BOOK EXCERPT

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The Integrated Reporting Movement:

Meaning, Momentum, Motives, and Materiality

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CHAPTER 5: MATERIALITY

Materiality forms the conceptual bedrock of corporate reporting, yet no authoritative definition of it exists. In "Securities Regulation,"[1] Louis Loss points out that the legal field offers no specific definition of the word. Court opinions on materiality have merely sketched its conceptual contours. Every time materiality has been relevant to a legal case in the United States, the court has opined that it must be decided on a case-by-case basis.[2] The U.S. Supreme Court has also asserted that this determination must be based on both qualitative and quantitative factors based on the "total mix" of information made available.[3] Further complicating the "total mix" standard set by the Supreme Court for evaluating potentially material omissions or misstatements, the Court left open the issue of "circularity" in its definition of materiality.[4] Finally, the courts have also made clear that materiality must be determined with complete clarity. These opinions do not discuss "degrees" of materiality; materiality is binary. A fact is either material, in which case it should be reported, or is not material, in which case it does not need to be reported.

These "delicate assessments" are to be made by the corporation itself. Since investors have no voice in a company's materiality determination process other than through lawsuits (which lead to further guidance instead of specific answers), it is management's, and ultimately the board's, responsibility to ascertain what information its "reasonable investors" would want to know. In the end, materiality is determined by the corporation itself and it is entity-specific.[5] While there may be no easy *rule* to follow in determining materiality, how companies go about making the ultimate decision of which externalities and issues are included in an integrated report should be a clearly defined *process* with solid lines of responsibility. The company's board of directors has the ultimate responsibility for putting in place a process that will enable it to make the final determination of what the company deems is material. In doing so, it establishes the legitimacy of the corporation's role in society.

In this chapter, we will not attempt to offer a precise definition of materiality. As accountant and historian Carla Edgley[6] has shown, such crystallization of meaning is neither historically probable nor necessary for the term to accomplish what it should.[7] There is also evidence that cultural context influences the meaning of materiality.[8] Rather than pin the idea down, this chapter seeks to widen our understanding of *what* materiality is by reviewing how it has been treated in the worlds of financial and nonfinancial reporting. In scrutinizing the assumptions and historical precedents upon which the notion of materiality is based, we will show how integrated reporting materiality should be determined by focusing on *who* should define materiality and for *whom* it is determined.

The Social Construction of Materiality

Although materiality forms the conceptual bedrock of corporate reporting, it is ultimately a social construct. In *The Construction of Social Reality,* philosopher John Searle observes that society's institutional structures share a special feature of social construction: symbolism.[9] The United Nations, Harvard University, the New York Stock Exchange, Rolex, the Red Cross, and Apple, for example, signify something beyond the sum of their parts. Their symbolic value is similar to brand power in that the mere mention of these institutions conjures expectations beyond what can be explained by their present "assets" and activities. As Apple is not the only company that makes innovative, imaginative products with attractive design, its products alone cannot explain the company's public monopoly on that combination of attributes or the fact that *Forbes* ranked it the world's most valuable brand in 2013.[10] The fragmented body that is society projects meaning onto these institutions.

Because societal agents like judges, commissioners, legislators, trustees, and board members consciously and intentionally foster this symbolism by reinforcing the reputation of these institutions, it can be said that these institutions are *socially constructed*: they exist only to the degree that meaning is shared between a given institution and its audience. Thus, meaning can exist without definition and, conversely, definition does not confer meaning.

Consider fraud. Fraud is analogous to materiality in its treatment by the courts. Like fraud, materiality does not lack for meaning in that people generally have a sense of what qualifies, but it has notoriously evaded definition for practical reasons. Loss wrote, "The courts have traditionally refused, whether at common-law deceit, or under securities laws, to define fraud with specificity."[11] Similarly, materiality is grounded in law that specifies that its meaning must be defined in practice by the particular circumstances of the company. In this spirit, the accountant William Holmes encouraged us to "continue to discuss, dispute, dissect, deplore, and generally 'look before and after and pine for what is not' in this matter of materiality," concluding that the solution is to "widen our understanding and narrow our judgments—short of official standards."[12] We take this to mean that rather than looking for an ultimate definition, we should instead focus on how to exercise judgment to determine what is material on a case-by-case basis.

Because materiality is a firm-specific social construct, it poses certain challenges for the integrated reporting movement. Since every board and management team protects a unique brand, what the corporation symbolizes for society is unique to each firm. The judgment of which limited matters are, in the language of the International Integrated Reporting Council (IIRC), "relevant and important,"[13] is also firm-specific. As each firm can define its own materiality threshold within the boundaries of accepted and evolving standards, our understanding of materiality must encompass all integrated reporting firms. In "Westphalian"[14] terms, materiality for the firm becomes materiality for its audience.

Regardless of whether or not its wishes are heeded, the involvement of an "audience" begs the question of *to whom* the firm is reporting. Recalling Searle, a social construct like materiality is a form of human agreement that involves the capacity of an institution, or more specifically its agents, to symbolize it. In the context of materiality for integrated reporting, one must ask, "*Whom* do the institution's agents address when they determine which issues are material, and which issues are *not?*"

Although providers of financial capital form the "direct audience"[15]—that is, the "users"—of an integrated report, the "indirect audience" of stakeholders also exerts pressure on the firm's selection of material issues. Firms are driven to engage with stakeholders because stakeholders wield varying degrees of influence on the providers of capital, and the implications of that influence are often too great to ignore. Consequently, when the firm decides what information is material, it must, for its own good, take into account the perspectives of stakeholders beyond those who provide financial capital.[16] Furthermore, as Berle and Means[17] have argued, society has granted corporations special privileges not given to individual persons, which suggests these same corporations have a moral, if not a civic, duty to think beyond profits to consider the good of society. Logically, corporations would then be morally obliged to not only "perform" in such a way, but to report back to society "material actions" beyond the profit-driven.

This does not mean, however, that issues that are "material" to stakeholders will be material to the firm. In the end, the corporation as represented by its board of directors will determine what is material for reporting purposes. In doing so, it chooses which stakeholders to address, how to obtain their input, and the relative weightings to assign to issues and audience members. The next chapter explores this in more detail in terms of the concept of a "Materiality Matrix" or, for reasons we will explain, what we prefer to call the "Sustainable Value Matrix." Here we will briefly use the case of environmental reporting to introduce a more general discussion about how materiality has been treated in the worlds of financial and nonfinancial reporting, compare the two, and then give our view of this concept's relevance for integrated reporting.

Audience

As discussed in Chapter 2, the direct audience for, or "user" of, an integrated report is the "providers of financial capital." We also noted that while this typically signals providers of equity capital—investors—it should also include other types, like bondholders. In keeping with Holmes's call for a broad understanding of materiality, the <IR> Framework states in its section on "Materiality," "An integrated report should disclose information about matters that substantively affect the organization's ability to create value over the short, medium, and long term."[18] In doing so, it implies a definition of materiality rather than explicitly stating one. Also in keeping with Holmes's call for narrowing judgment, the <IR> Framework goes on to discuss a four-step process to determine what information is material.

1. "Identifying relevant matters based on their value to affect value creation…
2. Evaluating the importance of relevant matters in terms of their known or potential effect on value creation…
3. Prioritizing the matters based on their relative importance…
4. Determining the information to disclose about material matters."[19]

Narrowing down a long list to what ultimately passes the materiality threshold for inclusion in the integrated report demands the exercise of judgment to separate the "material" from the "immaterial." The firm's ability to determine what is and is not material through its senior management and those involved in governance[20] symbolizes its social agency. Since a given factor's relevance must be weighted by its importance to the company, "Judgment is applied in determining the information to disclose about material matters."[21] While the firm may undertake an involved stakeholder engagement process, it makes the ultimate decision as to what is material to its strategy. In doing so, it exercises judgment as to what is both important and relevant to the user audience, and of equally symbolic importance, what is not relevant or important enough to report.

According to the <IR> Framework, stakeholders are the indirect audience of an integrated report. "An integrated report benefits all stakeholders interested in an organization's ability to create value over time, including employees, customers, suppliers, business partners, local communities, legislators, regulators and policy-makers,"[22] it reads. Although not the direct audience, stakeholders can both influence what a firm determines is material (to the extent that their interests and actions affect providers of financial capital) and be members of the direct audience of report users (to the extent they are interested in a company's ability to create value over time). This is not the same as being interested in what the company is doing about issues that are material to them even if they are not determined to be material by the company.

More generally, it is common today for companies practicing integrated and/or sustainability reporting to distinguish between importance (or materiality) to the company and importance (or materiality) to society. This distinction is sometimes expressed through a "materiality matrix," a social construct whose meaning comes as much from how it is put together as its content. Too often, a misunderstanding about the difference between the entity and society levels of analysis muddles thinking on this subject.

Because we do not view society as an entity *per se*, and because materiality is an entity-specific concept, materiality cannot be defined for society. Society is a reified concept based on the agglomeration of entities that have more or less defined identities, such as NGOs, political organizations, employees, unions, communities, religious and civil society organizations, formal and informal networks, companies, and providers of financial capital. The different constituent parts of society which *are* entities can have their own views of materiality and how to determine it, just as a company can, does, and must. The firm can form its own *view* of what a stakeholder regards as material based on substantial input from that stakeholder or virtually none at all. However, the firm *cannot* determine what is material for the stakeholder any more than a stakeholder can determine what is material for the firm. By the same reasoning, one could also claim that the firm cannot determine what is material to the reasonable investor, to the providers of financial capital, and to the rest of the direct audience. The difference is that the law requires the firm to make this judgment regarding the "reasonable investor," but it does not address whether such a materiality determination is valid from a social construct point of view; firms are simply required to make this materiality determination.

While the fact that neither the firm nor its stakeholders can determine materiality for entities besides themselves seems obvious, the consequences of this distinction are enormous and often overlooked. Any attempt to identify what is material using an approach based on distinctions between what is "material to the company" and "material to society" confounds two very different concepts. The first is indeed materiality. The second is a firm's *perception* of what is important to society. Since society is not an entity with an identity, what the firm has really determined is not what is "material to society." Rather, it is reporting its own *perception* of what it thinks is important to society through a social construct based on an aggregation of its views about what is material to the stakeholders selected by the firm. How these stakeholders are chosen (and ignored), how their views are assessed, and the weightings the firm assigns to them in the aggregation function are part of the social construction process. The data modeling concept of "cardinality" applies here. As a social construct, the firm defines materiality in terms of its "one-to-one" entity relationship between the firm and the "providers of financial capital." Each party in this relationship is a defined entity, more or less. Between the firm and society, there exists a "one-to-many" relationship. "Many" is not an entity.

Because the company's stamp on "importance to society" is as strong as it is on "importance to the company," any stakeholder can argue that the company "did not get it right" in its determination of importance to society and, in doing so, cast doubt on the legitimacy of the company's assessment.

This reflects the fundamental misunderstanding described in the previous paragraph. The firm is not—and should not think it is—providing an objective view of materiality from a stakeholder's, let alone society's, perspective. It is socially constructing its own view of what it thinks those stakeholders' views are. Stakeholders should recognize this for what it is, and they can attempt to change the company's perception if they do not agree with it.

In the same way that the firm cannot determine materiality for individual stakeholders, it cannot determine materiality for *other firms*—another indirect audience for an integrated report. In addition to suppliers and customers, other firms include competitors and potential competitors (who want to benchmark their performance against the firm's), potential acquirers (both strategic and financial buyers like private equity firms), and alliance or joint venture partners. While companies often include customers and suppliers in determining "importance to society," they almost never include other companies, thus making them unimportant in a discussion about materiality.

Governance

Aside from AccountAbility, the IIRC places more importance on the role of corporate governance in determining materiality than do the other NGOs concerned with corporate reporting. In a background paper for its <IR> Framework, the IIRC stated:

> Another unique feature of materiality for <IR> purposes is that the definition emphasizes the involvement of senior management and those charged with governance in the materiality determination process in order for the organization to determine how best to disclose its unique value creation story in a meaningful and transparent way.[23]

In the spirit of "narrowing of judgment," we think it possible to be more specific about the role of the board in determining materiality. In fact, we will argue that the responsibility for making this determination ultimately lies with the board and that, in order to fulfill its fiduciary responsibility, it must do so. However, in order to prescribe a more specific role for the board and to outline board tasks in the annual integrated reporting cycle, we must first review its basic, if often mischaracterized, role as an actor in the social construct of materiality.

In one of the most important business books of all time,[24] *The Modern Corporation and Private Property*,[25] Adolf Berle and Gardiner Means identified three broad privileges granted to corporations by the State:

1. The ability to limit liability, or to socialize losses,[26] while privatizing profits, thus attracting risk capital.[27]

2. The ability of corporations to own other corporations, allowing for concentration of control disproportionate to share of risk capital.[28]

3. The separation of ownership rights from control rights, enabling freely tradable shares.[29]

In summary, "The property owner who invests in a modern corporation so far surrenders his wealth to those in control of the corporation that he has exchanged the position of independent owner for one in which he may become merely recipient of the wages of capital…[Such owners] have surrendered the right that the corporation should be operated in their sole interest."[30] As noted at the beginning of this chapter, since society has granted corporations these special privileges, corporations have a moral, if not a civic, duty to think not only of profits, but also of the good of society.[31] This underpins the duty of corporations to not just "perform," but also to "report" material actions back to society beyond those that are profit-related.

The duty of a corporation to take society's interest into account in exchange for these special privileges is held, in trust, by the board of directors. Through the corporate privilege of personhood that is granted by society, a corporation arrives at its own legal identity, separate from its shareholders, directors, managers, employees, and stakeholders. As such, it has the capacity to survive many generations. In his book *Firm Commitment*, Professor Colin Mayer of Oxford University noted that the corporation's current decisions will have an impact long after the tenure of its current management and directors has expired, and, that consequently, the board is the appropriate trustee of the firm's intergenerational commitment.[32] This implies that director judgment must be informed by a keen sense of the social context within which the corporation is operating, further informing their oversight of the management team in formulating and implementing the company's strategy. It also implies that the board is responsible for taking a long-term view and ensuring that management is doing so as well to the extent it deems necessary.

In its 2003 version of *Redefining Materiality*, AccountAbility specifically stated in the section titled "Governing Materiality"[33] that each firm's board should define materiality within that firm's own context[34] and not that of its peers. Because the board's fiduciary responsibility is to the corporation itself rather than any particular stakeholder group—even investors[35]—it needs to assess how various stakeholders' interests affect the corporation. Doing so requires understanding the issues that are material to each stakeholder and reflecting on how this shapes what is material for the firm itself. We suggest adding a prior step to the four-step process recommended by the IIRC for determining materiality: "Identify stakeholders relevant to the corporation, their interests (including where they conflict), and the relative weight attached to each."

Our recommended first step is rarely done with any degree of rigor for two reasons. The first is the prevailing ideology that the fiduciary duty of directors requires them to place primacy on shareholders' interests. As we have noted, this is indeed ideology, not law, at least in the very Anglo-Saxon influenced United States.[36] The second is that corporations and their boards are reluctant to define the relative importance of different members of the audience with great specificity. It is easier to say something general like, "We are committed to delivering excellent returns for our shareholders and we firmly believe that addressing stakeholders' interests further enables us to do so." While this sounds "nice" and is consistent with the emerging rhetoric in support of the "business case for sustainability," it ignores the fact that tradeoffs often exist, particularly in the short term.[37] Since corporations often complain about the pressures for short-term performance imposed on them by the market, it is hard to reconcile this complaint with the breezy assertion of "doing well by doing good." Moreover, not only are there trade-offs between providers of financial capital and other stakeholders, there are tradeoffs between one type of provider of financial capital and another (e.g., equity vs. debt), as well as between different stakeholders (e.g., those focused on an environmental issue vs. those focused on a social issue).

Today the use of a "materiality matrix" by some companies to communicate their view about the relative importance of different issues begs the question of just how differences in importance are determined. What all members of the audience want to know is the underlying weighting given to each stakeholder group and the company's view of how important an issue is to each group. Since materiality is binary and based on judgment, judgment must first be exercised in identifying which members of the audience really matter. Doing so requires the courage to recognize that some stakeholders will disagree with this judgment, perhaps vocally so. Attempting to evade this conflict through conciliatory vagaries like "we care about all of our stakeholders" not only clouds the company's capacity to determine its material issues, but it also inhibits the company's ability to benefit from the transformation function of corporate reporting.[38] Transformation requires stakeholder engagement and, as with every resource allocation issue, there are limits to the resources that can be devoted to this.

Determining the relative importance of different providers of financial capital and different stakeholders is ultimately a responsibility of the board. What does this mean in operational terms? We suggest that annually the board issue, as part of the company's integrated report, a forward-looking "Statement of Significant Audiences and Materiality." This statement will inform management, providers of financial capital, and all other stakeholders of the audiences the board believes are important to the survival of the corporation. While management can play a significant role in preparing this statement, it is ultimately a statement of the board, somewhat analogous to the annual financial audit. While management is deeply involved in the audit and, in the United States, the chief executive officer and chief financial officer must personally sign off on the adequacy of a company's internal control systems, it is the Audit Committee of the board that selects and engages the audit firm and signs off on the scope of the audit. The difference is that the audit statement is ultimately a responsibility of the board—not management.[39]

Materiality for Integrated Reporting

Evidence shows that the investor audience has a significant latent appetite for integrated reporting. The Statement of Significant Audiences and Materiality, when combined with the new tools we outline in the next chapter, may be a vehicle that accelerates the adoption of integrated reporting by this user audience. According to a 2014 Ernst & Young survey on "Tomorrow's Investment Rules," institutional investors want a clearer view of what is material and want it directly from the company:

> Materiality is a key concept that emerged from this survey. Investors were more likely to value information which came directly from the company itself rather than from third-party sources. In addition, among those that never consider ESG information in their decision making process, the main reason for rejecting it was that they felt it was not material.[40]

When the board is very clear in its communication of what is material and what is not, and which audiences it feels are significant (and which are not), investors gain relevant guidance on how the board judges importance and its ability to exercise this judgment. Investors are looking for this guidance. The board's Statement of Significant Audiences and Materiality is a new venue through which the board can strengthen the social construction attribute of institutional symbolism. This symbolism, which makes clear what the company cares about and what it does not, is the foundation for the verity of the company's claims about its commitment to "sustainability." It is an important way in which the company avoids the charge of "greenwashing," but the company must also back up its claims about the audience and issues that are material and so included in their integrated report, with genuine resource commitments and stakeholder engagement, as discussed in the next chapter.

The board itself will determine the process for producing this statement using whatever tools and guidelines it chooses, while heeding the IIRC's guidance on concision in materiality. Selecting 10 audiences to include in the statement communicates more information than selecting 20, and selecting 5 audiences transmits more information than selecting 10. We suggest the following resources to aid the board in drafting its Statement of Significant Audiences and Materiality:

- The IIRC has established a *process* for determining materiality, which we have augmented as discussed above.
- SASB's rigorous, sector-specific, evidence-based standards are a good starting point for identifying ESG issues relevant to investors.
- GRI offers similar guidance regarding issues for stakeholders, and the board should determine which are material for the corporation itself.
- CDP provides the key performance indicators for reporting on climate, water, and forest issues that the board deems material.

In the previous chapter, we discussed more generally the way that the efforts of these four organizations are complementing each other in support of the integrated reporting movement. In the next chapter, we will discuss how the board's "Statement of Significant Audiences and Materiality" serves as the foundation for a management tool we call the "Sustainable Value Matrix."

References

[1]Loss, Louis. *Securities Regulation*. New York: Little, Brown and Company, 1961.

[2]"It is said that a fraudulent representation must be material to have that effect. But how are we to decide whether it is material or not? It must be by an appeal to ordinary experience to decide whether a belief that the fact was as represented would naturally have led to, or a contrary belief would naturally have prevented, the making of the contract." (Holmes, Oliver Wendell. "The common law." (1881) in Gutenberg Project version: [308] LECTURE IX.CONTRACT.- III. VOID AND VOIDABLE.) This is one of the first commercial law references to materiality. Later cases such as Basic Inc. v. Levinson, 485 U.S. 224, 108 S. Ct. 978, 99 L. Ed. 2d 194 (1988) and TSC Industries, Inc. v. Northway, Inc., 426 U.S. 438, 96 S. Ct. 2126, 48 L. Ed. 2d 757 (1976), as well as post-Securities Act regulations, arguably, stand on the shoulders of Holmes's legal construction of commercial materiality.

[3]" . . . a showing of a substantial likelihood that, under all the circumstances, the omitted fact would have assumed actual significance in the deliberations of the reasonable shareholder. Put another way, there must be a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the 'total mix' of the information made available." TSC Industries, Inc. v. Northway, Inc., 426 U.S. 438, 96 S. Ct. 2126, 48 L. Ed. 2d 757 (1976) at 449.

[4]The circularity of this [TSC v. Northway] definition leaves the question of what determines the "total mix" of information unanswered. Does it refer to all other material information except for the piece in question? If so, upon what basis was all this information judged to be material in the first place, since the "total mix" of information must be constructed one piece at a time? Was the first piece of information deemed material because it was important to a reasonable investor, and then all other information is judged in the 134 Materiality 3GC05 10/09/2014 8:13:49 Page 135 context of increasing amounts of information? Conceivably, whether a piece of information is material or not would be a function of how much other information is available. When little information is available, the relevance of an additional bit of information can be high. When a substantial amount of information is available, an additional piece may be less relevant. If the total mix of information also includes immaterial information, then the question arises regarding the basis on which the total mix is built.

[5]The phrase "entity-specific" is used in the Financial Accounting Standards Board definition of materiality. "Information is material if omitting it 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 or both of the items to which the information relates in the context of an individual entity's financial report. Consequently, the Board cannot specify a uniform quantitative threshold for materiality or predetermine what could be material in a particular situation." Financial Accounting Standards Board. Statement of Financial Accounting Concepts No. 8, p. 17, http://www.fasb.org/cs/BlobServer?blobkey=id&blobnocache=true&blobwhere=1175822892635&blobheader=application%2Fpdf&blobheadername2=Content-Length&blobheadername1=Contet-Disposition&blobheadervalue2=210323&blobheadervalue1=filename%3DConcepts_Statement_No_8.pdf&blobcol=urldata&blobtable=MungoBlobs, accessed May 2014. For another discussion on materiality for nonfinancial information see, Eccles, Robert G., Michael P. Krzus, and George Serafeim. "A Note on Materiality for Nonfinancial Information." Harvard Business School Note N9-314-033, November 2013.

[6]We would like to cite the work of Carla Edgley, Lecturer in Accounting and Finance Cardiff Business School, for her excellent compendium of sources on accounting materiality in her paper: Edgley, Carla. "A genealogy of accounting materiality." *Critical Perspectives on Accounting* (2013). All integrated reporting movement participants and materiality scholars will find this paper an excellent foundation for future research into the application of materiality beyond financial accounting into integrated reporting, as did we.

[7]Also, nonfinancial reporting materiality is inherently less historical and more forward-looking than financial materiality. In Solomon, Jill, and Warren Maroun. "Integrated reporting: the influence of King III on social, ethical and environmental reporting." (ACCA, 2012), p. 8: "In practice, the materiality of sustainability-related information is notoriously difficult to establish. Placing a financial value on materiality for financial risks is a complex process but establishing materiality and materiality thresholds for traditionally 'nonfinancial' risks, which are hard to quantify, is far more challenging if even possible. . . . 'The string of corporate collapses over the past decade has led many stakeholders to question the relevance and reliability of annual financial reports as a basis for making decisions about an organisation. Reports based largely on financial information do not provide sufficient insight to enable stakeholders to form a comprehensive picture of the organisation's performance and of its ability to create and sustain value, especially in the context of growing environmental, social and economic challenges. Sustainability reports have similarly suffered weaknesses, usually appearing disconnected from the organisation's financial reports, generally providing a backward-looking review of performance, and almost always failing to make the link between sustainability issues and the organisation's core strategy. For the most part, these reports have failed to address the lingering distrust among civil society of the intentions and practices of business. Stakeholders today want forward looking information that will enable them to more effectively assess the total economic value of an organisation' (Mervyn King's Foreword, IRCSA 2011:1)." "At a meeting of key sustainability reporting role players, held at St James Palace by Prince Charles in 2009 [author Krzus attending], Mervyn King shared the realisation that came of age: 'Corporate reporting as we've been doing it for the last decade is no longer fit for purpose. With the complexity of reporting, nine out of ten people do not understand it. What you need is concise international language so that the trustee of your pension fund can make an informed investment about your money that is invested in that company, that it's going to sustain value creation in the long return. You cannot tell that by looking at a balance sheet or profit and loss statement. In the nature of things that is historical information. You're trying to look into the future when looking at sustained value creation within the completely changed world in which we operate. Climate change, ecological overshoot and overusing the natural assets of the planet—all these things are happening around the world.'" "Interview Summary Report." Compiled by Jess Schulschenk in collaboration with the Albert Luthuli Centre for Responsible Leadership at the University of Pretoria. Published by Ernst & Young South Africa. August 2012. p. 23.

[8]New evidence indicates there may be significant differences in the meaning of materiality between countries. We entered "materiality" into the Google Correlate tool, and then subjectively selected the most relevant among the 30 most highly correlated search terms between January 2004 and April 2014. The most highly correlated, relevant terms for the USA were: income statement, balance sheet, sociocultural theory, and elasticity of demand, together having an approximate mean R2 of 0.92. Results for India, U.K., Canada, Australia, and New Zealand showed a significant diversity in meaning, both from the U.S. and between each other, along with a general, and apparently significant, decrease in correlation. This suggests a need for future research into national differences in the perceived meaning of materiality. Non-USA results follow (approximate mean R2 in parentheses). India (0.90): 136 ■Materiality 3GC05 10/09/2014 8:13:50 Page 137 accounting journal, positive words, account department, spending money, management roles. U.K. (0.85): subjective, definite, to analyse, discuss, a matrix, socially, normative. Canada (0.83): journal entry, the standard deviation, extrapolate, doubtful accounts, perceive, empathy. Australia (0.80): stakeholder analysis, behaviour change, critical appraisal, social learning theory, a firm. New Zealand (0.76): an organization, calculate standard deviation, an asset, the individual, a matrix.

[9]Searle, John R. The Construction of Social Reality. New York: Simon and Schuster, 1995.

[10]Badenhausen, Kurt. "Apple Dominates List of the World's Most Valuable Brands." *Forbes* online. November 6, 2013. Accessed online at http://www.forbes.com/sites/kurtbadenhausen/2013/11/06/apple-dominates-list-of-theworlds-most-valuable-brands/ on May 1, 2014.

[11]Loss continues: "Were any hard and fast rule to be laid down as to what constitutes fraud under the blue-sky law, the Oregon court has said, 'a certain class of gentleman of the J. Rufus Wallingford type . . . would lie awake nights endeavoring to conceive some devious and shadowy way of evading the law. It is more advisable to deal with each case as it arises." (Loss, "Securities Regulation."(1961), p. 1436.) "Common law deceit" used here as it refers to the broad body of case law and other governing prohibitions against lying, cheating or stealing in civil society, whereas "securities law" refers more specifically to prohibited deceptive practices as defined in the Securities Act of 1956, its successor Acts and implementing regulations, and to case law precedents related to this Act.

[12]Holmes, William. "Materiality – Through the looking glass." *Journal of Accountancy*,133, no. 2 (1972): 44-49.

[13]International Integrated Reporting Council. "Materiality background paper for <IR>," pp. 2–8. http://www.theiirc.org/wp-content/uploads/2013/03/IRBackground-Paper-Materiality.pdf

[14]In academic circles, the phrase "Westphalian Sovereignty" is sometimes summarized as "The religion of the prince is the religion of the place." Arguably, the source of the concept of "sovereignty," the Peace of Westphalia of 1648 was: "The end of the Thirty Years War brought with it the final end of the medieval Holy Roman Empire. Authority for choosing the religion of the political unit was given to the prince of that unit and not to the Hapsburg Emperor or the Pope. No longer could one pretend there was religious or political unity in Europe. Authority was dispersed to the various kings and princes, and the basis for the sovereign state was established." Russett, Bruce, Harvey Starr, and David Kinsella. *World Politics: The Menu for Choice*. Cengage Learning, 2005.

[15]We will refer to the direct audience of integrated reporting as "users."

[16]International Integrated Reporting Council. "The International <IR> Framework," p. 18. http://www.theiirc.org/wp-content/uploads/2013/12/13-12-08-THE-INTERNATIONAL-IRFRAMEWORK-2-1.pdf Notes • 137 3GC05 10/09/2014 8:13:50 Page 138

[17]Berle, Adolf Augustus, and Gardiner Coit Means. *The Modern Corporation and Private Property*. Transaction Publishers, 1991 (10th version, original published in 1933). pp. 69, 120–121, 250–251.

[18]"The International <IR> Framework," Guiding Principles 3.17, p. 18.

[19]Ibid., Guiding Principles 3.18, p. 18.

[20]The International Integrated Reporting Council. "Materiality: Background Paper for <IR>," p. 2, http://www.theiirc.org/wp-content/uploads/2013/03/IR-Background-Paper-Materiality.pdf, accessed March 2014.

[21]Ibid., p. 19.

[22]"The International <IR> Framework," p. 7.

[23]IIRC, Materiality: Background Paper for <IR>, p. 1.

[24]"'In the time to come this volume maybe proclaimed as the most important work bearing on American statecraft . . . and will mark a sharp turning point in fundamental, deep-thrusting thinking about the American State and American civilization.'" Few books receive reviews like this in the *New York Herald Tribune* [Charles Beard, "'Who Owns—and Runs—the Corporations'," February 19,1933, book review section], and still fewer that are academic research monographs. But so a book thatwas destined to establish a newfield of scholarship was greeted with its publication in 1932. 'This book will perhaps rank with Adam Smith's Wealth of Nations as the first detailed description in admirably clear terms of a new economics epoch'" [Frank, Jerome and Norman Meyers, 1933, Yale Law Review, 42, 989–1000]. Mayer, Colin. *Firm Commitment: Why the Corporation is Failing Us and How to Restore Trust in It*. Oxford University Press, 2013, pp. 71–72.

[25]Berle and Means. *The Modern Corporation and Private Property*.

[26]The ability to limit liability, through bankruptcy protection, is common to sole proprietors, closely held companies, and individuals, as well as corporations. A key difference is that the corporation's control group (officers and directors) are able to socialize the losses on others' capital investment, not their own capital investment.

[27]From American and English law, "the very existence of the corporation was conditioned on a grant from the state. This grant created the corporation and set it up as a separate legal person independent of any associates [investors and managers]," [also contemporarily termed "corporate personhood."] From this state granted personhood "privilege . . . flowed a limited liability of associates . . . a stockholder was not liable for any of the debts of the enterprise and he could thus embark a particular amount of capital in the corporate affairs without becoming responsible, beyond this amount, for the corporate debts." Berle and Means, *The Modern Corporation and Private Property*, pp. 120–121. Regarding the role of limited liability in attracting risk capital in Easterbrook, Frank H., and Daniel R. Fischel. "Limited liability and the corporation." U. Chi. L. Rev. 52 (1985): 89. p. 636, "Third, limited liability enables the transfer of securities on a trading market, ensuring liquidity. Absent limited liability, shares would be difficult to value because they would carry the potential of excess liabilities." The role of limited liability in attracting risk capital has also been shown mathematically in Merton, Robert C. "An Intertemporal Capital Asset Pricing Model," *Econometrica*, Vol. 41, No. 5 (Sep. 1973), which concludes on p. 885 that "An intertemporal model of the capital market has been developed which is consistent with both the expected utility maxim and the limited liability of assets [equities]."

[28]Also derivative of corporate personhood, corporations can exert "Control Through a Legal Device. In the effort to maintain control of a corporation without ownership of a majority of its stock, various legal devices have been developed. Of these, the most important among the very large companies is the device of 'pyramiding.' This involves the owning of a majority of the stock of one corporation which in turn holds a majority of the stock of another—a process which can be repeated a number of times. An interest equal to slightly more than a quarter or an eighth or a sixteenth or an even smaller proportion of the ultimate property to be controlled is by this method legally entrenched." Berle and Means, *The Modern Corporation*, p. 69.

[29]"The separation of ownership from management and control in the corporate system has performed this essential step in securing liquidity. It is the management and 'control' which is now wedded to the physical property. The owner has no direct personal relation to it and no responsibility toward it. The management is more or less permanent, directing the physical property which remains intact while the participation privileges of ownership are split into innumerable parts ["dispersed ownership"]-"shares of stock"-which glide from hand to hand [as a "token"], irresponsible and impersonal . . . Most striking of all, a liquid token acquires a value purely and simply because of its liquidity." Berle and Means, *The Modern Corporation,* pp. 250–251. As cited above, the separation of ownership from control combined with personhood-derived limited liability enables the free trading of shares and liquid market for these shares.

[30]Berle and Means, *The Modern Corporation*, p. 5.

[31]Stout, Lynn (*The Shareholder ValueMyth*, 2012) describes that the foundation of the "profit maximizing," thus stakeholder minimizing, corporate governance is the self-disproving view of social interaction symbolized by "Homo economicus": "Let us see how our friend Homo economicus stacks up against the list [of clinical sociopathic behaviors]. Lack of remorse (item 7)? Obviously; why would Homo economicus feel bad just because he hurt or misled another, if he advanced his own material welfare? Irresponsibility and reckless disregard for the safety of others (items 5 and 6)? Homo economicus feels responsible for, and cares about, no one but himself. Deceitfulness (item 2)? Homo economicus is happy to lie any time it serves his interests. Failure to conform to social norms with respect to lawful behaviors (item 1)? Whenever and wherever the police aren't around describes Homo economicus. Although Homo economicus is neither cranky nor impulsive—items 3 and 4—he has five of the seven characteristics on the list. Unburdened by pity or remorse, he will lie, cheat, steal, neglect duties, break promises—even murder—if a cold calculation of the likely consequences leads him to conclude that he will be better off. Like any sociopath, Homo economicus lacks a conscience." It is clear that most modern corporate board members are not Homo economicus, and it is within the norms of the modern corporate social construct to reciprocate back to society, beyond pure profit making. Stout, Lynn A. "Taking conscience seriously." *Moral Markets: The Critical Role of Values in the Economy.* Princeton University Press, Princeton (2007): 157–172.

[32]Specifically, Mayer advocates a two-tier form of board governance called a "trust firm," somewhat similar to the German Board model (Franks, Julian R. and Mayer, Colin, "Ownership and Control of German Corporations" (October 2001). *Review of Financial Studies*, Vol. 14, Issue 4, pp. 943–977, 2001.). Given that the trust firm is not (yet) the standard in the United States and other corporate domiciles, we feel that Mayer's "trust theory of the stratified Board" applies to today's current directors: ". . . the corporation is a rent extraction vehicle for the shortest term shareholders. The power of owners [controllers] with the shortest time horizon not only concentrates control and wealth amongst them and their agents, but also is the source of failure to account for the interest of any generation but their own. Competition may confer some benefits on their customers, but by focusing the horizon of the firm so closely on the near term, the wellbeing of all but the most immediate generation is disregarded. We should not therefore rely on competition to be the guardian of our offspring . . . [The corporation will have to turn to trustees who are the custodians of the firm's values] to restrain it from defaulting in the future. . . .Their presence changes the nature of the corporation from being a pure agency one, in which the directors act as agents of the shareholders, to a mixed trust arrangement in which the [board] acts in behalf of the designated stakeholders of the corporation." Mayer, *Firm Commitment*, pp. 240, 244–245. It is our belief that these stakeholders are the material and significant audiences that the firm defines and in its integrated reporting process.

[33]Zadek, Simon, andMiraMerme. "RedefiningMateriality."AccountAbility, http://www.accountability.org/images/content/0/8/085/Redefining%20Materiality%20-%20Full%20Report.pdf, accessed May 2014.

[34]Findings from behavioral economics, previously cited in this chapter, may have implications for how boards determine materiality, by including consideration of whether the information would be perceived as positive or negative as they make judgments on materiality and significance. This is a major conceptual change since none of the discussion above considers valence as a factor in determining materiality.

[35]"The Misleading Metaphor of Shareholder 'Ownership' . . . describes shareholders as 'owners' of corporations. As a legal matter, the claim that shareholders 'own' the corporation is obviously incorrect. Corporations are independent legal entities that own themselves; shareholders only own a security, called 'stock,' with very limited legal rights." [Footnote on p. 804: "This metaphor may have roots in the nineteenth century, when most corporations were closely held firms with only a single shareholder or a very small number of shareholders. In such firms, shareholders exercise far more control, and it may make more sense to think of them as owners."] "The Mythical Benefits of Shareholder Control." Stout, Lynn A., *Virginia Law Review*, Vol. 93, No. 3 (May, 2007), p. 804, http://www.jstor.org/stable/25050361.

[36]"In other words, once again beyond legal requirements, the interests of others, including human rights, derive from those of the corporation's shareholders. So the argument for shareholder value has been profoundly influential in shaping the laws and conventions that govern the conduct of our corporations. So elegant is the argument that I will employ it in coming to the exact opposite conclusion (pp. 31–32) . . . Shareholder value is an outcome not an objective. It should not drive corporate policy but be treated as a product of it. (p. 261)" Mayer, Colin. "*Firm Commitment: Why the Corporation is Failing Us and How to Restore Trust in It.*" (2013). Also see Stout, Lynn "*The Shareholder Value Myth: How Putting Shareholders First Harms Investors, Corporations, and the Public.*" (2012)

[37]Eccles, Robert G. and George Serafeim. "The Performance Frontier: Innovating for a sustainable strategy." *Harvard Business Review* 91, no. 5 (2013).

[38]"Corporate reporting serves another function, what can be termed the 'transformation function.' While the information function assumes no feedback from counterparties, the transformation function relaxes this assumption, allowing for engagement and activism from the counterparties. The counterparties receive and evaluate the information. Where they see opportunities to influence corporate behavior to their benefit, and potentially to the benefit of the corporation, they actively try to bring about change. This engagement, activism, and change process enables a company to transform. The transformation function does not assume that the information function is performed effectively. In many cases, counterparties engage and bring change under conditions of incomplete information. For example, NGOs like Global Reporting Initiative (GRI) and Transparency International (TI) engage with corporations to improve disclosure. Their engagement efforts are frequently exerted with incomplete, if any, information. It is natural to think, though, that counterparties will spend their efforts more productively if they are better informed." Eccles, Robert, and George Serafeim. "Corporate and Integrated Reporting: A Functional Perspective." Harvard Business School Working Paper, No. 14-094, April 2014.

[39]Sarbanes-Oxley Act of 2002, PL 107-204, 116 Stat 745, Section 301, Paragraph 2: "RESPONSIBILITIES RELATING TO REGISTERED PUBLIC ACCOUNTING FIRMS. —The audit committee of each issuer, in its capacity as a committee of the board of directors, shall be directly responsible for the appointment, compensation, and oversight of the work of any registered public accounting firm employed by that issuer (including resolution of disagreements between management and the auditor regarding financial reporting) for the purpose of preparing or issuing an audit report or related work, and each such registered public accounting firm shall report directly to the audit committee."

[40]E&Y. "Tomorrow's investment rules: a global survey." p. 2, http://www.ey.com/Publication/vwLUAssets/EY-Institutional-InvestorSurvey/$FILE/EYInstitutional-Investor-Survey.pdf, accessed May 2014.

CHAPTER 6: THE SUSTAINABLE VALUE MATRIX

In the previous chapter, we suggested that the board exercise its responsibility to determine integrated reporting materiality through an annual "Statement of Significant Audiences and Materiality." This Statement forms the basis for the idea of the "Sustainable Value Matrix" (SVM), a tool that expands on the concept of a "materiality matrix." Like the materiality matrix, the SVM can be used for purposes of external reporting, stakeholder engagement, and resource commitment. It goes above and beyond this, however, in that the SVM can also be used to drive innovation to reduce or even reverse the tradeoffs that often exist between financial and nonfinancial performance. In doing so, it pushes the boundary of the Performance Frontier that represents the typical tradeoffs between financial and nonfinancial performance.[1] When companies see that fostering innovation is one of its benefits, the SVM will become an accelerator for integrated reporting.

A Short History of the Materiality Matrix

While AccountAbility first articulated a formalized materiality determination process in their 2003 report, "Redefining Materiality,"[2] the materiality matrix emerged, like many management innovations, in practice. For determining material issues, AccountAbility recommended a five-part materiality test embedded in a transparent process of stakeholder engagement, subjected to external assurance—with both the process and results under the direct responsibility of the board.[3] BP, one of the first companies to turn this test into a materiality matrix, used it to select and prioritize issues to include in its 2004 sustainability report.[4] Ford and BT followed, putting materiality matrices in their sustainability reports for 2004/2005 and 2006, respectively.[5]

While both AccountAbility and Global Reporting Initiative (GRI) originally saw the materiality matrix as a tool primarily for sustainability reporting, the process has evolved in practice to include interdependencies with financial information. AccountAbility observed an emerging commonality, stating, "These (matrices) were variations on the familiar matrix plots used in risk analysis, but with scales representing societal and business significance."[6] GRI took it a step further by prescribing the following: "The threshold for defining material topics to report should be set to identify those opportunities and risks which are most important to stakeholders, the economy, environment, and society, or the reporting organization, and therefore merit particular focus in a sustainability report."[7] In practice, however, the process continued to evolve, and companies did not always adopt all of GRI's guidance. For example, while GRI recommends the X-axis as "Significance of Economic, Environmental, and Social Impacts" and the Y-axis as "Influence on Stakeholder Assessments and Decisions,"[8] many firms choose to define the X-axis as "importance to the company" or something closely related.[9]

Ten years after their invention, materiality matrices are starting to follow certain trends. As the clarity with which companies define "materiality" varies, companies tend to use the term interchangeably with "importance." While the tool appears in many variations, they all share a basic design. One axis, typically the X-axis, arrays the importance of different sustainability issues from the company's perspective, while the Y-axis does the same from "society's" or the "stakeholders'" perspective. The effort to make the latter determination typically involves some form of stakeholder engagement. Issues considered highly important to both the company and its stakeholders are deemed "material" and form the focus of the report.

As the materiality matrix is built on the notion of materiality, its use implies that the company using it knows what *not* to report on— that is, it implies a certain amount of discipline in its determination process. The company and its audience, both of which have limited bandwidth for how much information they can consider, must focus on what is important for their decision-making purposes. As a concept, materiality provides a discipline for dividing information into categories of "material" and "not material." Sustainability or integrated reporting is one use of the materiality matrix. Stakeholder engagement, resource commitment, and, through the evolution to the SVM discussed in the next section, innovation, are three others.

In the early days of the matrix, GRI, AccountAbility, and subsequent others viewed stakeholder engagement as part of the process for constructing the matrix—*engagement* *for construction*.[10] It is through stakeholder engagement that companies determine how important or material something is to a stakeholder. The company must also decide how important or material the issue is to itself, the importance of which is a function of the nature of the issue, the ability of stakeholders to mobilize resources in support of the issue, and the impact this can have on the company—positive or negative. Once constructed, the materiality matrix can then be a platform for broader *engagement in use* with the company's stakeholders. Through it, the company can set the context for specific engagements so that each stakeholder sees its issue from the company's holistic perspective. Engagement for construction and engagement for use are analytically distinct. Engagement for use can help refine the company's understanding of differences in stakeholder perceptions on particular topics and in their expectations about what the company should be doing, as well as to facilitate collaboration on finding solutions to address issues of contention.

The materiality matrix can also inform resource commitments on the part of both the company and its stakeholders. From the company's perspective, issues it deems material to itself and its stakeholders logically deserve more resources (e.g., time, dollars, top management attention, and degree of stakeholder engagement) from a risk and opportunity perspective than immaterial issues. They become a key part of the company's strategy. From the stakeholder's perspective, the matrix can inform whether it should invest more (e.g., if its issue is rated low) or less (e.g., if its issue is rated high) resources in engaging with the company and mobilizing others to influence its decisions. Potential employees could use it to decide whether to work for the company. Customers may use it as a factor informing whether or not to buy its products. Suppliers could give the firm priority in times of shortages from high demand.

While reporting and resource commitment are analytically separate, a clear relationship exists between resource commitment decisions and external reporting, and it is indicative of the transformation function of corporate reporting. A company is more likely to report on topics to which it is devoting substantial resources. For example, a company may choose not to report on material topic because it decides the litigation or competitive risk is too high. As noted in Chapter 4, while we are skeptical of this argument, it can be valid in certain circumstances.

Issues with the Matrix

As materiality matrices are an emerging tool, research on their construction and use is limited. Even so, this and our own analyses make clear that most companies give only the most cursory explanation for how their matrix is put together. Yet it is this explanation that makes the materiality matrix most useful for the company's audience. In 2011, Framework LLC published "The Materiality Bridge," which examines the extent to which companies use materiality analysis as a tool for reporting and strategy by evaluating companies on *CR Magazine*'s list of 100 Best Corporate Citizens for 2010 and 2011 for evidence of materiality discussion in their most recent sustainability report.[11] Of the 100 companies, 51 conducted a formal materiality process to identify and prioritize sustainability issues, but only 13 produced a visual representation of the results.[12] An analysis of 195 GRI-based reports from Brazilian companies in 2013 found that 98 published materiality information in their sustainability reports.[13] Eighty-three of them disclosed which topics they considered material and 60 used a materiality matrix. Forty-three companies published between 5 and 10 material topics, with another 28 publishing between 11 and 20. Neither study examined how the matrix was constructed or used.

A 2011 report from Fronesys[14] reviewed the matrices of 31 companies to offer recommendations for how this management tool can be improved.[15] The most salient of these include the need for companies to disclose the underlying processes and scoring mechanisms used to create the matrix, to increase the level of detail in how they assess the impact of issues, and to review the results against peers in order to avoid inexplicable anomalies. Although the report also covers variance in the axis labels and the range of constituencies along the stakeholder and company axes, it focuses mainly on the scoring of issues and how they compare across companies.[16] Two metrics are developed to analyze these issues. The first, "Issue Coherence Level (ICL)," measures how the same issues are scored by different companies.[17] The second, "Materiality Convergence," assesses the overlap between companies and stakeholders concerning the importance of a given issue.[18]

Fronesys's analysis assumes that there is enough underlying similarity in how materiality matrices are constructed that this kind of aggregate analysis, particularly the ICL, can be done—an assumption whose validity is undermined by significant discrepancies in matrix construction. As we will discuss, the following aspects are subject to variation: how the X- and Y-axes are defined (and even which is X and which is Y); whether there is only a "present" or also a "future trend" aspect to either axis; how issues are defined, identified, and ranked; the degree and nature of engagement for determining issues and their weightings; and, for the stakeholder axis, how various stakeholders are weighted to get to a single dimension of "stakeholders"—or even "society." Comparing matrices across companies is also directly contrary to our treatment of materiality in the previous chapter. What is material for a firm is entity specific and must be determined by that firm and ratified by its board of directors.

A comparison of two companies in the same industry, Ford and Daimler, illustrates the impact of these differences. Each has a fairly sophisticated approach to its materiality matrix. (Appendix 6A, "Comparing Ford and Daimler's Materiality Matrices," discusses each firm's matrix in some detail.) The two car companies use inverse definitions of each other's X- and Y-axes, and Daimler defines each simply in terms of "importance," implying the present. In contrast, Ford incorporates a future dimension into the company axis of "current and potential." It also uses yet another framing for the stakeholder axis, basing it not on magnitude but on acceleration ("increasing concern"). Important differences in the process and degree of explanation used to identify issues and their importance for both the company and stakeholders also exist. When the very definitions of each axis and the processes used to identify and rank issues differ, the resulting matrices will be different as well. This is certainly the case with Ford and Daimler.

While the companies' use of different issue descriptions and format for placing those issues in the matrix makes it harder to compare the two, distinctions can be made. For Daimler, customer satisfaction (in the top right-hand corner), (see Figure 6A.2) integrity and compliance, attractiveness as an employer, training and professional development, innovation and development, and business partner integrity management all rank very high. These or rough equivalents do not appear in Ford's High Impact, High Concern box. Ford is more concerned with public policy issues, water, sustainability of its supply chain, and the company's financial health. Not surprisingly, climate change issues rank high for both companies. Because of the entity-specific nature of materiality, we deduce that the differences between the issues identified in these two close competitors' materiality matrices is largely a function of differences in their definition of significant audiences.

The Current State of Materiality Matrices

To better understand how companies currently construct and use materiality matrices, we examined those of 91 companies (see Appendix 6B of the book for our methodology and the list of companies reviewed). We define a materiality matrix as a diagram having two axes, populated with named issues, where their location on the matrix (or scoring) is evident.[19] Based on this analysis, we examined current practice in terms of five aspects of materiality matrix construction and use: stakeholder identification and engagement, dimension definition and label, issue identification and description, issue scoring, and interactivity.

Stakeholder Identification and Engagement

We observed substantial variation in how stakeholder identification and engagement is done and the degree to which each is explained. Only 12% of our sample explains the identification process to any extent, yet 87% do so for the stakeholder engagement process (albeit with substantially varying degrees of detail).[20] In cases where it was possible to ascertain the number of stakeholder groups (63%), the average was 7.9. The most common stakeholder groups named were customers, communities, employees, suppliers, investors, media, government, and nongovernmental organizations (NGOs). Most companies name the high-level stakeholder groups, but few identify the specific stakeholders that comprise them. An exception, Volkswagen, provides an additional "Stakeholder dialogues" report as part of its 2012 sustainability report, which names the individual stakeholder, the stakeholder cluster, and the geographical context.[21] University of St. Gallen is part of the "Science" stakeholder group and the European Union geography, whereas the Federation of German Industries, a domestic geographical group, is part of the "Politics and Government Agencies" stakeholder group.

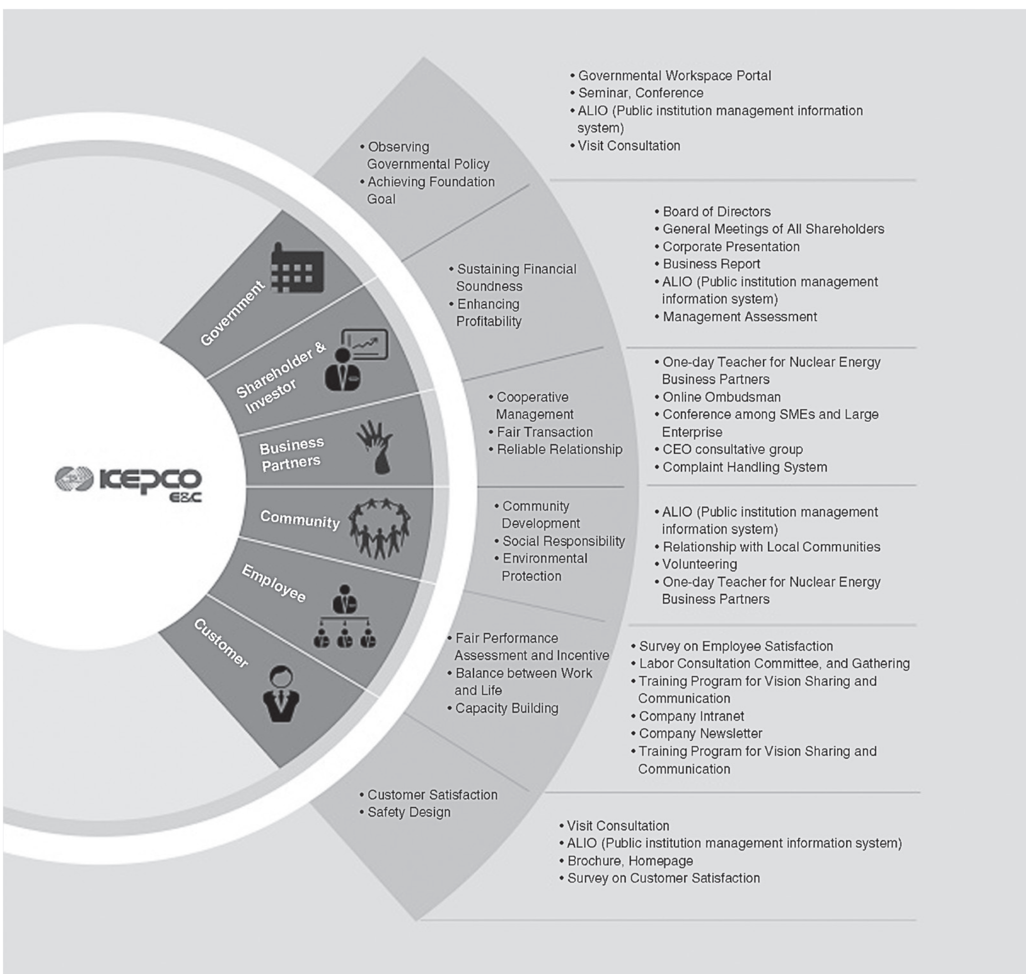
Stakeholder identification methods are limited and, across our sample, no consistent method was used. Dow established a Sustainable External Advisory Council, which "provides for open dialogue between Dow's business leaders and independent external thought leaders" and whose purpose is to help identify stakeholders who "can drive, block or shape the discourse around sustainability."[22] Carlsberg Group, on the other hand, uses GRI G3 guidelines to identify a prioritized list of eight external and internal stakeholder groups.[23]

While stakeholder engagement methods primarily include interviews, surveys, discussion groups, and media scanning, the depth with which companies pursue such engagement is uneven. Some merely conduct informal discussions or surveys. Others create thorough processes or consult with outside groups to devise methods for engagement. Staples Australia, for example, sent out a questionnaire that was "completed by over 400 stakeholders including associates, customers, suppliers, sustainability professionals and community stakeholders," asking them "which sustainability issues were the most important for us to address."[24] Daiwa House, Japan's largest homebuilder, disaggregated its six stakeholder groups and ordered the priority of the top five issues for each group.[25] Although Daiwa House did not explain the process of aggregating the stakeholder priorities in creating the matrix, its disaggregation allows the viewer to compare the level of issue importance across groups—a level of transparency rarely seen. Kepco, the largest electric utility in South Korea, provides a chart showing its different stakeholder groups, its responsibility to these groups, and the channels it uses to engage with them (Figure 6.1).[26]

Figure 6.1

Stakeholder Engagement at Kepco

Source: Kepco. Kepco 2012 Sustainability Report, http://www.kepco-enc.com/webzine_business-kopec/sr_2012_e.pdf, p. 20, accessed May 2014.



Issue Identification and Description

Both the number of material issues and their descriptions varied immensely between companies. The average number of issues included in the matrices we reviewed was 23, with a range from 7 to 69. Companies used different formats such as color, symbols, size of dot, and arrows when presenting issues in the matrix. Symbols or colors were used to denote certain themes, mostly along the environmental, social, and governance dimensions.[27] For example, Thomson Reuters uses different symbols for the categories Community, Workplace, Environment, and Marketplace, whereas Enel uses three different colors for the categories "Business and governance," "Environmental management," and "Social."[28] Another 5.5% of the sample varied the size of the issue dot, which most often represented the degree of control the company had over the issue.[29] Finally, 4.4% of matrices included an arrow either in place of the dot or next to the dot to show how the issue's importance had increased or decreased in the previous years or how it was predicted to change in the future. For example, UBS uses up or down arrows to signify whether an issue is likely to increase or decrease in relevance to UBS stakeholders and significance to UBS's performance.[30]

Dimension Definitions and Labels

Most companies (88%) use the X-axis for the company dimension and the Y-axis for the society or stakeholder dimension. The remaining 12% simply reversed them. Most companies also adhere closely to GRI's recommendation of labeling the company axis as "Significance to the company/organization" and the society or stakeholder as "Significance to stakeholders,"[31] but very few explain the meaning of "significance" on either axis. For the company dimension, significance is typically defined in terms of impact on strategy, financial performance, and sometimes reputation. The Norwegian petroleum company Statoil defines the company dimension clearly, saying, "The impact on Statoil was assessed based on factors such as potential financial impact, reputational impact, environmental and social impact, corporate strategy and key operations and industry comparison and standardisation."[32]

Because the stakeholder dimension contains diverse stakeholders with different interests, it is even harder to define, let alone know, what it means in the aggregate. As with the company dimension, its meaning depends upon what data are used and how different data are aggregated. One of the better explanations for this dimension comes from the Danish food producer Danisco:"In our matrix we rank the issues not only based on the number of stakeholders that raise the issue, but also the level of interest or concern that any one stakeholder group may have. Items that are of high concern to our most important stakeholders, customers, and employees may rank high on the interest continuum."[33]

Although far less frequent, some axis definitions add other elements to "significance" or "importance." The most common additional element, although relatively atypical (found in only 12% of the population studied) and with substantial variation itself, is to include a component of time on the company axis. For example, Nestlé labels its X-axis "Current or increasing impact on Nestlé," while Ball Corporation's is "Current or potential impact on Ball."[34] Clearly, "increasing" and "potential" are different ideas; the first is already happening and the second is something that might happen. In either case, no explanation is given regarding how the present and future were weighted in evaluating an issue from the company's perspective. Furthermore, the time dimension is rarely defined or quantified. Ford is one exception: "Though we consider possible impacts and importance out to 10 years, three to five years is the timeframe in which Ford can make meaningful changes in our own actions based on our internal planning and production cycles."[35] Still, the company did not explain its weightings between present and future.

Issue Scoring

What type of data and methodology are used to score the issues? The more information provided on how issues are scored, including both the type of data and the methodology used to collect and aggregate it, the more useful the matrix becomes for the reader. Without this information, the reader only learns the company's point of view about the relative significance of each issue. While useful, it is equally, if not more, useful to understand *how* the company came to this point of view. As with the above aspects of constructing a materiality matrix, most companies provide little to no explanation about how issue scoring is done, with only 8% providing even a modicum of explanation. Generally, little to nothing is said about the algorithms used to score an issue.

Regardless of the algorithms used, companies vary in terms of the precision with which issues are placed in the matrix. Three basic methods were observed: (1) numerical labels on the axis (e.g., 1 through 5), (2) word labels (e.g., high, medium, and low), and (3) no labels (with implied low to high).[36] For each, companies create cells in the matrix or used "isobars" to represent materiality "boundaries."

Still, some companies clearly articulate their scoring method and provide qualitative interpretation. UBS, with axis units of 1–100, breaks down the scoring into five different areas.[37] Royal DSM uses a numerical scoring system along the axis and segments its matrix into four quadrants with different descriptions.[38] However, no companies in our sample explicitly state how their stakeholders are weighted or how their views are aggregated on the Y-axis.[39]

Interactivity

Finally, we examined creative ways in which the company was leveraging online tools, a topic discussed more generally in Chapter 8. On their websites, companies can address some of the limitations we observed in the above aspects by making their materiality matrix more interactive. Some have an interactive materiality matrix that provides the user with an additional layer of data. These typically appear on the company's website with "clickable" issue points that direct the user to a page that explains the issue in more depth and details the company's response. Clicking on the issue "resource scarcity" on the German chemical company BASF's materiality matrix, for example, takes the user to a page addressing BASF's different strategies for resource efficiency and renewable raw materials.[40] Other interactive matrices allow the user to change the perspective along one or multiple dimensions. Cisco, for example, has an interactive materiality matrix that allows the user to populate the matrix with only one issue category (Society, Environment, or Governance) or based on the level of control the company had over the issue (High, Moderate, or Low).[41] Campbell's Soup, on the other hand, allows the user to populate the matrix with one of four different issue categories.[42]

Uses of the Matrix

As with the construction and presentation of the matrix itself, in our study of 91 companies we found substantial variation in the relative emphasis companies accord to reporting, stakeholder engagement, and resource commitment, and the degree to which the company explains how it uses the matrix for these purposes. In most cases, its main implied use is for the sustainability or integrated report, yet very few companies clearly link the entries in the matrix to the content of the report. Exceptions include Samsung Life Insurance and GS Engineering and Construction, which provide page numbers for the material issues prioritized in the matrix.[43] Similarly, companies rarely discuss engagement in use and, as described above, we noted tremendous variation in the amount of disclosure about engagement for construction. From an audience perspective, the most opaque use of the matrix by companies is for resource commitment decisions. One exception is Mountain Co-op's explanation of its materiality analysis: "At MEC, we use materiality analysis in two ways: to inform sustainability strategy by highlighting issues that matter to stakeholders and the organization, and to inform reporting to ensure transparent communication about material issues. By understanding what is material to our organization and our stakeholders, we can prioritize our strategy and our report accordingly."[44] This simple statement makes clear that the company believes more emphasis should be put on reporting about issues that have significant resource commitments.

From the Materiality Matrix to the Sustainable Value Matrix

We applaud the work companies and NGOs have done to develop the idea of a materiality matrix. It is an important contribution to helping companies develop sustainable strategies and work with their stakeholders to develop a sustainable society. However, we believe it is time to take the logical next step of improving the rigor by which this matrix is created and used. Evidence of the need for this is our analysis of the 91 matrices discussed above. We propose that it is time to shift from the "Materiality Matrix" to the "Sustainable Value Matrix (SVM)."

"Sustainable Value Matrix" is more than a mere change in terminology. Our rationale for why a "Sustainable Value Matrix" is a more appropriate term than "Materiality

Matrix " is grounded in the discussion of the previous chapter, particularly the idea that materiality only has meaning from the perspective of the entity that determines it. A firm cannot define the materiality of others—be they companies or other stakeholders. Thus, only one dimension, conventionally the X-axis, is "about" materiality, and we call this axis "Materiality to the Firm."

A sustainable strategy is one which enables a company to create value for its shareholders over the long term while contributing to a sustainable society. This involves recognizing what is *material* to investors from the company's perspective and, in its view, what is *significant* to society. Those stakeholders that are not significant and the issues they represent are absent from the company's "Statement of Significant Audiences and Materiality." The SVM and its supporting disclosures can be a visual representation of this Statement.

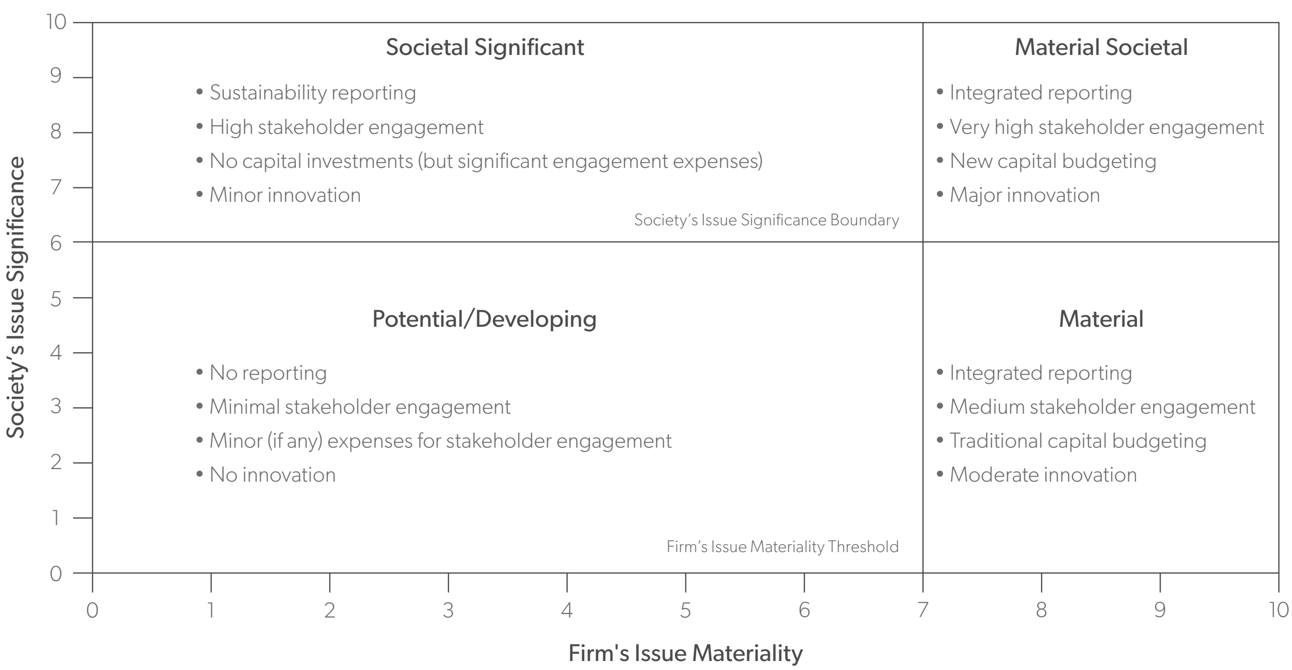
We call the stakeholder dimension, typically the Y-axis, "Society's Issue Significance." It is *not* "materiality to society." While specific stakeholders have their own view of materiality, society as a whole does not. To recall the "cardinality" concept from the previous chapter: between the firm and society, there exists a "one-to-many" relationship, not the one-to-one entity relationship required for materiality. Many is not an entity. The Y-axis is the firm's representation of the aggregated views of its chosen stakeholders as reified in the concept of "society." Through a process it designs, the firm determines the relevant (and irrelevant) stakeholders,[45] how it will engage with them to get their views, other methodologies for gathering data, and the algorithm for aggregating these data into one measure on this dimension for this issue. In truth, the most accurate label for the Y-axis is "The Firm's Perception of the Significance of Its Chosen Stakeholders' Interests Aggregated as 'Society.'"

However, we choose to shorten this mouthful to "Society's Issue Significance." This view is influenced by the firm's own perception of its role in society because this determines the stakeholders it chooses to engage with and the weightings it gives in aggregating their views. Thus it is not and *should not* be construed as an "objective" or "accurate" view of the relative importance society attaches to issues.[46] It is about how important the company thinks issues are to society from its perspective, as grounded in the board's "Statement of Significant Audiences and Materiality," which identifies the relevant stakeholders and their relative importance.[47]

Highlighting the binary nature of materiality, the SVM is a literal matrix with defined cells, not necessarily of equal size, and thresholds (Figure 6.2).

Figure 6.2

The Sustainable Value Matrix



(The inset "A Hypothetical SVM for a Pharmaceutical Company" provides a hypothetical example of the SVM for a pharmaceutical company.) Each cell has reporting, stakeholder engagement, resource commitment, and innovation attributes. The company has the responsibility and, consequently, must have the courage to be clear about which issues it considers to rise above the materiality and significance thresholds and which do not. The firm, as represented by its board, must first decide the "Firm Issue Materiality Threshold," which identifies the threshold for material issues, and then the "Society's Issue Significance Boundary," which identifies the boundary for stakeholder issue significance. Where to place each line is completely at the firm's discretion. It simply must do so and be clear about the methodology it uses to make this decision, which starts with the "Statement of Significant Audiences and Materiality."

The Four Cells

The "Material Societal Issues" cell contains the issues that the company has determined are most relevant for the stakeholders it considers most significant given the corporation's objectives. All of these issues should be the responsibility of line management and should be included in the company's integrated report. They also require high levels of stakeholder engagement and resource commitment. Often issues in which there is a tradeoff between meeting the objectives of providers of financial capital and stakeholders, the issues in this cell are those with the greatest need for major innovation. Specifically, a type of "open innovation" through stakeholder engagement can allow a company to simultaneously improve financial and nonfinancial performance. These major innovations are typically high risk, requiring substantial capital commitments, and long time frames before they pay off.[48] In its integrated report, the company should explain its efforts and expectations for stakeholder engagement, resource commitment, and innovation.

Because they are highly important to sustainable value creation—especially for the audience of shareholders—issues in the "Material Issues" cell should also be included in the company's integrated report. While the company deems them less significant for stakeholders, a medium degree of engagement is appropriate because of the opportunities they provide for moderate innovation regarding sustainability issues.[49] In general, resource commitments will be less than in the above cell, but they can still be significant.

In contrast, the issues in the "Societal Significant Issues" cell are not material for sustainable value creation. Still, a company cannot completely ignore civil society even if it does not deem these issues, at least for now, critical to its strategy. As such, these issues require a modest resource commitment and offer only minor opportunities for innovation for sustainability. Because the company has acknowledged the importance of these issues, however, it should practice high levels of stakeholder engagement and transparent sustainability reporting about them outside of its integrated report. These issues can be managed through a "sustainability program" being led by the "sustainability group," perhaps under the direction of a Chief Sustainability Officer. They are not the responsibility of line management.

The final cell, labeled "Potential/Developing Issues," includes topics that can and should be largely ignored—at least for now. There is no need to report on them and it would be a mistake to do so, as this will only create clutter and distract the audience from the issues the company deems are significant. Consequently, little effort should be made in stakeholder engagement and minimal resources should be committed to these issues. Innovation is largely irrelevant in this cell. Even if opportunities exist, the resources are best committed elsewhere.

The transformative power of the SVM is a product of the exercise of governance judgment, evidenced by clearly displaying this binary treatment of materiality and significance, drawing clear lines to inform reporting, stakeholder engagement, resource commitment decisions, and opportunities for innovation. By being clear on what it sees as material and significant and what is not, the company establishes credibility and legitimacy. It avoids charges of "greenwashing" that can legitimately be made when a company says, "we care about everything and everybody."

Yes, such demarcations can lead to conflict. Stakeholders unhappy with the placement of their issue(s) in a company's SVM may choose to try to influence them to change it. That is their right. It is also the company's obligation to engage—

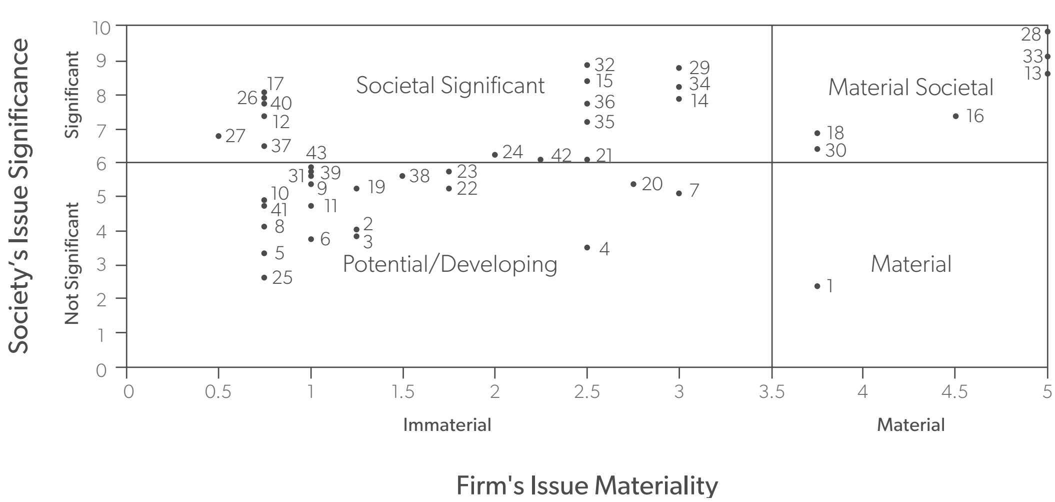
although not necessarily agree—with them. The SVM is the basis for a more meaningful conversation between a company and all of its stakeholders within the now-clarified framework of how the corporation sees its role in society. While the general quality of integrated reports being produced today is fair, however, there is substantial room for improvement in how companies communicate their views on materiality—an issue addressed in the next chapter on the quality of integrated reporting.

A Hypothetical SVM for a Pharmaceutical Company

Although clearly no company has produced an SVM, we can make this idea more concrete with an "as if" example for a hypothetical pharmaceutical company example (Figure 6.3). We say "as if" since this example violates the fundamental tenet of the SVM, which is that it is an entity-specific social construction. However, using data from other sources, we can illustrate what such a matrix might look like for a pharmaceutical company, with a corresponding "as if" analysis recognizing that it is not from an actual company's perspective. The 43 issues in this SVM are taken directly from the Sustainability Accounting Standards Board (SASB)[50] (Table 6.1). We used their Materiality MapTM to determine the value on the X-axis, setting the "Firm's Issue Materiality Threshold" line at SASB's cutoff point for materiality. The values on the Y-axis are the averages of a survey of eight partners at the Boston Consulting Group who are experts on the pharmaceutical industry, as a simulation of the stakeholder engagement process.[51] In keeping with the spirit of exercising discipline in drawing the "Society's Issue Significance Boundary," we set it at 6.0, on a 1–10 scale.

Figure 6.3

A Hypothetical Sustainable Value Matrix for a Pharmaceutical Company



Of the list of 43 issues (Figure 6.3), only 6 appear in the "Material Societal Issues" cell and they are either in the "Social Capital" or "Business Model and Innovation" SASB issue categories. This makes intuitive sense for a pharmaceutical company. Climate change risk (issue number "1") is the only entry in the "Material Issues" cell. This may suggest that the company perceives this issue as more significant than it believes stakeholders do. Or, it could be that this hypothetical firm is heavily weighting new Securities and Exchange Commission and European Union regulatory guidance on climate change when determining materiality. The "Societal Significant" cell is heavily populated by "Leadership and Governance" topics regarding the company's products, along with a significant number of "Social Capital" and "Business Model and Innovation" issues. Except for climate change risks, all issues in the "Environment" category appear in the "Potential/Developing Issues" cell, consistent with the perceived relatively low impact a pharmaceutical company has on the environment. Finally, while no Human Capital category issues were considered material by the firm, the firm perceives that its stakeholders think that "employee health and safety" as well as "retention and recruitment" are significant ("Societal Significant" cell), and that the remaining five other human capital issues are not significant to stakeholders.

Table 6.1

SASB Pharmaceutical Issues

Number	Issue	Category	Cell
1	Climate change risks	Environment	Material
2	Environmental accidents and remediation	Environment	Potential/Developing
3	Water use and management	Environment	Potential/Developing
4	Energy management	Environment	Potential/Developing
5	Fuel management and transportation	Environment	Potential/Developing
6	GHG emissions and air pollution	Environment	Potential/Developing
7	Waste management and effluents	Environment	Potential/Developing
8	Biodiversity impacts	Environment	Potential/Developing
9	Communications and engagement	Social Capital	Potential/Developing
10	Community development	Social Capital	Potential/Developing
11	Impact from facilities	Social Capital	Potential/Developing
12	Customer satisfaction	Social Capital	Societal Significant
13	Customer health and safety	Social Capital	Material Societal

Table 6.1 Continued

SASB Pharmaceutical Issues

Number	Issue	Category	Cell
14	Disclosure and labeling	Social Capital	Societal Significant
15	Marketing and ethical advertising	Social Capital	Societal Significant
16	Access to services	Social Capital	Material Societal
17	Customer privacy	Social Capital	Societal Significant
18	New markets	Social Capital	Material Societal
19	Diversity and equal opportunity	Human Capital	Potential/Developing
20	Training and development	Human Capital	Potential/Developing
21	Recruitment and retention	Human Capital	Societal Significant
22	Compensation and benefits	Human Capital	Potential/Developing
23	Labor relations and union practices	Human Capital	Potential/Developing
24	Employee health, safety, and wellness	Human Capital	Societal
25	Child and forced labor	Human Capital	Potential/Developing
26	Long-term viability of core business	Business Model and Innovation	Societal Significant
27	Accounting for externalities	Business Model and Innovation	Societal Significant
28	Research, development, and innovation	Business Model and Innovation	Material Societal
29	Product societal value	Business Model and Innovation	Societal Significant
30	Product life cycle use impact	Business Model and Innovation	Material Societal
31	Packaging	Business Model and Innovation	Potential/Developing
32	Product pricing	Business Model and Innovation	Societal Significant
33	Product quality and safety	Business Model and Innovation	Material Societal
34	Regulatory and legal challenges	Leadership and Governance	Societal Significant

Table 6.1 Continued

SASB Pharmaceutical Issues

Number	Issue	Category	Cell
35	Policies, standards, codes of conduct	Leadership and Governance	Societal Significant
36	Business ethics and competitive behavior	Leadership and Governance	Societal Significant
37	Shareholder engagement	Leadership and Governance	Societal Significant
38	Board structure and independence	Leadership and Governance	Potential/Developing
39	Executive compensation	Leadership and Governance	Potential/Developing
40	Lobbying and political contributions	Leadership and Governance	Societal Significant
41	Raw material demand	Leadership and Governance	Potential/Developing
42	Supply chain standards and selection	Leadership and Governance	Societal Significant
43	Supply chain engagement and transparency	Leadership and Governance	Potential/Developing

References

[1]Eccles, Robert G. and George Serafeim. "The Performance Frontier: Innovating for a sustainable strategy." *Harvard Business Review* 91, no. 5 (May 2013): 50–60.

[2]Fronesys, "Materiality Determination: Analysing who, what and how,"October 2011, p. 3. This report summarizes the results of detailed analyses of the materiality matrices of 31 companies. A full version of the report is available for purchase from Fronesys.

[3]The report recommended a five-part materiality test: (1) Direct, short-term financial impacts, (2) Policy-based performance, (3) Business peer-based norms, (4) Stakeholder behavior and concerns, and (5) Societal norms (regulator and nonregulatory). AccountAbility. Research, Organizational Accountability, http://www.accountability.org/images/content/0/8/085/Redefining%252520Materiality%252520-%252520Full%252520Report.pdf p. 4,accessed May 2014.

[4]BP, "Making the Right Choices," *Sustainability Report 2004*, http://www.bp.com/liveassets/bp_internet/globalbp/STAGING/global_assets/downloads/S/Sustainability_Report_2004.pdf, accessed May 2014.

[5]Ford, "Our Route to Sustainability," *Sustainability Report 2004/5*. http://corporate.ford.com/doc/2004-05_sustainability_report.pdf, accessed May 2014. BT, "Social and Environmental Report," 2006. http://www.btplc.com/betterfuture/betterbusiness/betterfuturereport/pdf/2006/2006Environmntalreport.pdf, accessed May 2014.

[6]AccountAbility. "The Materiality Report," http://www.accountability.org/images/content/0/8/088/The%20Materiality%20Report.pdf, accessed May 2014, p. 20. The report analyzed the approaches and experiences of Anglo American, Ford Motor Company, The Gap Inc., Hydro Tasmania, Nike, Novozymes, BP Plc, BT Group Plc, and Telefonica. "The Materiality Report," p. 7. For an example of a risk analysis matrix, see PricewaterhouseCoopers, "A practical guide to risk assessment," December 2008, p. 28, Figure 5. Risk analysis can be defined as "a systematic process for identifying and evaluating events (i.e., possible risks and opportunities) that could affect the achievement of objectives, positively or negatively. Such events can be identified in the external environment (e.g., economic trends, regulatory landscape, and competition) and within an organization's internal environment (e.g., people, process, and infrastructure). When these events intersect with an organization's objectives—or can be predicted to do so—they become risks." p. 5.

[7]Global Reporting Initiative. Reporting, G3.1 and G3 Guidelines, Guidelines Online, https://www.globalreporting.org/resourcelibrary/GRI-Technical-Protocol.pdf, accessed May 2014. GRI calls the material issue selection process the "prioritization step": "The methodology applied in the Prioritization step varies according to the individual organization. Specific circumstances such as business model, sector, geographic, cultural and legal operating context, ownership structure, and size and nature of impacts affect how an organization prioritizes the topics and Aspects it covers in its sustainability report. What is important, given this variation, is the need for an organization to develop a rational process, the ability to document it, and the ability to replicate the process in subsequent reporting cycles."

[8]Ibid.

[9]Mark McElroy, the founder and executive director of the Center for Sustainable Organizations, critiqued this formulation of the matrix, arguing that it "amounts to a perversion of the idea of materiality in sustainability reporting, because it essentially cuts out consideration of what are arguably *the most* material issues: the broad social, economic and environmental impacts of an organization, regardless of how they relate to a particular business plan or strategy." "Are Materiality Matrices Really Material?" http://www.sustainablebrands.com/news_and_views/articles/are-materiality-matricesreally-material, accessed December 2013. In the Technical Protocol forGRI3.1, released in the 2011, the X-axis was changed to "significance to the organization." https://www.globalreporting.org/resourcelibrary/GRITechnical-Protocol.pdf, accessed May 2014.

[10]Framework LLC, "State of Integrated Reporting," 2013, p. 5 and Fronesys,"Materiality Futures," 2011, p. 7.

[11]Framework LLC, "The Materiality Bridge," 2011.

[12]The visual representation could be a matrix, chart, or diagram. Framework LLC, "The Materiality Bridge," 2011. p. 2.

[13]Report Sustentabilidade, "Materiality in Brazil: How companies identify relevant topics," 2013. http://www.reportsustentabilidade.com.br/researchmateriality-in-brazil.pdf, accessed May 2014.

[14]Fronesys describes itself as a Digital Economy advisory service. Their focus is on research, consulting, and training in four core areas, Innovation and entrepreneurship, Sustainability, Big Data and Smart Cities and Digital skills. Fronesys. About, http://www.fronesys.com/blog/about.html, accessed May 2014.

[15]Fronesys, "Materiality Futures," 2011, p. 8. The companies were selected for inclusion using Corporateregister.com, Framework: CR (now known as Framework LLC) materiality analysis and Internet search engines. Each company selected had a published materiality matrix with at least three degrees of granularity per axis and with individual issues identified and positioned in the matrix. The 31 companies identified each had a published materiality matrix with at least three levels of granularity per axis and with individual issues identified and positioned within the matrix.

[16]NGOs were the most common constituency for the stakeholder axis, whereas Management/experts were the most common constituency for the company axis. Fronesys,"Materiality Futures," 2011. pp. 10–11.

[17]"This is calculated by averaging the distance of all points on an issue chart from the average materiality point. Using this approach, if all companies have agreed on the position an issue takes along the company axis, and their stakeholders have similarly agreed on the position the issue takes along the stakeholder axis, then the Issue Coherence Level (ICL) would be zero. On the other hand a totally random distribution would result in an ICL of about 4."Fronesys,"Materiality Futures," 2011. p. 14. The study finds that "economic stability/recession" has the greatest coherence level, while "biodiversity" has the least.

[18]"If the company and its stakeholders agreed on the materiality ranking for every issue considered then there would be perfect convergence and all the issue points would sit on an x=y straight line. To measure materiality convergence, Fronesys proposes the statistical parameter known as the average residual (R2), as defined in figure 8, where R2 is, in effect, a measure of divergence form the x=y line." Fronesys, "Materiality Futures," 2011. p. 16.

[19]For instance, China Mobile has a materiality matrix which was excluded because it does not properly label issue location. It provides a matrix populated with unlabeled dots, with a list of material issues given below the matrix. However, none of these issues are scored and it is not possible to correlate them with the dots on the matrix. China Mobile Limited. *2012 Sustainability Report*, http://www.chinamobileltd.com/en/ir/reports/ar2012/sd2012.pdf, p.6, accessed May 2014.

[20]The company's reporting and website were evaluated for explanations of the stakeholder identification process and stakeholder engagement process.

[21]Volkswagen. *Sustainability Report 2012*, http://sustainability-report2012.volkswagenag.com/fileadmin/download/11_Stakeholder_Dialoge_e.pdf, accessed May 2014.

[22]Dow. 2012 *Annual Sustainability Report*, http://www.dow.com/sustainability/pdf/35865-2012%20Sustainability%20Report.pdf, pp. 41, 43, accessed May 2014. See also for more background on the SEAC: Eccles, Robert G.,George Serafeim, and Shelley Xin Li. "Dow Chemical: Innovating for Sustainability." Harvard Business School Case 112-064, January 2012. (Revised June 2013.)

[23]Carlsberg Group. CSR, Materiality Analysis, http://www.carlsberggroup.com/csr/ReportingonProgress/overview/Materialityanalysis/Pages/Materiality Matrix.aspx, accessed May 2014.

[24]Staples. Staples Soul, Reporting Approach, Materiality Analysis, http://www.staples.com/sbd/cre/marketing/australia_soul/staples-soul-reporting-approach.html#id_ra2, accessed May 2014.

[25]Daiwa. *Daiwa House Group Annual Report 2012*, http://www.daiwahouse.com/english/groupbrand/ar/pdf/daiwahouseAR2012E_2.pdf, p. 145, accessed May 2014.

[26]Kepco. *Kepco 2012 Sustainability Report*, http://www.kepco-enc.com/webzine_business-kopec/sr_2012_e.pdf, p. 20, accessed May 2014.

[27]Enel. Sustainability, Responsibility, Materiality Matrix, http://www.enel.com/en-GB/sustainability/our_responsibility/materiality_matrix/, accessed May 2014.

[28]Thomson Reuters. The Knowledge Effect, Materiality Matrix, http://blog.thomsonreuters.com/index.php/materiality-matrix/, accessed May 2014.

[29]Other uses included "Global Sustainability Significance." Mountain Equipment Co-op. MEC's 2013 Materiality Matrix, http://www.mec.ca/media/Images/pdf/accountability/MEC_2013_materiality_matrix_v2_m56577569831501444.pdf, accessed May 2014 and "Pressure from stakeholders." Braskem. Annual Report 2012, http://rao2012.braskem.com/media/pdf/RAB12_PDF_completo_in.pdf, accessed May 2014.

[30]UBS. About us, Corporate responsibility, Our approach, Materiality assessment, https://www.ubs.com/global/en/about_ubs/corporate_responsibility/commitment_strategy/materiality-matrix.html, accessed May 2014.

[31]The three most common labels on the X-axis were "relevance to" (26%),"impact on"(23%), and "importance to" (20%). The three most common labels on the Y-axis were "importance to" (34%), "relevance to" (16%), and "significance to" (9%).

[32]Statoil. *Annual Report 2012*, Sustainability Report, http://www.statoil.com/AnnualReport2012/en/Download%20Center%20Files/01%20Key%20downloads/20%20Sustainability%20Report%202012/Sustainability.pdf, p. 51, accessed May 2014.

[33]Danisco. *2010/2011 Sustainability Report*, http://cdn.danisco.com/uploads/tx_tcdaniscofiles/danisco_sustanability_report_2010-11_04.pdf, p. 20, accessed May 2014.

[34]Nestlé. Creating Shared Value, What is CSV, Materiality, http://www.nestle.com/csv/what-is-csv/materiality, accessed May 2014. Ball Corp. Sustainability, Our Approach, Priorities, https://www.ball.com/materiality/, accessed May2014.

[35]Ford, Sustainability 2013/2013, http://corporate.ford.com/microsites/sustainability-report-2012-13/blueprint-materiality-analysis.

[36] Numerical (14.3%), Labels (60.4%), No labels (25.3%).

[37] UBS. E: 0–19. Relevant to a limited number of stakeholders and no current impact on UBS performance. D: 20–39. Relevant to a group of stakeholders and minor current impact on UBS performance. C: 40–59. Relevant to groups of stakeholders and limited current impact on UBS performance. B: 60–79. Relevant to most (including all key) stakeholder groups and relative current impact on UBS performance. A: 80–100. Relevant to all stakeholders and direct current impact on UBS performance.

[38] DSM. *Royal DSM Integrated Annual Report 2012*. http://annualreport2012.dsm.com/downloads/DSM-Annual-Report-2012.pdf, accessed May 2014. The upper right quadrant is "Prioritize," the upper left is "Actively monitor and communicate," the bottom left is "low priority," and the bottom right is "actively manage."

[39] Although Daimler acknowledges the complexity of aggregating stakeholders' views in producing the Y-axis in its 2012/2013 materiality matrix, it only provides a one-sentence explanation for howthis as done: "In addition, weighted averages were calculated for what in some cases were divergent interests among individual stakeholder groups. These averages (weighted) were incorporated into the matrix in an aggregate form." Daimler. *Sustainability Report 2012*, About this report, Materiality matrix, http://sustainability.daimler.com/reports/daimler/annual/2013/nb/English/7520/materiality-matrix.html, accessed December 2013. Deloitte recommends using decision science to calculate the stakeholder weighting: "Given today's immature state of knowledge on ESG valuation impacts, decision science methods are a powerful tool that can help managers develop a single scale and structure some of the complexity involved in ESG topics, including the subjective biases of multiple stakeholders. Using these methods can augment the credibility of ESG materiality determination and can allow business leaders to better defend their decisions about ESG management, investment and disclosure on matters of value to their myriad stakeholders." Decision science can be used to weight and aggregate the scores of individual stakeholder groups, as well as incorporate the importance of a time dimension in these issues. Using such methods can increase the transparency of the scoring process, and provide an objective measure, which acknowledges the differences in stakeholder groups. Deloitte. "Disclosure of long term business value; What matters?" http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/us_scc_materialitypov_032812.pdf, accessed May 2014.

[40] BASF. Sustainability, Identification and Management of Sustainability Issues, Materiality analysis, http://www.basf.com/group/corporate/en/sustainability/management-and-instruments/global-materiality-matrix, accessed May 2014. For other examples, see the following. Vodafone. Sustainability, Our vision and approach, Material issues, http://www.vodafone.com/content/sustainability/our_vision_and_approach/managing_sustainability/material_issues.html, accessed May 2014. Fraport. Connecting Sustainability – Report 2012, Sustainability Management, Sustainability Strategy, http://sustainability-report.fraport.com/sustainability-management/sustainability-strategy/#wesen, accessed May 2014.

[41] Cisco. 2013 Corporate Social Responsibility Report, http://www.cisco.com/assets/csr/pdf/CSR_Report_2013.pdf, accessed May 2014.

[42] Campbell Soup Company. *2013 Corporate Social Responsibility Report*, http://csr.campbellsoupcompany.com/csr/pages/success/materiality-analysis.asp#.UvGgNRBdVQF. Inactive link as of May 2014. The four stakeholder categories were "Customer/Consumer"; "Stakeholder Relations and Community"; "Workplace"; and "Environment and Supply Chain."

[43] Samsung Life Insurance. *2010-2011 Samsung Life Insurance Sustainability Report*, http://www.samsunglife.com/companyeng/pdf/2010_2011_SR_eng_full_page.pdf, accessed May 2014. The Corporate Library. GS E&C Integrated Report, http://public.thecorporatelibrary.net/Sustain/sr_2011_313140.pdf, accessed May 2014.

[44] Mountain Equipment Co-op.

[45] Most companies use a fairly high-level classification of stakeholders into broad groups like employees, customers, suppliers, and NGOs. But there are nuances within each and decisions made about how to construct the sample for each stakeholder group. The situation is especially complicated with NGOs. The company may not always know which NGO is the most "legitimate" one for representing society's interest on a particular topic. Conversely, identifying an NGO as a stakeholder in constructing the matrix and in ongoing engagement processes can confer legitimacy on the NGO, raise questions about why the company selected a particular NGO and not another, or both. For a thorough discussion of some of the nuances in identifying, selecting, and engaging with stakeholders see Wheeler, David, Heike Fabig, and Richard Boele. "Paradoxes and Dilemmas for Stakeholder Responsive Firms in the Extractive Sector: Lessons from the Case of Shell and the Ogoni." *Journal of Business Ethics* 39 (September 2002): 297–318.

[46] We observed this already in our comparison of Ford's matrix and Daimler's matrix. We saw that the same issues were given different scores along each company's materiality matrix, underlining the fact that the Y-axis is not an objective measure of importance to society but the company's *judgment* of an issue's significance to society.

[47] This approach has already been adopted by a few companies which name the Y-axis either "society" or "societal interest." See the following. Cisco. Petrobas, Investor Relations, Sustainability Report, http://investidorpetrobras.com.br/en/governance/sustainability-report/relatorio-de-sustentabilidade-detalhe-4.htm), accessed May 2014. DSM.

[48] Eccles and Serafeim explain that this is not for the faint of heart, "Addressing the most significant trade-offs between financial and ESG performance—challenges that are often unsolved in a sector—requires major, organization-wide innovation: entirely new products, processes, and business models that improve performance in 'bundles' of material issues. Developing a single product or process innovation to address a specific issue may be part of the solution but in and of itself won't shift the performance frontier for the company as a whole." Furthermore, they add, " . . . major innovations often require substantial investments whose benefits will not be seen for years to come. If a company expects shareholders to commit for the long term in order to receive those benefits, it needs to provide them with information that justifies their investments. Combining ESG and financial performance information in a single document [an integrated report], as Natura did, is an effective way to do this." Eccles and Serafeim. "The Performance Frontier," pp. 54 and 58.

[49] Eccles and Serafeim note that minor to moderate innovation may not be enough. "While minor innovations, such as efficiency improvements, can nudge a downward-sloping performance frontier up a bit, only major innovations in products, processes, or business models can shift the slope from descending to ascending." The authors continue, "If your firm's performance in an area—say, energy use or labor practices—falls short of industry benchmarks, getting it up above par is a first priority. At the very least it will mitigate your risks, since stakeholders tend to focus on industry laggards in campaigns aimed at increasing corporate ESG performance. Many improvements, such as reducing manufacturing waste, involve minor or moderate innovations that can enhance efficiency and, therefore, financial performance. Those sorts of innovations are increasingly necessary (but not sufficient) to ensure competitiveness." Ibid., pp. 53–54.

[50] Sustainability Accounting Standards Board. Approach, Materiality, SASB Materiality MapTM http://www.sasb.org/materiality/sasb-materiality-map/, accessed May 2014.

[51] Martin Reeves, email correspondence with Robert Eccles, April 17, 2014. We are deeply grateful to Martin Reeves, Senior Vice President of the Boston Consulting Group and head of their Strategy Institute, and seven of his partners for taking the time to fill out the survey, which provided data for the Y-axis.