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The Need for Sector-Specific Materiality and Sustainability Reporting Standards

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The number of reports published by corporations around the world that include sustainability information is growing. According to data from CorporateRegister.com, a repository of over 39,000 reports by 8,930 different companies in 159 countries, the global output of sustainability[1] reports increased from 26 in 1992 to 5,819 in 2011.[2]

At the same time that companies are reporting a much broader set of information than their financial statements and notes, investors and analysts appear to be taking a greater interest in sustainability information. A recent analysis by three of the authors reported that there were 44 million hits to the almost 250 environmental, social, and governance (ESG) metrics in the Bloomberg database during three bimonthly periods from November 2010 to April 2011.[3] Even though it is not possible to determine how Bloomberg subscribers actually used the available information, it is clear that sustainability data are of interest to people who don't have a lot of time to waste.

But if the reporting of sustainability information by companies is clearly growing along with the interest of the investment community, there are significant barriers to making sustainability information as important as financial information. One of the biggest challenges is determining standards for sustainability information that approximate the rigor of those for financial information. Without standards, it is difficult for companies to know exactly how to measure and report on some dimension of sustainability performance. Without standards, the investment community cannot make meaningful "apples-to-apples" comparisons of performance among companies and over time. The ability to make such comparisons is an essential requirement for building sustainability performance information into financial models, with the eventual aim of turning them into more robust business models. Performance comparisons are also of interest to companies that want to be able to benchmark their performance against a set of competitors or peers defined in various ways.

Another challenge in reporting on sustainability information is in determining which environmental, social, and governance issues are most important in terms of their impact on value creation. What is needed is an understanding of those dimensions of ESG performance that are material from a value creation perspective. In this article, we argue that materiality must be defined on a sector-specific basis. For each of these material issues, the appropriate way to measure and report on it—or what we call the "Key Performance Indicator" (KPI)—can then be determined. Part I of this article briefly describes the definition of materiality for financial reporting and Part II reviews the many definitions of materiality for nonfinancial reporting. In Part III, we report the results of a study of disclosures on climate by a sample of companies in six industries. We conclude by describing an approach for developing sector-specific standards for nonfinancial reporting.

Defining Materiality for Financial Reporting

The concept of materiality in financial reporting has both quantitative and qualitative aspects. Even though accounting firms and companies may use a numerical threshold such as 5% of earnings before income taxes or 10% of a given account balance, the determination of what is material must reflect both the magnitude and the nature of an item.

Definitions of materiality and related interpretive guidance have been evolving for several decades. Standard setters and regulators have promulgated materiality guidance for use by U.S. companies and auditors. International organizations have published similar rules and regulations. All of them are fairly general and "principles-based" in the sense that they do not give specific numerical-based guidance on how to determine if an item is material. However, this general guidance exists within a set of clearly defined accounting standards—either U.S. Generally Accepted Accounting Principles (U.S. GAAP) or International Financial Reporting Standards (IFRS)—which helps to give meaning to the general guidelines below.

* Note: The authors would like to acknowledge the invaluable research assistance of Arturo Rodriguez, SASB, in reviewing 2011 Form 10-K filings for companies in 6 industries.

1. Terms such as "sustainability," "environmental, social, and governance," and corporate social responsibility" are frequently used interchangeably to describe similar information.

2. CorporateRegister.com. Reports Statistics, http://www.corporateregister.com/stats/, accessed April 2012.

3. Eccles, Robert G., Michael P. Krzus, and George Serafeim. "Market Interest in Nonfinancial Information," *Journal of Applied Corporate Finance* 23, no. 4 (Fall 2011).

These guidelines also benefit from the fact that they are promulgated by regulatory bodies that ultimately have the backing of laws.

The following are the most important definitions of materiality for financial reporting:

• **Financial Accounting Standards Board (FASB)**. Information is material if omitting or misstating it could influence decisions that users make on the basis of the financial information of a specific reporting entity. In other words, materiality is an entity-specific aspect of relevance based on the nature or magnitude of the items to which the information relates in the context of an individual entity's financial report. As a consequence, the Board cannot specify a uniform quantitative threshold for materiality or predetermine what could be material in a particular situation.[4]

• **Securities and Exchange Commission (SEC)**. Materiality concerns the significance of an item to users of a registrant's financial statements. A matter is "material" if there is a substantial likelihood that a reasonable person would consider it important.[5]

• **Public Company Accounting Oversight Board (PCAOB)**. In interpreting the federal securities laws, the Supreme Court of the United States has held that a fact is material if there is "a substantial likelihood that the …fact would have been viewed by the reasonable investor as having significantly altered the 'total mix' of information made available." As the Supreme Court has noted, determinations of materiality require "delicate assessments of the inferences a 'reasonable shareholder' would draw from a given set of facts and the significance of those inferences to him…."[6]

• **International Accounting Standards Board (IASB)**. Materiality is an entity-specific aspect of relevance based on the nature or magnitude (or both) of the items to which the information relates in the context of an individual entity's financial report.[7]

One common point shared by the FASB, SEC, and IASB definitions is that information is material if its omission or misstatement would influence decisions made by general users of the information. The issue of "material to whom" is addressed only by the PCAOB, which focuses on the perspective and decision making of a "reasonable shareholder." Both FASB and the IASB very explicitly state that the determination of materiality is "entity-specific," which is consistent with defining materiality in the context of all the other information in an entity's financial report.

Defining Materiality for Nonfinancial Reporting

Both public and private sector organizations have issued guidelines on materiality for nonfinancial information. In general, they are modeled on the definition of materiality for financial information by describing it in terms relevant to decision making, putting it in the context of other information, and assessing its qualitative and quantitative importance with respect to this other information and decision making. However, more emphasis is placed on defining the user of the information, typically described as "stakeholders" rather than "shareholders," and emphasizing the importance of considering the impact of not providing information. The NGOs AccountAbility and the Global Reporting Initiative (GRI) and the United Nations have all offered definitions of materiality for nonfinancial information.[8] Only the GRI, through its Sector Supplements, considers the issue of defining materiality by sector.[9] These organizations do not have the same stature as either FASB or the IASB and their approaches to materiality are not "generally accepted" in the same sense as FASB and IASB guidelines.

National and international regulators and standards setters, which do have more institutional authority, have also attempted to define materiality for nonfinancial information. These include the International Federation of Accountants (IFAC),[10] the PCAOB,[11] and the SEC.[12] In general, such guidance is derived from financial reporting guidance and is not sector specific—and only the work of the Canadian Securities Administrators addresses the issue of material to whom.[13] Key determinants of materiality are whether it will influence the decisions of users, whether the omission or misstatement would influence a user's decision, the overall context of quantitative and qualitative information, and the importance of the practitioner's judgment.

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4. Financial Accounting Standards Board. Statement of Financial Accounting Concepts No. 8, http://www.fasb.org/cs/BlobServer?blobcol=urldata&blobtable=MungoBlobs&blobkey=id&blobwhere=1175822892635&blobheader=application%2Fpdf.

5. Securities and Exchange Commission. SEC Staff Accounting Bulletin: No. 99 – Materiality, http://www.sec.gov/interps/account/sab99.htm, accessed March 2012.

6. Public Company Accounting Oversight Board. Auditing Standard No. 11, Consideration of Materiality in Planning and Performing an Audit, http://pcaobus.org/Standards/Auditing/Pages/Auditing_Standard_11.aspx, accessed March 2012.

7. Deloitte IAS Plus. "Summaries of international financial reporting standards Conceptual framework for financial reporting 2010." www.iasplus.com/standard/framewk.htm, accessed March 2012. Note: International Financial Reporting Standards are only available through a subscription service.

8. AccountAbility. AA1000 AccountAbility Principles Standard 2008, http://www.accountability.org/standards/aa1000aps.html, accessed March 2012. Global reporting Initiative. GRI Guidelines 3.1, Part 1: Defining Report Content, Quality and Boundary, 1.1 Defining Report Content, https://www.globalreporting.org/reporting/guidelines-online/G3Online/DefiningReportContentQualityAndBoundary/Pages/default.aspx, accessed March 2012. United Nations Conference on Trade and Development—Guidance on Corporate Responsibility Indicators in Annual Reports http://www.unctad.org/en/docs/iteteb20076_en.pdf, accessed March 2012.

9. Global Reporting Initiative. Sector Guidance, https://www.globalreporting.org/reporting/sector-guidance/Pages/default.aspx, accessed March 2012.

10. International Federation of Accountants. International Standard on Assurance Engagements (ISAE) 3000, "Assurance Engagements Other than Audits or Reviews of Historical Financial Information," http://www.ifac.org/sites/default/files/downloads/b012-2010-iaasb-handbook-isae-3000.pdf, accessed March 2012.

11. Public Company Accounting Oversight Board. AT Section 101, Attest Engagements, http://pcaobus.org/Standards/Attestation/Pages/AT101.aspx, accessed March 2012.

12. Securities and Exchange Commission. Commission Guidance Regarding Disclosure Related to Climate Change, http://www.sec.gov/rules/interp/2010/33-9106.pdf, accessed March 2012.

13. Canadian Securities Administrators. Staff Notice 51-333, Environmental Reporting Guidance, http://www.osc.gov.on.ca/documents/en/Securities-Category5/csa_20101027_51-333_environmental-reporting.pdf, accessed March 2012.

In March 2012, Deloitte weighed in on the materiality debate with two papers.[14] Deloitte argues that one benefit of "using a concept such as materiality in the context of ESG issues is that it helps narrow down the broad universe of ESG information to those items that help inform investors and other stakeholders about a business's ability to create and sustain value. In other words, it helps emphasize a business-centric view."[15] The paper suggests that decision science methodologies can be used to winnow out the information that is critical to the business. The analysis, Deloitte concludes, revolves around two questions. One, "Is it likely the information will influence stakeholder judgment, including shareholders? Two, "How much business value will be created or destroyed?"[16]

All of the foregoing approaches have some merit. However, the proliferation of materiality guidance for nonfinancial information creates the perception of competing or dueling standards, which can and arguably does create confusion among companies. The absence of generally accepted accounting standards for nonfinancial information, including materiality, has also contributed to inconsistencies in the quality of nonfinancial reporting and the linkage between voluntary sustainability reports and official filings with the SEC. As Lowson (2012)[17] notes in this issue, there is "a substantial likelihood of widespread SEC noncompliance on ESG issues, due in large part to functionality deficiencies in enterprise software systems" and, as a result, "this noncompliance phenomenon arguably represents an emerging global financial market systemic problem, and a major opportunity for a market shift to Integrated Reporting." Notable concerns include the following:

• The number and wide range of issues identified as material

• Lack of alignment between material issues in a company's sustainability report and its regulatory report, such as the Form-10K in the U.S.

• The proliferation of boilerplate disclosures

• Minimal disclosure of quantitative ESG metrics

In a recent report, a well-known sustainability consultancy called Framework analyzed *Corporate Responsibility Magazine's* 12th annual 100 Best Corporate Citizens List[18] to examine the extent to which there was consistency between a company's sustainability report and its Form 10-K for 2011 regarding materiality and material items. Framework classified the degree of alignment of the Form 10-K and the materiality analysis in the sustainability report into the following four categories:[19]

• Aligned to a large degree: 8 companies

• Somewhat aligned: 28 companies

• Minimally aligned: 60 companies

• Not aligned at all: 4 companies

In response to the lack of clear guidance for what is material in the realm of ESG performance, some companies have attempted to determine this for themselves through stakeholder engagement in order to evaluate the importance of economic, environmental, and social impacts. This process may be used to build a materiality matrix, with one dimension being "importance for the company" and the other being "importance to society," which can result in a wide range in the quality of the disclosures within the materiality matrix. A recent study involving two of us[20] used the CorporateRegister.com database to review 71 sustainability reports published in 2010 that included a materiality matrix. We found a wide variation in practices. Some companies presented a materiality matrix, but did not populate it. Other companies presented 40 or 50 "material" items, while some presented five to ten material risks or opportunities.

Climate Change Disclosures

To further illustrate the challenges in achieving high quality nonfinancial reporting, we look at a specific example: climate change-related disclosures. The SEC issued an interpretive release, which became effective on February 8, 2010, regarding climate change disclosures, and noted that the effects of climate change could be both positive and negative.[21] The Commission identified the following topics as "some of the ways climate change may trigger disclosure:" (1) impact of legislation and regulation; (2) international accords: (3) indirect consequences of regulation or business trends; and (4) physical impacts of climate change.[22] In its conclusion, the SEC emphasized that "[t]his interpretive release is intended to remind companies of their obligations under existing federal securities laws and regulations to consider climate change and its consequences as they prepare disclosure documents to be filed with us and provided to investors."[23] In other words, the SEC stated that disclosures about climate change were

14. Deloitte. Deloitte Debate. "Does materiality matter? Should the principle of materiality be applied more consistently to non-financial reporting?" http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/us_scc_materialitydebate_032712.pdf, accessed April, 2012 and Deloitte. "Disclosure of long-term business value: What matters?" http://www.deloitte.com/view/en_US/us/Services/additional-services/sustainability-climate-change/962cef0ae3c26310VgnVCM2000001b56f00aRCRD.htm?id=us_pr_scc_materiality_032712, accessed April 2012.

15. Deloitte. Deloitte Debate. "Does materiality matter? Should the principle of materiality be applied more consistently to non-financial reporting?" http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/us_scc_materialitydebate_032712.pdf, accessed April 2012.

16. Ibid.

17. Linda M. Lowson, "SEC ESG Noncompliance: Where the Rubber Meets the Road" *Journal of Applied Corporate Finance* 24, no. 2 (Spring 2011).

18. *Corporate Responsibility Magazine*. CR's 100 Best Corporate Citizens List, http://www.thecro.com/files/100Best2011_List_revised.pdf, accessed March 2012.

19. Framework. Materiality Research Results, http://framework-llc.com/wp-content/uploads/2011/09/Materiality-Research-Results-2011-Framework-LLC.pdf, accessed March 2012.

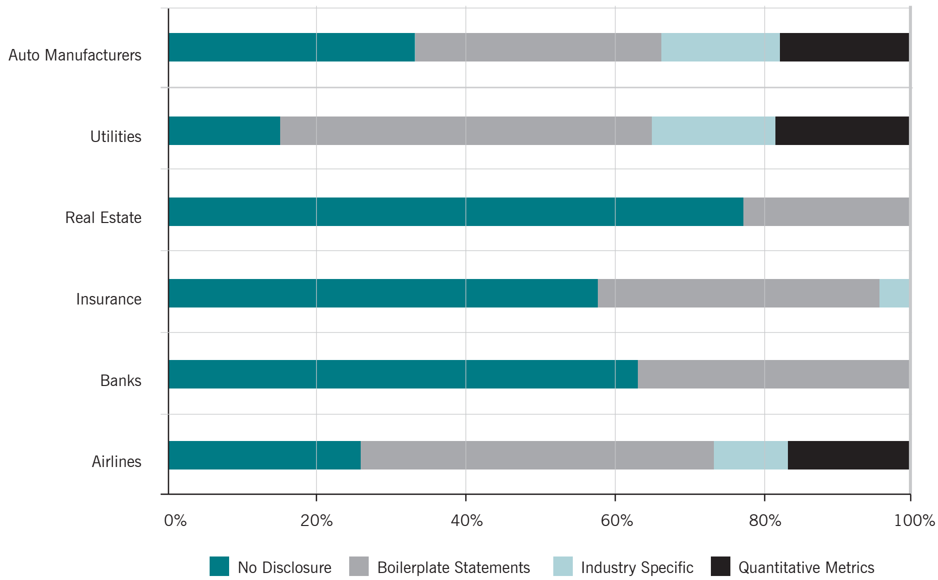
20. Eccles, Robert G., Michael P. Krzus, and Liv A. Watson. "Integrated Reporting Requires Integrated Assurance." *Effective Auditing for Corporates: Key Developments in Practice and Procedures*, 161-177. London: QFINANCE Key Concepts, Bloomsbury Information Limited, 2012.

21. Securities and Exchange Commission, "Commission Guidance Regarding Disclosure Related to Climate Change," http://www.sec.gov/rules/interp/2010/33-9106.pdf, pp. 1-29, accessed April 2012.

22. Ibid, pp. 22-27.

23. Ibid. p. 27.

Table 1 **Climate Change-Related Disclosures in Six Industries**



already covered by Regulation S-K such as in Item 101 on the description of the business, Item 103 on legal proceedings, Item 503 (c) on risk factors, and Item 303 on Management's Discussion and Analysis of Financial Conditions and Results of Operations (MD&A).

A common explanation for nondisclosure of ESG issues is that many of them are hard to measure and that standards of the same quality as accounting standards do not exist. However, in the case of climate change-related disclosure, the Climate Disclosure Standards Board (CDSB) has developed a Climate Change Reporting Framework (CCRF) that "is designed for use by companies in making disclosures in, or linked to, the mainstream financial reports about the risks and opportunities that climate changes present to their strategy, financial performance, and condition."[24] And the GHG Protocol, a decade-long partnership between the World Resources Institute and the World Business Council for Sustainable Development, has developed "an international accounting tool for government and business leaders to understand, quantify, and manage greenhouse gas emissions."[25] These two organizations work closely together, with the CDSB providing the overall framework and the GHG Protocol providing the measurement standards.

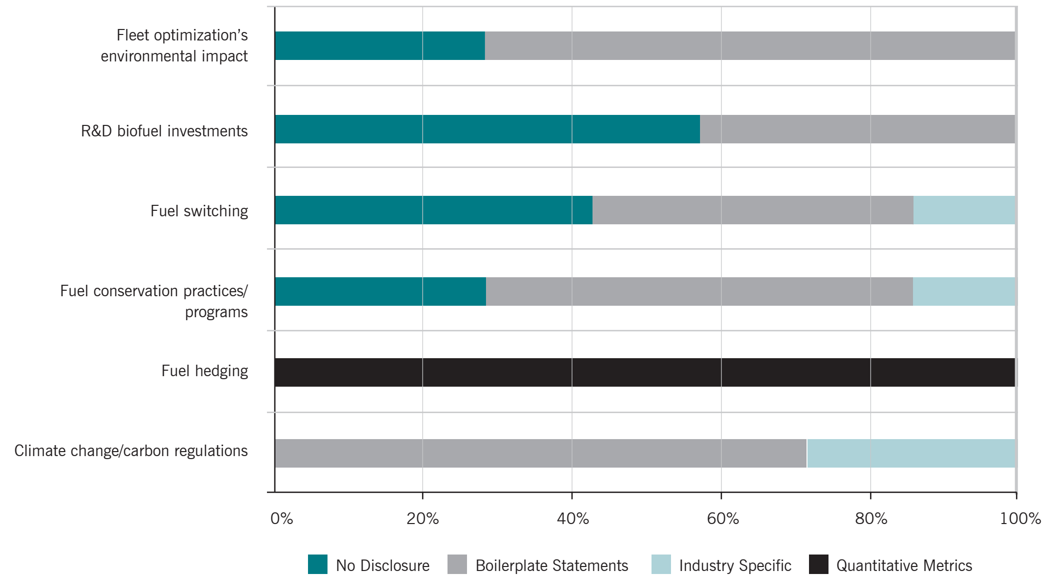
Based on the SEC interpretive release and reasonably well-defined guidelines on how to report on climate change-related issues, one would expect reasonably good disclosures by companies in those industries where climate issues are important. One would also expect similar disclosures within a given industry since climate change issues would be relevant to all of the companies in that industry, albeit potentially to a different extent depending on a company's strategy. For example, airlines should disclose fuel practices (ideally conservation and alternative fuels, in addition to hedging); utilities should discuss moving to a renewable energy portfolio (or lobbying against regulation); real estate should discuss the demand for and availability of green buildings and the vulnerability of assets in coastal locations; and the insurance industry should also disclose the vulnerability of insured assets and the impact of increased catastrophic storm events.

However, in our sample of six industries (which includes seven airlines, ten banks, ten insurance companies, nine real estate firms, ten utilities, and two automobile manufacturers) based on available 10-K filings in 2011, the first full year of performance disclosure since the SEC interpretive guidance on climate change was issued, we found a wide variation in disclosure practices. Within each industry, we identified the various types of climate change-related disclosures that would be relevant and categorized the quality of disclosure for each company along a continuum of quality starting with "No Disclosure" and including "Boilerplate Statement," "Industry Specific," and "Quantitative Metrics." "No Disclosure" meant no mention of climate change-related risks or opportunities. "Boilerplate Statements" encompassed generic language about potential risks from

24. Climate Disclosure Standards Board, http://www.cdsb.net/, accessed April 2012.

25. GHG Protocol, http://www.ghgprotocol.org/, accessed April 2012.

Table 2 **Climate Change-Related Disclosures by the Airline Industry**



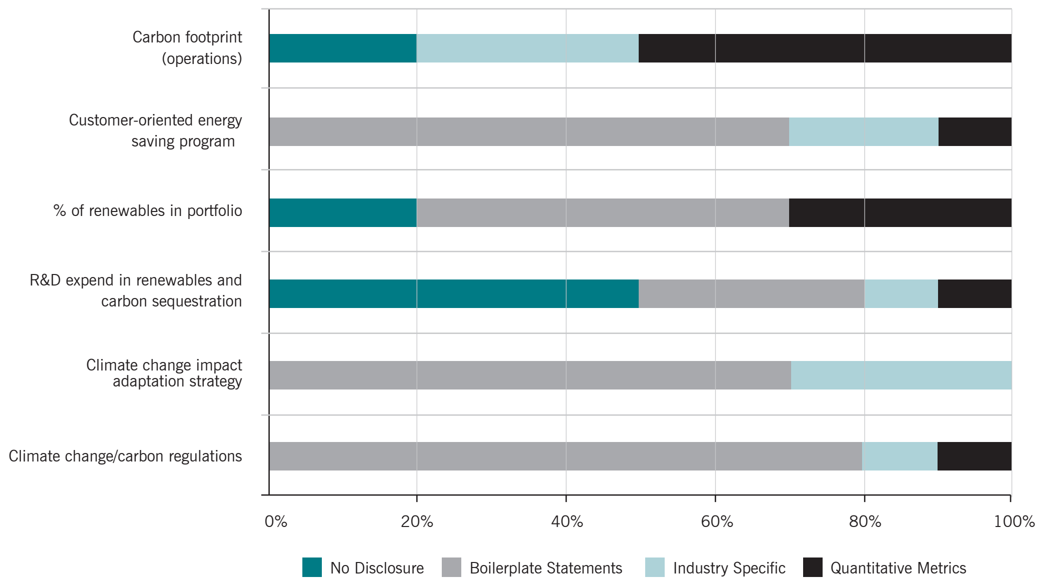
future regulation and the inability to quantify financial impacts. "Industry Specific" disclosures represented tailored language addressing specific risks or strategies related to climate change, such as renewable portfolio standards in utilities or the fuel efficiency of new product lines in automobiles. "Quantitative metrics," which represented the highest quality of disclosure, included comparable, quantifiable metrics such as measures of GHG emissions, energy use, and energy efficiency.

Table 1 summarizes our findings. In every single industry there were at least a few companies that had no disclosure at all in the 10-K, the document that contains all of the items identified by the SEC in their interpretive release as appropriate places for climate change-related disclosures. Real estate firms, insurance companies, and banks were the least likely to disclose anything related to climate, perhaps because they were taking a rather narrow view in terms of the impact of their direct operations on climate change. But even auto manufacturers (end-of-life-management) and utilities (carbon footprint operations and R&D expended on renewables and carbon sequestration) had no disclosure in many cases. When a disclosure was provided, it was usually a boilerplate statement rather than something clearly showing the relevance of the disclosure to the sector. The proliferation of boilerplate language is of concern because it adds no value to users of financial statements; it simply clutters the Form 10-K with generic language. Additionally, some of the firms using boilerplate language ostensibly because impacts are not quantifiable are the same firms lobbying against climate change regulation on the basis that it represents an undue burden. It's hard to see how both these objections can be true.

Least common were actual quantitative metrics; this is not surprising due to the lack of standards for nonfinancial information. About 15-20% of the disclosures for auto manufacturers (seven possible disclosures), utilities (six), and airlines (six) used quantitative metrics. For real estate firms (seven), insurance companies (five), and banks (three), there were none. The lack of relevant real estate disclosures is particularly disappointing given the advances this industry has made in the past 20 years with the advent of the U.S. Green Building Council and its emphasis on measurement of environmental impacts and energy efficiency in buildings. It is clear that increased industry awareness does not automatically translate into updated disclosure practices by the preparers of financial statements. This variation and general lack of transparency reflect the lack of a clear understanding of what constitutes a material disclosure and measurement standards for doing so. Another factor is the reluctance of some companies to disclose information unless absolutely required to do so for a variety of reasons, including litigation risk, establishing a disclosure precedent, perceived competitive disadvantage,[26] and creating expectations about performance.

26. "Climate change disclosure – exposing contradicting claims," November 28, 2011, http://www.riverbendadvisors.com/blog/2011/11/climate-change-disclosure-exposing-contradicting-claims/, accessed April 2012. Larry Margasak, "Companies give GOP, regulators, different messages," November 25, 2011, http://m.gosanangelo.com/news/2011/nov/25/bc-us--clean-air-politics-1st-ld-writethru928/, accessed April 2012.

Table 3 **Climate Change-Related Disclosures by the Utilities Industry**



The need for sector-specific guidance on materiality and reporting standards is further illustrated by looking in more detail at the airline (Table 2) and utilities (Table 3) industries. By holding industry constant, one would expect less variation. An issue material to one company in the sector should be material to others unless there are some very particular circumstances, such as a highly unusual strategy or large differences in size. Similarly, if one company can provide quantitative metrics, it should be possible, at least in theory, for the others to do so. An argument against this is that measuring and disclosing an item might be expensive. But the counter to this is that if management in one company finds it a worthwhile investment and judges it to be of importance to investors and necessary for disclosure in the 10-K, then again there must be some very particular reasons for other companies not doing this. Or it may simply be that there is a lack of consensus within an industry about just what is a material disclosure regarding climate change.

Table 2 suggests that all of these explanations have merit. All seven airlines provide quantitative metrics on fuel hedging, suggesting that they all consider this to be material and possible to measure in financial terms. All seven airline companies also provide disclosure on climate change/carbon regulations, but most of these are boilerplate statements, with a few being industry specific. Of the remaining four issues, on all of them at least one airline is not providing a disclosure. The reasons can vary. For example, it may simply be that an airline has no R&D biofuel investments. Yet it's hard to imagine that all of them don't have some kind of fuel conversation practices/programs. It is also hard to imagine that it is not possible to provide sector-specific disclosures for fleet optimization's environmental impact, although not a single company is doing so.

In contrast to airlines, there is no single item on which all companies in the utilities sector (Table 3) report quantitative metrics. Yet for five of the six issues, at least one utility company is providing a quantitative metric, demonstrating that it can be done. The exception is climate change impacts/adaptation strategy, which, along with climate change/carbon regulations, is largely reported in boilerplate form. One argument for this could be that these issues are very qualitative and policy-oriented in nature. Yet boilerplate disclosures are common for customer-oriented energy saving programs, an issue where not only sector-specific, but very company-specific information could be provided. Two of the ten utility companies do not report the carbon footprint from their operations, even though five provide quantitative metrics.

Creating Sector-Specific Standards for Materiality

While not a panacea, we believe that developing sector-specific guidelines on what sustainability issues are material to that sector and the Key Performance Indicators (KPIs) for reporting on them would significantly improve the ability of companies to report on their ESG performance. Even such global issues as climate change are much more important in some industries than others. By replacing high-level topic-based guidance, such as the SEC's interpretive release on climate change, with guidance that identifies the ESG issues that are material to a sector and how best to report on them, companies will have much clearer guidance on what and how to report. For some industries, climate change will make the list; for others, it may not, although some companies in that industry may still choose to report on it because of their particular strategy or to meet the information demands of a specific stakeholder group.

A 2010 study by Lydenberg, Rogers, and Wood proposed an approach for prioritizing sector-specific ESG topics that could provide the basis of sustainability disclosures by considering the following five tests:[27]

• Financial impacts/risks: Issues that may have a financial impact or may pose a risk to the sector in the short-, medium-, or long-term (e.g., product safety)

• Legal/regulatory/policy drivers: Sectoral issues that are being shaped by emerging or evolving government policy and regulation (e.g., carbon emissions regulation)

• Peer-based norms: Sustainability issues that companies in the sector tend to report on and recognize as important drivers in their line of business (e.g., safety in the airline industry)

• Stakeholder concerns and societal trends: Issues of great importance to stakeholders, including communities, non-governmental organizations and the general public, and/or reflect social and consumer trends (e.g., consumer push against genetically modified ingredients)

• Opportunity for innovation: Areas with potential to explore innovative solutions that benefit the environment, customers, and other stakeholders, demonstrate sector leadership, and create competitive advantage.

In essence, these tests provide a way to identify sustainability issues that are important to a reasonable investor. Applying them at the industry level, rather than the company level, provides a mechanism for identifying issues that all companies within an industry face. These issues are comparable because companies within an industry tend to have similar business models; they operate within the same regulatory environment, have similar approaches to handling resources and externalities, and produce similar products and services. Therefore, the material sustainability risks and opportunities facing companies within an industry are similar.

The method for identifying material issues within an industry proposed by Lydenberg et al., if implemented, will result in a *de facto* mandatory reporting environment because material issues are required by the SEC to be reported in the Form 10-K. The Sustainability Accounting Standards Board (SASB), a new 501(c)(3) organization committed to developing sustainability standards for disclosure by U.S. publicly-listed companies, is now relying on this approach to provide industry-specific guidance on recognizing and accounting for material sustainability issues. These standards are needed for investors and the public to have access to comparable, complete data sets on material sustainability issues, and to be able to make peer-to-peer comparisons. With comparable sustainability data in the public eye, companies will begin to compete on the dimensions of sustainability that matter for long-term value creation.

Conclusion

Even though the supply of sustainability information has increased considerably in the last decade, companies are still failing to disclose material information in a comparable format. We believe this has two downsides. On the one hand, companies are not adequately managing important business issues.[28] On the other hand, risks to investors' portfolios, such as exposure to climate change, remain hidden. If this disclosure void continues to exist, the competitiveness of U.S. companies and its capital market will be at risk.

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27. Lydenberg, Steve, Jean Rogers, and David Wood. "From Transparency to Performance: Industry-Based Sustainability Reporting on Key Issues," The Hauser Center for Nonprofit Organizations, Initiative for Responsible Investment, May 2010. http://hauser-center.org/iri/wp-content/uploads/2010/05/IRI_Transparency-to-Performance.pdf, accessed March 2012.

28. Analysis by Ioannou and Serafeim (2011) shows that firms improve their ESG performance after the enactment of mandatory sustainability disclosure.

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