing water scarcity in India and the introduction of regulation to

increase industrial energy efficiency and reduce greenhouse gases and other emissions. These drivers were assessed both qualitatively and quantitatively to understand their potential impact on Ambuja's future profitability.

Figure 24 / Key externalities prioritized by likelihood of internalization



Source: Ambuja Cements Limited (2014). *Sustainable Development Report 2013*.

STEP 3 / Future investments prioritized to create societal value as well as corporate value



"In the quest to create value beyond business, our people are focused on creating enduring results in all three aspects of our future – social, environmental and economic."

Narotam Sekhsaria

Chairman, Ambuja Cement

Ambuja is a major player with an 11 percent share of the fast-growing USD13 billion Indian cement market.

The cement industry is highly capital intensive and the company has to select investments carefully in order to maintain profitability and competitiveness.

The KPMG True Value methodology enabled Ambuja to make a comprehensive assessment of return-on-investment that included returns resulting from the likely internalization of externalities as well as direct financial returns. By taking this approach, Ambuja identified a number of financially attractive, positive NPV projects that would benefit local communities, society and the environment, and boost future profitability. In effect, the company is taking 'value creation at risk' and turning it into a source of competitive advantage.

The projects identified include measures to reduce greenhouse gas emissions that will also cut costs and capital outlays by reducing fuel intensity and the use of limestone. Other projects will see Ambuja reduce its use of scarce and increasingly expensive water.

Additionally, its on-going investment in communities and the local environment could secure its license-to-operate, enhance talent attraction, and facilitate access to new mining sites.

If all identified projects are implemented, Ambuja could boost its 'true' earnings substantially above the baseline scenario by 2020.

Taking true value forward

Going through the KPMG True Value methodology has been a powerful

process for Ambuja. Bringing together the numbers and presenting them in such a visual manner provided valuable insights, which helped to get company staff engaged in discussing.

The process has helped Ambuja in its decision-making and the company plans to fully integrate the KPMG True Value approach in its business processes.

The company's ambition is to continuously increase its 'true' earnings. It will do this by reducing its negative externalities, but also by creating more positive societal value. The water harvesting program is a good example of the latter, but the company could go further by developing products that help its customers to improve their own socio-environmental footprints.

Ambuja realizes that it cannot achieve this ambition in isolation, so it will be pro-actively engaging stakeholders – such as customers and the government – in discussions to communicate the results of the project and to explore how they can work together to create more socio-environmental value.

This approach mirrors the ambition of its parent company Holcim, which has recently published its Sustainable Development Ambition 2030. As part of this ambition Holcim will be working with a wide range of interested stakeholders to develop 'sustainability enhanced solutions' (products with proven sustainability benefits) and create shared value. Clearly, both Ambuja and its parent Holcim are taking a broader and longer-term view on value.



"True Value has a place in today's corporate world, and it's right at the top. Times have changed but most companies haven't. In the modern world, it's important that a company broadens its view on the value it brings to the world."

Ajay Kapur, CEO Ambuja Cement

Cautionary note: The Social and Environmental Profit and Loss Statement (SEP&L) is intended to raise awareness of externalities that may or may not affect Ambuja/Holcim's business and to assess their relative importance. It contains preliminary considerations which may be subject to change. Furthermore, the SEP&L may also change, for example, as valuation techniques and methodologies evolve. It should be considered as indicative and it does neither represent any final factual conclusions nor is it intended to assert any factual admission by any person regarding the impact of Ambuja/Holcim or any of its related parties on environment or society.





05

AN AGENDA FOR CHANGE:

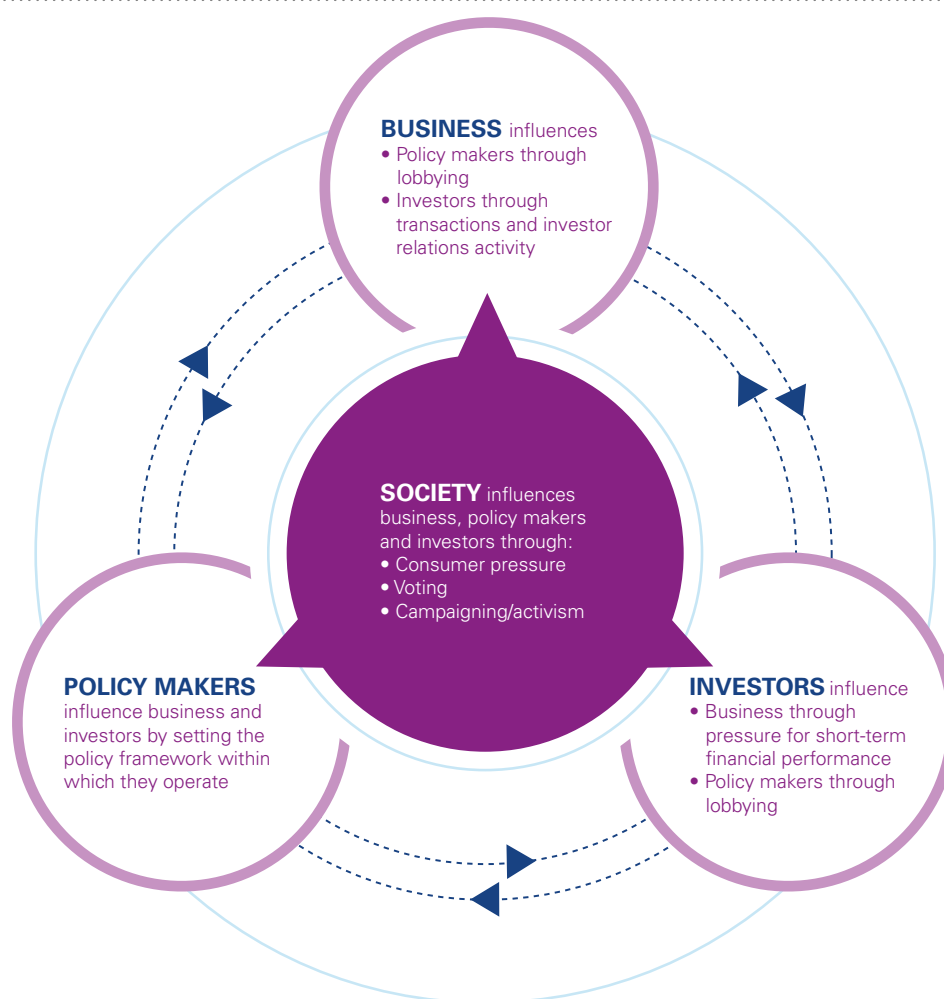
accelerating progress towards
a new vision of value

A new vision of value in which corporate and societal value creation are fully aligned ultimately requires business leaders to view the creation of societal value as a means to reshape business models, enhance profitability and reduce risk. Investors need to recognize the link between corporate and societal value and to support and finance the companies that are acting on it. Policy makers need to provide a regulatory environment in which the creation of societal value is more widely promoted and rewarded.

Many argue that meaningful change cannot happen while the current financial system focuses investors and business leaders almost exclusively on the creation of short-term shareholder value. Yet the power to drive change must lie with this triangle of investors, business leaders and policy makers, and with the society within which these three groups function.

We have set out to identify key actions that each of these groups can take in order to break down barriers and challenge the status quo. To do so, we spoke to more than 50 senior professionals worldwide from the fields of business, investment, policy, academia and civil society. These individuals participated in the research through workshops and interviews. Details of those who contributed can be found on page 112.

Figure 25 / Driving change towards a new vision of value



Source: KPMG (2014). *A New Vision of Value: Connecting corporate and societal value creation*.



A number of interventions emerged as common themes in these conversations. These interventions fall into six broad categories to form the following agenda for change:

Table 15 / An agenda for change

INTERVENTION	INVESTORS	BUSINESS LEADERS	POLICY MAKERS
Demonstrate leadership and tangible action	●	●	
Clarify the concept of fiduciary duty	●		●
Improve understanding of the relationship between corporate and societal value creation	●	●	●
Change mandates and incentives	●	●	
Improve the quality of data	●	●	●
Provide an enabling policy environment			●

These interventions are summarized in the following pages and serve as a starting point for discussion. It is important, however, to acknowledge that both the system itself and the dynamics between the key players are highly complex. The points that follow are by no means the only instruments with the potential to effect change. There are no easy answers and no single intervention will create meaningful change. Systemic analysis and action on multiple fronts is essential.

"It's not just about the listed corporates. We need a much more sophisticated view across the entire system. The capital supply chain is complex and badly understood by many of its own participants as well as by many policy makers and businesses."

Steve Waygood, Chief Responsible Investment Officer, Aviva Investors

DEMONSTRATE LEADERSHIP AND TANGIBLE ACTION

"All companies want long-term shareholders whom they can work with in terms of strategic decisions and who will be there when things get bumpy, which they inevitably will do. What they don't want is pressure to remove the CEO because a couple of quarters' earnings expectations have not been met."

Will Oulton, Global Head of Responsible Investment, First State Investments

If investment analysis and decision making are to take account of both societal and corporate value creation, then mainstream investors must show leadership in supporting wider systemic change within capital markets. Change cannot happen without leadership and therefore we need investors to show the way, both individually and collectively.

Leadership requires investors to engage actively with businesses and policy makers

One of the key opportunities for investors to demonstrate such leadership is by engaging with investee companies on their long-term business strategies and their potential to create both shareholder and societal value. Active engagement – or ‘stewardship’ where investors act as long-term owners of the business rather than short-term shareholders – is becoming a significant investment trend in order to enhance long-term returns.

First State and Aviva are among the investors that are demonstrating leadership in active engagement and both report on their stewardship.^{1,2} Another example is BlackRock whose Chairman and CEO Larry Fink, in March 2014, wrote to investee companies to encourage them to focus on long-term growth strategies.³

Leadership also requires engagement with public policy makers on how corporate value is affected by societal value creation with the aim of encouraging policy measures that enable companies to take a longer term approach to running their businesses.

PRI CLEARINGHOUSE: FACILITATING INVESTOR COLLABORATION

A good example of investor collaboration is the PRI Clearinghouse, organized by the Principles for Responsible Investment organization whose signatory asset owners and fund managers now represent assets totaling USD45 trillion.

The Clearinghouse provides a private forum to pool resources, share information, enhance influence and engage with companies, stakeholders, policy makers and other actors in the investment value chain. Its vision is to foster sustainable long-term value creation through collaboration, benefiting the environment and society as a whole.

Close to 500 PRI signatories have been involved in at least one collaborative initiative since the platform was launched at the end of 2006, and over 520 collaborative proposals have been posted.⁴ These proposals cover a variety of themes including water, carbon emissions, labor standards, human rights and sustainable palm oil.⁵

Leadership can be shown on an individual basis or in collaboration with other investors. Investor collaborations have the potential to shift traditional views of value creation and are becoming more common and having an increasing impact. Examples of effective investor collaborations include the Principles for Responsible Investment’s (PRI) Clearinghouse, the Enhanced Analytics Initiative, the new Shareholder-Director Exchange (SDX) and the Carbon Disclosure Project (See breakout box on the PRI Clearinghouse)

Changes to asset allocation can improve societal value creation

“We believe that private equity has the potential to outperform public markets in the long term. The main reason is the ability of private equity to act as owners and to steward companies towards long-term value creation”

Mark Wiseman, President & CEO, Canada Pension Plan Investment Board (CPPIB)

Societal value creation through investment may be easier to achieve in asset classes other than public equity where timeframes are traditionally short. As fund managers evolve their fiduciary duty interpretations to include the interests of long term beneficiaries, they are more likely to consider alternative asset classes.

For example, Canada’s largest pension fund - The Canada Pension Plan Investment Board (CPPIB) - has chosen to place some 40 percent of its assets in private equity, real estate and infrastructure. Its CEO Mark Wiseman told us that private companies have different pressures to listed companies and can therefore have a more long-term vision than public markets typically allow. He also referred to the more conservative and defensive attitudes of public company boards which typically spend far more time focusing on compliance and regulation than their private company counterparts.

More business leaders need to challenge the status quo

Closing the gap between corporate and societal value creation requires more business leaders to publicly challenge the idea of short-term financial performance as the sole indicator of business success.

1 <http://www.firststateinvestments.com/uk/insto/home/>. Retrieved 10 July 2014.

2 http://www.avivainvestors.com/about_us/stewardship_policy/principles/index.htm. Retrieved 10 July 2014.

3 <http://online.wsj.com/public/resources/documents/blackrockletter.pdf>. Retrieved 10 July 2014.

4 <http://www.unpri.org/areas-of-work/clearinghouse>. Retrieved 18 July 2014.

5 <http://www.unpri.org/areas-of-work/clearinghouse/coordinated-collaborative-engagements>. Retrieved 18 July 2014.

Unilever, under the leadership of Paul Polman, is arguably the best-known example of a company that has openly committed to delivering social and environmental benefits alongside financial performance, through its plan to double revenues while halving environmental impacts.⁶ However, other major companies are also setting ambitious targets.

Apple is one example. Under its new CEO Tim Cook, the company has ramped up its commitments to increase the company's positive externalities and reduce negative ones. The company's environmental manifesto includes a number of bold goals, including an ambition to power all Apple's corporate offices, retail stores and data centers with renewable energy.⁷

Apple is also aligning its brand – the most valuable in the world in 2013 and worth over USD100 billion according to Forbes⁸ – with a message of societal value creation. In a video on the company website, Tim Cook defines the company's mission as “to make the world a better place” and recent advertisements for the iPad show it being used to deliver benefits for society such as education and clean energy.⁹

However, it should be recognized that business leaders who attempt to address their company's externalities through new strategies, can expect to meet with resistance from some shareholders. Tim Cook of Apple is one. At a shareholder meeting in 2014 some investors questioned Apple's environmental initiatives. Cook told them to “get out of the stock”.¹⁰

Not all CEOs feel empowered to make societal value creation a ‘non-negotiable’ part of strategy and core to the ethos and DNA of a company, although it is an increasing trend. What seems to emerge is an increasing propensity among business leaders to acknowledge that value creation is not just about short-term shareholder value but that creating longer-term corporate value will rely on creating longer-term societal value.

While not all company leaders are yet prepared to stick their heads above the parapet in the same way as Polman and Cook have done, many are engaging collaboratively in the evolution of value creation, for example through programs such as the WBCSD's Redefining Value initiative.

CLARIFY THE CONCEPT OF FIDUCIARY DUTY

“Fiduciary responsibility is going to be an extremely interesting area going forward. The battle on divestment from fossil fuel stocks and other such initiatives may well be won or lost on this notion.”

Malcolm Gray, Head of ESG and Fund Manager, Investec Asset Management

The concept of fiduciary duty, namely the obligation for pension funds to act always in the best interest of their beneficiaries, was one of the central points to emerge from our conversations.

Fiduciary duty requires funds to focus not only on meeting short-term liabilities, but also to ensure the ability to pay beneficiaries in the future. In other words, it requires institutional investors to pay attention to the long-term value creation of the companies in which they invest.

Yet, many of those we spoke to acknowledged that today many funds face challenges and significant pressure in maintaining liquidity and paying their short-term liabilities. As a result, the concept of fiduciary duty is often interpreted and applied with a focus on the short-term rather than the long-term. This can lock in the type of short-term thinking that prevents funds from considering the longer term investment risks and opportunities related to social and environmental externalities.

This limited interpretation of fiduciary duty can be exacerbated by uncertainties and misunderstandings on the part of trustees and their advisors on how fiduciary duty should be applied in the context of environmental, social and governance (ESG) factors. There is a lack of clarity over which social and environmental factors should be considered and how investors should assess whether or not they are material to longer term financial performance.

Progressive work has been done on these uncertainties, particularly in the UK. The 2011 Kay Review, for example, called for a review of the concept of fiduciary duty. It was followed by a consultation and recommendations by the UK Law Commission.

6 <http://www.unilever.com/sustainable-living-2014>. Retrieved 10 July 2014.

7 <http://www.apple.com/environment/climate-change>. Retrieved 10 July 2014.

8 <http://www.forbes.com/sites/kurtbadenhausen/2013/11/06/apple-dominates-list-of-the-worlds-most-valuable-brands>. Retrieved 10 July 2014.

9 <http://business.time.com/2014/01/13/apples-latest-ad-is-probably-going-to-give-you-chills>. Retrieved 10 July 2014.

10 http://news.cnet.com/8301-13579_3-57619770-37/tim-cook-advises-climate-change-deniers-to-get-out-of-apple-stock. Retrieved 10 July 2014.

The Commission stopped short of recommending that consideration of ESG issues should be written into law as part of fiduciary duty, but did determine that trustees should take into account longer-term risks and opportunities related to ESG factors where they are financially material.^{11,12}

This clarification on fiduciary duty is likely to accelerate the alignment between corporate and societal value creation in investment processes and decision making.

Some funds are already acting on this broader interpretation of fiduciary duty. One of them is the California Public Employees Retirement System (CalPERS) which manages retirement benefits for over 1.5 million members. In 2013, CalPERS adopted a new set of investment beliefs which commits the fund to favor investment strategies that “create long-term, sustainable value” and sets out the fund’s belief that “strong governance, along with effective management of environmental and human capital factors, increases the likelihood that companies will perform over the long-term and manage risk effectively”.¹³

This in effect acknowledges that fiduciary duty extends to future as well as current beneficiaries, opens the door to changes in investment practice and allocations, and sets an example that other asset owners can follow.

SOUTH AFRICA’S REGULATION 28

Some countries are driving the evolution of fiduciary duty through law. One of these is South Africa which in 2011 revised Regulation 28 of its Pension Fund Act. The revised regulation states that a pension fund and its board must comply with a series of principles including “appropriate consideration to any factor which may materially affect the sustainable long-term performance of a fund’s assets, including factors of an ESG character.”¹⁴

“Regulation 28 helps in South Africa, and this might be a model worth considering elsewhere.”

Jon Duncan, Head of Sustainability Research and Engagement, Old Mutual Investment Group

IMPROVE UNDERSTANDING OF THE RELATIONSHIP BETWEEN CORPORATE AND SOCIETAL VALUE

“The most difficult thing to do is to create the right culture in which employees fully understand and appreciate our goals surrounding sustainable value creation and what this means for their jobs.”

Manuel Lewin, Head of Responsible Investment, Zurich Insurance Group

While interpretations of fiduciary duty are likely to evolve towards a longer-term and broader view of value creation, the fact remains that today only a relatively small number of ESG-oriented investors take issues of societal value creation into account. The relationship between corporate and societal value is not yet high on the agenda across much of the investment world.

This is partly due to a lack of common standards to assess the materiality of ESG issues and a lack of skills to apply such standards. A shortage of clear data on the effects of corporate sustainability strategies on the financial performance of companies also plays a part in perpetuating the problem.

Some of those we spoke to suggested that the investment industry would benefit from a recognized process or certification for financial institutions to consider in developing strategy and capacity.

Similarly, business leaders need to improve their understanding of the relationship between corporate and societal value so they can communicate it more effectively to their investors. Business schools can play a role here by teaching these subjects in a more integrated fashion, certainly when it comes to combining externalities, investment strategy, and value creation outcomes.

11 <https://www.gov.uk/government/consultations/the-kay-review-of-uk-equity-markets-and-long-term-decision-making>. Retrieved 29 July 2014.

12 http://lawcommission.justice.gov.uk/areas/fiduciary_duties.htm. Retrieved 29 July 2014.

13 <http://www.calpers.ca.gov/eip-docs/about/press/news/invest-corp/board-offsite.pdf>. Retrieved 29 July 2014.

14 http://www.totrust.co.za/30112012_investment1.htm. Retrieved 10 July 2014.

CHANGE MANDATES AND INCENTIVES

An improved understanding of the relationship between corporate and societal value creation cannot, in itself, drive change unless the nature of investor and executive mandates and incentives is also addressed.

Investment mandates are critical levers

“Mandates often simply don’t contain a long-term perspective, and this is the key driver in my view. Portfolio managers can be interested in the long-term question, but if it’s not in the mandate, the returns expectations always come first.”

Jon Duncan, Head of Sustainability Research and Engagement, Old Mutual Investment Group

Fund managers need to comply with the mandates given by asset owners and are therefore often incentivized primarily on the achievement of short-term financial results. These dynamics can create a situation where short-term shareholder value creation is prioritized at the expense of longer-term societal value creation.

Mandates and incentive structures are therefore critical levers in driving change. The Principles for Responsible Investment (PRI) is undertaking work in this area and some funds, such as the UK’s Environment Agency Pension Fund, provide examples of how mandates can be designed to create societal value.

Practical solutions to incentivization of fund managers are challenging and require innovative thinking around how performance fees can be extended across longer periods or replaced altogether by alternative incentive structures. While a complete end to short-term financially-based incentives is perhaps unrealistic, a more likely scenario is for some form of performance metrics that focus on longer-term and broader value creation and sit alongside rather than replace established financial KPIs. Such new metrics could be included in investment mandates.



USING INVESTMENT MANDATES TO CREATE SOCIETAL VALUE

Investment mandates are effectively the instructions that asset owners, such as pension funds, give to their appointed investment managers on how they are expected to manage the fund. The Principles for Responsible Investment (PRI) has identified mandates as a key tool that could drive a more sustainable financial system and is conducting ongoing research on this issue.

One fund that uses its mandates to create societal value alongside financial returns is the UK’s Environment Agency Pension Fund (EAPF). EAPF’s mandates have included requirements to:

- manage assets in accordance with ESG strategies and policies
- demonstrate in-depth ESG knowledge, capabilities and resources
- identify, analyze and integrate ESG-related financial risks.¹⁵

Working under these mandates has not prevented EAPF’s fund managers from turning in strong financial returns. In fact, EAPF has reported that its external fund managers outperformed their benchmarks by an average of almost 7 percent.¹⁶

¹⁵ http://www.unpri.org/viewer/?file=wp-content/uploads/ESThemedinvestingcasestudy_EAPF.pdf. Retrieved 22 July 2014.

¹⁶ Environment Agency Pension Fund (2014). *Active Pension Fund. Annual Report and Financial Statements 2013-2014*.

Innovative approaches to executive incentives are needed

“If we are to change the system then we need to restructure executive incentives. Achieving this can be difficult in practical terms but that’s not to say we shouldn’t try.”

**Helene Winch, Director of Policy and Research,
Principles for Responsible Investment**

In many large companies, executives are incentivized to deliver short-term financial performance and, in large part, this is due to similar incentive structures in the investment world as discussed above. However, a growing number of large businesses have developed innovative incentive structures that tie remuneration more closely to longer-term and broader-based value creation.

DSM, a Netherlands-based multinational life sciences and materials sciences company, is one. The company has adopted as its core value the pursuit of economic performance, environmental quality and social responsibility. The company’s performance management and incentive structure includes both short and long-term incentives based on key performance indicators (KPIs), of which, on average, 50 percent are non-financial.¹⁷

Another example is Steinhoff, a global diversified group with interests in industrial businesses in southern Africa. The firm’s strategy is based on managing the long-term sustainability of the business and, to support this strategy, the group’s remuneration policy states that incentive-based awards are earned “with due regard for the sustainable wellbeing of all stakeholders over the short, medium and long term.”¹⁸ This, and other guiding principles of the remuneration policy, help to support the group’s strategy to create long-term stakeholder value.



Innovation in terms of non-financial and longer-term incentives for executives is to be welcomed and was seen by those we spoke to for this report as a key focus for the business world to address. However, it is not without its challenges, not least because many business leaders have a self-interest in retaining short-term financial incentives that offer more immediate payoffs and greater certainty than bonuses based on longer-term and broader-based performance. There are also practical problems involved in trying to lengthen the incentive horizon for senior executives, especially since CEO tenure has fallen to an average of 3 to 4 years in recent years.^{19,20}

IMPROVE THE QUALITY OF DATA

It is clear that new metrics are required for companies to quantify their societal value creation and communicate the potential impacts of that societal value on financial performance. Without such metrics, investors do not have enough information to make a robust link between corporate and societal value creation.

Leading investors therefore have a role to play – either individually or collaboratively – in assisting companies to move beyond short-term financial reporting and to develop metrics which will provide a more complete view of value creation. Investors can also encourage companies to demonstrate how their corporate strategies will create shareholder value in the long term and how megafactors such as population growth, resource scarcity and climate change might impact the execution of those strategies and the creation of corporate value.

Furthermore, there is an opportunity for investors to encourage companies to communicate their short-term performance in the context of their medium and long-term strategies and value creation objectives.

¹⁷ DSM (2013). *Annual Report 2013*.

¹⁸ <http://www.steinhoffinternational.com/3-remuneration-report-02.php>. Retrieved 21 July 2014.

¹⁹ McClelland, J. et al. (2012). CEO career horizon and tenure: Future performance implications under different contingencies. *Journal of Business Research*, 65 (9), pp. 1387-1393

²⁰ Matta, E. and Beamish, P. W. (2008). The accentuated CEO career horizon problem: evidence from international acquisitions. *Strategic Management Journal*, 29, pp. 683–700.

²¹ KPMG (2013). *The KPMG Survey of Corporate Responsibility Reporting 2013*. The survey found that almost all (93 per cent) of the world’s 250 largest companies produce a corporate responsibility or sustainability report.

²² <http://www.aodproject.net/news/61-global-investors-on-track-for-climate-fall.html>. Retrieved 10 July 2014.

Increased reporting by investors could be a catalyst for change

“More narrative would help as far as how funds are looking to manage risk and take advantage of opportunities.”

Catherine Howarth, CEO, ShareAction

Sustainability reporting by companies is now the global norm but few funds currently disclose the societal value created by their investments.²¹

Most investors do not report on these issues qualitatively and disclosure of quantitative impacts is even more rare. This is illustrated by a recent report from the Asset Owners Disclosure Project (AODP), which found that around 80 percent of the world’s largest asset owners take very little or no action to factor the risks and opportunities of climate change into their investment strategies.²²

An increase of investor reporting on the societal value creation of their investments could act as a catalyst for progress towards a new vision of value. More reporting could enable asset owners to monitor more closely how their fund managers factor in longer term social and environmental risks and opportunities. In addition, it could help asset owners to manage their ESG-related risk exposure more effectively, optimize their longer-term investment performance, and meet their fiduciary duties.

There is a potential role for government to drive change by mandating fuller disclosure of societal value creation by pension funds to their members and beneficiaries. Requiring funds to communicate this information to their members would have knock-on effects in that funds would in turn require the information to be provided by the companies in which they invest. Such disclosure is increasingly possible with the development of new methodologies such as KPMG’s True Value.

Dialogue on long-term investment strategies is likely to increase between pension fund members, trustees and managers as pension fund members become better informed about where their money is being invested and the societal value it is creating.

Participants in KPMG’s research for this report broadly agreed that increased transparency from pension funds on investment strategies and value creation would be a positive step. However, there were some caveats raised around the fact that fund members and beneficiaries also need to understand the pressures trustees are under in order to

meet their commitments to pay out in the short term. Some interviewees suggested that some funds are deliberately opaque in communicating their investment beliefs and strategies precisely to avoid such discussion with members and beneficiaries.

Business leaders need to take a proactive approach to disclosure

“Companies are making progress but have not yet fully translated sustainability issues into business risk and opportunity in a way that investors can use.”

Murray Birt, Office to the Vice Chairman, Deutsche Bank

Many businesses claim that investors simply don’t ask them about their externalities. In fact, one corporate participant interviewed for this report claimed that analysts had never asked a single question about sustainability at any of the numerous presentations he had attended.

However, there appears to be a growing consensus that companies should be more proactive in communicating social and environmental information to investors. Several investors we spoke to said they are more likely to invest in companies that don’t wait to be asked but volunteer information that explains what they are doing with regard to externalities and how that impacts their value creation.

Unilever CEO Paul Polman is an example of a business leader who invests time in communicating effectively with investors on these issues. In an interview with the Harvard Business Review, he said, “We spent a disproportionate amount of time with our shareholders explaining what we’re doing. We spent a disproportionate amount of time discussing our longer term strategy, which actually has become easier now because we don’t do the quarterly reporting. And we tend to spend a disproportionate amount of time in attracting the right shareholder base.”²³

However, issuing more information more often does not necessarily result in better and more usable data for investors. It is important that information is material, focused and relevant. Many investors we spoke to said that much of the sustainability data published by companies today is not material and that the last thing they need is more data. What is needed instead are tools that help companies demonstrate to investors that addressing their externalities improves cash flows and reduces risk.

²³ <http://blogs.hbr.org/2012/05/unilevers-ceo-on-making-respon>. Retrieved 10 July 2014.



NEW BRITAIN PALM OIL: COMMUNICATING MATERIAL ADVANTAGE

New Britain Palm Oil was highlighted during our research as a company that is doing better than many others at communicating its value creation story to investors.

The company's vision is to demonstrate that palm oil can be produced and consumed responsibly and sustainably and it is working with Greenpeace among others on a variety of initiatives.

Neil Brown, Fund Manager at Alliance Trust said, "We look at all the things they are doing on sustainable agriculture, worker treatment, renewable energy, and the like and we calculate how this impacts their fresh fruit bunch yield per hectare, their oil extraction rates from those bunches and similar. We see a material advantage emerging from their practices increasing their value as a company and an investment, and are further engaging with them to report on these benefits they have experienced specifically."

While many other corporations are also members of the Roundtable on Sustainable Palm Oil and are working on the issue through commitments and strategies, many are arguably not pushing the envelope as much as New Britain Palm Oil on transparency, accountability and process: all steps aimed at maximizing societal and corporate value creation.

LEARNING THE LANGUAGE OF THE INVESTOR: ALLIANCE BOOTS

In 2007, KKR, one of the world's largest private equity firms bought Boots, the UK's largest pharmacy chain which was publicly traded prior to the acquisition. At the time, concern was raised that the progress Boots had been making on environmental initiatives might be lost. In fact, the opposite occurred.

Richard Ellis, previously head of CSR for Boots and now for the larger Alliance Boots organization, wanted to ensure that KKR would understand the financial implications of the environmental and social initiatives at Boots.

He said, "I had to learn their language, the language of the investor, and once I'd learned their language and understood what they were looking for it all became so much easier. KKR can now understand that by pursuing our CSR policies they are enhancing the long-term value of the business."

Through a process of learning and communication, KKR has recognized the potential financial benefit of accelerating investments that pay off in the longer term, such as retrofitting stores to higher environmental standards. Ellis argues that it would have been much harder, if not impossible, to achieve these investments at all if the company had been still publicly traded given external investor pressures to maximize short-term cash flow and dividend targets.

Society has a role in encouraging more complete disclosure on value creation

Society at large has the potential to play a significant role by encouraging fuller disclosure of societal value creation by both investors and businesses.

People can become disconnected from their own money once they hand it over to financial institutions in the form of pension contributions and savings. Most people who pay into a pension fund are not aware of what happens to their money afterwards, claimed many of those we spoke to for this report.

However, if people demand a greater say in how their money is used, they have the potential to exert significant influence over institutional investors and the companies in which they invest.

An example of consumer pressure at work in the investment world is the fossil fuel divestment movement that aims to persuade or coerce pension funds into divesting fossil fuel stocks. The movement began as a student campaign in the US, targeting the pension funds of educational institutions. Its support has since broadened to other regions and other stakeholder groups, including religious networks.^{24,25}

These campaigns have had some success. Some asset owners and managers, such as Dutch bank Rabobank and Norwegian pension fund and insurance company Storebrand, have divested from fossil fuel companies.²⁶ Others, including Norway's USD840 billion sovereign wealth fund – the world's largest sovereign wealth fund and itself funded by Norway's oil revenues – are seriously considering doing so. This has been seen by some as proof of inherent financial risks in fossil fuel investments and has provided important fuel for campaigning organizations.²⁷

Opinion varies on whether such campaigns can ever generate sufficient critical mass to effect real change. Some commentators also dispute the assumption that divesting fossil fuel shares will in fact achieve the desired aim of shifting the global energy supply to greener sources.²⁸

Whatever the outcome, the noise around fossil fuel divestment continues and asset owners would be wise to expect further pressure and debate on this and other issues of societal value creation in the future.

PROVIDE AN ENABLING POLICY ENVIRONMENT

The actions outlined earlier apply primarily to investors and business leaders, however policy makers also play a critical role by providing a policy environment that enables these groups to align corporate and societal value creation more closely. Policy makers have multiple tools at their disposal to do so. In particular, they can:

- set international, national or local ambitions for societal value creation
- correct market failures
- provide strong and consistent policy signals
- use their public purchasing power
- create and support innovative investment vehicles.

Set ambition for societal value creation

"What kind of society are we trying to build? Unless one begins to address that, you really can't answer questions about how to align societal and corporate value."

James Featherby, Chairman, Church of England Investment Advisory Group

A new vision of value, in which corporate and societal value creation are fully aligned, requires a macroeconomic environment that recognizes social and environmental as well as economic progress. This is largely missing today because the prominent indicator of progress in use for the last 80 years has been gross domestic product (GDP).

Much has been written about the weaknesses of GDP as a measure. Sometimes it is criticized on economic grounds in that it can be a misleading or inaccurate short-term indicator of economic health. However, many argue that its biggest failing is simply that it all but ignores social and environmental wellbeing. GDP does not capture the quality of life for people within an economy, such as how healthy, well educated or happy they are, or the health of the ecosystems on which they depend.

24 <http://www.theguardian.com/environment/2014/apr/10/desmond-tutu-anti-apartheid-style-boycott-fossil-fuel-industry>. Retrieved 20 April 2014.

25 <http://www.theguardian.com/environment/2014/apr/16/pope-francis-back-fossil-fuel-divestment-campaign-religions-groups>. Retrieved 20 April 2014.

26 <http://www.euractiv.com/energy/rabobank-storebrand-boost-fossil-news-529155>. Retrieved 19 August 2014.

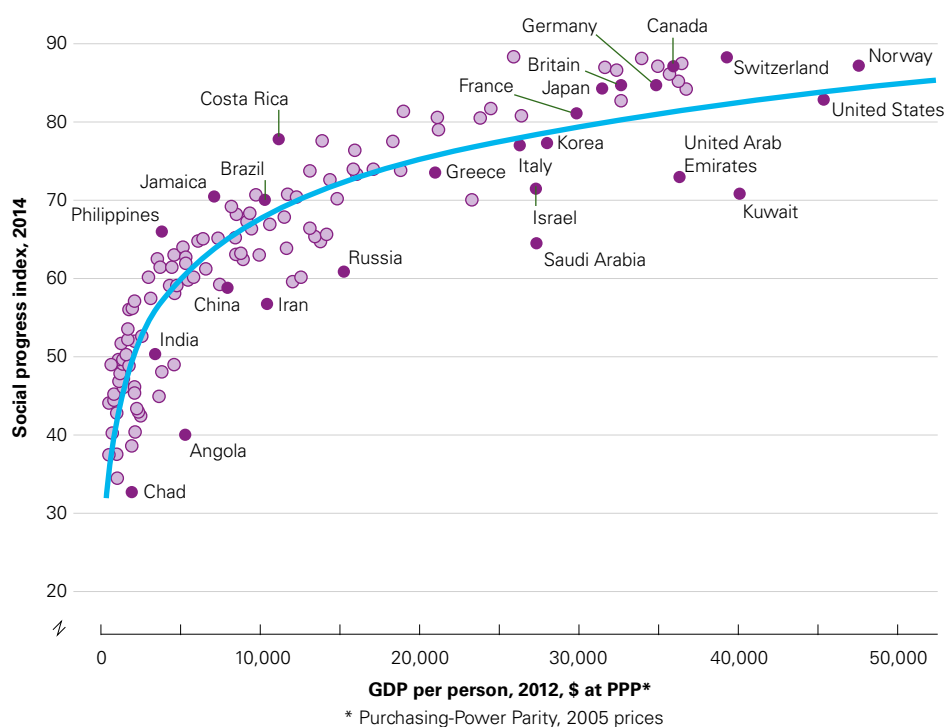
27 <http://business.financialpost.com/2014/03/03/norway-to-study-pulling-wealth-fund-investment-from-oil-gas-coal>. Retrieved 21 July 2014.

28 <http://www.theinternational.org/articles/345-does-the-math-add-up-in-fossil-fuel-dives>. Retrieved 21 July 2014.

While there is a broad correlation between economic output and quality of life, this is not a direct linear relationship. As Figure 33 below shows, initial economic growth generates steep increases in social progress but, after a certain point (approximately USD30,000 GDP per capita), further GDP growth makes little difference to social progress.²⁹

The figure below also shows that levels of overall wellbeing can be quite different between countries that have similar levels of GDP. Brazil and Iran, for example, have similar levels of GDP per capita but Brazil has a significantly higher level of social progress.

Figure 26 / Social Progress Index and GDP per person



Source: © The Economist Newspaper Limited, London 8 April, 2014. Adapted from Social Progress Imperative (2014). *Social Progress Index 2014*.

Policy makers can therefore drive change by adopting new indicators to inform and guide policy development and public investment decisions in order to maximize societal value creation.

There are a number of initiatives around the world that seek to replace or supplement GDP with a broader view of economic, social and environmental performance. These include the OECD's Better Life Index³⁰, the UN's Human Development Index³¹, the Social Progress Index³², Bhutan's Gross National Happiness Index³³, the Index of Sustainable Economic Welfare³⁴, and the Canadian Index of Wellbeing³⁵. However, these have yet to gain any widespread acceptance among the governments of the world.

If we are to fully close the gap between corporate and societal value creation, then policy makers must play a fundamental role in setting the national ambition and vision, agreeing appropriate measures of social and environmental, as well as economic, progress, and providing an enabling policy framework.

29 For more details on how the Social Progress Imperative defined social progress, which is based on numerous factors in the categories of basic needs, foundations of wellbeing and opportunity, please see: <http://www.socialprogressimperative.org/data/spi>. Retrieved 1 May 2014.

30 <http://www.oecdbetterlifeindex.org>

31 <http://hdr.undp.org/en/data>

32 <http://www.socialprogressimperative.org/data/spi>

33 <http://www.grossnationalhappiness.com>

34 <http://www.foe.co.uk/community/tools/isew>

35 <https://uwaterloo.ca/canadian-index-wellbeing>

THE USE OF THE GENUINE PROGRESS INDICATOR IN US STATES

The Genuine Progress Indicator (GPI) is an index for economic wellbeing that also takes into account social and environmental impacts. It measures 26 variables including the costs of unemployment, pollution, climate change and crime, and the positive value of factors such as home working, education and volunteer work.³⁶

The US states of Vermont and Maryland both use the Genuine Progress Indicator to inform policy making and the approach is spreading to other US states including Oregon and Washington.³⁷ In Vermont, for example, the GPI has highlighted the impact of income inequality in holding back 'genuine progress'.³⁸

Regional preferences dictate the nature of pricing mechanisms. For example, when it comes to pricing carbon, Sweden uses a tax while the EU and China opted for trading systems. Similarly, the choice of pricing tool is, to a certain extent, dictated by the nature of the externality the policy seeks to address. A tax, for example, is easier to implement on diffuse sources such as cars.

Strong prices set for the long term are critical success factors. This is where the EU ETS is struggling: the EU carbon price of less than USD10/tCO₂ is in stark contrast to the Swedish carbon tax of USD160/tCO₂.⁴⁰

Some policy makers are concerned about the potential impact that a high pricing of negative externalities may have on their economy and constituents may prefer to subsidize positive action rather than imposing penalties.

However, according to a recent OECD study on carbon pricing, subsidies can be much more costly than explicit and direct pricing mechanisms.⁴¹

Remove harmful subsidies

"There are things we just shouldn't do, such as subsidizing fossil fuels with hundreds of billions of dollars – that just doesn't make sense".

David Bresch, Head of Sustainability & Political Risk Management Unit, Swiss Re

Another major barrier to alignment between corporate and societal value creation is the presence of harmful subsidies and, in particular, fossil fuel subsidies which, according to the IEA amounted to half a trillion dollars (USD544 billion) in 2012.⁴² Such subsidies distort the allocation of resources, increase the vulnerability of energy importing countries to energy price fluctuations and deepen inequalities within the very society they are meant to help.⁴³

36 <http://www.newrepublic.com/article/116461/gpi-better-gdp-measuring-united-states-progress>. Retrieved 15 July 2014.

37 <http://www.newrepublic.com/article/116461/gpi-better-gdp-measuring-united-states-progress>. Retrieved 15 July 2014.

38 <http://www.demos.org/publication/whats-missing-gdp>. Retrieved 15 July 2014.

39 EPA (2012). *2012 Progress Report: Clean Air Interstate Rule, Acid Rain Program and Former NOx Budget Trading Program*.

40 OECD (2013). *Climate and Carbon: Aligning prices and policies*.

41 OECD (2013). *Climate and Carbon: Aligning prices and policies*.

42 These subsidies include both consumption and production subsidies. In the former the consumer faces a lower price, while in the latter the producer benefits form a mark up to what the normal price would be. <http://www.worldenergyoutlook.org/resources/energysubsidies>. Retrieved 15 July 2014.

43 Examples include fossil fuel subsidies or irrigation subsidies.

Correct market failures

"When you have markets that aren't working the way we would like them to work and private and social interests don't seem to be aligned, it is the government that is expected to do something about that."

Paul Ekins, Professor of Resources & Environmental Policy, University College London

Governments use a number of tools to counter market failures including the pricing of negative externalities, the provision of fiscal incentives and subsidies to encourage positive externalities, and the removal of harmful subsidies.

Such regulatory approaches form one of the key drivers that are currently internalizing business externalities and are discussed earlier in this report. (See page 21)

Pricing externalities

Pricing is one of the most effective policy levers because it factors negative externalities directly into traditional corporate value drivers of cost and risk. When implemented properly, pricing externalities can deliver good results. A text-book example of this is the Sox-NOx cap-and-trade market established in the US in 1990 as part of the Clean Air program. It reduced annual sulphur dioxide emissions by 80 percent between 1990 and 2012 and nitrogen oxide emissions by 74 percent.³⁹

For example, since energy consumption grows with income, most of the money spent on fossil fuel subsidies ends up benefiting the wealthy. Because of this - and as a result of the negative externalities associated with increased consumption - the true cost of harmful subsidies is much more than the money spent on the subsidies themselves.⁴⁴ According to the IMF, this brought the cost of fossil fuel subsidies to USD1.9 trillion in 2011, around four times the direct amount spent on subsidizing fossil fuels that year.⁴⁵ When seen in this context, it seems clear that these subsidies should be a priority for policy makers to address, but failed attempts to abruptly phase out fossil fuel subsidies illustrate the importance of an inclusive and gradual approach.^{46,47}

Provide strong and consistent policy signals

"There are governments that will tinker with policy on a regular basis. That pushes up the cost of capital and can stop projects going ahead."

Ian Farmer, former CEO, Lonmin

44 In the case of fossil fuel subsidies, these externalities include greenhouse gas emissions, increased air pollution as well as the impacts that result from these, such as health impacts, and impacts associated with increased use of the resource, including congestion and road traffic accidents.

45 IMF (2013). *Energy Subsidy Reform: lessons and implications*.

46 Nigeria, for example decided to abruptly phase out fossil fuel subsidies during a holiday weekend, leading to protests that lasted for weeks, eventually resulting in the subsidy being reinstated. <http://www.theguardian.com/world/2012/jan/02/nigerian-motorists-angry-fuel-subsidies>. Retrieved 15 July 2014.

47 <http://www.ft.com/cms/s/0/565be45c-6e9d-11e1-a82d-00144feab49a.html>. Retrieved 15 July 2014.

48 Blythe, W. and the IEA (2010). *The economics of transition in the power sector*.

Unpredictable and inconsistent policy signals will slow or stop investment. While investors and business leaders will accept a certain amount of policy risk, ongoing volatility in policy inevitably affects their willingness to engage.

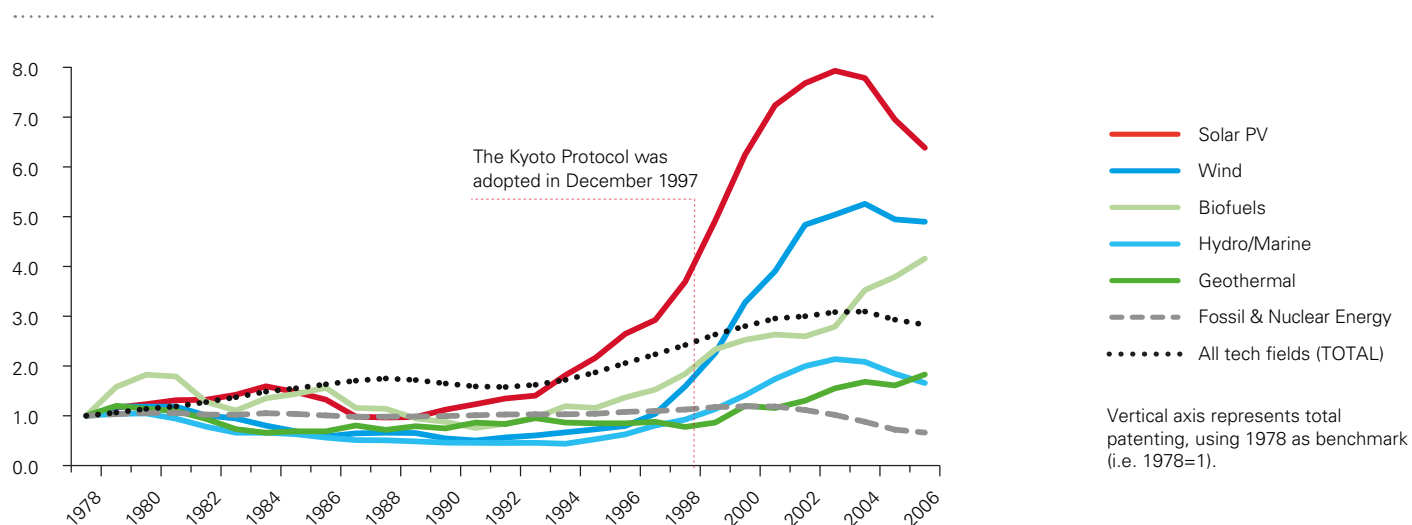
A study from the IEA, for example, has found that uncertainty over carbon pricing put a higher value on maintaining old inefficient coal power plants than on refurbishing them.⁴⁸ Similarly, uncertainty over the continuation of the US production tax credit (a policy tool used for supporting wind energy development) has led to volatile investment flows in the US.

A strong, predictable and reliable policy signal also plays a role in driving innovation. A good example is the Kyoto Protocol, the enactment of which helped drive innovation in clean energy as illustrated in Figure 33 below.

Providing a clear and long-term policy signal requires policy makers to find a balance between committing to the long term and being able to adjust to new, short term realities as they appear – such as the global financial crisis, socio-political events or natural disasters.

This kind of flexibility can be achieved in different ways, for example by evaluating the ambition of the policy on a regular basis or by defining triggers or thresholds that enable the revision of the policy.⁴⁹ It also requires a strengthening of the connections between policy, and corporate and societal value creation by setting value creation targets that are measurable, reportable and verifiable.

Figure 27 / The role of the policy signal in driving innovation



Source: OECD (2013). *Climate and Carbon: Aligning Prices and Policies*, OECD Environment Policy Papers, No. 1, OECD Publishing.

Public procurement

The power of public procurement to drive change should not be underestimated given that procurement spending represents up to 19 percent of a nation's GDP.⁵⁰

While most OECD and BRICS countries now use sustainable procurement practices to some extent, they differ widely in terms of scale (for example, national vs local government procurement) as well as in the scope of products covered.⁵¹ Japan, for example, requires all levels of government to engage in sustainable public procurement practice.⁵² For public procurement policy to be effective in driving societal value creation at scale, it needs to be transparent, non-discriminatory and competitive. Governments also need to ensure full disclosure of how the policies are applied and their impacts. More reporting would be a positive step as only a few countries such as Japan or Sweden currently require such reporting on their sustainable public procurement.⁵³

Create and support new investment vehicles

A number of public-led financial innovations have appeared in recent years aimed at delivering societal value along with attractive financial returns. Among the most notable of these are green bonds. Green bonds, originally issued by multilateral institutions such as the World Bank, aim to raise capital specifically for projects that create societal and environmental value. The market for green bonds has grown rapidly to reach USD346 billion in March 2013 and is particularly suited for long-term investors.⁵⁴

Green bonds are also an increasingly attractive fund raising option for companies, such as energy companies; corporates represented over half (55 percent) of green bond issuance in the first half of 2014.⁵⁵ Policy makers can support the growing interest in the green bond space by working with the private sector to establish standards, and reporting and verification mechanisms for green bonds.

Bonds can not only be used for environmental projects but have also been used successfully in the field of public health (see breakout box). Governments can also combine financial innovation with fiscal tools such as taxes. Although there have been early struggles, new forms of financing retain promise. The US, for example, has Property Assessed Clean Energy (PACE) mechanisms whereby municipalities issue bonds to raise funds which they then use to finance energy efficient property retrofits through loans to property owners.⁵⁶ The debts are repaid over periods of up to 20 years by adjusting property taxes for the buildings where the retrofits are undertaken.^{57,58}

While the financial tools described above are not necessarily new in themselves, the innovation comes from using accepted financial instruments in new ways.

BONDS FOR PUBLIC HEALTH: THE INTERNATIONAL FINANCE FACILITY FOR IMMUNISATION

In 2006 the International Finance Facility for Immunisation (IFFIm) issued its inaugural triple A-rated bonds to raise funds for health and immunization programs in 70 of the world's poorest countries around the world. The initiative, which aimed to raise USD4 billion over 10 years and save as many as 10 million lives, was driven by then UK prime minister Gordon Brown and backed by the governments of the UK, France, Italy, Norway, Spain and Sweden.⁵⁹

"You need leadership, political leadership. It was long term budgetary allocations from six governments that really made it happen."

Abyd Karmali, Managing Director, Climate Finance, Bank of America Merrill Lynch

- 49 This is the case for example of the UK's carbon budget, which set four legally binding carbon budget periods (2008-2012, 2013-2017, 2018-2022, 2023-2027) with the objective to half UK's greenhouse gas emissions by 2027 - relative to 1990 levels. On the upside, this enables the ambition of a given period to be reassessed in view of the progress achieved in the previous one. On the downside, it also creates uncertainty as the ambition may be revised on the upside or the downside. For more details, please see: Parliament of the United Kingdom (2008). *Climate Change Act 2008*.
- 50 <http://trade.ec.europa.eu/doclib/press/index.cfm?id=788>. Retrieved 17 April 2014.
- 51 UNEP (2013). *Sustainable Public Procurement: A global review*.
- 52 Most countries do not require mandatory reporting on the achievement of procurement targets, making tracking of sustainable procurement a challenge. UNEP (2013). *Sustainable Public Procurement: A global review*.
- 53 UNEP (2013). *Sustainable Public Procurement: A global review*.
- 54 A compound annual growth rate of 55 percent since 2008. Climate Bonds Initiative (2013). *Bonds and Climate Change. The State of the Market in 2013*.
- 55 <http://www.theguardian.com/environment/2014/jul/17/green-bonds-climate-initiative-low-carbon-economy>. Retrieved 21 July 2014.
- 56 <http://pacenow.org/about-pace/what-is-pace>. Retrieved 17 April 2014.
- 57 Two challenges for financing energy efficiency are upfront investment costs and split incentives - whereby the one who makes the investment is not necessarily the one who benefits from it. This, for example, applies to the situation in which an owner may invest in energy efficiency but sell the house before investments have been recouped. PACE addresses that challenge by having the public sector finance energy efficiency upfront (via bond issuance) and recoup the investment by adjusting the property tax (so that the debt obligation remains with the asset irrespective of the asset owner).
- 58 The Rockefeller Foundation and DB Climate Change Advisors (2012). *United States Building Energy Efficiency Retrofits: Market Sizing and Financing Models*.
- 59 <http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,date:2006-10-03~menuPK:34461~pagePK:34392~piPK:64256810~theSitePK:4607,00.html>. Retrieved 22 July 2014.



A hand in a blue sleeve points at a document. The entire image is covered by a dark blue diagonal overlay.

APPENDIX

BIBLIOGRAPHY

AccountAbility and the UN Global Compact (2005). *Towards responsible lobbying. Leadership and public policy.*

Allianz (2012). *Sustainability Factbook 2012.*

Andriessen, D. (2004). *Making sense of intellectual capital: designing a method for the valuation of intangibles.* Routledge: New York.

Arangies, G. et al. (2008): The value-added statement: An appeal for standardisation. *Management Dynamics*, 17 (1), pp. 31-43.

Association of Chartered Certified Accountants (2013). *Carbon Avoidance? Accounting for the emissions hidden in reserves.*

Ballinger, J. & Olsson, C. (eds.) (1997). *Behind the swoosh : the struggle of Indonesians making Nike shoes.* Global Publications Foundation: Uppsala.

Bloomberg New Energy Finance (2013). *Global Renewable Energy Market Outlook 2013.*

Blowfield, M. & Johnson, L. (2013). *Turnaround Challenge: Business and the City of the Future.* Oxford University Press: Oxford.

Blowfield, M.E. (2005). *Does society want business leadership? An overview of attitudes and thinking.* Boston College Center for Corporate Citizenship: Chestnut Hill, MA.

Blythe, W. and the International Energy Agency (2010). *The economics of Transition in the power sector.*

Bradfield Moody, J. and Nograd, B. (2010). *The Sixth Wave: How to Succeed in a Resource-Limited World.* Random House Australia: Melbourne.

Brossard, O., Lavigne, S. & Sakinç, M.E. (2013). Ownership structures and R&D in Europe: the good institutional investors, the bad and ugly impatient shareholders. *Industrial and Corporate Change*, 22 (4), pp. 1031-1068.

Caldecott, B., and McDaniels, J. (2014). *Stranded Generation Assets: Implications for European Capacity Mechanisms, Energy Markets and Climate Policy.*

Carbon Tracker Initiative (2013). *Unburnable carbon 2013: Wasted capital and stranded assets.*

Carbon Finance at the World Bank (2013). *Mapping Carbon Pricing Initiatives.*

Celik, S., & Isaksson, M. (2013). *Institutional investors as owners.* OECD Publishing: Paris.

Ceres (2014). *Investor listing standards proposal: recommendations for stock exchange requirements on corporate sustainability reporting.*

Ceres (2010). *Murky Waters? Corporate reporting on water risk.*

Christensen, H.B. & Nikolaev, V.V. (2013). Does fair value accounting for non-financial assets pass the market test? *Review of Accounting Studies*, 18 (3), pp. 734-775.

Citi Research (2013). *Global Oil Demand Growth – The End Is Nigh.*

Citi Research (2013). *The Unimaginable: Peak Coal Demand in China.*

Climate Bonds Initiative (2013). *Bonds and Climate Change. The State of the Market in 2013.*

Commission on the Measurement of Economic Performance and Social Progress (2011). *Survey of Existing Approaches to Measuring Socioeconomic Progress.*

Connelly, B.L., Tihanyi, L., Certo, S.T. & Hitt, M.A. (2010). Marching to the beat of different drummers: The influence of institutional owners on competitive actions. *Academy of Management Journal*, 53 (4), pp. 723-742.

Curcio, V. (2013). *Henry Ford.* Oxford University Press: New York.

DB Climate Change Advisors & Rockefeller Foundation (2012). *United States Building Energy Efficiency Retrofits. Market Sizing and Financing Models.*

Deutsche Bank Research (2011). *Solvency II and Basel III. Reciprocal effects should not be ignored.*

Drescher, S. (2009). *Abolition : a history of slavery and antislavery.* Cambridge University Press: Cambridge.

DSM (2013). *Annual Report 2013.*

Environment Agency Pension Fund (2014). *Active Pension Fund: Annual Report and Financial Statements 2013-2014.*

EPA (2012). *Clean Air Interstate Rule, Acid Rain Program and Former NOx Budget Trading Program 2012 Progress Report.*

Esty, D.C. (2009). *Green to gold : how smart companies use environmental strategy to innovate, create value, and build a competitive advantage.* Rev. and updated edn. John Wiley & Sons: Hoboken, NJ.

ExxonMobil (2014). *Energy and Carbon - Managing the Risks.*

Fama E.F. (1969). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance*, (25) 2, pp. 383-417

First State Investments (2014). *Responsible Investment and Stewardship. Annual Report 2013.*

Greenpeace (2014). *Locked in the Past: Why Europe's Big Energy Companies Fear Change.*

Hemmati, M. (2002). *Multi-stakeholder Processes for Governance and Sustainability: Beyond deadlock and conflict.*

Hibbert, C. (1974). *Rise and fall of the house of Medici.* Allen Lane: London.

Holt, D.B., Quelch, J.A. & Taylor, E.L. (2004). How global brands compete. *Harvard Business Review*, 82 (9), pp. 68-75.

HSBC (2014). *Coal and Carbon Revisited.* HSBC Climate Change Centre.

Hubbard, D.W. (2010). *How to measure anything: Finding the value of intangibles in business.* John Wiley & Sons: Hoboken, NJ.

IEA (2013). *Energy Policies of IEA Countries – Germany.*

IEA (2013). *Tracking Clean Energy Progress 2013.*

IEA (2013). *World Energy Outlook 2013.*

IFMA Foundation (2012). *The Economics of Sustainability in Real Estate.*

IKEA (2013). *Sustainability Report 2013.*

IMF (2013). *Energy Subsidy Reform: Lessons and implications.*

Institute of Directors in Southern Africa (2011). *Code for Responsible Investing in South Africa.*

International Federation of Accountants (2013). *Stranded Assets and Reserve Accounting.*

Intergovernmental Panel on Climate Change (2013). *Climate Change 2013: Summary for Policymakers.*

Intergovernmental Panel on Climate Change (2012). *Managing the Risks of Extreme Events and Disasters to Advance; Climate Change Adaptation: Summary for Policymakers.*

Investment Company Institute (2013). *2013 Investment Company Fact Book: A Review of Trends and Activities in the U.S. Investment Company Industry.*

Jaeger, C.C., Paroussos, L., Mangalagiu, D., Kupers, R. et al. (2011). *A New Growth Path for Europe: Synthesis Report.*

Kaminker, C., Kawanishi, O., Stewart, F. et al. (2013). Institutional Investors and Green Infrastructure Investments: Selected Case Studies. *OECD Working Papers on Finance, Insurance and Private Pensions*, 35.

Keefer, P. and Khemani, S. (2005). Understanding political incentives for providing public services. *World Bank Research Observer*, 20 (1), pp. 1-27.

KPMG (2012). *Expect the Unexpected: Building business value in a changing world.*

KPMG (2013). *Green Tax Index 2013.*

KPMG (2011). *Integrated Reporting: Performance insight through better business reporting.*

KPMG (2011). *Integrated Reporting: Understanding the requirements.*

KPMG (2013). *The KPMG Survey of Corporate Responsibility Reporting 2013.*

KPMG (2014). *A Taste of the Future: The trends that could transform the chocolate industry.*

KPMG (2010). *The Transformation of the Automotive Industry: The environmental regulation effect.*

KPMG, UNEP, GRI and Unit for Corporate Governance in Africa (2013). *Carrots and Sticks: Sustainability reporting policies worldwide.*

Krosinsky, C. (2013). *The Short Guide to Sustainable Investing.* DoSustainability: London.

Krosinsky, C., Robins, N. and Viederman, S. (2011). *Evolutions in Sustainable Investing: Strategies, Funds and Thought Leadership*. John Wiley & Sons: New York.

Krosinsky, C. and Robins, N. (2008), *Sustainable investing: the art of long-term performance*. Taylor & Francis: London.

Kubiszewski, I., Costanza, R., Franco, C. et al. (2013). Beyond GDP: Measuring and achieving global genuine progress. *Ecological Economics*, 93, pp. 57-68.

Locke, R., Kochan, T., Romis, M. & Qin, F. (2007). Beyond corporate codes of conduct: Work organization and labour standards at Nike's suppliers. *International Labour Review*, 146 (1-2), pp. 21-40.

Mackay, C. (1852). *Memoirs of extraordinary popular delusions and the madness of crowds*. Office of the National Illustrated Library: London.

Marlay, R. & Neher, C.D. (1999). *Patriots and tyrants : ten Asian leaders*. Rowman & Littlefield Publishers: Lanham, MD.

Martenson, C. (2011). *The crash course : the unsustainable future of our economy, energy, and environment*. John Wiley & Sons: Hoboken, NJ.

Matta, E. & Beamish, P.W. (2008). The accentuated CEO career horizon problem: Evidence from international acquisitions. *Strategic Management Journal*, 29 (7), pp. 683-700.

McClelland, P.L., Barker III, V.L. & Oh, W. (2012). CEO career horizon and tenure: Future performance implications under different contingencies. *Journal of Business Research*, 65 (9), pp. 1387-1393.

McDonough, W. & Braungart, M. (2002). *Cradle to cradle: remaking the way we make things*. North Point Press: New York.

McKinsey Global Institute (2011). *Mapping Global Capital Markets*.

McLean, B. & Elkind, P. (2003). *The smartest guys in the room : the amazing rise and scandalous fall of Enron*. Portfolio: New York.

Milanovic, B. (2013). Global Income Inequality in Numbers: in History and Now. *Global Policy*, 4 (2), pp. 198-208.

Moss, L.S. (ed.) (1996). *Joseph A. Schumpeter, historian of economics*. Routledge: New York.

Nachmany, M., Fankhauser, S., Townshend, T. et al., GLOBE International and the Grantham Research Institute on Climate Change and the Environment at LSE (2014). *The GLOBE Climate Legislation Study: A Review of Climate Change Legislation in 66 Countries*.

Navigant Research (2014). *Energy Efficiency Retrofits for Commercial and Public Buildings*.

Network for Business Sustainability (2013). *Sustainability through Partnerships. Executive Report*.

Network for Sustainable Financial Markets (2012). *The Systemic Nature of Ownership 2013. White Paper*.

Newell, P. & Paterson, M. (2010). *Climate capitalism: global warming and the transformation of the global economy*. Cambridge University Press: Cambridge.

OECD (2013). *Climate and carbon: Aligning prices and policies*.

OECD (2012). *OECD Environmental Outlook to 2050: The consequences of inaction*.

Palma, J.G. (2009). The revenge of the market on the rentiers. Why neo-liberal reports of the end of history turned out to be premature. *Cambridge Journal of Economics*, 33 (4), pp. 829-869.

Perez, C. (2009). The double bubble at the turn of the century: technological roots and structural implications. *Cambridge Journal of Economics*, 33 (4), pp. 779-805.

Perez, C. (2012). Innovation systems and policy: not only for the rich? *Tallinn University of Technology, Working Papers in Technology Governance and Economic Dynamics*, 42.

Philips (2013). *Annual Report 2013*.

Phillips, K. (2006). *American theocracy : the peril and politics of radical religion, oil, and borrowed money in the 21st century*. Viking: New York.

- Prager, J. (2013).** The Financial Crisis Of 2007/8: Misaligned Incentives, Bank Mismanagement, And Troubling Policy Implications. *Economics, Management, and Financial Markets*, 2/2013, pp. 11-56.
- Porter, M.E. (1992).** Capital choices: Changing the way America invests in industry. *Journal of Applied Corporate Finance*, 5 (2), pp. 4-16.
- Ray, D.K. et al (2013).** Yield Trends Are Insufficient to Double Global Crop Production by 2050. *PLoS ONE*, 8(6).
- Reinhart, C.M. (2009).** *This time is different : eight centuries of financial folly*. Princeton University Press: Princeton, NJ.
- Robèrt, K. (2002).** *The natural step story : seeding a quiet revolution*. New Society Publishers: Gabriola Island, BC.
- Roberts, P. (2009).** *The end of food : the coming crisis in the world food industry*. Bloomsbury: London.
- Robins, N. (2011).** *The Corporation That Changed The World: How the East India Company Shaped the Modern Multinational*. Pluto Press: London
- Robins, N. (2007).** The imperious company. *Journal of Corporate Citizenship*, 25, pp. 31-42.
- Scoones, I., University of Sussex and the Institute of Development Studies (1998).** *Sustainable rural livelihoods : a framework for analysis*.
- Shiller, R. and Akerlof, G. (2010).** *Animal Spirits*. Princeton University Press: Princeton, NJ.
- Solow, R.M. (1956).** A contribution to the theory of economic growth. *The Quarterly Journal of Economics*, 70 (1), pp. 65-94.
- Soros, G. (1987).** *The Alchemy of Finance*. Simon & Schuster: New York.
- Stern, N. (2006).** *Stern Review: The Economics of Climate Change*.
- Sullivan, R. & MacKenzie, C. (eds.) 2006.** *Responsible investment*. Greenleaf Publishing: Sheffield.
- Taleb, N.N. (2007).** *The black swan : the impact of the highly improbable*. Random House: New York.
- TIAA-CREF (2013).** *Leadership in Responsible Investing*.
- Tilman, D., Socolow, R., Foley, J.A. et al. (2009).** Beneficial biofuels —the food, energy, and environment trilemma. *Science*, 325 (5938), pp. 270-271.
- Tony Chocolonely (2013).** *JaarFAIRslag 2013*.
- UN's High-Level Panel of Eminent Persons on the Post-2015 Development Agenda (2013).** *A new global partnership: eradicate poverty and transform economies through sustainable development*.
- UNEP (2011).** *The provision of international environmental public goods*.
- UNEP (2013).** *Sustainable Public Procurement: A global review*.
- UNEP Financial Initiative (2005).** *A Legal Framework for the Integration of ESG Issues into Institutional Investment*.
- UNEP Financial Initiative (2011).** *Universal Ownership: Why Environmental Externalities Matter to Institutional Investors*.
- UNFCCC (2009).** *The Copenhagen Accord*.
- Union of Concerned Scientists (2012).** *Water Dependence Risks for America's Aging Coal Fleet*.
- UK Department for Business Innovation and Skills (2013).** *The Smart City Market: Opportunities for the UK*.
- Water Resources Group (2012).** *Background, Impact and the Way Forward*.
- WEF & Accenture (2012).** *More with less: scaling sustainable consumption and efficiency*.
- WEF & Deloitte (2011).** *The Consumption Dilemma: leverage points for accelerating sustainable growth*.
- WEF and Ellen Macarthur Foundation (2014).** *Towards the circular economy: Accelerating the scale-up across global supply chains*.
- World Ocean Review (2013).** *World Ocean Review 2: The Future of Fish – The Fisheries of the Future*.

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ABOUT KPMG'S TRUE VALUE SERVICES



KPMG is one of the pioneers of sustainability consulting – some KPMG member firms first offered sustainability services over 20 years ago – which gives KPMG's network a level of experience few can match. Today our member firms employ several hundred sustainability professionals located in around 60 countries.

Local knowledge, global experience

Our global network means KPMG firm professionals have in-depth understanding of the economic, political, environmental and social landscapes wherever your organization may operate. At the same time, our member firms are closely connected through our global Center of Excellence. This means that, whatever challenge you face, we can put together a team with international experience to help you.

Sustainability Plus

We don't work in a sustainability vacuum. We work side-by-side with KPMG firm professionals from tax, audit and advisory including sector specialists, management consultants, tax accountants and experts in IT, supply chain, infrastructure, international development and more.

You won't receive generic advice and one-size-fits all solutions, instead you can benefit from a hand-picked multi-disciplinary team.

Results-driven

KPMG firms help clients to develop future-fit business strategies based on solid understanding of the issues. We strive to think big and challenge convention, but with implementation in mind, working with you to find practical solutions that can create success and growth through change.

Foresight needs insight

Our global Center of Excellence focuses on thought-provoking research, analyzing drivers of global change and developing practical business responses that you can apply within your own organization.

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HOW WE CAN HELP: KPMG'S TRUE VALUE SERVICES

KPMG's True Value methodology is a three step process that enables you to understand how your organization's externalities, both positive and negative, may be internalized and what the implications are for your corporate value creation. KPMG firm professionals can work with you to develop your response strategy to capture opportunities and reduce risk from the drivers of internalization.

A detailed explanation of the methodology can be found in Part 3 of this report (page 40) and the case studies in Part 4 (page 58) demonstrate how it can be applied in practice.

KPMG's True Value methodology can help your organization to:

- Better understand and articulate the connection between your company's corporate and societal value creation
- Quantify and monetize your company's positive and negative externalities (in a 'true' earnings bridge) and understand where your company is creating or reducing societal value
- Identify which drivers are most likely to internalize your organization's externalities and understand how this could affect your profitability and where your value is at risk
- Develop risk reduction strategies which will help your organization make more informed investment decisions
- Develop strategies to build corporate value while also enhancing societal value
- Have a more fact-based and balanced conversation with stakeholders on corporate and societal value creation
- Improve your annual reporting processes and corporate disclosures.

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