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Overcoming current practical challenges in sustainability and integrated reporting: insights from a Swiss field study

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Abstract

A growing number of companies worldwide face practical challenges in their sustainability and integrated reporting. This is mainly due to two reasons. First, new voluntary reporting guidelines have been published, such as the Sustainability Reporting Standards of the Global Reporting Initiative, the guideline for integrated reporting by the International Integrated Reporting Council and the sector standards of the Sustainability Accounting Standards Board. Second, new binding reporting regulations have been adopted, such as Directive 2014/95/EU on non-financial reporting issued by the European Commission. This article analyzes current practical challenges in sustainability and integrated reporting and suggests tools to overcome them, based on desktop research, an experience-based consultancy view, and two case studies, from banking and tourism, respectively. The article is the result of a two-year research project funded by Innosuisse, the Swiss Innovation Agency. Reporting involves several major practical challenges: (i) identifying the issues with the greatest sustainability impact along the value chain, (ii) prioritizing sustainability topics in accordance with both the Global Reporting Initiative and the International Integrated Reporting Council, (iii) clarifying the sustainability context of corporate activities, and (iv) developing reports that can influence the decisions of key target groups with regard to purchasing and investments, for instance. Based on its analysis, the article makes several recommendations for the enhancement of sustainability reporting, including an analysis grid to identify sustainability issues along the value chain, a multicriteria analysis tool for the materiality criteria of the Global Reporting Initiative and International Integrated Reporting Council, and tools for target group-specific reporting. Case studies provide indicative evidence that the developed tools can help companies to enhance their sustainability reporting.

Keywords Sustainability reporting · Value chain · Materiality · Sustainability context

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Die Bewältigung der aktuellen praktischen Herausforderungen in der Nachhaltigkeitsberichterstattung und der integrierten Berichterstattung: Einsichten einer Schweizer Studie

Zusammenfassung

Unternehmen sind zunehmend mit praktischen Herausforderungen bei der Erstellung von Nachhaltigkeitsberichten und integrierten Berichten konfrontiert. Zwei wesentliche Gründe dafür liegen in Änderungen der regulatorischen Rahmenbedingungen. Erstens wurden mehrere neue freiwillige Leitfäden für Nachhaltigkeitsberichterstattung veröffentlicht, wie z. B. die Sustainability Reporting Standards der Global Reporting Initiative, der Leitfaden für integrierte Berichterstattung des International Integrated Reporting Council und die Branchenstandards des Sustainability Accounting Standards Board. Zweitens, wurden neue verbindliche Regulierungen verabschiedet, z. B. die Richtlinie 2014/95/EU der Europäischen Kommission zur nicht-finanziellen Berichterstattung. Dieser Artikel analysiert die aktuellen praktischen Herausforderungen in der Nachhaltigkeitsberichterstattung und integrierten Berichterstattung und stellt Werkzeuge vor, wie die Herausforderungen überwunden werden können. Die Resultate basieren auf Literaturrecherchen, Erfahrungswissen eines Beratungsunternehmens und zwei Fallstudien aus der Tourismus- und der Bankenbranche. Der Artikel ist das Resultat eines zweijährigen Forschungsprojekts, das durch die Schweizerische Agentur für Innovationsförderung „Innosuisse“ gefördert wurde. Gemäss den Analysen gibt es mehrere praktische Herausforderungen in der Nachhaltigkeitsberichterstattung. Diese sind: (i) die Identifizierung der wichtigsten Nachhaltigkeitsauswirkungen entlang der Wertschöpfungskette, (ii) die Priorisierung von Nachhaltigkeitsthemen gemäss Global Reporting Initiative und International Integrated Reporting Council, (iii) die Darstellung des Nachhaltigkeitskontexts der unternehmerischen Aktivitäten und (iv) die Entwicklung von zielgruppenspezifischen Berichten, um die Entscheidungen von wichtigen Zielgruppen, wie z. B. Kauf- oder Investitionsentscheidungen, beeinflussen zu können. Basierend auf diesen Analysen stellt der Artikel mehrere Werkzeuge vor, die dabei helfen können, die Herausforderungen zu überwinden. Dies sind zum Beispiel ein Analyseraster zur Identifizierung der wichtigsten Nachhaltigkeitsauswirkungen entlang der Wertschöpfungskette, eine Multikriterienanalyse zur Materialitätsbewertung, welche die Kriterien von Global Reporting Initiative und International Integrated Reporting Council beinhaltet, sowie Leitfäden zur zielgruppenspezifischen Berichterstattung. Die Fallstudien zeigen beispielhaft, dass die entwickelten Werkzeuge Unternehmen dabei helfen können, ihre Nachhaltigkeitsberichterstattung zu verbessern.

Schlüsselwörter Nachhaltigkeitsbericht · Wertschöpfungskette · Materialität · Nachhaltigkeitskontext

1 Introduction

Sustainability communication and reporting have become common practices among listed companies worldwide (Szekely and Brocke 2017; Hetze and Winistörfer 2016). In fact, more than 90% of the 250 largest companies worldwide have published a sustainability report (KPMG 2017). The reporting process may have an influence on organizational change management towards more sustainable practices (Domingues et al. 2017) and can increase the legitimacy and reputation of organizations (Brusca et al. 2018). In the European Union, reporting on non-financial topics has become a legal requirement for (large) public interest entities with more than 500 employees due to EU Directive 2014/95/EU on non-financial reporting (European Union 2014; cf. Stawinoga 2017). The directive will most likely also have consequences for small and medium-sized companies, in particular suppliers, as large companies will also need to report about sustainability topics in their up-stream and down-stream value chain.

In many world regions, there is a lack of political regulation concerning sustainability reporting. Even where rules exist, they are often too vague to provide concrete guidance for companies. The above-mentioned EU Directive (European Union 2014), for instance, leaves it to the respective company to choose from a variety of reporting guidelines, such as the Sustainability Reporting Standards (SRS) of the Global Reporting Initiative (GRI) (e. g., Alonso-Almeida et al. 2014), the guidelines for Integrated Reporting of the International Integrated Reporting Council (IIRC) (e. g., Stelkens et al. 2017; Dumay et al. 2016), or the sector standards of the Sustainability Accounting Standards Board (SASB) (e. g., Eccles et al. 2012). Alignment with new standards, such as IIRC, can be very demanding for companies, e. g. to collect and to provide all the necessary information that is required (e. g. Veltri and Silvestri 2015). In addition, the guidelines of GRI and IIRC show many differences (e. g. Milla and Haberl-Arkhurst 2018), which makes it even more difficult for companies to comply with both guidelines. Consequently, companies receive little orientation and face major challenges in finding a suitable reporting process and output that both satisfies the expectations of external stakeholders and is in accordance with the prevalent guidelines.

Both GRI and IIRC, for instance, require companies to describe the issues that have a serious sustainability impact along the value chain. At the same time, companies are left in the dark about how to do this in a feasible manner. Likewise, there are different criteria for the prioritization of topics in the guidelines of GRI, on the one hand, and IIRC, on the other. Companies find it difficult to merge these criteria in order to comply with both. In addition, sustainability reports are often published without reference to the relevant target groups, such as investors, customers, non-governmental organizations, the media, and the authorities. For example, a company may want to use its sustainability reporting to convince its investors or its customers to make specific investment or purchasing decisions that would benefit the company. There are currently no convincing approaches to meet these needs.

A two-year research project was launched to address these challenges. It was funded by Innosuisse, the Swiss Innovation Agency. The main practical problems concerning the sustainability reporting of companies in a Swiss context were analyzed, and tools were developed to overcome them. This article does not cover major problems with respect to the content of sustainability reports, such as partial reporting (i.e., often only positive or minor topics are included in a report), "greenwashing", (i.e., the companies promise more than they can keep), weak corporate sustainability data, and a lack of comparability of companies' sustainability performance (e.g., Eccles et al. 2012; Boiral and Henri 2017). Instead, the focus of this article is on the practical challenges for companies in their efforts to publish a report according to the guidelines of GRI and IIRC.

The article is structured as follows: Sect. 2 describes the methods we used to uncover the challenges of sustainability reporting and to develop the tools to overcome them. Sect. 3 presents the results of our research, and Sect. 4 concludes with a summary, limitations, and options for further research.

2 Project background and methods

The research design of the project is transdisciplinary, as both scientists and practitioners were involved from the very beginning (see Seidl et al. 2013). All project partners agreed on most important research questions and, for the duration of the project, participated in a mutual learning process culminating in tool development and finalization. Partners involved were scientific institutions such as ZHAW Zurich University of Applied Sciences and FHNW University of Applied Sciences and Arts Northwestern Switzerland, as well as practice organizations such as the sustainability consultancy BSD Consulting, two Swiss companies from banking and tourism, and the Center for Corporate Reporting, an independent center of excellence for corporate reporting.

The project was financed by Innosuisse, the Swiss Innovation Agency (URL: https://www.innosuisse.ch/inno/en/home.html). Innosuisse projects typically aim to solve practical challenges of Swiss companies and to create financial benefits for one primary implementation partner. Correspondingly, in the case of this project the starting point for the analysis were current practical challenges of Swiss companies in sustainability reporting and the aim was to develop methodological tools to help companies to overcome these practical challenges. As primary implementation partner the Swiss sustainability consultancy BSD Consulting was involved. To create financial benefits for BSD Consulting the developed tools were handed over to BSD Consulting, so that they can use the tools to generate more turnover and at the same time help Swiss companies with their consulting services to overcome the practical challenges in sustainability reporting companies are facing.

In addition, Innosuisse projects need to show that they contribute to solving the practical challenges of secondary implementation partners. In the case of this project Basler Kantonalbank, the major cantonal bank in the Basel region, and Kuoni, a Swiss tourism company, were involved. These two companies from different sectors were chosen to ensure that the developed tools can be tested in completely different settings. Indeed, the developed methodological tools were tested by the two secondary implementation partners to check the practical feasibility of the tools and to identify potential for improvement for the tools. By including companies from different sectors, we aimed at increasing the likelihood that tools are useful for a wide array of different companies from different sectors. Thus, the main purpose of the involvement of the two secondary implementation partners was not to develop empirical insights that could be transferred to other sectors, but rather to test the tools in different settings to increase the likelihood that these are practically feasible and useful for a wide array of companies.

The project consisted of four phases. In the *first phase*, the current practical challenges of sustainability reporting were identified. This was done based on desktop research and a workshop format where all project partners, i.e. the universities and the primary as well as the secondary implementation partners, were brought together. The identification of major challenges was largely based on the experiential knowledge of BSD Consulting and their longstanding experience in sustainability reporting and work with corporate clients from all over the world. It became clear that the major practical challenges in sustainability reporting can be grouped into four modules, namely Value Chain, Stakeholder Orientation, Materiality, and Target Group Orientation (for designing a report), as all of the identified

Table 1 Major practical challenges in sustainability reporting;

Module	Key question/major challenge	Abbreviation
Value Chain	How to define and depict the value chain of companies	VC1[a]
	How to identify relevant topics along the value chain	VC2[a]
	How to identify and illustrate the most important impact of material topics along the value chain	VC3[a]
	How to define those parts of the value chain that contain the most important sustainability topics	VC4[a]
	How to define the topic boundaries with respect to the value chain	VC5[a]
	How to document and illustrate the severity of the impact, the likelihood of occurrence, and the leverage of the company in relation to the different steps of the value chain	VC6[a]
Stakeholder Orientation	What forms of stakeholder involvement in management processes (especially for the determination of materiality) are required by the guidelines and suitable for use?	SO1
	What role do stakeholders play in identifying topic boundaries?	SO2
	How can stakeholders help to determine if companies have an impact concerning a specific topic?	SO3
	Which stakeholders are suitable to assist companies in identifying material topics?	SO4
	How can stakeholder knowledge and expectations be better used to understand the sustainability context of companies?	SO5[a]
Materiality	How to define material topics according to the Global Reporting Initiative and the International Integrated Reporting Council simultaneously	MT1[a]
	How to prioritize material sustainability topics in a justified manner	MT2[a]
	How to include information about the impact of a company concerning sustainability topics in a materiality assessment	MT3[a]
	How to define the threshold of a materiality matrix	MT4[a]
	How to define topics in a materiality matrix in a consistent way	MT5[a]
Target Group Orientation	How to differentiate sustainability communication from sustainability reporting	TO1
	What information is relevant for which target group?	TO2[a]
	What are the circumstances under which the provision of individual information needs become useful?	TO3[a]
	What format of target group communication is suitable for what company setting?	TO4[a]
	What is the relationship between a certain target group constellation (e. g., B2B) and the reporting format (e. g., separate reporting, integrated reporting, or a mixed form)	TO5[a]
	How can a company know whether or not a certain target group perceives the reporting as credible?	TO6[a]
	How to communicate stakeholder involvement in the report	TO7

[a]This is a challenge that can be addressed now, as a tool has been developed to overcome it

challenges were related to one of these modules. Thus, the research team came up with several major challenges in sustainability reporting in the form of key questions for each module. For more details on the concrete practical challenges confer the results section.

In the *second phase*, an analysis of the current reporting products and reporting processes of the involved secondary implementation partners was carried out based on semi-structured interviews and qualitative content analysis (cf. Saunders et al. 2016). This was done with the help of an evaluation grid using various criteria from the guidelines of GRI, IIRC, and UN Global Compact. The evaluation grid contained general reporting principles, such as accuracy, topicality, and balance, and also criteria for the four modules mentioned above, such as involvement of stakeholders, description of the value chain, definition of material topics, sustainability context and communication channels, which are related to target group orientation for designing a report.

In the *third phase*, tools were developed to overcome some of the challenges identified in Phases 1 and 2. The prioritization of major challenges and correspondingly, the decision on which tools will be developed for which challenges, has been done in close cooperation with the primary and secondary implementation partners. During this collaboration the biggest needs of Swiss companies in the field of sustainability reporting became visible. Tool ideas were only developed for these biggest needs and accordingly the prioritized challenges (marked by an asterix in Table 1). Based on desktop research on the current state in sustainability reporting in the four modules value chain, stakeholder orientation, materiality and target-group orientation, the university partners cooperated in a creative process and came up with tool ideas that addressed the prioritized major challenges. These tool ideas were then discussed with BSD Consulting to ensure practical relevance and feasibility for Swiss companies. Subsequently, prototypes of the tools were developed and again discussed with the primary implementation partner. Finally, the feedback of the primary implementation partner was used to develop a provisional full version of each tool.

In the *fourth phase*, the tools were tested in concrete company settings. More specifically, the secondary implementation partners used some of the tools, checked practical usefulness and feasibility and identified improvement potential for each tool. The suggestions for improvement were used to develop the finalized tools, which were then handed over to BSD Consulting for their consultancy work.

3 Results

This section describes the results of the research project. It first presents the major practical challenges in sustainability reporting. Second, it provides an overview of the tools developed to overcome these challenges throughout the reporting process and specifies more details for three exemplary tools. We picked these three examples because the tools refer to important aspects of the reporting process and it is possible to illustrate them graphically.

3.1 Major practical challenges in sustainability reporting

Table 1 below lists several major practical challenges in sustainability reporting that were identified. These challenges were categorized according to the four modules Value Chain, Stakeholder Orientation, Materiality and Target Group Orientation (for designing a report). While it exceeded the scope of the project to develop solutions for all key challenges, it was decided to focus on those challenges that correspond to the biggest needs of companies in the field of sustainability and integrated reporting. Practical challenges that were addressed by a tool developed as part of the project are marked with an asterisk in Table 1. In addition, the corresponding major challenge to be overcome by the respective tool is also listed below.

3.2 Tools to overcome major practical challenges

The tools developed for this project can be used at different stages of the reporting process. Fig. 1 provides an overview of the tools and shows at which points of the reporting process they can be of help. The first four phases in Fig. 1 explicate the reporting process that each company needs to follow if it wants to be compliant with GRI and IIRC (cf. GRI 2016; IIRC 2013), i. e. (i) to analyze the most important information that is needed as input for the report, such as the sustainability context for a specific company; (ii) to formulate the potentially relevant sustainability topics in a consistent way, because otherwise the ranking of topics within a materiality matrix gets confounded; (iii) to specify the most important sustainability impacts along the value chain, as one criterion to assess the importance of specific topics for the own company; and (iv) to create a materiality matrix in order to prioritize sustainability topics and to develop a focus for the sustainability management and reporting. The fifth phase is an addition to the normal reporting process, because both GRI and IIRC provide very little information about how to target a sustainability or integrated report towards specific target groups. However, from a strategic standpoint, reports should be written to convince specific target groups and influence their decisions, e. g. purchasing decisions and investment decisions (e. g. IÖW & imug 2001). That is why we included the fifth phase in the reporting process and also included the module target group-orientation. In the following the specific phases of the reporting process and the respective tools will be described.

Fig. 1 Overview of tools developed and their use in the reporting process; VC: value chain (Source: Brand et al. 2017)

3.2.1 Phase 1 – analysis (of information needs)

For companies, it is essential for their sustainability management and reporting to identify relevant sustainability topics for their specific industry in order to have a genuine positive impact on both society and business success (Brand and Winistörfer 2017, p. 19 ff).

Tool "Sustainability Context" To be able to identify potentially relevant topics in their industry companies need to reflect on their "sustainability context", which can be interpreted as the sustainability goals of the key national, European, and international organizations of relevance for their industry (GRI 2016, p. 9). To gain a better understanding

of the specific sustainability context of organizations, the tool "Sustainability Context" (major challenge SO5) provides a database of the sustainability goals contained in important documents of authorities and NGOs, such as the Strategy for Sustainable Development of the Swiss Confederation, the EU Sustainable Development Strategy, the UN Sustainable Development Goals, and the Paris Climate Agreement, among many others. The tool uses an SASB logic to link these sustainability goals to a specific industry. If a sustainability goal refers to a specific sustainability topic (such as consumer health) and this topic is considered as important for a given industry according to SASB, then the goal is assigned to the sustainability context of that industry. During the application of the tool, companies can filter the sustainability goals according to their industry and their needs (e. g., quantitative or qualitative goals or regional focus). An enhanced understanding of their specific sustainability context can enable companies to better connect their sustainability reporting to national and international sustainability debates. This can help to increase the practical relevance and credibility of their sustainability reporting. The SASB standards are very helpful in this regard, as they provide a well-founded prioritization of the most important issues for different sectors that is based on an extensive stakeholder involvement.

Tool "Best Practice Value Chain" In addition, potentially relevant sustainability topics may emerge from the whole value chain of a company (Brand and Winistörfer 2017, p. 12 ff). This reflects the fact that companies are increasingly held responsible by external stakeholders (e. g., customers, investors, the media, and non-governmental organizations (NGO)), not only for the impact of their immediate business operations but also for the indirect impact related to their up- and down-stream value chain. Coca-Cola, for instance, has been heavily criticized by the NGO Oxfam concerning the issue of forced labor in their cane sugar supply chain and by Foodwatch for contributing to obesity among the population—neither of which has much to do with Coca-Cola's production sites (e. g. Oxfam 2013). During the analysis phase, organizations therefore need to develop a notion of their entire value chain, which is also a requirement of both GRI and IIRC (e. g., GRI 2016, p. 11). To do this, they can employ the tool "Best Practice Value Chain" (VC1), which provides an overview of best practice cases for illustrating the value chain of different industries.

3.2.2 Phase 2 – specify and adjust topics

Subsequent to the identification of potentially relevant sustainability topics along the entire value chain, these topics need to be defined in a consistent way.

Tool "Topic Definition" If topics are defined in inconsistent ways—at different levels of detail or referring to different topic categories, such as impact, processes, or policies—this may lead to difficulties in the prioritization of topics due to topical overlaps and redundancies of topics. In this context, the tool "Topic Definition" (MT5) provides guidelines to unambiguously define sustainability topics, in other words, to define topics as impacts (rather than being process- or stakeholder-related), highly selective and at the same aggregation level for each topic area. The tool also describes best practice examples for different industries.

3.2.3 Phase 3 – specify impacts

For each potentially relevant sustainability topic, the main corporate issues that have an impact along the value chain need to be specified, which is a requirement of GRI and IIRC (e. g., GRI 2016, p. 15). Also the EU Directive on non-financial reporting demands to provide information about severe impacts stemming from own operations or the broader value chain (European Union 2014).

Tool "Topic Matrix" The Excel-based tool "Topic Matrix" (VC1, VC2, VC3, VC4, VC5, VC6) is designed to help companies assess sustainability impact along the entire value chain concerning predefined sustainability topics. In applying the tool, the first step is to specify the value chain. To reduce complexity, the company should define about five to eight stages or value chain activities, respectively. The research team chose five to eight stages, as this range enables companies to be as accurate as necessary (which is important from a scientific view) but also as pragmatic as possible (which is important from a business view). Although neither GRI G4 nor IIRC require graphic representation for reporting, it may provide valuable assistance for the further steps in applying the tool.

In a first step, for each stage of the value chain each topic has to be assessed based on two criteria: severity of impact and likelihood of occurrence. The research team selected these two criteria to specify impact, as (i) GRI is not explicit about how to measure impact (even though GRI takes into consideration the stakeholders expectations and the way they react to the information in their decision-making) (GRI 2016, p. 10), (ii) these two criteria are commonly used in risk assessment to quantify impacts, and (iii) these criteria are used in the IIRC (2013) guidelines. Each topic is rated according to the two criteria on a scale from 1 (very low/not at all) to 5 (very high/very certain). For each point on the scale, examples are provided to facilitate a systematic evaluation. By applying this tool, it becomes clear where, internally or externally, impact occurs and how great the sustainability impact of the company's business activities are. In addition, a matrix chart is generated that visually

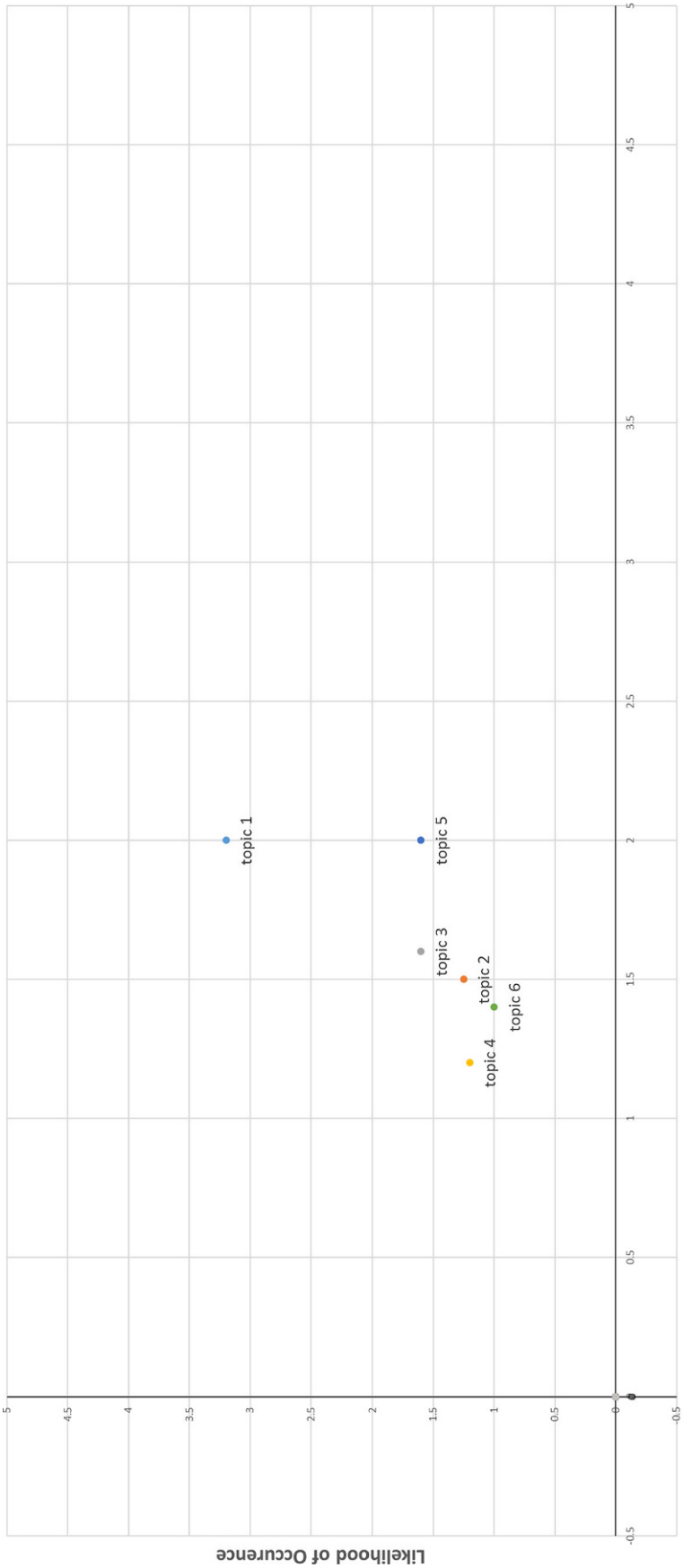

Fig. 2 Exemplary result of application of the tool "Topic Matrix". To specify the magnitude of the sustainability impact of various topics, the tool uses the two criteria "severity of impact" (x-axis) and "likelihood of occurrence" (y-axis) and plots the predefined sustainability topics within this matrix

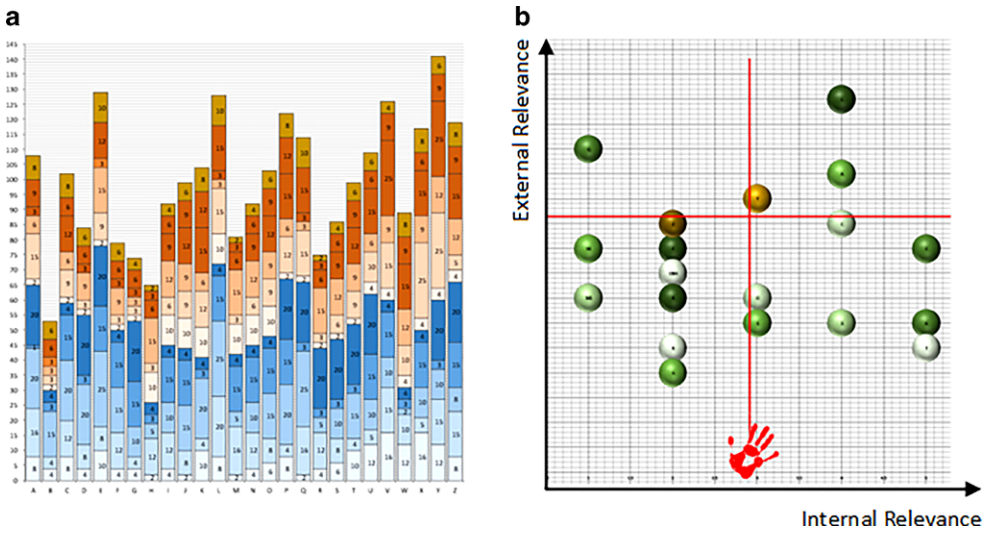

Fig. 3 Two of the results of the tool "Multicriteria Analysis". **a** Bar chart with overall scores of each potentially relevant topic; the five lower parts of the bar: scores according to external criteria; the five upper parts of the bar: scores according to internal criteria; **b** Materiality matrix using internal and external criteria by both GRI and IIRC. Users can shift the threshold value according to their needs

displays severity of impact and likelihood of occurrence for each topic (see Fig. 2). From a company's perspective, the tool is easy to use once the preparatory work (definition of the values chain relevant topics) has been completed.

3.2.4 Phase 4 – Create materiality matrix

Both GRI and IIRC provide procedural but little contentual guidance to distinguish between important and non-important sustainability topics for a specific industry and company. In addition, the EU Directive for non-financial reporting remains very general on this point, and only lists general categories of topics that should be reported, such as environmental matters, social and employee-related matters, respect for human rights, anti-corruption and bribery matters (European Union 2014). However, it is pivotal to prioritize the potentially relevant sustainability topics along the entire value chain for a specific industry in order to develop a focus for sustainability management and reporting (Brand and Winistörfer 2017, p. 19 ff).

To prioritize sustainability topics, it is common to use a so-called materiality matrix (e. g., KPMG 2014; AccountAbility 2013). A materiality matrix is typically constructed by two axis, which specify two criteria, such as importance for the company and importance for stakeholders (Brand and Winistörfer 2017, p. 21 f). Indeed, both GRI (2016, p. 10) and IIRC (2013, p. 18) require companies to prioritize material topics. If a company wants to be in compliance with both guidelines, the question arises of how to prioritize sustainability topics according to both GRI and IR at the same time (MT1 and MT2 in Table 1).

Tool "Multicriteria Analysis" To answer this question, the Excel-based tool "Multicriteria Analysis" was developed. It applies the method of multi-criteria assessment (Scholz and Tietje 2002, p. 143 ff) and uses the materiality criteria proposed by GRI and IIRC. Multi-criteria analysis is a useful method if alternatives (in this case reporting topics) must be evaluated to determine which alternatives perform better (in this case prioritized reporting topics that have a higher importance for the specific company) (ibid., 143). In this project we took the materiality criteria of GRI G4 (2013), as the finished version of the GRI SRS were not available at the time of the project. The materiality criteria of GRI (2013) are:

- reasonably estimable sustainability impact
- main sustainability interests raised by stakeholders
- main topics for the sector reported by peers and competitors
- relevant laws, regulations, international agreements, and voluntary agreements with strategic relevance
- key organizational values, policies, strategies, operational management systems, goals, and targets
- significant risks to the organization
- critical factors for enabling organizational success; and
- core competencies of the organization and the manner to which they may or could contribute to sustainable development.

  For IIRC (2013), the criteria are:
  - magnitude of the impact (i. e., how much the topic affects the value creation of the company); and
  - likelihood of occurrence of the impact.

These criteria can be grouped into "external criteria" and "internal criteria" depending on whether they refer to internal processes (e. g., key organizational values) or external processes (e. g., interest of stakeholders). This distinction enables companies to identify whether a specific sustainability topic is more important from an internal perspective

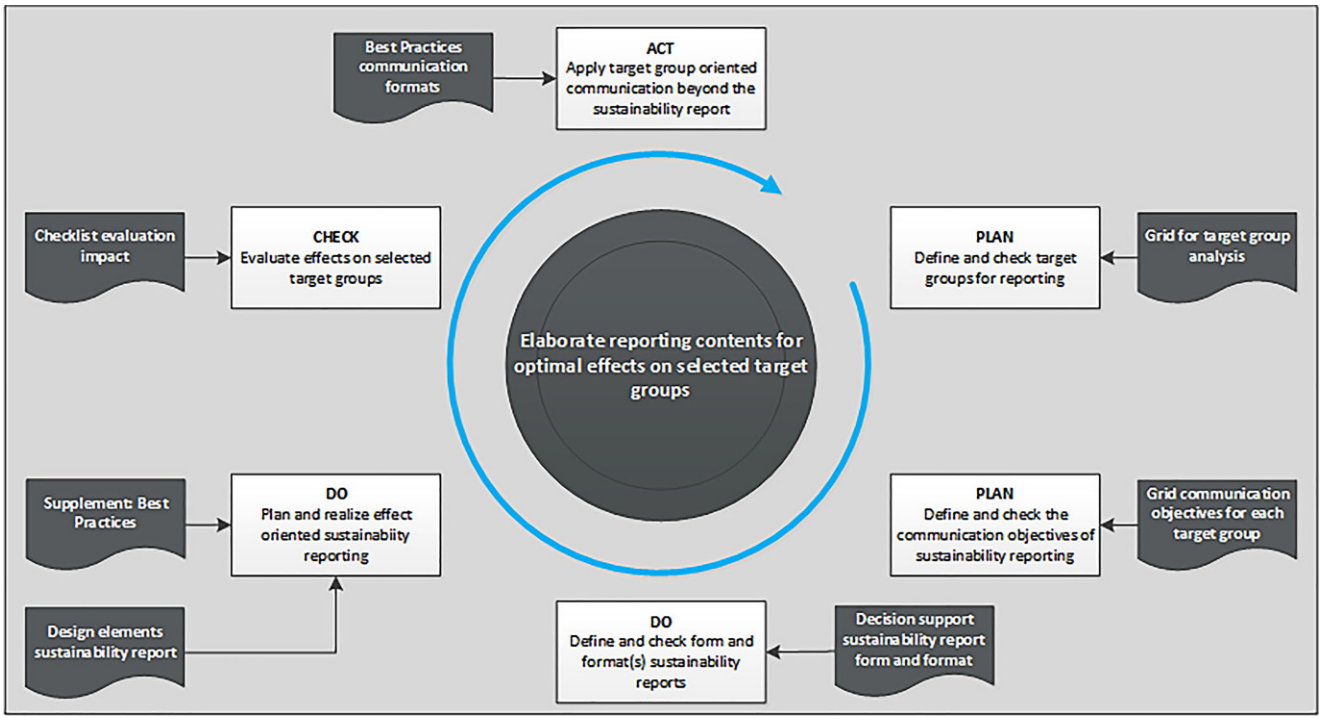

Fig. 4 Overview of tools in the module "Target Group Orientation". Six tools and one tool supplement were developed and grouped according to the plan, do, check, act concept

or rather from an external perspective, which can be helpful information for internal decision processes.

For the tool "Multicriteria Analysis", the criteria of both GRI and IIRC have been combined. The potentially relevant topics that a company has identified in its analysis phase are entered into the Excel-based tool and then rated on a scale from 1 (very low importance) to 5 (very high importance) for each of the criteria. In addition, each criterion needs to be weighted using a scale from 1 (very low importance) to 5 (very high importance). The scoring should be based on expert knowledge of company representatives (e. g. from procurement, production, marketing, etc.) but remains to a certain degree subjective. The overall score of each potentially relevant topic is then calculated by $\sum_1^n (v_{c_1^n} * v_{w_1^n})$, where c = materiality criterion, w = weighting of materiality criterion, v = a value between 1 and 5, and n = number of used criteria. This enables the user to compare the scores of all topics that may be relevant. In addition, all topics are plotted within several materiality matrices. One materiality matrix, for instance, uses the x-axis to show the aggregated sum of all internal criteria while the y-axis shows the aggregated sum of all external criteria (see Fig. 3).

3.2.5 *Phase 5 – develop a target group-oriented report*

Tool set "Target group orientation" It is a prevalent practice in sustainability reporting that one report is written for many if not all of the stakeholders of a company: employees, consumers, industry customers, authorities, investors, NGOs, sustainability rating agencies, and the media (e. g., Isenmann 2011). There are only a few cases where most important target groups are identified and reports are written specifically to address and convince them. This is also due to the fact that both GRI and IIRC provide very little guidance to which stakeholders the report should be targeted at. Certainly, IIRC is targeted mainly to the capital market players; however IIRC also mentions other stakeholders as possible target groups and is not explicit how to create reports that are explicitly written for specific target groups. To address this issue, a tool set entitled "Target Group Orientation" (TO2, TO3, TO4, TO5, TO6) provide concrete guidelines to write a report that is designed specifically for specific target groups of a company (see Fig. 4). It is based on the plan, do, check, act logic (Tague 2005) of continuous improvement, which has proved to be an effective management tool.

In the planning phase, the company has two tools at its disposal to ensure the target group orientation of the report. On the one hand, the target groups of the report can be identified systematically while, on the other hand, the communication goals can be determined per target group (See Table 1, Major challenge TO2). In the implementation phase, based on the results of the first two steps, the report form (separated or integrated) and the report formats (print, PDF and/or HTML) can be defined for the respective target groups (TO3, TO4, TO5). For example, the company

can decide whether it makes more sense to choose different formats for two target groups with different information preferences. For investors as a target group, it may be useful to choose an integrated report in PDF format, while for other target groups a separate online sustainability report might be more effective. In the next step of the implementation phase, the company plans and implements its impact-oriented sustainability report. It decides on appropriate design elements to address its target groups at the right level (TO4, TO5). It must also decide whether the target group should be addressed more on the level of knowledge, emotion, or action. Depending on the level chosen, the company then decides on individual design elements (e. g., language, images, illustrations, statements, color) to contribute more to the transfer of knowledge, the emotional approach of the target group, or the call to action. The tool supplement offers a collection of best practice examples. Subsequently in the reporting process, the report is written and published in a manner best suited to the target group to be addressed. In the review phase, it is important for the company to review the impact of its target group-oriented sustainability reporting. A tool is available to support the preparation, implementation, and follow-up of the impact evaluation (TO6). In the final phase, the company can consider target group-oriented sustainability communication beyond the report through a collection of best practice examples. For example, it may consider adapting other means of communication (e. g., brochures, information on the corporate website) to meet the needs of a specific target group.

4 Discussion and conclusion

Several reviews have been published recently on the topic of sustainability reporting. Szekely and vom Brocke (2017), for instance, conducted a substantial analysis of over 9500 reports that distinguishes between ten observations and recommendations, from achieving a balance of social, environmental and economic dimensions to providing more information on the context of sustainability behavior. Schaltegger et al. (2017) reviewed the contribution of innovative accounting practices, whereas Dumay et al. (2016) investigated integrated reporting practices, arguing for more societal inclusion in research activities.

The approach presented in this article does not primarily refer to challenges in sustainability reporting with regard to the content such as partial reporting, data availability, and incomparability of sustainability information (e. g., Eccles et al. 2012; Boiral and Henri 2017). Rather, it focuses on practical challenges of companies that are in the process of writing a sustainability report. Additional researchers examined rather practical challenges in sustainability reporting, yet focused on factors that do not refer to the requirements of prevalent guidelines for reporting such as GRI and IIRC. For instance, Giacomini et al. (2018) examined 8003 Italian municipalities by using email survey and identified cost reduction, the voluntariness of sustainability reporting and low effectiveness in writing a sustainability report as major barriers for the diffusion of sustainability reporting in Italian Local Government Organizations. In a case study about the university in Eberswalde, Germany, Kräusche and Pilz (2018) name short time frame for reporting, interdepartmental cooperation, cooperation with external service providers and time management, for instance, as major practical obstacles to the sustainability reporting in their organization. A major challenge in the reporting process found by Domingues et al. (2017) is the data collection process, which involves the gathering of consistent data over time. This relates to the use of software tools, which is certainly a common practice in the financial realm of companies, but not as much in sustainability management.

Our approach completely focuses on the practical challenges in the use of the prevalent guidelines for sustainability or integrated reporting, i. e. primarily GRI and IIRC. While the approach presented in this article takes account of these prevalent reporting guidelines, it also moves beyond them in that major challenges in the application of these guidelines are identified and several tools are suggested to overcome them. We list several major challenges that companies face in their sustainability reporting process. Those are, among others: (i) the assessment and prioritization of the impact of sustainability issues along the entire value chain, (ii) the prioritization of topics in accordance with the guidelines of both GRI and IIRC, (iii) the clarification of the sustainability context of corporate activities, and (iv) the development of target group-specific reports to be able to influence the decisions of key target groups.

For each of these challenges, tools have been developed that can assist companies in overcoming them. Those include: (i) an analysis grid to assess the most important corporate sustainability impacts along the whole value chain, (ii) a tool for multicriteria assessment to prioritize topics according to the materiality criteria of both GRI and IIRC, (iii) a database with national and international sustainability objectives of authorities and NGOs to be able to better specify the sustainability context of a given company, and (iv) guidelines for target group-oriented reports to produce reporting content with the best possible effect on selected target groups including customers, investors, and authorities.

Main benefits of our study for readers from companies are twofold. First, using the list of major challenges companies can better become aware of pitfalls in the application of prevalent reporting guidelines, such as GRI and IIRC, and check whether or not the challenges have been recog-

nized for their respective organization. Second, by looking at the methodological tools presented in this article companies can learn how to overcome the challenges they face in their specific company setting. Main benefits for readers from the scientific community are our contributions to the analysis of practical challenges in sustainability reporting (i. e. what are the challenges?) and the tool development to address these challenges (i. e. what are tool ideas to overcome challenges?).

Some limitations to this approach exist which may also be the starting point for further research activities. The identification of practical challenges was based on desktop research, practical consultancy knowledge within an international context, and case studies of two Swiss companies. To extend the validity and generalizability of results, a wider sample of companies could be analyzed taking into account different sizes of companies, countries of operation, and industries. We used two case studies from tourism and banking to gain further insights into challenges in sustainability reporting and to achieve a better practical relevance of the tools we developed. Additional in-depth case studies would help to gain a better understanding of specific business-related challenges and to further test and refine the tools. Future studies could involve more countries, again widening the applicability of results. Furthermore, the tools that were developed are of a qualitative nature and their application still depends on the person in charge and the quality of the data available. While applying the tools can help to structure the reporting process, it is no guarantor for credibility. Additional tools could be developed based on insight from behavioral science to make assessment and individual decisions more factual and to enhance credibility.

Currently, the GRI guidelines are the most prevalent standard in sustainability reporting. However, many competing or complementary standards exist, such as IIRC, SASB, and "The Sustainability Code" (Deutscher Nachhaltigkeitskodex 2018). In addition, the transition of the GRI from the GRI G4 version to the Sustainability Reporting Standards increase requirements for companies. As political regulation in the European Union leaves room for companies to decide which reporting guideline to follow, companies might decide to switch to other reporting guidelines with other requirements that might suit them better, such as IIRC. This might result in changes in the share of sustainability and integrated reporting guidelines used by companies worldwide. It will be interesting to see, therefore, whether or not the GRI dominance in sustainability reporting will prevail. If there is a stronger focus on IIRC in the future, for instance, further practical challenges might evolve for companies wanting to produce an integrated report that is aligned with the prevalent reporting guidelines. In addition, there is some reflection on the relations between GRI and IIRC (GRI 2018), with possible effects on future sustainability reporting.

Conflict of interest F.S. Brand, V. Berger, K. Hetze, J. Schmidt, M.-C. Weber, H. Winistörfer and C.-H. Daub declare that they have no competing interests.

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