Received 4 May 2021
Revised 18 December 2021
30 March 2022
Accepted 17 April 2022

Reporting challenges and organisational mechanisms of change: a Latourian perspective on risk disclosure of a pioneer company in integrated reporting

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Abstract

Purpose – This paper aims to explore the reporting challenges and related organisational mechanisms of change associated with disclosing corporate risks within integrated reports.

Design/methodology/approach – This paper adopts a Latourian performative approach to explore the organisational mechanisms of change in terms of networks of actors, both "human" and "non-human", involved in the preparation of risk-related disclosure. Empirical evidence is collected by means of in-depth interviews with the preparers of an integrated reporting pioneer company.

Findings – Preparing disclosure on corporate risks in the context of integrated reporting demands close interaction among several actors. When disclosure shifts from listing key risks to providing information on how these risks are managed or connect with corporate strategy and value creation, departments not usually involved in corporate reporting play an active role and external stakeholders offer pertinent insights, benchmarks and feedback. Integrated reporting and risk management frameworks are the "non-human" actors that facilitate the engagement of diverse "human" actors.

Practical implications – Preparers should be aware that risk disclosure within integrated reports requires collaboration among ("human") actors belonging to different departments and the engagement of external stakeholders. Preparers should consider the frameworks of integrated reporting and risk management as facilitators of cross-departmental discussions and dialogue, rather than mere contributors of guidelines and recommendations.

Originality/value – This study enriches the scant literature on organisational mechanisms of change made in response to integrated reporting challenges, showing subsequent advancements in the organisational process underlying the preparation of risk disclosure.

Keywords Integrated reporting, Organisational change, Reporting preparers, Risk disclosure

Paper type Research paper

This paper forms part of a special section "Integrated Reporting and Change? The Impacts after a Decade of Integrated Reporting", guest edited by John Dumay, Stefano Zambon and Elisabetta Magnaghi.

The authors are grateful to the guest editors and the two anonymous reviewers.

Journal of Accounting & Organizational Change
Vol. 19 No. 2, 2023
pp. 226-249
Emerald Publishing Limited
1832-5912
DOI 10.1108/JAOC-05-2021-0064

1. Introduction

Integrated reporting (IR) is a reporting process aimed to provide a comprehensive picture of the corporate value creation by combining a variety of financial and non-financial information, capturing a long-term perspective and offering a thoughtful image of corporate strategy, risks, governance, business model and performance (Adams *et al.*, 2011; Rinaldi *et al.*, 2018; Girella *et al.*, 2019; Cerbone and Maroun, 2020; Florio *et al.*, 2021). To foster IR adoption, the International Integrated Reporting Council (IIRC) provides principle-based guidance through its *International <IR> Framework* (hereafter, "IIRF") (IIRC, 2013 [1]), which indicates seven guiding principles and eight content elements that underpin the preparation of an integrated report [2]. Among the content elements, the one on Risks and opportunities invites preparers to explain the specific risks and opportunities that affect the organization's ability to create value over the short, medium and long term and how the organization is dealing with them (IIRC, 2013).

In this respect, IR is expected to provide narrative information and quantitative measures about risks and risk management (ACCA, 2012; Raemaekers *et al.*, 2016; Guthrie *et al.*, 2020). To such purpose, IR fosters preparers "to assess metrics that are strategically important and could incorporate past performance and prospective events" (Cohen *et al.*, 2017, p. 1181) and to rely on well-established risk management frameworks, which recognise reporting and disclosure on risks as constitutive parts of the risk management process. Therefore, preparing risk disclosure within an integrated report may involve several organisational actors and departments. For example, the finance department may gather detailed information from the risk management department on risk management practices, while other departments may be engaged to find connections among risks, the business model, the strategy and performance.

In spite of the potential involvement of various actors and the malleability of IR information (Stacchezzini and Lai, 2020), the process behind the preparation of disclosure about risks and risk management remains largely unexplored. Indeed, prior research has mostly investigated the information about risks and risk management in integrated reports by focusing on what and how disclosure is provided (Moolman *et al.*, 2016; Raemaekers *et al.*, 2016; Manes-Rossi *et al.*, 2017; Guthrie *et al.*, 2020). A few studies have offered insights on the IR process, but without concentrating on the reporting challenges and related organisational mechanisms of change (Stubbs and Higgins, 2014) associated with the preparation of risk disclosure. Some studies have explored the IR process with reference to the preparation of forward-looking information (Lakshan *et al.*, 2021) or intellectual capital disclosure (Corbella *et al.*, 2019; Stacchezzini *et al.*, 2019), while others have detailed how organisational actors may be conveniently involved to implement the materiality principle and forge a value creation storytelling able to address stakeholders' information needs (Lai *et al.*, 2017, 2018). However, to the best of our knowledge, prior research is lacking on the organisational challenges associated with translating existing IR and risk management frameworks into risk disclosure offered within the integrated report. This study aims to fill this gap by exploring the organisational mechanisms of change underlying reporting challenges experienced over time in association with risk disclosure.

To explore how various actors, both "human" and "non-human", are mobilised throughout the integrated report preparation processes, the paper adopts a performative approach (Latour, 1986, 2005) to IR and benefits from interviews with preparers from an IR pioneer company. In particular, the research relies on an in-depth analysis of the process behind the preparation of risk disclosure in an IR context. By means of interviews with IR preparers, the preparation process is investigated in terms of organisational actors and departments involved and how they interact with each other and rely on risk management frameworks and practices to gather, select and combine the information to disclose. For this purpose, the study focuses on the risk and risk management disclosure in the integrated report and the related organisational mechanisms of change of a multinational company operating in the chemical industry. As this company has published an annual integrated report since 2013, it can be considered an IR pioneer. Semi-structured interviews with managers of the organisational departments involved in IR represent the main empirical material.

The analysis reveals that preparing IR risk disclosure requires cooperation among various organisational departments, dialogue with external stakeholders, benchmarking with integrated reports and mobilisation of both reporting and risk management guidelines and recommendations. Extending disclosure on key risks requires departments traditionally charged with reporting duties to closely interact with departments having differentiated expertise. Moreover, feedback from external stakeholders and benchmarks with integrated reports provide pertinent insights to clarify how key risks are managed and connect to strategy and value creation. In the resulting networks of actors, integrated reports, the IIRF and risk management frameworks are the non-human actors that facilitate the engagement of diverse human actors.

With its findings, the study contributes to IR research on the preparation process (Corbella *et al.*, 2019; Lai *et al.*, 2018; Stacchezzini *et al.*, 2019; Sproviero, 2020), underscoring that organisational mechanisms of change evolve in response to specific reporting challenges and imply a wide collaboration among preparers with different expertise, stakeholders and frameworks. The paper also contributes to advance empirical insights on the performativity of accounting and risk management frameworks (Skærbæk and Tryggestad, 2010; Revellino and Mouritsen, 2015; Themsen and Skærbæk, 2018), demonstrating that the IIRF is crucial in facilitating preparers to engage with internal and external actors. In addition, the paper produces practical implications by advising preparers to conveniently involve organisational departments and external stakeholders when producing risk disclosure that connects to the company's core elements such as strategy and value creation.

The paper proceeds as follows. Section 2 provides a literature review on IR risk disclosure, IR reporting challenges and related organisational mechanisms of change. Section 3 presents the theoretical approach, the research method and the case company. Section 4 illustrates the major findings on the organisational mechanisms of change underlying the reporting challenges associated with IR risk disclosure. Finally, Section 5 discusses the findings and concludes by highlighting the key contributions and limitations of the study.

2. Literature review

Risk disclosure is a well-established subject of interest in the accounting and management fields (Abraham and Cox, 2007). Extensive literature underscores the relevance of risk disclosure for ensuring corporate transparency and accountability to meet stakeholders' demand about a company's risk profile (Linsley and Shrives, 2005; Khlif and Hussainey, 2016; Elshandidy *et al.*, 2018; Nagel *et al.*, 2022).

With the launch of the IIRF, which identifies the content element *Risks and opportunities*, a specific interest has emerged on how and to what extent companies provide disclosure about risks and risk management within such an innovative form of reporting (Cho *et al.*, 2022; Florio, 2022). Raemaekers *et al.* (2016) find a significant increase in the risk-related disclosure in the aftermath of the IR adoption. Similarly, Manes-Rossi *et al.* (2017) show that risks disclosure is extensive and distributed throughout the integrated report, while Guthrie *et al.* (2020) notice a marked use of narratives and infographics, especially to highlight risks related to the capitals involved in the value creation process. Further, Moolman *et al.* (2016) highlight that risk-related disclosure incorporates risks into strategic objectives and key performance indicators (KPIs), favouring "integrated thinking between strategy and the risks and opportunities faced by the organisation" (p. 600). Florio *et al.* (2022) point out that IR enhances risk-related disclosure, even in companies experienced with enterprise risk management (ERM) model adoption. Such disclosure particularly draws on non-financial, qualitative and forward-looking information.

In spite of this attention to IR risk disclosure, prior studies neglect to explore the reporting challenges associated with the preparation of such information. A notable exception is Lakshan *et al.* (2021), who provide evidence on preparers' reluctance to include future-oriented risk information because of the uncertainty underlying the related predictions. Preparers continue to mitigate such uncertainty by reporting conservative forecasts, linking targets to performance measurement systems and providing ex post explanations for missed targets previously communicated. According to Lakshan *et al.* (2021), through their behaviour, preparers ultimately undermine the usefulness of the integrated report for external users.

By focusing on the implementation of the IIRF's guiding principles and content elements, other than *Risk and opportunities*, extant literature shows that preparers do tackle significant reporting challenges. Indeed, the implementation of the materiality and completeness principles, the disclosure on strategic information and non-financial KPIs and the identification of intellectual capital are shown to generate uncertainty about what to report according to the IIRF's principle-based approach (Steyn, 2014; McNally *et al.*, 2017; Lai *et al.*, 2017, 2018; Corbella *et al.*, 2019; La Torre *et al.*, 2019; Stacchezzini *et al.*, 2019; Stacchezzini and Lai, 2020). Preparers are often unconvinced about the relevance of the document for stakeholders, have limited interaction when producing the report and show a lack of understanding of their roles in the process. This particularly occurs when a push-down approach for driving IR is adopted, with the result that managers who take part in the report preparation do not have enough time to understand the IR rationale (McNally *et al.*, 2017).

To overcome the mentioned reporting challenges, IR adopters resort to organisational mechanisms of change (Stubbs and Higgins, 2014; Dumay and Dai, 2017; Girella, 2021). A first mechanism refers to the creation of cross-functional teams that involve multiple organisational departments to forge the content of the report (Feng *et al.*, 2017; Corbella *et al.*, 2019; Stacchezzini *et al.*, 2019; Stacchezzini and Lai, 2020). This helps to move away from siloed thinking, supporting dialogue and cooperative reasoning among managers with different expertise, who are called to interpret the ambiguous concepts of the IIRF (Dumay *et al.*, 2017, p. 465). Another mechanism of change is stakeholder engagement, which manifests through undertaking a conversation with external recipients of the report (Stubbs and Higgins, 2014; Lai *et al.*, 2018). It supports preparers not only to recognise the relevance of the integrated report for stakeholders but also to strike a balance between qualitative and quantitative disclosure and to fulfil the demanding task of applying the IIRF. The development of an integrated measurement system is an additional organisational mechanism that may help capture financial and non-financial outcomes by means of "integrated" KPIs (Stubbs and Higgins, 2014; Corbella *et al.*, 2019). Another organisational mechanism is the push–pull approach to IR: a mixed approach that combines a push approach, which imposes IR on the organisational processes and structures, with a pull approach, which assumes IR is a result of an integrated business (Stubbs and Higgins, 2014). All these mechanisms resonate the concept of "integrated thinking", which prior research interprets in terms of collaboration among different departments; long-lasting relationships with (external) stakeholders; and interconnectivity among strategy, strategic objectives, performance, risk and incentives (Chaidali and Jones, 2017; Dumay and Dai, 2017; Dumay *et al.*, 2017; Feng *et al.*, 2017; La Torre *et al.*, 2019; Stacchezzini *et al.*, 2019; Busco *et al.*, 2021).

Extant research shows the involvement of several human actors in preparing integrated reports (Stacchezzini *et al.*, 2019; Stacchezzini and Lai, 2020), but limited attention is dedicated to how humans' perceptions and decisions about the content of integrated reports evolve over time. Additionally, non-human actors have been studied as inscriptions mobilised via humans' interactions (Corbella *et al.*, 2019), while evidence is lacking on the active role non-humans play in stimulating these interactions among human actors. Further, the current IR literature proposes the organisational mechanisms of change as contingent solutions to specific reporting challenges, but does not explore how these mechanisms develop over time. The present study aims to fill these gaps by investigating how the network of human and non-human actors evolves to overcome the subsequent reporting challenges experienced by an IR pioneer company while preparing risk-related disclosure.

3. Theoretical framework, research method and case study context

3.1 Theoretical framework

The paper is interpretative in nature and adopts the performative approach elucidated by the French sociologist Bruno Latour to interpret empirical materials (Latour, 1986, 2005). Latour posits two alternative approaches to reality based on divergent ontological premises. The *ostensive approach* postulates that reality has stable properties (or fundamental and generalisable elements) that exist independently of human action and interaction. The *performative approach* instead posits that reality has a variable set of human practices (or actions and interactions) that change depending on how its elements are mobilised. Focusing on action and enactment (Schultze and Orlikowski, 2010, p. 813), the performative approach investigates reality as "a doing", that is, as enacted in ongoing practice (Barad, 2003). Reality is constituted by "fluid, dynamic, multiple and emergent phenomena" (Schultze and Orlikowski, 2010, p. 814). From a methodological point of view, scholars need to "trace the footsteps of diverse actors" (Boedker, 2010, p. 597) whose interaction contributes to enact reality. These actors are both "human" and "non-human", with non-human actors (e.g. theories, frameworks and technologies) coming to produce the worlds that they describe as an effect of their mobilisation by human actors.

Scholars in accounting have already engaged with the performative approach and related concepts, particularly within the studies informed by actor-network theory (Chua, 1995; Baxter and Chua, 2017). Showing accounting's relational agency, these studies demonstrate that accounting interactively brings actions, events and actors forward (Skærbæk and Tryggestad, 2010; Revellino and Mouritsen, 2015; Themsen and Skærbæk, 2018). In particular, Skærbæk and Tryggestad (2010) and Revellino and Mouritsen (2015) show that accounting plays an active role in shaping strategy and developing innovation. In the same vein, Themsen and Skærbæk (2018) highlight the performativity of risk management frameworks, which enable interactions among humans.

In spite of this interpretative potential, to date, few studies have applied the performative approach to the IR process (Cavicchi *et al.*, 2019; Corbella *et al.*, 2019). Yet, this approach may help depict how "non-human actors" (e.g. reports, reporting frameworks, guidelines and visual tools) are mobilised by diverse "human actors" – belonging to different departments and directly or indirectly involved in integrated report preparation – to forge the risk disclosure to be included in the IR value creation story. Indeed, a performative approach appears to be particularly suitable to track the preparation of a report that is malleable in nature and in practice (de Villiers and Sharma, 2020; Stacchezzini and Lai, 2020), also with reference to the deployment of its content elements (including *Risks and opportunities*).

3.2 Research method

To explore the reporting challenges and related organisational mechanisms of change associated with disclosing risks within integrated reports, this study draws primarily on data obtained through the utilisation of an in-depth semi-structured interview research method.

Interviewees were selected among the IR preparers of an IR pioneer following a snowball sampling method. This method allows focusing on interviewees whose characteristics fit the design of the study (Patton, 2002) until saturation is reached and further insights would not be gained through additional interviews (Bryman and Bell, 2015; Dai *et al.*, 2019). In detail, interviews started with the financial reporting manager and proceeded with managers and assistant managers of the major organisational departments involved in the preparation of the integrated report (i.e. finance, sustainability, investor relations, risk management and strategic planning departments) [3]. The first round of interviews was carried out from March to November 2017 and consisted of 13 interviews held in person at the corporate offices or remotely via Skype calls or phone calls. Three follow-up interviews were carried out remotely in September–October 2021.

The interviews covered the following topics: organisational challenges related to IR adoption, departments involved in the preparation of risk disclosure, how managers belonging to different departments interact during integrated report preparation, the extent to which risk disclosure relies on information prepared in accordance with a risk management framework and other guidelines followed by preparers and how risk disclosure combines with other information required by the IIRF (e.g. business model and strategy). Interviews lasted for 50–110 min and were recorded and transcribed. They allowed the procurement of a broad, in-depth perspective about the activities and relations entailed in the preparation of risk-related disclosure within integrated reports and their evolution over time. Interviewees were assured they will be identified with a generic description of their job position. Further, they are referred to by using the gender-neutral third person ("they") as a de-identifying pronoun, while the case study company is cited with an invented name, not to be identifiable.

Further data was obtained through our participation in conferences on IR that took place in 2018. Such conferences host preparers from finance and sustainability departments as speakers to discuss the organisational challenges encountered in embarking on the IR journey with academics, practitioners and other IR pioneers. Notes and transcripts of the speeches added insight to data collected from interviews.

Finally, insights on risk disclosure were gained by a close reading (Brummett, 2018) of the company's integrated reports from 2012 to 2020. Such a reading allowed a comprehensive overview of the risk disclosure provided by the company over the nine years under study and helped link this to the experience told by preparers during the interviews and conferences.

The interpretation of the empirical material thus collected is based on the theoretical framework introduced above, which allows the provision of theoretically informed case insights on the network of actors involved in the preparation of risk-related disclosure within the integrated report and the organisational changes brought by IR as a process.

The analysis consists of an iterative process aimed at coding the empirical material to detect actors and their interactions. In line with the performative approach, such actors are distinguished as human or non-human actors. Human actors are managers and assistant managers who participate in the IR process (i.e. preparers), their peers, stakeholders and international organisations. Attention is paid to the cognitive resources such actors mobilise in preparing the report: the ideas they developed on how risks and risk management practices should be disclosed; the opinions they expressed about particular information to be provided; the suggestions they made about particular aspects; and the experiences they brought, in terms of knowledge developed and skills acquired over the years, from integrated or other reporting processes (i.e. financial reporting and sustainability reporting). Non-human actors are represented by integrated reports and all frameworks that inform the IR process. The latter are identified in the guidelines for preparing integrated reports and risk-related disclosure, used to forge risks and risk management disclosure within the integrated reports. Finally, the networks of (human and non-human) actors are analysed by considering how human actors refer to and/or are influenced by non-human actors while coping with the reporting challenges identified.

3.3 Case study context

The case study company (hereafter, Chem) is a multinational working in the chemical industry. As part of its mission, the company is committed to being sustainable by limiting global warming and reducing greenhouse gas emissions. Thus, it has implemented a decarbonisation strategy and joined the Task Force on Climate-Related Financial Disclosure (TCFD) as a supporter, adopting its recommendations on information to be provided about the risks associated with climate issues.

Chem took part in the 2011 IIRC Pilot Programme, participating in a selected group of global companies that shared their experiences with IR and contributed to developing best practices for its adoption. Since Chem's participation in the above Programme, it has published an integrated report annually, following the guidelines provided by the IIRC. Many of these reports have received awards by professional associations for their accountable, concise and mature disclosure.

To obtain a comprehensive view of the main corporate risks and manage them optimally, Chem adopts an ERM model based on the framework and guidelines issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO, 2004, 2012, 2017). It also has a dedicated department that carries out continuous risks analysis aimed at offering an overview of the different types of risks that affect the company.

The durable experience with IR, the awards assigned to its integrated reports and the commitment in managing its high operational risks make Chem a valuable case to study the network of actors involved in preparing risk-related disclosure for IR purposes and how the evolving of said network affects the underlying organisational processes.

4. Findings

This section provides a theoretically informed narrative of the organisational mechanisms of change enabled by Chem to overcome the reporting challenges associated with risk disclosure within integrated reports. With reference to the Latourian performative approach (Latour, 1986, 2005), the mechanisms of change are interpreted in terms of involvement of and interaction between human and non-human actors that contribute to the preparation of risk-related disclosure.

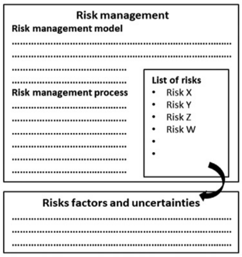
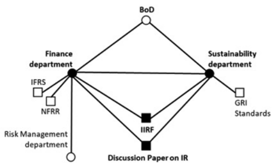
The section is structured in accordance with three main reporting challenges and the related organisational mechanisms of change enabled emerging from the analysis and refer to three phases of preparation of the integrated reports (2012–2013, 2014–2016 and 2017–2020). In this respect, for each phase, the following sub-sections describe: the reporting challenge associated with risk disclosure; the risk disclosure provided in integrated reports;

the human and non-human actors involved in overcoming the reporting challenge; the network of human and non-human actors enabled to overcome the challenge. All these aspects are also summarised in Figures 1, 2 and 3.

4.1 Phase 1: the challenge of identifying key risks associated with value creation

The content element *Risks and opportunities* of the IIRF invites preparers to inform about those risks that "affect the company's ability to create value" over time and explain how the company is dealing with them (IIRC, 2013, par. 4.23). In the company under investigation, providing such information posed the very first reporting challenge associated with risk disclosure within IR (Figure 1).

In early integrated reports of 2012–2013, two sections are dedicated to risk disclosure, namely, "Risk management" and "Risk factors and uncertainties". The first section opens by stating the ERM purpose, summarised in assuring that managers assume decisions by taking due account of actual and potential risks that may affect Chem's activities and undermine the achievement of the main business targets. Following this, a short narrative is provided on the risk management process, focusing on specific sub-processes and referring to the adoption of key risk indicators and KPIs for risk monitoring and treatment. The organisational bodies involved in risk management and their responsibilities are also highlighted. The section "Risk management" ends with a minimal list of the main risks that affect Chem's ability to create value. These risks are not detailed further, yet at the end of the list, a reference is made to the

<table>
<tr><td rowspan="2">Reporting challenge and risk disclosure</td><td colspan="2">Reporting challenge associated with risk disclosure</td><td>Identify key risks associated with value creation.</td></tr>
<tr><td colspan="2">Risk disclosure within integrated reports</td><td>The IR contains two sections dedicated to risk disclosure: "Risk management" and "Risk factors and uncertainties". The "Risk management" section provides a narrative disclosure on the risk management model and process, also indicating organisational bodies involved in risk management and their responsibilities. It ends with a minimal list of the main risks that affect the Chem's ability to create value and refers to the "Risk factors and uncertainties" section for further details. This last section complies with the provisions of the national financial reporting regulation and offers a description of the risks monitored and managed by Chem.

</td></tr>
<tr><td rowspan="3">Organisational mechanisms of change to overcome the reporting challenges</td><td rowspan="2">Actors</td><td>Human</td><td>Board of directors (BoD), finance department, sustainability department, risk management department.</td></tr>
<tr><td>Non-human</td><td>Discussion Paper on IR, GRI Standards, IFRS, IIRF (par. on Business model, Governance, Risks and opportunities, Value creation), National financial reporting regulation (NFRR).</td></tr>
<tr><td colspan="2">Network of human and non-human actors</td><td>Engagement with the board of directors to start the IR project; Establishment of a cross-departmental IR team; Training sessions to introduce the IR guiding principles and content elements; Brainstorming to discuss the concept of value creation; Dialogue to share a view on the risks that may affect the company's ability to create value; Provision of risk management information from the risk management department to the finance department; Approval of integrated reports and of the risk disclosure therein contained by the board of directors.

</td></tr>
</table>

Legend: ● Human actor with a primary role, also written in bold type; ○ Human actor with a secondary role; ■ Non-human actor with a primary role, also written in bold type; □ Non-human actor with a secondary role; — Interaction among actors.

Figure 1.
The reporting challenge associated with risk disclosure and related organisational mechanisms of change in Phase 1 (integrated reports 2012–2013)

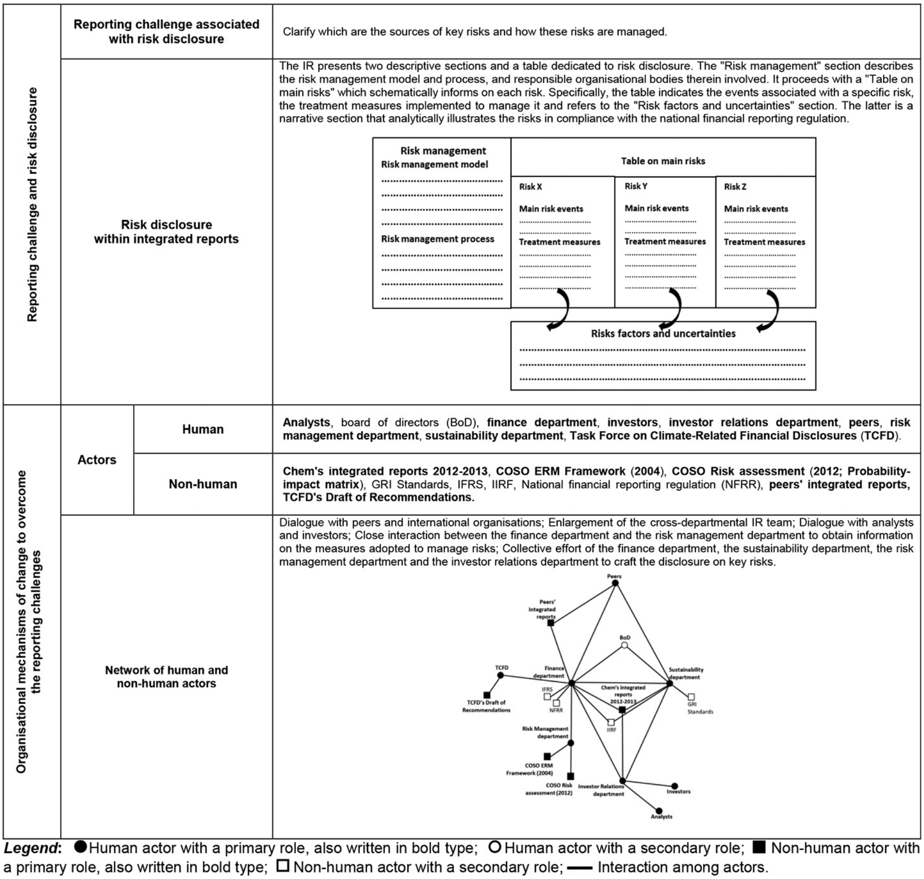
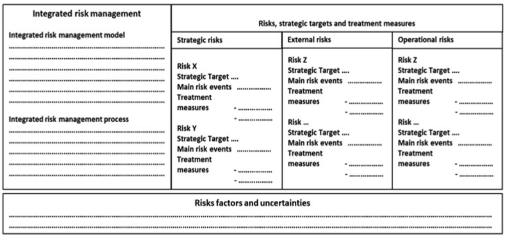
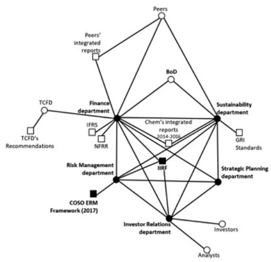


Figure 2.
The reporting challenge associated with risk disclosure and related organisational mechanisms of change in Phase 2 (integrated reports 2014–2016)

"Risk factors and uncertainties" section. Although being part of the integrated report, this section is prepared in compliance with the financial reporting regulation in force in Chem's home country and offers details on a broad spectrum of risks that the company faces, actively monitors and manages to safeguard its survival [4] (Figure 1).

The first reporting challenge was dealt with by deputing a few human actors, namely, the finance department and the sustainability department. By interacting with each other and with extant frameworks and guidelines as non-human actors, they triggered specific organisational mechanisms that helped them *break the ice* with risk-related disclosure in the new reporting context. Understanding such mechanisms and how they allowed the resolution of the challenge to identify risks to be disclosed requires revisiting the involvement of diverse actors since the emergence of Chem's IR project. The actors that contributed to solving the first reporting challenge and their network of interactions are identified in Figure 1.

Before the IR implementation, the human actors in charge of corporate external reporting were the finance department and the sustainability department. They used to work separately and make reference to specific and diverse non-human actors. The finance

<table>
<tr><td rowspan="2">Reporting challenge and risk disclosure</td><td colspan="2">Reporting challenge associated with risk disclosure</td><td>Explain how key risks connect with strategy and value creation.</td></tr>
<tr><td colspan="2">Risk disclosure within integrated reports</td><td>The IR contains two sections dedicated to risk disclosure: "Integrated risk management" and "Risk factors and uncertainties". The first section begins with narrative information about the risk management model and process as well as organisational bodies involved with related responsibilities. This section proceeds with a descriptive table, named "Risks, strategic targets and treatments measures", that identifies three risk categories: strategic, external and operational risks. For each key risk included in the risk categories, the table associates the strategic target potentially impacted, the main events that trigger the risk, and a description of the treatment measures adopted to manage it. The IR also includes the "Risk factors and uncertainties" section, which provides mandatory information on risks.

</td></tr>
<tr><td rowspan="3">Organisational mechanisms of change to overcome the reporting challenges</td><td rowspan="2">Actors</td><td>Human</td><td>Analysts, board of directors (BoD), finance department, investors, investor relations department, peers, risk management department, strategic planning department, sustainability department, Task Force on Climate-Related Financial Disclosures (TCFD).</td></tr>
<tr><td>Non-human</td><td>Chem's integrated reports 2014-2016, COSO ERM Framework (2017; Managing Risk to Strategy and Business Objectives), GRI Standards, IFRS IIRF (par. on Business model, Connectivity, Organizational overview and external environment, Risks and opportunities, Strategic focus and future orientation, Strategy and resource allocation), National financial reporting regulation (NFRR), peers' integrated reports, TCFD's Recommendations.</td></tr>
<tr><td colspan="2">Network of human and non-human actors</td><td>Further enlargement of the cross-departmental IR team; Strong involvement of the strategic planning department to associate strategic targets to main risks; Dialogue and cooperation among the finance department, the sustainability department, the risk management department, the investor relations department and the strategic planning department to share a view on the connections among risks, strategy and value creation.

</td></tr>
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Legend: ● Human actor with a primary role, also written in bold type; ○ Human actor with a secondary role; ■ Non-human actor with a primary role, also written in bold type; □ Non-human actor with a secondary role; ▬ Interaction among actors.

Figure 3.
The reporting challenge associated with risk disclosure and related organisational mechanisms of change in Phase 3 (integrated reports 2017–2020)

department disclosed financial risks within the (compulsory) annual report prepared in accordance with the national financial reporting regulation and the International Financial Reporting Standards (IFRS) [5], while the sustainability department communicated on social and environmental risks within the (voluntary) sustainability report set up according to the sustainability reporting standards issued by the Global Reporting Initiative. Such non-human actors continued to participate in the network of actors involved in setting up risk disclosure, but their role is secondary in addressing risk disclosure within the integrated report. Since the first approach to IR in 2011, the chief sustainability officer recognised the potential of IR to drive the transformation of fragmented reporting processes towards a comprehensive corporate reporting capable of representing how the company generates value for its shareholders and stakeholders. Thus, after having studied the Discussion Paper on IR (IIRC, 2011), the chief sustainability officer submitted to Chem's board of directors two proposals – to start preparing the integrated report and to participate in the Pilot Programme promoted by the IIRC. With the approval of the board of directors, Chem's IR journey began.

As a starting point, the chief sustainability officer asked for the cooperation of the finance department in implementing IR. The finance department immediately reacted with scepticism, if not resistance, because it was concerned that moving from traditional financial reporting to IR might increase the complexity of the procedures that usually support the annual report and result in possible duplication of information already provided in the sustainability report issued by Chem. The chief sustainability officer thought to address such concerns via mechanisms of dialogue, training and brainstorming, which proved to be of primary importance in tackling the first reporting challenge. This officer promoted meetings with managers and employees of the finance department to endorse the IR implementation by introducing the Discussion Paper on IR [6], the idea behind the integrated report and its overall purpose. After preliminary group discussions, a tight interaction arose between the finance and the sustainability departments, which combined their reporting expertise to create a cross-departmental IR team. With the launch of the IIRF in 2013, the team ran further training sessions to gain knowledge of the final version of the IR guiding principles and content elements. The IIRF emerged as the only non-human actor that played a primary role in tackling the first reporting challenge, of which it was both the trigger and the solution. Mobilised by the finance and the sustainability departments, the IIRF allowed the development of a common language that facilitated the exchange of ideas.

Given that the IR core concept is *Value creation* (IIRC, 2013, par. 2.4–2.9) and that risk disclosure should be provided in integrated reports on those risks that significantly affect value creation, brainstorming sessions were organised to define how Chem creates value. Bringing their own opinions in light of knowledge and skills gained from previous experiences and their understanding of the IIRF, the finance department and the sustainability department initially assumed (apparently) adamant positions: The former maintained that Chem creates value by achieving positive financial results, so qualifying value as *financial value*; instead, the latter maintained that Chem generates value by safeguarding social and environmental resources, so characterising value as *social and environmental value*. Common ground was found in an upper-level concept capable of uniting the diverse perspectives initially put in place – such a concept is *sustainability*, which everyone in the team considers central for qualifying Chem's long-term success.

The IIRF was key also to induce the IR team to explain how Chem generates sustainability-oriented value, especially via the suggestions contained in the content elements *Business model* (IIRC, 2013, par. 4.13) and *Governance* (IIRC, 2013, par. 4.9). The former urges preparers to highlight the basis of corporate value creation and stimulated a debate within the IR team, which concluded that the business model is founded on corporate governance and ERM and structured upon the strategic pillars of decarbonisation, cooperation and operational superiority – such as resulting from the strategic plan presented during shareholders' meetings. Within the business model, ERM is particularly deputed to identify, monitor and manage those risks that impair the company's success. To enhance the comprehensibility of the business model, the content element *Governance* encourages preparers to disclose the company's attitude to risk and its approach to risk management: The IR team thus decided to dedicate a specific section of the integrated report to disclosure on risks and risk management, in addition to the mandatory information provided in the traditional section "Risk factors and uncertainties".

First, the section titled "Risk management" should provide information on the ERM model adopted and the risk management processes implemented. For this purpose, the finance department referred to the risk management department, which promptly provided the information requested. The IR team then agreed to simplify the description of such items as much as possible so that users could focus on the key elements of the hierarchy of the risk management model and the tasks and responsibilities attributed to each level and organisational body [7]. Second, the section should provide information on the risks that influence Chem's ability to create sustainability-oriented value (i.e. key risks). A common view on the risks to be reported in the newly created section was searched, again, through a close dialogue internal to the IR team. The finance department underlined the importance of informing about risks of a *financial* nature (e.g. market, credit and commodity risks), which may produce an impact on the company's ability to generate profits. It also maintained that changes in *regulations* and trends in the *strategic arena*, as well as the risks associated with *operating activities*, may influence Chem's ability to provide its products. The sustainability department agreed to include all such risks and underlined that operating activities may produce an impact also on the health and safety of corporate workers and local communities of those countries that host Chem's operations. Further, it proposed to list two other key risks: *environmental risk*, which affects the company's ability to access natural resources, and the risk associated with *host countries*, such as political instability and corruption, which may influence the company's ability to establish lasting partnerships.

At this stage, one last step was needed: the collection of specific information on key risks. The finance department once again sought an interaction with the risk management department. However, such interaction turned out to be loose and somehow conflictual. Indeed, opposite positions emerged as regards the depth of the disclosure to be offered on key risks: While the financial reporting manager (on behalf of the IR team) aimed for structured and extensive disclosure on the key risks identified, the risk management department insisted on providing a bullet-point list of such risks. In attempting to find common ground, the finance department proposed to include at least a ranking of the major risks and an explanation of the activities promoted by Chem to deal with them. Still, the risk management department offered resistance, maintaining that information on the risk-related activities was already included in the "Risk factors and uncertainties" section in compliance with the national financial reporting regulation. In the end, a minimal list of generic key risks was reported in the appendix of the section "Risk management" of the integrated report, with reference to the section "Risk factors and uncertainties" for any further detail. Finally, with the approval of the board of directors, the early integrated reports were published.

4.2 Phase 2: the challenge of clarifying which are the sources of key risks and how these risks are managed

In spite of the substantive amount of work done to meet the requirements of the content element *Risks and opportunities*, Chem's IR team was not completely satisfied with the risk disclosure provided in early integrated reports, especially as regards disclosure on key risks. To make headway on risk disclosure, it particularly felt the need to confront actors outside the company. The solicitations coming from these actors posed the second reporting challenge associated with disclosing risks within the integrated report. As reported in Figure 2, such challenge consisted in clarifying the sources of the key risks and how these risks are managed.

In Chem's integrated reports 2014–2016, the risk disclosure remains structured into the sections "Risk management" and "Risk factors and uncertainties". The "Risk management" section still describes, through narrative information, the risk management model and process, including the organisational bodies responsible for risk management. Disclosure on key risks is now extended and included in a dedicated "Table on main risks", which offers a schematic representation of the risks affecting the company's ability to create value by indicating the events associated with each risk, the treatment measures adopted and a reference to the exact page of the section “Risk factors and uncertainties” where further information on the same risk is provided (similar to the previous phase).

To overcome the second reporting challenge and bring about risk disclosure, further organisational mechanisms of change operated. Understanding the emergence of these mechanisms requires reconstructing how the network of human and non-human actors extended beyond the original IR team and the few reporting guidelines initially considered. Such an extension clearly emerges from the graphical representation reported in Figure 2.

After issuing the integrated report 2013, managers from the finance and sustainability departments started to take part in round tables and events aimed at exchanging knowledge and sharing experiences among companies that adhered to the IIRC Pilot Programme. The IR team thus engaged in constructive dialogue with its peers and received comments and suggestions on the reports produced so far. The main point raised on these reports was the lack of connection between value creation and key risks. The peers underlined that if sustainability qualifies Chem’s value creation and drives the way the company conducts its activities, then sustainability should emerge more clearly as the *fil rouge* of the disclosure on key risks provided throughout the integrated report. These human actors played a primary role in helping the IR team face this reporting challenge because they suggested breaking down the concept of sustainability-oriented value creation according to the tripartite perspective of financial, social and environmental sustainability and to (re)define disclosure on key risks accordingly. This means specifying the financial, social and environmental nature of each risk, its sources and the measures Chem takes to manage it. The final purpose is to outline a more precise qualification of Chem’s value creation in the business model and the risks that may threaten its achievement.

Prompted by the comments received by other IR pioneers, the financial reporting manager conducted a comparative analysis on how these IR pioneers disclosed the key risks in their integrated reports. The peers’ reports highlighted a major difference: Most peers offered insights on risk triggers, corporate objectives undermined, metrics for risk monitoring and initiatives for risk treatment. Meanwhile, Chem had joined the TCFD and has since benefited from recommendations on voluntary disclosure that can be provided within financial reports on climate-related issues and their impacts on a company’s strategy, strategic planning and future financial performance. Having the chance to participate in meetings and interact with representatives of other companies involved in the TCFD, Chem’s financial reporting manager noted that the company’s integrated reports lacked focus on the linkages between climate-related issues and corporate strategy, metrics and targets.

The financial reporting manager submitted the evidence found by analysing the peers’ integrated reports and the perceptions emerged during the TCFD meetings, for the attention of other IR team members. It was concluded that an effort was needed to improve disclosure on all key risks and to enhance disclosure on climate change-related risks by including the actual and potential impacts of such risks on the corporate strategy. The tight interactions occurring among the finance department, the sustainability department, the peers, Chem’s early integrated reports and those of the peers and the TCFD and its Draft of Recommendation (2016) were thus central to overcome the second reporting challenge. Non-human actors played a primary role in reviving the dialogue among human actors, both external and internal to Chem. In detail, recognising the importance of engaging with new human and non-human actors, the original IR team formed by the finance and the sustainability departments aimed to establish a tight interaction with the investor relations department to benefit from its contacts with Chem’s stakeholders. The chief investor relations officer immediately launched consulting sessions with investors and analysts to gather their perceptions on Chem's integrated reports. Investors underscored that the documents published were too hermetic regarding risk disclosure and that the additional information offered in the "Risk factors and uncertainties" section was both dispersive and drawn on the concept of corporate survival rather than value creation. Financial analysts and analysts focused on environmental, social and governance issues also recommended adding information on the actions the company undertakes to manage risks, related impacts and links with strategic objectives.

The feedback from external stakeholders clearly confirmed the initial concerns of both the finance and the sustainability departments on the need to integrate risk disclosure with an explanation of how Chem deals with key risks. Indeed, such an integration was perceived as essential to fully adhere to the content element *Risks and opportunities* (IIRC, 2013, par. 4.23). Strengthened by all such inputs, the IR team was strongly motivated to persuade the risk management department to become more actively involved in the IR process. The IR team particularly stressed the importance to go beyond the list of key risks and prepare a disclosure that clarifies both the sources of these risks and how each of them is treated to preserve the company's ability to create value. After initial resistance in the initial years, the chief risk officer finally recognised that the integrated report should be treated as a standalone informative tool and their department started to closely interact with the finance department to provide information on the sources from which key risks arise as well as the measures adopted to manage them, thus becoming a primary player in overcoming the second reporting challenge. Information is derived from the risk assessment activity carried out in accordance with the COSO ERM Framework (2004) and ERM Risk Assessment in Practice (2012). These guidelines help describe the key risks by leveraging the probability–impact matrix, which allows mapping the risks associated with value creation according to their likelihood of occurrence (which stems from triggering events) and their impact on the organisational performance. Based on the matrix, treatment measures are also defined, risk by risk.

A collective effort was then made by the expanded IR team – now including finance, sustainability, investor relations and risk management departments tightly interacting with each other – to shape the disclosure on key risks. The process was guided by the financial reporting manager, who, in light of the comparative analysis previously developed on the peers' integrated reports, suggested creating a "Table on main risks" that includes, for each key risk, the main triggering events, the treatment measures implemented by Chem and a reference to the pages of the section "Risk factors and uncertainties" providing further details on the specific risk. For instance, upon suggestion by the sustainability department, the table includes the risk of "accidents", indicating blow-outs as one of its sources and continuous monitoring of the drilling and pre-drilling phases as one of its treatment measures. Pleased with the disclosure on key risks resulting from the extended cooperation, the IR team was motivated to further improve such disclosure by working in close collaboration.

4.3 Phase 3: the challenge of explaining how key risks connect with strategy and value creation

In spite of the significant improvements made to risk disclosure within the integrated reports 2014–2016, the IR team was aware that some feedback received by external actors still needed to be addressed. Such feedback determined the third reporting challenge – explaining how key risks connect to the company's strategy (as advanced by investors, analysts and the TCFD) and value creation (as suggested by the peers) (Figure 3).

As reported in Figure 3, the integrated reports 2017–2020 include two sections dedicated to risk disclosure. The first section is called “Integrated risk management” and describes the approach to risk management adopted by Chem. This section begins with narrative information about the risk management model and process (including the organisational bodies involved and their responsibilities) and proceeds with a table on “Risks, strategic targets and treatment measures”. The table identifies three categories of risk – namely, strategic, external and operational risks – and sorts the key risks according to such categories. Each key risk is presented in terms of the strategic targets it potentially affects, the main triggering events and the treatment measures adopted. The second section remains the one of “Risk factors and uncertainties”, which provides complementary information on all corporate risks (even those that do not affect value creation directly).

In addressing the third challenge, the further enlarged IR team played a primary role. Indeed, a new department joined the team and all five departments tightened interactions with each other and with the existing frameworks of reference (e.g. IIRF and ERM Framework). Interactions persisted also with Chem’s and the peers’ integrated reports and external human actors, but they became loose and these actors kept a secondary role in the IR process. Understanding how the third reporting challenge associated with risk disclosure was overcome requires revisiting the evolution of the network of (old and new) human and non-human actors (Figure 3), which resulted in strengthening of the organisational mechanisms already enabled in the previous two phases.

A primary role in pushing risk disclosure forward in this last phase was played by the Committee of Sponsoring Organizations of the Treadway Commission (2017) framework in *Enterprise Risk Management – Integrating with Strategy and Performance*, which reinforced previous analysts’ remarks and helped find a way to give substance to the IIRF guiding principle of *Connectivity*. On one side, the risk management department signalled to the rest of the IR team that the Committee of Sponsoring Organizations of the Treadway Commission (2017, p. ii) ERM Framework recognises the “need for organizations to improve their approach to managing risk” by connecting the types of risk assumed by the company, the strategy setup and the related objectives. On the other side, the IIRF underscores the importance of showing “the combination, interrelatedness and dependencies between the factors that affect the organization’s ability to create value over time” (guiding principle *Connectivity*; IIRC, 2013, par. 3.6).

Both the COSO ERM Framework and the IIRF made the finance and the sustainability departments aware that connectivity was not explored enough in earlier integrated reports as regards risks. They considered involving the strategic planning department in the IR team: Indeed, being deputed to define the action plan and to select the means and tools for achieving the long-term corporate objectives, such department is meant to facilitate the association of key risks with strategic targets. Managers from the strategic planning department welcomed the opportunity of contributing to IR and formed a tight interaction with the other departments in a series of meetings. Said managers especially advanced two proposals. Firstly, they advised linking the three pillars of the long-term strategy (i.e. decarbonisation, cooperation and operational superiority) with the risks that undermine both the company’s strategy and its value creation from the financial, social and environmental perspectives. Secondly, to make the identification of the common risk sources easier, they proposed replacing the risk-by-risk list included in previous reports with a list of key risks sorted by category. This proposal found endorsement by the IIRF, which suggests identifying the external and internal sources that give rise to key risks (content element *Risks and opportunities*; IIRC, 2013, par. 4.25) [8]. Although agreeing on classifying risks by categories, the risk management department suggested customising such classification in coherence with the method it uses to assess and manage risks (i.e. by distinguishing among strategic, external and operational categories of risks). The strategic category refers to internal and external risks originating from the pursuit of long-term strategy as established in Chem's strategic plan. The external category includes those risks related to the geographic, natural and political context in which the company carries out its activities. Finally, the operational category comprises risks implicit in the core corporate activities. The finance, sustainability and investor relations departments accepted the proposals advanced by the other two human actors and re-affirmed that each key risk shall continue to be described in terms of its triggering events and treatment measures.

Having achieved an agreement on key risks classification, the finance and the sustainability departments noted that a further step could be made to explain how risks connect to strategy and value creation. Strengthening the interaction with the strategic planning department, they started to associate key risks with one or more strategic targets (i.e. those objectives that drive Chem's strategy and value creation in the short and medium terms). Being identified according to profitability, relationship with stakeholders and reputation, the strategic targets recall the financial, social and environmental perspectives of corporate sustainability-oriented value creation. An intense dialogue followed to share views on the connections among risks, strategy and value creation within the IR team. The discussion first focused on the *locus* in which such connections should emerge within the integrated report. In this regard, the investor relations department suggested revising the "Table on main risks" to include information on both the strategy and value creation. The IR team easily converged on naming the revised table "Risks, strategic targets and treatment measures" and then undertook profound reflection to redefine its content. Mobilising the IIRF guiding principle *Strategic focus and future orientation* (IIRC, 2013, par. 3.4), which states that an integrated report shall inform about significant risks deriving from the market in which the company operates as well as from the business model it adopts, the sustainability department realised that a balance between issues that affect profitability and those that affect social and environmental outcomes (e.g. workers' health and security and air pollution) was advisable. In addition, given that Chem's business model positioned sustainability in its financial, social and environmental perspectives at its core, such balance became key to fully capture the idea of value creation. This proposal prompted the whole IR team to cooperate closely and the five departments agreed that the table should include those sustainability actions and projects that have already produced or will produce a significant impact on identified risks as well as value creation, while other initiatives are disclosed in the sustainability report only.

Upon agreement on the strategic targets, risk events and treatment measures to be disclosed in the table, the IR team finally focused its attention on how the table should be organised. Once more, the input came from the IIRF, which encourages distinguishing between external and internal sources of key risks (content element *Risks and opportunities*; IIRC, 2013, par. 4.25). The suggestion by this non-human actor was then combined with the risk categories already shared within the IR team. Accordingly, the table was divided into three sections corresponding to three main risk categories of strategic risks, external risks and operational risks. Within each risk category, the IR team made an effort to clarify how the company intends to prevent or react to key risks, as recommended by both the IIRF (content element *Strategy and resources allocation*; IIRC, 2013, par. 4.29) and the Committee of Sponsoring Organizations of the Treadway Commission (2017) ERM Framework. For instance, the category of strategic risks mentions climate change as a key risk that stems from events that alter the climatic scenario and may influence energy transition projects through their impacts on regulation, technological evolution and market conditions. Climate change risk also affects the pursuit of the strategic pillar of decarbonisation and Chem's three strategic targets of profitability, relationship with stakeholders and reputation. Among the treatment measures linked to this risk, renewable energy initiatives are highlighted, together with commitment to research programs, participation in the TCFD and other international groups of discussion and improvement of management accounting systems.

As a final step in preparing risk disclosure, the investor relations department tried to quantify the impact of treatment actions on corporate performance, to fully accomplish the content element *Risks and opportunities*, which recommends assessing all risks, identifying actions aimed at mitigating or managing key risks and including in the report "*t*he associated strategic objectives, strategies, policies, targets and KPIs" (IIRC, 2013, par. 4.25, p. 27). The idea here was to connect strategic targets, risk events and related treatments to financial, social and environmental KPIs that are associated with the three corporate strategic pillars. The IR team developed a table prototype with some crucial projects enacted, namely, a project for improving the safety of the workplace and a renovated corruption prevention system. However, when trying to estimate the costs avoided by the decrease in the number of injured workers and frauds, the IR team failed to come up with reliable (financial) measures. Given that the intrinsic uncertainty of the estimates was perceived to be higher than expected information benefits, the IR team finally decided not to provide any quantitative information within the table. Of course, the idea is not definitively abandoned, but represents the next challenge associated with risk disclosure in the integrated report.

5. Discussion and conclusions

Prior research shows that integrated report preparation poses challenges related to uncertainty about what to disclose and how, according to the principle-based approach of the IIRF (Steyn, 2014; McNally *et al.*, 2017; Lai *et al.*, 2017, 2018; Corbella *et al.*, 2019; La Torre *et al.*, 2019; Stacchezzini *et al.*, 2019; Stacchezzini and Lai, 2020). This uncertainty goes hand in hand with preparers' reluctance to disclose future-oriented information and unavailability of information about content elements a company is not used to account for (Steyn, 2014; Lakshan *et al.*, 2021). To overcome these reporting challenges, IR preparers are urged to develop organisational mechanisms of change (Stubbs and Higgins, 2014). Cross-functional teams, stakeholder engagement, integrated measurement systems and the push–pull approach to corporate reporting represent some of the organisational mechanisms of change that support preparers in their journey toward IR (Rinaldi *et al.*, 2018). While these organisational mechanisms rely on both human and non-human actors, prior research has paid limited attention to the performative role of these actors (Cavicchi *et al.*, 2019; Corbella *et al.*, 2019). The present paper aims to address this research gap by tracing "the footsteps of diverse [human and non-human] actors" (Boedker, 2010, p. 597) engaged with the reporting challenges posed by risk-related disclosure within integrated reports.

Informed by a Latourian perspective (Latour, 1986, 2005), the empirical material shows that the preparation of IR risk disclosure relies on the active role of several human and non-human actors, which form networks of actors able to address various reporting challenges. The role of diverse human and non-human actors and the overall structure of the networks of actors vary according to subsequent reporting challenges. When the reporting challenge is in identifying the key risks to be disclosed within the first integrated reports (i.e. the first phase in our case study), the human actors involved mainly belong to the departments traditionally charged with corporate reporting duties (i.e. the finance and the sustainability departments). These departments collect information from various departments not directly involved with reporting preparation (e.g. risk management), but interactions and dialogue with these other departments are limited. The non-human actor playing a primary role in selecting risk disclosure is the IIRF [and its antecedent, the Discussion Paper on IR (IIRC, 2011)], which triggers the reporting challenge because it requires identification of the key risks that may undermine value creation. At the same time, the IIRF helps address the reporting challenge because it prompts the finance and the sustainability departments to share their views on value creation and related key risks. Following the IIRF, these departments align their language to the IR principles and content elements and establish a constructive dialogue. Overall, the finance and sustainability departments and the IIRF (and its antecedent) form the network of actors able to overcome the first challenge associated with risk disclosure. The fact that the risk management department is averse to including risk information within integrated reports does not prevent the resolution of this prime reporting challenge, although the finance and sustainability departments are not fully satisfied with the risk disclosure provided. This evidence confirms McNally *et al.*'s (2017) concerns, showing that when the IR is imposed on existing organisational processes, its purpose is not fully understood and some departments may be reluctant to fully engage with the IR project and related disclosure. Until the risk management department engages completely with the IR team, the risk disclosure remains relatively brief rather than, as found by Raemaekers *et al.* (2016) and Manes-Rossi *et al.* (2017), increasing. The IIRF demonstrates a performative role (Latour, 1986, 2005), making "real" the interactions and dialogue that it suggests developing. However, its influence is limited to the departments traditionally involved in corporate reporting, which usually create the early cross-departmental team (Stubbs and Higgins, 2014).

When the reporting challenge relates to incorporation of specific information on where key risks originate from and how they are managed (i.e. the second phase in our case study), the finance and sustainability departments are urged to involve other actors, both internal and external. "New" internal human actors belong to the risk management and investor relations departments. "New" external human actors include stakeholders interested in risk information (i.e. analysts and investors), other IR pioneer companies with which Chem shares views on IR and the TCFD. Non-human actors extend to risk management guidelines and recommendations on climate-related risk disclosure (i.e. COSO ERM Framework, COSO Risk Assessment and TCFD's Draft of Recommendations). Overall, the network of actors extends beyond the organisational boundaries, involving representatives of other organisations sharing the issue of disclosing risks (external human actors) and members from other organisational departments (internal human actors). In extending such a network of human actors, the integrated reports released by Chem and peers have a main role. Peers' integrated reports help develop benchmarking practices; indeed, they offer a basis for internal discussion about how risk disclosure should be enhanced and help persuade the reticent risk managers to provide pertinent information on risk management measures. These reports thus facilitate the dialogue between internal human actors (i.e. finance, sustainability, investor relations and risk management departments) and external human actors, who either prepare (i.e. peers and companies involved in the TCFD) or read (i.e. analysts and investors) risk disclosure. The integrated reports stimulate human actors not only to extend their relationships but also to come up with feedback on the risk disclosure provided and ideas on its development. The non-human actors (Latour, 1986, 2005) are unveiled of their full potential, facilitating a real engagement of departments not traditionally involved with corporate reporting and even supporting the dialogue with external stakeholders and peers. In other words, the mentioned non-human actors act as facilitators of cross-departmental discussions, rather than mere contributors of guidelines and recommendations. Further, non-human actors support stakeholders' engagement, creating a dialogue between some organisational departments and external stakeholders (Stubbs and Higgins, 2014).

The shift of the reporting challenge to the connection of key risks with the company's strategy and value creation (i.e. the third phase in our case study) solicits a strong involvement of managers with expertise in strategic planning and the dialogue among diverse departments to achieve a common view of the connections among risks, strategy and value creation. Once again, non-human actors play a significant role in stimulating the involvement of an increasing number of human actors. The frameworks issued by the IIRC and the COSO make the human actors aware of the need to actively cooperate with an additional internal human actor (i.e. the strategic planning department) to gain perspective on the impact of risks on strategy and value creation in the short, medium and long terms. Actually, the IIRF also enables human actors with diversified expertise (i.e. finance, sustainability, investor relations, risk management and strategic planning departments) to interact and actively contribute to organise, select and connect the information on risks, strategic targets and treatment measures, unveiling how key risks are linked with strategy and value creation. The evidence collected with regard to this reporting challenge shows the performative role (Latour, 1986, 2005) of the IIRF and the risk management framework and guidelines because they facilitate interactions among various departments, beyond the ones traditionally involved in corporate reporting. These non-human actors form the basis for constructive dialogue within a cross-functional team (Stubbs and Higgins, 2014), where departments with diverse expertise can share their views and reach a compromise on disclosure (Feng *et al.*, 2017; Corbella *et al.*, 2019; Stacchezzini *et al.*, 2019). These non-human actors also facilitate a push–pull approach to IR (Stubbs and Higgins, 2014). On the one side, they help drive organisational change in terms of creation of cross-departmental relationships within a team (the push approach); on the other side, they help IR to make apparent the integration among corporate strategy and value creation (the pull approach) (Stubbs and Higgins, 2014). In their turn, human actors have learnt to share key information related to their area, thus creating the premises for the ongoing development of an integrated measurement system (Stubbs and Higgins, 2014).

With its findings, this study provides contributions to some research streams. Firstly, it extends prior research on integrated report preparation and related organisational mechanisms of change (Lai *et al.*, 2018, 2021; Corbella *et al.*, 2019; Stacchezzini *et al.*, 2019; Lakshan *et al.*, 2021). The present study offers insights on how these mechanisms evolve over time. Indeed, the role of human actors belonging to different departments evolves in response to specific reporting challenges and non-human actors offer the ground for engaging human actors that do not have any external reporting duties. In this vein, the study also contributes to prior research on the performativity of accounting and risk management frameworks (Skærbæk and Tryggestad, 2010; Revellino and Mouritsen, 2015; Themsen and Skærbæk, 2018), demonstrating the performative role of the IIRF, as well as risk management frameworks. Actually, with its principle-based approach, the IIRF does not impose detailed contents, but stimulates reporting preparers to engage with different internal and external stakeholders to develop new disclosures. Overall, the non-human actors mobilised during integrated report preparation make "real" processes that resonate the concept of "integrated thinking" (Chaidali and Jones, 2017; Dumay and Dai, 2017; Dumay *et al.*, 2017; Feng *et al.*, 2017; La Torre *et al.*, 2019; Stacchezzini *et al.*, 2019; Busco *et al.*, 2021). This particularly happens with reference to stakeholder relationships and interconnectivity among strategy, performance and risks. The paper also contributes to prior research on risk disclosure within integrated reports (Manes-Rossi *et al.*, 2017; Guthrie *et al.*, 2020), showing that behind the evolution of IR disclosure on risks and risk management practices, there is a dense network of relationships that transcends the reporting departments and benefits from several reporting frameworks, guidelines and benchmarking practices (Lai and Stacchezzini, 2021).

This study also offers some practical implications. Specifically, it advises preparers embarking on the IR journey to leverage internal and external collaborations to appreciate and disclose risks and risk management practices in connection with strategy and value creation. Such collaboration should include individuals with differentiated expertise and benefit from guidelines dedicated to ERM and risk disclosure. By showing the performative role of IR and risk management frameworks, the paper also suggests that preparers consider these frameworks as facilitators of cross-departmental discussions and dialogue with stakeholders, rather than mere contributors of guidelines and recommendations.

This study is not free from limitations, which may lead to further research. Firstly, it focuses on the preparation of integrated reports by an IR pioneer, so its findings rely on the experience of the company under investigation and are not generalisable. Future research may undertake examinations with companies that have started the IR project in recent years and compare the reporting challenges experienced and the mechanisms of change enabled by these IR "followers" to reveal if they have learnt from pioneers. Secondly, the analysis draws on managers' experience with preparing integrated reports, without engaging with IR (external) stakeholders. Further studies might interview stakeholders to deepen the understanding about how they form opinions and remarks after reading integrated reports. Finally, while this research focuses on the challenges of preparing risk disclosure for integrated reports, future investigations could broaden the scope of analysis to other disclosures solicited by the IIRF, such as those related to governance and the business model.

Notes

1. While acknowledgement is made of the IIRF's revision in January 2021, reference is made to the 2013 version to be consistent with the one used by the interviewees to prepare their reports at the time of the interview process or previously.
2. The guiding principles offer broad recommendations that preparers should follow to produce and present information within an integrated report, while the content elements identify "*categories of information*" (IIRC, 2013, p. 33) that an integrated report should disclose.
3. All interviewees have been working in the company for ten years, at least.
4. For instance, the section "Risk factors and uncertainties" informs about the financial risk related to the market by providing specific insights on the exchange rate, interest rate and commodity risks.
5. The IFRSs require disclosure on risks related to the evaluation of assets and liabilities. For instance, IFRS 7 – Financial instruments: Disclosures, par. 33, requires information is provided for each type of risk arising from financial instruments on exposures to risk and how they arise; the objectives, policies and processes the company has adopted to manage the risk; and the methods used to measure the risk, as well as any changes that have occurred from the previous period.
6. For the sake of transparency, Chem's integrated report 2012 was prepared in accordance with the Prototype of the (IIRC, 2012), which contained concepts, principles and content elements reviewed in light of the feedback the IIRC received on the 2011 Discussion Paper. The Prototype was a working document that guided Pilot Programme companies in testing the IR principles. It was then superseded by the publication of the IIRC (2013).

7. For instance, the risk committee supervises the evolution of the risk management process to ensure its consistency with both operating dynamics and regulatory changes. Following (and here is the hierarchy), risk owners have the responsibility to assume risks and related treatment actions.
8. In detail, external sources refer to "aspects of the legal, commercial, social, environmental and political context" that can affect the company's ability to create value (content element *Organizational overview and external environment*; IIRC, 2013, par. 4.6), while internal sources refer to any activity carried out by the company to generate revenue, differentiate its business, improve processes, train employees, manage relationships, etc. (content element *Business model*; IIRC, 2013, par. 4.16–4.17).

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