

Sustainability communication in the mining industry

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List of abbreviations

AA1000 – AccountAbility’s principle-based standard guiding sustainability reporting

CDP – Carbon Disclosure Project

CSR – Corporate Social Responsibility

DJSI – Dow Jones Sustainability Index

GRI – Global Reporting Initiative

EITI – Extractive Industries Transparency Initiative

ICMM – International Council on Mining and Metals

ILO – International Labor Organization

ISO – International Organization for Standardization

MDG – Millennium Development Goals

REACH – The EU regulation for Registration, Evaluation, Authorisation and Restriction of Chemicals

SR – Sustainability Report/ing

UNDHR – United Nations Declaration of Human Rights

UNGC – United Nations Global Compact

Summary

This report is based on a pre-study aiming to provide an overview of what and how the largest mining companies, internationally and in Sweden, communicate in terms of sustainability on their websites. The report presents a broad understanding of what large mining companies 'say' when it comes to sustainability. Conceptually, the study draws on writings in the areas of organizational communication, institutional theory and sustainability accounting. Methodologically, the study is based on qualitative textual analyses, to some extent aided by the text analytic tool Leximancer. The main findings of the study are that while most companies communicate all relevant sustainability issues and all the global leaders publish sustainability reports with the Global Reporting Initiative level A+, all companies distinctively communicate sustainability in *unique* ways. In this report, these similarities and differences in sustainability communication are retold in four main tensions and four main stories.

1. Introduction

Companies' communication on sustainability – economic, environmental and social – has increased over the years (Basil & Erlandson 2008; Borglund et al. 2008; Capriotti & Moreno 2007; Frostenson, Helin & Sandström 2011). Most large companies, independent of industry, communicate sustainability in some form and most of them engage in sustainability reporting (SR; Frostenson, Helin & Sandström 2012a; 2012b; 2013), defined by the Global Reporting Initiative (GRI) as helping:

organizations to set goals, measure performance, and manage change in order to make their operations more sustainable. A sustainability report conveys disclosures on an organization's impacts – be they positive or negative – on the environment, society and the economy. In doing so, sustainability reporting makes abstract issues tangible and concrete, thereby assisting in understanding and managing the effects of sustainability developments on the organization's activities and strategy. (GRI 2013: 3)

To communicate sustainability then implies communicating all three categories of sustainability – economic, environmental and social. Within each of these categories, however, there is a wide range of issues that *could* be communicated and the selection of what to communicate is a complex and contextually bound process. Given the growing use of SR, however, there is an on-going standardization of issues that *should* be communicated (Frostenson et al 2012a). Following the reporting guidelines developed by the GRI, the three categories of sustainability are fine-tuned into seven main sustainability issues: economy, environment, society, health and safety, human rights, product responsibility, and equality.

1.1 Sustainability in the mining industry

As different industries to some extent face different sustainability challenges, what are considered as salient sustainability issues are commonly decided in a particular context based upon whom the company's salient stakeholders are (Mitchell et al 1997; Jensen & Sandström 2011). This report focuses on *the mining industry* and it is to a large extent a unique industry, particularly when it comes to sustainability. Mining, in general, creates significant economic, environmental and social footprints. The industry also faces pressure to practice and communicate sustainability. In its report *Mine. The growing disconnect* from 2012, PWC concludes that:

CEOs are faced with persistent pressure from governments and communities who continue to demand an ever-growing share of the mining pie, generating investor uncertainty. Many CEOs have sought to improve stakeholder engagement, enhance transparency in tax payments, and focus on improving sustainable mining development. However, with the social licenses to operate becoming harder to obtain, CEOs recognise that actions are not enough – telling the story is also important. We expect to see more activity in this space going forward. (PWC 2012:15)

Both sustainability practice and communication of these practices are important, that is. It might even be argued that it is of particular importance that an integrated approach to sustainability, engaging both in sustainable practices and in honest and trustworthy storytelling on sustainability, is fostered in the mining industry. There are also a number of initiatives that point to the sustainability issues' increasing salience in the mining industry. The Extractive Industries Transparency Initiative (EITI) is one example, announced by former British Prime Minister, Tony Blair, in 2002 in Johannesburg, South Africa, at the follow-up meeting of the Rio-conference in 1992. EITI consists of representatives from countries, civil society organizations and mining companies. Another example is the International Council on Mining & Metals (ICMM), established in 2001, led by CEOs of large mining and metals companies and associations. ICMM writes on its homepage that: "Our vision is one of leading companies working together and with others to strengthen the contribution of mining, minerals and metals to sustainable development" (ICMM 2013). GRI has also developed a so-called sector supplements for the mining and metals sector ("Mining and Metals Sector Supplement", see Appendix), structured around the seven sustainability issues in the GRI framework mentioned previously.

1.2 Research question and aim

Based on the growing interest among mining companies and their stakeholders to work with sustainable development, the research question set forth in this report is: *How do the largest mining companies, internationally and in Sweden, communicate sustainability?*

Grounded in an examination of mining companies' sustainability reports and other sustainability communication on the companies' websites, the aim of this report is *to describe what is communicated and how it is communicated in order to create a broad understanding of mining companies' sustainability communication.*

1.3 Outline of the report

The remainder of the report is structured as follows. In chapter 2, we briefly introduce the conceptual model on which our analysis is based, along with a selection of its most significant theoretical underpinnings. Chapter 3 covers the research methods we have relied upon in our analysis. This chapter explains the selection of mining companies included in the study as well as the different phases during which our conclusions have emerged, as results of different methodological approaches. Chapter 4 presents our empirical results when it comes to the top companies in Sweden and chapter 5 provides a similar overview of the top global players in the industry. Chapters 6 and 7 contain a discussion of our findings and the conclusions and implications of the study.

2. Conceptual framework

When aiming for a broader understanding of mining companies' sustainability communication, there are several perspectives on organizational communication available for such a purpose (cf. Boland & Tenkasi 1995). We have chosen to appropriate a more traditional idea about organizational communication, as involving a message, a sender, a receiver and a focus on the form or media used to communicate, to fit the contemporary context for mining companies. This line of thinking about communication has been drawn upon on many occasions in addressing numerous different research questions in business studies. Hence, our chosen approach draws on theoretical underpinnings which are well established in this research discipline.

The first aspect considered is the MESSAGE the company sends out. Put differently, this is about WHAT the company communicates. Does it merely state facts or are emotions, values and storytelling involved? Is the information very detailed and specific or is it of a more general and overarching kind? Is the message kept simple or does it become highly complex to capture? Does the company predominantly communicate successes or are there signs of failures in the sustainability work as well? Is the message systematically told or more ad hoc?

The second aspect zooms in on the SENDER and the STYLE in which the message is sent. It is to a large extent the question of WHO sends the message. Focus is here on matters such as who is doing the talking, the CEO or is the company 'speaking'? Which tone of voice do they use, a more authoritarian or a more dialogic? Is the style more permeated by statements of how it is (concrete) or a more inviting 'we are in this together' (abstract)? Is it one of inclusiveness or exclusiveness?

The third aspect deals with the RECEIVERS of the company's message, those stakeholders the company seems to communicate with. Are they involved in core operations or more located in the periphery? Do specific issues target specific receivers? Does the target group of the company's sustainability communication seem to be a very limited group or a broad group of stakeholders? Are they globally dispersed or very locally anchored?

The fourth and last aspect considered in this version of communication is the FORM, or MEDIA, relied upon by the company. There is, of course, a limitation to the particular websites, but then focus is on how they make use of texts, pictures, graphs, numbers, sound, videos etc.

Taken together, how companies answer to these four aspects to some extent defines their approach to sustainability communication. The literature on organizational communication as used above does not, however, answer to what can be said about the different approaches. As this report predominantly has a descriptive approach, the study draws on previous literature for the structuring

of the empirical material to some extent, while subsequently emphasizing an empirically grounded understanding of what and how companies communicate in the area of sustainability. Later, in the discussion and conclusions, some theoretical ideas are, however, brought in (DiMaggio & Powell 1991; Milne et al 2006), in order to give some suggestions to how this study taps into previous research.

3. Research method

This report is based on information communicated by mining companies on their respective homepages. The selection of which mining companies to include in the study is built on a national interest in mining companies operating in Sweden, but also on generating an overview of the global corporate leaders in the mining industry. The ambition was initially to select and analyze the top ten companies in Sweden and the top ten companies globally. There are, however, only nine companies actually operating in Sweden, which meant that they were all selected:



Figure 3.1: The top nine mining companies operating in Sweden

Focusing on the global level, many of the largest mining companies in the world are also significant players in areas not directly related to mining, which means that other salient stakeholders influence the respective company's sustainability communication. This might complicate comparisons between companies, but as we interpret it, it can also open up for interesting observations between the cases.

Creating a top ten list of the global leaders in the mining industry also proved a bit arbitrary. Accommodating some of the borderline cases the top ten list was eventually extended to a top dozen list:



Figure 3.2: Logotypes from the top 12 global mining companies

At the time of writing this report, two very large corporations, Xstrata and Glencore, merged, and we have analyzed the website for the new company, GlencoreXstrata. However, it has not published a joint SR for 2012, but on the new website the company communicates the reports published by the respective companies before the merger. We have therefore chosen to use the Glencore and Xstrata reports from 2011. All other SRs analyzed in this report are from 2012 (from 2013 for those using a different financial year).

Given this selection of case companies, the data collection was based on what might be referred to as a *face-value analysis* of each company's website. This meant that sections on the particular site where the respective company explicitly communicates one or more of the seven sustainability categories were identified. For each company, a numbered list of sustainability related communication and the specific link to this section of text were also compiled. This list provided a grounded view of which categories that were communicated, where on the website and to which extent they were communicated.

This phase of the research process also implied compiling facts and other more tangible information facilitating comparisons between companies. It meant collecting basic facts such as size in terms of sales and number of employees, if and where the company's share is listed, where in the world the company is active, which minerals that are mined, and, importantly, which sustainability

related tools, initiatives and standards (for example, ICMM, UNGC and GRI) that are communicated.

This first phase then, focused on some of the basic facts and, predominantly, on the impression each site gives off and on describing which sustainability story each company is communicating. As the lists mentioned above in themselves do not tell much of a story, in the report, these lists, the basic facts and the visual impressions from each site, are translated into stories structured by the organizational communication model outlined in the theoretical framework (message, sender, receiver, form).

Following these stories based on the impressions each site gives off, the data processing was to some extent *triangulated* by zooming in on the SRs (where these were possible to download). In this phase, we enrolled the software for *qualitative text analysis*, Leximancer. Through Leximancer, each available SR was translated into a list of key themes (concepts that are widely used and the degree of connectivity between these concepts) and a concept map that illustrates the different emphases on sustainability that the respective mining companies make. In short, Leximancer helps answering the question: Which concepts and issues does the company communicate in its SR and how are these concepts and issues related to each other? The concepts maps could also be described as sustainability “heat maps” that in themselves tell a sustainability story.

The lists of key themes emerging from these analyses sometime included up to ten concepts for each company, but in our retelling of each Leximancer analysis, we have drawn the line based on the degree of connectivity to no less than around 30% in the Leximancer tables. This meant that on average, five to six themes are listed.

An interesting question for this report is, of course, how the stories based on the Leximancer-analyses match, or not, the stories based on the impressions each site gives off. A normative idea is that they should match each other; that they should tell the same story, but in most cases there are tensions. Why these tensions occur is to a large extent beyond this report, but it points to interesting avenues for further research.

Taken together, each case analysis is compared with the other case companies, a process in which we identify both general tendencies and specific differences in mining companies’ sustainability communication.

3.1 Websites as sources

Before presenting each of the companies’ sustainability communication, a note on the use of websites as sources for data collection is needed. We particularly think of one aspect: sites change, sometimes from one day to another and for most of the companies, particularly the larger ones, sustainability communication is a dynamic, ‘living thing’. The site analyses undertaken for this report have not been conducted at the same time, neither within nor across the

different case companies. Visits, and re-visits, have been conducted over a period of nine months (January-September 2013).

One evident example is that during this time, each company engaging in SR has published a new SR (usually published early to late Spring). This has on occasion resulted in the first phase of the data collection (the face-value analysis) being performed early on in the study (January-March), while the Leximancer analyses have been performed based on the latest SR (in April-September). Although discrepancies within a case might occur then, we do *not* see this affecting the general observations and conclusions drawn in this report as such. For sure, a critical event might change the sustainability communication, but path dependency also vouches for some inertia.

4. Findings – top companies in Sweden

Björkdalsgruvan AB

Björkdalsgruvan AB, the Björkdal Mine, is located in the county of Västerbotten, Sweden. The mine was opened in 1988 as a result of mineral findings (gold) in 1983 and subsequent prospecting. The Björkdal Mine is 100% owned and operated by a wholly owned subsidiary of Elgin Mining, Björkdalsgruvan AB. In 2010, it surpassed its first millionth ounce of gold production. The Björkdal Mine claims to be one of the most environmentally friendly and safe mines in Europe.

The mine is a combined open pit and underground operation with a surface plant designed to process between 1.2 and 1.3 million tons annually. The plant produces gold concentrate, which is sold to nearby smelters. The operations are based on a combination of gravity and flotation, with no cyanidation used. In 2011 Björkdal produced 41,000 ounces of gold with planned 2012 production between 44,000 and 46,000 ounces. Björkdalsgruvan employs 160 people and had sales of more than 75 million USD in 2012.

The Björkdal web page is in Swedish only and has a straightforward structure and outline eight different headings; 1) the Company, 2) the Process, 3) Human resources, 4) Environment, 5) Subcontractors, 6) History, 7) Contact, and 8) Job opportunities. The following four icons or ‘buttons’ are also available on the site; 1) Process, 2) Environment, 3) Entrepreneurs, and 4) Preconditions. The headings above, which are identical to any of the icons, mentioned lead to identical information. The top of the web page exhibits a photograph of an operations officer ‘in action’, remote-controlling underground mining equipment. The other pictures on the site give a ‘natural’ (unrefined, authentic) impression and illustrate the headings and icons of the website. There is no sustainability report available on the website, and very little evidence of any detailed guidelines and policies on sustainability and environmental issues. No financial information in relation to sustainability is provided.

The MESSAGE conveyed is comparatively high on *factual* content. Although there is room for *values*, much of the message is descriptive, for example, the history of the mine, the production process and the environmental implications of the mining operations. Accordingly, the message appears rather *specific* and *territorial* (related to the conditions of a specific mining site) and simple rather than complex (for example in terms of the language used). There is an emphasis on stressing *success* in different domains.

The SENDER is on the *local* level and the STYLE is *concrete*. In every section of the website the message includes oral statements by local level employees in different fields of activity, who testify to the success of Björkdal. There is little evidence of authority yet little evidence of dialogue.

One interpretation is that the web is designed to communicate basic *information* primarily to RECEIVERS that include *stakeholders* in the *local* community,

including possible future employees. By restricting the website through exclusive reliance on the Swedish language, the *target group* immediately becomes more *limited*. The FORM relies mainly on *text* and *pictures*, supplemented by a certain amount of *numbers* to highlight key facts.

The interpretation that the whole communication principally is designed for a local target group is plausible because the Elgin Mining (owners) website holds corporate social responsibility information (notably an environmental and sustainable development policy and a health and safety policy) as well as financial information and related items targeting investors. Possibly, as Björkdal is wholly owned by Elgin Mining, local management might see little reason for communicating sustainability in detail to prospective investors. Additionally, the Björkdal Mine has not been subject to extensive media interest for environmental- or sustainability-related events and thus the need to attempt to create legitimacy through the web can be perceived to be limited. It should be noted that while the Elgin Mining website communicates sustainability in more detail than the local level Bjorkdal site, the Elgin website also is comparably simple and straightforward in relation to many other players in the mining industry. Thus, the simplicity of the Bjorkdal web-based sustainability communication may itself mirror the philosophy in this area of its owners.

Dannemora Mineral

Dannemora is a mining and exploration company, and its main activity is mining in the Dannemora iron ore mine. Dannemora employs 51 people and had sales of 21 million USD in 2012. The company's B shares are traded on First North in Stockholm and on Oslo Axess.

Visiting its website, there is a picture of a small, idyllic mining facility, partly covered by snow. There are five main headings; Home, About Dannemora, Operations, Market, and Career. Then slightly to the right are the headings of Sustainability, Investor relations, Press, and Contact. The first impression is that the site speaks straightforwardly to the investor, both through text, pictures (diagram of the Dannemora share) and videos.

Exploring the Sustainability heading, the MESSAGE stated is that the company "shall operate with a high level of profitability, responsibility and expertise, enabling it to be an attractive workplace and business partner", and that "[t]he goal is to be a responsible and sustainable company in every way." In a coherent but short text, the visitor can read about the company's ambitions and principles in the areas of: Health and safety, Quality, Personnel, Environment, and Energy. In terms of what Dannemora communicates, it is predominantly about *values* and on a very *general* level. The message is *simple* and positively framed. Dannemora has corporate governance guidelines, but it does not publish a sustainability report nor communicate any other activities in the sustainability area.

The SENDER is the company, using a rather *abstract* voice, *informing* the visitor about its sustainability ambitions and values. The RECEIVERS seem very *limited*

in Dannemora's case. Given the very generally formulated and limited sustainability communication, and no enrolment of any third-party actors (standards, accreditations, initiatives etc.), it is difficult to identify whom Dannemora communicates with in the area of sustainability. The MEDIA used is predominantly *text*, with only two *pictures* (one from inside a mine and one of a four-leaf clover displaying Dannemora's values).

Dragon Mining

Dragon Mining is a Nordic gold producer, registered in Australia and listed on the Australian Securities Exchange, with operations in Västerbotten, Sweden and in Finland. The Svartliden Production Centre is located in northern Sweden, west of the Skellefteå Mining District. Svartliden was brought into production in March 2005 and represents the first integrated mine and treatment plant to be developed under the new Swedish Environment and Mining Acts. By the end of September 2012 it had produced more than 300,000 ounces of gold. The Svartliden gold deposit is mined by open-cut and underground methods, with material processed through a carbon in leach plant (CIL) with a design capacity of 300,000 tons per annum. Sales amounted to 79 million USD for 2012.

The website is strictly based on the English language. It is headed by a scenic picture of a minerals transport through a sunny winter landscape. Ten headings are visible; 1) About us, 2) Operations, 3) Exploration, 4) Investor, 5) Reports, 6) ASX releases, 7) Gallery, 8) Employment, 9) Links, and 10) Contacts. Next to the headings is a photograph, which automatically switches between five different pictures of a winter landscape, indoor operational work, miners in helmets and mining equipment 'in action'. There is a newsflash section showing short headings on matters such as the release of a new financial report or a new disclosure policy. There are links to the latest annual reports and presentations, and 'live information' on the current share price of the company on the Australian Stock Exchange (ASX). Each heading is supplemented with subheadings, the most plentiful, which refers to the categories of Investor, Reports and ASX releases.

The website refers to ASX corporate governance practices and includes a detailed code of conduct, a diversity policy, a remuneration and nomination (bonus scheme) charter and several other formal policy documents, but no sustainability report. The web is bent towards communication with investors and packed with managerial jargon as evidenced by this quote (italics added): "Dragon Mining Limited is a *leading* Nordic gold producer with the *management, financial and resource capacity to deliver on its growth strategy* to produce 150,000 ounces of gold per annum. The Company will use cash flows generated from operations to *aggressively explore and develop the highly prospective* Kuusamo Gold Project in northern Finland."

The MESSAGE is mainly concerned with the reporting of financial performance and with regulation compliance, making the message oriented towards *factual* content and *complex* to grasp while mostly concerned with the celebration of *success*. The presentation appears highly *systematic*. One interpretation is that

the company is using the website to attract the appeal of potential investors, and that investors are seen as oriented towards financials and towards the existence of formal policies and guidelines, but not towards the sustainability dimension (as evidenced by the absence of a sustainability policy). The SENDER/STYLE is *top-level* and uses an *abstract* voice. There is very little use of the pronouns “we” or “us” and evidently a matter of conveying *information authoritatively*. The RECEIVERS appear to a lesser extent to include employees and to a greater extent to include regulators, authorities and investor, making the target group *global yet narrow*. The FORM relies heavily on *text* and *numbers* and to a limited extent on pictures.

LKAB

Luossavaara-Kiirunavaara AB (abbreviated LKAB) is an international minerals group owned by the Swedish government. The group is a world-leading producer of processed iron ore products for steelmaking, and a growing supplier of mineral products for other industrial sectors. LKAB's sales for 2012 amounted to 26.971 MSEK. Production equaled 26.3 million tons of iron ore products. The group employs 4.100 people in 14 countries.

Three alternating pictures head the website. One shows a mining worker wearing a helmet and safety glasses, against the backdrop of a plant and surrounding mountains. This picture is linked to the words “*resource efficient*” and a subtext on resource and climate efficiency and sustainability. The second picture shows test tubes with transparent fluids and the words “*mineral solutions*” along with a subtext on the importance of minerals for modern life. The third picture exhibits iron ore pellets at close range, along with the words “*quality first*” and a subtext about customized, climate smart iron ore products and world-class service. There are four main headings on the website: 1) About us, 2) Our approach, 3) Careers, and 4) Future. Financial facts and corporate governance, the latter with a corporate governance charter, are included under “About us”. Information on values, policies, work environment and safety as well as quality and environment is presented under “Our approach”. These two main headings also are the ones with the most plentiful subheadings.

The heading “Performance in Iron Making” is available on the right hand side. Below there are two brief news headings such as the release of a new interim report. Underneath are links to six subsidiaries and 12 icons on products, green pellets, suppliers, sustainability, investments, short facts, new main levels and new mines, subsidiaries and R&D.

The sustainability icon leads to LKAB's sustainability strategy 2013-2020. This strategy states as its objective that: “LKAB generates prosperity by being one of the most innovative and resource-efficient mining companies in the world”. This overall objective is operationalized as follows:

- 1) *LKAB will be one of the leading mining companies in terms of resource- and climate-efficient production. Our customer offer is efficient ironmaking*

(Performance In Ironmaking) and climate-smart products (LKAB Green Pellets).

- 2) *LKAB will be an industry leader in research, innovation and new technologies.*
- 3) *LKAB will be a desirable partner for product and technology development with customers and suppliers.*
- 4) *LKAB will set an international example in the mining industry in terms of ethics, work environment, equality and diversity.*
- 5) *LKAB's operation will enable sustainable community development and generate prosperity.*

According to the sustainability strategy, sustainable development has the following benefits and foundations:

- 1) *Increases our positive contributions to community development, people and the environment, and strengthens our long-term profitability while minimizing negative impacts on our surroundings.*
- 2) *Contributes to the business by helping us manage risk, strengthen our brand, increase competitiveness and reduce costs.*
- 3) *Is based on LKAB's values: Commitment, Innovation and Responsibility.*

Four strategic focus areas are presented which are covered in the sustainability strategy: 1) Attractive LKAB, 2) Attractive communities, 3) Responsible operation, and 4) Resource-efficient production. Each focus area includes goals and activities. From 2012, the group publishes an *integrated* report, which includes the annual report and the sustainability report.

The MESSAGE is a combination of *facts* and *values* with much efforts dedicated to facts aiming to explain company operations (“about us” and “our approach”) and some values especially when it comes to the sustainability strategy. The message is quite *specific* and *complex* detailing various characteristics of the company and its operations. The communication appears *systematic*. Interestingly, the sustainability strategy holds information not only on success but also - under the heading of responsible operation – on “*significant atmospheric emissions*” and “*dirtying dust*”.

Analyzing the company's Integrated report from 2012 with Leximancer, the following key themes emerge, in order of relevance: financial, year, iron, LKAB and company (Figure 4.1). The contents of the Leximancer analysis suggest an important position for financial accounting and reporting. The financial theme is composed by subthemes including accounts, statement, assets, income, report and balance. There are concepts that relate to sustainability but those are comparatively general and can be related to many other matters too. Such subthemes include environmental, employees, process, operations, and product. It is fair to say that the LKAB leximancer is based on an integrated report and it is therefore reasonable to expect that financial reporting terms will be more heavily emphasized in their case than in other cases where the analysis is strictly based on a sustainability report.

(Fäboliden), Sweden, and in Finnish Lapland (Pahtavaara). Lapland Goldminers is listed on First North, an alternative marketplace for NASDAQ OMX. Its' strategy is, through profitable mine production, to continually expand and develop new areas where gold deposits have been found. Gold production in Pahtavaara began in 2008. In 2010 it amounted to some 23800 ounce, with an average extraction ratio of some 87 percent. The Swedish site is in a project phase. Sales for 2012 equaled some MSEK 210 and the total number of employees was 74.

The web is structured around seven main headings; 1) Home, 2) About the company, 3) Investors, 4) Corporate social responsibility, 5) Mines, 6) Mining projects, and 7) Exploration. Below the headings there is an alternating picture of each of the two mining sites accompanied by short facts on each of the two. On the sublevel there are short written facts typically accompanied by pictures taken outdoors in the regions of the mining sites. Underneath the main headings there are six icons; 1) Careers, 2) Press releases, 3) Calendar, 4) Share price, 5) Presentations and 6) Contact us, a geographical map indicating areas in interest in the Nordic counties and a press release section. The language used is informal and down-to-earth.

Under the heading 'Corporate social responsibility', there is a short environmental policy statement and a value statement concerning social responsibility. There are also files attached that report on the environmental impact assessment made at the Swedish site. There is little attention devoted to sustainability on the web page and no sustainability report is available.

As there is little explicit communication of sustainability on the website, this analysis becomes rather sketchy. There is reliance on *values* (value statements) and *facts* (environmental impact assessment), the first of which is *general* and the second which is *specific*. The message is *simple* and *ad-hoc*. The SENDER/STYLE has a *local* level-flair and is written in a *concrete* voice with *dialogic* elements (e.g., "get in touch with us, we are glad to help if there are questions"). RECEIVERS seem to be envisioned as mainly *external* ones, who are addressed using *text* and some *pictures*.

Lovisagruvan

Lovisagruvan is a small mining company extracting ore with high zinc and lead and some silver contents from an underground mine in Bergslagen. The minerals finding was made in 1985 by a joint venture between LKAB and BP-Minerals. Lovisagruvan delivers its product to the Boliden concentrator at Garpenberg. The current production volume amounts to some 3.000 tons per month. The target is to reach 40.000 tons per year. Lovisagruvan has 17 full time employees in production. Revenues for 2012 amounted to MSEK 43.2. Lovisagruvan holds a share in the ownership of the Stekenjokk mine in Västerbotten, which is not currently in operation but where there are findings of copper, zinc and precious metals.

The main website shows four alternating pictures from the mining production site. The pictures show the employees at Lovisagruvan and different facets of

production. It is striking to note how the pictures are “authentic” i.e. they have not been subject to any styling but could have been taken with any cell phone camera by anyone. The site is exclusively in Swedish and has seven headings: 1) Home, 2) Stock information, 3) Organization, 4) Production, 5) Market, 6) Media and 7) Contact and information. The main text leans towards a description of the minerals finding, the production, the machinery and the production volume. The seven headings reveal written and numerical information in a straightforward way about production and financials. Photographs appear occasionally, that have the same straightforward characteristics as the web overall. With the exception of a few lines on environmental permission and emissions related to its operations, which appear under the production heading, there is no mentioning of sustainability issues.

The story told is one of a small, *local* mining company with informal management producing ore for Boliden. There is a reliance on *facts* and on *specific information* about the mine. Being a site entirely in Swedish and with very little marketing efforts put in, the impression is that the web is *territorial* and rather *ad hoc*. The STYLE is informal, *concrete* and oriented towards *information*. Information seems to be oriented towards the *local* community including employees and to some extent to investors. *Text* and *numbers* dominate the presentation.

Lundin Mining

Lundin Mining Corporation is a diversified base metals mining company with operations in Portugal, Sweden, Spain and Ireland, producing copper, zinc, lead and nickel. In addition, Lundin Mining holds a 24% stake in the world class Tenke Fungurume copper/cobalt mine in the Democratic Republic of Congo (managed by FXC; see among the top global companies). Lundin sold for more than 721 million USD in 2012 and has about 1600 employees. Its headquarters are in Toronto, Canada.

Visiting Lundin’s website, the impression it gives off is one of a global corporation emphasizing financial aspects (stock quote and financial statements are highlighted, along with videos on financial performance) and concrete mining activities (videos presenting mines). The image displayed on the first page shows three trucks in what seems to be an open-pit mine. Two of the trucks are fully loaded with rocks and the third is going the other way, empty. Lundin’s website is structured around four main headings, Investors, Corporate Responsibility, Operations & Development, and News. Only Investors and Operations & Development contain sub-headings, where none but a heading on Corporate Governance gives any signs of sustainability issues being communicated.

Under the heading Corporate Responsibility, the emphasis on concrete mining is toned down. Four areas are defined, Environment (picture of a lake, some forest, and a smeltery), Social (picture of two black women in a green environment), Health and Safety (picture of excavators), and Corporate Governance (picture of a smeltery and offices taken from above). The only clickable links under the

Corporate Responsibility heading is to access the latest sustainability report and to the external website of Zinc Saves Kids, which Lundin supports. The visitor of the site can also follow a link to send Lundin mining a message.

In regard to sustainability communication, the MESSAGE on Lundin's website is *general* and *value-driven*. Statements such as "to create sustainable value" and being "a good corporate citizen" are not really substantiated, but come across as positive visions and indicators of the company's ambitions. The visitor has to download the SR in order to get more information on what is meant by such general statements. The most concrete information on the website is that the company follows the GRI framework in its SR. The message on the site is also a positive one, one of a company contributing to society, strengthened by the logotype and support of the initiative Zinc Saves Kids. A general observation is that the financial communication is never mixed with the Corporate Responsibility communication.

When running the SR (simply named Sustainability report - GRI level B) from 2012 through Leximancer it is revealed that the key themes in the report are, in order of relevance: operations, local, mine, safety, development, rock, and water (see Figure 4.2). Water, rock and mine are explicitly coupled, but the other key themes show very loose couplings. The sustainability message in the SR then is first one in which sustainability has to do with environmental issues, such as waste and tailings, predominantly linked to Zinkgruvan in Sweden. It is interesting to note that the key theme development (tied to community development), linked to social issues in sustainability, is tied to a certain place, TFM in Congo.

The SR also reveals that Lundin works with ICMM, EITI, UNGC, OHSAS, has CG guidelines and a code of ethics. The rather short-handed and superficial statements conveyed under the Corporate Responsibility heading are in other words substantially developed in the SR. It is as if the web page is meant to remain an overview for sustainability issues and that anyone interested in sustainability has to dig into the SR. Financial aspects are more prioritized.

The SENDER of Lundin's sustainability communication, the STYLE in which the message is conveyed, is one of a *concrete, top-down* and *matter-of-fact* style. Lundin *informs* the visitor and does not, except for the possibility to "Send us a Message", through its communication style invite a more dialogic orientation. The RECEIVERS of Lundin's sustainability communication seems to be a *limited* yet *global* group of stakeholders. Given that the financial issues, except for those communicated in the SR, are communicated separately from sustainability issues, there seems to be an idea about different sets of stakeholders for financial aspects and sustainability issues respectively. The MEDIA is traditional; text, pictures and, in the SR, a lot of numbers and diagrams. In the SR there are a lot of pictures in relation to the amount of text. Besides pictures showing core mining activities, there are a lot of images on nature, animals and people. Diagrams on emissions, energy consumption, explosives etc., are frequently used.

Entering New Boliden's website, there's a fixed picture of a worker at a smelter. On the right side of the picture there is a slogan: "We produce metals for modern life", under which there are messages clearly related to sustainability (restoring mining areas and recycling of electronic scrap). There are seven headings: About, Sustainability, Products, Operations, Investor Relations, Press, and Career. Press releases, news, career and financial information dominate the remaining part of the first page. Overall, the site is easy to navigate.

Visiting the Sustainability heading, there is an image of a lake and tree, with a horizon to what seems to be the ocean. The first MESSAGE that meets the eye is "Towards a sustainable development", indicating that the sustainability work is a journey. As such it is a very *simple* message. Formulations are also *general* and *value-oriented* (ex. "our ambition is"). New Boliden's support to Zinc Saves Kids is also highlighted. There are separate sub-headings for social, environmental and economic responsibility, as well as for SRs, business partners and in focus.

Under the Social responsibility heading the value-orientation continues (as in The New Boliden Way, the Group's organizational and production philosophy), but when zooming in on the health and safety of workers, the message is also much more *specific* and supported with *facts*. OHSAS 18001 is mentioned. The responsibilities toward the local communities in which the company operates are also addressed, predominantly in terms of having a good dialogue. Under the Environmental responsibility heading the message that stands out is to minimize emissions. There are both specific facts and more general value-oriented statements. For Land, Waste, Energy use and Recycling, the message is more value-oriented and general. Current licensing procedures and salient legislations affecting New Boliden's operations are also listed. REACH and ISO 14001 are mentioned in the Environmental responsibility section as well. The message under the Economic responsibility heading targets the contribution to the local communities in which the company operates as well as very general formulations on responsibilities toward investors, customers and suppliers. Under each sub-heading, for each of the three sustainability pillars, the company also lists its goals in the respective area. It should also be mentioned that New Boliden lists its corporate governance guidelines, but under the heading About.

The sub-heading Sustainability Reports merely links to different reports (not all clearly sustainability related), of which the GRI appendix is the most sustainability-related one. Under the Business partners sub-heading there is an emphasis on Corporate Social Responsibility (CSR) and on dialogues with, predominantly, customers and suppliers. UNGC, ILO and ISO are mentioned, as well as the company's code of conduct. Under the sub-heading In focus, there is an extensive commentary on the case of delivering smelting residues to Chile in the mid 1980s.

The company publishes a separate sustainability report (GRI B-level), but it was only possible to send the GRI appendix from 2012 through Leximancer (see Figure 4.3). From this appendix, the key themes that were revealed were, in order of relevance: emissions, Boliden's, Boliden, management and company. What this predominantly signals is that the sustainability issue that stands out in

Boliden's sustainability communication is clearly emissions. The social responsibility issues are not as evident in this analysis.

The SENDER and the STYLE in which the messages are sent are both done in a very inviting, *bottom-up* way (as in impact on local communities and on dialogues with partners) and in a more *top-down* and *authoritarian* way (as in the health and safety of workers). In general, the style seems permeated by New Boliden wanting to invite the visitor to its journey towards sustainable development. The RECEIVERS of the company's sustainability communication seem to be a *broad* yet rather *local* group of stakeholders. The sustainability issues are made salient on the first page and in the company statement of what it is all about, meaning that no stakeholder visiting the site can miss the sustainability message. Yet, when fine-tuning the analysis a bit, there seems to be a strong local focus. The health and safety issues specifically target the worker collective and potential recruits, while the issue of local communities seems to target these communities at large. The MEDIA used by New Boliden is based on *text* and *pictures*, combined in a way that makes the website very easy to navigate. There are also diagrams and videos, out of which one good example is the video on why New Boliden's products are necessary in modern societies, listed under About and Fun facts.

in combination with strong local commitment and outstanding business relations” (italics added), but no details about what sustainable entails are given. Moving to the sub-heading Corporate Governance, there are links to three sustainability-related policies: Whistleblower, Code of Business Ethics and Sustainable Development. Both the whistleblower policy and the code are more rule- and fact-based, while the sustainable development policy is much more *value-oriented* and *general*, as in: “We recognize that integrating stringent standards governing safety, environmental, economic and social activities into our business practice is a condition for our success and a benefit to society. Our vision of performance excellence can only be realized through strong sustainable development practices.” A list of principles then follows, of which most are written in terms of “we foster”, “we strive to”, “we respect”, “we aim to” etc., strengthening the value-orientation and general formulations.

Under the sub-heading Our approach, it is further stated that Northland “start out from a community building perspective”, but no details are given. To the right, there are sustainability-related links to the three policies already mentioned and to Mining Responsibly, which include a long text that details what is meant by this. This page seems to be the main sustainability page. Several international initiatives and standards are mentioned (ISO 14001, OHSAS 18001, UNDHR, ICMM, World Bank Operational Directive on Involuntary Resettlement, The International Financial Corporation’s (IFC) Performance Standards on Social and Environmental Sustainability), but it is in the same paragraph stated these are considered and followed when “developing our own standards”. The last sub-heading communicates Northland’s sponsorship of Luleå’s elite women’s’ basketball team (“Northland Basket – digging for gold”).

There is no SR, or similar, published by Northland that can be analyzed through Leximancer.

The SENDER of Northland’s sustainability communication and the STYLE in the communication seem to be rather *abstract*, although management seems to be the ones communicating. Under Our approach, the text on this page concludes with “*I feel confident about the future*” (italics added), implying a *top-level* manager’s voice but without specifying who says this. There seems to be a rather general, *broad* group of RECEIVERS of the sustainability communication. Given the sustainability issues peripheral placement on the website and its rather general statements, it is difficult to pinpoint any particular receivers. Regarding the MEDIA through which the company communicates, there is in general a mix of *text*, *pictures* and *videos*. There are videos on several pages, but no page that is sustainability-related. There is even a live cam from one of its mines, but again, no sustainability coupling.

5. Findings – top companies globally

Alcoa

There is a good chance that if you use a product containing aluminum (a soft drink, for example) or decide to take a plane somewhere, you are in a material relation with Alcoa. On its homepage, the company states that it “is the world's leading producer of primary and fabricated aluminum, as well as the world's largest miner of bauxite and refiner of alumina”. Its mines are located in Australia, Brazil, Suriname, Jamaica and other parts of the world. Alcoa processes most of the bauxite into alumina. The company employs about 61000 people in 30 countries and sold for close to 24 billion dollars in 2012. Company headquarters are in Pittsburgh, US, and the company's share is listed on the New York Stock Exchange.

Visiting Alcoa's website, the sustainability issues are highly visible. It is also evident that Alcoa has a more complex set of stakeholders to consider in its sustainability communication than many of the other large mining companies. Of the eleven headings on the first page, four has to do with sustainability: Safety, Sustainability, Community, and Environment. Pictures sliding on the first page also include sustainability, recycling and the Alcoa foundation (the company's community work).

Exploring the website further reveals a complex site, where cross-links between different pages make it difficult to orient. Clicking on Safety, for instance, leads directly to Sustainability, and both Community and Environment can be accessed through Sustainability. On the Sustainability page we learn that: “At Alcoa, we use our values to build financial success, environmental excellence, and social responsibility in partnership with all stakeholders in order to deliver net long-term benefits to our shareholders, employees, customers, suppliers, and the communities in which we operate.” Alongside this quote is a picture of Alcoa's CEO and in the background there are two hands holding a grain.

The MESSAGE is of a company engaged in all dimensions of sustainability and *successfully* so. The message is substantiated with very *specific facts* as well as through more *general* formulations on *values* adhered to at Alcoa. Although the message to some extent is clear, it is still very complex as Alcoa close to over-communicates sustainability and provides little help for a visitor aiming for a more holistic understanding about its sustainability engagements. The company is also widely engaged with organizations, standards and initiatives in the sustainability area. Alcoa is included in the Dow Jones Sustainability Index. It is part of ICMM, EITI and BSR; certified according to ISO 14001; and, it works with UNDHR, UNGC, ILO, MDG, REACH, and OHSAS. It also communicates its corporate governance guidelines, its code of ethics, publishes as separate SR (GRI level A+), and provides sustainability-related case studies (stories).

Running the 2012 Sustainability Highlights Report through Leximancer reveals the following key themes: Aluminum, sustainability, targets, and emissions

(Figure 5.1). Evident couplings exist between aluminum, emissions and targets, while sustainability is more connected to the key theme programs. Environmental issues, as in emissions, are in the map de-coupled from the sustainability-related programs.

The wide extent and complexity in Alcoa's sustainability communication might mirror the diverse operations the company is involved in (predominantly through vertical integration), although alumina is a common denominator. The SENDER therefore, more apparently than in many other cases, has to speak with many voices, appropriate to specific areas, when communicating the message. In the perhaps most salient sustainability issue related to mining, local communities (as in Juruti in the Amazonas), the voice is very *bottom-up* and of a *dialogic* orientation, aiming to communicate with these stakeholders. As stated under the heading Community: "We are committed to transparent and open engagement with stakeholders, as well as improving the quality of life in the communities in which we operate." In other instances it is more about informing stakeholders about the company's excellence in sustainability engagement, as when it comes to "Improving our products", a page under Sustainability. The style of communication then changes into a more *top-down* and *authoritarian* voice, as in "We believe world markets increasingly should, and will, demand sustainable products as defined by cradle-to-cradle design philosophy."

The complexity in Alcoa's sustainability communication might then be explained, or at least better understood, by its rather wide and diverse set of RECEIVERS; from local communities in the Amazonas to R&D staff at automobile companies or to those interested in the recycling of used soda cans. It is perhaps most evident in the way pictures are used. When communicating to those stakeholders interested in Alcoa's community work, there are pictures of children and of people out in nature. When communicating "Improving our products", there is a picture of the left front tire of a modern car. The MEDIA used is diverse; text, numbers, pictures, videos, and the voice of a narrator on some pages. The forms through which Alcoa communicates are varied, but the sheer amount of text is striking.

Overall, Alcoa communicates sustainability to a very large extent, to a wide set of stakeholders, in a wide variety of ways, and through a wide variety of media. In this way, it gives off a serious impression, but at the same time, Alcoa's communication seems to mirror the vertical integration of the company. This results in a complex set of stakeholders, which might be an explanation to why its sustainability communication is massive, very complex and not easily grasped.

which contain photographs. The contents range from share reporting, share prices and news to HIV/AIDS and TB programmes and enterprise development, Optima - the current affairs journal, recent tweets and Facebook. The main webpage holds links to social media including Facebook, Twitter, LinkedIn, Flickr, Slideshare and Youtube. The message on the main website is communicated in “we-form”.

There are twelve subheadings to the sustainability category; Approach and policies, our performance, employees, environment, safety and health, social, economic value, supply chain, mine-closure, reports, contact us, and case studies. These subheadings have a highly factual orientation and they are rather many. While the main subheading continues in the language of “we”, the message in the following subcategories changes from “we” to “what Anglo American does”. It is interesting to note how employees and economic value is treated as part of sustainability and the use of different standards and models including a sustainability performance scorecard, FTSE4GOOD standards, GRI indicators and Global Compact membership.

The MESSAGE can be partially categorized as *value*-based. For the most part however, the message appears strongly *factual* in its orientation. For each subcategory there are *specific* examples that illustrate the key message in rather *simple* terms and with a reliance on *success* stories (the latter which also can be found among case studies). The message is *territorial* in the sense that examples are taken from several different countries and locations but *global* in the sense of its coverage. The interpretation is one of a highly *systematic* sustainability communication telling the story of an industry-leader in sustainability.

Sending the 2012 Sustainable development report, named “Creating value: the future in mind”, through Leximancer reveals the following key themes, in order of relevance: operations, management, development, business, local, mine, Anglo American, water, and impact (Figure 5.2). The Angloamerican Leximancer includes twelve concepts and is comparatively broad in its orientation. The concepts and subconcepts included also indicate a concern for local level sustainability work with communities and an orientation towards people and employees.

The switching from “we” to “Anglo-American” can be seen as a step towards signaling the *authority* of the SENDER. The communication-dimension which can be inferred not only from the use of “we” on the main (first) pages but also from links to social media, is also replaced by the provision of *information* in the sustainability domain. The RECEIVER appears to be global and broad, including operations in various locations and many stakeholders. The use of models, techniques and standards such as a sustainability scorecard, responsible investments and FTSE4GOOD includes targets which are set that, in turn, can be analysed to detect boundaries for responsibility. If targets are met, there is little use to go further. On the web there is great reliance on *text*, with *photographs* as a supplementary medium. Each sustainability subsection is dominated by text. *Numbers* appear predominantly at the next level of the website.

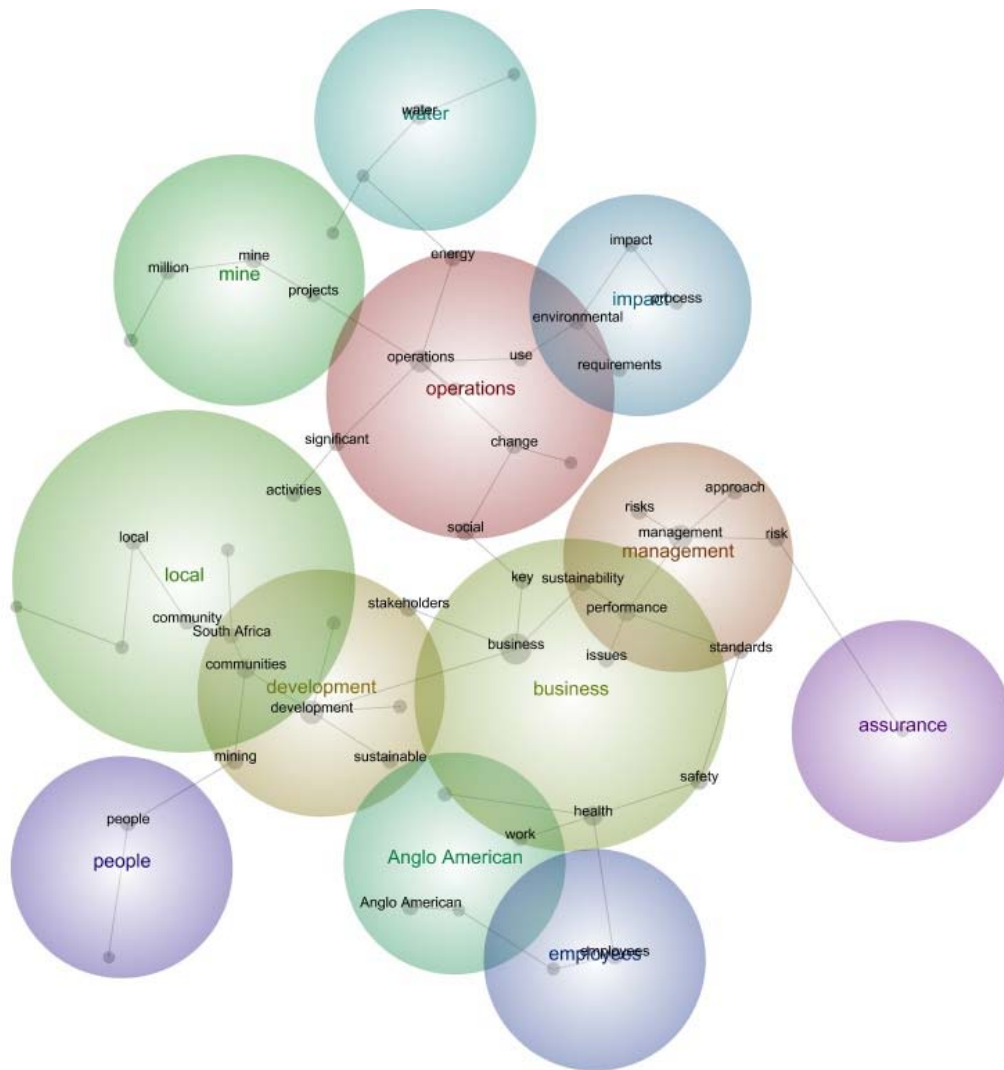


Figure 5.2. Anglo American's Sustainable development report from 2012.

BHP Billiton

BHP Billiton is a diversified company that mines aluminum, manganese, nickel, copper, iron ore as well as coal, petroleum and potash. BHP had revenues of 66 billion USD for the financial year 2013 (broken year, June-June) and when including contractors in its workforce, about 128000 people in 26 countries work for the company. It is listed on the Australian Security Exchange (ASX), Johannesburg Stock Exchange (JSE), New York Stock Exchange (NYSE) and London Stock Exchange (LSE), and the group's headquarters are in Melbourne, Australia.

Visiting BHP's website four sliders meet the eye, of which one is sustainability related ("A sustainable and socially responsible business", with a picture of two workers in the field, one woman and one man). There are six headings; Home, About us, Businesses, People & careers, Investors & media, and Contact us. "Sustainability" is communicated as a sub-heading under About us. Below the four sliders are four modules, of which one is about "Sustainability in action" and

it leads to case studies published by the company (22 cases 2012-2013, and a video), a page that is also organized under “Sustainability”.

Exploring the Sustainability heading, the largest image is of a group of people, six colored men and women, and one white woman, in an environment with green plants: “Sustainable development is a key priority. We are committed to health, safety, the environment and the communities in which we operate.” This MESSAGE about commitment to sustainability is also detailed in four sub-headings; Sustainability reporting (links to the most recent and the last years’ reports), Environmental and sustainability case studies (the cases mentioned above), Sharing opportunities with our communities (the company’s community work, for example The BHP Billiton Foundation), and Creating an enduring harmony between community and nature (the company’s environmental work).

BHP’s sustainability message clearly includes the three pillars of sustainability and the company provides *specific facts* (“community investment totalled US\$245.8 million”, “planting of more than 2.5 million native trees”) as well as *general values* (“committed to”, “we listen to”) constituting the company’s sustainability message. Among the different standards, principles and certification schemes that relate to the sustainability area, BHP only communicates UNDHR. A common aspect of the message is that alliances with other organizations and societies are highlighted, emphasizing that ‘we are in this together’, and that collaboration with stakeholders such as Non-Governmental Organizations is salient. BHP manages to give the visitor a quick overview of the sustainability message, while also giving more specific information once the visitor opens the SR and the wide range of case studies.

It should also be mentioned that sustainability is communicated on several pages beyond those under the Sustainability heading. Under Our company, the visitor can find the company’s charter (core values), corporate governance principles, and code of business conduct. Under People & careers, respect and benefits related to community and environment are mentioned as part of what makes the BHP workplace unique. A sustainability message is, however, less obvious when detailing the company’s Strategy, which is much more financially biased and more to the point in terms of delivering “superior margins”.

BHP labels its SR from 2013 “Our shared values” and running it through Leximancer reveals the following key themes, in order of relevance: risks, community, people, business, operations, use, activities, and sustainability (Figure 5.3). The social side of sustainability, in terms of taking responsibility in the communities in which the company mines, stands out, but it is not connected to the environmental side of sustainability in the map. Risks, as the most relevant theme, indicate a focus on risk management in the sustainability communication. Risks also include “environmental”, but as a key theme, risks is basically decoupled from emissions, as the perhaps most evident sign of the environmental aspects of sustainability. Emissions more or less occupy an independent place in the concept map.

The SENDER is a very confident company that speaks in a different style depending on sustainability issue. In regard to community aspects of sustainability, the tone is more inviting, *dialogic*, about giving, sharing, voluntary services, donating time etc. In regard to environmental aspects of sustainability the tone is more *concrete* and *authoritarian*, about preventing, minimizing pollution, rehabilitating land, protecting forest etc. Given the size and global presence of BHP, the RECEIVERS of the company's sustainability communication are potentially a very *broad* and *global* group of stakeholders. BHP's systematic communication of sustainability's three pillars might also reflect that the company attempts to communicate wide. Some differences in who the company communicates with can be noted in the same vein as with the sender. Given the lack of sustainability communication in the company's Strategy, a somewhat loose coupling between communicating with financial investors and, for example, local communities and NGOs can be noted. The MEDIA, the forms through which BHP communicates sustainability include texts, numbers, pictures and videos. The mix of media comes across as balanced and helps make the website of a very large corporation very easily accessed and navigated.

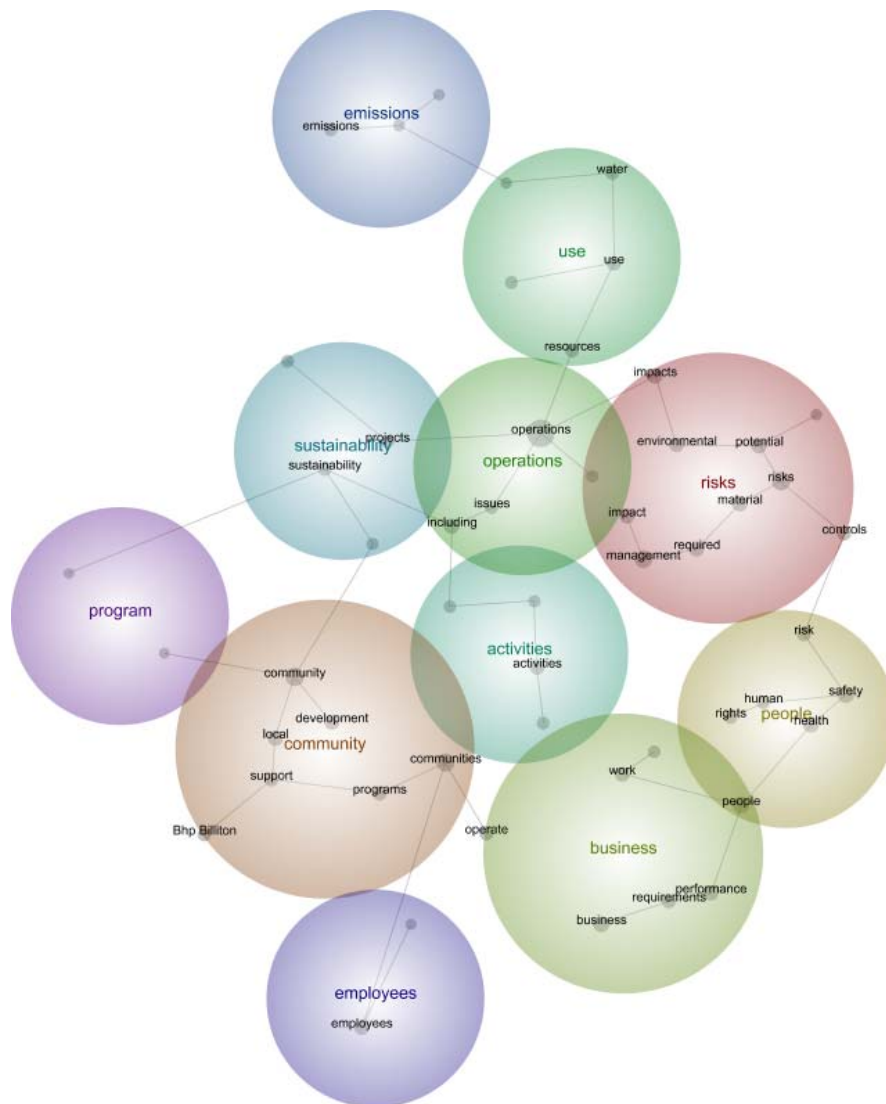


Figure 5.3. BHP Billiton's Sustainability report from 2013.

Barrick

Barrick's operates mines and exploration and development projects on four continents, and holds land positions on some of the most prolific and prospective mineral trends. The corporation has as its vision to be the world's best gold mining company by operating in a safe, profitable and responsible manner. In 2012, Barrick produced 7.4 million ounces of gold and 468 million pounds of copper. Revenues amounted to 14.457 MUSD.

The website is headed by four themes: 1) investors, 2) operations, 3) responsibility and 4) company. A picture of a production facility with a mountain background follows beneath, whereafter brief news and events follow, along with a link to the latest quarterly report and a video on "the remarkable people of Barrick Gold Nevada". In the low end are "about us", "most popular" and links to social media.

The "responsibility" heading leads to an image showing the contours of miners in helmets in extreme sunlight, along with the text "Modern mining includes the world around us". Next to it there is a clickable film sequence on "mining closure done right" and eight key fact statements, one each concerning water management, community investments, energy and climate change, air emissions, community engagement, employee safety and health, supply chain, and management approach, respectively. There are ten subsections to responsibility; CSR advisory board, our commitment, environment, community, heart of gold fund, safety & health, security, human rights, ethics and reporting. Beneath, there are two links, one to a separate website called Beyond Borders: Responsible Mining at Barrick Gold Corporation and the other leading to the most recent sustainability report.

The Responsible Mining site has the format of a newspaper with headings, illustrative pictures and stories that cover news related to sustainability issues globally in relation to Barrick. The sustainability report is structured around thirteen clickable themes; materiality process, water management, biodiversity management, waste and materials management, energy and climate change, employee safety and health, employee development and engagement, human rights, responsible supply chain, social impact management, community engagement, community safety and security, and community investments. All links display photographs, with motifs including birds nesting next to mining operations, miners wearing helmets and typical attire interacting with nature (water) or amongst themselves, or local community involved in various daily activities.

The MESSAGE combines *facts* and *values*. It is interesting to note the use of a newspaper format of the Responsible Mining website and how the format can contribute to the interpretation of the contents as factual. The use of images, photos and film sequences is both factual and value-based. The message is oriented towards *success*. The impression is *systematic* with a message which is *global*, telling *the story of responsible mining*.

Analyzing the company’s Corporate Responsibility Report from 2012 with Leximancer, the following key themes emerge, in order of relevance: Barrick, employees, mine, community, safety, areas, water, and performance (Figure 5.4). It is notable that the company name is closely linked to the concept of “environmental” in the Leximancer analysis. The concept of “employees” is closely linked to human rights and the concept of “community” to local, business, support and development.

The SENDER / STYLE is that of the “corporation” and it is more oriented towards *information* than communication. The RECEIVERS of Barrick’s sustainability communication are *investors* and *other stakeholders* globally. The target group appears to be *broad*. The MEDIA used by Barrick occurs by means of *text, numbers, pictures* as well as *movies*.

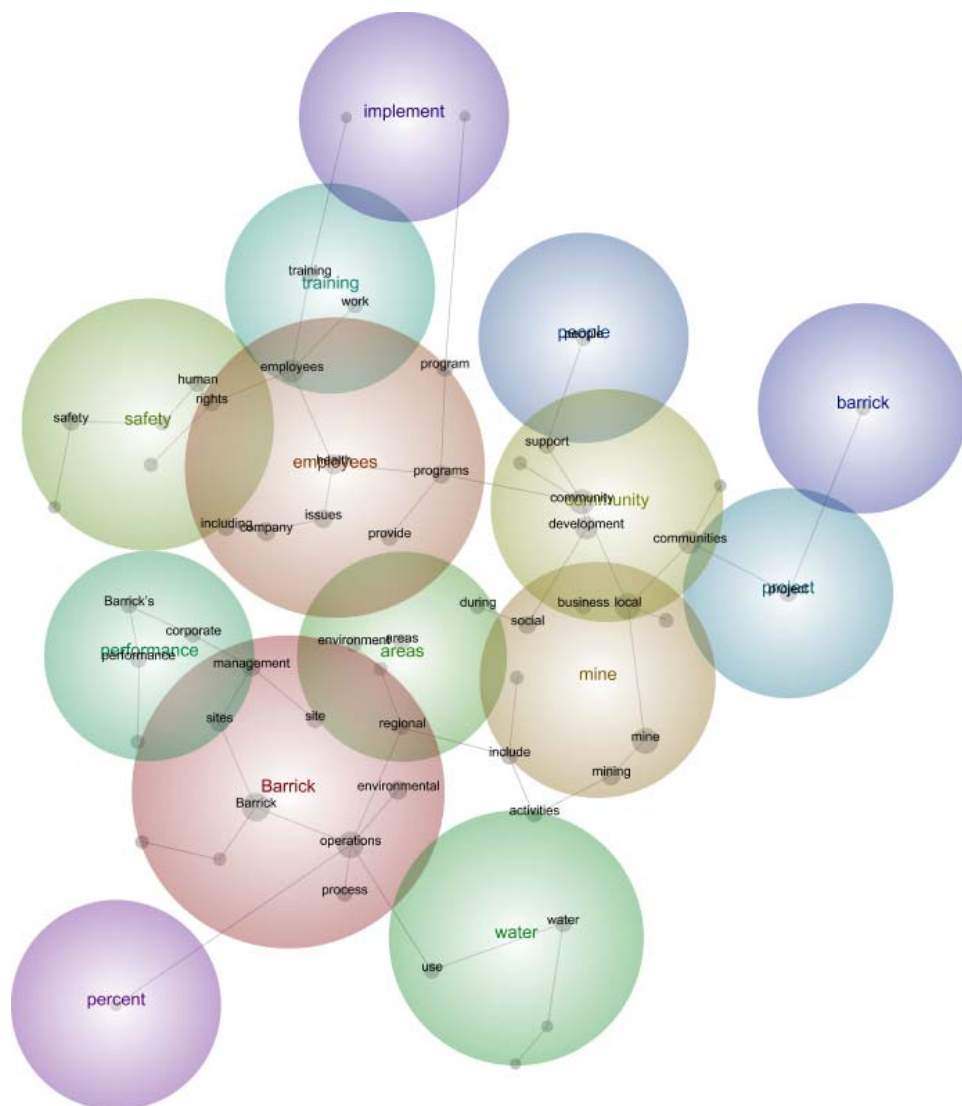


Figure 5.4. Barrick’s Corporate responsibility report from 2012.

Fortescue

Fortescue is a fairly young company and describes itself as “The new force in iron core”. The company has expanded heavily in the last years and now operates two mines in the northwest of Australia. For the financial year 2013 (July to June), Fortescue employed 3752 persons and 14536 contractors, and had revenues of 8120 million USD. The group’s share is listed on the Australian Stock Exchange (ASX).

Visiting the website, there are eight sliders of which five are dedicated to financial performance and export capacities, and of which three are dedicated to the aborigines. Six main headings make up the menu: Home, About Fortescue, Our business, Investors & media, Community, and People & careers. On the lower sections of the site, there is predominantly information related to corporate finances and operations, but for one link, which is directed to the environmental report. The Community heading covers sustainability issues. Ten opportunities are available on the left-side menu, which is broken down to the three main areas, making up the Community page (some of the sub-pages were not working). The three areas are: Social responsibility (“we aim to enhance communities”), Safety (“is a priority”), and Environment (“Protecting the environment is essential”). The broader approach seems, however, to be described under the first heading on the left-side menu, Corporate Social Responsibility, which incorporates most issues relevant to the company’s sustainability work.

In the first paragraph an overall MESSAGE in the sustainability communication is stated: “At Fortescue we aim to enhance communities, behave with respect and care for people and the environment, take broad responsibility for the effects of our presence and do what we say we will do.” This quote emphasizes the *value*-orientation of the sustainability communication, but the company’s message is also very *specific* as *successful* initiatives toward involving the aborigines in the businesses in and around Fortescue are the most visible activities in the sustainability communication, both in text and in pictures.

The program “A billion opportunities” is a good example of this and there are several testimonies from aboriginal entrepreneurs. An example from one of them is quoted on the website saying: “I was sitting in Newman with my family and, just, you know, things were not going anywhere. We didn't have a business, we were just sitting with nothing happening. And you get tired of just waiting for the royalties every year. So our family decided to get out and have a go and do our business. So it just started from an idea and its come this far. I'm really proud of our family that we've come this far. We're not exactly rich or anything but we come from a very poor background, like many Aboriginal people, and I'm just proud that we've come this far.” The sustainability message can therefore also be considered as rather *territorial*, as zooming in on the areas in and around the company’s mines.

The company communicates several sustainability-related international standards, initiatives and certifications, such as UNDHR and the GC. It has a code of conduct and it follows the reporting guidelines set by GRI and reports on level

B. Fortescue does not, however, publish a sustainability report, but seems to divide its sustainability reporting in three documents: the Environment Report, the GRI index and the Annual report (in which there are about 22 pages under the heading Corporate Social Responsibility).

For the Leximancer analysis then, these three documents were available and we decided to send all of them through Leximancer. What are striking are the similarities between the documents, despite being three distinctly different documents. The key themes emerging from the GRI index are: impacts, significant and Fortescue (Figure 5.6); for the Environment Report: financial, ended, Fortescue, performance, and operations (Figure 5.7); for the Annual Report: ended, Fortescue, during, performance, assets, environmental, and ore (Figure 5.8). Studying the heat maps, there are, in other words, few sustainability themes emerging as relevant and there seems to be a stronger focus on finances and operations.

The SENDER of the company's sustainability communication is very clearly the company's top management, a *top-down* communication. Several pictures in the sustainability communication involves the chairman or the CEO stating how important sustainability is, or is seen collaborating with community representatives or employees. The STYLE is, beyond the general value-statements, rather *concrete* and *authoritarian*. The RECEIVERS of Fortescue's sustainability communication seem predominantly to be the aboriginal communities and those stakeholders (NGOs, local politicians) viewing the relation between the company and the aborigines as the most salient sustainability theme. The receivers of the more environmental information seem to, given its more technical jargon, be more legislative bodies. The MEDIA through which sustainability is communicated on the website are predominantly text, numbers and pictures, but on occasion also videos (as with A billion opportunities, for example).

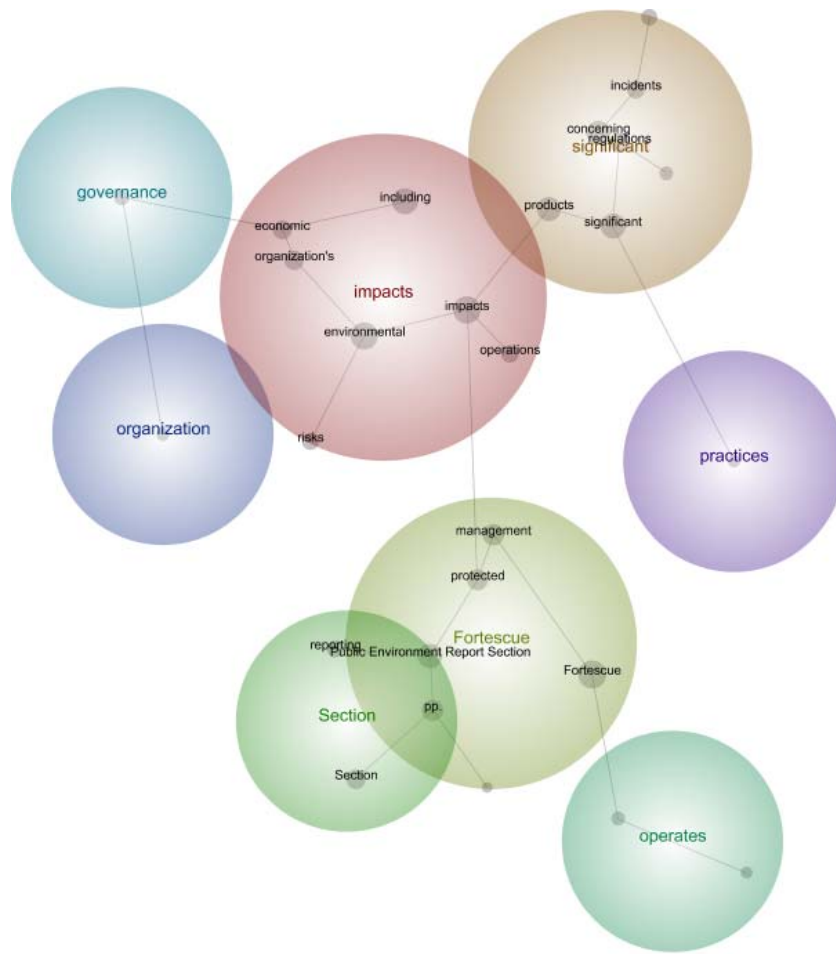


Figure 5.6. Fortescue's GRI index from 2012.

Clicking the Sustainable development heading, six pictures (on a slider) meet the visitor. Four of them are on colored people, presumably indicating the community focus (two of colored women in what seem to be a local village setting and two of colored men in company gear, working for the company), and two of them are on different facilities, indicating the environmental focus. The headings are: Our approach, Sustainability reports, Workforce, Security & human rights, Communities, and Environment. Each of these headings in turn includes new sub-headings. Overall, FCX displays a very encompassing sustainability communication.

The MESSAGE in FCX's sustainability communication is first one of sustainable development as separated to some extent from financial aspects. Once entering the heading of Sustainable development, however, there is a mix of *facts* and *values*, of *specific* and more *general* information, and the results is a rather *complex* sustainability communication, not easily grasped. There is a continuous emphasis on *success*, on the company's contribution to communities, in the sustainability communication. Explaining the company's approach to sustainable development, it is stated that: "We mitigate impacts to the extent practicable through state-of-the-art control and remediation measures. We develop infrastructure, support health, safety and education efforts, and provide local employment and business development opportunities. The metals we produce are critical for a sustainable, healthy, energy-efficient society."

The company also communicates its engagement with a wide group of organizations, standards and initiatives, such as ICMM, ISO 14001, EITI, BSR, UNDHR, the Voluntary Principles on Security and Human Rights, REACH, and OHSAS. It also communicates its corporate governance guidelines, its code of ethics, its encompassing work with carbon disclosure projects (CDPs), and also provides sustainability-related case studies (stories). A central part of the message that FCX conveys in its sustainability communication is community involvement in poorer areas and about compliance in the environmental area. For FCX's community programs, there is even a separate website. Although community is more than PT Freeport Indonesia (PTFI) and Tenge Fungurume Mining (TFM) in Congo, these particular sites are dominant in the sustainability communication, resulting in a rather *territorial* bias.

The company produces a separate SR (GRI level A+) and running the 2012 version of the "Working toward sustainable development report", sub-titled "Expanding resources", through Leximancer reveals these key themes, in order of relevance: operations, opportunities, PTFI, water, safety (Figure 5.5). Opportunities, operations and PTFI are rather tightly coupled, indicating a predominant community focus in FCX's SR. Water, as the only stand out example of an environmental issue in the map, is more or less decoupled and safety ties into opportunities to some extent.

The SENDER of the sustainability communication and the STYLE with which communication is conducted is very *top-down*, almost *authoritarian*. Matter-of-fact statements coupled with emphases on systems and standards do not leave

room for a more bottom-up and dialogic voice. The style could perhaps also be described as both managerial and technocratic. Regarding the RECEIVERS of FCX's sustainability communication, it is evident that they ought to have an interest in the community aspects in relation to Indonesia and Congo. As much of the financial communication is decoupled from sustainability, it seems as if investors are not targeted in the sustainability communication. The way information on environmental issues is presented also signals that intended receivers are keener on figures and facts (presumably authorities). Predominantly those stakeholders considering community involvement as salient seem to be the main receivers. The MEDIA used by FCX is predominantly based on relatively large amounts of text, and frequent use of pictures and diagrams.

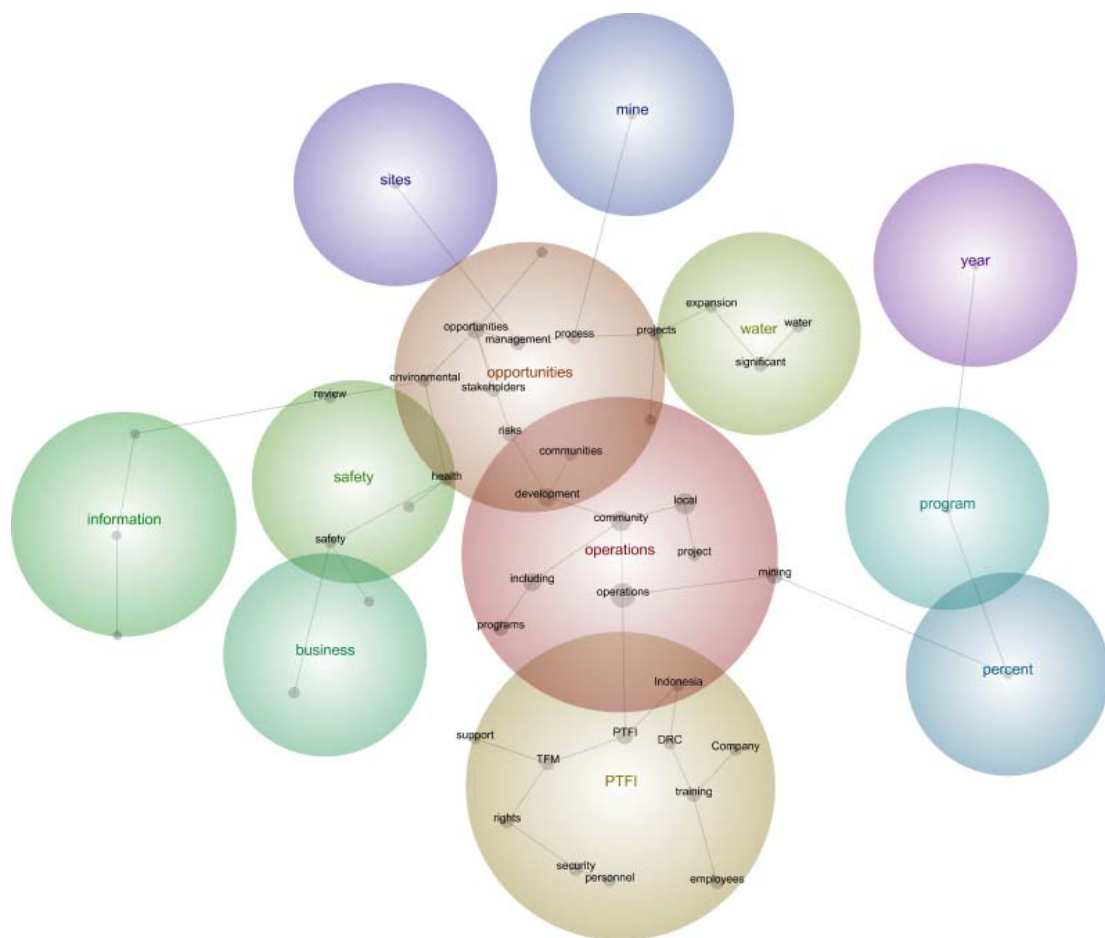


Figure 5.5. FCX's Working toward sustainable development report from 2012.

GlencoreXstrata

The merger between Glencore and Xstrata was completed in May 2013 and it is now one of the largest corporations in the world, employing around 190000 people in 50 different countries. The first six months reveals revenues of more than 121 billion USD. The company's share is listed in London and Hong Kong, and it has its headquarters in Switzerland. The company operates in three areas: mining and metals, agriculture, and energy. In relation to mining, the company mines copper, nickel, zinc/lead, alloys, alumina and iron ore. It also operates smelters and refineries.

Visiting the GlencoreXstrata website, three pictures as a slideshow meet the visitor. One picture is of two colored workers watching over an open-pit mine; another of a refinery; and the third of a large cargo ship. The last slide with the ship has a sustainability theme: "We aim to integrate sustainability in every area of our company and to create shared value for all our stakeholders". Three modules below the sliders include information on: Share price, News, and Investor day. Above the sliders are seven main headings: About us, Our business, Investors, Media centre, Sustainability, Careers, and Contact us.

Exploring the Sustainability heading there is a picture of a group of colored people in a green environment. There are links to Our approach (further links to policy documents on "our values" and a "Code of Conduct", available in a wide variety of languages, and a reference to the company's corporate governance framework, detailed under the main heading About us), Performance (picture of a worker measuring something in nature; GRI is mentioned, the GRI-level is A+, and the first joint SR will be published later in 2013), and Sustainability reports (where there are links to the SRs from 2011, before the merger). Overall, it is an easily navigated website in terms of sustainability.

Perhaps given the recent merger, the company's sustainability MESSAGE is largely based on *values* and rather *general* statements, as in "we recognize", "we constantly strive to", and "we are committed to". There is *simplicity* in the message communicated: "We see sustainability as being integral to how we do business, reflecting our belief that our long-term success requires us to prioritise sustainability throughout our business." The message is therefore to some extent vague, but when reading the code of conduct the message is much more matters-of-facts and *specific* (for example, everyone who works for GlencoreXstrata must comply with the code in order to ensure that the company's core values are lived by).

There are no sustainability reports for 2012 and the company refers to the 2011 reports from the respective companies before the merger. Running Glencore's Sustainability Report 2011 through Leximancer, these key themes, in order of relevance, emerge: operations, safety, Glencore, local, and business (Figure 5.9). From this heat map it is difficult to find a clear sustainability focus, with the exception of the issue of safety. For Xstrata, its Sustainability report from 2011, named "Creating shared value", revealed the following key themes, in order of relevance: local, business, mining, operations, and energy (Figure 5.10). Again,

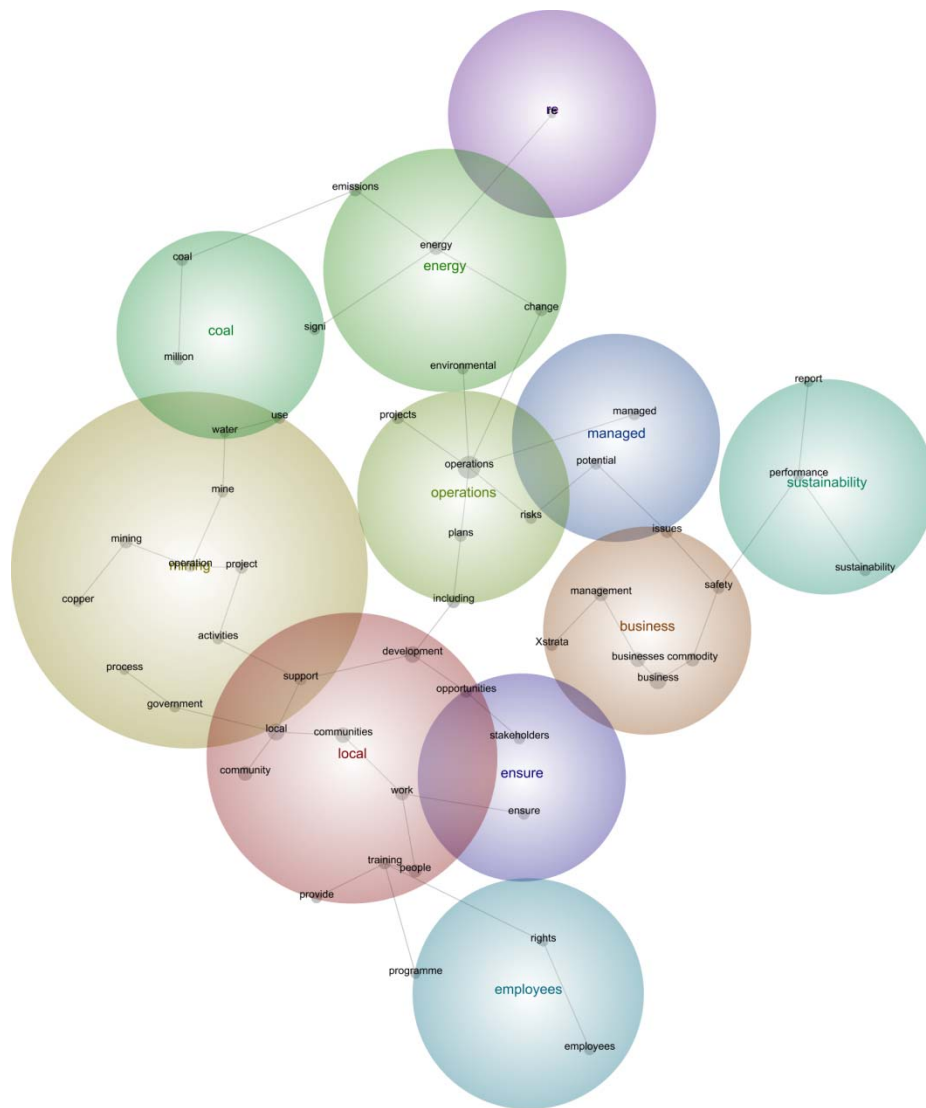


Figure 5.10. Xstrata's Sustainability report from 2011.

Goldcorp Inc.

Goldcorp is a gold producer with operations and development projects located throughout the Americas. A Canadian company headquartered in Vancouver, British Columbia, Goldcorp employs more than 16000 people worldwide. For 2012, revenues amounted to MUSD 5,435. Goldcorp is listed on the New York (NYSE) and on Toronto Stock Exchange (TSX). Its' sustainability report complies with level A+ of the GRI G3. Goldcorp focuses on five key attributes for goal attainment: growth; low cash costs; a strong balance sheet; regions with low political risk; and responsible business conduct.

The Goldcorp website has four main headings: 1) Why Goldcorp? 2) Unrivalled assets, 3) Investor resources, and 4) Responsible mining. The main page shows three alternating photographs and headlines. First, the heading "one company, thousands of stories" is accompanied by an image of mining trucks lined up at a

mining site. Second, the heading “Join us” is linked to a picture of a mining worker outdoors in safety vest and helmet. Third, the message reads “Cerro Negro: our next cornerstone mine”. This line appears against the backdrop of an image of the prospective mining site in question. All three main headings and pictures are accompanied by a clickable video sequence providing more in depth information about the topic in question. Beneath, the following line appears: “Goldcorp is the fastest-growing, lowest-cost senior gold producer, with operations and development projects in politically stable jurisdictions throughout the Americas. Our strong project pipeline is positioned to drive long-term, sustainable growth.” (words underlined by the authors)

Thereunder, links appear to the most recent sustainability report, the annual report and last quarter results including related conference calls and webcast. Numerous social media linkages are facilitated. Stock prices appear in the top right hand corner of the page. A news section appears in the bottom line of the page along with links for investors, links, about us, careers and media. Stock prices are then repeated.

Under the heading labeled “Responsible mining”, eight subheadings appear: 1) Partnerships & programs, 2) Memberships & Commitments, 3) Awards & Recognition, 4) Governance, Policies & Guidelines, 5) Reporting, 6) Current issues, 7) Donations, and 8) Blog. The first statement under “Responsible mining” (a value statement labeled “sustainable prosperity”) reads: “At Goldcorp, responsible mining is a company-wide commitment that’s at the core of every business decision we make. Every one of us, from senior management through the work crews at each of our operations, strives to conduct our business to ensure lasting social progress and economic growth for all stakeholders throughout the life of a Goldcorp mine and well beyond.”

The information provided explains how Goldcorp subscribes to ICMM's Sustainable Development Framework and its membership of and commitment to standards including UN Global Compact and GRI. Moreover, information is provided about how Goldcorp Mexico was named as social responsible company in 2012, how the corporation is named one of Canada’s Top 100 employers and its membership in the Dow Jones Sustainability Index North America. This section relies heavily on text. The sustainability communication reveals that Goldcorp introduced a new Corporate Vision Statement in 2012: “Together, Creating Sustainable Value”. Sustainability is further discussed under seven different headings; 1) Strategy and governance, 2) Economic contribution, 3) Workplace and people, 4) Safety and health, 5) Human rights, 6) Community relations, and 7) Environmental stewardship, all with text, numbers and pictures and including numerous subsections.

The MESSAGE is one of a successful mining corporation which creates value for its stakeholders AND for local communities, other stakeholders and indeed for society at large. This message is communicated by means of a combination of *facts* and *values*. The level of *complexity* is rather high considering the many categories and subcategories used on the website and in the sustainability report. The communication is very *systematic*.

Running the 2012 sustainability report, labeled “One company, thousands of opportunities”, through Leximancer reveals the following key themes, in order of relevance: human, employees, Goldcorp, operations, and sites (Figure 5.11). As can be seen from figure 5.11 the themes “human” and “employees” are composed by a particularly large set of subthemes, suggesting that Goldcorp’s sustainability communication is particularly elaborate in these dimensions.

The STYLE is more *authoritative* than dialogic and mainly oriented towards providing *information*. The *target group is broad*. Having said that, the language used signal the investors are a very important stakeholder category (see for example the underlined words in the introductory statement above). However, the systematic sustainability report suggests that the responsibilities are broader than that, including also governments, local communities, employees, etc. There is a reliance on *text* on the web as a while but also *movies, pictures and numbers* are used.

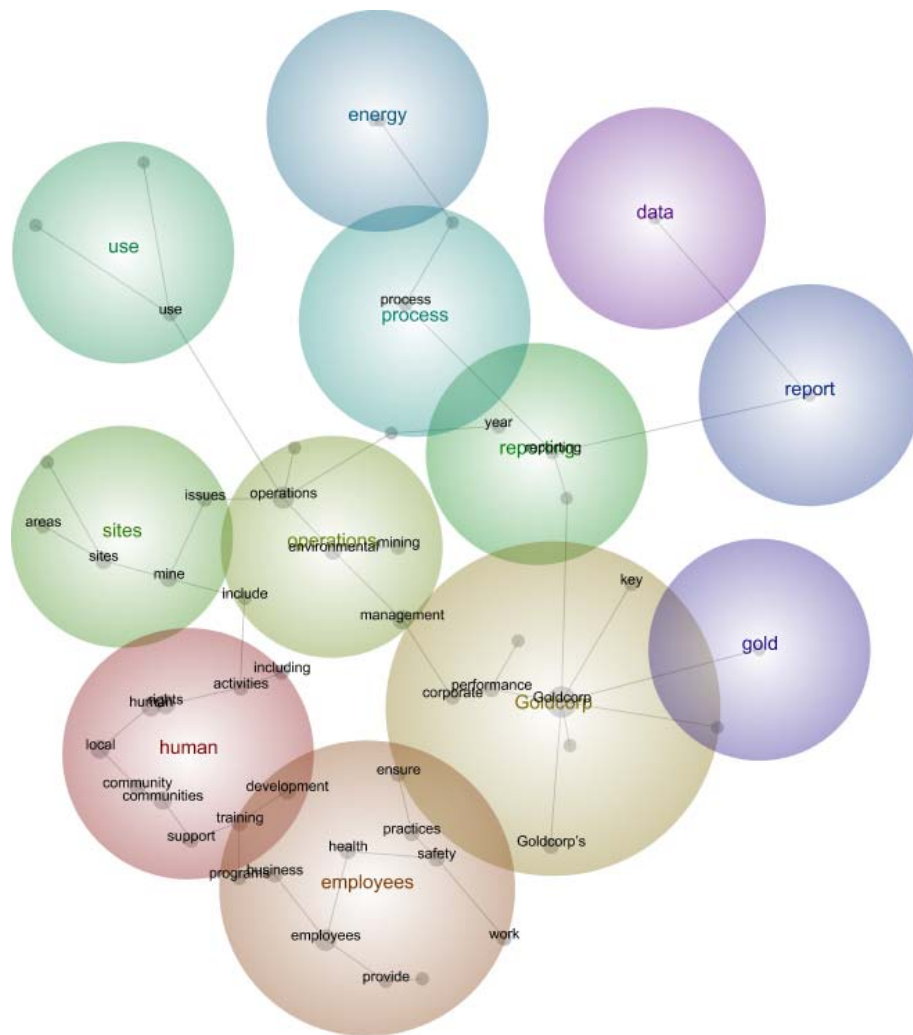


Figure 5.11. Goldcorp’s Sustainability report from 2012.

Newmont Mining Corporation

Newmont is primarily a gold producer, with significant assets or operations in the United States, Australia, Peru, Indonesia, Ghana, New Zealand and Mexico. Founded in 1921 and publicly traded since 1925, Newmont is one of the world's largest gold producers (included in the S&P 500 Index and Fortune 500). Headquartered near Denver, Colorado, the company has around 40,000 employees and contractors. Since 2007, the company is part of the Dow Jones Sustainability World Index. Newmont claims to be an 'industry leader' with high standards in environmental management, health and safety and value creation for its host communities and shareholders.

On the Newmont website, sustainability is one of five main headings. The first page on the Newmont website automatically switches between five pictures that display motifs from production, mining sites, children playing and employees that communicate in an indoor (office) environment. Each picture is accompanied by a text message with frequent use of we-form" (e.g., "About Newmont - our visions and values", "Our global presence", "Making a difference. Our success depends on creating value within our communities", "Join our team", "Connect with us"). The remaining sections include "Our vision" and "Our voice" "Explore Newmont" and "Latest Facebook posts". While "our voice" contains entries with more in depth articles, "Explore Newmont" is a list of news headings with a newflash character.

Under the sustainability heading lies a separate website ("Beyond the mine – the journey towards sustainability") which hosts the sustainability report. The heading of this website is written against a photographic backdrop exhibiting details from a forest. The webpage alternates between three different pictures that show: 1) people of a supposedly Latin-American origin discussing details exhibited in writing on a poster, 2) a scenery from a water basin (at a mining site) and 3) a large congregation of Afro-Americans posing together with their hands raised in the air ("local community"). Underneath there are four large headings with accompanying pictures: 1) How to navigate this report, (linked to a picture of minerals) 2) Message from the CEO, (with a picture of the CEO) 3) Goals and objectives (linked to a picture of scenery with a forest and mountains) and 4) Report assurance (with a picture of a lit-up crane in operation at a mining site).

The sustainability report on the web site has five themes; 1) Inspiring our people, 2) Community relationships, 3) Environmental stewardship, 4) Corporate governance and 5) Value chain stewardship, all of which are laid out along the x-axis of the main page of the website. There are six additional headings along the y-axis: 1) About this report, 2) About Newmont, 3) Report Glossary & GRI, 4) Staging our Growth, 5) Managing Sustainably, and 6) Community Relationship Review. Thus, there are eleven themes all in all on the main website, all of which include a sub-level of 2 to 10 headings.

The MESSAGE on the main website and the sustainability site is predominantly *value-oriented* and *general*. As there are quite a number of items/headings on the website and several possibilities for navigation, there is a certain level of *complexity* to the websites. Both sites exhibit a *systematic* orientation. It is only at the level of the sustainability report that the message becomes more *factual* in its appearance and more *specific*.

Analyzing the 2012 Sustainability report with Leximancer reveals the following key themes, in order of relevance: local, environmental, work, Newmont, mine, and operations (Figure 5.12). Figure 5.12 reveals how the top three concepts are tightly interlinked and in the center of picture. These three concepts are also the ones which are most elaborated in terms of the extent to which there is a multitude of subconcepts that relate to the main concepts. It would seem that Newmont's sustainability communication is heavily influenced by the environmental dimension of sustainability and by the corporation's activities on the local level with communities that have an interest in their mining site areas.

The STYLE (SENDER) appears more top-down than local bottom-up. The use of terms such as "environmental stewardship" and "corporate governance" suggests a rather *abstract* voice. The message is often rather "instructional" and information rich which contributes to its *authoritative* character despite some *dialogic* elements related to Facebook and other social media. The RECEIVERS potentially can include a broad target group including prospective employees, stakeholders, investors and regulators. The use of locally oriented content appears to be directed to *global* target group, signaling a commitment to the local community as an important part of sustainability. The MEDIA used is predominantly *text* and *pictures* with more *numerical* content appearing on the level of the sustainability report.

larger sized, including: Our business, Investors, Careers, Media, Our commitment, and About us. Most sub-headings are also revealed and there are some indications of sustainability issues under Our commitment. Below are modules on financial information, media releases, careers and our business. Again, the main impression is that sustainability is not a main theme that Rio Tinto communicates on its website. Moving beyond the first page, however, on the contrary reveals a very rich communication on sustainability.

Under Our commitment, three sliders meet the visitor, one on the UN Global Compact and progress made by the company, one on the economic impact in the operations in Mongolia, and one on employing indigenous people in Australia. Below the sliders, it is written in large letters that: “At Rio Tinto, our commitment to sustainable development is fundamental to everything we do.” There are eleven sub-headings and all dimensions of sustainability are covered. Following the sub-heading Our performance, there is also a link to a new page on which “Our sustainable business” is provides an overview of the different sustainability areas as well as detailing the company’s performance in different interactive (and very pedagogical) charts. This can also be noted in the wide range of international standards, initiatives and certifications that the company is engaged with: GRI (level A+), EITI, ICMM, MDG, CDP, UNGC, UNDRR, Voluntary Principles on Security and Human Rights, REACH. It is also listed on the DJSI and FTSE4Good, and it mentions partnership with universities and research centers (University of Queensland and the Danish institute for human rights).

The MESSAGE in the company’s sustainability communication is comprehensive. Within each area there are *value*-statements and *factual* information, providing a structured, *systematic* story within each of these areas. Given the wide range of areas addressed and the layers of information under each area, the message can also, however, be considered *complex*.

Rio Tinto publishes local SRs within each area of mining, but it is the company’s Sustainable development report from 2012 that we send through Leximancer. The key themes revealed are, in order of relevance: sustainable, work, operations, management and use (Figure 5.13). There are explicit couplings between sustainable, work, operations and management, where sustainable predominantly is about developing local communities; a social emphasis on sustainability, that is, Energy and emissions, as important environmental issues in the sustainability work, are very loosely coupled to sustainability.

The SENDER is to some extent the *top-level* in the organization, top management, particularly when communicating the more value-oriented messages. The voice is here rather *abstract* and *dialogic*. When becoming more detailed about sustainability performance the voice is more *concrete* but still rather dialogic. An emphasis on showing, through figures and graphs, softens the style in which the company communicates its sustainability work. The RECEIVERS are a *broad* group of stakeholders, reflecting the size and global presence of the company. Different sustainability issues, however, target different audiences. Community issues zoom in on aborigines and local communities in which the operations are located. Health, safety and people issues target the employees, and when

Visiting Teck's website, three sliders meet the visitor. One is of a worker with an amazing high mountain backdrop, with the accompanying text directly related to sustainability: "Teck Named to Dow Jones Sustainability World Index". The other is of a worker outside a mine, with the text "View our 2012 Annual Report". The third slider is aimed towards future employees, with two images of the same woman, the first in work clothes and the other in leisure clothes with a horse. The text states "See Yourself at Teck". Below the sliders is a one-sentence description of the company and below this text is modules on News, Events and the company's share. Above these sliders are three main headings: Diversified mining, Responsibility, and Investors (in a smaller text above these are headings on About, Careers, Media, Products, and Contacts). Under Diversified mining there are sustainability related issues addressed, but they do not stand out in any sense in the communication. The same goes for Investors, where, for example, the DJSI inclusion is mentioned as news. Interesting here, under the sub-heading Leadership, is that there are no women in what is called the leadership team except for the position as Senior vice president, Sustainability and External Affairs.

Exploring the main heading Responsibility then, sustainability issues are extensively communicated. A picture of a female worker, measuring the length of a plant, meets the visitor. The text on the picture states: "View our 2012 Sustainability Report". Six sub-headings are listed on a left-side menu: Sustainability, Safety & health, Corporate governance, Community investment, Recycling, and Zinc & health. What seems to be a key phrase in the communication is also listed on the first page: "At Teck, we are committed to responsible resource development." Three core principles are detailed below this; safety ("it is possible to operate without injuries", environment ("to protect the environment and always strive to act with care and sensitivity") and community ("develop open, honest and respectful relationships and partnerships").

Under the sub-heading Sustainability, the visitor gets a good overview of Teck's sustainability work. Each sustainability area is presented based on a structure following: the values and aims, short- and long-term goals, case studies, and then a reference to SR for even more detailed information. Teck also communicates a lot of policies and frameworks guiding the sustainability work, such as the company's Charter of Corporate Responsibility, Code of Sustainable Conducts and Code of Ethics, as well as 21 standards related to the fulfilling of such codes. Some of certifications and standards listed include: GRI, AA1000, CDP, ISO 14001, ISO 26000, Voluntary Principles on Security and Human Rights, MDG, UNDHR and ILO core conventions. A wide range of partnerships and alliances relevant to sustainability are also listed, such as BSR, UNGC, EITI and ICMM. For the company's community work the Teck Community Investment Program and the work with zinc for kids stands out in the communication. Regarding the environmental issues, four out of six focus areas predominantly belong the environmental are, adding to this a separate page on the company's work with recycling.

The MESSAGE in Teck's sustainability communication comes across as balanced between *facts* and *values*, of more *specific*, detailed information and of *general* statements. Value statements are backed-up with more detailed information, giving the impression of a comprehensive sustainability work in each area. It is only when searching for integration between the different issues that the sustainability communication gets a bit *complex*.

Part of Teck's sustainability communication is the backlog of SRs. The visitor can download SRs from 2001 and forward. The SR from 2012 is named "Generations" and running it through Leximancer, the key themes emerging are: development, operations, management, performance, business, and emissions (Figure 5.14). From this heat map, development is a salient sustainability theme and it is coupled to business and management. Emissions emerge as the most salient environmental theme, but there are no direct couplings to the social aspects of sustainability.

The SENDER, particularly regarding sustainability-relevant policies and standards are *top-level*, the top management, and in these instances there is a rather *concrete, authoritarian* voice mixed with more *bottom-up, abstract* voice. This reflects the mix of hard rules and soft value statements in the sustainability communication. The STYLE in which sustainability is communicated is pedagogical in its mix of actors and voices (the use of case studies, third party organizations etc.), making a more bottom-up and dialogic communication style also present on the website. Taken together, the RECEIVERS are a *broad* and *global* group, but it can also be considered a *limited* group when zooming in on the communication of each particular sustainability issue. The inclusion of the company's share in the two financial indexes indicates that (some) investors are a targeted group, but then again, under the main heading Investors, there is scarce information about the company's sustainability work. The environmental, safety and community work are to some extent very *local*, tied to specific sites in which Teck operates. The MEDIA are predominantly text, images and figures, and there is a good balance between these different forms of communication. Videos appear, but they are not systematically used.

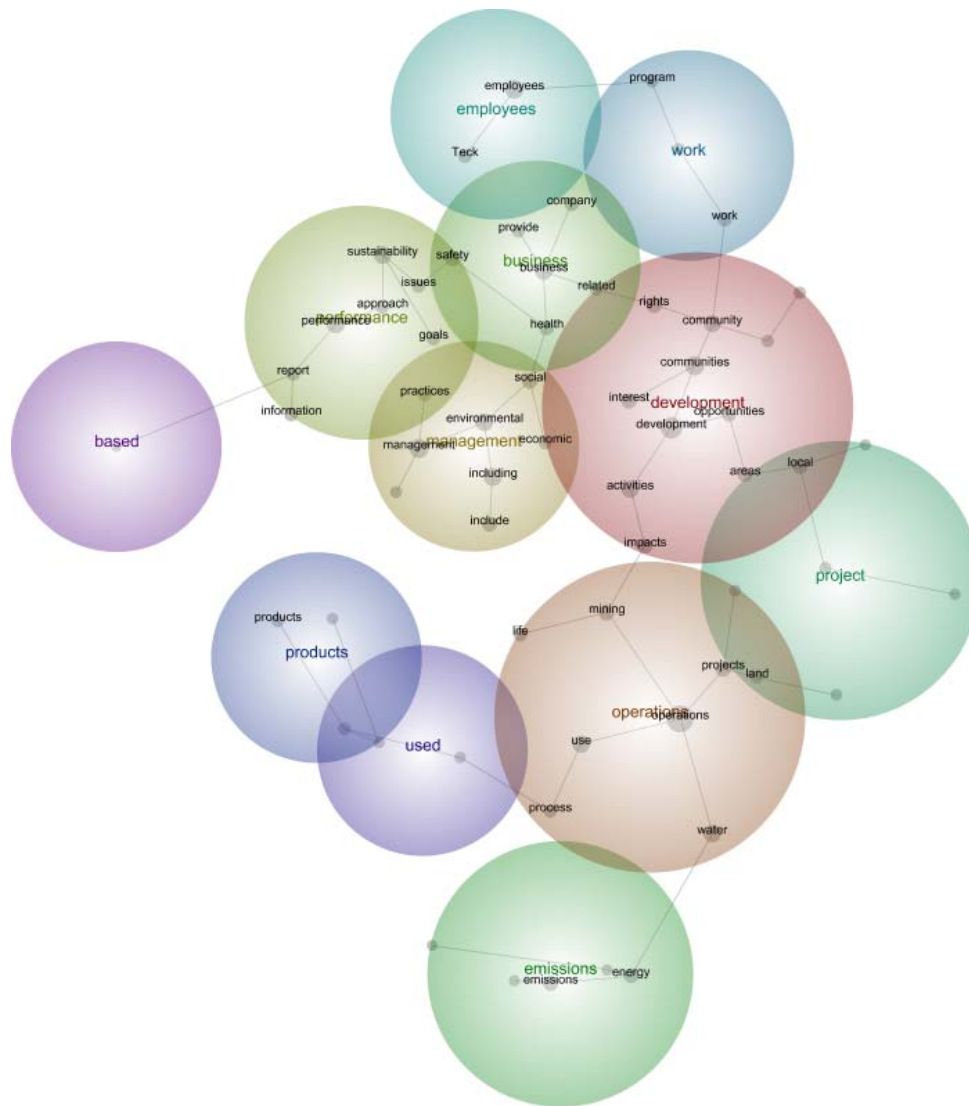


Figure 5.14. Teck's Sustainability report from 2012.

Vale

With a market capitalization of around US\$ 100 billion and approximately 400000 shareholders from all continents, Vale is one of the largest metals and mining companies and one of the largest publicly traded companies in the world. The corporation is a producer of iron ore and iron ore pellets, raw materials for steelmaking, and nickel. Vale also produces manganese, ferroalloys, thermal and coking coal, copper, cobalt, platinum group metals, and fertilizer nutrients. On their website, Vale refers to Boston Consulting Group in support of the argument that Vale is: "...one of the top 25 sustainable value creators in the globe, due to its extraordinary performance over the last 10 years".

The Vale website starts off with six headings: About Vale, Business, Careers, Investors, Press and Suppliers. Underneath these headings there is a space exhibiting pictures. The pictures alternate automatically and each picture shows a related text message.

One text message is: “We are one of the world’s main mining companies, present in all 5 continents. Get to know Vale”. This message appears against the backdrop of an outdoor image of two men in helmets. Another text message is: “We transform mining into sustainable development. Find out how in our report”. This message has as its background a Vale employee in a helmet, bedding a plant in an outdoor environment. A third message is: “Transparency and value creation are some of our commitments. Visit our Investor's section”. This message is written against the backdrop of two Vale employees at a mining site wearing helmets and safety vests, communicating with each other while looking at a topographical map. One is holding a cell phone and the other a pen. A fourth text message is: “We support our mining activities with an integrated logistics system”. This message is conveyed with a background showing a large transportation vessel at open sea. Underneath the main pictures and text there are ten shortcuts with the following headings; Commercial relations, Sustainability, Across the world, Imagine yourself here, Ipad, Paraguay, News, Waste Management, Mining and Canada.

The sustainability heading leads to the information content under “About Vale”. The sustainability report represents one of six subheadings in this area of the website. The web page of the sustainability report displays an image of mountains covered by a forest. In turn; the sustainability report is subdivided into eight different themes: 1) 2) 3) 6) Vale seeks to be a leader in the social field in order to leave a positive legacy for the communities it’s a part of. We are committed to respecting and understanding communities, taking into account their cultural diversity“

Underneath each value statement there is numerical information (“facts”) on target fulfillment in different fields, which have been grouped under each of the eight different themes (absolute numbers and percentages). There are also other web features related to sustainability, including a sustainable development policy, a human rights policy, a human rights guide and information on several different initiatives including nature reserves, botanic parks, a zoo and different emission reduction programs.

The MESSAGE on the main website and under the sustainability heading is *value-oriented and predominantly general*. The value statements are relatively simple statements oriented towards the *success* of Vale. This is also true for the overall sustainability page. The sustainability report includes both *values* and *facts*, representing goal fulfillment on a specific level in different areas. The information is *simple* (absolute numbers and percentages), depicting *success* rather than failure and it is apparently *systematic*.

Analyzing the company’s Sustainability report from 2012 with Leximancer, the following key themes emerge, in order of relevance: Vale, environmental, health and areas (Figure 5.15). A large leap to production and Brazil.

6. Discussion and conclusions

Based on this overview of how and what mining companies communicate in the area of sustainability, some important observations can be made. First, the set of companies included is very diverse, from the small, local Swedish company Dannemora mining to the global giant Rio Tinto. This renders a complete cross-case comparison difficult, but despite the significant diversity among the cases, there are not only differences between them. After all, all mining companies are dependent upon actual mines for their value creation and they need to manage and communicate both environmental and social impacts. Below, we have structured the discussion around salient themes emerging from our analysis.

The main conclusions drawn on the basis of this pre-study concern the MESSAGE communicated by mining companies in the sustainability area. The emphasis on the message when it comes to conclusions is a logical result of the design of this pre-study. Firstly, our conclusions concerning the message revolve around tensions that we have found in the sustainability communication. In this section we present four main tensions that characterize the sustainability communication of mining companies. Secondly, our conclusions regarding the message concern the actual content and structure of the message communicated by the different mining companies, i.e. the story being told. Hence, this section presents four stories that are conspicuous in the results of this pre-study. In both sections, we enroll appropriate theories in order to illustrate these tensions and stories.

Tensions in the sustainability communication of mining companies

First, this study reveals a tension on the industry level (a theoretical/empirical tension). According to established institutional theory (DiMaggio & Powell 1991), isomorphic tendencies should arise for the sustainability communication, where the companies communicate similar messages in similar ways. One reason for such isomorphism could be a tendency for some firms to benchmark and imitate the sustainability communication of other firms ('mimetic isomorphism'), often industry leaders. A second reason could be that the communication is increasingly homogeneous because of the adoption and/or adherence to the same standards, initiatives and networks ('coercive isomorphism'). For example, it is reasonable to expect that GRI to some degree should trigger a certain coherence between the sustainability communication of mining companies.

With the empirical material collected for this study at hand, evidences of isomorphism can also be identified (most major companies are A+ reporters, most communicate all seven sustainability issues etc.), but coherence between the companies does not seem to follow from this. Isomorphism is not dominant as all companies – also – communicate sustainability very differently. Why these differences occur is interesting, but beyond this particular study. Relevant factors might include the geographical location where each company operates, the size of the company, the ownership structure, and more, but answering this question demands more in-depth empirical and theoretical studies.

Second, the results indicate a tension between themes on the corporate level. While this pattern is not evident across all the firms, the results pertaining to the Leximancer heat maps suggest that the mining companies included use about a dozen themes for their sustainability communication, five to six of which are key themes. Typically, out of these themes, there seems to be three or four that can be considered as highly interconnected, whereas the other themes appear to be loosely coupled to the SR in which they are included. 'Community' and 'operations' seem to be two common key themes. It is interesting to note that in some cases, 'community' is emphasized in the sustainability communication while a contrasting 'elite' or 'authority' theme is evident in other parts of the web communication.

Third, based on the face-value analysis we find tensions on the corporate level between financial communication and sustainability communication, and between the environmental and social sides of sustainability. Even if a particular mining company is listed on the FTSE4Good or DJSI, there seems to be a tension between financial communication and sustainability communication. Simply put, financial issues are one thing, channeled to one section on the web and usually to a significant part of the first site. For example, Barrick, FCX, Newmont and Teck use a separate website when communicating sustainability while LKAB provides an integrated AR/SR. Second, the environmental side of sustainability (as in emissions and energy) is often kept separate from the social side (as in community development).

Fourth, there is an empirical tension on corporate level identified through the triangulation of data between Leximancer and the face-value analysis. In the face-value analysis, there seems to be a more integrated impression of the sustainability communication and an important idea in GRI is also to get the organization's sustainability work together. In the Leximancer analysis however, there is often an apparent decoupling, which concerns environmental issues and community issues in particular.

In sum, the concurrent tendencies of *standardization* and uniqueness could arguably be characterized as opposing forces. Since we find evidence of both tendencies in our results, it would appear reasonable to search for an alternative understanding of their coexistence. Rather, our results suggest that although there is a development towards standardization as manifested by GRI and other standards, the standards of interest are broad enough to accommodate a sufficient "action sphere" for the mining companies wherein they may fulfill the reporting standard while still making local level choices and *adaptations* to their sustainability communication.

What is the story?

Turning to the second part of the conclusions, mining companies tell sustainability stories in order to show how they take responsibility and in order to seek legitimacy for their operations. There are differences with respect to how they craft these stories. In this study it would seem that large companies tend to

rely on a broad array of communication media including not only written narratives and numbers but also images, pictures and movies, whereas smaller companies rely on a more narrow set of media. In the results reported here, four types of sustainability-related stories could be identified.

In no particular order, the *first* story is rather straightforward: “We contribute to sustainable development”. This story rests on the discourse of value-creation, but even though the value-creation story to some extent shares its rhetoric with traditional economic value-creation, value should be understood in a broad sense. In this story, it also includes environmental and social value. The large players predominantly communicate this story. In the literature on sustainability accounting and communication (Gray 2001; 2010; Milne et al 2006; 2009), this story is criticized for its claim to produce ‘sustainability value’ given the environmental impact of mining and large power asymmetries between companies and local communities.

The *second* story is basically a community-oriented story: “We are in this together”. This story is based on conveying the idea that several stakeholders are working together to achieve sustainable development and that the company is one of them. Alliances with NGOs, communities, academia, other companies, and so on, are highlighted in the crafting of this story. On occasion, this story seems to some extent to hide power relations (a company can downplay its role and responsibility by showing that many other stakeholders are demanded in this process), but on other occasions it seems realistic. One example is LKAB, who operates in a town far up north that is totally dependent on the company and vice versa, the company is very dependent on the people living there.

The *third* story follows a financial logic: “We are an attractive investment opportunity”. It is, simply put, a call to investors that your money is good with us. It is interesting for this study that financial information crosses sustainability communication in the reliance on indices and portfolios that have a clear sustainability profile. The DJSI and FTSE4Good are two examples of how sustainability is part of the story of making the company more appealing to investors. In its pure form, this story can be interpreted as saying that sustainability becomes relevant only when incorporated in the financial discourse.

The *fourth* and last story emphasizes sustainability as a process: “We are on a journey towards sustainability”. In this story, the company presents historical developments, of critical events, of how the company moves forward towards sustainability. It is not uncommon that the story includes the message that ‘we have always worked with sustainability’, addressing things that happened long before sustainability was in fashion. This type of story can be questioned based on its historical revisionism and because sustainability as a journey means that the destination never really is addressed (Milne et al 2006; 2009).

In sum, a company can rely on more than one story and each story is often more or less salient for each company. One observation from this study is, however, that if any of these stories is pushed too far, it will run the risk of becoming

watered down, maybe even perceived as a bit ridiculous, thus rendering in a loss of credibility. This is perhaps most notable in the use of pictures by some companies. On the other hand, storytelling is very important in mining companies' sustainability communication. To tell a sustainability story that is coherent and trustworthy is arguably the most important contemporary challenge to mining companies.

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