CSR Index

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Chapter 1

Corporate Social Responsibility: From "Compliance" to "Performance"

Francis Quinn

Trust Capital

Trust is vital for society and for the global economy to function successfully and efficiently given the fast pace of change in the world today. The economic crisis that began in 2008 continues to challenge us, in part due to (a) the diminished sense of trust between businesses and their stakeholders, and (b) the lack of trust in the data on which businesses report performance and make decisions.

The banking industry is a good example of just one of the sectors where trust capital has been significantly diminished. In fact, a detailed analysis of hundreds of thousands of media reports in leading international business publications and TV news programs revealed that banks are now even more discredited in opinion-leading media than the historically troubled industries like tobacco and nuclear power ever were.[1]

More than five years after the financial crisis, trust in the banking sector continues to erode and shows no signs of a turnaround. The situation is particularly striking in the U.S., where almost 70% of TV news stories about banks have a clearly negative tone. The vast majority of these news stories focus on customer relations and on products offered by the banks. In addition, trust appears to be fading across the entire industry and is not specific to individual banks. There are a number of reasons why banks should feel concerned about this situation.

Firstly, the amounts that banks pay in fines to regulators have increased significantly since 2007—even if the sums concerned are relatively small compared to the revenue of major financial institutions.[2] Over the same period, banks have also had to pay out very large sums to settle litigation and cover associated legal fees. According to some estimates, the six biggest U.S. banks have accumulated $103 billion in legal costs since the financial crisis, more than all dividends paid to shareholders over the preceding five years.[3]

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[1] Media Tenor. 2013. *Transition towards a truly global scenario: Challenging elite opinion* (white paper). Media Tenor Reputation Lab Davos.

[2] http://www.theguardian.com/business/2013/nov/09/bank-of-america-us-864m-mortgage-verdict

[3] http://www.bloomberg.com/news/2013-08-28/u-s-bank-legal-bills-exceed-100-billion.html

Secondly, such an unprecedented poor reputation as perpetuated by televised media is driving increasing public concerns about banks and their role in society, just as it did for nuclear power and tobacco in the past. Politicians, who have a highly developed sense of what matters to the public, have already started to pick up on this—and where public concern goes, politicians follow with oversight and regulations.[4] It is no coincidence that nuclear power and tobacco are among the most regulated of all industrial sectors, and that the media's focus on the U.S. Federal Reserve, central banks and regulatory authorities—calling for increased supervision of the banking sector—is rising steadily.

That said, there is an even more important reason why banks should pay more attention to their crumbling reputation: license to operate. Without a license to operate, there is no more business, no more profits and no more jobs. In the wake of the Fukushima Daiichi nuclear disaster, it only took the German federal government a few weeks to withdraw the entire German nuclear industry's licenses and establish a new nuclear-free energy policy for the country.[5] Politically, this was a relatively easy thing to do, as the nuclear industry was already very unpopular.

The U.S. Federal Reserve is currently considering reversing a decade-old ruling that lets banks trade physical commodities, such as cotton, corn, aluminum, gold, silver, and electricity. Banks were permitted to expand into commodities markets in 2003, but the central bank is currently, under Senate scrutiny, reviewing the policy to ascertain whether such involvement allows Wall Street firms to control prices. The ten largest banks earned approximately $6 billion in revenue from commodities in 2012, including dealing in physical material as well as related financial products.[6]

Of course, society will always need banks, or, more correctly, banking services. However, this may not be enough to guarantee the longevity of today's banks, because there are other organizations starting to offer banking services to the public, such as insurance companies, automotive companies, and retailers.[7] The good news is thus that, even as banks gradually lose their license to operate, they will be replaced by new players with new business models—a bit like the airlines Pan Am and TWA (and many others), who failed to adapt to a changing world with changing values and innovation by low-cost airlines.

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[4] http://www.bloomberg.com/news/2013-08-02/banks-replacing-enron-in-energy-incite-congress-as-abuses-abound.html; http://www.mondovisione.com/media-and-resources/news/deploying-the-full-enforcement-arsenal-sec-chair-mary-jo-white-council-of-inst/

[5] http://www.businessweek.com/articles/2013-11-14/2014-outlook-germanys-green-energy-switch

[6] http://www.bloomberg.com/news/2013-07-22/wall-street-commodity-trading-in-jeopardy-amid-fed-review.html?alcmpid=politics

[7] http://www.bai.org/bankingstrategies/strategy/retail-consumer-banking/richard-branson-retail-banker

Can the banks' trust capital be restored? The short answer is "possibly," but it will take a long time to undo the accumulated negative image, and it will require a lot of transparent and sincere dialogue to rebuild the trust of the banks' many stakeholders.[8]

The New Deal

Against this backdrop, it comes as no surprise that today's trust in business is cautionary. The public opinion slogan is, "We will trust you if you let us verify" and verification means, "Show me the data." Data quality therefore is now front and center in the debate, with companies increasingly relying on third parties to provide verification statements that attest to the quality of the data disclosed in corporate publications.[9]

Content analysis was recently used to assess whether business performance as described in the annual reports of 137 multinational companies set forth convincing arguments and if it finds an echo in opinion-leading news media.[10] A study of more than 120,000 statements from 2011 corporate annual reports concluded that, in general, companies were cautious with regard to the tone of content; negativity was almost nonexistent; and risks were mentioned only when it was unavoidable. Even positive statements were fairly limited—typically less than 10% of the total content. This contrasted with the coverage from 28 leading international TV news channels, which was clearly negative on almost all topics, including image, stock price, production, human resources, and management. In other words, TV news essentially ignores the content in corporate annual reports—except the financial results.

Companies are therefore not making a convincing case for who they are, their values, and how they operate in their annual reports. TV news media are forming their own opinions, and the lack of clarity on successes, failures, and risks in these reports has led to a situation where the media largely ignore these documents, which should be central to corporate image and reputation building with stakeholders.

It goes without saying that annual reports deal with the topics that companies feel are important. Today, activities undertaken as part of corporate social responsibility (CSR) typically only represent 5 to 10% of the total content. Specificity in annual reports is also a real challenge for many companies. CSR performance is a good

[8] http://www.theguardian.com/sustainable-business/morgan-stanley-sustainable-investing; http://www.greenbiz.com/blog/2013/10/02/jpmorgan-chase-transparency-defining-way-forward

[9] http://thecro.com/content/what-price-assurance

[10] Media Tenor. 2013. Transition towards a truly global scenario: Challenging elite opinion (white paper). Media Tenor Reputation Lab Davos.

example: according to the study cited earlier, companies were rarely specific as to where their CSR activity even occurred. Clearly, this lack of specificity influences the credibility and level of transparency of CSR initiatives. When location was specific, it was predominantly in the organization's home country. While CSR activities in the home market are important and can be drivers of growth, this is the era of globalization. Indeed, the majority of economic growth is currently concentrated in emerging nations—and many stakeholders, in particular local stakeholders, want to know about CSR activities in developing markets.

CSR is a new and advanced approach to assess the vitality of companies and is becoming increasingly relevant for the in-depth evaluation of investment and development opportunities. This is of paramount importance, because investors faced with the uncertain evolution of the global financial crisis are now looking to evaluate not only the short-term financial performance of companies, but also their real viability—in other words, their ability to grow in the context of new challenges and to manage new risks generated by a rapidly changing world.

The study suggests that many multinational firms are missing a real opportunity to engage their stakeholders, including investors, in a transparent and meaningful dialogue and, by default, are leaving it to others to tell their stories—with all the risks that this inevitably entails.

The remainder of this chapter will illustrate the leading role of data quality in nurturing trust between companies and their stakeholders by presenting the corporate and business data management challenges that businesses currently face. It will also describe new approaches that have the potential to fundamentally change the way data is used by businesses and stakeholders. The goal is to reveal a way to demonstrably increase trust in corporate and business data that will benefit business leaders' decisions as well as further economic and political relations, and consequently benefit the global economy—not to mention society as a whole.

The CSR Data Challenge

Around the world, publically listed companies are beginning to sense the new reporting paradigm and are increasingly publishing CSR reports and related disclosures to regulatory bodies, rating agencies and nongovernmental organizations (NGOs), to illustrate how they are managing their risks and how they are developing new business opportunities.[11] That said, these laudable efforts at transparency face

[11] Paul Scott. (2013). Global Corporate Responsibility Trends and Stakeholder Views. Corporate Register, 2013.Retrieved from http://database.globalreporting.org

several significant challenges. Firstly, there are several different frameworks for CSR reporting—each with its own methodology, its own performance indicators, and its own orientation—that in many ways compete with each other.[12] There is no common standard, no common structure, and no two reports (even by companies in the same sector) can be compared directly.

A recent poll that investigated the challenges of CSR reporting and the verification process for companies revealed that the three most important obstacles were availability of data, accuracy or completeness of data, and external buy-in to disclose data.[13] Another poll concluded that the most significant barriers to integrated reporting, where financial and extra-financial data are published in a single document, are the strong organizational silos in companies and the patchwork of IT programs/legacy systems used to compile and analyze data.

In addition, the CEO signs the CSR report. This means that the data required for reporting needs to be assembled, its quality assured, and its provenance verified and qualified as reliable and pertinent. In fact, this may be a good thing because it suggests that there is a move toward being performance-based and accountable for data quality. This will enable business leaders to make better decisions and to be responsible for the decisions made based on the data. This is analogous to the CFO and CEO certification of 10-Q and 10-K filings to the U.S. Securities and Exchange Commission, driven by the Sarbanes-Oxley Act of 2002 after the Enron scandal.[14]

There are two key aspects to data quality: the attitudinal aspect and the technical aspect.

Firstly, the attitude towards CSR reporting is evolving, albeit slowly. Companies are gradually realizing that it is in their own best interest to manage CSR data for the purpose of improving business performance. In situations where a company is focused exclusively on check-the-box compliance, less attention is generally paid to data quality. This contrasts with the situation where CSR data is used to drive performance. In this case, data quality tends to improve because what gets measured properly, ultimately gets done properly.

The second aspect is technical in nature. There can be little doubt that the current

[12] http://blogs.law.harvard.edu/corpgov/2013/08/01/sustainability-disclosure-in-annual-reports-and-proxy-statements/

[13] http://www.ey.com/Publication/vwLUAssets/ACM_BC/$FILE/1304-1061668_ACM_BC_Corporate_Center.pdf

[14] http://en.wikipedia.org/wiki/Sarbanes–Oxley_Act

location-based legacy systems for document and information management have failed.[15] What is location-based data management? Put simply, in order to find data in a location-based model, one has to know where the data is stored, access the server or hard drive, find the specific file, open the spreadsheet, and go to the row and column to get the value. To understand what that value means, one has to visually inspect the spreadsheet to find human-readable labels and pretend to know the details.

What is really needed, is a data model that lets us work with data based on meaning—semantic data. Considering the way knowledge is created and organized, Umberto Eco proposes that our traditional systems of classification are based on the idea of a "tree of knowledge."[16] Accordingly, a dictionary is like a tree whose trunk holds a hierarchy of branching categories that order knowledge into a matrix of definitions. However, in Eco's view, the dictionary is too rigid as it turns knowledge into a closed system, and he argues in favor of the encyclopedia, which is a more flexible organizational scheme. Instead of resembling a tree with finite branches, the encyclopedia offers a labyrinth of pathways presenting knowledge as a network of interlinked relationships. As such, the encyclopedia sacrifices the dream of possessing absolute knowledge, leaving us free to pursue an infinite number of new connections and meanings.

If the dictionary model defines the term 'man' as the sum of a series of traits (male; adult; human), the encyclopedic model considers the meaning 'man' as the set of all interpretations relating to that term (male; adult; human), pertaining to anatomical information (legs; hands; head), social and psychological characteristics ('organize in groups'; emotions) and representative illustrations.

What is a semantic data model? Generally speaking, semantics is the study of the meaning behind words. Semantics in the context of data and data management means understanding data from the user's perspective.

Semantic terms are deceptively similar to those we find in logical or physical data models: constructs like "customer", "product", "credit limit", and "net sales". The semantic data model addresses the context of a term and how it relates to other data elements. For example, is a customer an individual (e.g. chief purchasing officer) or a company (ACME Inc.)? Is a customer someone who has actually purchased a product or can a customer also be someone who is a potential buyer of a product? Is the customer a wholesaler or end consumer? Is the wholesaler's customer also called a customer?

[15] http://www.forbes.com/sites/danwoods/2013/11/26/how-semantics-can-make-data-analysis-like-a-google-search/2/

[16] Eco, U. (2007). Dall'albero al labirinto. Studi storici sul segno e l'interpretazione. Milan: Bompiani.

The answer to these questions is likely to be “it depends”—and that is the correct answer, as it depends on who is asking and why. ACME Inc.’s sales department may draw a clear line between customers (buyers) and prospects. Their marketing department may simply use ‘customer’ to refer to those participating in the market, whether or not they have actually bought the company’s products. The R&D department may be referring to ‘customers’ without knowing for sure whether a market even exists for a product.

The semantic data model drills down and captures the nuance of each perspective, and ideally, all perspectives are represented in the semantic model. It also provides business users with a naming convention that provides clarity and transparency, because the meaning of the data, and not just the numeric value of the data element, is preserved.

It was the lack of understanding of the true nature of complex financial instruments and their level of interconnectivity that led to the liquidity freeze and the failure of capital markets in 2008. One way to reduce such occurrences that would benefit both regulators and regulated industries, stakeholders and capital markets, is *tagged business reporting*, a model that also has much to offer to CSR reporting.[17]

Tagged business reporting provides a language (syntax), standardized terms (semantics), and templates for relating these terms (models). It brings consistency, transparency, and comparability to reporting. Because it is a shared resource for all companies, it can significantly improve the efficiency of business reporting and automation of the tests for verifiability and regulatory compliance.

Now what happens when people speak different languages? Imagine a conversation between a French speaker and a Gaelic speaker. The accurate exchange of information, without resorting to hand gestures, would be very difficult indeed. This is where standardized reporting language comes into its own, as it provides vocabulary and grammar to facilitate the exchange of information. The colloquial expression “we speak the same language” speaks to the benefits of using a single standard for business reporting.

Data Discovery

The goal is to be able to turn corporate and business data into real, tangible assets and not simply terabytes of information sitting on servers, waiting to serendipitously

[17] Quinn, F. (2013). Transitioning CSR from “nice to have” to “must have”. *CSR Index 2013.* Zurich, Switzerland: InnoVatio Publishing.

be found at the right moment. The key to achieving this goal is to design data for discovery, for use, and for consumption. Remember, if data (value *and* meaning) cannot be found, then it cannot be used, hence the need to design data for accurate and easy discovery.

There are several approaches to this. One approach is XBRL, a serialized data transport language.[18] In essence, XBRL is a computer language designed to move business data from point A to point B, without anything getting lost in transfer. Just like a French or Gaelic dictionary, the language of XBRL also features something akin to a dictionary, which in XBRL is called a taxonomy. A dictionary consists of a set of terms. Likewise, a taxonomy consists of a set of terms, but goes even further by capturing the meaningful relationships between the terms.

In the financial reporting realm, standardized taxonomies are in near-ubiquitous use in the United States, Australia, the Netherlands, and the United Kingdom, and are being used increasingly in developed and emerging nations. This is driving the creation of software tools to capture and use XBRL-tagged information. Publically listed companies in the United States are required to make quarterly and annual disclosures to the U.S. Securities and Exchange Commission, in several data formats, including HTML and XBRL. HTML is for the benefit of human readers and XBRL is for the initial benefit of the computer. If a computer can read two different reports based on their financial content (the semantics captured in XBRL rather than the page layout content of HTML), the computer can then compare the business performance disclosed in the reports, to which there are obvious benefits.

On one hand, XBRL allows these reports to capture some amount of financial meaning because it utilizes standardized terms, and then relates these terms to each other. That is, it provides a way to organize knowledge. There are several standard taxonomies, such as the U.S. Generally Accepted Accounting Principles Taxonomy, and the International Financial Reporting Standards Taxonomy. CSR-focused taxonomies include the MIX Microfinance Taxonomy, the Global Reporting Initiative Taxonomy and the Climate Change Reporting Taxonomy.[19]

It is important to remember that XBRL allows users to add new terms to the taxonomy, and most agencies requesting XBRL-formatted reports permit these extensions. This is possible because new terms can be added in XBRL without damaging the data previously delivered, and without having to coordinate with receivers of the data. This is achieved because the taxonomic structure is delivered alongside the data

[18] http://en.wikipedia.org/wiki/XBRL

[19] https://www.globalreporting.org/information/news-and-press-center/Pages/GRI-launches-GRI-Taxonomy-2013-to-support-digital-disclosure-of-sustainability-information.aspx

so, unlike a database where the structure is hidden, the structure is on the outside in XBRL—much like an exoskeleton.

Sadly, not everyone uses these standardized terms correctly, and new terms are easily added without thorough forethought or adequate documentation, especially with regard to existing standardized terms, leading some to question the quality of the data and thus the utility of the initiative.[20] Furthermore, XBRL was not designed as a query language: it is meant for data transport, with very limited utility for data discovery. In fact, analysis tools for XBRL usually convert the data from XBRL into another format more appropriate for data analysis. Lastly, while XBRL technically can represent more complicated arrangements of knowledge, these features are not being utilized in any standardized way, or are explicitly prohibited from being used. Standards do not have limitless flexibility.

So, what are the alternatives? The first is the document location model. The most common way to give meaning to data is to label it. That is how Excel works, by putting a label to each column and descriptor to each row to cross-reference the location of the information. This is useful, but again limits the scope of data that can be referenced.

More importantly, consider what happens when the value is copied out of the spreadsheet. Once copied, the value is retained, but loses its contextual meaning because that relational meaning is captured in the labels (row and column) outside the cell. Therefore, this is a poor way to manage data.

To understand the possible ramifications of losing the meaning of a numeric value in a spreadsheet, consider the following example:

In 2012, a trader known as the London Whale, because of the scale of his trading, accumulated trading losses of $6.2 billion. The taskforce subsequently set up to investigate what had happened, revealed that the trader had relied on a spreadsheet for the Chief Investment Officer's value at risk (VaR) reporting, but stopped doing so after errors were discovered in the model. In its report, the taskforce noted that "after subtracting the old rate from the new rate, the spreadsheet divided by their sum instead of their average, as the modeler had intended. This error likely had the effect of muting volatility by a factor of two and of lowering the VaR." Put simply, the unsustainably high VaR was due to a grossly incorrect Excel formula that misreported the bank's VaR by 50%.[21] As to the question of how long the bank

[20] http://datacoalition.blogspot.com/2013/10/financial-services-alternatives-open-data-ban.html

[21] http://www.accountingweb.co.uk/article/excel-errors-jp-morgan-s-multi-billion-classic/538876

had been exposed to this level of risk, the taskforce concluded that “it also remains unclear when this error was introduced in the calculation.” In addition to the trading loss and reputational damage, the bank also received a very hefty fine in the fallout that followed the incident.[22]

A similar kind of problem was recently spotted in an advertisement for Microsoft’s Surface tablets, where the total of a simple spreadsheet was incorrect (Figure 1). The error most likely occurred when rows to the value of $500 were inserted into the spreadsheet but someone forgot to press F9 in order to recalculate the spreadsheet formulae before copying it into the advertisement. In this case, the consequences for Microsoft had more to do with the corporation’s reputation than any direct financial impact.

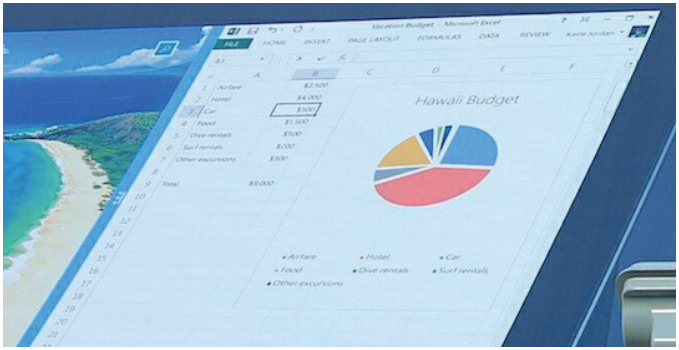

Figure 1: Billboard advertisement for Microsoft Surface

The second alternative is the so-called simple label or simple metadata model. Anyone who has ever tagged a photograph with the name of person in the photo has used simple labeling tagging. This allows photographs on which that person appears to be found by searching for photos with that person’s name as a tag. Photos can even be found without knowing whether others used the same tag. Hence, the major difficulty with this approach is the proliferation of tags that is essentially uncontrolled. In addition, the same tag can be used, but with different meanings. For example, three users might tag a picture with the word “bark.” However, one user is referring to a picture of a dog, another has labeled a picture of a tree, and the third tagged a sailing ship with three masts.

Simple labeling is ambiguous and this is why internet searches can be so frustrating: we get to search for words, but we actually want to search for what the words

[22] http://www.bloomberg.com/news/2013-10-16/jpmorgan-to-pay-100-million-to-settle-cftc-claims-chilton-says.html

mean. For example, an internet search for “energy plants” might turn up facilities for producing electricity, fuel, or other forms of energy when in fact one is looking for information about pomegranates and other plants that are high in energy and anti-oxidants. In fact, simple labeling provides the illusion of structure and meaning, just without the structure or the meaning.

Semantic Tagging

The most advanced way to turn data into an asset is by using semantic tagging.[23] This involves tagging data with terms that themselves are tagged, so that each term is well defined. Definitions can be concise and without ambiguity and can even show how terms relate to each other—that is, how knowledge and the data behind it are organized. The good news is that the underlying principles are well tested: librarians have been doing this for centuries.

Returning to tagging photos: in the semantic model, photos are tagged with the names of persons appearing in them. The names can be separately tagged with gender, and then with the names of their children for example. In addition, terms can be defined, like grandfather, for a person who is male and who has children who themselves have children. A user could then find not just persons by name, but also find all photos that contain grandfathers.

Think about what has happened here: knowledge about grandfathers has been added without requiring that the original owner of the data do so. Indeed, it has been added without knowing if any grandchildren even exist. Nevertheless, when they are born, and their name and parentage are added, they are discovered as grandchildren. If by chance in your family, the grandfather is not called “grandfather,” but rather “granddad,” that is not a problem, as one simply has to define a synonym.

Semantic Searching

The aim of semantic searching is to get at the real intent of a query, rather than simply matching a page to a search string—in other words, the aim is to improve the accuracy and relevance of searches by understanding the intent of the user and the contextual meaning of terms employed. A platform that searches semantically must therefore consider various parameters, including context of search, location, intent, variation of words, synonyms, generalized and specialized queries, and concept matching in order to provide relevant results. The user enters a phrase that is intended to denote

[23] http://en.wikipedia.org/wiki/Semantic_data_model

an object about which the user is trying to gather information. Typically, the user is not attempting to find a particular document, but a host of documents that together will provide the desired information. The goal therefore is to deliver the information required rather than have the user sort through a list of loosely related keyword results.

One example of this kind of approach is one of Google's projects, called Knowledge Graph.[24] The Knowledge Graph is a knowledge base used by Google to enhance its search engine's results with semantic search information gathered from a wide variety of sources. Knowledge Graph was added to Google's search engine in 2012 and provides some structured information about the queried topic in addition to a list of links to other sites. According to Google, the information in the Knowledge Graph is derived from many sources, including the *CIA World Factbook* and *Wikipedia*. As of 2012, it contained over 500 million objects and more than 18 billion facts about objects and the relationships between them, which in turn are used to understand the meaning of the keywords entered in a search query.

In the example below, the user entered the phrase "How can I learn to swim". The search engine has found the right type of content and although none of the results is an exact match to the phrase, they match the intent of the query.

[24] http://www.google.com/insidesearch/features/search/knowledge.html

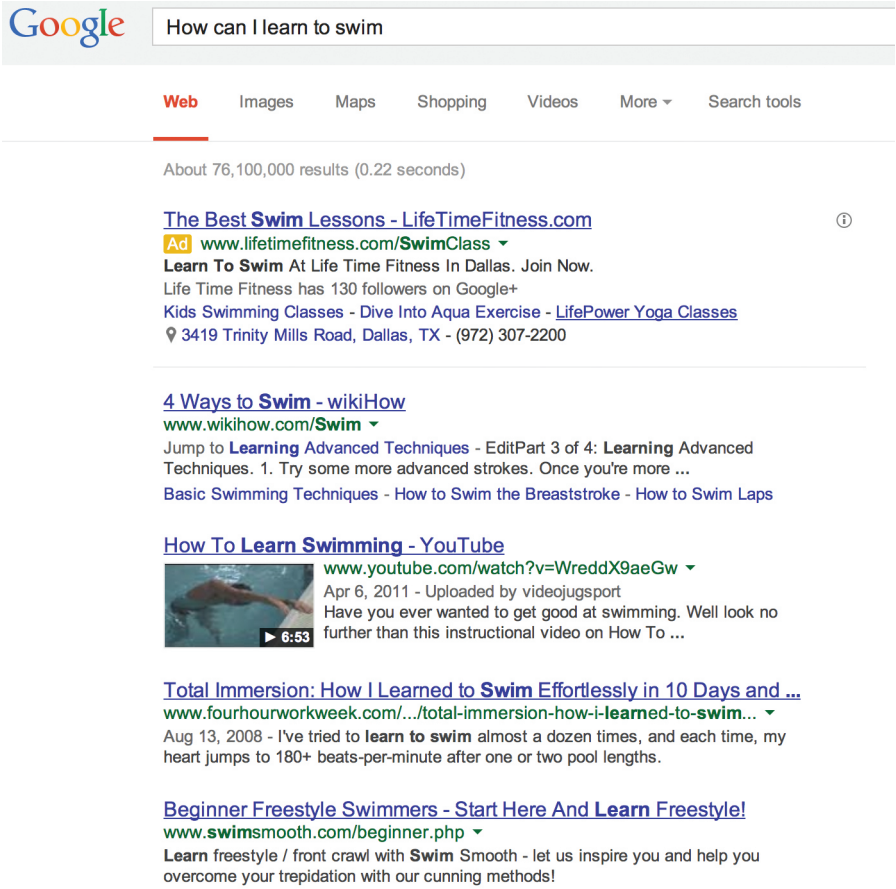

Figure 2: Results of Google query, "How can I learn to swim"

Another example is GoPubMed—a knowledge-based search engine for scientific articles in the biomedical area. GoPubMed structures the information contained in several millions of articles present in the Medline database using Medical Subject Headings and Gene Ontology (i.e. a set of tags that captures ideas of gene science). According to some sources, the search engine allows researchers to obtain relevant search results significantly faster than on Pubmed, the U.S. National Library of Medicine's citation database.[25]

An effort is currently under way to use semantic data modeling to structure data in ways so that it can be shared easily between banks, financial institutions and

[25] http://www.gopubmed.org/web/gopubmed/

regulators as a means to better understand and manage big banks' risk profiles.[26] This essentially amounts to pulling and comparing risk information from a variety of different systems and platforms, written at different times by different people. To do so, the joint effort by the Object Management Group and the Enterprise Data Management (EDM) Council to standardize the language used to precisely define the terms, conditions, and characteristics of financial instruments, and the legal obligations of corporate activities is taking shape in the form of the Financial Industry Business Ontology (FIBO). Under the Dodd-Frank Act and Basel III, banks will also have to report much more detail about their operations, more frequently.

The semantic data model is already used to promote common data formats for the World Wide Web to link sites to one another. At large global banks, common data infrastructure is still a work in progress in most cases. Internal structures have allowed different (and incompatible) data sets and systems to develop, making the task of accumulating and repurposing data for compliance reporting and internal risk analysis difficult and time consuming.

Semantic data on derivatives, for example, could automatically be tied to asset classes, generating information not only for reporting purposes, but also for making strategic business decisions, as well as evidence-based adjustments to the regulatory environment of the banking sector. In this case, operational ontologies based on the FIBO standard could then scan swap transactions and automatically detect when swaps are truly credit default swaps, truly interest rate swaps, or other types of derivatives. This would be a significant step forward for the financial industry, because it allows unambiguous identification and confirmation of the nature of complex transactions.

The ultimate goal is for FIBO to serve as the global open data standard for all financial institutions, and for regulators to use it in their oversight and monitoring activities. If all the organizations can align their data so that it carries the same meaning, the information being reported would be much more trustworthy, and the understanding of the level of systemic risks would improve. This will introduce greater health and trust into financial systems.

This also opens up the prospect of connecting FIBO's conceptual and operational ontologies to other industries' ontologies, like that of the healthcare, real estate and insurance sectors. For example, FIBO could address the data and metadata to manage the financial parts of real estate transactions, with the real estate industry developing its standard as a complement to cover the other nonfinancial aspects of the deals.

[26] http://www.edmcouncil.org/financialbusiness

Where do we stand today?

In order to grasp how difficult it is to compare the CSR performance of two companies in the same sector, consider the following hypothetical case based on real companies. ABC Company and XYZ Corporation are two global firms, of approximately equal size and revenue, whose products and operational activities consume significant amounts of water. In their CSR reports, both companies claim they are working diligently to lower their water footprint. In the meantime, a manager of a socially responsible fund is looking for opportunities that are in line with the fund's policy of investing only in companies that are actively working to reduce their water footprint, and he wants to know which of the two companies perform the best regarding this criterion.

From the respective CSR reports, the fund manager learns that both companies have a strong operational presence in water-scarce regions and that they recycle water used for washing and processing at those sites. Both firms draw water from local aquifers, gather rainwater and have water treatment facilities on site. However, ABC's water consumption figures cover manufacturing and distribution sites, but not offices and research centers. In addition, ABC considers the water present in its products as an ingredient and therefore does not account for it as part of its water footprint. Finally, water used by customers while using ABC's products is estimated using a methodology developed with an NGO that specializes in water footprint calculation. On the other hand, XYZ's water consumption figures cover all sites. The water consumed by customers while using the final product is estimated, but the water used by suppliers to produce and process ingredients is not. XYZ does not reveal whether the water present in its products is accounted for or not.

Topic	ABC Company	XYZ Corporation
Operations in water-scarce regions	Yes	Yes
Recycle water after washing and processing	Yes	Yes
Water from local aquifers	Yes	Yes
Gather rainwater	Yes	Yes
Water treatment facilities	Yes	Yes
Water consumption on all sites	No	Yes
Water in products	No	Not disclosed
Water used by customers, calculated using recognized methodology	Yes	No
Water used by suppliers	Not disclosed	Yes

Table 1: Comparison of water usage data as provided by ABC Company and XYZ Corporation in their CSR reports

Despite the fact that both companies have disclosed much information in their CSR reports, it is clearly extremely difficult to directly compare and determine which of the two has the lowest water footprint.

The case presented above is common in industry today and does not only concern water, but many other important sustainability parameters.

There is currently no standardized sustainability balance sheet that covers the full range of activities of companies, or which allows the reporting company to assign different sustainability elements, such as water, waste, and emissions, to different parts of the balance sheet. In addition, the reporting parameters differ considerably between firms, and the calculation methodologies and changing reporting framework do little to help the situation. What is missing, is a common set of standards and metrics—a "currency"—that would allow the analyst to build the sustainability balance sheet (semantically tagged, of course) and compare the two companies directly. It goes without saying that such a balance sheet would also be useful to the firms' operation managers to evaluate (and benchmark) performance and evaluate progress.

The Global Sustainability Index is a recent multi-stakeholder initiative with the aim to develop such a currency, so that the performance of companies can be evaluated in a transparent and pertinent manner—and, importantly, so that it can be compared with others in the same sector, thereby driving consciousness and investment. In this way, companies working to develop win-win scenarios can clearly be identified and those attempting to "greenwash" their operations can be exposed.[27]

Mind the Perception Gap

The point is that, with a data model based on meaning, CSR data can also be turned into assets that can be used. In addition, the true meaning of data (and not just the value) will always be preserved.

Adopting frameworks for CSR reporting is an important step and, as noted earlier, several of them exist today. The real challenge ahead, is data modeling based on meaning, so that CSR data becomes more transparent, more comparable, and, therefore, more trustworthy. Only then can it rationally become a true driver for improving performance and fostering greater responsibility. In this sense, semantic data can contribute directly to reducing the trust gap between business and its stakeholders.

[27] Quinn, F. (2013). Transitioning CSR from "nice to have" to "must have". CSR Index 2013. Zurich, Switzerland: InnoVatio Publishing.

As companies strive to grow their business in the context of new challenges and manage new risks generated by a fast-changing world, tension with stakeholders is unavoidable. Clearly, a system is required for mediating the multiple viewpoints of different stakeholders and the approach to CSR adopted by a given company or sector, before incorporating the data into standardized reporting frameworks like the Global Reporting Initiative. The semantic data model allows companies and their stakeholders to begin understanding each other and reconcile their points of view, and in doing so, turn knowledge into an asset by:

- Helping communication and exchange by describing the issues in a particular way that other people can understand.

- Explaining and making predictions by relating primary phenomena to one another and to more complex phenomena under discussion.

- Mediating multiple viewpoints, because no two people agree completely on what they want to know about a phenomenon, and models represent their commonalities while allowing them to explore their differences.

The good news is that the technologies to support the semantic model for CSR data already exist and are well known to experts, including those working on Web 3.0 applications, such as RDF, OWL, SKOS and triple-store databases. The challenge for technology companies, like WebFilings, that develop platforms for business reporting, is to make the power of these technologies accessible to mainstream users in the form of user-friendly applications that allow business teams to collaborate in real time in order to create documents with an intuitive and familiar format. Ideally, word processing, presentation, and spreadsheet capabilities should be integrated into a single platform so that the entire reporting effort is streamlined, with process and document controls. Incorporating semantic data capability into a platform with these functionalities will go a long way towards improving the accuracy, transparency, and compliance of CSR reports. It will also help companies to meet their stakeholders' expectations and regain their trust.

Trust is vital for society and for the global economy to function successfully and efficiently given the fast pace of change in the world today. The economic crisis that began in 2008 continues to challenge us today in part due to (a) the diminished sense of trust between businesses and their stakeholders, and (b) the lack of trust in the data on which businesses report performance and make decisions. Today's trust is cautionary: the public opinion slogan says "We will trust you if you let us verify".

Verification says, "Show me the data." Data quality therefore now is front and center in the debate. Data has consequences because what gets measured gets done. From financial reporting to greenhouse gas emissions to organizational management, measurable objectives are key to performance. The book aims to illustrate this leading role for data quality by (a) presenting the corporate and business data management challenges that businesses currently face and (b) describing new approaches that have the potential to fundamentally change the way data is used both by businesses and stakeholders.

CSR Report presents ways to demonstrably increase trust in corporate and business data that will benefit business leaders' decisions as well as economic and political relations, and consequently the global economy—not to mention society as a whole.

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