



# *Multidimensional P&L in brief*

Brief report

## About True Price

True Price is a social enterprise that aims to contribute to the creation of an economy that creates value for all. We do so by helping organizations quantify, value, and improve their impact on society.

We assist multinationals, SMEs, NGOs, and governmental organizations with risk management and strategic decision making by providing insights into their impacts and their associated risks and opportunities.

In addition, True Price brings together organizations in a joint quest towards establishing a relevant, sound, and inclusive standard for measuring and valuing impacts through an open source platform. For more information, visit [trueprice.org](http://trueprice.org).

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# Executive summary

*The past five years have seen remarkable growth in the uptake of impact valuation by businesses. As the trend towards impact reporting matures, the next step is the recent innovation of multidimensional profit and loss accounting - extending the traditional financial P&L to include capitals beyond financial capital, including natural, social and human capital.*

The impacts businesses have on society and nature are becoming increasingly relevant to profitability. Stakeholders have higher expectations and businesses are becoming more dependent on scarce resources provided by society and nature. This leads companies to increasingly measure and value their impacts upon society and nature.

This report reveals that while most organisations initially expanded their focus to Natural Capital, there is now a trend to include Social Capital. The latest innovation is to systematically account for impacts across financial, natural, social and human dimensions and combine these in a single multidimensional profit and loss account.



This report features four leading examples of businesses that value impacts in a particular dimension: Standard Chartered (Financial Capital), Puma (Natural Capital), Infosys (Human Capital) and Achmea (Social Capital). It also features a multidimensional P&L: a 4-D P&L published by AkzoNobel.

Businesses can employ a multi-dimensional P&L internally to identify hidden risks and opportunities and form a strategy around long-term value creation for an inclusive set of stakeholders. They can also publish this P & L externally to enhance their reputations and valuations with investors.

The road ahead is a more standard approach towards impact valuation and scaling up application of multidimensional P & L accounting worldwide.

# Businesses are extending the P&L to include benefits and costs for society

*The impacts businesses have on society are becoming increasingly relevant for their profitability. In the past, impacts were mainly a concern for society. Nowadays, impacts represent material risks and opportunities for businesses as a result of increasing resource scarcity, stakeholder action, fast flowing information, transparency and regulation.*

## Impact valuation

Business impacts become increasingly important and they are increasingly measured. For example, businesses conduct Life Cycle Assessments to measure the environmental impacts of their products.

A novel trend is that businesses are also expressing impacts as monetary benefits and costs. Valuation enables businesses to integrate impact information into core processes by translating impacts into a single currency which is also the lingua franca of business: money.

Monetization facilitates decision making by allowing businesses to weigh the pros and cons of several options in terms of impact.

In addition, monetized impact information allows businesses to better forecast the implications of their actions on their bottom lines. This can help businesses with managing their risk, innovation and reputation (True Price, Deloitte, EY and PwC, 2014).

## Reporting on impact

Stakeholders increasingly want to know how a business impacts them and society at large. Investors, customers, citizens and regulators expect higher levels of transparency. As a result, reputation increasingly depends on the ability to be transparent and demonstrate a positive impact on society.

Voluntary reporting initiatives such as the Global Reporting Initiative (GRI), the UN Global Compact and OECD Guidelines have mainstreamed impact reporting. Regulators have also stepped forward. In the US, the SEC requires disclosure of material issues, and standards have been developed for that (e.g. SASB). In 2014 the EU adopted a directive requiring large companies to report on their impact or 'non-financial information' (EU, 2014).

The work of the International Integrated Reporting Council (IIRC) has enabled businesses to increasingly integrate impact information into their standard annual reporting.

## Extending the P&L

Both the trend to measure and value impacts and the trend to report impacts call for a systematic manner to measure impacts and a way to integrate this information with standard financial data.

A natural step is to extend the Profit and Loss account into more dimensions, providing an increasingly complete picture of the capital a business creates for its stakeholders.

Until now, most enterprises that have engaged in such extended P&L analysis have provided a separate P&L for another impact dimension. A first mover was PUMA, which published its Environmental Profit & Loss (EP&L) over 2010. Currently, the most recognized dimensions have been Financial Capital, Natural Capital, Social Capital and Human Capital. On the following pages, we provide prominent examples of such multi-dimensional P&Ls focusing on different dimensions.



# Case PUMA: Natural Capital



*PUMA has been a pioneer in the field of environmental profit and loss (EP&L) accounting. Their EP&L for 2010 was the first example of multidimensional accounting to be recognized internationally and it created global momentum for impact valuation in the business sector.*

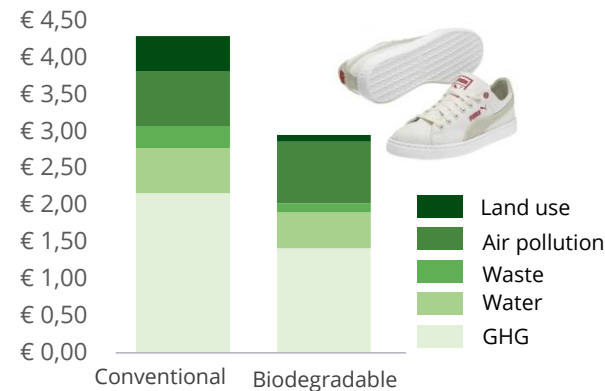
PUMA places a monetary value on the environmental impacts resulting from business activities, not only within direct operations but along the entire supply chain.

PUMA's 2010 environmental costs resulting from GHG emissions, water consumption, land use, air pollution and waste were valued at €145 million, of which €8 million was derived from PUMA's direct operations. PUMA's supply chain was responsible for the remaining €137 million.

In 2012, PUMA extended its corporate EP&L to products. The company published a product EP&L for a suede shoe and a cotton T-shirt. For the shoe, PUMA compared a mix of organic cotton and linen with leather and for the T-shirt organic cotton with

**The Environmental Profit and Loss**

EUR million	Water use	GHGs	Land use	Other air pollution	Waste	TOTAL
	33%	33%	25%	7%	2%	100%
<b>TOTAL</b>	<b>47</b>	<b>47</b>	<b>37</b>	<b>11</b>	<b>3</b>	<b>145</b>
<b>PUMA operations</b>	<b>&lt;1</b>	<b>7</b>	<b>&lt;1</b>	<b>1</b>	<b>&lt;1</b>	<b>8</b>
Tier 1	1	9	<1	1	2	13
Tier 2	4	7	<1	2	1	14
Tier 3	17	7	<1	3	<1	27
Tier 4	25	17	37	4	<1	83



Figures and numbers taken from Puma's 2010 EP&L (2011) and their product-level EP&L (2012)

conventional cotton. This exercise provided PUMA with quantified insights about the effect of specific product innovations on the impact of existing products.

In 2014 the mother company of PUMA, Kering, rolled out an EP&L for the group's six biggest brands. Initial analyses showed that around 80% of the environmental impacts reside in production and sourcing (Tier 1-4). The EP&L informs Kering and its brands as to which sourcing and manufacturing locations have the biggest environmental impacts, in addition to providing insight about the most cost-efficient ways to avoid or reduce potential impacts (True Price, 2014).

Kering will use the EP&L in the years to come to inform corporate strategy and operational decisions.



# Case Infosys: Human Capital

*Infosys – an Indian company specialized in IT consulting, technology and outsourcing – has reported on its human capital value since 2008. Their human capital model incorporates the present value of the increase in future earnings of employees due to increasing productivity which employees gain via their employment at Infosys.*

Traditional accounting practice mostly ignores human capital while non-human capital is reported as assets on financial statements. However, for service companies such as Infosys employees are their most important and valuable assets. Their training and retention is crucial to sustaining and enhancing their long-term competitive advantage (Infosys, 2013).

The Infosys GIST-HCX Model is based on the Lev and Schwartz human capital accounting model. It consists of the present value of the increase in future earnings which employees realize by working at Infosys. This model accounts for the value of the positive human capital externality generated by Infosys, which distinguishes this model from others.

	2013 (Rs crore)	2012 (Rs crore)	Change
Employees (no.)			
Software	1,47,008	1,41,788	3.7%
Support	9,680	8,206	18.0%
Total	1,56,688	1,49,994	4.5%
Value of human capital			
Software	1,24,867	1,15,900	7.7%
Support	12,978	9,817	32.2%
Total	1,37,845	1,25,717	9.7%
Value of human capital externality			
Software	6,767	6,182	9.5%
Support	878	649	35.2%
Total	7,645	6,831	11.9%
Total human capital	1,45,490	1,32,548	9.76%

Table adopted from Infosys' Annual Report - Additional Information 2012-2013 shows that its human capital value creation for 2013 amounted to Rs 1,45,490 crore (Rs 1 crore = 10 million Rupees).

Human capital externality refers to benefits derived by society when employees, who enhance their human capital value due to training and development at Infosys, leave the company. The model discounts future earnings at an appropriate discount rate, and uses a long run inflation rate consistent with the Reserve Bank of India's target for inflation expectations.

Monetizing human capital has the potential to improve transparency, and facilitates efforts to attract talent and make effective direct investments in people. Knowing which specific trainings add most value to their human capital helps Infosys optimize their internal human resource development programmes as well as clearly communicate about their focus on generating positive human capital.

# Case Standard Chartered: Financial Capital

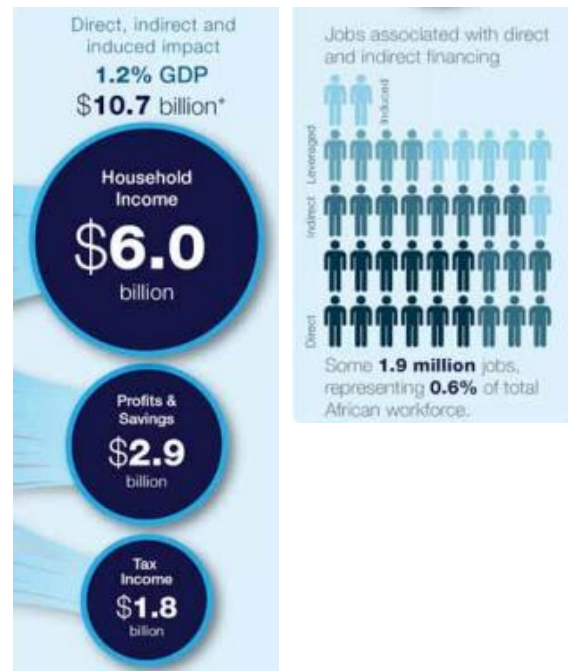
*Standard Chartered is a global bank and serves as a link between many economic markets. The bank has measured its impacts on trade, growth and jobs in Sub-Saharan Africa in order to discover where they create value, how they create value, and what they can do better.*

Standard Chartered considers its main contributions to society in Sub-Saharan Africa to be the jobs they create, the finance they provide and the offshore capital they mobilize in order to stimulate local economies and infrastructure investments. (Standard Chartered, 2014).

However, the bank also supports job creation by training local talent, by making it easier to gain access to finance, and by helping develop local financial markets.

The impacts resulting from the bank's activities are assessed in terms of economic value added and employment supported.

Other contributions to local communities, via (for example)



Figures taken from the Standard Chartered 2014 Banking on Africa report.

financial innovations, introducing new banking technologies and sound business practices, improving corporate governance standards, and community investments were assessed qualitatively.

The total contribution to financial capital during the 2013 accounting year in Sub-Saharan Africa was estimated at 10.7 billion USD supporting 1.9 million jobs.

Standard Chartered notes that this analysis has helped it to set its strategic focus. For example, in order to optimize their positive impacts they now invest more time in engaging and supporting SMEs by providing greater access to value chain finance.







# Case Achmea: Social Capital

*The Dutch insurance company Achmea assessed the social capital creation of four fast growing sharing economy platforms. This was an effort to discover new ways of creating value for customers, society and the organization itself by gaining a deeper understanding of sharing economy platforms, which have the potential to transform entire markets.*

Online sharing platforms allow their members to exchange goods and services with relatively low barriers to entry. These platforms create substantial Social Capital. In order to get a grip on the exact size of this social capital creation the social aspects of the interaction between consumer and supplier are highlighted (Achmea, 2015).

More often than not a transaction on these platforms occurs between two (near) strangers living in relative close proximity of each other. This contact between two people contributes to their trust in others, a sense of belonging to society and improved health. Next to enabling people to engage in meaningful social interaction and potentially reducing their isolation, participating in such platforms also

	Core activity	Social Capital Creation
 <b>Craigslist</b>	Market place for chores	Stimulates contact, jobs, and get chores done
 <b>SnappCar</b>	Sharing private cars	Stimulates contact, mobility, and creates financial benefits
 <b>Thuisafgehaald</b>	Sharing meals	Stimulates contact, cohesion, and reduces isolation
 <b>peerby</b>	Sharing stuff/tools	Stimulates contact, creates financial benefits

provides people with new opportunities to earn or save money.

For the valuation, first the material impacts of these platforms upon individual well-being were estimated and then differences in well-being were valued in monetary terms.

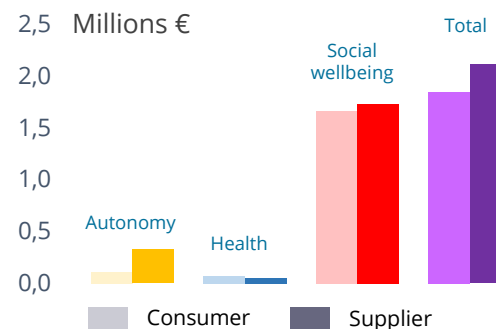


Figure taken from the Achmea news site. The four sharing platforms created an estimated total social capital of 4 million euros in 2014.

Achmea looks for innovative ways to increase the value created for clients and society. Achmea creates value through sharing economy platforms by developing insurance products that enable these platforms to work. This study helped Achmea identify the potential contribution to value creation of sharing economy platforms as they scale up.

# A multidimensional P&L: the logical next step

*The previous case studies show that it is feasible and valuable to measure social, environmental, human, and financial capital. The next step is to combine all of these separate efforts into a multidimensional P&L incorporating all capitals in one model.*

The fields of impact measurement and valuation are highly innovative and complex. In addition, businesses often look first at those impacts that seem most material to them. As such it is not surprising to see a diversity in scope and approach: companies have measured, valued and accounted for impact in different ways. Some report only on costs or only on benefits, or leave out one or more of the four capitals. Some have only done a pilot while others are further on their way to structural measurement and reporting.

The next step is to systematically account for all impacts and combine the various impacts and valuations into one coherent model.

A multidimensional P&L accounts,  
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in a systematic manner, for the material benefits and costs to multiple stakeholders across various dimensions expressed in monetary terms. As such, it is an extension of the classical P&L, which shows net financial benefits or losses for its shareholders.

There is a clear trend towards accounting more systematically across more dimensions for impacts. There is an ongoing discussion about how the dimensions should be classified. Currently the most commonly used are financial capital, natural capital, human capital and social capital (see e.g. IIRC 2013 and UNEP 2014).

In the next pages, we provide an overview of the state of the art, and a specific case of an innovative multidimensional P&L.



# State of the art: impact valuation and reporting

	FINANCIAL CAPITAL				NATURAL CAPITAL				SOCIAL CAPITAL				HUMAN CAPITAL			
	Costs		Benefits		Costs		Benefits		Costs		Benefits		Costs		Benefits	
	Direct	Value chain	Direct	Value chain	Direct	Value chain	Direct	Value chain	Direct	Value chain	Direct	Value chain	Direct	Value chain	Direct	Value chain
 Standard Chartered			■	■												
 SOLVAY adding more than chemistry®					■	■										
 novo nordisk®					■	■										
 DSM					■	■										
 otto group					■	■										
 puma					■	■										
 bam					■	■										
 Dow							■									
 aachmea									■	■	■	■				
 Infosys®															■	
 natura			■		■		■									
 nestlé					■	■			■	■						
 Holcim	■		■		■	■	■		■		■					
 THE CROWN ESTATE			■	■	■	■	■		■		■	■				
 pwc			■	■	■	■									■	
 AkzoNobel	■	■	■	■	■	■	■	■	■	■	■	■			■	■

Valued, monetized, reported impacts of:

■ one product or plant

■ one or more business unit(s) or entire operation

*This analysis provides the state of the art of impact valuation and (partial) disclosure. The table distinguishes financial, natural, social and human capital, largely following the definitions provided by the IIRC (2013), and distinguishes (absolute) costs and benefits, and impacts created by the direct operations of a businesses from those by its downstream/upstream value chain. The table is based on publicly available information.*

# Case AkzoNobel: the 4D P&L



*AkzoNobel is a global producer of paints, coatings and specialty chemicals, has developed a new 4D P&L for measuring its business impact. AkzoNobel published the results of a pilot in their Pulp and Performance Chemicals business in Brazil. This 4D method is the first to measure the positive and negative impact of four dimensions (financial, human, social and natural) throughout the value chain.*

As a global company active in numerous markets, AkzoNobel is similar to many other large organizations. It generates revenue, incurs costs and creates value for shareholders. However, AkzoNobel believes that economic growth cannot be sustained if the underlying natural and social capital upon which wealth creation depends is depleted.

In order to get a more detailed insight into how profit and loss is generated, AkzoNobel wanted to develop a deeper understanding across the value chain of how their business impacts the environment, people and society at large. Gaining a better understanding of these aspects – and attaching a monetary value to them – assists identification of possible improvements and will ultimately increase business value.

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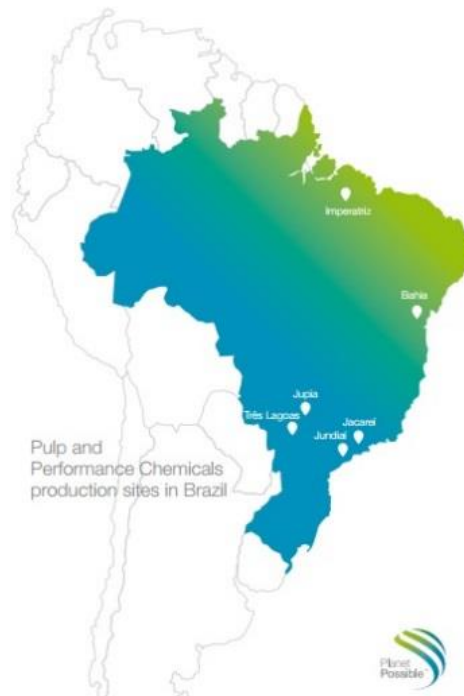


Figure and content taken from AkzoNobel annual report 2014

AkzoNobel undertook a pilot study during 2014 at their Pulp and Performance Chemicals business in Brazil, which specifically looked at environmental, human, social and financial impact. By measuring these four dimensions across the whole value chain – including raw materials, sodium chlorate production and the use of sodium chlorate in pulp production by their customers – as well as attaching an economic value to the positive and negative aspects of each, they were able to identify where they could improve.

The findings are already being used to make relevant improvements at the six plants in Brazil where the pilot was conducted. AkzoNobel is also looking at scaling up the project and introducing it throughout its Pulp and Performance Chemicals business.



# Case AkzoNobel: the 4D P&L (2)

The 4D method increases internal transparency concerning environmental, human, social and financial capital. It becomes possible to easily compare impacts, target risks and identify issues. The overview of social, environmental, financial, and human capital impact displayed in the graph below indicates which impacts are most significant during each phase in the supply chain. This new insight enables AkzoNobel to make better business decisions by reducing the negatives and building on the positives.

## Monetized impact across the whole value chain (indicative<sup>1</sup>)

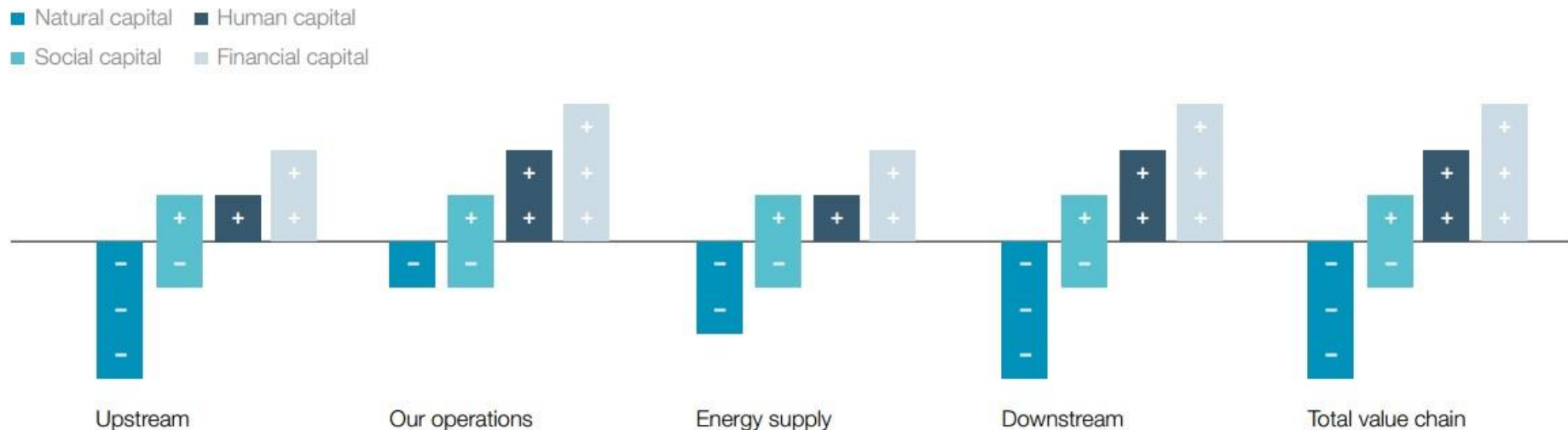


Figure taken from AkzoNobel annual report 2014



# How businesses can use a multidimensional P&L

*Businesses can use the multi-dimensional P&L internally to identify hidden risks and opportunities and form a strategy around long term value creation for shareholders and stakeholders. Businesses with superior performance can present such a P & L externally to demonstrate resilience and improve their reputations and valuations with investors. When applied internally or externally, a multi-dimensional P&L can be relevant in the short, medium, and long term.*

In the short term, measuring and valuing impacts help businesses detect immediate vulnerabilities; from dependencies on a specific capital, to hidden risks and inefficiencies in a supply chain.

A superior performance relative to others in a sector can demonstrate leadership and resilience, adding value to businesses that present their multidimensional P&L externally.

In the medium term, businesses can use multidimensional P&L accounting to improve investment choices and marketing decisions, and to drive innovation.

Externally, businesses can show accountability to stakeholders by consistently reporting and managing their impacts. Superior performance can help improve their valuations in the eyes of investors.

In the long term, the multidimensional P&L is a crucial tool for businesses that want to shape their business strategy around shared value creation.

A multidimensional P&L is a worthwhile endeavor whether applied internally or externally. When done well, it can be a powerful tool to communicate value creation to stakeholders and investors alike.

The matrix below shows the internal and external use of the multidimensional P&L depending on the decision horizon.

	Short term	Medium term	Long term
Internal use	<ul style="list-style-type: none"><li>• Map hidden dependencies</li><li>• Uncover immediate risks</li><li>• Improve sustainability decisions</li></ul>	<ul style="list-style-type: none"><li>• Select segments and products</li><li>• Rationalize investments</li><li>• Guide innovation</li><li>• Strengthen risk management</li></ul>	<ul style="list-style-type: none"><li>• Strategy around value creation</li><li>• Select business models</li><li>• Select sectors and markets</li></ul>
External use	<ul style="list-style-type: none"><li>• Show leadership</li><li>• Demonstrate superior resilience</li></ul>	<ul style="list-style-type: none"><li>• Show accountability</li><li>• Differentiate credibly to customers</li><li>• Improve valuation of investors</li></ul>	<ul style="list-style-type: none"><li>• Brand around value creation</li><li>• Shape valuation of investors</li></ul>

## *The road ahead: standardization and scaling up*

*The value of a multidimensional P&L, both for internal and external use, will increase as the level of standardization and the number of businesses that adopt it both increase.*

Many harmonization efforts are underway in both the public and private sectors to address the multitude of approaches to impact measurement and valuation. On a global level, the United Nations established the System of Environmental-Economic Accounting (SEEA) initiative, to assist the production of “internationally comparable statistics on the environment and its relationship with the economy.” Non-governmental efforts include general reporting standards such as GRI, SASB and IIRC, and the True Price platform which focuses efforts upon creating effective methodologies for valuation and monetization.

Harmonization is expected first for Natural Capital, as key global players are jointly developing a Natural Capital Protocol.



In the past 5 years businesses have started to work purposefully on impact valuation. At least 20 companies have published some form of impact valuation after the first was published in 2010. Many more companies are working on impact valuation internally, with a view to revealing fruits of their efforts at a later stage.

It is expected that the uptake of multidimensional P&L accounting by businesses will accelerate due to initiatives such as Accounting for Sustainability, the WBCSD, the Natural Capital Declaration, and the EU Business and Biodiversity Platform. As the adoption of the multidimensional P&L reaches scale, it will profoundly affect how businesses are valued, create opportunities for shared value creation and further align the interests of business with society.

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