

British Academy Future of the Corporation Working Paper

Title: How to Measure Performance in a Purposeful Company?

Analysing the Status Quo.

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Abstract

This paper examines the relevance of the British Academy Principles for Purposeful Business in the area of corporate measurement and performance. Because measurement and performance are critical for effective and sustainable management, the success of putting purpose into practice hinges on the ability to create metrics beyond solely financial standards and benchmarks. Drawing on expert interviews, case studies and document analysis, this paper analyses the current ecosystem of “non-financial” measures, discussing which frameworks and methodologies organisations can choose from and how these may differ in utility. It further explores whether and how metrics can be practically integrated with the traditional financial performance measurement, such as profits and capital investments. This enquiry provides an analysis of the remaining gap between existing non-financial measurement and accounting efforts and their full integration into organizations. The paper concludes with a discussion of three areas in which non-financial measurement is believed to be most impactful: investment practice, management decision making & incentivization, and corporate governance.

Key words: Non-financial measurement and performance, corporate purpose, sustainable investing, full-cost accounting, sustainability.

Introduction

The Purpose of companies is being revised in thought and practice. Friedman's (1970) doctrine of shareholder primacy is increasingly being challenged, in business, society, and capital markets. The latest publication of a "Statement of the Purpose of a Corporation"¹ by the long-time conservative and mostly shareholder-oriented US Business Roundtable (August 2019) has been a strong signal and tribute to the scope of shift from shareholder- to stakeholder-oriented markets. These changes are attributed in part to market shocks, such as the financial crisis, and perhaps increasingly to the gravity and urgency of systemic "wicked" outcomes, such as climate change and income inequality. Due to their size and the social and environmental impact they yield, particularly large companies face growing stakeholder demand to act as agents of change in order to maintain their license to operate within society. To do so, companies are expected to redirect their focus from maximising shareholder value to "finding profitable solutions for people and planet" (Mayer 2018).

This poses a challenge to companies, as the capitalist markets of the past half century have created a corporate focus vastly different from this vision. As evidence for this one must only look at the internal and external accounting, measurement and reporting systems which are currently in place to evaluate and track a company's performance and value. While annual financial reports, accounting standards and stock prices are intended to track and report a company's financial health, they are very limited in capturing information about the intangible and non-financial performance and value of a firm. In other words, if Mayer's vision of corporate purpose were to become the new template for the corporation of the future, current performance measurement would be largely unfit.

Recent trends in corporate reporting, accounting and investment practice seem to mirror the concern that the current practices for performance measurement are not holistic enough. At company level, increased stakeholder pressure and a growing realization of the linkages between long-term liabilities and system level challenges have already pushed board-rooms to engage in much broader conversations beyond the concern about traditional financial profit (Gordon 2018). In recognition of these dependencies, and to

¹ The Business Roundtable, 2019, <https://opportunity.businessroundtable.org/ourcommitment/>.

construct a sustainable strategy, many companies have begun to address and manage the scarcity and vulnerability of intangible and non-financial assets, such as workers, communities, and natural resources through a variety of disclosure mechanisms and / or so-called “full cost accounting” systems (Bebbington *et al.* 2007; Unerman *et al.* 2018; Stroehle & Rama Murthy 2019). As a parallel trend in the capital markets, the incorporation of environmental, social and governance (ESG) factors into investment decisions has become increasingly important. What used to be a niche investment-strategy, driven by particular ethical values, has increasingly gone mainstream under the recognition that environmental and social dependencies are important risk-factors which should be priced into the prudent construction of investment portfolio under the expectation of long-term financial capital returns (Eccles, Ioannou & Serafeim 2014; Khan, Serafeim & Yoon, 2016; Beal *et al.* 2017).

Both full-cost accounting and sustainable/ ESG investing² rely on consistent, high-quality measures of non-financial performance and impact. Yet, as there is no universally agreed-upon or mandated set of non-financial measures; companies and investors have to choose from a wide variety of methodologies and definitions offered by a complex ecosystem of international organizations, non-governmental organizations (NGOs) and commercial data vendors. Although various organisations have emerged to bring order into this universe, it can still be a daunting task to find the “right” framework that will fulfil a specific entity’s need or requirement to provide non-financial measures. Addressing this, our paper lays out different utilities for non-financial measures and frameworks, which we hope will help to reduce the complexity and clarify the places in which various actors and methods operate.

To achieve an incorporation of non-financial measurement and performance with the current financial performance reports and definitions, the British Academy’s Future of the Corporation programme put forward two specific principles³:

² Sustainable, Responsible and ESG Investing are usually used synonymously. The European Foundation for Sustainable Investing (Eurosif, 2018) defines them as: “a long-term oriented investment approach which integrates ESG factors in the research, analysis and selection process of securities within an investment portfolio. It combines fundamental analysis and engagement with an evaluation of ESG factors in order to better capture long term returns for investors, and to benefit society by influencing the behaviour of companies.” <http://www.eurosif.org/wp-content/uploads/2018/11/European-SRI-2018-Study.pdf>

³ British Academy Future of the Corporation Programme (2019): Principles for purposeful business: How to deliver the framework For the Future of the Corporation An agenda for 2020s business and beyond.

1. Measurement should recognise investment by companies in their workers, societies and natural assets both within and outside the firm.
2. Performance should be measured against fulfilment of corporate purposes and profits measured net of the costs of achieving them.

To this end, we discuss three dimensions of measurement and performance relevant for these principles:

a) the choice of measures which are created within and about a company, b) the construction and incorporation of these measures in current accounts, and c) their utility for management and investment practice. By discussing these dimensions, we set the principles into the current context of the above-mentioned developments in both corporate non-financial measurement, management and investment practice to fully appreciate their practicability, feasibility and potential limitations.

The paper is structured as follows. Section two examines a company's choice in non-financial measures and metrics concerning the boundary of the firm and its stakeholders, relating these to the myriad of already existing disclosure frameworks and discussing the benefits and challenges of potential disclosure standards. Section three examines the use of these non-financial measures in the context of existing accounting practices and challenges and discusses their potential incorporation through various "full-cost" accounting techniques and the limitations this faces. Section four examines the three main areas of application of the principles, including investment practice, corporate decision making and corporate governance. Section five concludes.

The Choice of Non-Financial Measures

Types of Corporate Measures and Information.

The axiom 'you manage what you measure' is truer than ever. Reliable information and measures are the basis for evaluation, valuation and decision making in companies and the capital markets. The information perspective and the notion of providing decision relevant, reliably measured data to the equity investor lies at the heart of the financial reporting system. To enable this, 'investors require timely and accurate data (measures of performance) in order to create relevant electronic information (metrics)

that can, in turn, be utilized by decision-makers in order to make strategic choices vis-à-vis their long-term objectives (knowledge)' (Clark & Monk 2018: 3). Currently, a wide range of financial and non-financial metrics exist which can be used to evaluate the performance, growth and robustness of corporate operations and firm value.

For financial metrics, accounting statements, such as the income statement, cash flow statement and balance sheet, have the purpose of recording mandated accounting constructs, such as profit and loss, which allow financial analysts and corporate accountants to make these evaluations. Which measures appear where, how and when in financial statements is largely mandated by international accounting standards⁴ which are enforced through national legislation and periodically audited for external assurance. These standards are intended to 'bring transparency, accountability and efficiency to financial markets around the world' (IFRS 2019) and 'to establish and improve financial accounting and reporting standards to provide useful information to investors and other users of financial reports' (FASB 2019). Yet, financial reporting standards have not always existed. They are the result of a long history of social construction and debate which ultimately resulted in some aspect of harmonised standards due to a strong market driven need for accountability and auditability as well as global transparency and comparability. They continue to be influenced by changing political and economic climates and pressure from non-financial reporting initiatives and systems. The mapping of these changes has long been of interest to academics and practitioners and helps us understand the multitude of factors at play (Tschopp & Huefner 2015).

The sphere of non-financial metrics is a relatively recent one and therefore far less developed than that of financial metrics. Although the last decades have been marked by an increasing need and demand for information about firm's intangible assets, as well as their social and environmental impacts, globally accepted standards for non-financial disclosure do not exist. Businesses are still only required to report on accounting principles which were organised in a time when technology, innovation, and environmental and social disruption were at a vastly different pace than today. Due to this, we now face

⁴ Approximately 120 countries mandate the 2001 released International Financial Reporting Standards (IFRS) from the International Accounting Standards Board (IASB), and in the United States US Generally Accepted Accounting Principles (GAAP) issued by the Financial Accounting Standards Board (FASB) apply.

a market need for standards for reporting corporate non-financial information. In the absence of such standards, a wide range of services and methodologies have been developed all proposing to evaluate companies' non-financial and sustainability performance from an external perspective. This variety of data, indices and rankings have to a large extent succeeded in moving the non-financial evaluation of companies into the investment and reporting mainstream. However, most data vendors and rating agencies use their own social constructs of what a 'sustainable company' is, with proprietary methodologies for their assessments, often based on self-reported data which lacks consistency and external assurances (Eccles & Strohle 2018). While non-financial information about companies is now abundant, objective transparency and comparability are still low.

Concerning types of non-financial information, it is helpful to differentiate between measurement, methodologies and metrics. In broad terms, measurement describes the way in which information is stored as data. For example, in non-financial measurements, metrics are often categorized into different dimensions and correspond to certain frameworks. Different frameworks will suggest the measurement of different dimensions, such as ESG (environmental, social and governance), or of different forms of capital, like in the Integrated Reporting framework⁵ (including financial, manufactured, intellectual, human, social and relationship, and natural capital). Metrics are the quantified and usually electronically stored items which capture and describe the value of a specific measurement. They can capture information as absolute (giga-tons of CO₂), binary (0-1, yes-no) or monetary (price of carbon) information, they will however always be quantitative. When qualitative concerns enter measurement, their evaluation will either be narrative (description of a policy) or captured through binary metrics (existence of a policy, yes-no). Methodologies, then, are the link between measurement and metrics. Methodological decisions determine how measurement translates into metrics, which entities are used, and how information is collected, aggregated and weighted. In other words, the same measurement goal can result in the use of varying metrics if the underlying methodology changes. The information extracted from these metrics finally allows users of the data to form knowledge about what was

⁵ International Integrated Reporting Council <https://integratedreporting.org/what-the-tool-for-better-reporting/get-to-grips-with-the-six-capitals/>, last accessed Aug 2019. Another example of a multi-“capital” approach is the Economics of Mutuality methodology, which advocates the measurement of financial, shared financial, human, social and natural capital. See <https://economicsofmaturity.com/what-is-eom>, last accessed Aug 2019.

measured. Because knowledge-creation is always contextual, the same information may lead to different insights for different individuals which use measurement for varying purposes.

Because the terminology around non-financial measurement varies significantly between frameworks, Table 1 provides definitions for selected terms which are commonly used in discussions around non-financial performance and impact. As numerous definitions exist for some of the following, the definitions provided only capture the general meaning for further reference in this article⁶.

The appendix of this paper features various examples of measurement, methodologies and the use of different metrics in a variety of globally operating organizations. Particularly the case of Olam (Appendix A1) offers an insight into the effort of companies when developing and constructing non-financial metrics for managerial and communication purposes. These non-financial metrics allow organizations to understand how certain corporate activities affect the stock of an environmental asset (such as water and its pollution) or a social good (such as the physical or mental health of their employees).

Using Metrics to Measure Purpose

Linking Inputs and Outcomes to the Boundary of the Firm

The non-financial performance of firms is often assessed as a link between corporate input and a specific, desired outcome: the association of corporate activity (or inactivity) with a desired change in status quo (or lack thereof). This is true both on the financial and non-financial level. Regarding non-financial measurement, however, the framing of input and output is particularly helpful in understanding corporate impact on externalities. In other words, in order to assess how well a company is addressing certain externalities, the effect of targeted activities can be evaluated. Vörösmarty *et al.* (2018) suggest that the results of corporate activity can be captured in outputs, outcomes and impacts (as shown in Table 2). The obvious challenge here is the difficulty of isolating a single activity's (distributing drugs) impact on a system-level change (better health-care). Clark & Monk (2018) therefore outline that it is a

⁶ Also, the Natural Capital Coalition provided an early set of definitions and an additional set of definitions was developed by the World Business Council for Sustainable Development (WBCSD).

combination of various environmental enablers (governance, culture and technology) and production inputs (capital, people, process, and information), which allow to create outcomes that are necessary to manage capital in the long-term. Still, the framing of output, outcome and impact is useful for establishing intersubjective consensus⁷ (Unerman *et al.* 2018), as it is closely related to an extension of the understanding of the boundary of the firm.

While the traditional boundary of the firm is tied to notions of ownership and control as well as by legal structures, a purpose-driven company benefits from a wider inclusion of other, non-financial concerns which are material⁸ for the firm and consider the dependency of other stakeholders on these assets. In fact, some argue that current accounting practices are directly implicated in defining and maintaining boundaries between organisations and their environments⁹. The extension and recognition of a wider understanding of the boundary of the firm has therefore direct consequences for non-financial measurement. Typically, all forms of corporate action create direct outputs (such as production, scope of distribution) which are well within the traditional boundary of a firm and under its immediate influence. Standard accounting measures and alternative performance measures (so-called APMs or Non-GAAP) are used to record these. The wider externalities or impacts of this action (such as environmental degradation, social unrest due to resource scarcity), on the other hand, have typically been considered outside the boundary of a firm and therefore beyond direct influence.

⁷ 'Instead of being objective, many accounting metrics are intersubjective. This is the term used for subjective items where there is widespread consensus around the judgments that are appropriate in reaching a subjective understanding of the item, such that sufficient people agree that this understanding or perception is the correct and only appropriate way of knowing the item (McKernan 2007). While knowledge and understanding of an item might, therefore, appear to be objective because few, if any, dissent from it, it is not actually an objectively factual representation. However, the more widespread the intersubjective consensus around [...] any item, the more likely it is to be regarded by many as an objective fact.' (Unerman *et al.* 2018: 508)

⁸ Materiality is a key concept which is used to address only those issues which are of significance to both company and stakeholders. Various organizations advocate for different definitions of materiality, notably the "financial materiality" of the Sustainability Accounting Standards Board (SASB) <https://materiality.sasb.org/>, and the Global Reporting Initiative's definition of materiality as the sum of total impacts on society and environment. www.globalreporting.org/resourcelibrary/Defining-Materiality-What-Matters-to-Reporters-and-Investors.pdf.

⁹ For example, Llewellyn (1994) argues that organisational information collection and processing systems shape the intra-organisational reception of environmental signals, concluding that 'accounting information is implicated in the construction of environmental realities in order to aid organizational understanding of both what to attend to and how to interpret it' (Llewellyn 1994: 20). The extent to which social and environmental issues are considered to fall within the boundary of the firm are thus partly managed through accounting practices that shape 'what is or is not "part" of the organisation and consequently part of the business of the organisation' (Gray *et al.* 2014: 91).

If a company is to widen its traditional boundaries, it can consider the importance of externalities in two ways. Firstly, the firm can recognize the importance of its activities for people and planet. Secondly, the firm can recognize the importance of people and planet for its sustained success. These recognitions are not mutually exclusive, yet both require that firm boundaries are widened as they reveal a need to act in response to impacts of firm action on externalities. To adequately manage these responses, non-financial measurement becomes critical.

Achieving Context Specificity

To avoid geographical biases, Vörösmarty *et al.* (2018) highlight the importance of creating context-oriented metrics, particularly when measuring impact. Context specific measures are therefore those which ‘go beyond documenting changes in facility-scale outputs and combine them with [...] outcomes and impacts, which by their very nature evaluate corporate products and services within broader environmental or human beneficiary’ (Vörösmarty *et al.* 2018: 523). The example of CO₂ emissions hereby shows how outputs (emissions avoided), outcomes (air-quality improved) and impacts (associated health benefits) are inherently context dependent: a small renewable company in a highly polluted area may contribute more to health benefits than a larger company which operates in an area where air quality is already relatively good. However, as mentioned above, regarding the biggest challenge of impact measurement remains the attribution of singular corporate action to systemic change. To address this, for example, the multi-stakeholder Science-based Targets Initiative¹⁰ has been created to work on the connection of system-level developments (global warming) with organisation-level action (GHG emission reduction objectives aligned with Paris Agreement).

A further challenge with the creation of context-specific metrics is to allow for specificity without the loss of consistency for comparison. To achieve this, Clark & Monk (2018) suggest five golden rules for designing and implementing metrics which are comparable and consistent, while allowing for context specificity: ‘effective metrics are 1. consistent (not in conflict) across the organization; ... 2. function-

¹⁰ <https://sciencebasedtargets.org/>, last accessed October 2019.

and/or task-relevant ... ; 3. parsimonious and transparent ... ; 4. mutually exclusive and collectively exhaustive ... , and 5. flexible and/ or adaptive to market risk and uncertainty” (p. 5).

Including Stakeholder Perspectives

Finally, when considering non-financial measures, both a company-centric or a stakeholder perspective can be adopted. Considering that companies manage what they measure, one would expect a reasonable measurement strategy to include the capture of a status quo, the (actual and desired) change in that status quo and the definition of a targeted and measured intervention, which links the actual status quo to its desired change. In this measurement for management process, the perspectives which companies take into consideration can have a big effect. Let’s take human resource management as an example. From a company perspective, measuring a certain status quo could mean monitoring the number of employees currently on a company’s payroll. The change in status quo captures the increase or decrease in staff compared to the year before, and the intervention metric reads the number of employees hired and fired. All three of these factors can be captured in both non-financial (in numbers of people) and financial terms (the total staff cost, the turnover cost, and human resource effort), which makes it possible to record human aspects as financial accounts. From a stakeholder perspective, however, the status quo can be very different. It could, for example, describe the contribution of a firm towards lowering unemployment, its efforts in addressing the concern and its success in doing so. Or, from an employee’s perspective, these measures would additionally concern the personal income and livelihood. Regarding the previous point, these perspectives are then also inherently context-specific: unemployment may be of varying importance in different regions and at different levels (locally, regionally, nationally). While the adoption of a stakeholder perspective in non-financial measurement is still relatively uncommon in practice, it offers therefore an opportunity to assess the benefit of an activity not only from a corporate perspective, but also from a variety of perspectives of other stakeholders.

Distinguishing between a shareholder and a stakeholder orientation of accounting and reporting, Barker (2019) provides a lucid analysis of the difficulties with operationalising the notion of impact. Pointing out that – in the case of the shareholder orientation – ‘the concern is not with corporate impact on the environment per se, but instead only with that impact in so far as it causes an impact on shareholder

value; externalities can safely be ignored.’ (Barker 2019: 77). To remedy this shortcoming, Barker argues: ‘More effective, from a natural capital perspective, would be to link corporate reporting on environmental impact to science-based social targets, aligned for example with the UN’s Sustainable Development Goals (SDGs). And yet this would imply a stakeholder orientation, which runs against the direction of travel of corporate reporting frameworks and practice.’ (Barker 2019: 78). Still, any redefinition of corporate performance with regard to corporate purpose would require non-financial measurements utilised in corporate accounting and reporting to combine both shareholder and stakeholder orientations. The former is necessary to assess whether companies’ actions are profitable, and the latter is required for evaluating if interventions indeed solve the problems of people and planet. In other words, societal and environmental challenges serve as a benchmark for assessing how well companies perform what they set out to do in their corporate purpose statements or objectives.

The Importance of Baselines and Benchmarks

When measuring outputs, outcomes and impacts, as defined above, benchmarks are necessary to determine the scope and gravity of corporate activity. Consider, for example, the outcome of wastewater treatment shown in Table 2, which is measured as ‘Pollutant concentration reductions in receiving waters (e.g. milligrams per litre)’. To achieve any meaningful measure of reduction, the absolute pollutant concentration in receiving waters has to be taken as relevant baseline here, while an understanding of acceptable levels (for example in terms of health impact) of these concentrations would have to serve as benchmarks. Likewise, ambient air pollution is the relevant benchmark for assessing outcomes around Renewable Energy.

While for some natural assets this may be relatively straightforward (you use 10 litres of water, you clean 10 litres of water), this may be less intuitive for others (how do you clean 10 litres of polluted air?) and certainly less for social and human assets (such as worker wellbeing). Here, baselines and benchmarks become important to define, for example, the current level and legal minimum requirements for worker wellbeing. Organizations such as the London Benchmarking Group, the World Business Council for Sustainable Development (WBCSD) and the World Benchmarking Alliance (WBA) can be of big help in this regard. It is important to note that the choice of benchmarks and baselines has a major

effect on assessment results, as demonstrated in a Social and Human Capital Coalition case study¹¹ of Nestlé:

Nestlé develops a methodology to show the link between employee income and health. There is an underlying assumption that income inequality is a key health determinant which the private sector has agency on. Baseline definitions in this example are critical. For example, if it is assumed that everyone should earn Western wages, then the impacts in the supply chain would always be negative. If the baseline would focus only on minimum wages, then the impacts would often be positive – although minimum wages often lie below living wages. The definition of living wages becomes then key. Either way, a baseline assumes that there is a threshold (e.g., minimum wage, living wage, first dollar earned) below which impacts are negative and above which they are positive; depending on the choice of this, results can be wildly different.

Further examples of corporate practice in the use of benchmarks and baselines can be seen in the case of Novo Nordisk, which is outlined in the appendix of this paper (Appendix A2).

Existing Standards and Frameworks for Non-financial Measurement and Disclosure

The importance of achieving the incorporation of non-financial factors into the decision-making processes of companies and portfolio selection of investors is increasingly recognized. Various stakeholder groups have developed frameworks and methodologies which mean to guide and standardize the reporting, measurement and integration of non-financial information. To achieve a full integration of material, non-financial issues into all relevant structures of organizations, including value-creation, decision-making, leadership and incentivization, companies often make use of a variety of frameworks and measurement guidance in order to achieve the best fit for their idiosyncratic needs. For public companies, one of the largest challenges is hereby to strike the right balance between the creation of measures which are useful for external reporting to investors and other stakeholders, and those which are needed for internal decision making. Whether the emergence of this abundance of frameworks is a

¹¹ <http://social-human-capital.org/case-studies/nestle%20s-approach-valuing-social-impacts>, last accessed October 2019.

testament to the existing willingness for meaningful transformation or rather an indicator for increased sophistication in greenwashing remains to be seen. Recent studies, however, seem to suggest that specific disclosure requirements of non-financial information can indeed impact the environmental performance factors of companies (Jouvenot & Krueger 2019).

To structure the large number of frameworks which have appeared to meet the market need for standardized non-financial information, the Impact Management Project¹² – an NGO with the mission to establish and foster common definitions for impact measurement and management – defines five planes of work into which frameworks and standards can be categorized: 1. Standards of practice and process, 2. Conceptual frameworks, 3. Data standards for metrics, 4. Valuation frameworks and 5. Frameworks for the integration with financial reporting (see Figure 1). While the sheer number of organizations and frameworks which have emerged in this space can be off-putting, this categorization helps to assess each alongside their actual value proposition and utility. In doing so, the impression of extreme multipolarity in this space is somewhat reduced.

The following description of frameworks and standards will focus on the first three planes, while the later section on multi-capital accounting will zoom into the areas of valuation and integration.

The variety of existing frameworks and the market demand for standards of non-financial disclosure has created an uncommon need for consolidation in the non-profit sphere. As certain frameworks enjoy wider adoption than others, it is helpful to review their characteristics alongside the dimensions in Figure 1 to arrive at some clarity about patterns of current practice and acceptance. Table 3 summarizes a selection of the most important frameworks and standard setters in the non-financial reporting sphere and categorizes them into principles of practice, conceptual frameworks and data standards.

The list of organizations which outline principles of practice and process, is the longest and by far not exhaustive as displayed in Table 3. These frameworks generally outline broad principles which describe good practice and processes of due diligence that organizations should adopt if they want to be

¹² Impact Management Project, 2019, “a forum for building global consensus on how to measure, compare, and report ESG risks and positive impacts. We convene a Practitioner Community of over 2,000 organisations to debate and find consensus (norms) on technical topics, as well as share best practices”, online under <https://impactmanagementproject.com/>, last accessed October 2019.

responsible and long-term focussed. The acceptance and adoption (where relevant) of such principles of practice naturally varies significantly by types of actors, size and even geography, as most organizations focus on a specific group of actors and their contribution to a more sustainable economy. Interestingly, although there is a wide variety of organizations, the content divergence of principles on this plane of work seems to be relatively low. Work done by the IMP¹³ suggests that the broad understanding of what defines a sustainable and diligent process is relatively aligned in most of the principles of practice they reviewed. Many of these frameworks and networks are hosted by international organizations, such as the Global Compact¹⁴, the OECD's Guidelines for Multinational Enterprises¹⁵, and the UN-backed Principles for Responsible Investment (PRI)¹⁶. They enjoy large memberships, as the actual commitment of participation in these initiatives is relatively low with a focus on best-practice sharing of principle-based conducts rather than specific disclosure requirements.

As an anchor for what constitutes a sustainable planet and society, many of these principles of practice reference the UN SDGs. This follows a larger trend, which suggests that the SDGs have become the number one global framework of reference for sustainability matters. A PricewaterhouseCoopers report states that in 2018, 72% of a sample of 729 large publicly listed companies mentioned the goals in their annual corporate or sustainability report and that 50% of companies identified priority SDGs¹⁷, and included them into their strategies. These numbers indicate a substantial appetite for a global framework to measure corporate, social and environmental behaviour.

The measurement of a company's contribution to the SDGs is, however, very difficult and often results in reports which only highlight the positive contribution of a company to the SDGs, neglecting the negative (so-called 'SDG'-washing). The difficulty of connecting corporate action to the wider scope of

¹³ Insight through interview held for this paper, publication with evidence said to be forthcoming.

¹⁴ The UN Global Compact has a current membership of 9,913 companies in 161 countries. Last accessed Aug 2019, www.unglobalcompact.org/

¹⁵ The OECD Guidelines are implemented by 48 national governments and thus apply to all companies within them. See: Annual Report on MNE Guidelines, <http://mneguidelines.oecd.org/2018-Annual-Report-MNE-Guidelines-EN.pdf>, last accessed Aug 2019.

¹⁶ The UN PRI has over 2,300 signatories to its principles with collectively more than \$US 89 trillion in assets under management. See: <https://www.unpri.org/pri/about-the-pri>, last accessed Aug 2019.

¹⁷ PricewaterhouseCoopers 2018: SDG Reporting Challenge 2018 - From promise to reality: Does business really care about the SDGs? <https://www.pwc.com/gx/en/services/sustainability/sustainable-development-goals/sdg-reporting-challenge-2018.html>, last accessed August 2019.

the SDGs has incubated the creation of organizations such as the World Benchmarking Alliance (WBA), which address this challenge through the creation of global benchmarks.

Concerning organizations with conceptual frameworks for non-financial reporting, the list becomes shorter and is likely exhaustive as displayed in Table 3. This body of work is largely focussed on the expansion of corporate disclosure beyond the annual financial report. Categories of how to structure measurement of non-financial information and guidance on how to report on key-concepts, such as materiality, will often be part of these frameworks. A conceptual framework therefore provides the ‘how’ of corporate non-financial reporting and can be important for the format of a report. The most comprehensive non-financial reporting frameworks are offered by the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB) and International Integrated Reporting Council (IIRC). The other frameworks mentioned in Table 3 are focussed on more specific reporting areas, such as carbon disclosure (CDSB, Carbon Disclosure Standards Board) or climate related risk (TCFD, Task-Force for Climate Related Financial Disclosure). Additionally, conceptual guidance on non-financial reporting can also be found under the International Accounting Standard’s Board (IASB) Management Discussion and Analysis definition or in the UK FRC’s guidance on Strategic Reports.

Frameworks which offer a complete set of standards on non-financial measurement and metrics for companies to report on are finally much fewer than those outlining principles of practice and conceptual frameworks. GRI and CDP are by far the most important and most used by companies and represent what many perceive ‘the standard’ of non-financial corporate disclosure. In a July 2019 testimony to the US House Committee on Financial Services¹⁸, Tim Mohin, CEO of the GRI, outlined that about 75% of the largest 250 companies worldwide, and about 80% of companies in the Dow Jones Industrial Average make use of GRI standards in their sustainability disclosures. SASB, on the other hand, is particularly interesting for investors, as its metrics convey a clear definition of financial materiality. In its 2017 ‘State of Disclosure’ report¹⁹, SASB reported that about 82.5% of all public American companies included some form of disclosure recommended by SASB, while 42% provided disclosure on specific

¹⁸ <https://financialservices.house.gov/uploadedfiles/hhrg-116-ba16-wstate-mohint-20190710.pdf>, last accessed Aug 2019.

¹⁹ SASB, The State of Disclosure 2017. See: <https://www.sasb.org/wp-content/uploads/2017/12/2017State-of-Disclosure-Report-web.pdf>, last accessed Aug 2019.

topics from the SASB conceptual framework. Metrics suggested by CDP focus exclusively on natural capital in the areas of climate, water, and forests, the Embankment Project's emphasis lies on human capital measurement and the WBA focusses on benchmarks for the measurement of SDGs. The only two holistic non-financial data standards setters are therefore SASB and GRI. The main difference between the two organizations' standards lies in the scope of analysis. While GRI focusses on all environmental and social impacts of corporate activities, SASB only focusses on those issues which are of financial materiality to a company in a given sector. Where the two align, metrics are often (yet, not always) congruent.

Although structuring these organizations into different planes of work does indeed help to understand the universe of non-financial measurement and reporting better, the need for continued conversation and alignment still exists. Therefore, efforts such as the IMP Structured Network²⁰ and the Bloomberg funded Corporate Reporting Dialogue²¹ have been initiated to create a multi-stakeholder dialogue between these organizations and companies in the hope to create consensus.

Standards for Non-financial Disclosure: A Discussion

As iterated earlier in this article, there is a wide consensus amongst investors, companies and other stakeholders that there are both a strong market-need and a -demand for standards for non-financial disclosure. This was confirmed in all the interviews we led and focus groups we observed. The assumption is that such disclosure standards ultimately have the purpose of providing a transparent and comparable data-environment for all stakeholders, while creating a level playing field for those companies under obligation to report on these standards.

However, a number of unanswered questions are holding the development of these standards back: which measures should be included in these standards, how should these measures be computed, which should be the institutions mandating them, and how should compliance be monitored and audited?

²⁰ Impact Management Project, global network launch. See: <https://impactmanagementproject.com/structured-network/the-imp-launches-global-network-to-mainstream-impact-management/>, last accessed August 2019.

²¹ <https://corporatereportingdialogue.com/>, last accessed August 2019.

To answer the first question, it is useful to reconsider the frameworks we discussed in the previous section. Many of these have been developed under careful consideration of multi-stakeholder consultation and international standards and law and offer a good starting point for a conversation about what can and should be measured. Arguably, good, standardized measures thus already exist, and the discussion needs to move on from the what to the how. What is needed, then, is a decided choice and agreement about which existing standard are to be mandated by governments. Ideally, standards would be created on a global scope and mandated at a national level, as is the case in financial reporting with IFRS and IASB. Organizations such as GRI or SASB, for example, could be taken as globally agreed standards which are then mandated by national law. In fact, GRI is already recommended or referenced in several legal jurisdictions²². This is however different from being legally mandated, by which we mean hard legislation as opposed to soft law.

While SASB and GRI put forward a wide variety of industry-specific standards, focus group discussions about this topic repeatedly documented not only the call for standards, but also a call for simplicity in regard to the implementation of these standards. This would suggest a set of relatively few mandated measures (between ten and fifteen) with a focus on a selected set of system-level challenges (such as climate change, income and social inequality) that are considered of universal importance. Additionally, the interviews we led conveyed a sense that such mandated disclosure should have to go beyond the sector of publicly listed equities and include disclosure requirements for private firms of public interest (i.e., above a certain revenue or employment threshold).

To extrapolate a list of standards, it is well conceivable that international frameworks would give guidance and serve as templates for legally mandated measures. While the SDGs could offer a general framework, the TCFD and CDP recommendations could serve for more specific measurement standards concerning climate related matters and GRI or SASB could fill in for the rest. To understand better what

²² The European Union Directive 2014/95/EU on Non-financial disclosure, for example, recommends the use of GRI's Sustainability Reporting Guidelines. Furthermore, the use of GRI is mentioned in a total of 38 national and regional jurisdictions, recommended in 23 jurisdictions and required for certain types of companies (usually state-owned, listed in Taiwan) in 6 jurisdictions. A full account of GRI's mention in policy and regulation can be found on www.globalreporting.org/SiteCollectionDocuments/2016/GRI%20references%20for%20the%20website.pdf, last accessed Oct 2019.

additional characteristics such standards should have, we compiled, based on our data collection, a non-exhaustive list of principles which are perceived as desirable by key stakeholders:

- Existence of clear and *explicit definitions* which outline measurement and metrics
- *Consistency* across organizations and time
- Definition of *targets and aspirations*
- Links to external environmental / social targets and legal frameworks as *benchmarks*
- Explanations of *trends over time*, to clarify how slow-burn issues evolved over time
- Including information about *supply chain* should be mandatory for those that have one
- Including *stakeholders outside the traditional boundary of the firm* should be encouraged
- Link to systems of *external assurance*, to make measures auditable

Finally, the call for standards which are few, yet systemically important does not stand in contrast to the wide range of industry specific standards of disclosure put forward by organizations such as the GRI or SASB. On the contrary, if companies would be legally required to report on a set of relatively few, systemically relevant issues, the increased transparency would likely spill-over into an augmented need for additional, explanatory disclosure about a company's non-financial performance. Mandated disclosure could therefore create new capabilities, expertise and awareness within an organization, which would naturally lead to further, voluntary measurement and disclosure around non-mandated social and environmental impacts. This continued importance of voluntary disclosure also prescribes a continued importance to the various non-governmental organizations which are active in the space and support and advocate corporate non-financial disclosure.

The institutional question of who would be willing and capable of mandating these standards, however, results to be very complicated. Harmonisation of financial reporting standards through the IASB and FASB itself was a highly politicised process (Schipper 2005); and we would expect a similar sense of political engagement before agreement on who should mandate non-financial standards and how this process should be managed. In December 2018, an Oxford Union Debate saw eight high-level experts²³

²³ In proposition: Paul Druckman (Chair, Corporate Reporting Council; Chair, World Benchmarking Alliance; Former CEO at International Integrated Reporting Council), Ian Mackintosh (Chair, Corporate Reporting Dialogue; former Vice-Chairman, IASB), Sir Callum McCarthy (former Chair, UK Financial Services Authority),

from the finance and accounting sector debate the following motion: ‘This House believes that corporate sustainability reporting should be mandated, and standardised by FASB and IASB, for it to be most useful for investors’. The result of the debate was the following: two-thirds of the audience voted in favour of mandated non-financial disclosure by the international accounting standard setters. The representatives of FASB and IASB themselves, largely represented on the ‘nay’ side of the discussion, displayed, however, a strong resistance to the idea that financial standard setters should expand their mandate to the non-financial sphere. This hints to the fact that these institutions have not fully bought into the concept of financial materiality of non-financial disclosure. It also suggests that the established and institutionalized accounting bodies, at least at this point, display a high rigidity and unwillingness to change.

If not the IFRS and IASB, who, then, would be able to mandate global standards for non-financial disclosure? Barker & Eccles (2018) discuss this question at length in a Green Paper preceding the above-mentioned debate. They suggest that there are two possible pathways conceivable. The first puts international organizations and national legislators at the focal point of standardization; the second imagines a key actor-driven convergence (not consolidation) in the non-governmental sphere.

Various international and intergovernmental bodies have already demonstrated vast efforts and activities in the sustainability disclosure and measurement field. As displayed in table 2 above, several UN bodies have released frameworks of disclosure and investment and many efforts are grounded in the idea of advancing the SDGs – a framework which has been described as ‘the closest thing earth has to a strategy’²⁴. The most advanced legislative effort to date, however, has come from the European Union (EU) in the form of its Non-financial Reporting Directive (2014/95/EU). Furthermore, the EU Commission, in its Technical Expert Group on Sustainable Finance, is working on the EU Sustainable Finance Taxonomy, which would establish a classification system of sustainable activities within Europe. The biggest challenge to the creation of these directives is the opposition it faces from member

and Anne Simpson (Director Board Governance & Strategy, CalPERS). In opposition: Jonathan Bailey (Head of ESG Investing, Neuberger Berman), Bob Herz (Board member AccountAbility; former Chairman of US Financial Accounting Standards Board), Harvey Pitt (former Chairman of U.S. Securities and Exchange Commission SEC), and Tom Quaadman (Exec VP of the US Chamber of Commerce’s Centre for Capital Market Competitiveness).

²⁴ <https://www.ukssd.co.uk/the-sdgs>, last access, August 2019.

states, such as Germany and Austria, who seek to protect their small- and medium sized enterprises from additional reporting ‘burdens’ (Kinderman 2019). In its originally proposed form, this EU law would have mandated non-financial disclosure to a large amount of the companies operating from and inside the European common market. In its current form, only listed companies, banks and insurance companies above 500 employees are required to disclose certain non-financial information²⁵. With this, the directive falls short on both the necessity of universal disclosure concerning the size of firms, as well as that of ownership type, as neither small nor private firms are under obligation to report. Still, if various intergovernmental organizations, such as the European Union and the United Nations, would be able to consolidate their existing efforts into a global but manageable set of standards, implementation could be feasible. Strong national interests, as displayed in the creation of the EU Non-financial Reporting Directive, may, however, make this process very difficult and water down any final results.

A key-actor driven approach to convergence in the non-governmental sphere is the alternative hypothesis as to how a set of non-financial reporting standards could be created. Rather than a market-based approach, this convergence would require a strong leadership from key actors who fund the non-governmental efforts of organizations such as the GRI, SASB and the IIRC. Large foundations, such as the Ford Foundation and Bloomberg are of critical importance here, and first efforts into this direction can already be observed. The Bloomberg-funded Global Reporting Dialogue is one example hereof. However, standards which were to come out of a non-governmental convergence process would still need a body they could be attached to in order to be mandated at national level. The International Standard Setting Organization ISO, or one of the existing bodies, such as GRI or SASB, could, potentially, offer the institutional body for this.

Of course, the effectiveness of mandated standards is limited by the quality of compliance, monitoring and auditing. If we look at the current landscape of mandated vs. voluntary disclosure, we find that certain frameworks are enforced much more effectively through social pressure than others which are mandated and therefore legally enforced so the solution might not rest solely in formal monitoring and auditing mechanisms. An example of a framework with strong social enforcement is the TCFD. The

²⁵ https://ec.europa.eu/info/publications/non-financial-reporting-guidelines_en, last access August 2019.

framework for climate risk and opportunity reporting, created in 2016, enjoys large support in both the corporate, public and investor sphere. The framework is so-well perceived, in fact, that the EU Commission's released a Consultation Document²⁶ in February 2019 which outlines in detail how the EU's Non-Binding Guidelines about the Non-financial Reporting Directive will align the Directive with the TCFD recommendations. An example of a disclosure standard with relatively weak, albeit legal enforcement is the UK Modern Slavery Act of 2015²⁷. Although this act was the first of its kind in Europe, and therefore progressive by design, its implementation left much to desire. Much criticism and concerns from activists and NGOs about the 'light-touch approach to a serious topic'²⁸ have culminated in a 2019 'Independent Review'²⁹ of the Act, which confirmed several issues with key corner-stones, such as the definition of groups of victims, implementation problems, and lacking rigour in control procedures. These two examples highlight that any mandated set of non-financial standards for disclosure will be in need of broad industry and multi-stakeholder support in order to be successful in design and implementation.

The Use of Non-Financial Measures

In the previous sections, we outlined the current state-of-play in non-financial measurement and disclosure and reviewed existing practices, frameworks and methodologies used to capture a company's environmental and social performance and impact. We also discuss whether and how a standard for non-financial reporting could be established. The creation of a standard in non-financial measurement, however, has but one purpose: to incentivize and drive better, more responsible business behaviour. Measurement of social and environmental performance and impact can therefore help companies to manage their externalities more effectively and address long-term risks, while disclosure allows investors and other stakeholders to allocate their capital sustainably and for the long-term.

²⁶ https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/2019-non-financial-reporting-guidelines-consultation-document_en.pdf, last accessed Aug 2019.

²⁷ <https://www.gov.uk/government/collections/modern-slavery-bill>, last accessed Aug 2019

²⁸ <http://www.ethicalcorp.com/uk-should-listen-mps-and-fix-holes-modern-slavery-act>, last accessed Aug 2019.

²⁹ Independent Review of the Modern Slavery Act 2015: Final Report, Presented to Parliament by the Secretary of State for the Home Department by Command of Her Majesty in May 2019. See: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/803406/Independent_review_of_the_Modern_Slavery_Act_-_final_report.pdf, last accessed Aug 2019.

In this section we particularly discuss the use of non-financial measures in accounting terms. The first sub-section reviews current accounting practices and the challenges faced regarding non-financial information. The second sub-section explores and discusses the concept of full cost accounting (FCA) and a third sub-section outlines some practical examples.

Current Accounting Practices and Challenges.

‘Investments’ vs. ‘Costs’

Many of the current accounting practices have only limited ability to capture the measures discussed in the previous section. Take the recording of investments as an example. While many of the impact-related metrics are connected to specific corporate investments into non-financial assets (e.g., investing in renewable energy sources, waste-water management system, employee training programs), under current accounting standards, not all of these can also be recorded as such. In financial accounting, an investment classifies an allocation of economic resources into either a physical assets, land, financial assets, intangibles, or other companies, with the hope and intention that these would appreciate (create a financial return on investment) with time. The actual accounting treatment of the investment varies depending on the type of investment³⁰. However, there is an ongoing debate about the treatment of non-financial and intangible assets of a company. For example, from a purpose driven, non-financial management perspective, investments into training of employees is viewed as an investment into building social and human capital for the company and the employees. This investment would be expected to yield positive operational results and should therefore be capitalized³¹. In common practice, however, training costs are generally expensed as incurred (as operating expense, through the income statement (P&L statement)). Although there has been ample discussion about whether these could and should be capitalized, the recurrent accounting issue is that while internally generated intangibles are likely to yield future returns, these future economic benefits cannot be reliably measured and therefore

³⁰ For example, if the investment is an investment into another company then the following rules of thumb apply: a subsidiary greater than 50% is fully consolidated, 20-50% the equity method is used, less than 20% the cost method. Several other rules exist for other types of investments (particularly SPEs, property, financial investments, etc).

³¹ “A capitalized cost is an expense that is added to the cost basis of a fixed asset on a company's balance sheet. Capitalized costs are incurred when building or financing fixed assets. Capitalized costs are not expensed in the period they were incurred but recognized over a period of time via depreciation or amortization.” Kenton, 2019

most costs or expenditures incurred in creating these intangibles are expenses. There are also concerns about whether intangibles create separable, controllable assets, as viewed by the conceptual framework.

Business Reporting of Intangibles – ‘Realistic’ proposals?

Accounting for intangibles is an area of financial reporting that has a long history of measurement and information concerns. Intangibles generally refer to non-monetary assets that lack physical substance. In order to comply with the accounting requirements on what constitutes an asset, criterion such as identifiability, control, and future economic benefits need to be fulfilled (IAS 38, IASB). As with accounting for social and environmental challenges, intangibles pose the inevitable separability and measurement challenges. The very identification of an intangible might be subject to interpretation and judgement and depend on legal criteria in different jurisdictions. Often due to the subjective nature they are not fully accounted for, suggesting that there may be gaps in the balance sheet, not unlike those related to social and environmental issues.

A recent discussion paper³² of the UK Financial Reporting Council (FRC) highlights the challenges of reporting intangibles and proposes “realistic” solutions from a current accounting perspective. The FRC paper acknowledges the constraints in reporting for intangibles as assets, especially where the definition of an asset is constrained by the conceptual framework. It explores reasons why intangibles cannot be more fully reflected in financial statement without radical change. It also suggests some practical proposals for improvement in reporting of intangibles. It summarises the implications of the conceptual framework on the reporting of intangibles and considers possible improvements. It also explores the use of additional information or narrative reporting to enhance the information for investors and financial statement users. Part of the accounting concerns on the reporting of intangibles is the inherent measurement uncertainty in their fair valuation and whether they can be represented faithfully and consistently. These concerns are valid as fair valuation often depends on a selling price in relatively deep and liquid markets or being able to compute a net present value from predicted future cash flows

³² Financial Reporting Council, 6. February 2019, Discussion Paper - Business Reporting of Intangibles: Realistic Proposals <https://www.frc.org.uk/consultation-list/2019/discussion-paper-business-reporting-of-intangibles>, last accessed May 2019.

generated by that asset. It is typically difficult to reliably ascertain either a market price or future cash flows for intangibles.

At a practical level, because of the uniqueness, and by their very nature, the subjectivity of a number and nature of intangibles (what should be considered as intangible asset, and what shouldn't), there is considerable variation in the practice of measuring and recognising intangible assets. New types of businesses, technological developments and innovation mean that it is almost impossible to have an exhaustive list of different intangibles and prescriptive methodology on how to measure and account for each of these. The challenges facing accounting for intangibles are not dissimilar to those pertaining to the accounting of externalities and impact, which face similar concerns of measurements and objectivity. Considering the difficulty with which the accounting profession is coming to terms with the nature of intangibles, it is unsurprising, that the discussion has not yet reached sufficient depth to discuss the measurement of externalities and impacts. Models and methodologies for cost-based non-financial accounting are therefore largely advanced and advocated for by the academic community, not by the profession itself. We will discuss these methodologies further on in this paper.

Accounting challenges

There are numerous challenges to achieving the objectives of fuller and comprehensive accountability, measurement and reporting. The challenges can be roughly divided into two broad categories – those faced by internal decision makers and management accountants and those faced by preparers of financial statements for external reporting purposes.

Management accounting challenges

Effective management accounting is fundamental to good decision making on a number of dimensions such as resource allocation, product and service mix, and pricing to name a few. At the heart of this is a detailed and accurate understanding of a firm's costs, and this understanding is based on cost characteristics such as traceability, nature and behaviour, and purpose of costs. Analysis of these costs are not straight forward and changing business and economics conditions have thrown up various

challenges. Broadly speaking, costs fall into the following categories. In reality, costs are likely to be much more complex and not easily fit into specific groups.

Direct and indirect costs – problems with traceability to a particular product, process, resource or service, and corresponding allocation.

Fixed and variable costs – understanding the nature and behaviour of costs plays a critical and vital part in traditional costing methodology. Analysis and breakdown of these costs is already complicated for conventional costs directly related to a company's core business.

Product or period costs – identifying costs associated with producing or supplying a specific product or service, as opposed to costs generally incurred over a specific operating or reporting period.

Insight into the functionality and purpose of the vast variety of costs is crucial in internal decision making. In addition to problems with identifying and measure these internal costs in their various categories further difficulties exist when interfacing these costs with information that is included in the company's financial statements. Certain disconnects exist between financial and management accounting, and practitioners use a number of marginal and relevant costing principles for internal decision making that are not identical to costs presented for external reporting purposes. The inherent conflict between management needing to make decisions that are beneficial in the medium to long-term and report positive results to shareholders in the short-run, creates distorted incentives and possible misallocation of resources (Johnson & Kaplan 1991; Johnson 1994).

A vast and considerable literature and practice has been devoted to understanding and updating our methodologies and toolset to derive and measure these costs as we have moved from a post-war manufacturing to internet based and intangibles intensive world. Adding to this the complexity and conflicts inherent in incorporating external costs such as natural, social and human costs raise considerable challenges. The costs of these externalities cannot be readily derived from market prices because the underlying factors are not necessarily traded in deep and liquid markets. Still, the knowledge and incorporation of such non-financial factors is increasingly important for management accounting,

particularly in order to manage long-term risks and to avoid making profit off social and environmental harm. Selected methodologies on how to do incorporate these measures are presented below.

Financial reporting challenges

The following are just two examples of the challenges present in expanding our current financial reporting system to incorporate expenditures on workers, employees, communities, society and natural resources.

Inherent (genuine or perceived) mismatch with accounting terminology in US GAAP and IFRS conceptual framework definitions: For instance, the definition of an asset directly or indirectly relies on control, separability, and future benefits, and there is no straightforward way of applying these to human, social, and natural capital. This problem is compounded when certain financial reporting terminology is absorbed into the narrative on accounting for human, social, and natural capital without clear consensus on the applicability and scope of this terminology in

Lack of consensus in reporting summary line items such as revenue: There has historically been a lot of variation in the measurement and recognition of summary measures such as revenues. The new standard in revenue recognition IFRS 15/ASC 606 seeks to address this to some extent but we are still awaiting evidence from actual application. Accrual accounting mandates matching of revenues with expenses incurred in generating these revenues. This is already difficult and imperfect for expenditures directly traceable to the core operations of the business. Incorporating less precise and inexact expenditure on wider costing models only compounds these problems.

Application and implementation challenges

At present there is no single accepted path for accounting for these additional expenditures. Some companies acknowledge the importance of expanding our understanding of costs and resource consumption beyond the narrow view traditionally taken and make use of proprietary methodologies in order to do so. The practical motivation for companies is often couched in noble motivations – ending

poverty, preserving the earth's resources, building society – abstracted from the business objective. The challenge remains in capturing all these factors in 'accounting acceptable terminology'. The following marks an account of suggested methodologies which value and incorporate non-financial concerns into accounting practices in various ways.

Accounting for Externalities

Capital Maintenance

In a recent research paper, Barker & Mayer (2017) lay out a full cost accounting concept for sustainability accounting, which is defined as 'a system that measures, reports and reconciles business activity from both a financial and a sustainability perspective' (p. 12). The methodology outlined in this paper underpins the British Academy's principle on performance. A truly sustainable profit therefore accounts for negative externalities in the area of material³³ human, social and natural capital – such as workers, communities and natural resources.

The impact idea of full-cost accounting is then relatively simple: through the incorporation of capital maintenance processes and the provision of their cost on corporate income statements, companies set strong incentives for their business executives to act and manage the firm according to its purpose. According to the capital maintenance principle, all renewable non-financial capital assets that are owned by a company are replaced upon consumption. Consumption of the asset is expensed, while the sales value of the asset is recognised as income (Barker & Mayer, 2017). The cost-based adjustment of the income statement includes therefore two entries: the cash inflow from customers and the capital outflow which is spent to replace the asset. If the company were to choose not to replace the non-financial capital and instead accept depletion, then a hypothetical replenishment cost would appear on the adjusted income statement until the maintenance is performed.

The argued benefit of recording material, non-financial capital maintenance on corporate Income Statements is as follows:

³³ Refer to description of 'Materiality' earlier in this paper.

1. Due to the hypothetical replenishment cost which is incurred on the income statement, management is incentivized to maintain its material, non-financial capital. By assigning responsibility for its negative impacts in this way, adjusted income statements with sustainable profit measures implement a new understanding of management accountability for a company's negative externalities.
2. If non-financial capital is not or not easily renewable (i.e. coal), cost-based sustainability accounting can refer to the necessity of business transformation. In this case, the focus would lie on investments into non-financial capital and internal or external capacity building.

Full Cost Accounting

Full Cost Accounting (FCA) is an approach that aims to capture the external impacts of organisational actions on society and the natural environment. As such, FCA is part of wider efforts to account for externalities, which seek to complement conventional financial accounting systems by capturing the 'social, environmental and broader economic impacts arising from the activities of an entity that are borne by others and do not feedback directly into short-term financial consequences for the entity' (Unerman *et al.* 2018: 498). The concept of externalities originates from economics and describes the positive and negative effects of market transactions on third parties that are not reflected in market prices. While measures to internalise externalities have been extensively discussed by economists at the national level, FCA is focused on accounting systems at the organisational level that 'allow current accounting and economic numbers to incorporate all potential/actual costs and benefits including environmental (and perhaps social) externalities' (Bebbington *et al.* 2001b: 8).

While the term FCA was coined by Bebbington *et al.* (2001) in the early 2000s, attempts to incorporate social and environmental impacts into corporate accounting practices can be traced back to the 1970s (Antheaume 2007). Indeed, Unerman *et al.* (2018) identify four phases of FCA developments: After a first phase of FCA proposals emerging from the social audit movement in the 1970s, a second phase of FCA development began in the 1990s with calls for integrating the impacts of business on the natural environment and society into (management) accounting practices (Gray 1992; Milne 1991, 1996). While a number of organisations experimented with FCAs in the 1990s – often with a particular focus on

environmental impacts (Antheaume 2007 for an overview) – the turn of the century saw a gradual shift towards more holistic FCA comprising both social and environmental impacts and operating more on project- instead of company-wide levels (Unerman *et al.* 2018). This third phase of FCA development brought forward a project evaluation tool termed Sustainable Assessment Model (SAM), which measures and monetises impacts across social, economic, and environmental dimensions (Bebbington *et al.* 2007). In recent years, a variety of actors – ranging from individual companies to accounting firms to practitioner networks – have developed new FCA approaches, constituting the fourth and so far, final phase of FCA developments³⁴ (Unerman *et al.* 2018).

While specific FCA approaches might differ in terms of particular design choices, they usually follow a standard approach, which is summarised by Bebbington *et al.* (2001) in four stages:

- Stage 1: Define entity for which FCA is to be developed, e.g. a project, process, product, business unit, company, or industry.
- Stage 2: Determine scope of analysis, i.e. select which impacts are considered in FCA.
- Stage 3: Identify and measure the impacts in physical terms.
- Stage 4: Monetise the impacts, i.e. translate physical into monetary measurements.

Although these four common stages of FCA can be identified, there is a distinct lack of standardisation and harmonisation across FCA approaches in practice, which poses significant challenges for the inter-organisational comparability of FCA results (Unerman *et al.* 2018). Recent developments such as the establishment of the Value Balancing Alliance (VBA), a non-profit organisation dedicated to developing a standardised Impact Measurement and Valuation (IMV) model, might help to address some of these shortcomings (see Value Balancing corporate practice example in Appendix).

Monetization of Impacts

Valuing non-financial capital impacts and dependencies in monetary terms can be a powerful aid to decision making and can facilitate comparison between diverse categories of impact and dependence.

³⁴ See the section *Existing Frameworks for Multi-Capital Reporting, Accounting, and Valuation* below as well as the case study vignettes in this evidence paper for a discussion of recent FCA initiatives.

Monetization is particularly helpful when there is no benchmark for absolute entities of human, natural and social capital given. They are therefore important measures for the contextualization of decisions around (positive and negative) impacts, which may have very different weights attached concerning the economic and political environment. The valuation of non-financial impacts in business reporting and accounting can be achieved in different ways. Impact can be valued through qualitative assessments of progress (e.g., ‘project A to address water scarcity has yielded success in the last year, as testified through various key community -member interviews’). They can also be quantitatively valued through tracking of changes in absolute units of natural, human and social capitals (e.g., ‘we have reduced our use of water from 100L/product to 80L/product in the last three years’). And finally, they can be monetized through the assignment of monetary values to absolute units through either cost-based or value-based assessments.

Two popular methodologies are used to monetise business impacts on natural capital (Mayer & Barker, 2017). One approach attempts to undertake an economic valuation of natural capital by either observing or approximating market prices through hedonistic or survey-based pricing techniques. Antheaume (2004), for example, discusses the application of three such valuation approaches – avoidance cost method, cost of damages method, and collective consent to pay method – in an experiment that comprised the environmental impact valuation of an industrial process concerned with feeding natural gas into domestic gas distribution networks. While the three methods discussed differ in their specific design, they all rely on valuing environmental impacts as economic consequences for third parties, that is, the yardstick for assessing environmental impacts are their financial implications for societal actors.

The other approach identified by Barker & Mayer (2017), in contrast, relies on physical measurements of natural capital impacts and determines the economic costs of restoring natural capital to its original state prior to being impacted by business activities. In this approach, ‘the important point is that monetisation is concerned specifically with the cost of making good any physical depletion of the natural resource; at heart, therefore, the notion being employed is that of physical capital maintenance [...]’ (Barker & Mayer 2017: 15). This resembles earlier proposals such as the Sustainable Cost Calculation, which ‘provides calculations of what additional costs must be borne by the organization if the

organizational activity were not to leave the planet worse off, i.e. what it would cost at the end of the accounting period to return the planet and biosphere to the point it was at the beginning of the accounting period' (Gray 1992: 419). These approaches thus place the physical maintenance of natural capital at the heart of analysis and advocate for a shift from monetisation approaches centred on economic valuations to monetisation approaches based on capital maintenance (Barker 2019; Mayer 2019; see also Reinhardt 2000).

Challenges with Full Cost Accounting and Monetization of Impacts

There is a range of challenges that is associated with FCA, and monetizing non-financial capital impact in particular, which can be broadly categorised into conceptual and practical challenges. As the subsequent discussion will demonstrate, the distinction between practical and conceptual challenges is somewhat artificial since the conceptual design of FCA approaches influences their implementation in practice and vice versa (see for example Bebbington & Gray 2001), but the distinction is nonetheless considered useful to structure the discussion.

Conceptual Challenges

The conceptual challenges associated with FCA revolve largely around the fourth and final stage of FCA approaches, the monetisation of impacts. The literature on monetisation of non-financial aspects through instruments such as Cost-Benefit Analysis (see for example Bebbington *et al.* 2007) is extensive and cannot be reviewed within the space of this paper. Instead, this section aims to briefly discuss the most common conceptual challenges that are identified in the context of FCA and accounting for externalities more broadly.

Firstly, it is argued that there are limitations to the commensurability of social and environmental impacts through monetisation (Frame & O'Connor 2011). For example, Unerman *et al.* (2018) strike a cautionary note with regard to the commensurability of accounting externalities through monetisation, pointing out that the intersubjective consensus required for achieving commensurability might be impossible to establish for some externalities, given the high level of context-specificity of issues such as water use or biodiversity. Furthermore, they argue that in the absence of 'a process of widespread

intersubjective consensus-building, the resulting objectified externalities accounts risk being misleading as well as non-comparable' (Unerman *et al.* 2018, p. 510).

Secondly, the commensurability of social and environmental impacts is enmeshed with moral and ethical considerations (Antheaume 2007). While the monetisation of impacts has clear advantages in terms of complexity reduction, i.e. it translates different impacts into a common language, it also poses serious ethical questions. For instance, can negative impacts in one area be compensated by positive impacts in another area? Is it possible, or desirable, to offset negative environmental impacts with positive social impacts or vice versa? Can, or should, a stable climate be traded-off against positive corporate tax contributions? Depending on the philosophical, political, and ideological commitments of an observer, the answers to these questions will differ profoundly. In addition, “[i]t can be argued that placing a value on such things as life or biodiversity is not morally acceptable as these attributes may have an infinite value” (Antheaume 2007: 214).

Thirdly, FCA and monetisation of social and environmental impacts has a political dimension which manifests itself both in terms of processes and design choices. On a processual level, this gives rise to the question of which stakeholders are involved in the construction of full cost accounts, that is, who has a say and whose voices are heard (Bebbington *et al.* 2007). Closely related to this processual aspect is the issue of choosing the most relevant design features of FCA approaches, including which impacts are considered and how these impacts are assessed (Frame & O’Connor, 2011).

Practical Challenges

The practical challenges cut across all four stages of FCA (Bebbington *et al.* 2001) and include technical difficulties, social dynamics involved in implementing new accounting systems, and organisational and institutional context factors. Firstly, technical difficulties stem largely from data availability issues, both in terms of physical impact data as well as financial data to monetise these impacts (Bebbington *et al.* 2001; Herbohn 2005; Frame & Cavanagh 2009). It is to be noted that academic case studies of FCA implementation attempts are relatively scarce and empirical settings are often public or public-private entities such as a New Zealand-based research institute (Bebbington & Gray 2001), an Australian government department (Herbohn 2005), or infrastructure projects in New Zealand (Frame and

Cavanagh 2009). Considering the relatively modest size of the entities under investigation in these studies, it is noteworthy that the lack of data nonetheless constituted a serious impediment, often contributing to the failure of implementing FCA within these organisations. It seems thus plausible to expect that technical challenges associated with data availability will be even greater in the case of globally operating companies with complex and geographically dispersed value chains.

Secondly, social dynamics can manifest themselves in the form of internal and external stakeholders' resistance against the implementation of FCA. For example, in a case study of the implementation of FCA in an Australian Government Department in charge of managing publicly owned forests, resistance against FCA emerged from outside the organisation in form of adversarial conservationist stakeholders and from sceptical managers within the organisation, who both expressed philosophical reservations against monetising aesthetical aspects of forests (Herbohn 2005). Similarly, a commitment to 'business as usual' can result in limited acceptance of FCA results, if those results suggest that an organisation needs to fundamentally change its operations (Bebbington & Gray 2001). While philosophical or ethical objections against monetising social or environmental impacts might be less likely to occur among internal stakeholders in a corporate setting, inertia caused by 'business as usual' commitments seem to be a highly relevant factor irrespective of the type of organisation.

Thirdly, organisational and institutional contexts can interact with both technical and social factors in obstructing the implementation of FCA within organisations. External developments such as political pressures and resource constraints can limit the room for experimentation within organisations and distract managers' attention away from implementing new accounting systems (Herbohn 2005). Contextual factors such as resource constraints seem to be particularly relevant in corporate settings, where takeover threats or economic downturns can result in a strong focus on financial cost control, thereby reducing the scope for dedicating resources to projects that might be seen to pay-off only in the mid- to long-term.

Existing Frameworks for Multi-Capital Reporting, Accounting and Valuation

To implement full cost accounting, economic valuation and capital maintenance, the last ten years have seen the development of a variety of multi-capital reporting and accounting frameworks. Most of these

frameworks serve the purpose to facilitate the incorporation of negative and positive impacts of business operations on the material non-financial capitals (or assets) of a business. A white paper by Stroehle & Rama Murthy (2019) reviews and maps six general frameworks which are most commonly used for the reporting and integration of non-financial capitals (see Table 4). Most of these frameworks have been developed by one or several stakeholder groups which advocate for the wide application of their framework and engage with companies on how to best do so. The frameworks put forward certain processes for disclosure, and some include standards for non-financial measurement and recommended methodologies on how to monetize corporate impact.

The frameworks displayed in Table 4 differ in various aspects of application and design. In particular, three dimensions can be used to assess their similarities and differences:

- Their intended audience (internal or external);
- The level of operation under observation (the unit of analysis: firm, product or project-level);
- The valuation technique which is applied to quantify and compare measures.

The biggest tension for many of these frameworks is their relevance for both internal management decisions and external reporting. Frameworks developed for the capital markets are often prone to become reporting exercises which struggle with meaningful and strategic implementation through business practice (e.g., Integrated Reporting). At the same time, frameworks developed among private companies (such as the Mutual P&L example) are often developed for business operations on project level and are thus very granular and difficult to aggregate and report on, which is challenging for creating comparability. Valuation techniques try to address these problems, as the assumption is that monetization creates a pathway for the better incorporation of non-financial measurement on various levels. The Appendix to this paper features the description of two prominent examples which are listed in Table 4: The Mutual P&L approach of Mars and the so-called Value Balancing Alliance's approach to create standards in the area of impact valuation and the Integrated P&L.

Finally, an important academic initiative which is active in this space is the so-called Impact-Weighted Accounts Initiative at Harvard Business School. The goal of this project is to create specific indicators which can appear as 'line items on a financial statement, such as an income statement or a balance sheet,

which are added to supplement the statement of financial health and performance by reflecting a company's positive and negative impacts on employees, customers, the environment and the broader society' (Serafeim *et al.* 2019). The project aspires to create an integrated view of performance for management accounting and reporting through the identification of metrics and related monetary valuations that allow the evaluation of impact in three areas: employment, products and environment.

Applying Metrics to Purpose in Three Core Areas

In this section we discuss the application of non-financial metrics in three core areas along the investment chain: investment practice, corporate governance, and corporate decision-making. As financial capital flows from individual savers through a sequence of intermediaries to companies, information about financial and non-financial performance of these companies is important at each step of the chain as it enables the sustainable allocation of financial capital through sensible investment decisions and the responsible application of financial capital by way of informed corporate governance and sustainable management decision-making. In other words, the flow of sustainable financial capital is coupled with the flow and use of high-quality, reliable non-financial information.

Following the logic of financial capital flow, the first two sub-sections discuss the role of non-financial metrics in the relationships between asset owners, asset managers and companies. The third sub-section shifts focus from investment practices to corporate governance: we explore the role of boards in the adoption of a corporate purpose and discuss the implications of this for the concept of fiduciary duty. The fourth sub-section examines how senior management can implement a purpose-orientation throughout a company, by focusing on the role of non-financial metrics in intra-organisational processes and incentive structures.

Use of Non-Financials Metrics in Investment Practice

Regarding non-financial information flows in the investment chain, three actors are particularly important: asset owners, asset managers and companies. This sub-section will focus on the first two, while the subsequent sub-sections will focus on the latter. Asset owners (also referred to as institutional

investors) typically refer to institutions that pool financial capital from individuals, such as pension funds, insurance companies, and sovereign wealth funds. High-net worth individuals and retail investors also classify as asset owners, yet not as institutional investors. Asset managers are organizations which deploy financial capital to companies on behalf of those asset owners which decide not to self-manage their financial capital. Usually, asset managers are given a mandate to invest that capital in a certain way: for example, with high risk and maximum returns, or as long-term, stable yield, or under consideration of specific sustainability concerns. Apart from asset owners, asset managers, and companies, a wide range of other investment intermediaries and lenders exist, which mark the investment chain as a complex ecosystem of transactions and mandates (Arjalies *et al.* 2017).

Financial markets have been a major driver of the emergence of non-financial disclosure as both asset owners and managers increasingly seek to incorporate non-financial factors into their investment practices. While some investors seek to incorporate non-financial factors to include their moral concerns, others use the so-called sustainable or ESG investing practices to manage long-term risk within their portfolios. While the actual environmental and social impact of this investment practice is contested (Busch *et al.* 2016), the theoretical importance of investors to enable the move of capital towards more sustainable and transformative businesses and innovation strategies cannot be contested. The magnitude and growing significance of capital moved under considerations of ESG becomes apparent when looking at the United Nations Principles for Responsible Investments (UN PRI), ‘a voluntary and aspirational set of investment principles that offer a menu of possible actions for incorporating environmental, social and governance issues into investment practice’, whose list of signatories experienced a rapid growth over the last 10 years and, as of 2019, accounts for about US\$ 89 trillion in assets under management worldwide. Through signature, the use of this money is pledged to incorporate ESG issues into investment analysis and decision-making processes (Principle 1), ownership policies and practices (Principle 2) and to seek appropriate disclosure on ESG (Principle 3). However, as of date there is no standardized definition or methodology which constitutes for a fund to be called ‘sustainable’, ‘green’, ‘ESG’ or ‘impact’ fund. The use of any of the seven strategies identified

by the European Sustainable Investing Forum (Eurosif)³⁵ is therefore sufficient to claim a sustainable investing strategy – even if this only means the exclusion of certain sin stocks.

Institutional Investors

Controlling the allocation of significant amounts of financial capital (Hawley & Williams 2007), institutional investors have been some of the key drivers behind the efforts to integrate non-financial considerations into investment processes (Clark & Hebb 2005; Sievänen *et al.* 2013). To effectively incorporate sustainability concerns into their capital allocation decisions, asset owners need high-quality, consistent and comparable non-financial metrics to evaluate the non-financial performance of their asset managers and their internally-managed investment portfolios. The availability of standardised non-financial metrics would be particularly helpful for strengthening the reliability and validity of non-financial performance assessments for these actors (Busch *et al.*, 2016).

Due to their size and positioning at the top of the investment chain, institutional investors wield significant influence on financial markets and beyond (Clark & Hebb 2005), which designates them as important players in facilitating the development of standards for non-financial metrics. If a coordinated group of institutional investors were to throw their weight behind a set of standardised non-financial metrics, the ripple effects could help galvanise the standardisation of non-financial metrics along the investment chain. Imagine, for example, pension funds seeking to report the carbon footprint of their entire portfolio. This would require not only asset managers under contract to obtain and disclose these metrics, but effectively all companies held within the asset owner's portfolio. Assuming this pension fund also invests in passive funds with index tracking, this requirement would touch a large amount of companies world-wide. This argument is often cited with reference to the so-called 'universal ownership' thesis (e.g. Hawley & Williams 2007): large institutional investors have such highly diversified and global portfolios that they are inevitably exposed to large systemic risks, such as climate change, and therefore have an inherent fiduciary duty to track and address these in an effort to minimize

³⁵ Eurosif (2018) identifies and tracks the following seven sustainable investing strategies: 1. Sustainability themed investment; 2. Best-in-Class investment selection; 3. Exclusion of holdings from investment universe; 4. Norms-based screening; 5. ESG Integration factors in financial analysis; 6. Engagement and voting on sustainability matters; 7. Impact investing. See online: <http://www.eurosif.org/wp-content/uploads/2018/11/European-SRI-2018-Study.pdf>, last accessed October 2019.

their exposure and help create positive transformation. Theoretically, the influence of institutional investors even stretches beyond the public markets. A universal requirement of disclosure would therefore equally affect the private equity markets, where current regulatory settings offer less leverage to establish non-financial metric standards. So far, however, private equity has managed to avoid most disclosure requirements from their limited partners, as many of the institutional investors are dependent on the high returns offered by their allocation to this asset class in order to retain their yearly average compound growth rates (Eccles 2019).

Increasingly, specific types of institutional investors collaborate to work on joint strategies for the integration of systemic concerns through non-financial information. The One Planet initiative³⁶ is an example of this, where six sovereign wealth funds have come together in the aftermath of the 2015 Paris Climate Agreement to identify strategies for long-term value creation and sustainable market outcomes that can be adopted in the context of large, publicly-led asset pools.

Asset Managers

For asset managers, non-financial metrics are important in three ways: to be able to adequately fulfil mandates from asset owners, to integrate non-financial information into their investment analysis and create products with a sustainability focus, and to be able to adequately benchmark and lead conversations and engagements with companies and other stakeholders.

If asset managers receive a clear mandate to include ESG considerations into their portfolios, the contracted parties would likely set up some due diligence processes and reporting alongside these requirements as proof of their integration strategies. However, since asset owners usually deal with more than one asset owner at a time, due diligence processes are often flawed, and asset managers are given considerable freedom as to how they implement their mandate. Beyond the disclosure requirements to asset owners, asset managers typically do not report on non-financial information. A trend likely to change if institutional investors or governments were to implement specific reporting requirements on the output and impact of portfolios beyond single mandated.

³⁶ <https://oneplanetwfs.org/>, last accessed October 2019.

Depending on the sophistication of asset managers in the area of sustainable investing, strategies to include non-financial information can range from a simple use of exclusion criteria (often sin-stocks, such as tobacco, gambling, pornography, and weapons) to a full integration of this data into processes of fundamental analysis and portfolio selection (see Eurosif strategies mentioned above). To be able to fully integrate ESG considerations, high-quality data is imperative. For instance, the evaluation of the relationship between non-financial and financial performance is challenging without robust, consistent and comparable non-financial metrics. Equally, asset managers require adequate metrics to assess how successful companies are in implementing their proposed purpose and the aligned prospective. The availability of such metrics depends on the quality of the non-financial disclosure issued by companies themselves and their assembly by commercial data vendors. Increasingly, large asset managers produce this information themselves with the help of growing teams of ESG analysts which investigate firm's environmental, social and governance performance beyond given data sets by inspecting additional primary and secondary data from a variety of stakeholders. However, as this process is costly, only asset managers with sufficient resources to spare will be able to afford such analysis.

In addition to encouraging corporate disclose for non-financial metrics, asset managers therefore increasingly engage with companies on questions regarding their financial and non-financial performance. Academic evidence (Gond *et al.* 2018) suggests that effective and long-term ESG engagement can create important value for shareholders, particularly through three dynamics: (a) communicative dynamics – engagement enables the exchange of information between corporations and investors, creating 'communicative value'; (b) learning dynamics – engagement helps to produce and diffuse new ESG knowledge amongst companies and investors, creating 'learning value'; and (c) political dynamics – engagement facilitates diverse internal and external relationships for companies and investors, creating 'political value'. However, since the disclosure of material issues from companies' side is often minimal, engagement efforts from different investors at the same company can diverge strongly. This may limit the effectiveness of singular engagements on specific issues with companies, particularly if conversations are one-off and comparable to a box-ticking exercise. As a result, joined investor initiatives, such as the Climate Action 100+, have become more popular to drive common engagement strategies on specific issues.

Board Responsibility and Decision Making

As environmental and social concerns become more important for shareholders and stakeholders alike, there is an increasing need and demand for corporate boards to outline how their company is taking position on these issues. If boards chose to engage with these issues, the importance of non-financial information is particularly relevant for them on three levels: a. the fulfilment of their fiduciary duty, b. the formulation and implementation of strategy and purpose, c. engagement and communication.

The board's fiduciary duty is a key piece in the consideration of the environmental and social performance and impact of a firm. While since the 1970s, fiduciary duty was overwhelmingly viewed as the board's responsibility to act in the interest of the shareholder, this viewpoint has been overturned in recent years. Eccles & Youmans (2016: 40) describe fiduciary duty therefore as follows:

The board's duty is to the interests of the corporation itself. As a separate legal entity, a corporation has two basic objectives: to survive and to thrive. Shareholder value is not the objective of the corporation; it is an outcome of the corporation's activities. While shareholders entrust their stakes in a corporation to the board of directors, shareholders are just one audience among others that the board may consider when making decisions on behalf of the corporation.

A recent legal memo of the prominent U.S. law firm Wachtell, Lipton, Rosen & Katz underlines this notion, by discussing a significant decision of the Delaware Supreme Court interpreting the *Caremark doctrine*: The Court said to 'satisfy their duty of loyalty, ... directors must make a good faith effort to implement an oversight system and then monitor it themselves ... , the existence of management-level compliance programs is [therefore] not enough for the directors to avoid Caremark exposure'³⁷. This legal decision is relevant, as it highlights the expanded notion of boards' responsibilities, even in the relatively more conservative legal system of the United States. With this, Lipton (2019) outlines 18 sustainability-disclosure critical, legal expectations which boards are facing today. The first five expectations highlight that directors must:

³⁷ <http://www.wlrk.com/webdocs/wlrknew/WLRKMemos/WLRK/WLRK.26467.19.pdf>, last access Aug 2019

- ‘Recognize the heightened focus of investors on “purpose” and “culture” and an expanded notion of stakeholder interests ... and work with management to develop metrics to enable the corporation to demonstrate their value;
- Be aware that ESG and sustainability have become major, mainstream governance topics that encompass a wide range of issues, such as climate change and other ... ;
- Oversee corporate strategy (including purpose and culture) and the communication of that strategy to investors, ... ;
- Set the “tone at the top” to create a corporate culture that gives priority to ethical standards, professionalism, integrity and compliance in setting operating and strategic goals;
- Oversee and understand the corporation’s risk management, and compliance plans and efforts and how risk is taken into account in business decision-making ... ;’ (Lipton 2019: 2f)

The changing expectations of company boards and directors in the context of responsible stewardship and governance is further clarified by Lipton & Savitt (2019) in a new legal memo³⁸ on fiduciary duty in the United States. While these ‘legal expectations’ do not (yet) exist as hard law, a very similar set of board responsibilities has been written into the law of the United Kingdom in 2018 in the form of Section 172 of the UK Corporate Governance Code. Most importantly, this Section of the UK company law outlines the legal responsibility of boards to all stakeholders of their firms, not just shareholders.

As outlined by Lipton (2019) above, one of the expectations directors face today is the formulation of a credible corporate purpose and strategy. This sentiment was picked up by the U.S. Business Roundtable in August this year, which released a Statement of the Purpose of the Company as a public pledge of 181 CEOs to move on from shareholder primacy to a more holistic, stakeholder-oriented version of the 21st Century corporation. While this Statement received a lot of attention it rightfully also attracted criticism: signing a one-page document which subscribes to a ‘commitment to all of our stakeholders’ (BRT 2019) is relatively easy; restructuring companies to apply this principle, however, is another matter altogether. A parallel, yet similar idea has developed around thinkers in Oxford, led by Prof.

³⁸ <https://corpgov.law.harvard.edu/2019/09/19/directors-duties-in-an-evolving-risk-and-governance-landscape/>, last accessed October 2019.

Robert Eccles, in collaboration with the London-based asset manager Hermes Equity Ownership Management. This group has developed guidance³⁹ for how and why companies should each release a company-specific Statement of Purpose. Including such a board-signed Statement of Purpose in each annual report would allow companies to control the narrative around who they think their significant stakeholders are (rather than just saying ‘all stakeholders’ matter) and what material issues the firm recognizes and intends to make priority. The Statement can be used to communicate timelines (what does the company understand as ‘long-term’) and would allow both alignment within the company and more targeted conversations with stakeholders outside the organization. Not to be considered as a silver bullet, the Statement of Purpose is considered as an important first step of companies to communicate their priorities and thereby highlight which non-financial issues a company needs to report on. This prioritization also allows companies to focus their internal measurement and management accounting systems on those non-financial issues which have been identified as material.

Finally, boards are important actors for credible stakeholder and shareholder engagements. A Statement of Purpose or any other mission statement released by the board can therefore be incredibly useful for investors and other stakeholders to structure conversations alongside mutual topics of interest or alongside perceived omissions. Furthermore, this document can be used as leverage to ensure the company upholds its commitment and purpose as postulated. For boards to be able to speak eloquently on the variety of issues that can surface under the broad concept of purpose, the creation of granular, reliable and informative non-financial information is imperative for each company. Because this is not the case, many directors feel ill-prepared to address sustainability issues. It is therefore this base of knowledge and non-financial data within an organization which can help the board, and as a function of that the whole company, to deal more confidently with the most material non-financial concerns.

The Importance of Incentive Structures

While performance measurement is undoubtedly a critically important area for the application of non-financial metrics, achieving corporate purpose is, ultimately, also about using non-financial metrics to

³⁹ Hermes Investment, 2019, <https://www.hermes-investment.com/ukw/wp-content/uploads/2019/08/statement-of-purpose-guidance-document-aug-2019.pdf>, last accessed October 2019.

ensure that business provide profitable solutions to problems of people and planet. Thus, it is important to embed sustainability accounting frameworks in management frameworks. Or in other words, management frameworks are important for the incorporation and effective management of multi-capital accounting frameworks. Stroehle & Rama Murthy (2019: 10) therefore argue that many sustainability accounting frameworks

‘... have concentrated on the measurement of (impacts on) non-financial capitals. The management of these non-financial capitals is [however] a separate stream of research. Managing businesses to tackle for societal and environmental concerns is explored as shared value or system value. Practice tools such as Future-Fit help companies pursue social and environmental goals and track extra-financial information for internal and external audiences. However, measurement and management of non-financial capitals need to be aligned to improve performance.’

The emphasis on embedding non-financial measurement into management frameworks directs attention towards the ways in which non-financial metrics are actually being *used* within companies. A helpful concept in this context is the notion of management controls, which ‘include all the devices and systems managers use to ensure that the behaviours and decisions of their employees are consistent with the organisation’s objectives and strategies’ (Malmi & Brown 2008: 290), or in other words, the company’s purpose. Put differently, the sheer availability of non-financial metrics within organisations might inform behaviour but it does not automatically shape practices and, ultimately, decision-making: ‘While information systems may have an influence on behaviour, they are not specifically designed to hold organisation members accountable for their behaviour, nor do they relate behaviour to targets.’ (Malmi & Brown 2008: 295). Hence, non-financial metrics need to be embedded in control structures that incentivise managers to consider these metrics in their decisions-making. This can, for instance, be achieved by integrating relevant non-financial objectives into (individual) performance targets, which, if achieved, unlock additional compensation, benefits and promotion. Non-financial metrics then become essential components of evaluating and incentivising managerial, staff and ultimately firm performance. Furthermore, non-financial metrics can be integrated into key management processes, such as strategy development, capital expenditures, and risk management. The recommendations of the

Task-Force on Climate-related Financial Disclosure, for instance, ask companies to disclose how climate-related risks and opportunities are considered in governance, strategy, and risk management processes. While these recommendations are first and foremost geared towards disclosure, they imply that companies are indeed considering climate-related risks and opportunities in their key management processes.

Conclusion

This project examines two principles proposed by the British Academy's Future of the Corporation Programme in the area of measurement and performance. The principles suggest that measurement needs to reflect the growing significance of workers, societies and natural assets both inside and outside a company's legal boundaries; and that performance should be evaluated in relation to attainment of corporate purposes and profits measured after providing for costs of rectifying failures to fulfil them. This report examines the practicability, limitations and feasibility of these principles within their given context. It examines a myriad of methodologies and frameworks for this sort of measurement and performance evaluation, the bodies that promulgate or prepare guidelines and methodologies. Throughout the report we use practical examples and expert interviews to inform the discussion. We find that while the demand for non-financial reporting and disclosure is growing rapidly and progress to provide this information has been made, considerable gaps and challenges persist for actors at various levels. In particular, we outline that the choice and use of non-financial measures is particularly important in three main areas to achieve transformational change towards a purposeful company: for investors' ability to allocate their capital sustainably, for boards to set 'the tone at the top' and fulfil their fiduciary duties, and for managers to establish incentivized and responsible decision making processes. The development in these three areas would be significantly influenced by the emergence of an internationally recognized standard of non-financial measurement.

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Appendix A: Case Studies and Examples of Corporate Practice

Full case studies of these examples are available upon demand from authors.

Overview of Case Studies

| Name | Novo Nordisk | Olam | Mars | Value Balancing Alliance |
|---|---|---|--|--|
| Organisation type | Publicly listed company | Publicly listed company | Private company | Association (e.V.) |
| Industry sector | Healthcare | Food | Consumer goods | Non-profit organisation |
| Purpose of the organisation | Driving change to defeat diabetes and other serious chronic diseases | Re-imagining global agriculture and food systems | Our Consumer is Our Boss | Integrating business into society and environment by developing a standardised impact measurement and valuation model that enables decision-makers to create and protect long-term value |
| Headquarter | Denmark | Singapore | USA | Germany |
| Countries in which the organisation is present | 80 | >60 | 80 | Member companies operate globally |
| Organisation annual revenues | 111,831 million Danish kroner | S\$30.5 billion | > \$35 billion | Annual budget of approximately €800 000 |
| Total numbers of employees | 43,202 | 74,500 | 125,000 | 15 plus extensive stakeholder network |
| Extra-financial measurement innovation | Application of the Future-Fit Business Benchmark, a measurement approach that translates system-level requirements of sustainability into clear organisation-level objectives, thereby offering a practical tool for assessing how companies contribute to solving societal key challenges as defined in the UN SDGs. | Integrated Impact Statement (IIS) that comprises both a Profit and Loss (P&L) and a Balance Sheet approach to measuring Olam's short- and long-term impacts and dependencies on various capitals, including human, social, and natural capital. | Mutual Profit & Loss (P&L) tool as an additional internal management account for measuring and managing performance across human, social, natural, and shared financial capital. | Development of a standardised Impact Measurement and Valuation (IMV) model to monitor, manage, and disclose the economic, environmental, human, and social value companies provide to society. |

Appendix A1 – A4

A1 – Olam International

Olam is a globally operating food and agri-business company that supplies a broad range of agricultural products and raw materials to customers in various industries. Responding to a number of social and environmental challenges (e.g. climate change, malnutrition, obesity), the company is committed to ‘Re-imagining Global Agriculture and Food Systems’. Olam’s efforts to put this purpose into practice are underpinned by the conviction that long-term value creation requires the skilful management of not only financial capital but also manufactured, intellectual, intangible, human, social, and natural capital. To improve the assessment of its impacts and dependencies on these capitals, the company has developed an Integrated Impact Statement (IIS) that comprises both a Profit and Loss (P&L) and a Balance Sheet approach to capturing the interactions between various capitals. However, due to limitations of existing accounting methodologies, the IIS currently includes only three forms of capital: human, social, and natural capital. While the P&L tool monitors short term capital flows on each of these three dimensions (e.g. c changes of Olam’s use of natural capital over a year), the Balance Sheet account measures Olam’s activities with reference to the capacity of capital stocks to sustain these activities in the long run. As part of this Balance Sheet approach, Olam has defined boundary condition for human, social, and natural capital, which are used as a benchmark to assess the sustainability of its operations. See Appendix for more details.

A2 - Novo Nordisk

Novo Nordisk is a global healthcare company that is focused on developing and delivering diabetes treatment. Convinced that long-term business success is inextricably linked with the welfare of society and environment, Novo Nordisk is committed to further improve its positive and minimise its negative societal impacts. To this end, the company has begun to systematically assess its contributions to the SDGs by working with the Future-Fit Business Benchmark (the Benchmark). Developed by the Future-Fit Foundation, a UK-registered charity, the Benchmark is a tool that allows companies, investors, and other stakeholders to assess corporate performance against a set of a set of science-based *Break-Even*

Goals, which define minimum standards every business has to meet to prevent negative impacts on society and environment. Taking the long-term viability of social and environmental systems (e.g. ecosystems, climate system) as a starting point, the Benchmark translates the system-level requirements of sustainability into organisation-level objectives. Hence, it provides a yardstick for assessing companies in terms of their impacts on to the health of society and nature at large. Novo Nordisk has collaborated with the Future Fit Foundation early on, when the Benchmark itself was still under development, and it is the first global company that has completed a self-assessment against the Benchmark, with assessment results that have been assured independently by Grant Thornton.

A3 – Mars, Inc.

Mars Incorporated is a private consumer goods company with a portfolio ranging from pet care to confectionary to food and drinks. After one of Mars' family shareholders raised a question about the right level of profit for a corporation, Mars Catalyst – an internal think tank – developed a Mutual Profit & Loss (P&L) tool to capture a more holistic notion of value creation. Instead of measuring business activities primarily in terms of financial capital, the Mutual P&L accounts for corporate performance across human, social, natural, and shared financial capital. For example, if a business activity depletes a local freshwater reservoir, the hypothetical costs of replenishing this form of natural capital will be captured in the Mutual P&L by deducting these costs from the profit recorded in the conventional P&L. The Mutual P&L thus complements conventional P&Ls and renders previously unrecognised impacts on human, social, and natural capital visible within organisations. At Mars, the Mutual P&L is used primarily as a management accounting tool on the business unit level, so it is geared towards providing information to internal stakeholders (i.e. managers) as opposed to external stakeholders, such as investors or the general public. This granular use poses challenges for aggregating Mutual P&Ls on the corporate level (Eccles and Stroehle, forthcoming).

A4 – The Value Balancing Alliance

The Value Balancing Alliance (VBA) is an association that is committed to integrating business into society and environment by developing a standardised Impact Measurement and Valuation (IMV) model. IMV is a method for capturing corporate value creation for the economy, society, and

environment and involves the systematic measurement and valuation of financial and pre-financial external effects of companies in a common monetary unit. To date, various companies, accounting firms, and initiative have developed IMV approaches. The Impact Valuation Roundtable, for example, has developed an approach to impact valuations that includes three steps (Impact Valuation Roundtable, 2017): 1) Determining the scope of business activities that are covered by impact valuation calculations; 2) Measuring the impacts of business activities; 3) Valuing impacts through the application of valuation coefficients. Each of these steps requires numerous decisions on data collection, quantification methods, valuation coefficients, and many other aspects that influence the outcome of IMV calculations. However, there is currently no detailed guidance available on making these decisions, resulting in a lack of consistency across IMV calculations, which, in turn, hampers the comparability of IMV results. The VBA was founded to address these shortcomings through the development of a standardised IMV model that is expected to facilitate the consolidation of the growing field of impact measurements, thereby improving comparability and fostering a greater uptake of IMV approaches in the business community.

Appendix B: List of Interviews and Focus Groups

Expert Interviews

- Organization: Deloitte; Name: Veronica Poole, Global Head of IFRS; Interview Date: Aug 2019.
- Organization: Deloitte; Name: Neil Stevenson, Director Deloitte UK; Interview Date: Aug 2019.
- Organization: Hermes Investment Management; Name: Dr Michael Viehs, Associate Director; Interview Date: Aug 2019.
- Organization: Impact Management Project; Name: Clara Barby, CEO; Interview Date: Sept 2019.
- Organization: International Integrated Reporting Council; Name: Charles Tilly, CEO; Interview Date: Sept 2019.
- Organization: The Prince's Accounting for Sustainability Project; Name: Jessica Fries, Professor of Accounting, Executive Chair; Interview Date: Aug 2019.
- Organization: University of Oxford; Name: Prof. Robert Eccles, Visiting Professor of Management Practice and Founding Chairman of SASB; Interview Date: Aug 2019.
- Organization: University of Oxford; Name: Prof. Richard Barker, Professor of Accounting; Interview Date: Aug 2019.
- Organization: Value Balancing Alliance; Name: Christian Heller, CEO; Interview Date: Sept 2019.

Observed Focus Groups

- British Academy, London, Future of the Corporation Workshop on Measurement & Performance; Date: May 2019
- British Academy, London, Future of the Corporation Workshop on Measurement & Performance; Date: June 2019
- British Academy, London, Future of the Corporation Workshop on Principles; Date: Sept 2019.

FIGURES

Figure 1: Working Planes of Non-financial Standards and Frameworks

See png. provided

Source: Illustration based and adjusted from the Impact Management Project's "plumbing system" categorization and related interviews led for this paper.

TABLES

Table 1. Selected Terms used to describe Non-Financial Information.

| | |
|----------------------------------|--|
| Non-financial performance | <p>Describes the relevant non-financial outputs and the related outcomes which are associated with a firm’s activities. Outputs describe the direct, measurable changes in a natural, social or human state, whereas outcomes are the measurable changes within a related, relevant reality which are affected by said output.</p> <p>Some stakeholder groups do prefer the terms “pre-financial” or “extra-financial” as opposed to non-financial performance in the description of these issues, highlighting that environmental and social concerns are imperative for sustained, financial success and therefore by nature not un-financial.</p> |
| ESG | <p>Non-financial performance measures which are categorized into the dimensions of environmental, social and governance (ESG) performance (captured through both metrics and qualitative descriptions). ESG particularly describes a specific kind of corporate, externally evaluated data (usually provided through commercial data vendors) which are increasingly used to assess companies alongside dimensions other than mere financial performance. The term “ESG” was first mentioned in a United Nations Global Compact Report in 2004 and subsequently taken up by the investment and rating industry.</p> <p>As a non-financial performance (output & outcome) measure, ESG must decidedly be differentiated from the concept of “impact”.</p> |
| Impact | <p>Impact is a change in positive or negative outcomes for people or the planet which can be traced to a certain activity of an organization or entity. According to the Impact Management Project, impact can be deconstructed into five dimensions: What, Who, How Much, Contribution and Risk (IMP, 2019). Impact particularly describes an organization’s contribution to a larger outcome beyond what would have happened anyway. Impact differs from ESG as it describes the effect of a corporate action on its larger eco-system, and not only its immediate outcome or output.</p> |
| Externalities | <p>Externalities refer to situations when the effect of production or consumption of goods and services imposes costs or benefits on others which are not reflected in the prices charged for the goods and services being provided. Water pollution is an example of an externality, which is linked to a negative impact by affecting the livelihood of fishermen and farmers nearby.</p> |

| | |
|-------------------------|--|
| Multi-capitalism | An extension of the conventional focus on material and financial capital to include “other” forms of capital a company must consider, such as human, natural and social capitals. |
| Human capital | Consists of employees and workforce of an organization, and their skills, competencies, knowledge, attributes and experience. Good insight into these can result in better management & utilisation of these resources. In corporate practice this could include factors such as employee mental wellbeing, happiness and satisfaction. |
| Natural capital | Natural capital is defined as the world’s stock of natural resources which include geology, soil, air, water, and all living things. A company can consider the depletion and creation of natural capital in corporate and in planetary terms. The challenge for accounting is the valuation and recognition of the consumption of these resources and the costing associated with them. |
| Social capital | This is the value added to society by the organisation’s products, services and activities, as well as the relationships within and between communities, groups of stakeholders and other networks. Social capital is the least precise of the three commonly used “other” capitals and therefore most difficult to capture in numbers. Some of the literature views social capital as an intangible asset and some aspects overlap with human capital and it is not always possible to delineate. |
| Intangibles | These are identifiable non-monetary assets without physical substance, such as intellectual capital or brand value. Such assets may be identifiable when they are separable, or when they arise from contractual or other legal rights. |

Table 2: Outputs, Outcomes and Impact of Corporate Activities

| ASSESSMENT MEASURES | WASTEWATER TREATMENT | RENEWABLE ENERGY | PHARMACEUTICALS |
|--|---|---|---|
| <p>Impact metrics</p> <p><i>Data source: Combined business activity/technology/sociobiogeophysical impact metrics, as proposed here</i></p> | <p>Outputs: Volumes of waste-water treated (e.g., cubic meters per day)</p> <p>Outcomes: Pollutant concentration reductions in receiving waters (e.g., milligrams per liter)</p> <p>Impacts: Beneficiary populations drawing drinking water from downstream (1000s), stream length of improved fish habitat (kilometers below threshold)</p> | <p>Outputs: Emissions reduced (CO₂, PM_{2.5}, SO₂, NO_x) (e.g., metric tons per year)</p> <p>Outcomes: Ambient air pollution improvement (e.g., parts per million; number of smog alerts)</p> <p>Impacts: Lives extended, hospitalizations and sick days avoided, reduced health-care spending</p> | <p>Outputs: Spatially distributed drug sales</p> <p>Outcomes: Target populations reached (e.g., millions; % of total)</p> <p>Impacts: Lives extended, hospitalizations and sick days avoided, reduced health-care spending</p> |

Source: Vörösmarty et al. (2018), p. 524.

Table 3: Selected Institutions and Frameworks for the Measurement and Management of Non-Financial Information.

| Institution / Framework | Acronym (Type, Foundation) | Actors directed at | Description |
|--|---|--------------------|---|
| Standards of Process and Practice | | | |
| United Nations, Sustainable Development Goals | UN SDGs (Intern. Org., 2016) | All | A set of global goals as “blueprint” to create a more sustainable future. Successors of the Millennium Development Goals, the seventeen Goals are set to be achieved by 2030. |
| The Organisation for Economic Co-operation and Development, Guidelines for Multinational Enterprises | OECD Guidelines (Intern. Org., 2004) | Governments | The Guidelines are a set of recommendations on responsible business conduct addressed by governments to MNEs operating in or from adhering countries. |
| United Nations Global Compact | Global Compact (Intern. Org., 2000) | Companies | A voluntary initiative based on CEO commitments to implement 10 universal sustainability principles and advance “broader societal goals”, like SDGs. |
| United Nations Environmental Program, Finance Initiative | UNEP FI (Intern. Org., 2005) | Investors | A partnership between UNEP and the global financial sector created in the wake of the 1992 Earth Summit with a mission to promote sustainable finance. Advocates Principles for Positive Impact. |
| United Nations Principles for Responsible Investment | UN PRI (Network, 2005) | Investors | Founded by Global Compact and UNEP FI as a network of international investors working together to put six Principles into practice. |
| Focusing Capital on the Long-term | FCLT Global (NGO, 2013) | Investors | Investor initiative which works to encourage a longer-term focus in business and investment decision-making by developing practical tools and approaches to support long-term behaviours across the investment value chain. |
| Impact Management Project Structured Network | IMP Network (Network, 2019) | All | A structured network that facilitates collaboration between 9 members to work on a consolidation of impact measurement. Includes: UN Development Program, International Finance Corporation, OECD, GRI, Social Value International, the Global Impact Investing Network, the UN PRI, the WBA and the Global Steering Group for Impact Investment. |
| Conceptual Frameworks | | | |
| Includes also: SASB & GRI (see description in next section) | | | |
| International Integrated Reporting Council, <Integrated Reporting> Framework | IIRC / <IR> (NGO/Standard setter, 2010) | Companies | A global coalition of regulators, investors, companies, standard setters, the accounting profession and NGOs. Promotes multi-capital framework and value creation as the next step in the evolution of corporate reporting. Mission to establish integrated reporting as mainstream. |
| European Union High-Level Expert Group, Non-financial Reporting Directive | EU Directive 2014/95/EU (EU Law, 2004) | Companies | Under the Directive, large European companies have to publish reports on the policies they implement in relation to specific non-financial issues. A 2007 guidance document from the EU’s |

| | | | |
|---|--------------------------------------|-------------------------|---|
| | | | technical expert group on sustainable finance (TEG) further outlines how to disclose social and environmental information. |
| Climate-Disclosure Standards Board | CDSB (NGO, 2007) | Companies | Works to provide climate change-related information into mainstream financial reporting. Offers companies a framework for reporting environmental information. |
| Financial Stability Board (FBS) Task-force for Climate-related Financial Disclosure | TCFD (Initiative, 2005) | Companies | Develops voluntary, consistent climate-related financial risk and opportunity disclosures for use by companies, banks, and investors in providing information to stakeholders. Works with scenario disclosures. |
| World Business Council for Sustainable Development, Natural Capital Protocol (Natural Capital Coalition) and Social & Human Capital Protocol (S&HC Coalition) | WBCSD Capitals Protocol | Companies and Investors | A global, CEO-led organization working to accelerate the transition to a sustainable world. Have given out Natural Capital and Social & Human Capital Protocols which are frameworks for business to measure and value their non-financial impacts and dependencies. |
| International Standards Organization, Standard 14007 and 14008 | ISO 14007 / 14008 (Standard) | Companies | Standard on determining and communicating the environmental costs and benefits associated with companies' environmental aspects, impacts and dependencies on natural resources and ecosystem services (14007); and Standard on monetary valuation of environmental impacts and related environmental aspects (14008). |
| Data Standards | | | |
| Sustainability Accounting Standards Board, SASB Conceptual Framework | SASB (NGO /Standard setter, 2011) | Companies and Investors | Proposes industry-specific reporting standards for non-financial disclosure (topics and measures) with a focus on financial materiality. Standards are developed through multi-stakeholder consultation and updated periodically. |
| Global Reporting Initiative, Sustainability Reporting Standards, G4 | GRI (NGO /Standard setter, 1997) | Companies | Advocates for a sustainability reporting standard with a focus on materiality defined through externalities. They feature a modular and interrelated structure for reporting on a range of economic, environmental and social impacts. |
| CDP (former Carbon Disclosure Project) | CDP (NGO, 2000) | Companies | Runs a global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts. Its questionnaires help companies and investors understand climate related risks and opportunities. |
| Coalition for Inclusive Capitalism, Embankment Project for Inclusive Capitalism | EPIC (Network, 2017) | Companies and Investors | An effort that brought together companies, asset managers and asset owners to “identify and create new metrics to measure and demonstrate long-term value to financial markets”. Final report outlines taxonomy and collection of metrics for human capital and intangibles. |
| World Benchmarking Alliance | WBA (NGO, 2017) | Companies and Investors | An NGO which has set out to develop transformative benchmarks that will compare companies' performance on the SDGs. The benchmarks are to be backed by science, while leveraging existing international norms. |

Source: Information pooled from organization websites, all last consulted in August 2019.

Table 4: List of Multi-Capital Frameworks and Advocating Groups

| Framework | Advocating Group |
|--------------------------|--|
| Sustainability Reporting | Global Reporting Initiative Sustainability Accounting Standards Board |
| Triple Bottom Line | Volans/ John Elkington (1994) |
| Integrated Report | The International Integrated Reporting Council, The Integrated Thinking and Strategy Initiative |
| Impact Valuation | Impact Management Project |
| Integrated P&L | Value Balancing Alliance, Integrated P&L Initiative |
| Mutual P&L | Mars Catalyst (Economic of Mutuality Foundation) |

Source: Amended from Stroehle and Rama Murthy (2019)