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What's Your Strategy for Supply Chain Disclosure?

With pressures to increase public disclosure of supply chain information mounting, managers need to appreciate the diverse forces and actors driving and enabling this trend and understand how to cope with these mounting pressures.

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We live in an era where many organizations operate highly complex and globalized supply chains. While these supply chains are now required to be lean, agile and sustainable, they are also the focus of growing attention from a variety of external stakeholders seeking information that includes and frequently exceeds what the company is legally obliged to disclose. However, many companies have limited visibility of their supply chain information, have a poor understanding of their capabilities for capturing and reporting this information and have not overtly considered their supply chain information disclosure strategy.

In this article we discuss the pressures on companies to disclose supply chain information, the drivers and impediments to supply chain disclosure, and the types of supply chain information typically made available to the public. Finally, we identify the broad disclosure strategies companies can use to release supply chain information and offer managers guidance on designing the optimal disclosure strategy for their company.

Pressures to Disclose Supply Chain Information

To understand how best to strategically manage public supply chain information disclosure, it is important that managers appreciate the diverse forces and actors driving and enabling this trend. Aside from internal governance and risk concerns, external pressure has come from government regulations, best practices of peers, and changing expectations from salient stakeholder groups such as NGOs.

Recent examples of new regulatory pressure in the United States include the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act and the California Transparency in Supply Chains Act 2010; in Europe, examples include the Restriction of Hazardous Substances Act (RoHS) 2006 and the Registration, Evaluation, Authorization and Restriction of Chemicals Act (REACh) 2007. At the same time, leading companies in many industries are shifting the boundaries of supply chain information disclosure. We have seen this in the apparel and the electronics industries, with companies such as Nike and Apple leading the field in supply chain information disclosure and other companies

following their lead. Once a brand leader begins to open up its supply chain to public scrutiny, it is difficult for others in the industry to resist without a good commercial reason.

Pressure also comes from what we term 'critical events.' Such events—for example, the 2013 Rana Plaza garment factory collapse in Bangladesh, in which more than 1,000 people died – often act as tipping points, bringing about a fundamental shift in public opinion and major changes in industry disclosure practice. NGOs and activist groups can play a critical role in pushing this process. Through effective use of traditional and social media, they undertake sophisticated media campaigns to expose poor supply chain practices. The campaigns (a good example was Greenpeace's campaign against Nestlé's palm oil supplier's deforestation practices in 2010)[1] can have potentially serious implications for brand reputation and can give rise to a loss of investor confidence.

Enablers and Barriers to Transparency

With pressures to increase public disclosure of supply chain information mounting, key enablers and barriers will determine the extent to which a company can effectively respond to the demands. The adoption of new information and communication technology, particularly in the area of tracking and tracing such as radio frequency identification, has facilitated tremendous transparency potential. For example, Switcher, a Swiss clothing company, lets customers trace the t-shirt they are wearing back to every participant in the production process. The information systems can also facilitate other types of information collection, such as employee welfare and working hours. Despite the potential of these technologies to create almost complete transparency within supply chains, certain industries including fashion often have limited knowledge of their supply chains and engage in limited public disclosure. For example, a 2013 survey of Australian fashion companies revealed that 93% of the companies surveyed didn't know where their raw materials came from.[2]

Improved transparency, however, is not without its costs, especially in complex multilevel supply chains. The cost and effort in setting up, using and monitoring a transparent reporting system across a complex supply chain can be steep. In our research, many people we interviewed commented on "audit fatigue" associated with the growing level of transparency-related data gathering and reporting. The lack of standardized reporting systems, the absence of a common technology platform, ill-defined standards and lack of supplier education can also pose serious hindrances to companies wishing to improve their supply chain transparency.

A 2014 report by Deloitte Consulting LLP[3] described a number of approaches companies can use to improve their supply chain transparency, which typically involve tradeoffs between cost or effort and quality. At the low-cost end of the spectrum, companies can gather basic information from tier one suppliers using simple solutions such as Excel spreadsheets or SMS texting surveys. Although inexpensive, it can require high labor investment for data gathering and analysis, and it offers the potential for slowly evolving with the adoption of more sophisticated reporting technologies such as product coding

and real-time monitoring tools. A second, more involved approach requires suppliers to meet externally certified accreditations as a precondition for becoming part of the supply chain. For example, suppliers might have to comply with environmental management standards such as ISO 14000. This approach externalizes the cost of audit and compliance, but it is limited in terms of its ability to be tailored to the specific needs of the company. A related, potentially more expensive approach is to outsource all or part of the audit function to third-party bodies. Although this facilitates tailored data gathering, it can still be costly. What's more, it is unlikely to foster a collaborative engagement with suppliers and may create an ongoing dependency on external experts.

Of course, developing one's own data collecting and audit capabilities, coupled with a collaborative philosophy across the supply chain, offers the greatest potential for developing a high-quality transparency system. However, tools such as real-time monitoring, product coding and serialization will require substantial upfront investment in both resources and industry collaboration. Once the investments have been made, companies would have substantially improved data capabilities to pursue further transparency and process improvements.. Companies adopting this approach, including Coca-Cola, tend to provide guidance and assistance to their suppliers to help them attain high levels of transparency, increasing joint competencies and minimizing the administrative burden while at the same time maximizing the quality of the data transfer.

Types of Supply Chain Information

Once a company understands the pressures it faces to release supply chain information to the public and is aware of its information gathering constraints and capabilities, it must understand the scope of supply chain information available for release. We identified four common types of supply chain information that tends to be publically disclosed: supply chain membership, provenance, environmental information and social information.

Supply chain membership Membership provides information on the suppliers that make up the supply chain. This information is especially important if suppliers are involved in practices that are a risk to the reputation of a company. Basic information within this category will, at a minimum, provide names of first-tier suppliers. For example, in the electronics and fashion industries many companies publish lists of first-tier suppliers, but this is less common in the food, pharmaceutical or medical devices industries. A growing trend among exemplar companies is to disclose information on *supplier location* and also about lower tier suppliers. Nike, for instance, began to move toward disclosure throughout the late 1990s, and in 2005 it became one of the first companies to reveal a global suppliers list containing information on 90% of its suppliers. Now, corporate responsibility information appears on Nike's main website, and the company reveals a supplier list for its entire product range including the name, location, workforce composition and subcontracting status of every supplier.[4]

Provenance Information on the materials used in a product, the source location of the material or ingredients, and details on how the material or ingredients were extracted and produced is becoming increasingly common. The point is to ensure that there are no

harmful or hazardous components in the finished product and that the materials meet appropriate regulatory standards. For example, many consumers are unaware that tantalum, tungsten, tin and gold are common elements in electronic devices and that companies may have sourced them from suppliers in locations where armed gangs profit from their extraction and where mining processes are dangerous and have a devastating effect on the environment. Intel took the lead as the first electronics brand to offer microprocessors made with materials from smelters validated as conflict free.

Environmental information Most corporate responsibility reports include a wide range of environmental measures such as carbon and energy usage levels, water use and levels of waste in the supply chain. For example, Puma, the athletic footwear and clothing company, leads the field in environmental reporting of their supply chain disclosing information on water use, land use, air pollution and waste from its own operations as well as its lower tier suppliers, and publishes an environmental profit and loss statement.

Social information typically includes details on labor policies, human rights and social impacts within the supply chain. Typically, labor policies include work hours and holidays, wages and benefits, working conditions and health and safety reports. Human rights include child labor, forced labor, freedom of association and non-discrimination. Social impact includes anti-corruption policies, impact on local communities, local engagement and development programs and non-compliance with rules and regulations. For example, Nestlé's Society Report 2014 says the company audited 87% of its tier one suppliers, reporting a 73% compliance rate with their own internal standards.

The radar, illustrated below provides a visualization of the four broad categories of supply chain information discussed above and their key sub-categories. This radar is not intended to capture the full extent of all possible supply chain information gathered by organizations. Rather it is designed as a broad guide for managers to help them categorize and plot a firm's current approach to information gathering and disclosure and to frame thinking and change in relation to future disclosure strategies.

Supply Chain Disclosure Radar
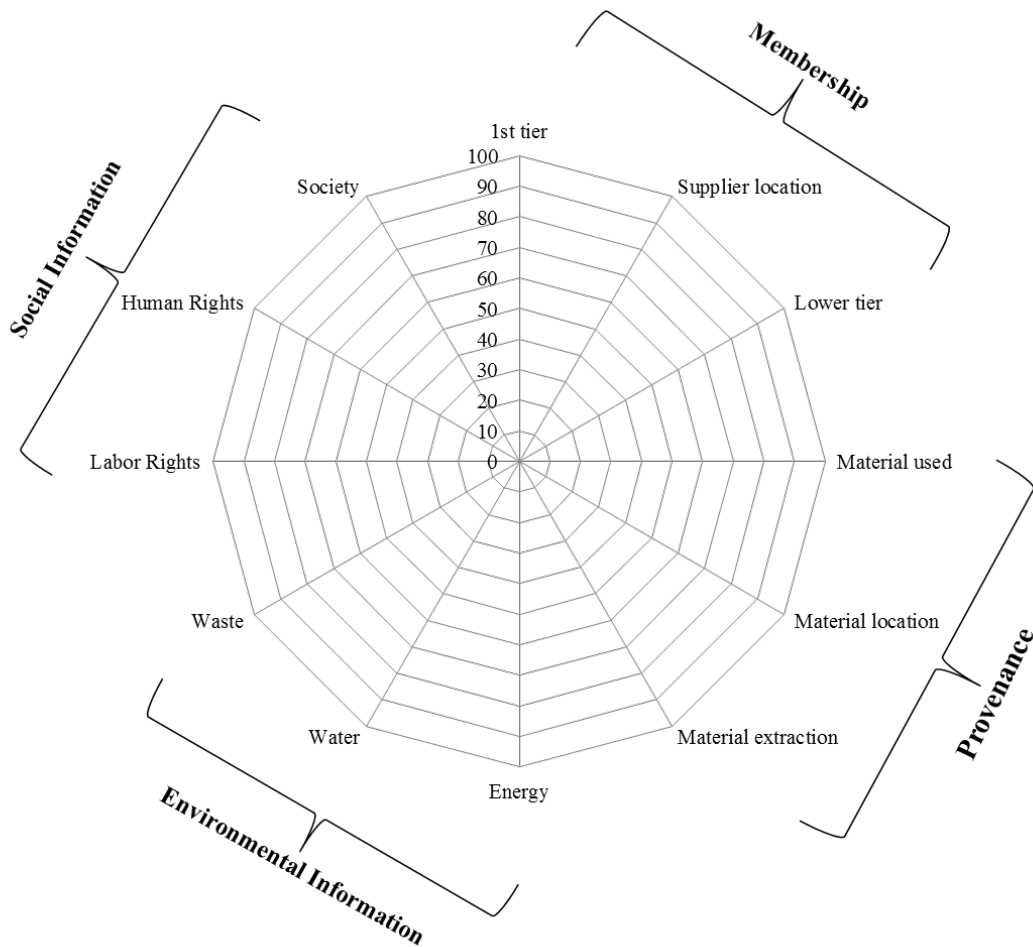
Caption: The disclosure radar identifies four main categories of supply chain disclosure information and allows companies to evaluate their degree of transparency among these categories.

Selecting the Supply Chain Disclosure Approach

After identifying the types of information a company can disclose, the next challenge is supporting strategic thinking around the that level of supply chain information disclosure. Based on our research, we developed a *transparency matrix* to frame four typical supply chain disclosure strategies: transparent; secret; distracting; and withheld. On one axis, companies can select the degree of supply chain disclosure it wants. On the other axis, it can show its assessment of supply chain information: Does the company have a good grasp of the information in the supply chain; if so, is it reported accurately and appropriately? (See the **"Transparency Matrix."**)

Transparency Matrix

	High ← **Degree of disclosure** → Low
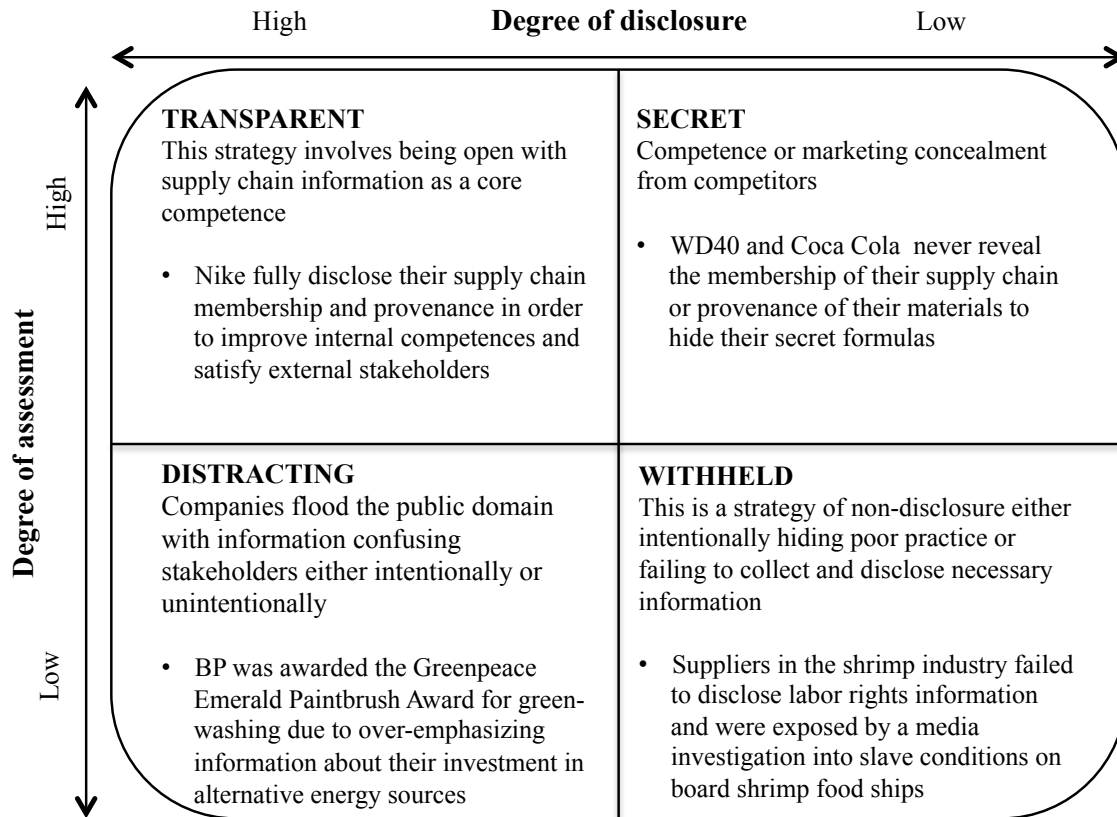
Caption: This matrix outlines four idealized transparency strategies based on the amount and depth of evaluation and the level of public disclosure of this data. Managers can use this to describe and reflect on the coherence of their current approach to supply chain transparency.

Transparent A company following this strategy aims for maximum public disclosure of all supply chain information. This practice will typically extend both internally through its supply network and externally into the public domain. Companies committed to transparency tend to regard disclosure as a competence or capability. For example, Patagonia, the Ventura, California-based outdoor apparel company, provides a map of suppliers, indicating which materials or processes a supplier is involved with. Nike is another company that provides a rich variety of detailed supply chain information. Tainted in the 1990s for reports about worker abuse, sweatshop labor and poor working conditions, Nike has become known for responsible supply chain membership, provenance and environmental and social sustainability disclosure. Although scrutiny of the company continues, Nike is cited as a company that 'turned full disclosure into a badge of honor.'[5]

Secret Companies employing this strategy have a high degree of knowledge about their supply chain activities but will not disclose or will disclose very little information into the public domain. In fact, they may deliberately and selectively conceal supply chain

information, protecting their intellectual property to enhance their brand value and, ultimately, competitive advantage. Issues such as new products under development, unique manufacturing techniques, sources of supply, recipe composition, technical specifications or simply lists of customers may be kept under wraps, as they constitute important strategic information to a competitor. The formula for the popular WD-40 lubricating spray provides a good example. Although the company reveals what is *not* in WD-40 ("silicone, kerosene, water, wax, graphite, chlorofluorocarbons (CFCs) or any known cancer-causing agents"), it guards its 1953 formula in a bank vault. The company further protects the formula's secrecy by mixing the substance in three different cities before passing it on to its manufacturing partners for production.[6] Closely guarded formulae also protect the ingredients for Coca-Cola, the recipe for Twinkies and the batter for KFC chicken.

Distracting Companies following this strategy report substantial information to external stakeholders. Unwittingly the company doesn't understand or evaluate what is pertinent to stakeholders and the public and instead reports excessively on other practices. However companies will distract people from questionable practices by flooding the public domain with excessive levels of data on self selected practices while deliberately hiding others. For example, the practice of 'green-washing,' a marketing tactic some companies use to present themselves as environmentally friendly even if their practices are not, falls into this category. Greenpeace highlighted this practice in 2008, when it awarded its Emerald Paintbrush Award to BP, which focused its marketing campaign based on green issues even though its investment in solar and wind energy was only about 4%.

Withheld Companies using this approach withhold supply chain information from the public. They have not disclosed supply chain information either because they have not collected the data about dangerous practices in their supply chain (they are unknowingly withholding information), or they have intentionally avoided releasing data that would reveal harmful practices in the supply chain (knowingly withholding information). In terms of supply chain membership, it is vital to have information about suppliers used for high-risk tasks (such as environmentally damaging material extraction) and those with tainted records (such as reported human-rights abuses). Notable cases include Mattel, which disclosed in 2007 that a subcontractor used lead paint on a number of its toys.

The Transparency Matrix helps managers clarify their current approach to supply chain information disclosure and helps in the integration of the company's approach to disclosure with its core business strategy. Although we don't think there is an optimal approach, companies need to undertake an adequate level of assessment to minimize their exposure to brand risk.

Determining What to Disclose

The final issue companies need to resolve involves what to disclose. Once managers understand the pressures for increased transparency and identified what their transparency strategy is, they need to determine the information they will disclose. This

brings to the fore decisions about how reactive or proactive the company wants to be in this area. Ideally, a company should anticipate the information demands of its external stakeholders ahead of time in order to determine the materiality of the information to the company. In our view, reactive responses reduce the time for planning, participation and experimentation and limit opportunities for early-mover competitive advantage.
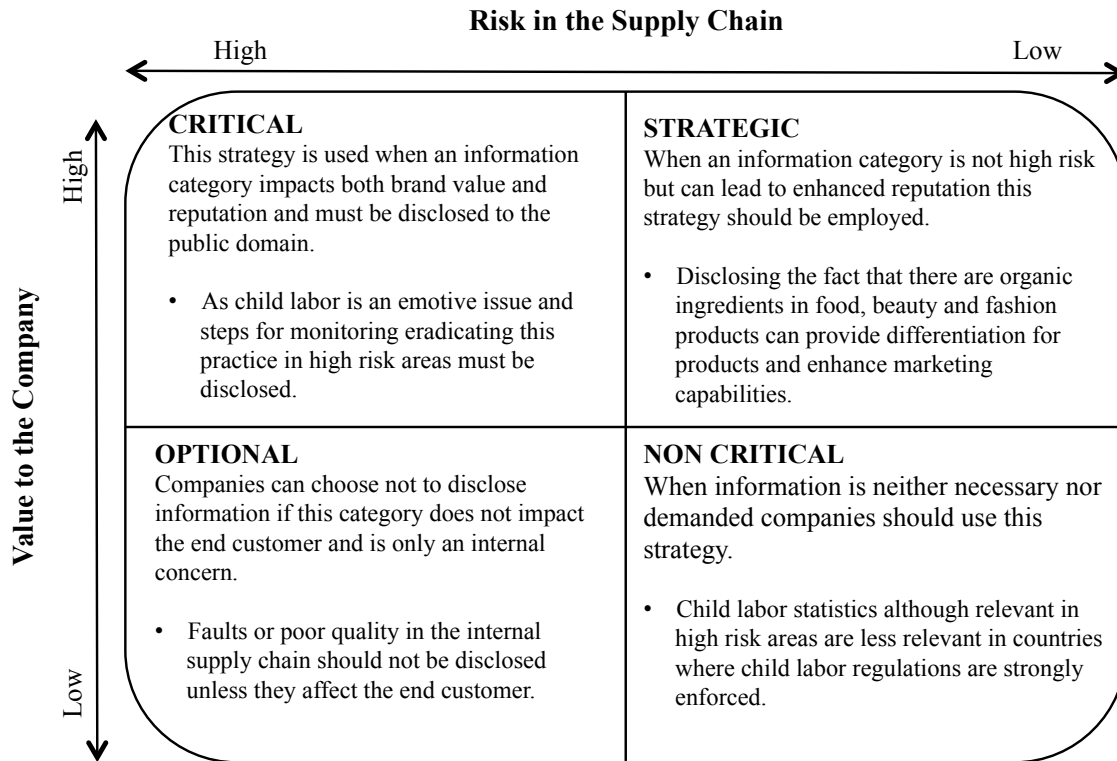
We developed a matrix for categorizing supply chain information disclosure, one that balances the value to the company and the amount of risk to the supply chain. It describes strategies for: critical, strategic, optional and non-critical disclosure (see the "**Supply Chain Information Disclosure Matrix**"). The "critical" category involves information that's both high risk and high value to the company. Companies taking advantage of this approach recognize that there are issues in their supply chain that, left unaddressed and undisclosed, are likely to result in pressure from NGOs, the media and eventually end customers, resulting in damage to brand value. Examples include information relating to unsafe, poor quality, contaminated products, bribery and corruption in the supply chain, worker suicides and major environmental degradation.

A second category involves information that's low risk in the supply chain but has high brand value to the company. We call this type of information "strategic." Although stakeholders may not demand the information, management considers that releasing it will provide product differentiation and enhance the reputation of the company. In the electronics industry, an example might include providing contextual information to consumers about product features such as memory capacity; it would allow consumers to easily discern the benefits of choosing your product over that of a competitor.

Information that has low value to the company but where the risk in the supply chain is high we refer to as "optional." This means that the information released does not impact the end customer and is primarily an internal supply chain concern. An example of this might include a potential problem that was averted, for example, low-quality ingredients in the pharmaceutical supply chain that were removed during quality control screening, which do not affect the end product.

The final category in our matrix is something we call "non-critical". This information is both low value to the company and low risk to the supply chain with negligible effect on brand value. Examples of this might include information on child labor in countries where the laws relating to workplace age are clear and actively enforced. In fact, disclosure of such information is not deemed necessary.

Supply Chain Information Disclosure Matrix

Risk in the Supply Chain

High   Low

	High	
	CRITICAL This strategy is used when an information category impacts both brand value and reputation and must be disclosed to the public domain. • As child labor is an emotive issue and steps for monitoring eradicating this practice in high risk areas must be disclosed.	**STRATEGIC** When an information category is not high risk but can lead to enhanced reputation this strategy should be employed. • Disclosing the fact that there are organic ingredients in food, beauty and fashion products can provide differentiation for products and enhance marketing capabilities.
	OPTIONAL Companies can choose not to disclose information if this category does not impact the end customer and is only an internal concern. • Faults or poor quality in the internal supply chain should not be disclosed unless they affect the end customer.	**NON CRITICAL** When information is neither necessary nor demanded companies should use this strategy. • Child labor statistics although relevant in high risk areas are less relevant in countries where child labor regulations are strongly enforced.

(left vertical axis label: Value to the Company — High at top, Low at bottom)

Caption: This tool helps companies identify which issues are pertinent in their particular supply chain and guides in their choice of disclosure strategy.

The information disclosure matrix can help managers map their future disclosure practices for specific categories of supply chain information. It outlines when it is critical to disclose information, when information should be strategically disclosed to differentiate a company or product, when decisions are made not to disclose irrelevant or inappropriate information or when disclosure is non-critical. Managers should map stakeholder needs to identify material supply chain issues for disclosure. This will enable them to see where the company might be targeting resources inappropriately, releasing unnecessary information, or where there needs to be additional investment in data gathering or release of more information.

How Apple's Approach Changed

To illustrate how they work together, we studied Apple using publicly disclosed supply chain information comparing the years 2009 and 2014. When Tim Cook took over as CEO in 2011, Apple was in the headlines following reports of suicides at a Chinese supplier Hon Hai Precision Industry Co., Ltd. (known as Foxconn). Cook had to respond to the public outcry and had to act to protect Apple's reputation and ensure that workers throughout Apple's supply chain were treated fairly and in line with basic human rights. The events at Foxconn pushed Apple to open up supply chain details to the public moving it from an extremely secretive supply chain to a more open one.[7]

Apple did not give specific information on the number of suppliers in its supply chain for 2009. They did not disclose information related to any areas of membership, provenance or environmental sustainability. Its 2009 report[8] provided results for 83 social sustainability audits. In the 2015 report, relating to 2014, the company refers to 633 supplier audits.

Beginning in 2012, Apple periodically responded to media or NGO criticism reactively disclosing supply chain information, including limited supplier membership and provenance. In 2015, Apple produced an extensive array of information and reports covering the radar categories. Included in this information was: a list of 200 first-tier suppliers including company names and addresses; a list of metals and minerals sourced from lower-tier suppliers, their provenance and whether the supplier was using a conflict-free protocol; and separate reports on the environmental and social performance of suppliers.

The 2015 environmental report[9] covers 100% of the carbon emissions of the entire Apple supply chain and waste generated throughout the supply chain. It also reveals that the top 200 suppliers used 120 billion gallons of water, but it does not provide any information about supply chain energy usage. Apple also reported social sustainability information for its suppliers.

Between 2009 and 2014, Apple went from regarding its supply chain information as a source of strategic secrecy to openly publicizing it as a reputational insurance policy. For example, in the space of a few years, Apple has become much more transparent about its material provenance, environmental sustainability, and social sustainability. As for secrecy, Apple only discloses aggregate environmental and social sustainability information, keeping specific examples or cases out of the public arena. In the future, Apple may decide to follow the example of companies such as Nestlé, which give more specific information.

Although Apple has come a long way on disclosure since 2009, there are still areas to be addressed and improved. Regarding information that might be considered critical, a 2014 BBC documentary about Apple exposed, among other things, poor treatment of workers in Chinese factories in Apple's supply chain.11 Following this, Apple has been under pressure to provide information on how it is tackling first-tier and lower-tier social sustainability issues. Apple also hasn't yet publicly discussed how it plans to ensure a living wage for workers in its supply chain.

Developing a Successful Disclosure Strategy

What steps should companies take to ensure a viable and high-quality supply chain transparency strategy? We suggest the following:

1. **Analyze the pressures for increased supply chain transparency.** Executives should begin by understanding which supply chain information is critical to

stakeholders, both internal and external, and use this knowledge to proactively respond to the needs of key stakeholder groups. This activity needs to become a core dimension of the company's approach to effective stakeholder management.

2. **Assess current capabilities and resource base.** Companies need to audit the technological and human-factor capabilities of both your own company and those of your suppliers to assess current capacity for gathering critical, high quality supply chain information and to assess the financial costs and resource feasibility of improving transparency information.

3. **Identify current levels and quality of critical information in your supply chain.** Many managers have limited knowledge of the depth and quality of supply chain information available to them. Companies often have other information gathering systems in place and, with the push toward sustainability, many are already evaluating suppliers on triple-bottom line criteria. This information could be gathered from different departments. The supply chain disclosure radar will aid in the identification of current and desired levels of supply chain information capture and disclosure. Gaps in your information portfolio should be filled by new investments in supply chain information gathering.

4. **Clarify strategic thinking around the current and desired extent of supply chain information disclosure you wish to follow.** Companies should have strategic clarity in relation to their broad approach to supply chain transparency, and it should be aligned with the company's core business strategy and its need to protect intellectual property. Our transparency matrix will enable focused debate in relation to this core issue.

5. **Decide on type and level of information disclosure.** Once you are clear on your broad strategic approach to supply chain disclosure, you need clarity on the type and level of information you need and wish to disclose. Our disclosure matrix can aid this process.

6. **Ensure strategic alignment between supply chain information and company strategy.** It is useful to have all the information outlined in the supply chain disclosure radar readily available: the more information you have on hand in advance of a critical event, the quicker you can resolve the problem. The information may also be used to gain competitive advantage and develop added value. For instance, if your strategy is to deliver high-quality products to the customer, having complications with provenance or membership could be catastrophic. Making sure supply chain management gets the proper amount of attention it requires is essential. Disclosure reporting is too important to be the preserve of a single department or business function.

7. **Build collaborative relationships.** Our research suggests that the best route to high quality internal and external transparency is to develop close collaborative relationships across the supply chain. This may require companies providing

technical, operational or financial assistance to suppliers to share the cost burden, foster learning and ensure that there is a culture of transparency and open disclosure throughout the supply chain. Suppliers should be selected in part based on key transparency criteria and motivated to improve these practices. Managers can then develop transparency strategies that go beyond single capabilities to building systems of learning based on supply chain disclosure.

8. **Be proactive: Anticipate future demands.** Once you have established your strategy for supply chain disclosure, you should begin to investigate your competitors' information disclosure strategies and gather intelligence on the changing concerns and priorities of external stakeholders. You can also analyze the best-in-class disclosure strategies of companies such as Nike and Patagonia. It is vitally important to monitor the media and reports and campaigns of NGOs and influential commentators. Apple, for example, responded twice in recent years to shifting issues: first in 2012 when commentators called for locations of suppliers, and again in 2013 when questions came up about its tin suppliers in Indonesia. On both occasions, Apple responded by addressing these issues in its subsequent reports. For future products and markets, companies may decide to change their strategies, moving from transparency to secrecy or vice versa.

The demands for transparency in supply chain information are growing. Managers must understand these demands and respond in creative and meaningful ways without undermining the competitive advantage of their company. The tools and advice presented here will aid managers in grappling with this complex and evolving area.

About the Research

For this paper we did three levels of research. First, we did a literature review around the topic of supply chain transparency, reviewing 179 academic articles on the topic. We then set about identifying companies that were judged to be relatively advanced in their supply chain disclosure practices, choosing 20 companies (by revenue) across five selected industries groupings (electronics, medical devices, fashion, food and pharmaceuticals) using the Forbes Global 2000 list. We undertook a detailed content analysis of the companies' annual and CSR reports and relevant content of their websites to explore what they were saying about supply chain transparency practices and trends. We also conducted a further 20 in-depth case studies of purposively selected espoused exemplars and non-exemplars of supply chain transparency practice. In these cases, we focused our interviewing on supply chain, purchasing and CSR managers. The cases, following a grounded theory research design, are representative of five different industry sectors (electronics, medical devices, fashion, food and pharmaceuticals) to enable us to explore varying transparency practices across different industries. The specific cases draw on publicly available information and are used for illustrative purposes rather than as evidence of empirical support for the arguments made. The identity of the companies in the case studies remains confidential, as required under our research protocol and research ethics guidelines. From the research and associated analysis, we developed and,

through the empirical case studies, tested the tools and frameworks presented in this paper for relevance, validity and robustness.

Acknowledgment

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