Reflection on integrity management while engaging with third parties in the construction and civil engineering industry

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Abstract

This reflection aims to investigate the integrity-related risks for companies engaging with third parties in the construction and civil engineering industry. The business partner compliance process of a multinational construction engineering company is assessed through internal interviews with integrity officers per business sector and per region in a static and dynamic strategy framework. The actual process is the internal evaluation of a ready-made tool bought from a service supplier that assess how the risks related to corruption are covered in order to determine the level of due diligence necessary when

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engaging with a specific third party. This study finds that companies must involve their own experts to improve integrity tools. Collecting expert opinions on risk is necessary to allow an improved understanding of the scope of the tool. This study reflects on new ways for improving the integrity tool and demonstrates the necessity to cover risks not solely associated with Corruption & Bribery, but also with Human Rights, Conflict of Interest, Antitrust & Competition, as well as Compliance with Regulations to fully protect company's integrity.

KEYWORDS: Integrity, Construction engineering, Third party, Risk management, SWOT analysis, Contrast Analysis

1. Introduction

Corporate Social Responsibility (CSR) is an important corporate function in engineering and construction. In addition to its direct positive impacts for a company, CSR is now required by many public and private organizations (Dainty 2009). Construction engineering is considered as one of the most corrupt sectors in wealthy countries (Matthews 2016; Transparency International 2011). New risks associated with integrity, business ethics and compliance are emerging, and companies need to manage them. These risks are both internal and external, and are often related to interactions between suppliers, business partners, and other third parties. Of specific concern to the engineering and construction industries are the very high number of daily interactions associated with the activities of these stakeholders. According to the Organization for Economic Cooperation and Development (OECD), three out of four foreign bribery cases involve payments through intermediaries (OECD 2014a). In this context, third-party risk management theories and

guidelines have emerged (Dow Jones 2018; NAVEX Gobal 2018; PACI 2013; Shen et al. 2018) suggesting due diligence measures as a necessary step, not only for financial purposes, but also for preserving integrity. Recent events such as the Odebrecht scandal reveal the importance of addressing such issues (Gallas 2019). In this context, a number of research questions arise. With a high number of third parties and integrity-related risks, how can construction engineering companies investigate and assess their business partners thoroughly? Do generic prescriptive tools enable the protection of company's integrity?

Business's integrity is closely related to their code of conduct, and includes risks associated with elements such as Corruption & Bribery, Human Rights, Conflict of Interest, Compliance with Regulations, and so on. Interestingly, past studies about construction risk management did not integrate integrity-related risks (Deng et al. 2014; Tang et al. 2007). Recent research suggests including these risks and proceeding with an overall review of the entire company governance structure to cover all integrity-related risks (Mhetre 2016; Sadgrove 2015). The target of this reflection is to demonstrate how companies can detect flaws in their third-party management processes and what can be done to improve it according to their context and reality.

There is a demand for prescriptive models dealing with ethical issues among construction-related organizations (Ho 2011). If the company faces allegations of misconduct due to the actions of a third party it has engaged, demonstrating sufficient due diligence will significantly reduce any potential penalties it may face (United States Sentencing Commission 2018). Moreover, many international funding institutions, such as the World Bank, have strict requirements regarding due diligence measures, and risk assessment has become a contractual requirement.

Enterprise performance management enables continuous improvement with the help of performance analysis tools (Cokins 2013). Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis is a static strategic framework that has been used in studies examining strategic management in construction and engineering companies to evaluate the management effectiveness (Zavadskas et al. 2011), to manage water resources (Rao et al. 2018), and more (Bull et al. 2016; Jaber et al. 2015; Njoh 2017). The present study similarly uses SWOT with internal interviews and a dynamic based strategy (Ghemawat 2016) to collect expert perception since the method can be easily adapted and includes external and internal context for a better understanding of the company's reality. The constraint approach is then applied to turn the company's weakness into advantages (Brandenburger 2019).

To create a risk management program, one must collect data about risk perception among experts. The lack of available data in the scientific literature and the dearth of prior studies on this subject make it necessary to start from a company case study and then develop a theory based on the findings. As part of the present research, a company operating in the engineering and construction industry is analyzed. This company was chosen because of its size and international renown. Following past misconduct, the company became a leader in developing an ethical and integrity culture (Hachey 2012; World Bank 2013), in addition to also being an innovation-driven organization systematically engaging in risk assessment.

2. Literature Review

To attain the objectives of this research, it is necessary to cover different subjects in the literature to have a comprehensive understanding of the context. Firstly, the concept of

integrity, its management and the unicity of the construction engineering sector is discussed. Secondly, the different types of business partners are presented. Thirdly, engineering risk management is shortly addressed. Fourthly, integrity-related risks and their indicators according to various references are covered. Finally, enterprise performance management and the use of SWOT is explained.

2.1. Integrity

Integrity has many definitions. A research presenting the results of interviews with seven chief executives of large firms suggests that integrity is the coherence with core values such as honesty and justice (Badaracco and Ellsworth 1991). Others from the business ethics area argue that integrity is being consistent with laws and regulations, and demonstrating exemplary moral behavior in accordance with norms and values (Brenkert 2004). While defining integrity is not the core subject of this article, it is important to understand that the concept of integrity is not universal. Notwithstanding this, all consider that integrity engenders commitment and trust, and ensures the welfare of all stakeholders (Lawton and Páez 2015).

Implementing corporate ethical culture is challenging. Codes of ethics are an effective way to shape integrity management, but they must be embraced by the leaders and proper communication is a crucial success factor (Stevens 2008). Values and ideals must be discussed between the employees and management. Based on insights from strategic planning, an author identified three barriers/enablers for effective governance of corporate ethics (Bonn and Fisher 2005). Companies must foster a flexible approach by including discussion and debates among all employees. They must also monitor the implementation of ethical culture indicators that are not solely financial. Finally, companies must integrate

ethics throughout the organization with training, communication channels and enthusiasm from top to bottom.

Construction engineering is considered to be one of the most corrupt sectors (Matthews 2016; Transparency International 2011). What makes integrity management in the construction engineering industry so special? Firstly, construction represents an important part of the country's GDP and is a key driver for economic growth (Ho 2011). Secondly, construction requires many interactions with governments and state employees (public projects, licences, permits, etc.). Thirdly, construction companies are often working abroad in developing countries where laws, regulations and ethical standards are lower (Ameyaw et al. 2017). Fourthly, due to project unicity, construction engineering companies have numerous business partners helping them achieve their goals. Despite efforts to produce codes of ethics and conduct, it has been discussed that construction engineering industry is ineffective for its implementation and that there is a lack of training and understanding (Oladinrin and Ho 2016). Managing integrity internally is easier than externally. Even with all due diligence, a business partner can conduct unethical activities damaging company's integrity (Deloitte 2016). To protect their integrity, construction engineering companies need to assess and mitigate the risks of their business partnerships.

2.2. Business Partners in the Construction Industry

Major construction and engineering companies often expand beyond national borders and depend on third parties. In some cases, over 90% of the value of a contract is transferred to these third parties (Watson and Serra 2016). Popular types of partnerships are Public-Private Partnerships (PPPs), joint ventures and consortiums, and business developments, each having their own advantages and disadvantages.

The global financial crisis of 2007-2008 was the start of the boom in PPP projects (Osei-Kyei and Chan 2015). Often presented as cheaper and involving lower risks, PPP often last for generations (Bloomfield 2006). That said, PPP faces criticism because a complete and true partnership is impossible if partners do not share the same objectives (profit, for companies; social service, for governments). Furthermore, healthy competition in these cases is impossible, because very few companies can afford to finance such projects (Hodge and Greve 2017; Zhang 2005). Despite these disadvantages, PPP is valued by governments because it makes major infrastructure projects possible.

The last decade has seen a jump in the popularity of joint ventures and consortiums. A joint venture is an entity formed between parties to undertake economic activities, whereas a consortium is an association between parties to achieve a common objective. These partnerships are difficult because each party is acting both as an associate and as a competitor at the same time (Ozorhon et al. 2008). This can lead to Conflicts of Interest and collusion issues and must be managed properly.

Business development is crucial for construction and engineering companies (Smyth et al. 2016) whether prospecting new clients, working with sales agents, lobbyists, or marketing (Conseil du trésor 2011). The organization is strongly impacted, should a business partner act in a less-than-stellar fashion, since the partner is considered as a de facto representative of both entities, and to be acting on behalf of this organization. These types of partnerships are associated with a higher risk for companies. It is common to see compensation based on sales or successful completion of tasks for these partnerships. This can easily tempt ill-intentioned individuals to engage in Corruption & Bribery (Teichmann 2018).

158 Several other types of business partner relationships exist, including consulting services,
159 visa or customs services, local sponsors, and recruitment firms. Local sponsors are
160 common in many countries, particularly in the Middle East, for oil development projects
161 (El-Sabek and McCabe 2018).

162 2.3. Risk Management

163 Initially, experts did not include construction risks that are considered uninsurable, such as
164 morality, third party-related, etc. The latter are closely related to perception, which implies
165 that each person or company has a different way of viewing, understanding and interpreting
166 them (Coeckelbergh 2012). Emotions and perception are often overlooked in engineering
167 risk management (Richter and Paretti 2009). Also, the engineer training curriculum limits
168 the capacity to address issues from perspectives other than seeking technical solutions
169 (Guntzburger et al. 2018). Risk management professionals in construction engineering
170 must therefore include social sciences and perception to have an accurate representation of
171 the situation. To manage risks related to morality, companies draft codes of conduct and
172 ethics.

173 2.4. Integrity-Related Risks

174 Following a review of four codes of ethics and business conduct from major players in the
175 construction and engineering industry, five integrity-related risks have been identified: 1)
176 risks associated to Human Rights, 2) Competition & Antitrust, 3) Corruption & Bribery,
177 4) Compliance with Regulations and 5) Conflict of Interest (CIMA+ 2018; SNC-Lavalin
178 2019; Stantec 2017; WSP 2018).

Human rights and modern slavery constitute a major issue for companies' integrity. The construction engineering industry requires a lot of materials and temporary migrant workers for major projects (Anderson 2015; Millward 2017). Currently, more than 40 million people are modern slaves (Anti-slavery international 2018). Modern slavery generates illegal profits estimated at 150 billion USD annually (Institute of development studies 2018). Working conditions are also part of this issue, considering the major impacts on the reputation following a deadly incident.

Anti-collusion measures and antitrust laws are mandatory for a competitive market. In construction and engineering, criminals use four techniques to create an apparently competitive market (Conseil du trésor 2011). They consist of (1) the creation of fake bids with abnormally high prices, (2) a long-term pattern of rotating winners, (3) contract distribution to the same bidders, and (4) suppression of bids without notice or reason (Locatelli et al. 2017).

Corruption is abused by an entity in a position of authority for personal gain, with bribery being its most common form. The annual cost of corruption represents more than 5% of global gross domestic product, standing at an estimated 3.5 trillion USD lost each year (OECD 2014). Corruption increases inequality, especially in developing countries, while reducing the overall efficiency of services and products.

Compliance with Regulations is expected to be more complicated and expensive with increasing regulations. Money laundering and tax evasion affect taxpayers and governments. Not reporting income from foreign sources and tax scheme promotion lead to criminal prosecution (OECD 2012). Non-compliance with economic sanctions leads to adverse consequences for companies. Since such sanctions are constantly evolving, they

must keep abreast of current political events. Even where they are only apparent and well managed, conflicts of interest often feature in adverse media coverage. Managing conflicts of interest is necessary for objective decision-making, especially in public services (OECD 2003).

2.4.1. Factors Influencing and Predicting Risk

To ensure an efficient risk management process, companies assess risks according to different factors. According to two third-party risk management references (Dow Jones Risk & Compliance 2018; NAVEX Gobal 2018), six main factors can predict and influence integrity-related risks for business partners. The six main factors to be considered in predicting integrity-related risks are: Type of Industry, Contract Complexity, Proximity to Public Officials, Type of Third Party, Country, and Partner Profile.

A survey on bribe payers with more than 3000 business executives respondent revealed the likelihood of bribes being paid by companies in 19 different industries (Transparency International 2011). Public works contracts, construction, oil, gas and mining are the most affected. An analysis of foreign bribery cases concluded between 1999 and 2014 identified the industry of guilty companies (OECD 2014a). Extractives came first with 19% of the cases and construction followed with 15%.

Type of Industry can also reveal potential Human Rights issues. Some industries prioritize low wages with lower-skilled workers in abundant supply and seen as expendable (Blanton and Blanton 2009). Self-regulation is directly related to CSR (Dashwood 2014). Therefore, the level of self-regulation can predict a company's behaviour (Nysten-Haarala et al. 2015). Oil, gas and mining industries are the least self-regulated and among the most internationally active industries (Philp 2012).

Contract Complexity is ambivalent in that some people consider it as a catalyst for risk and others as a real factor; a catalyst because a multi-billion-dollar project can get more exposure and media scrutiny if a company were to be found guilty (Chang et al. 2018). Also, because the philosophy underlying integrity-related risk management is that even the smallest act of corruption is punishable, and a project size must not affect how a company deals with ethics and compliance (Scalza 2008). Notwithstanding this perspective, project characteristics define corruption vulnerability (Locatelli et al. 2017; Nordin et al. 2013), as shown in Table 1. Finally, accountability for each risk in a complex contract is challenging for managers. Therefore, Contract Complexity is arguably a factor influencing integrity-related risk evaluation.

Major projects often involve government and public officials. The main concern with this factor is identifying if the relation involves a governmental agency or determine how much ownership, control or influence is related to the government (Dow Jones Risk & Compliance 2018). This factor is directly related to Corruption & Bribery risks (Ernst & Young 2013). Construction requires a lot of planning permission and licences, which can lead to abuse (e.g., bribe to a public official for a faster work acceptance) to avoid cost or time overruns. Also, projects in developing countries require many interactions with government officials (directly related to the country's corruption perception index). Finally, Proximity to Public Officials can also lead to Conflicts of Interests (OECD 2003a).

Some Types of Third Parties elevate the risk associated with Corruption & Bribery. The highest risk lies with third parties who are authorized to represent the company (Transparency International UK 2016), such as a business development consultant, commercial or sales agent, mandatory local partner, or lobbyist. The UK Bribery Act

introduced a liability offense for companies who fail to prevent bribery (United Kingdom 2010). Therefore, evaluating risks associated with the Type of Third Party is mandatory to protect the company's integrity.

Country is a non-negligible factor in evaluating risks. Indeed, organizations produce annual data such as the corruption perception index (Global coalition against corruption 2018) to that end. A Dow Jones survey revealed that more than 80% of companies risk rank the countries of their third parties as part of their review process (Dow Jones Risk & Compliance 2018).

Country-based risks include the geopolitical situation, laws, regulations and sanctions. The geopolitical situation and sanctions are closely related, with many developed countries using sanctions as a foreign policy tool to signal the need for a change in behaviour or policy of a specific country or region (Lektzian and Patterson 2015). Moreover, country-based assessments can reveal risks in terms of tax havens, tax evasion and money laundering with the financial secrecy index (Tax Justice Network 2018). Finally, the Country can also be an indicator of the Human Rights situation, and many renowned organizations, such as Human Rights Watch and the United Nations, address this issue through annual country-based reports and rankings (Human Rights Watch 2018; United Nations 2018).

Historical dealings with a particular third party must be reviewed and the occurrence of unusual events analyzed (NAVEX Gobal 2018). Furthermore, the third party's risk aversion and fit with the company must also be considered (Ozorhon et al. 2008). Adverse media coverage of past misconduct influences the assessment and the level of due diligence and scrutiny necessary for a third party. In some cases, this can in fact be an advantage

because sanctions and prosecution often lead to redemption and very strong compliance measures. Partner Profile also includes the type of compensation and payment terms required by the third party. A great indicator of money laundering or tax evasion here could be if the partner asks for a payment in an offshore institution, for example (Chong and Lopez-De-Silanes 2015). Traditionally, blocking sanctions are applied to individuals and entities, as well as to entities that are majority-owned by them. In this regard, the Office of Foreign Assets Control (OFAC), for example, publishes the Specially Designated Nationals and Blocked Persons List (SDN) (United States of America 2018). Furthermore, considering the Partner Profile can reveal potential conflicts (OECD 2003a).

2.5. Performance Analysis

Performance analysis is used to gain strategic advantages. Adjustments and improvements to business processes are necessary in a constantly evolving world (Cokins 2013). Ethical leadership requires the capacity to assess a complex situation from the perspectives of many (Lawton and Páez 2015). According to the concept of ethics of responsibility, leadership is not generated by the self, but through engagement with others and a sense of responsibility (Knights and O'Leary 2006). Therefore, an analytic tool for integrity management must be interactive and not solely involve decision makers. Many measurement and analysis methods exist for business management. The Political, Economic, Socio-cultural, Technological, Legal and Environmental (PESTLE) analysis and the Porter's five forces analysis investigate the external environment of an organization (Cadle 2010). The Mission, Objectives, Strategy and Tactics (MOST) analysis and the Boston Box investigate internal capabilities. Risk management depends on the external environment to create the risks and the internal capabilities of the organization countering

them. While being originally used as a strategic development tool, the SWOT analysis has been adapted and used in many different contexts including construction engineering ones (Rao et al. 2018; Zavadskas et al. 2011). The strength and weakness can investigate internal capabilities while the threat and opportunity investigate the external environment. Also, this method can be interactive by combining the answers of different parties. This analysis specifies the target objectives, while identifying internal, external, positive, and negative constraints. SWOT analysis is useful for strategic planning, especially if the analysis is conducted with a specific objective, such as taking advantage of a new business opportunity or implementing a new technology (Houben et al. 1999). Additionally, SWOT analysis can be modified and adapted to specific situations other than general business management (Kangas et al. 2017; Njoh 2017; Quezada et al. 2009). SWOT analysis is a static strategy framework that needs to be used with a dynamic framework (Ghemawat 2016). Dynamic strategy frameworks come from creative thinking. Indeed, creativity enables out of the box ideas that often withstand the test of time and a strong competitive advantage. Some suggested sources for creativity (4 C's): contrast, combination, constraints and context (Brandenburger 2017). The same author suggests using SWOT analysis with one of the C's to challenge assumptions about company's characteristics and what they mean for the organization (Brandenburger 2019a). By turning the tool upside down (contrast method), it enables accounting for dynamic aspects such as the constant changing business landscape (Brandenburger 2019b). Threat and weakness can be turned into strength and opportunity. Indeed, the opposite is also true where an asset that helps the company succeed becomes a liability and the likelihood of it happening increases over time

when the context changes. As an example, having a big retail shop with on-site inventory used to be successful, but is now a liability when competing with online giant retailers.

2.6. Ethical Companies

Often, the most ethical companies used to be the exact opposite. Strong penalties, financial difficulties and other negative effects really act as an eye-opener. To survive, these companies must have put in place strong compliance measures that led to redemption. As an example, Fluor, a major construction engineering firm, is now on Ethisphere's most ethical companies list despite past scandals related to fraud and others (Lu et al. 2016).

3. Case Study Methodology

3.1. Presentation of the Company

Following various corruption-related events in Qadhafi's Libya (Hachey 2012) and its debarment from World Bank-financed projects for ten years (World Bank 2013), SNC-Lavalin made drastic changes to its governance policies. With the creation of a department dedicated solely to protecting the company's integrity and preventing such events from happening again, SNC-Lavalin is now a leader in ethical and compliance management and earned the prestigious Compliance Leader Verification from the Ethisphere Institute in 2019. After creating policies to manage integrity and conducting their first integrity-related risk assessment in 2014, the company never stopped improving their program and their CEO earned a chair at world economic forum global anticorruption initiative.

Third-party risk management is mandatory in the company, and thousands of potential business partners are checked annually. The database contains around two thousand active

business partners, which is a small number compared to the hundreds of thousands of business partners of financial institutions but is still a challenging amount to monitor due to the variety of activities and relationship to the engineering company. The goal is to propose a methodology for construction engineering companies to evaluate which indicators can reveal integrity-related risks and to include experts' opinions by interviews based on the strength, weakness, opportunity and threat analysis. From the contrast method, the weakness and treat are transformed into competitive advantage of the company.

3.2. Current Practices in Business Partner Risk Ranking

At SNC-Lavalin, business partners are risk-ranked based on a series of questions and an integrity check. Points are assigned to each question and the sum of the assessment distinguish low, medium and high-risk partners. Questions for the business partner evaluation cover specific risk factors, as shown in Table 2. Contract Complexity and Type of Industry were not yet covered by the questions. Also, some risk factors were covered in greater detail than others; an example is the third-party type as compared to the country risk. Finally, the integrity check covered three Dow Jones lists (Dow Jones 2016): Watch lists (Public Services and Procurement Canada, World Bank and other development banks lists of ineligible entities and economic sanctions imposed by various governments), Politically Exposed Person/State Owned Company and Adverse media coverage, and one list from SNC-Lavalin's references.

3.3. Case Participants/Experts

The interviews were conducted among 14 SNC-Lavalin's employees, including the 6 sector officers, 7 regional officers and the corporate officer (Figure 1). Experience and

knowledge of the experts were the two main characteristics for the selection. The participants needed to have a comprehensive view of the risk management situation in the company and to have enough expertise on integrity, ethics and compliance. The officers have different backgrounds and come from different countries and industries. This heterogeneous population is composed of lawyers, engineers, business administrators and human resources specialists from the United States, United Arab Emirates, India, and more. At company scale, this population is representative and covers most business units of the company.

3.4. SWOT and Interviews Analysis Processes

A qualitative approach was used in conducting a SWOT analysis of the business partners' tool. The first step of the process involved interviews with the 14 experts at SNC-Lavalin. Interview results gave fragmented agreement for each SWOT category. Also, it gave the perception of the experts regarding the different risk factors and their influence on specific risks. For this research, a modified version of the SWOT analysis was used. Since the analysis pertains to a management tool rather than general economic/business performance, the main objective was not necessarily related to profit and economic gains. Opportunities were replaced by positive developments because they are associated with a better understanding of the risk factors, new data or tool, laws and others in integrity related-risk management. The strengths and weaknesses are related to the current tool, and the threats to forthcoming risks in the engineering and construction industry. Interviews were divided into five sections, each one addressing a risk determined through the literature review: Antitrust & Competition, Conflict of Interest, Compliance with Regulations (trade, money laundering, and tax), Human Rights, and Corruption & Bribery. The six risk factors

stated in the literature review were used, and respondents needed to rank them. A ranking of 1 for Country regarding Corruption & Bribery means that Country is the best indicator allowing the detection of corruption and that would give Country 6 points for this risk in the interviews (Table 3). Non-applicable gives 0 points. The research and analytic process used is shown in Figure 2. The scores for the risk indicators were gathered in a single table where an average was made. The answers to the SWOT categories were analyzed to find recurring answers and include them to the final SWOT themes. Finally, based on the contrast method, the tool is turned upside down in the discussion section to see how weakness and threat can be turned in strength and positive development and vice versa.

4. Case Study Results

4.1. Risk Indicators

Consolidated results of the risk factors consisted of an average of fourteen different respondents (Table 4). Table 4 presents the capacity of each risk factors to detect each integrity-related risk according to the participant's interviews. A score of 0 means that the factor was useless at detecting the risk, and the closer it got to 6, the better it is at detecting the risk. The boxes with an asterisk in Table 4 represent the best risk factor for each integrity-related risk. The standard deviations of the respondents' answers for each of the risk factors are then presented (Table 5). The boxes with an asterisk in Table 5 represents low standard deviations, while the ones with a cross show high standard deviations. A high deviation is related to a divergence in opinions between the respondents.

By analyzing the interviews' answers, it was determined that the Type of Third Party is crucial for both Antitrust & Competition and Conflict of Interest. The highest risk lies with

partners who are authorized to represent the company. Country is a main indicator for three of the five major risks at SNC-Lavalin and it is an important indicator of corruption perception, human rights status and financial secrecy. Partner Profile was consistently grade ranked for the five risks (more consistent than the first and second indicators). Indeed, Partner Profile provides data for each risk (past behaviour for Corruption & Bribery, Antitrust & Competition and Human Rights, relation for Conflict of Interest and payment/financial information for Compliance with Regulations). Proximity to Public Officials did not score highly for most risks, this indicator is critical for Corruption & Bribery and Conflict of Interest, especially in riskier countries highlighted by Transparency International. The combination of this risk factor with Country or Type of Third Party can reveal a strong risk of Corruption & Bribery or Conflict of Interest. Type of Industry acts as a significant indicator for Antitrust & Competition and Human Rights. As mentioned, industry self-regulation is a great indicator for the different risks. Finally, Contract Complexity has a significant impact on Antitrust & Competition, and Compliance with Regulations.

The standard deviations show mixed perceptions for the Type of Industry. Indeed, the two greater deviations are for this factor, meaning that some respondents consider it meaningful, while others less. This can be explained by the nature of the respondents. A sector integrity officer has a narrower overall view of the other sectors, which leads to a biased judgment of his own sector. This trend also appears, but less drastically, for the Country. The main factor affecting the standard deviations is the regional and sector integrity officer's biases. Also, the standard deviations show that the results for Human Rights and Conflict of Interest are very stable as compared to the other risks. As discussed,

it is necessary to include perception in risk management, especially for integrity-related risks. More than half of the factors have a relatively high standard deviation, and this must be reflected in the business partner compliance process. However, for a major company like SNC-Lavalin, it is crucial to adhere to a single prescriptive business partner compliance process. The integrity department receives cases from different business units, and consistency allows officers to avoid mistakes.

4.2. SWOT Analysis

The results for the SWOT analysis were gathered for the five risks (Figure 3). Results for Antitrust & Competition confirm the importance of the indicator Type of Third Party. As mentioned in the literature, some relationships elevate the risks and, in this case, a joint venture or a consortium can reduce the number of bidders and affect healthy competition. Also, Proximity with Public Officials can reveal potential collusion particularly if the partner is working in business development. The results also confirm the necessity to include the Type of Industry and Contract Complexity indicators in a future tool because, as mentioned, they can reveal risks associated to a cartel in the construction engineering industry. The SWOT results concord with the score per risk (Table 4).

The results for Conflict of Interest confirm the importance of the indicators Proximity with Public Officials and Type of Third Party, particularly if the partner is working in business development for a public project. The results also highlight the importance of going deeper into the Partner Profile since it can reveal internal Conflict of Interest between the partner and the originator. The SWOT results concord with the score per risk (Table 4).

The results for Compliance with Regulations confirm the importance to include the Country indicator because, sanctions are often on a country and there is a lot of data produced about financial secrecy and tax havens. The results also highlight the importance to adjust the risk level according to the Country indicator since it is considered the most important for that risk (Table 4). Finally, including Contract Complexity and going deeper into the Partner Profile can uncover beneficial owners whom could be sanctioned. The SWOT results agree with the score per risk (Table 4).

The results for Human Rights confirm the importance of the Country indicator to detect risks related to Human Rights. Indeed, many organizations produce country reports and rankings. It also highlights the importance of the Partner Profile indicator because adverse media coverage can reveal breaches in Human Rights. The results do not include the Type of Industry indicator even if it was ranked as an important one in the score per risk (Table 4). As mentioned, lower-skilled workers' industries tend to see Human Rights as less important (Blanton and Blanton 2009).

The results for Corruption & Bribery confirm the importance to include the Country, Proximity with Public Officials and Type of Third-Party indicators. Many organizations produce annual rankings on corruption per country and a third party who is authorized to represent the company with ties to public officials can reveal important risks of Corruption & Bribery. The results also highlight the importance to cover the Partner Profile deeper since it can reveal potential beneficial owners. The respondents did not include Contract Complexity even if the literature demonstrates that it can be an important indicator. The results agree with the score per risk (Table 4).

5. Discussion

Integrity and ethics management are constantly evolving. Associated data, population perception, technologies and legislation are changing, and the tool of the trade needs to reflect that (Slagmulder and Devoldere 2018). A comprehensive view of the whole process is necessary for a complete improvement. A good assessment is useless if it cannot be adjusted over time with the help of ongoing monitoring and tracking of the business partner. Furthermore, regulatory, data and technological monitoring are necessary to keep the whole process up to date. A process that does not include the latest laws or data becomes irrelevant very quickly.

A qualitative approach such as SWOT is suited for this research. Indeed, given the very limited number of experts on this subject within such a big company, SWOT allows researchers to adapt the method in an interactive process and collect opinion easily about internal and external context. As a first step to better circumscribe the integrity-related tool, SWOT enabled a broader perspective by letting experts answer openly. In other situations, with a much higher number of participants, this approach is not applicable. The core idea of SWOT can still be used but with close answers (e.g. multiple choices, one-word answer, etc.). Regarding research questions, answers from interviewees revealed that a generic tool covering only corruption does not protect a construction and engineering company's integrity. Furthermore, answers also revealed potential solutions to investigate and assess thoroughly business partners in this sector. Finally, SWOT enables researchers to go beyond these results by turning the tool upside down with the contrast method. This allows long-term analysis and offers new possibilities to turn negative aspects into positive ones as shown in the next discussion subsections.

5.1. Risk Indicators

The weighting of the new scoring system must draw from the interview's ranking of the risk factors. However, only taking these into account would not be reliable. Indeed, some indicators are very critical in specific projects or situation. For example, Proximity to Public Officials in a Country with a high perceived level of corruption is a very critical indicator (PACI 2013). The reviewed indicators often interact and must not be assessed separately only. Therefore, findings suggest that a good tool must include a scoring system based on the interviews, with exceptions based on past events or expert opinion. Although fourteen participants are a small number to conduct a study and rank risks, including input from additional company employees would not improve the assessment due to their unfamiliarity with integrity management concepts. Despite being a leader in this domain, few of SNC-Lavalin's experts can answer integrity-related questions with a broader perspective. Having more experts would mean more solid results. Since answers were highly related to company's internal activities, having experts from other firms was not considered pertinent, but could be if the goal was to identify threats and positive developments only (external context).

5.2. SWOT

According to the findings, the main strength for all the risks is undoubtedly the *Integrity Check*. Questions about partner's experience, audited financial reports and suppliers' code of conduct can also respectively reveal partner's maturity, financial irregularities and Human Rights risks. Corruption & Bribery are also greatly covered by the tool since it was designed for this specific risk. Using the contrast method, it is possible to evaluate how the

main strength (integrity check) can turn into a weakness. Indeed, these checks have technological flaws. The first one is the numerous results generated by these checks. Too much information can lead to analyst overlooking important aspects and data availability is expected to rise significantly (Deloitte 2018). The second one is the beneficial ownership schemes getting more complex (Jong et al. 2017). Only relying on the check can allow fraudulent owners to slip below the radar. To mitigate those flaws, integrity departments must focus on reducing false positives in the integrity check and advocate for more transparent ownership in problematic countries.

Ongoing monitoring was one of the main weakness of the integrity tool. It is already automated in the current tool and generates many notifications. Also, money laundering, tax evasion and sanctions are treated separately but the tool must reveal possible breaches of Compliance with Regulations and notify those concerned. By turning the main weakness upside down with the contrast method (Brandenburger 2019), it is noted that a more precise ongoing monitoring become a strength. Improving ongoing monitoring would also benefit the integrity check. As mentioned, reducing false positives could mitigate the risks of integrity check turning into a weakness. Therefore, reducing false positives and narrowing researches while monitoring partners can easily be adapted to maintain the strength of the integrity check. Analysts could spend less time eliminating irrelevant information, thus having more time to assess partners consistently.

The positive developments were all related to more laws and regulations and access to information. Governments are enforcing laws and penalties. From a contrast (upside down) perspective, despite being good news for the public, these laws can become a threat to companies. Indeed, following their evolution is a complex task when the company has

business in dozens of countries each having their own laws. To mitigate this positive development turning into a threat, SNC-Lavalin must allow more resources on this aspect and integrate them in the integrity department.

Without applying the contrast strategy, participants also identified more laws and regulations as a threat. Also, globalization has led to complex supply chains. Keeping track of all the activities is challenging (CIOB 2016). Improving and forcing supplier transparency can turn the threat into a positive development for the company. Indeed, it can increase business opportunities for projects requiring social or environmental certification. Developing such an expertise can enable SNC-Lavalin to strengthen its leadership role within the construction engineering sector. More and more procurement schemes require certification, and these are expected to grow with the increased awareness about social and environmental issues.

Conclusion

By reviewing the literature and analyzing the data from the interviews, gaps in the current risk assessment tool were identified, and suggestions for the future business partner compliance tool were made regarding the integration of other risk indicators, the strategic use of data and the interactive process in integrity management for SNC-Lavalin. A case study interview was created to investigate the perception of experts using the current tool on an almost daily basis and validate how construction engineering companies can assess their tool for complete integrity protection. There was very high interest among participants for improving the current tool. Regarding the research questions, it was determined that the ready-made tool did not protect the company's integrity and that companies must involve

their experts in order to create a tool with more risks included to assess their business partners and protect their integrity. Findings show the importance of having an interactive process and combining different performance analysis to assure integrity management. Indeed, answers were quite different depending on the participants because of their geographic or sectorial context. Also, with integrity being a relatively new concept, awareness needs to be done among employees and other companies. The scientific value of this article is a reflection on how construction engineering companies can assess, and enhance eventually, their third-party management to protect their integrity. Very few scientific papers have studied this aspect and were mostly limited to the financial sector. With construction engineering companies having less business partners than financial ones, recommended resources and strategy were not adapted to their needs.

The study was conducted at SNC-Lavalin and the views presented by the experts reflect some of the integrity management team's perspective. Further research should focus on different types of companies, such as general contractors or engineering consultants. Also, the company's past influences its current behaviour and its risk aversion. A company involved only in the local market would not have the same risks and indicators in comparison to a multinational company. Limitations are mostly related to the internal context aspects of the tool and the precise results themselves. Namely, the importance of each risk and indicators and the strengths and weaknesses results. The proposed methodology to assess integrity tools is applicable to other construction engineering companies. Interviews, SWOT and contrast analysis proved to be an efficient way to assess and improve the company's integrity tool for third parties. More studies like this one can help standardize integrity management and organizations with fewer financial resources

587 can benefit from this by implementing integrity tool and processes at a low cost (the same
588 organization who sometimes act as a third party for multinationals) resulting in a more
589 transparent, honest and fair industry.

590 Data Availability

591 Some or all data, models, or code generated or used during the study are available from the
592 corresponding author by request (SWOT results for each respondent and score per risk
593 results for each respondent).

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Tables

Table 1. Project characteristics and corruption vulnerability adapted from (Locatelli et al. 2017)

Characteristic	Description
Size	Easier to hide bribes and inflated claims in large projects
Uniqueness	Budget costs difficult to compare and therefore it is easier to inflate
Number of contractual links	Each link provides an opportunity for someone to pay a bribe
Project complexity	Very complex projects create mismanagement or poor design, which can hide bribes or inflate claims

Table 2. Risks covered by SNC-Lavalin's business partner compliance tool

Questions	Risk factors
Will the Business Partner conduct business development for SNC-Lavalin?	Type of Third Party
Will the business partner be directly or indirectly interacting with government officials?	Type of Third Party and Proximity to Public Officials
Has the business partner been recommended by government officials?	Proximity to Public Officials
What is the purpose of the engagement?	Type of Third Party
All countries where the business partner is expected to perform his mandate with or on behalf of SNC-Lavalin must be selected. Also add the home base country of the business partner.	Country
How is the business partner compensated by SNC-Lavalin (payment or other benefit)?	Partner Profile, Type of Third Party
Has the business partner requested any unusual payment terms or rates?	Partner Profile
Check against the Integrity Database.	Partner Profile

Table 3. Points allowed for the score per risk according to the rank

Rank	1	2	3	4	5	6
Points allowed	6	5	4	3	2	1

Table 4. Risk indicators importance regarding each risk

Risk indicators	Average score per risk				
	Antitrust & Competition	*Corruption & Bribery*	*Human Rights*	*Conflict of Interest*	*Compliance with Regulations*
Proximity to Public Officials	2.4	4.9 *	1.1	4.6	3.0
Country	2.6	4.7	4.9 *	2.1	4.7 *
Partner Profile	3.3	3.1	3.9	3.4	2.9
Type of Third Party	5.0 *	3.7	3.1	5.7 *	3.7
Type of Industry	3.7	2.1	3.9	2.0	3.1
Contract Complexity	3.6	2.4	1.9	2.7	3.4

Table 5. Standard deviation for each score of the Table 4

Risk indicators	Standard deviation				
	Antitrust & Competition	*Corruption & Bribery*	*Human Rights*	*Conflict of Interest*	*Compliance with Regulations*
Proximity to Public Officials	1.99	1.46	0.82 *	0.98 *	1.63
Country	1.9	1.11	0.82 *	1.87	1.89
Partner Profile	1.25	1.95	0.55 *	1.27	1.97
Type of Third Party	0.82 *	1.11	1.3	0.49 *	0.76 *
Type of Industry	2.56 +	1.46	1.68	0.82 *	2.19 +
Contract Complexity	1.27	1.51	0.41 *	1.47	1.51

List of figures