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Analysing and evaluating integrated reporting

Analysing and
evaluating IR

Insights from applying a normative benchmark

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Abstract

Purpose – The integrated reports published by companies vary significantly in quality in spite of them claiming to be compliant with the integrated reporting (IR) Framework issued by the International Integrated Reporting Council (IIRC). The purpose of this paper is to develop and apply a normative benchmark against which compliance with the IR Framework, and the extent to which integrated reports make visible how organisations create value, can be evaluated.

Design/methodology/approach – The three pillars of the IR Framework – Capitals, Content Elements and the Guiding Principles – are operationalised by the way of a set of disclosure items that capture the extent to which they manifest within integrated reports. The created disclosure index is applied to analyse reports of five companies that are expected to be superior integrated reporters.

Findings – The normative benchmark that was created to operationalise the IR Framework identifies a vast amount of potentially communicable information and various degrees to which information may be disclosed. The integrated reports analysed differ significantly in the extent to which value-creation stories are made visible, despite some of the companies promoting to have actively engaged with IR as participants of the IIRC Pilot Program Business Network. All selected companies performed poorly in comparison to the normative benchmark.

Originality/value – This paper is the first to provide a comprehensive normative benchmark for analysing and evaluating compliance with the IR Framework and the extent to which integrated reports make visible how organisations create value.

Keywords Global Reporting Initiative (GRI) Guidelines, Integrated reporting, Integrated reporting framework, International Integrated Reporting Council

Paper type Research paper

1. Introduction

Companies have provided corporate sustainability[1] and intellectual capital information on an *ad hoc* basis for many years. Traditionally, this information has been either restricted to a separate section of annual reports or presented in the form of stand-alone reports. Researchers point out that corporations' economic fundamentals provide a platform from which non-financial information can be reported (Schneider and Meins, 2012), enhancing understanding of corporations' value-creation stories and potential (Stubbs and Higgins, 2018). Integrated reporting (IR) is an innovation in accounting that advocates the linking of financial and non-financial information in a single report to provide a holistic view of how firms create value. Amongst other things, it enables managing, measuring and reporting of intellectual capital.

In 2010, a newly established global body, the International Integrated Reporting Council (hereafter "IIRC") (formerly known as the International Integrated Reporting Committee) emerged, not from governments or standard setters, but rather from industry, to develop and promulgate an IR framework and facilitate companies' preparation of integrated reports. The IR Framework, issued at the end of 2013, explains IR compared with more traditional reporting as "a more cohesive and efficient approach to corporate reporting that draws on different reporting strands and communicates the full range of factors that materially affect the ability of an organisation to create value over time", to enhance "accountability and stewardship for the broad base of capitals [...] and promote understanding of their interdependencies" (IIRC, 2013a, b, p. 2). The IR Framework identifies a framework of "Capitals" (not limited to human,



structural and relational capitals, traditionally included in intellectual capital reports), which are seen as inputs and outputs of a business, “Content Elements”, which guide companies in explaining their value-creation story, and “Guiding Principles”, which are employed for preparing and presenting integrated reports.

An integrated report is not a report that simply is named as such, or references the IR framework, but rather needs to provide adequate information about and show linkages between the capitals (i.e. financial, manufactured, intellectual, human, social and relationship, and natural), the external environment, governance, business model, strategy and resource allocation, performance and future outlook. Explication of the interdependencies between these aspects or dimensions is argued to enable a better understanding of an organisation’s value-creation story over time than traditional reporting. Hence, the usefulness of an integrated report should be judged against the extent to which it explains how an organisation creates value in the short, medium and long term. In this paper, our interest in IR is driven by its promise to make organisational value-creation potential visible, as it is this that lays at the heart of intellectual capital reporting (Abhayawansa, 2014) and which, arguably, practitioners of intellectual capital reporting often fail to achieve (Schaper, 2016).

The IR Framework provides a principles-based approach to guide corporate reporting practices rather than introducing a list of standard disclosure items. It does not stipulate minimum levels at which various types of information should be disclosed. Hence, integrated reports, even those that claim to have followed the IR Framework, can vary in the extent to which they explain organisations’ value-creation stories. In comparison, for example, a sustainability report that claims compliance with the Global Reporting Initiative (GRI) at a stipulated application level[2] carries a very clear and concise meaning of reporting quality and creates an expectation in the reader of finding in it a given level of pre-specified information.

This paper is an attempt to highlight the vast array and nuances of information that can fall potentially within the scope of IR and how that creates significant variability in the extent to which various integrated reports explain how an organisation creates value in the short, medium and long terms. Towards this end, a normative benchmark that captures potentially communicable information according to the spirit of the IR Framework was devised and applied to integrated reports of listed companies that are early adopters of IR and/or winners of IR and sustainability reporting awards. The normative benchmark enables one to analyse the extent to which integrated reports make visible how organisations create value and what aspects of the value creation are emphasised. The development of a normative benchmark to evaluate IR is timely as IR practitioners find the implementation of the IR Framework challenging and intellectual capital practitioners are keen to understand, amongst other things, how IR enables and normalises more meaningful disclosure of organisations’ intellectual capital compared with conventional reporting.

This study responds to the call by Cheng *et al.* (2014) for more research on how the IR Framework is being implemented by companies and by Dumay and Cai (2014) for studies examining intellectual capital information offered in integrated reports. Currently, there is limited research on implementing the IR Framework or evaluating organisations’ compliance with the IR Framework in its entirety. Stent and Dowler (2015) is one of the few studies to have operationalised the IR Framework in its entirety, i.e., not limiting to particular aspects or dimensions such as the Capitals. The relevance of Stent and Dowler (2015), however, is limited since it is based on the Prototype Framework issued by the IIRC in 2012, an early predecessor of the IR Framework. More importantly, the information categories adopted by Stent and Dowler (2015) are too broad for use in analysing important variations in the disclosure of organisations’ value-creation stories. This study addresses this gap in the literature by creating a detailed disclosure index based on the IR Framework and showing how even exemplary integrated reports can vary significantly in the extent to which they explain their organisations’ value-creation stories.

There are several practical benefits of the disclosure index introduced in this study. First, it can help businesses voluntarily adopting the IR Framework but possessing limited knowledge or resources to achieve successful application, and enable consistency of operationalising the IR Framework across companies. Second, the disclosure index can contribute to curriculum design in IR training programs and courses by providing a fundamental basis for operationalising the IR Framework in order to prepare integrated reports. In the February 2015 edition of IIRC's newsletter, the IIRC invited professionals and organisations to become involved in developing a high standard syllabus in order to provide support, appropriate skills and knowledge to existing and potential IR practitioners. Several institutions (e.g. KPMG Australia, University of New South Wales) around the world are now providing training programs and academic courses in IR. Third, organisations that are evaluating IR performance of businesses (e.g. EY Limited, Australasian Reporting Awards (ARA), Integrated Reporting Committee of South Africa) may find the disclosure index beneficial to their work in evaluating the quality of integrated reports. Finally, this study offers stakeholders the means to gain insights into companies' IR practices and so may assist them in making informed decisions about companies of interest.

The remainder of this paper is arranged as follows. An overview of the IR Framework is provided in Section 2, followed by a summary of the literature in Section 3. Section 4 explains how the disclosure index linking the IR Framework and the Global Reporting Initiative 2013 Guidelines was created. The process of scoring information and coding rules are offered in Section 5. Section 6 documents as illustrative examples the application of the disclosure index to the 2014 corporate reports issued by three Australian listed companies participating in the IIRC Business Network Pilot Program, plus one company acknowledged to be exemplary in its reporting practices. Section 7 analyses an IR award winner's report and provides a comparison with reports prepared by the three Australian Pilot Program participants. The final section concludes with research limitations and future research directions.

2. An overview of IR and the International IR Framework

IR originated out of a desire to enable financial capital providers understand organisational value drivers and how they interact with the organisations' business models in the context of the business strategy and external environment to create value. Evidence from prior literature reveals that intellectual capital, which accounts for the majority of organisational value drivers, has the most impact on the valuation of companies compared to recognised tangible and intangible assets (Sang and Dennis, 2014). Abhayawansa and Guthrie (2010) provided a useful review of this literature, showing that an array of different types of intellectual capital is found to be relevant to the capital market. However, it has also been found that influential capital market intermediaries such as analysts do not fully appreciate the relevance of intellectual capital (Simpson, 2010), arguably leading to less than optimal valuation of companies. Proponents of IR attribute this phenomenon to the limitations of the traditional reporting formats which inhibit intellectual capital to be appreciated within the business models, broader organisational context and interrelationships (Laura *et al.*, 2016), and argue that IR would enhance the value relevance of both financial and intellectual capital information (Baboukardos and Rimmel, 2016; Zhou *et al.*, 2017). Lending credence to this argument it is found that company's level of alignment with the IR Framework is associated with the accuracy of analyst forecasts (Zhou *et al.*, 2017) and price targets (Barth *et al.*, 2017). Hence, the extent to which integrated reports follow the IR Framework in making visible how organisations create value is important for a better appreciation of intellectual capital by the capital markets and efficient valuation of companies.

The IIRC was established on 2 August 2010 by the GRI and the Prince of Wales' Accounting for Sustainability Project. It aims to "establish Guiding Principles and Content Elements that govern the overall content of an integrated report and to explain

the fundamental concepts that underpin them” (IIRC, 2013a, b, p. 7). It does this through the development of an IR Framework.

The IR Framework was released in December 2013 by the IIRC. Prior to that, a discussion paper, “Towards Integrated Reporting – Communicating Value in the 21st Century”, had been published on 12 September 2011, with the public invited to provide comments (IIRC, 2011). Around one month later, the IIRC (2013a, b) announced a list of initial organisations participating in the IIRC Pilot Program Business Network, a two-year programme for initial participants to exchange their understanding, knowledge and experiences of integrated reporting. In November 2012, the IIRC released a Prototype of the International IR Framework with a call for businesses to start testing the principles of IR and evaluating their relevance and applicability. In April 2013, a Consultation Draft of the IR Framework was promulgated based on, *inter alia*, responses to the 2011 Discussion Paper, feedback on the Prototype Framework and input from the IIRC Pilot Programme’s business and investor networks. The IR Framework released in 2013 benefited from comments received from stakeholders on the Consultation Draft.

The purpose of the IR Framework is to present an ordered “methodology” by which an organisation can describe how it creates its value over short-, medium- and long-term periods. It promotes a comprehensive approach to integrating financial and non-financial information. The IR Framework also aims to encourage integrated thinking[3] on matters including, but not limited to, organisations’ financial, social, environmental and governance issues that have actual or potential substantive impacts on organisations’ value-creation process. By enhancing the quality of corporate reporting, stakeholders are argued to be able to acquire a more comprehensive understanding than is possible under conventional reporting, including of organisations’ strategy, performance, intellectual capital and matters related to sustainability challenges (ACCA and The Net Balance Foundation, 2011).

The IR Framework adopts three main “dimensions” to guide organisations in preparing integrated reports, which are meant, where feasible, to replace annual, sustainability and any other publicly available corporate reports to non-regulator stakeholders, and these aspects govern the context of the integrated report (IIRC, 2011). The first dimension is “Capitals”, of which there are six, the second dimension is “Content Elements”, of which there are nine and the third is “Guiding Principles”, of which there are seven.

Capitals refer to the resources and relationships used and impacted by organisations. Capitals are of six types: financial, manufactured, intellectual, human, social and relationship, and natural, and are explained in pages 11-12 of the IR Framework (IIRC, 2013a, b). According to the IR Framework, the Capitals represent stocks of value used as inputs by organisations and also stocks of value outputted by organisations through their business models. Different companies may and can place different emphases on reporting the various Capitals based on the nature of their industries and needs. As such, comparing disclosures about Capitals across different industries is problematic.

Content Elements present a guide to information included in integrated reports and are linked to each other. The IR Framework highlights nine Content Elements: organisational overview and external environment, governance, business model, risks and opportunities, strategy and resource allocation, performance, outlook, basis of preparation and presentation, and general reporting guidance. Under the IR Framework, organisations are to use these Content Elements to explain their unique value-creation stories by presenting the connections between these elements. In doing this, the business model, seen as “the core of the organisation” (IIRC, 2013a, p. 13), can be considered as the first and most significant element in assessing a company’s telling of its value-creation story.

In order to ensure the quality of integrated reports and to achieve transparency and comparability of integrated reports amongst different organisations, seven Guiding

Principles are introduced in the IR Framework to underpin organisations' IR practices as a whole. These Guiding Principles include: strategic focus and future orientation, connectivity of information, stakeholder relationships, materiality, conciseness, reliability and completeness, and consistency and comparability.

Relationships between the three key components of the IR Framework reflecting the authors' view of the degree of difficulty of operationalising and hence of adoption are shown in Figure 1. Capitals are ranked as the least abstract component to be communicated in companies' integrated reports, although some of them (e.g. human capital) present a challenge in measuring and quantifying. Prior to the IR Framework, many companies reported on each of the six capitals under either mandatory legislation (e.g. International Financial Reporting Standards) or voluntary disclosure guidelines (e.g. the GRI) and researchers have long investigated how this information is reported (Clarkson *et al.*, 2008; Gibbins *et al.*, 1990; Guthrie *et al.*, 2012), and factors affecting reporting performance (Lodhia *et al.*, 2012). Capitals are more concrete to operationalise, but also more industry-sensitive compared with reporting on Content Elements or Guiding Principles. The Content Elements report on and act in linking Capitals together to show a company's unique value-creation story. Finally, the Guiding Principles, being the most abstract, are the most difficult to explicitly reflect in companies' integrated reports, but arguably it is these principles that embody the spirit of the IR Framework.

Many companies have long reported on some of the items recommended for disclosure under the IR Framework without their annual reports necessarily being called integrated reports. Since the establishment of the IIRC in 2010 with the aim of promoting IR worldwide, the number of companies self-declaring their reports as "integrated" has increased significantly and is growing. According to Blasco and King (2017), 14 per cent of the 250 largest companies in the world (G250 companies) in 2017 labelled their reports as "integrated". They also show that some countries have witnessed growth rates of more than 15 per cent in the number of self-declared integrated reports produced between 2015 and 2017. Not all self-declared integrated reporters follow the IR Framework. As of March 2017, the IIRC lists 477 organisations the reports of which refer to the IIRC or the IR Framework.

3. Related literature

Researchers have studied integrated reports for their information content. These studies fall within three strands: studies examining sustainability reporting and disclosure; studies examining the disclosure of non-financial capitals (i.e. human, social and relationship, intellectual and natural); and studies examining all aspects of IR as specified in the IR Framework.

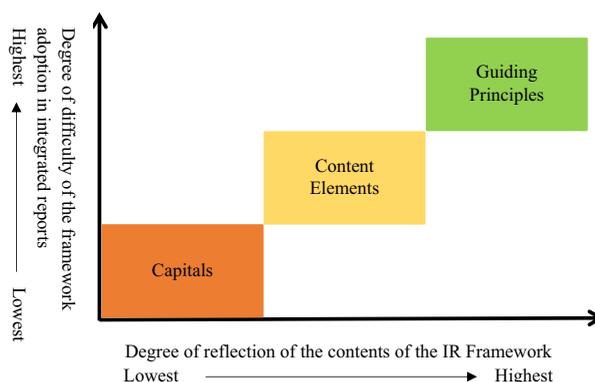


Figure 1.
The relationship of capitals, content elements and guiding principles with corporate reporting performance

Hindley and Buys (2012) examined integrated reports of mining companies listed on the Johannesburg Stock Exchange (JSE), which requires publication of integrated reports or provision of reasons for not doing so by listed companies, for their compliance with GRI Guidelines. They report that since the introduction of the JSE requirement to produce integrated reports, companies' adherence to GRI Guidelines has improved. Van Zyl (2013) analysed integrated reports of JSE listed companies' for their sustainability reporting quality using the JSE Sustainability Index. She found that the extent to which sustainability is integrated into core business strategy was low during the first two years of introducing the listing requirement. Solomon and Maroun (2012) examined the impact of the required introduction of IR on social, environmental and ethical reporting of JSE listed companies. They not only observed a marked improvement in the quantity of social, environmental and ethical information reported, but also qualitative changes in the types of information and the manner in which various information was presented (e.g. a tendency towards quantification and integration of social, environmental and ethical information into corporate governance) for the companies they examined.

One of the first studies to examine the disclosure of non-financial capitals within integrated reports is Setia *et al.* (2015). The authors showed that adoption of IR by JSE listed companies resulted in increased disclosure of information on human, social and relationship, natural and intellectual capital. Setia *et al.* (2015) observed a greater increment in the quantity of social and relational disclosures compared to the other three types of non-financial capitals. Haji and Anifowose (2017) conducted a similar study, but involving a bigger sample of JSE listed companies and covering a three-year period after introduction of the IR requirement. They reported an increase in intellectual and human capital disclosures, but a decrease in social and relationship capital, in the three-year period subsequent to the requirement. Melloni (2015) differed from the two aforementioned studies due to its focus on integrated reports published by IIRC Pilot Program Business Network participants rather than JSE listed companies. Her findings show that integrated reports have a greater emphasis on relationship capital compared to structural and human capital, but limited quantitative and forward-looking information relating to these Capitals were disclosed therein.

Stent and Dowler (2015) is one of the few studies examining the extent to which integrated reports present information relating to all three dimensions of the IR Framework – Capitals, Content Elements and Guiding Principles. Using conceptualisation of these dimensions found in an earlier iteration of the IR Framework (i.e. the Prototype Framework), they analysed the level of IR of the annual (rather than integrated) reports of four best practice reporting entities from New Zealand. The analysis was conducted using a checklist of 53 items, representing the six Capitals, eight Content Elements and seven Guiding Principles stated in the Prototype Framework. Stent and Dowler (2015) concluded that only a relatively small gap existed between IR requirements and current best practice reporting, as evidenced by their sample companies scoring in the range of 70–87 per cent of the maximum possible checklist score.

Our study too is situated within the third strand of IR disclosure research, which holistically examines how organisations explain all aspects of value creation, including Capitals, Content Elements and Guiding Principles enshrined in the IR Framework. Its focus is on facilitating a more detailed and nuanced understanding of the level of IR, or the extent to which all aspects of value creation is made visible through integrated reports, than offered by Stent and Dowler (2015).

4. Research design

The research method adopted in this study is content analysis. As the study's focus is assessing the extent to which companies' reporting is aligned with the IR Framework, the content analysed in this study is the information that an organisation ought to disclose in

relation to the Capitals, Guiding Principles and the Content Elements described in the IR Framework. Section 4.1 explains the disclosure index developed to classify and categorise the relevant information disclosed by the companies. Section 4.2 provides an explanation of the manual coding process for coding both narrative and non-narrative content. Section 4.3 describes how the coded content was measured to obtain disclosure scores the companies analysed. Finally, Section 4.4 describes the sample companies and the basis of their selection.

4.1 *The integrated reporting disclosure index (IRDI)*

A disclosure index is a research instrument comprising a series of pre-selected items for measuring the level of disclosure in a given context. The disclosure index designed for this current study, labelled as IRDI, is intended to measure the level of disclosure on each of the Capitals, Content Elements and Guiding Principles of the IR Framework.

Several steps were involved in developing disclosure items (i.e. pre-defined items that are expected to be disclosed) to be included in the IRDI. First, the Capitals, Content Elements and Guiding Principles were divided into first- and second-level subcategories. Then the second level subcategories are operationalised for content analysis using a number of disclosure items. Appendix 1 shows the main categories and the two levels of subcategories included in the IRDI. Consistent with the IR Framework, the Capitals category has six subcategories, Content Elements category has nine subcategories and Guiding Principles category has six subcategories. The total number of second level subcategories is 123.

The IR Framework, being principles based, does not stipulate specific disclosures beyond the first level subcategory. Rather than a zero-based approach to developing the IRDI, the GRI 2013 (GRI 4) Guidelines are chosen as the main point of reference for developing second level subcategories and disclosure items for each second level subcategory. GRI 4 provides a list of indicators for measuring performance against economics, environmental and social aspects of organisations as well as general disclosure relating to organisations' strategy and analysis, profile, identified material aspects and boundaries, stakeholder engagement, report profile, governance and ethics and integrity. Some of the disclosure items and measures found in GRI 4 could be readily mapped with the subcategories for the Capitals, Content Elements and Guiding Principles, while others were either ignored or modified to suit our requirements for designing disclosure items. Further justification for the choice of the GRI Guidelines as the point of reference for the construction of the IRDI is provided in Section 4.1.1.

The second level subcategories for which disclosure items could not be identified/ designed in this manner were dealt with by the researchers designing disclosure items from scratch by carefully interpreting the information requirements for the Capitals, Content Elements and Guiding Principles. These purpose-designed disclosure items enable information not covered by GRI 4 but serving as an important aspect of the IR Framework to be included in the disclosure index. A total of 941 disclosure items were developed across the 123 second level subcategories to operationalise the IR Framework comprehensively. Table I provides the number of main categories, first and second level subcategories and disclosure items, comprising the IRDI.

Main categories	First level subcategories	Second level Subcategories	Disclosure items
Capitals	6	53	408
Content elements	9	56	478
Guiding principles	7	14	55
Total	22	123	941

Table I.
Structure of the IRDI

As the IRDI is a lengthy document, all 941 disclosure items cannot be reproduced in this paper due to space limitations. Hence, for a better appreciation of the comprehensiveness of the IRDI, examples of selected subcategories and the disclosure items comprising selected Capitals, Content Elements and Guiding Principles are provided. Table II shows the disclosure items comprising intellectual property and organisational capital, which are the two second level subcategories of the intellectual capital subcategory, one of the six Capitals. Table III provides the second level subcategories and disclosure items comprising

Table II.
An excerpt from the IRDI – intellectual capital disclosure items

ID	Description
CA3	<i>Intellectual capital</i>
CA3.1	Intellectual property
CA3.1.1	Description of patents
CA3.1.2	Description of copyrights
CA3.1.3	Description of software
CA3.1.4	Description of rights and licences
CA3.1.5	Description of trademarks
CA3.1.6	Amount spent on obtaining or protecting the above intellectual property
CA3.1.7	A statement about the organisation's brand value by dollar value, ranking, awards or index
CA3.2	Organisational capital
CA3.2.1	Description of corporate culture
CA3.2.2	Description of the organisation's systems
CA3.2.3	Description of the organisation's procedures
CA3.2.4	Description of the organisation's protocols
CA3.2.5	Description of other organisational capabilities
CA3.2.6	The total amount of investment in technology

Table III.
An excerpt from the IRDI – disclosure items for “future outlook”

ID	Description
CE7	<i>Outlook (the challenges and uncertainties the organisation is likely to encounter in pursuing its strategy, and the potential implications for its business model and future performance)</i>
CE7.1	Description of expected changes over time
CE7.1.1	Description of the organisation's short-term expectations about the external environment
CE7.1.2	Description of the organisation's medium-term expectations about the external environment
CE7.1.3	Description of the organisation's long-term expectations about the external environment
CE7.1.4	A statement about how the short-term expectations affect the organisation
CE7.1.5	A statement about how the medium-term expectations affect the organisation
CE7.1.6	A statement about how the long-term expectations affect the organisation
CE7.1.7	Availability and affordability of resources to face any critical challenges
CE7.1.8	Availability and affordability of resources to face any uncertainties
CE7.2	Description of potential implications over time
CE7.2.1	Discussion about how external environment affects the achievement of strategic objectives
CE7.2.2	Discussion about how risks affect the achievement of strategic objectives
CE7.2.3	Discussion about how opportunities affect the achievement of strategic objectives
CE7.2.4	A statement of techniques adopted to manage key relationships relating to the capitals
CE7.2.5	A statement of why these key relationships are important to the organisation's value-creation ability
CE7.3	Description of sensitivities involved in forecasting forward-looking information
CE7.3.1	A summary of related assumptions used in the forecasts or projections included in organisation's outlook reporting
CE7.3.2	A comparison of current performance to initially identified targets used to review an organisation's existing outlook
CE7.4	Regulatory requirements affecting organisation's outlook
CE7.4.1	An overview of relative legal or regulatory requirements included while forecasting an organisation's outlook

“future outlook”, the seventh Content Element of the IR Framework. In relation to Guiding Principles, the disclosure items included within the “stakeholder relationships” subcategory is shown in Table IV.

Most disclosure items are self-explanatory, and therefore can be applied without further interpretation. However, some disclosure items needed to be supported with coding rules to help the coders interpret them and reliably code the disclosures relating to those disclosure items. An example of coding rules designed by the researchers to facilitate the coding of the disclosure items (i.e. deciding when a particular disclosure item is “scored” as disclosed) included within the “stakeholder relationships” subcategory is shown in Table IV.

4.1.1 Reasons for selecting the GRI 4 Guidelines for designing disclosure measures. The GRI Guidelines are chosen to operationalise the IR Framework for several reasons. First, the GRI Guidelines are a widely used disclosure framework in organisations’ sustainability reporting practice, as well as in extant research (e.g. Liu and Anbumozhi, 2009; Prado-Lorenzo *et al.*, 2009). Many organisations adopt the GRI Guidelines in the process of compiling their sustainability reports because of increasing recognition of these Guidelines around the world (Sutantoputra, 2009).

Second, practitioners adopting the GRI Guidelines are amongst those providing integrated reports. Eccles and Armbrester (2011) stated that around 160 businesses which introduced their integrated reports in 2010 were application users of the GRI 3 Guidelines. Adams (2015) argued that strong and mature sustainability reporting plays an essential role in organisations’ IR journeys. Moreover, according to a survey conducted by the GRI (2013b), some IR practitioners consider the GRI Guidelines as a “roadmap”, “baseline” or

ID	Description	Coding rules
<i>GP3</i>	<i>Stakeholder relationship</i>	
GP3.1	Nature and quality of the organisation’s relationships with its key stakeholders	
GP3.1.1	A list of stakeholder groups engaged with the organisation	Reference to stakeholder groups by names
GP3.1.2	A statement about identification and selection of stakeholders with whom to engage	Reference to the selection process of stakeholders who are engaged with the organisation
GP3.2	Stakeholder engagement in the organisation’s activities	
GP3.2.1	Description of stakeholder engagement in the organisation’s environmental and social issues	Reference to how stakeholders engage in dealing with environmental and social issues
GP3.2.2	Description of stakeholder engagement in the organisation’s other issues related to its day-to-day operations	Reference to stakeholder engagement activities except those awarded under GP3.2.1
GP3.2.3	An indication of whether any of the stakeholder engagement was undertaken specifically as part of the report preparation process	Reference to stakeholder groups who are consulted in the organisation’s report preparation process
GP3.2.4	A statement of key topics and concerns that have been raised through stakeholder engagement	Reference to significant topics and/or concerns raised by stakeholders
GP3.2.5	A statement that how the organisation has responded to those key topics and concerns, including through its reporting	Description of how the organisation addressed the topics and concerns raised as per GP3.2.4
GP3.3	Accountability and transparency	
GP3.3.1	Description of the processes taken to discharge accountability and transparency	Reference to description of how governance body carries out the stewardship responsibility; reference to any regulations applied to enhance the stewardship responsibilities when resources are not owned by the organisation

Table IV.
An excerpt from the
IRDI – disclosure
items for “stakeholder
relationships”

“reference point” in their IR journey (p. 29). Furthermore, the GRI Guidelines are not only limited to disclosure of indicators of environmental and social information, but also extend to organisations’ governance and process areas. For these reasons, it can be expected that organisations experienced in adopting the GRI Guidelines will find it easier to adopt the IR Framework in their IR practices.

Third, the GRI is one of the three founding bodies of the IIRC. The GRI 4 Guidelines, launched in May 2013, established objectives that include how to link the organisation’s sustainability reporting to its preparation of an integrated report (GRI, 2013a). Michael Meehan, the Chief Executive of GRI, has stated that the GRI is on its way to building up the connections between organisations showing value-creation stories and the current status of financial and non-financial reporting practices (GRI, 2013a).

Fourth, different from the IR Framework, which provides a principles-based reporting framework, the GRI Guidelines list a number of aspects and indicators that, where appropriate, can assist in operationalising the principles included in the IR Framework.

Fifth, there are commonalities of characteristics between the IR Framework and the GRI Guidelines. GRI 4 Guidelines state that “sustainability reporting is fundamental to an organisation’s integrated thinking and reporting process in providing input into the organisation’s identification of its material issues, its strategic objectives, and the assessment of its ability to achieve those objectives and create value over time” (GRI, 2013a, p. 58). Furthermore, a KPMG report released in 2014, “Bridging the gap between integrated and GRI 4 reporting”, clarified the similarities and connectivity of the IR Framework and the GRI 4 Guidelines. This report concludes that the Guiding Principles and Content Elements from the IR Framework are at least roughly aligned with the GRI 4 Guidelines, apart from one Guiding Principle known as connectivity of information (refer to Appendices 1 and 2) (KPMG, 2014).

Finally, the IR Framework and the GRI 4 Guidelines include overlapping aims. The IR Framework delivers an organisation’s integrated thinking of how financial information interacts with non-financial information, regarding its value creation over time, to investors as a specific group of stakeholders. GRI Guidelines emphasise organisations’ non-financial-related matters to all stakeholders.

4.2 The process of manual coding and scoring

The study adopts the variant of content analysis commonly known as semantic content analysis, where coding is performed based on the meaning of the text or image rather than the mere occurrence of a given word in the text or image.

4.2.1 Coding of narrative content. In terms of narrative disclosures, the coding involved capturing the manifest meaning of sentences. Sentences are syntactical units (Rourke *et al.*, 2001) that may deliver more than one piece of information. The recording unit (i.e. the segment of content that is assigned to a disclosure index item) applied in this study is a “single piece of information that [is] meaningful in its own right” (Beattie and Thomson, 2007, p. 142). Hence, any sentence containing more than one piece of information is first disaggregated into separate pieces of information and then each individual piece of information is assessed against the items in the disclosure index. If text containing a piece of information aligns with a disclosure index item then that is coded as relating to the particular disclosure item. For instance, the sentence “We employ 1,200 people in 70 locations across Australia and 1,300 people in 13 locations in the UK” (Slater and Gordon, 2014, p. 2) contains two pieces of information relating to the “organisation’s ownership and operating structure” (CE1.3). The first one relates to disclosure item CE1.3.7, which is about “the scale of the organisation by total number of operations” (CE1.3.7) as it indicates that the company has 70 offices in Australia and 13 offices in the UK. The second one provides information relating to disclosure

item CE1.3.14 – “the total workforce by region”, as the company explains that it employs 1,200 employees in Australia and 1,300 in the UK (see Appendix 1).

4.2.2 Coding of non-narrative content. Corporate reports often include information presented in non-narrative formats, such as tables, charts, diagrams and pictures. Arguably, imagery is an effective means of presenting intangible aspects of companies’ businesses (Davison and Skerratt, 2007). The recording unit used for coding non-narrative content in this study is a single piece of information that is communicable through an image (Abhayawansa and Guthrie, 2016). For instance, each cell of a table, each bar of a bar chart, each line in a line chart or each slice in a pie chart are considered as a single piece of information representing unique information, whose carried meanings can be obtained through interpreting footnotes to the tables and charts, column and row headers of the tables and charts, and legends and captions of the tables and charts. In the case of images, single pieces of information were identified with reference to the captions of the images, the texts within which the images are positioned and the narrative explanation associated with the images.

4.3 Measuring the coded content

The notion of measurement in content analysis concerns the basis for quantifying the amount of disclosure. If a given disclosure item is present within the texts or the images of organisations’ reports, then a score of 1 is assigned to that disclosure item for that organisation. Otherwise, a score of 0 is assigned. Some disclosure items included in the IRDI have a temporal dimension because the IR Framework requires companies to explain value creation over time. The measurement of such disclosure items (mainly disclosure items relating to financial performance and social performance) is based on a scale of 0–3. In this case, a score of 1 is assigned if the information related to the disclosure item is attributed to one time horizon (i.e. previous financial years, present financial year or future financial years), a score of 2 is assigned if attributed to two time horizons or a score of 3 is assigned if attributed to all three time horizons.

Disclosure items relating to environmental performance are measured based on a scale of 0–6, as such disclosures are expected to lend themselves to more detailed comparisons. The 0–6 scale also incorporates the scoring method based on the time dimension included in the 0–3 scale explained above. In the case of 0–6 coding, the assigned score is increased by one point at a time for information relating to the disclosure item having the following attributes: absolute as well as relative amounts, amounts disaggregated into different levels and amounts compared with targets. For example, a company disclosing its carbon emissions in the current and previous years in both absolute and relative terms to the industry and providing a breakdown of carbon emissions by geographical location will be assigned a score of 4. It loses two points (from the maximum of six possible) for not disclosing expected (future) carbon emissions and not comparing emissions with set targets.

Another variation to the normal measurement procedure is applied for two disclosure items within the subcategory of “conciseness”, another Guiding Principle. These two disclosure items are: explain concepts clearly in as few words as possible and report information by using plain language rather than jargon or highly technical terminology. As these disclosure items do not lend themselves to manual content analysis, readability measures are used. Whether the concepts are clearly explained was measured using “average words per sentence”. If the average words per sentence are at least 30, then a score of 1 is assigned to that disclosure item, or 0 otherwise. Whether the report uses plain language was measured using the Flesch (1948) Reading Ease Score, consistent with prior literature on readability (Bayerlein and Davidson, 2015; Curtis, 1998). The disclosure item on “presenting information in plain language rather than using highly technical jargon” is scored by awarding a value of 1 if the report obtained a Flesch Reading Ease Score of at least 60, which is the desired goal for readership by the general public (Flesch, 1948; Lucassen *et al.*, 2012).

The total IRDI score represents the sum of the scores allocated for each disclosure item in relation to a given company. The equation used here is presented as follows:

$$\text{IRDI}_i = \sum_{d=1}^n d,$$

where IRDI_i represents the total disclosure score for company i ; d indicates one disclosure item which is assigned a value; and n represents the total number of disclosure items.

Overall, the optimal scores for the three dimensions of Capitals, Content Elements and Guiding Principles, which are evaluated in this study, are 1,002, 990 and 55, respectively, with a normative total of 2,047. The fact that some disclosure items can achieve a score of up to 6 explains why 941 disclosure items result in a potential benchmark score of 2,047.

4.4 Sample

4.4.1 Sample selection. The sample for this study is drawn from Australian companies. Australia is an appropriate site for this study since it was ranked fourth[4] amongst the top 10 countries publishing integrated reports from 2010 to 2012 (GRI, 2013b) and virtually all non-financial information is reported voluntarily.

Organisations were invited by the IIRC to join its business network to share their knowledge and understanding of the IR Framework. As disclosed on the IIRC website as at 29 April 2014, the initial list of companies joining the network consisted of four Australian companies, namely National Australia Bank (hereinafter referred to as "NAB"), Stockland, Slater and Gordon Lawyers and Bankmecu (since renamed Bank Australia). The first three companies were chosen since they are publicly listed companies, whereas Bank Australia is a financial cooperative. In terms of Global Industry Classification System industry group, NAB is in the banking industry, Stockland in the real estate industry, and Slater and Gordon Lawyers in the consumer services industry. Hence, there is no commonality between these companies in terms of industry groupings. This necessitates IR performance of each company to be appreciated in the context of its industry group.

The SASB (2018) shows that the materiality of various sustainability issues affecting businesses varies by industry. Steinbarth and Bennett (2018), using industry-specific environmental, social and governance (ESG) performance scores developed using SASB's industry-based classification of material sustainability issues, showed that ESG scores material to the industry is a better predictor of stock returns compared to traditional ESG scores that are not industry specific. Similarly, Khan *et al.* (2016) demonstrated that what matters to the market is the companies' performance on sustainability issues that are argued to be material to the industries in which the companies operate, but not any sustainability issue.

Another two companies, Westpac and Sanford, are also selected in this study for comparing and setting benchmarks in order to provide a sound understanding of the implementation of the IR Framework. Westpac[5], an award winner for its sustainability report, is used as a benchmark for NAB since it too is a large bank. Sanford, a New Zealand company listed on the Australian Securities Exchange and the winner of the ARA for the best integrated report in 2016[6], was selected and is used as a general comparator. The reasons for comparing the IR performance of the selected companies with Sanford are threefold. First, a benchmark using Capitals, Content Elements and Guiding Principles can be established against which to compare the scores of the other companies. Second, the feasibility of applying the IRDI created in this study can be tested. Third, as the winner of an integrated report award, Sanford's annual report is expected to follow the spirit of the IR Framework by combining information traditionally found in annual reports, and sustainability and other reports.

4.4.2 Reports selected for the analysis. In order to assess the extent of adoption of the IR Framework, all reports (annual, sustainability, etc.) published by the five listed companies are analysed. For all companies except Sanford, the reports published in 2014 are analysed. Because the GRI 4 Guidelines were launched in May 2013 and the IR Framework was promulgated in December 2013, reports from the 2014 financial year provide the first opportunity for disclosures to be informed by both frameworks. The 2015 annual report of Sanford is analysed because it is the annual report that won the ARA award and therefore ought to have followed the spirit of the IR Framework, making it an ideal candidate for a comparator.

NAB published three corporate reports, including an annual financial report (NAB, 2014a), an annual review report (NAB, 2014b) and a “Dig Deeper” report (NAB, 2014c). Slater and Gordon Lawyers and Sanford published annual reports only. Stockland presented a financial report (Stockland, 2014a) and a shareholder review (Stockland, 2014b). Westpac produced an annual report (Westpac Group, 2014a), an annual review and sustainability report (Westpac Group, 2014b), and seven “factpac” reports[7]. NAB’s and Westpac’s 2014 fiscal year ends 30 September, while the 2014 fiscal year of Slater and Gordon Lawyers and Stockland ends on 30 June. The 2015 fiscal year of Sanford ends on 30 September.

5. Results and analysis

5.1 Results by main categories

The total optimal disclosures scores relating to capitals, Content Elements and Guiding Principles account for 49, 48.4 and 2.6 per cent, respectively, of the total optimal score. Table V provides a summary of the optimal scores compared with the outcome scores. Overall, the three companies, as well as the comparator companies, perform poorly when judged against the normative benchmark consisting of potentially communicable information. In terms of Capitals and Content Elements, Slater and Gordon and Stockland achieved less than 5 per cent of the total possible score for both categories, while NAB achieved 10.3 per cent for the Capitals and 11.3 per cent for Content Elements. The two reporting award winners, Westpac and Sanford, scored more or less similarly to NAB in relation to Capitals and Content Elements. The reporting on Guiding Principles by Slater and Gordon and Stockland also lagged behind that of NAB and the two comparison companies, achieving only 9.1 per cent of the total possible score each. Although NAB scored significantly better than Westpac on this dimension, Sanford clearly stands out from the rest by scoring 61.8 per cent of the total possible score for Guiding Principles.

Of the three IR pilot participants, Slater and Gordon and Stockland score very similarly for Capitals, Content Elements and Guiding Principles dimensions. NAB clearly stands out, with scores more than three times for Capitals, more than twice for Content Elements and more than four times for Guiding Principles compared with the other two companies. However, care needs to be taken in comparing reporting across these industries as what information is material and therefore would be disclosed depends on the industry in which companies operate. A comparison between NAB and Westpac is more meaningful as these organisations are two of the big four banks in Australia. Despite Westpac being a sustainability reporting award winner, it performs almost equally to NAB in relation to Capitals and Content Elements. However, NAB differentiates itself from Westpac on disclosure relating to the Guiding Principles.

5.2 Results by subcategories

5.2.1 Capitals. All five companies performed relatively well on reporting financial capital but variously on other five capitals. Slater and Gordon scored 2 out of the total possible score of 6 for manufactured capital while the other companies scored only 1. Human capital

Table V.
IRDI scores for
sample companies by
categories and total

Disclosure categories	Total (1) ^a		Slater and Gordon		Stockland		NAB		Westpac		Sanford		
	No. of disc. items	Score	% of score	Total score (2)	% of possible score (3)	Total score (4)	% of possible score (5)	Total score (6)	% of possible score (7)	Total score (8)	% of possible score (9)	Total score (10)	% of possible score (11)
Capitals	408	1,002	49.0	29	2.9	29	2.9	103	10.3	101	10.1	89	8.9
Financial capital	14	60	6.0	15	25.0	17	28.3	25	41.7	25	41.7	19	31.7
Manufacturing capital	6	6	0.6	2	33.3	1	16.7	1	16.7	1	16.7	1	16.7
Intellectual capital	13	13	1.3	1	7.7	0	0.0	1	7.7	1	7.7	3	7.7
Human capital	93	192	19.2	6	3.1	7	3.6	39	20.3	26	13.5	43	22.4
Social and relationship capital	132	318	31.7	3	0.9	4	1.3	21	6.6	10	3.1	5	1.6
Natural capital	150	413	41.2	2	0.5	0	0.0	16	3.9	38	9.2	18	4.4
Content Elements	478	990	48.4	49	4.9	48	4.8	112	11.3	107	10.8	123	12.4
Org. overview and external environment	120	170	17.2	15	8.8	18	10.6	49	28.8	38	22.4	45	26.5
Governance	105	127	12.8	23	18.1	23	18.1	26	20.5	21	16.5	17	13.4
Business model	143	519	52.4	2	0.4	0	0.0	19	3.7	33	6.4	28	5.4
Risks and opportunities	21	41	4.1	0	0.0	0	0.0	0	0.0	0	0.0	4	9.8
Strategy and resource	8	8	0.8	0	0.0	0	0.0	1	12.5	1	12.5	5	62.5
Performance	43	87	8.8	0	0.0	0	0.0	3	3.4	3	3.4	5	5.7
Outlook	16	16	1.6	0	0.0	0	0.0	2	12.5	1	6.3	4	25.0
Basis of prep. and presentation	12	12	1.2	1	8.3	1	8.3	7	58.3	4	33.3	6	50.0
General reporting guidance	10	10	1.0	8	80.0	6	60.0	5	50.0	6	60.0	9	90.0
Guiding Principles	55	55	2.6	5	9.1	5	9.1	23	41.8	14	25.5	34	61.8
Strategic focus and future orientation	9	9	16.7	0	0.0	0	0.0	2	22.2	1	11.1	5	55.6
Connectivity of information	7	7	13.0	0	0.0	0	0.0	3	42.9	1	14.3	5	71.4

(continued)

Disclosure categories	Total (1) ^a		Slater and Gordon		Stockland		NAB		Westpac		Sanford		
	No. of disc. items	Score	% of score	Total score (2)	% of possible score (3)	Total score (4)	% of possible score (5)	Total score (6)	% of possible score (7)	Total score (8)	% of possible score (9)	Total score (10)	% of possible score (11)
Stakeholder relationships	8	8	13.0	0	0.0	0	0.0	6	75.0	1	12.5	5	62.5
Materiality	8	8	14.8	0	0.0	0	0.0	4	50.0	4	50.0	7	87.5
Conciseness	7	7	13.0	2	28.6	2	28.6	1	14.3	2	28.6	3	42.9
Reliability and completeness	9	9	16.7	1	11.1	2	22.2	2	22.2	2	22.2	4	44.4
Consistency and comparability	7	7	13.0	2	28.6	1	14.3	5	71.4	3	42.9	5	71.4
Total scores	941	2,047	100	83	4.0	82	4.0	238	11.6	222	10.8	246	12.0

Notes: The scores for the subcategories within each main category are represented as percentages of the total score of the main category to which they belong.^aIn the percentage column, the total scores for the three main categories (i.e. capital, content elements and guiding principles) are presented as percentages of the total score

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Table V.

disclosures received relatively less attention from Slater and Gordon and Stockland compared to the other three companies. Sanford, the IR award winner, disclosed the highest volume of information on human capital, achieving the highest disclosure score for human capital. Overall, the disclosure of intellectual, social and relational, and natural capital information was significantly less across the sample companies compared to potentially communicable information in those categories. Westpac, the sustainability reporting award winner, received the highest score on disclosing natural capital. However, NAB reported more information on human and social and relationship capitals.

5.2.2 Content elements. A close examination of the disclosure score distribution across the nine Content Elements shows that major differences in disclosure appear under “organisational overview and external environment”, “business model”, “strategy and resources” and “outlook” subcategories. Based on disclosure scores for Content Elements, the most information was disclosed for “organisational overview and external environment”, “governance” and “general reporting guidance” and the least for “business model”, “risks and opportunities” and “performance” subcategories.

A clear difference in the scores for Content Element-related disclosure can be seen between Slater and Gordon and Stockland on the one hand and the other three companies on the other. Slater and Gordon and Stockland did not report any information on four of the nine Content Elements (i.e. risks and opportunities, strategy and resources, performance and outlook). Also, these companies’ disclosures of information related to their business models were either minimal or non-existent. NAB performed on par with (or sometimes better than) the two award-winning companies in relation to Content Elements-related disclosures, except for “strategy and resources” and “outlook” subcategories for which Sanford provided significantly more information.

It was stated earlier that reporting of the “business model” is critical in reflecting whether a report can be defined as an integrated report. The business model is described as: “an organisation’s system of transforming inputs through its business activities into outputs and outcomes that aims to fulfil the organisation’s strategic purpose and create value over the short, medium and long-term” (IIRC, 2013a, b, p. 33). The emphasis on business model-related information in IR is depicted in our IRDI as more than 50 per cent of the potential disclosure score relates to this category. The total optimal score for business model is high because zero to three and zero to six measurement scales apply to the reporting of the four key aspects of a business model: “inputs”, “business activities”, “outputs” and “outcomes” (IIRC, 2013a, b, p. 25). The IR Framework further identifies a number of features in an attempt to ensure that the business model is presented in an easy to read and effective format, including but not limited to, applying a simple diagram comprising key elements and using a “narrative flow” to describe the business model. Companies can effectively depict their business models in a diagram while providing descriptions, presenting inputs and outputs, and describing business activities and relevant outcomes.

Westpac obtained a disclosure score of 33 for its business model-related disclosures (Table V). This was followed by Sanford, the IR award winner, receiving a score of 28. Westpac scores particularly well on presentation of its outputs and outcomes by providing information from past and current time frames and reporting information at a disaggregated level, benefiting from the zero to three and zero to six measurement scales developed to capture the level of granularity in the disclosed information. While the number of disclosure items Westpac disclosed is not altogether high, it obtained a high disclosure score due to the granularity of the disclosed information. This indicates that Westpac focuses on providing related information in detail rather than only in generalities. Sanford provides its business model in a diagram on pages 12 and 13 of its annual report. Showing its business model in this way clearly presents its value-creation process, reflecting the

requirements of the IR Framework. Seven themes, including values, value enablers, value-creation process, external environment, four focus areas[8], sustainability goals and vision, are defined and numbered in the diagram. Although the value enablers are listed in an organised table, the information provided is simplistic and does not include adequate explanations. Thus, Sanford's disclosure score is affected by the lack of granularity in the business model-related disclosures.

Compared with Westpac and Sanford, the three IIRC Pilot Program Business Network companies generally perform poorly in reporting on their business models, with Slater and Gordon scoring a total of 2 and Stockland scoring nil. Neither presents information about how they generate value from their day-to-day operations. NAB scores 19 distributed across the second level subcategories of inputs and outputs, but NAB's business mode-related disclosures are not adequate to meet the implicit demands of the IR Framework for explaining an organisation's business model.

5.2.3 Guiding principles. Of the companies analysed, in terms of connectivity of information, Sanford performs best with a score of 5 out of 7. It achieves this by disclosing that it is in a partnership innovation programme between government and the industry in which Sanford operates, aiming to maintain a leading position within this industry. Within its description of this programme (Sanford, 2015, p. 64), Sanford reports the total amount of capital invested by government and connects this with the expected future returns using both qualitative (e.g. improving productivity efficiency and quality, staying ahead of the market, and bringing long-term economic benefits) and quantitative (e.g. contributing around \$237 million to New Zealand Gross Domestic Product from 2,025) informational perspectives. Sanford then describes a number of its projects that are in line with the innovation programme, making connections between qualitative (e.g. to nurture innovation and to make the generation of ideas everyone's responsibility) and quantitative (e.g. the identified total amount of projected saving is \$1,912,916) information; and past and current time periods (the projected saving is \$2m and \$1,912,916 in 2014 and 2015, respectively).

NAB as the next best performer obtains a total score of 3 by reporting information on the connection between capitals and financial and non-financial information (e.g. its indigenous traineeship programs (social and relationship capital and non-financial information) delivers a \$3.14 (financial capital and financial information) in social return for every \$1 invested). Also, NAB reports the connection between information in its annual report and its website. Surprisingly, Westpac receives only one point, while Slater and Gordon and Stockland received a score of nil for connectivity of information. These results suggest that creating connectivity is perhaps one of the more difficult aspects of the IR Framework to achieve.

Reporting on stakeholder relationships requires companies to not only present information about the quality of the relationship with their key stakeholder but also to consider and report how they respond to matters of interest to their key stakeholder (IIRC, 2013a, b). In relation to disclosing information on the relationships with their key stakeholders, NAB and Sanford perform equally. Tellingly, they both report on stakeholders engaged with their companies, stakeholders' key concerns and their responses to those concerns. However, Westpac received a score of only 1, and Slater and Gordon and Stockland did not disclose any information on this aspect.

Materiality refers to matters which have actual effects on organisations' value-creation process over the short, medium and long terms. Adherence to the Guiding Principle of materiality requires organisations to report information which is sufficiently important to their value-creation stories (IIRC, 2013a, b). Of the five companies, Slater and Gordon and Stockland did not disclose any information on materiality determination. As a top reporter, Sanford not only identified material issues but also ranked them based on their importance to the value-creation process of the company. Materiality is one of the key aspects of the

GRI 4 Guidelines. Sanford, Westpac and NAB followed GRI (2013a, b) Guidelines while preparing their reports, whereas Slater and Gordon and Stockland did not declare any reference to GRI. Hence, judging by their performance in materiality disclosure, moving from GRI 4 to the IR Framework, which is a principles-based framework, might have made the transition smoother.

6. Discussion

When developing the normative benchmark, it was realised that a large number of information items is required to fully explain the organisational value creation as stipulated in the IR Framework. The majority of information that is required to be disclosed relates to Capitals and Content Elements in general, and human, social and relationship and natural capitals, organisational overview and external environment, governance and business model specifically. Thus, the normative benchmark, as well as the insights generated by applying this benchmark, are of relevance to academics, practitioners and users of corporate reports with a special interest in organisations' disclosure of intellectual capital. The analysis of corporate reports based on the normative benchmark, as explained in this paper, sets a practical example for further research on the practicality of adopting the IR Framework and reporting on intellectual capital based on it.

Our analysis of the disclosure levels of the selected companies indicates that companies are disclosing far less than the optimal level and not making sufficient connections between various strands of information, including between the financial and non-financial capitals. The results from our study suggest that even companies that are at the forefront of IR implementation, or those who have won awards for integrated or sustainability reporting, need to make significant improvements in their reporting to achieve fully integrated reports. Thus, any claims by companies that their reports are integrated reports and are in compliance with the IR Framework should not be taken without scrutiny to mean that their reports meet any sort of minimum standard in relation to making visible how they create value.

Another important finding of this study is that companies vary significantly in the extent to which they comply with the IR Framework. Sanford, the winner of the ARA Integrated Reporting Award in 2016, as might be expected, receives the highest scores on Content Elements and Guiding Principles, although NAB and Westpac score marginally higher than Sanford on the Capitals, and is clearly the best adopter of the IR Framework compared with the other four companies. NAB scores higher than Westpac on all three dimensions, indicating that IR requires much more information than what the best sustainability report offers. Of the three Pilot Program practitioners, it can be concluded that NAB better applies the IR Framework, with some understanding of the guidelines. The reports of Slater and Gordon and Stockland show significant similarity in their compliance with the IR Framework, although lagging significantly behind NAB.

The variations in the level of disclosure observed amongst the integrated reports are so significant as to suggest that there is a need for companies to provide external assurance on their level of compliance with the IR Framework and the extent to which their reports explain how they create value. Current practice is for companies to declare that their reports are prepared in compliance with the IR Framework. However, our results suggest that in the absence of any declaration of the compliance level, readers can be misled into believing that all reports meet a minimum standard. In this regard, the IIRC can adopt a methodology similar to the GRI Application Level Check, where sustainability reports are labelled according to the extent to which they have applied the GRI Guidelines.

It has been argued that the measurement, management and reporting of intellectual capital is kept alive and advanced through IR and the IR Framework (Abhayawansa, 2014). Our findings indicate that inadequacies identified in organisations' reporting and disclosure of intellectual capital, as shown by a plethora of early studies on intellectual capital

reporting, are yet to be overcome by IR. Thus, one cannot yet be complacent that the world has found the most efficient and effective method and mode of communicating organisational value creation and the role of intellectual capital in it.

Given our findings, the question has to be asked as to whether joining the IIRC's Pilot Program is more symbolism than an attempt to genuinely prepare integrated reports. The symbolism of joining the Pilot Program Business Network compared with the reality of complying with the implicit demands of the IR Framework leads to questions about whether these companies are "walking the walk" (PwC, 2016, p. 26)? It also potentially indicates a transitional period is needed for companies to transform from providing a range of reports to concisely integrating and presenting information (see also Stubbs and Higgins, 2014). In defence of Sanford and the three IIRC Pilot Program participants, however, one could note the relative novelty of the IR Framework that had been issued only six months prior to the release of their 2014 annual reports, which were the subject of our analysis. There is some evidence that even companies in South Africa have not shown high levels of performance in producing fully integrated reports (Setia *et al.*, 2015) even two years after the country mandated IR on "comply or explain" basis. Therefore, it is not surprising that the sampled companies do not appear to have implemented IR in a comprehensive way, especially in a voluntary environment. There is still much to be learned in applying the IR Framework. Organisations as practitioners of IR need more guidance and a longer period to become truly familiar with this emerging reporting format. The normative benchmark introduced in this paper in the form of the IRDI can assist organisations in operationalising the IR Framework and complying with it.

7. Conclusion

This study develops and applies a normative benchmark for evaluating companies' compliance with the IR Framework and the extent to which their integrated reports make visible how organisations create value using financial and non-financial capitals. The present study applies this benchmark to three Australian, self-declared integrated report adopters who participated in the IIRC's Pilot Program Business Network (Slater and Gordon, Stockland and NAB). Subsequently, the reporting performance of these companies is compared with that of acknowledged high reporting performers, Westpac and Sanford. The normative benchmark that was created to operationalise the IR Framework identifies a vast amount of potentially communicable information and various degrees to which information may be disclosed. The integrated reports analysed differ significantly in the extent to which their value-creation stories are made visible. All selected companies performed poorly in comparison to the normative benchmark.

This study makes an important contribution from both practical and scholarly perspectives. Practical contributions lie in the design and operationalisation of a complete suite of indicators that can be used as a tool to assist preparers with developing content related to intellectual capital and otherwise for inclusion in their integrated reports and assist readers of integrated reports with a normative benchmark by which to evaluate that content. Further, by demonstrating the application of the IRDI to a carefully selected sample of integrated and sustainability reports based on their expected exemplary nature, this study reveals significant variation in compliance in a holistic way with the "spirit" of the IR Framework. For reporting practitioners, this variation is illuminating of the challenges faced in operationalising what is a principles-based framework that intentionally shies away from creating practical guidelines for application. For assurance providers and standard setters in that space, this study and its normative benchmark may assist in developing standards and guidelines for assessment of materiality and completeness of integrated reports.

For the IIRC, this variation implies that reconsideration should occur of the merit of remaining purely principles based without authoritative illustrative guidance to accompany the

IR Framework. For those charged with enforcement obligations in countries that mandate IR, the study highlights the level of ambiguity that will need to be tolerated in monitoring compliance with the IR Framework. For public policymakers, this study may motivate an evaluation or re-evaluation of whether the implementation of IR, either voluntarily or under a mandate, can achieve the desired objectives of implementation. And for all types of stakeholders who are users of integrated reports, this study may assist in providing an evaluation benchmark against which reports can be judged for completeness and utility in telling companies' value-creation stories and explicating corporate intellectual capital in them.

Given the innovative nature of IR and its potential to encourage greater attention to the Capitals and their role in value creation, including intellectual capital, this study is timely in highlighting the vast array of information potentially includable in IR if the IR Framework is to be conscientiously and faithfully adhered to. The comparatively poor performance against the benchmark of self-proclaimed integrated reporters in this study demonstrates the challenge not only in preparing integrated reports but also in providing assurance on them. Notwithstanding the challenges, use of GRI Guidelines in the operationalisation of the IR Framework in this study, guidelines with which many preparers have familiarity, may mitigate the more daunting aspects of implementation and encourage adoption of IR.

In terms of contribution to the literature and scholarly pursuit, this study's use of the IR Framework to devise a highly granular, normative instrument to serve as a benchmark index for future studies could progress the currently limited literature on IR and intellectual capital. It could also motivate industry-specific re-design of the instrument for further application. Such re-designing can, for example, be modelled on the approach adopted by Steinbarth and Bennett (2018) in developing industry-specific ESG performance matrices that distinguish between those issues that are financially important for a given industry vs those that are immaterial. There is also a need to validate the normative benchmark developed in this study by seeking an evidence base of decision usefulness of specific disclosure items included in it, using research methods, such as quasi-experimental behavioural research designs and capital markets-based value relevance studies.

In terms of limitations, the IRDI developed is somewhat unwieldy to apply. The potential score is far higher than that for other content analysis indices, but, in large part, this is caused by the aim of the IR Framework to tell the value-creation story in terms of past, current and future timelines. Each of these timelines is accommodated in the IRDI, creating multiple normative scores for many items. The number of optimal items to be disclosed under the IR Framework illustrates the challenge facing organisations seeking to implement IR.

Notes

1. Within the social and environmental literature, older studies adopted terminology such as "social reports", "environmental reports" or "social and environmental reports". Extant research widely uses either "sustainability reports" or "corporate social responsibility reports" (Robertson and Samy, 2015). This study adopts the term sustainability reports.
2. GRI 3 offers three application levels (i.e. A, B or C) to indicate the extent and scope of the use of GRI 3 indicators. Level A represents the application of the most number of GRI indicators in a sustainability report and level C the least. A plus (+) sign can be added next to each application level to indicate that the sustainability report has been externally assured. GRI 4 offers two application level options – core and comprehensive. "The Core option contains the essential elements of a sustainability report. The Core option provides the background against which an organisation communicates the impacts of its economic, environmental and social and governance performance. The Comprehensive option builds on the Core option by requiring additional Standard Disclosures of the organisation's strategy and analysis, governance, and ethics and integrity. In addition, the organisation is required to communicate its performance more extensively by reporting all Indicators related to identified material Aspects" (GRI, 2013a, p. 11).

3. Integrated thinking refers to: “The active consideration by an organisation of the relationships between its various operating and functional units and the capitals that the organisation uses or affects. Integrated thinking leads to integrated decision making and actions that consider the creation of value over the short, medium and long term” (IIRC, 2013a, b, p. 33).
4. According to the survey conducted by the GRI (2013b), South Africa, the Netherlands, Brazil and Australia were ranked in first, second, third and fourth place, respectively. Compared with South Africa, which has mandated integrated reporting practice for all listed companies, and the Netherlands, where the government introduced a 100 per cent sustainable procurement policy, Brazil and Australia have adopted an “if not, why not” approach to listed companies disclosing non-financial information. In addition, the total number of integrated reporting practitioners in Australia was higher than in Brazil in 2012.
5. It is noted that Westpac did not participate in the IIRC’s pilot programme and has not claimed to be applying the IR Framework. Nevertheless, Eccles and Armbruster (2011) stated that corporations are better to start with sustainability reporting practice if they wish to produce integrated reports.
6. Sanford received first place for the “Integrated Reporting” award and also won the “ARA Hong Kong Sustainability Award” in the Australasian Reporting Awards (ARA) in 2016.
7. These seven reports provide supplementary information to the annual report, annual review and sustainability report, and consist of one Communities factpac (Westpac Group, 2014c), one Customer factpac (Westpac Group, 2014d), one Employees factpac (Westpac Group, 2014e), one Environment factpac (Westpac Group, 2014f), one Financial factpac (Westpac Group, 2014g), one Suppliers factpac (Westpac Group, 2014h) and one Sustainability Strategy factpac (Westpac Group, 2014i).
8. These four focus areas are value, brand, quality and innovation (Sanford Ltd, 2015, p. 13).

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ID	Description
CA	<i>Capitals</i>
CA1	Financial capital
CA1.1	The scale of the organisation by financial information
CA1.2	Any significant changes during the reporting period regarding the organisation's capital structure
CA1.3	Direct economic value generated and distributed
CA1.4	Financial assistance received from government
CA2	Manufactured capital
CA2.1	The scale of branches and offices of the organisation
CA2.2	Description of machines and tools used within the organisation
CA2.3	Description of infrastructure related to the organisation's operation
CA2.4	Any significant changes during the reporting period regarding the organisation's location of, or changes in, operations
CA3	Intellectual capital
CA 3.1	Intellectual property
CA 3.2	Organisational capital
CA4	Human capital
CA4.1	The scale of the organisation as per current employment information
CA4.2	Description of employees' training and education
CA4.3	Description of labour/management relations
CA4.4	Description of occupational health and safety
CA4.5	Description of diversity and opportunities
CA4.6	Description of security practices
CA4.7	Description of human rights
CA4.8	Description of formal grievance mechanisms
CA5	Social and relationship capital
CA5.1	Participation in any voluntary initiatives that apply to the organisation's economic, social and environmental performance
CA5.2	Participation in any specific industry associations/initiatives that apply to the organisation's economic, social and environmental performance
CA5.3	Participation in other national/international organisations/associations that apply to the organisation's economic, social and environmental performance (if not awarded under CAH5.1 or CAH 5.2 above)
CA5.4	Stakeholder involvement in setting corporate economic, social and environmental policies
CA5.5	Stakeholder involvement in environmental, social and economic disclosure processes
CA5.6	Description of an organisation's supply chain
CA5.7	Description of an organisation's market presence
CA5.8	Description of current or expected impacts of an organisation's operation or the significant infrastructure investments on communities
CA5.9	Description of current or expected impacts of an organisation's products and/or services
CA5.10	An overview of an organisation's policies on stating freedom of association and collective bargaining
CA5.11	Description of rights of indigenous people
CA5.12	Description of supplier assessment for its impacts on society
CA5.13	Description of policies or mechanisms related to anti-corruption
CA5.14	Description of political contributions made by an organisation
CA5.15	Description of any policies and/or mechanisms related to anti-competitive behaviour
CA5.16	Description of any policies and/or mechanisms related to participation in customers' protection
CA6	Natural capital
CA6.1	Description of weight and volume of renewable or non-renewable materials consumed

(continued)

Table AI.
Main categories and
subcategories included
in the IRDI

ID	Description
CA6.2	Description of energy consumption within the organisation
CA6.3	Description of energy consumption outside of the organisation
CA6.4	Description of energy intensity
CA6.5	Description of how to reduce energy consumption
CA6.6	Description of water consumption within the organisation
CA6.7	Description of water consumption outside of the organisation
CA6.8	Existence of plans related to water recycling and reuse
CA6.9	Description of conservation of biodiversity and habitats
CA6.10	Description of greenhouse gas emissions (GHG) of the organisation
CA6.11	Description of GHG emissions related to the organisation (but external to it)
CA6.12	Description of GHG intensity
CA6.13	Description of initiatives for reducing GHG emissions
CA6.14	Emissions of ozone-depleting substances emitted by the organisation
CA6.15	Description of other significant air emissions of the organisation
CA6.16	Description of Toxics Release Inventory (TRI) an organisation released to air, land or water
CA6.17	Description of other discharges, releases and/or spills (not TRI)
CA6.18	Amount of environmental expenditures
CA6.19	Description of grievances relating to environmental impacts submitted through formal grievance mechanisms
<i>CE</i>	<i>Content Elements</i>
CE1	Organisational overview and external environment
CE1.1	Organisation's mission and vision
CE1.2	Organisation's culture, ethics and values
CE1.3	Organisation's ownership and operating structure
CE1.4	Organisation's principal activities and markets
CE1.5	Organisation's competitive landscape and market positioning
CE1.6	Organisation's position within the value chain
CE1.7	Organisation's key quantitative information
CE1.8	Description of the legitimate needs and interests of key stakeholders
CE1.9	Macro and microeconomic conditions
CE1.10	Description of market forces
CE1.11	Description of the speed and effect of technological change
CE1.12	Description of related societal issues, such as population and demographic changes, human rights, health, poverty, collective values and educational systems
CE1.13	Description of environmental challenges
CE1.14	Description of the political environment
CE2	Governance
CE2.1	Description of the organisation's leadership structure of those charged with governance
CE2.2	Participation in specific processes used to make strategic decisions and to establish and to monitor the culture of the organisation
CE2.3	Particular actions taken by those charged with governance to influence and monitor the strategic direction of the organisation and its approach to risk management
CE2.4	Description of how the organisation's culture, ethics and values are reflected in its use of and effects on the capitals
CE2.5	Description of the influence of regulatory requirements on the organisation's governance practices
CE2.6	Description of governance responsibility for promoting and enabling innovation
CE2.7	Description that how remuneration and incentives are linked to value creation in the short, medium and long term
CE3	Business model
CE3.1	A simple diagram highlighting key elements, supported by a clear explanation of the relevance of those elements to the organisation
CE3.2	Explicit identification of the key elements of the business model
CE3.3	Narrative of the particular circumstances of the organisation

Table AI.

(continued)

ID	Description
CE3.4	Identification of critical stakeholders and other (e.g. raw material) dependencies and important factors affecting the external environment
CE3.5	Description of the connections between the business model and information covered by other content elements
CE3.6	Description of key inputs
CE3.7	Description of key business activities
CE3.8	Description of key outputs
CE3.9	Description of key outcomes
CE3.10	Description of processes of dealing with multiple business models
CE4	Risks and opportunities
CE4.1	Description of key risks and opportunities that affect organisation's ability to create value over the short, medium and long-term
CE4.2	A statement of the specific source of risks and opportunities, which can be internal, external or, a mix of the two
CE4.3	Assessment of the likelihood of the risks and opportunities materialising
CE4.4	Participation in mitigating or managing key risks or creating value from key opportunities
CE5	Strategy and resource allocation
CE5.1	The organisation's short-, medium- and long-term strategic objectives
CE5.2	Description of organisation's strategies to achieve those strategic objectives
CE5.3	Description of the resource allocation plans used to implement its strategy
CE5.4	Description of measuring achievements and target outcomes over time
CE6	Performance
CE6.1	Description of quantitative indicators related to targets and risks and opportunities
CE6.2	Description of influence of capitals within and outside of the organisation
CE6.3	Description of the dealings with key stakeholders
CE6.4	The linkages between past and current performance, and between current performance and the organisation's outlook
CE6.5	Adoption of the KPIs to present linkages between financial performance and other performance
CE6.6	Description of influence of regulations on the organisation's performance
CE7	Outlook
CE7.1	Description of expected changes over time
CE7.2	Description of potential implications over time
CE7.3	Description of sensitivities involved in forecasting forward-looking information
CE7.4	Regulatory requirements affecting organisation's outlook
CE8	Basis of preparation and presentation
CE8.1	A summary of the organisation's materiality determination process
CE8.2	Description of the reporting boundary
CE8.3	A summary of the significant frameworks and methods used to quantify or evaluate material matters
CE9	General reporting guidance
CE9.1	Disclosure of material matters
CE9.2	Disclosure about capitals
CE9.3	Time frames for short, medium and long-term
CE9.4	Presenting information in an aggregation or a disaggregation
GP	<i>Guiding Principles</i>
GP1	Strategic focus and future orientation
GP1.1	Description of the organisation's strategic plan
GP1.2	A statement on how the governance body takes into consideration the influence of the aforementioned information (awarded under GP1.1) over different time periods
GP1.3	Description of how an organisation achieves its strategic objectives
GP2	Connectivity of information
GP2.1	Description of connectivity of information
GP3	Stakeholder relationship
GP3.1	Nature and quality of the organisation's relationships with its key stakeholders

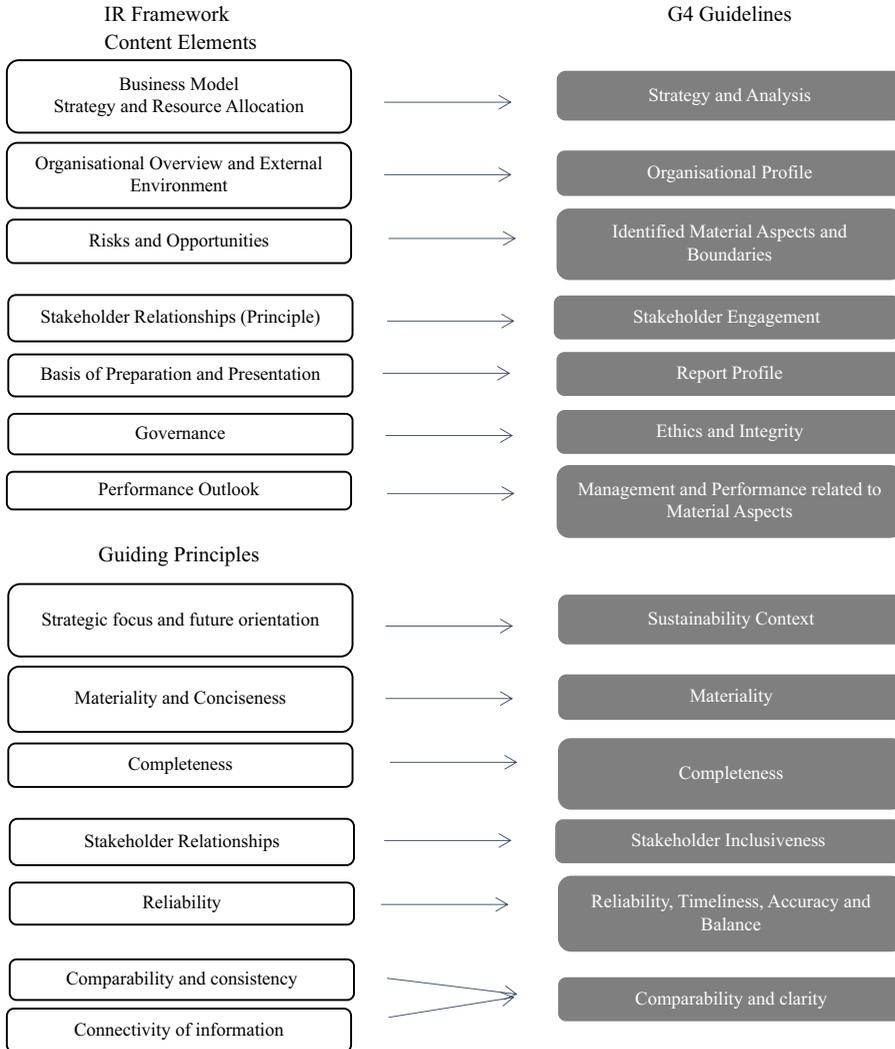
(continued)

Table AI.

JIC

ID	Description
GP3.2	Stakeholder engagement in the organisation's activities
GP3.3	Accountability and transparency
GP4	Materiality
GP4.1	Description of the materiality determination process
GP4.2	Description of the reporting boundary
GP5	Conciseness
GP5.1	Concise presentation of information in a logical manner, using plain language and making links between information (not in a boilerplate manner)
GP6	Reliability and completeness
GP6.1	Presentation of information in a manner that exemplifies the reliability of it
GP6.2	Presentation of information in a manner that exemplifies the completeness of it
GP7	Consistency and comparability
GP7.1	Presentation of information in a consistent manner
GP7.2	Presentation of information in comparable manner

Table AI.



Source: For Content Elements: KPMG (2014, p. 8) and for Guiding Principles: KPMG (2014, p. 7)

Figure A1.
Alignment between the IR Framework and GRI 4 Guidelines

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