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Exploring integrated reporting in the banking industry: the multiple capitals approach

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Abstract

Purpose – The purpose of this paper is to investigate the engagement with integrated reporting (IR) of the Development Bank of Singapore (DBS), as one of the banks that pioneered IR. Banking industry members face critical sector-specific issues regarding the use of capitals, especially the disclosure of relational and natural capital-related information, and reporting of the outcomes of capitals. This study examines an innovative approach to accounting for multiple capitals adopted by DBS during its journey toward IR.

Design/methodology/approach – This empirical research follows the case study method, using semi-structured interviews with DBS's managers, and analyzing reports and other documentation.

Findings – The authors find that DBS re-conceptualizes, re-categorizes and measures multiple capitals as a form of non-financial value using the balance sheet approach to make visible the interactions and potential tensions (trade-offs) among capitals.

Research limitations/implications – Case studies are best used to understand a specific context, so the findings of this study cannot be generalized statistically. However, the study does provide insights into the banking industry that may be applicable to other organizations.

Practical implications – The categorization and reporting of multiple capitals using the balance sheet approach and the integration of the balanced scorecard are innovative operationalizations of the International <IR> Framework.

Originality/value – This study provides an innovative approach to the categorization and measurement of multiple capitals. It represents a step toward reducing the gap between research and practice on IR.

Keywords Case studies, Categorization, Multiple capitals, Integrated reporting, Business model, Banking industry

Paper type Case study

1. Introduction

The integrated reporting (IR) approach to corporate reporting, with its emphasis on going beyond financial results, has increasingly gained prominence and been widely debated among both scholars and practitioners. This growing interest emphasizes the need to assess best practice models (Eccles *et al.*, 2015), and to highlight the most important issues for this innovative form of reporting. In 2013, the International Integrated Reporting Council (IIRC) issued the International <IR> Framework (IIRC, 2013a, b), but it remains unclear how companies can implement its Guiding Principles and Content Elements operationally (de Villiers *et al.*, 2015) and whether this process can lead to innovative changes in

JEL Classification — M14, M20, M41

corporate reporting. Over recent decades, there have been several attempts to integrate different types of information into reports, with mixed success (Jose and Lee, 2007; Tilt, 2008).

The development of IR is strongly linked to business sustainability (A4S The Prince's Accounting for Sustainability Project, 2013; Churet and Eccles, 2014; Knauer and Serafeim, 2014; Vesty *et al.*, 2015) because it is a way to show how an organization creates and sustains value (IIRC, 2013b; Eccles and Krzus, 2010; Eccles *et al.*, 2014; Adams, C.A., 2015). IR combines economic, social and environmental considerations, addressing factors that arguably led to the recent global financial crisis (ISSD, UNEP FI, The Blended Group, 2012) and addressing the call for greater transparency in corporate reporting. IR is also likely to change management approaches to business strategy and value creation, and provides an effective way to communicate with stakeholders and the community.

To date, most empirical studies on IR have adopted a supra-national/international or national perspective (Ayoola and Olasanmi, 2013; Stubbs and Higgins, 2014), across general, industry or organizational sub-categories (Dumay *et al.*, 2016). Only a few studies have focused on a single organization (Parrot and Tierney, 2012; Busco *et al.*, 2013, Dumay and Xi Dai, 2014; Lodhia, 2015; Vorster and Marais, 2014; Lueg *et al.*, 2016). Some scholars have suggested that a case study approach (de Villiers *et al.*, 2014, 2015) might help to better understand how organizations adapt IR to their needs.

In the banking industry, some critical, sector-specific issues require more attention to be paid to managing non-financial capitals. Traditionally, banks have been more focused on financial and human capital, but increasing challenges, such as digitalization and disintermediation, have increased the importance of other forms (IIRC, 2015a). At present, human, intellectual and social and relational capitals are arguably the most critical forms of capital for banks. Several developments in the banking industry have been combining to create strong incentives for banks to report how they manage these forms of capital:

(1) the introduction of consumer companies intensifies the competitive landscape for banks;

(2) new technology has led the industry to fundamentally revisit its value proposition to address the challenges of digitalization and disintermediation;

(3) reputational damage to the banking industry in the wake of the 2008 financial crisis led to some cases of price/book values being below those of many other sectors[1]; and

(4) awareness that, in a competitive arena, talented human capital may become scarce.

Acknowledging these trends and developments in the banking industry, the IIRC (2015a, 2016) recently issued two documents clarifying the application of the IR concepts of capitals (especially social and relational capital) and outcomes. Most forms of non-financial capitals cannot immediately be captured on a traditional balance sheet. For instance, investments in new technology may provide future financial returns but might also create immediate intellectual and human capital. Banks have to manage several causal (linear and non-linear) relationships and potential trade-offs between the different forms of capital. Against this background, it is perhaps surprising that an industry study by the IIRC Banking Industry Group[2] found that little more than half (55 percent) of banks disclosed information on capital in a structured way, and in line with the International <IR> Framework (IIRC, 2015a). These banks focused on key performance indicators (KPIs) linked to overall outputs and outcomes, but tended to overlook inputs and net contribution. The need for different KPIs to measure capitals was found to result in a range of practices showing different understandings of the six IR capitals. It was also noted that reported KPIs were often poorly defined, making it unclear whether an increase or decrease was beneficial. There was also no information about the connections between performance achieved for each KPI and the bank's business strategy.

Given this backdrop, the main purpose of this research is to assess the use of IR by one of its pioneers: the Development Bank of Singapore (DBS). A case study approach is adopted (Ryan *et al.*, 2002; Yin, 2009), with semi-structured interviews of DBS managers, including the chief financial officer (CFO) and the team that led on IR implementation at DBS. The study also analyzes DBS reports and other documentation. The primary focus is on the innovative categorization and measurement approach adopted by DBS for managing intellectual and the other five capitals, and its disclosure of the value creation process using the International < IR > Framework (IIRC, 2013b). There is scant academic research on the how the IR capitals are operationalized in practice (Solomon and Maroun, 2012; Setia *et al.*, 2015; McElroy and Thomas, 2015; Rambaud and Richard, 2015). The present study addresses this literature gap.

The paper's Section 2 summarizes previous studies on IR, focusing on how IR is used in practice. Section 3 describes the research methodology; Section 4 sets out the case study findings, which are then discussed in Section 5. Finally, Section 6 sets out the conclusions, practical implications and limitations of the study.

2. Literature review

2.1 Relevant literature

The last decade has seen considerable debate about the role of IR in corporate reporting, but further work is needed to analyze the rationale behind its use and the critical issues involved in its effective implementation in different business contexts. This study emerged from an initiative promoted in 2011 through the IIRC Pilot Program Business Network (http://integratedreporting.org/ir-networks/ir-business-network/). This initiative, which ended in September 2014, aimed to develop the principles and concepts of IR by testing them in a select group of companies. It also allowed the pilot companies to interact with reporting experts and investors to discuss important issues about IR adoption. Stakeholders met several times from 2011 to 2014, attending conferences and meetings with IIRC representatives. One of the major benefits for these pilot companies was the feedback on their reports from investment professionals, as the primary audience of IR (International Integrated Reporting Committee (IIRC), 2011).

The academic and professional literature about IR remains at an early stage. The first comprehensive literature study was by Dumay *et al.* (2016), although numerous other papers have also provided an overview (Lodhia, 2015). IR was promoted as a revolutionary model to support disclosure of a mixture of financial and non-financial information and reporting on interdependencies, "to enable a more efficient and productive allocation of capital" (IIRC, 2013b, p. 2). This approach focused on investors, but has been criticized by some scholars for ignoring sustainability stakeholders (Adams, M., 2015; Flower, 2015; Thomson, 2015).

Some recent academic studies have examined the integrated reports drawn up by IIRC Pilot Program participants, mining sample companies from the IIRC website (Melloni, 2015; Lai *et al.*, 2016). However, quantitative analysis does not allow researchers to identify operational issues and subsequent difficulties in IR implementation. In-depth qualitative analysis of a few companies involving management engagement is therefore recommended (Parrot and Tierney, 2012; Solomon and Maroun, 2012; King and Roberts, 2013; Busco *et al.*, 2013; IIA, 2013, Vorster and Marais, 2014; Lodhia, 2015; Eccles *et al.*, 2015; Adams *et al.*, 2016; Lueg *et al.*, 2016; Mio *et al.*, 2016; Beck *et al.*, 2017). A non-exhaustive list of studies analyzing companies using the International < IR > Framework is provided in Table I.

Different perspectives on IR still lack clarity and have considerable heterogeneity, providing opportunities for researchers to investigate idiosyncratic organizational IR practices (Haji and Anifowose, 2016). Existing research highlights that the manner of

Authors	Title	Companies	Notes
Parrot and Tierney (2012)	"Integrated reporting, stakeholder engagement, and balanced investing at American Electric Power"	American Electric Power	AEP's management is focused on maximizing the company's long-term value. The company does not provide a practical guide to its decision-making process
Solomon and Maroun (2012)	"Integrated reporting: the influence of King III on social, ethical and environmental reporting"	Impala Platinum, Group 5, Exxaro, PPC, Sasol, Barloworld, Goldfields, Sappi, Bidvest, Royal Bafokeng Holdings	Analysis of the annual reports of 10 major South African companies listed on the Johannesburg Stock Exchange to evaluate the impact of introducing mandatory integrated reporting on social, environmental and ethical reporting
King and Roberts (2013)	"Integrate: doing business in the 21st century"	Sasol Limited, Gold Fields Limited	Analysis of the process of integrated thinking as an important corporate tool for businesses
Busco *et al.* (2013)	"Integrated reporting. concepts and cases that redefine corporate accountability"	ENEL, ENI, Eskom	Analysis of the integrated reporting model (i.e. business model) adopted by companies operating in different industries
IIA (2013)	"Integrated reporting and the emerging role of internal auditing"	Clorox	External assurance of non-financial indicators. Analysis of the firm's sustainability commitment and performance
Vorster and Mairas (2014)	"Corporate governance, integrated reporting and stakeholder engagement: a case study of Eskom"	Eskom	Qualitative evaluation of Eskom's response to stakeholder expectations and interests on sustainability issues
Knauer and Serafeim (2014)	"Attracting long-term investors through integrated thinking and reporting: a clinical study of a biopharmaceutical company"	Biopharmaceutical company	Examination of the firm's commitment to integrated thinking and the adoption of integrated reporting that serves to attract medium-long term investors
Lodhia (2015)	"Exploring the transition to integrated reporting through a practice lens: an Australian customer owned bank perspective"	Goodbank (customer-owned mutual bank)	Analysis of the drivers of the transition to integrated reporting for a customer-owned bank
Eccles *et al.* (2015)	"Models of best practice in integrated reporting 2015"	25 multinational companies that participated in the IIRC Pilot Program Business Network	Analysis of IR practices in several companies identifying three criteria: strategic focus; connectivity of information; and materiality
Adams *et al.* (2016)	"Exploring the implications of integrated reporting for social investment (disclosures)"	GlaxoSmithKline, Heineken, National Australian Bank, Unilever	Analysis of the association between purpose/outcomes of social investments and long-term issues such as progress, risk and strategy
Lueg *et al.* (2016)	"Integrated reporting with CSR practices: a pragmatic constructivist case study in a Danish cultural setting"	EGE (Danish carpet manufacturer)	Analysis of how guidelines and standards on corporate social responsibility (CSR) reporting can help companies to adopt IR
Mio *et al.* (2016)	"Internal application of IR principles: Generali's internal integrated reporting"	Generali Group	Analysis of the Generali Group's internal IR practices. By merging management control systems and IR literature, the study shows several

(*continued*)

Table I.
Overview of case studies on the International <IR> Framework

Authors	Title	Companies	Notes
			mechanisms for developing management control systems
Beck *et al.* (2017)	"In pursuit of a 'Single Source of Truth': from threatened legitimacy to integrated reporting"	A large Australian corporation in the financial service sector	Analysis of the company's journey toward adopting IR through a legitimation lens. Internal reflections are linked to external good reporting practices supported by guidelines such as the framework issued by Global Reporting Initiative (GRI) or the International < IR > Framework

Table I.

implementing IR in an organization determines whether it achieves its intended purpose. For instance, in Lueg *et al.* (2016), using CSR in integrated reports did not result in the effective disclosure of the firm's value and possibilities, whereas Adams *et al.* (2016) found that adopting IR resulted in an effective shift in organizations' reconsideration of social investment practices, which became linked to strategy. Haji and Hossain (2016) provided empirical evidence from South African integrated reporters. They show that the adoption of IR, particularly the multiple capitals framework, did not positively influence the substance of organizational reporting practices. As organizational idiosyncrasies underpin the effectiveness of IR practices, more research is needed to understand how IR can be effectively implemented. The dearth of studies on this topic leaves a gap between academic research and practice, which has also been linked to the poor engagement of practitioners (Churet and Eccles, 2014) and researchers with practical aspects of IR (Dumay *et al.*, 2016).

2.2 The multiple capitals model

The main basis of the IR agenda is a shift[3] "from 'a financial capital market system' to an 'inclusive capital market system' (IIRC, 2015b) through recognition of multiple forms of capital and integrated reporting and thinking" (Coulson *et al.*, 2015, p. 290). Traditional financial reporting discloses capital in the balance sheet, as one of the three fundamental financial statements. This report shows the company's total assets and how these are financed through either equity or debt[4]. The balance sheet approach can also be applied to the other six forms of capital defined by IR, namely, all:

> Stocks of value on which all organizations depend for their success as inputs to their business model, and which are increased, decreased or transformed through the organization's business activities and outputs. In this framework, the capitals are categorized, such as 1) financial, 2) manufactured, 3) intellectual, 4) human, 5) social and relationship, and 6) natural. (IIRC, 2013b, p. 33)

The multiple capitals categorization is not new. The first identification of five forms of capital (natural, social, human, manufactured and financial) was in the SIGMA Guidelines (The SIGMA Project, 2003), introduced to overcome some of the weaknesses of the triple bottom line concept. Another initiative, named Forum for the Future (2009), also suggested five types of capital (natural, human, social, manufactured and financial) as a framework for sustainability; it proposed a different conceptual relationship between capitals. The IIRC model of six capitals highlighted the need for human and social/relational capital to be categorized as distinct from intellectual capital (IC), advocating a radical change from the literature's definition of IC (Adams *et al.*, 2013). The IIRC's "Capitals Background Paper for < IR > " proposed multiple ways to value capital, and provided examples of metrics used by the IIRC pilot companies. It recommended that companies develop a metric database to measure the relationship between forms of capital. The concept of capital is strongly associated with the business model, where it is represented as "inputs" expected to be converted, through the company's business activities and outputs (products, services, by-products and waste), into outcomes, namely, the effects of capital. IR aims to demonstrate how multiple capitals are used by companies in their value creation processes and the activities that may determine preservation or diminution of these capitals (Blacksun, 2012; IIRC, 2013b). They also emphasize the company's broader effects on society and the community.

The IIRC's multiple capitals framework, with its six forms of capital, is an innovation in corporate financial and non-financial reporting. The IIRC suggests a revised view of the concept of IC, restricting it to only one of its traditional components (i.e. structural/organizational capital) to emphasize the role exerted by the other two components, i.e. human and social/relational capital. Human and social capital have been research topics since the 1960s (Putnam, 1995; Coleman, 1988; Nahapiet and Ghoshal, 1998; Lepak and Snell, 1999, 2002; OECD Organization for Economic co-operation and Development, 2001; Stiles and Kulvisaechana, 2003; Offstein *et al.*, 2005; Dumay and Garanina, 2013), while the research on natural capital began in the late 1980s. Natural capital has been defined as any stock of natural resources and environmental assets that provides a flow of useful goods and services in the short- and medium-to-long term (Costanza and Daly, 1992; Holland, 1994; Ekins *et al.*, 2003; De Groot *et al.*, 2003; Brand, 2009; OECDOrganization for Economic co-operation and Development, 2016).

The IIRC emphasizes the difficulties of recognizing and valuing several forms of capital in financial statements, except financial and manufactured capital. Financial frameworks use different recognition and measurement criteria (e.g. historical cost, fair value, amortized cost, realizable value and present value), but the presence of other capitals in financial statements increases the difficulty of measurement, especially if they involve intangibles or externalities with a financial impact on the organization, such as carbon taxes or emissions trading schemes (IIRC, 2013a). Social/relational, human and natural capitals are often disclosed in a stand-alone sustainability report, whose aim is to disclose the economic, environmental and social impacts caused by the company's everyday activities. It also presents the organization's values and governance model, and demonstrates the link between its strategy and its commitment to a sustainable global economy (Global Reporting Initiative, 2014).

The IIRC (2015c) conducted a survey of the pilot companies' capital reporting practices. It found the disclosures of the six capitals to be at a mature stage, but identified a lack of information about the interrelationships between the capitals or their components, which may affect value creation over time (Adams *et al.*, 2013). It was also found that these interdependencies and trade-offs tended to be generic, rather than company-specific (IIRC, 2015a).

Although the application of IR guidelines is growing, some empirical studies have highlighted issues with the reporting of some forms of capital. For instance, Wild and van Staden (2013) found that most companies worldwide included in the IIRC Pilot Program only disclosed information on four forms of capital (financial, human, natural and social). Similar results were obtained in a study by the IRC (2015), which found very limited disclosure of multiple capitals. The majority of the South African companies focused only on financial capital, without any reference to the other forms. Another empirical study (Setia *et al.*, 2015) found growing disclosure of four forms of capital (human, social/relational, natural and intellectual) in the top 25 South African companies after the introduction of mandatory IR.

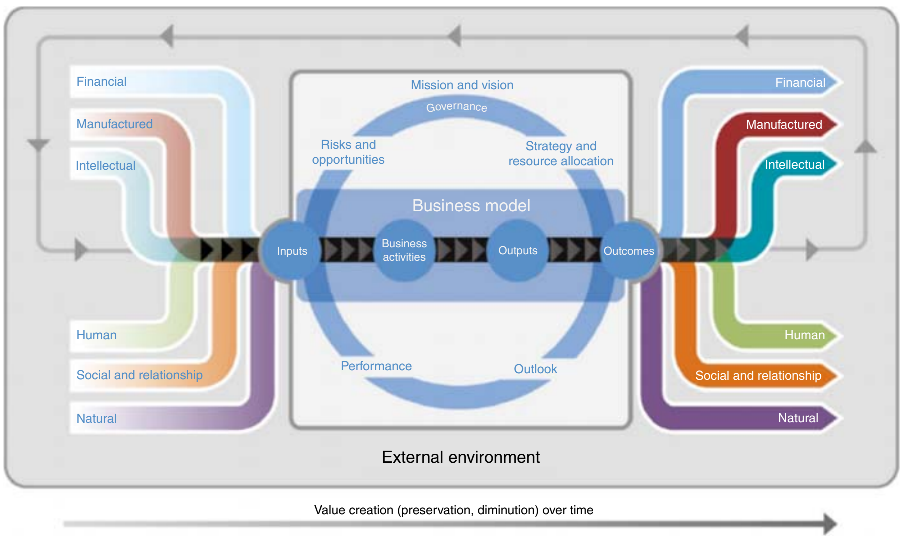
2.3 Frameworks for reporting on capitals

The six capitals can be addressed within more complex frameworks able to aggregate capitals at the organizational or inter-organizational levels and provide standardized definitions of the various capital types, with a set of indicators and methods of measurement. In this regard, Adams, M. (2015) described the following three frameworks: the intangible (IC) framework, the sustainability framework and the integrated framework. Since the 1990s in particular, the need to identify and measure the gap between companies' book and market value has fostered the intellectual (or intangible) capital movement. The three different types of capital (e.g. structural capital, relational capital and human capital) that form IC have been widely studied by scholars and consultants, signaling the growing importance of intangibles and knowledge in different business areas, such as accounting, knowledge management, innovation and strategy. The IC movement has been associated with a shift from the "capitalism era," and the associated traditional financial model, to the "knowledge era," focused on alternative accounting measures (Guthrie *et al.*, 2012; Dumay, 2009, 2016). In the post-industrial period, organizations' sustainability performance has also been a growing area of interest for academics, practitioners and investors (Larrinaga, 2007). Multiple stakeholder groups, including investors, media and the wider community, increasingly expect organizations to report their sustainability performance with respect to environmental, social and governance factors (Cohen *et al.*, 2011; Eccles and Serafeim, 2013). These two movements, which are developing and changing along distinct but parallel paths, are together pushing companies to enhance corporate reporting and adopt integrated frameworks connecting intangibles and sustainability.

Figure 1 shows the forms of capital included in most frameworks. Progress on independently reporting IC and sustainability may be realized without showing the interactions between capitals, but it is also possible to use an integrated framework to link and harmonize these two concepts. The three components of IC and the triple bottom line of sustainability both incorporate human and social/relational capital.

The integrated frameworks propose a categorization of capitals that takes a holistic approach to measuring and managing the value creation processes (Adams, M., 2015) (Figure 2).

The International <IR> Framework is the first attempt to identify, evaluate and disclose intangible and sustainability issues alongside tangible and financial resources. However, it does not fully clarify the relationships between intangible and sustainable resources and more traditional financial measures, such as profits, revenues and valuation



Source: IIRC (2013b, p. 13)

Figure 1.
IR value creation process diagram

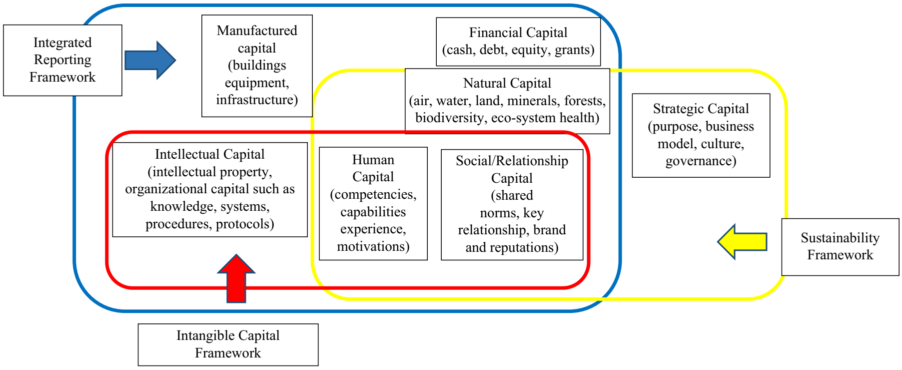


Figure 2.
Theoretical model

Source: Adapted from Adams, M. (2015, p. 87)

(Adams, M., 2015). The key foundation of this approach is to frame capitals in a strategic context, as required by investors (Adams *et al.*, 2013). Many investors would like quantitative disclosures on capitals to be supplemented by qualitative information, both to explain their material relevance to the company's valuation and to show the company's strategy and action plan for improving performance over time (Adams *et al.*, 2013).

3. Research design and methodology

This research adopts a case study approach. Case studies (Ryan *et al.*, 2002; Stake, 1995; Yin, 2009) allow researchers to build theories and generalizations by studying practical scenarios (Yin, 1981; Bourgeois and Eisenhardt, 1988; Eisenhardt, 1989). This method supports understanding of a specific context with a focus on analytical, rather than statistical, generalizations. The first step in this methodological approach is to identify the focus (Eisenhardt, 1989). This study focuses on developing models for categorizing and measuring multiple capitals within banks adopting IR. For any qualitative analysis, the research question should be broadly designed to give interesting answers to "why" and "how" questions. Therefore, this research was designed to examine why, despite increasing interest in the International < IR > Framework in the banking industry, a company might decide not to adopt the framework's proposed categorization and measurement of capitals. Moreover, given that the top management team implements organizational change, this study's qualitative analysis also focuses on the adoption of specific management accounting tools, such as the balanced scorecard.

DBS was selected as the case company because, in 2015, it was the only banking industry pilot company to have launched an innovative approach to managing and reporting multiple capitals. From a methodological standpoint, it might, therefore, represent a "critical case" (Yin, 2003) to verify this qualitative study's research question. In other words, it could be considered a holistic single case study (Yin, 2003) allowing analysis of a unique situation (Baxter and Jack, 2008). Despite its own innovations, DBS was actively involved in the IIRC Pilot Program, and therefore manifested a clear commitment to using IR. It remains an active member of IR networks. Data were collected from January to July 2016, and focused on the fiscal year 2015, when DBS first adopted the IR approach of categorizing and measuring multiple capitals. Several data sources were used, including external documents, internal documents and interviews (see Table II).

Interviews were conducted with key contributors to DBS's IR project. Each interview took between 1 and 2 h, and involved at least two researchers. They were semi-structured, giving freedom to interviewees to go over the list of questions and give their views about the topics (Bryman and Bell, 2003). The list of questions covered interviewees' career experience; their personal and the overall perception within the firm of the IR project; key stakeholders and the competitive context; the strengths and weaknesses of the International < IR > Framework; corporate reporting procedures; the system used for internal and external assurance of information; the company's ability to improve corporate reporting; and future challenges. The outputs of each interview were recorded and filed to enable sharing of information among the research team.

Yin (2003) suggested that qualitative studies should outline relationships between questions, the data collected and conclusions. The researchers performed ongoing triangulation of data sources to check the reliability of findings. Since one of the authors was an employee of DBS and was actively involved in the company's IR project, this methodological step was crucial for avoiding bias. Matching data collected from key people in the IR team with that obtained from internal and external data sources provided reasonable objectivity and different points of view.

4. DBS and capital management

4.1 Background: DBS and the banking industry

In the wake of the financial crisis, banks came under scrutiny for being exclusively profit-driven and not providing any wider benefits to society. The banking industry is also under intense pressure to increase earnings, adopt new financial technologies and compete with new market entrants. This has given banks a natural desire to better articulate their sustainability and value to stakeholders. An increasing number of banks have started to use the International < IR > Framework as part of their strategy, aiming to articulate the value of their transformed banking platform[5].

DBS was founded in 1968 (DBS Newsroom, 2003) to help build Singapore's industries and financial services sector (Hamilton-Hart, 2002). Today, DBS is a leading financial services group in Asia, with over 280 branches across 18 markets. It is headquartered and listed in Singapore, and has been growing its presence in three key areas: Greater China, Southeast Asia and South Asia. Its corporate strategy is predicated on Asia's megatrends, including the rising middle class, growing intra-regional trade, urbanization and the rapid adoption of technology to fuel new innovations. DBS operates across several business areas, including corporate and investment banking, small and medium enterprises banking, capital markets, wealth management and personal banking. In 2015, DBS had an operating income of around US$7.6bn (SGD10.80bn)[6], with total assets of US$325bn (SGD458bn).

4.2 DBS's journey to integrated thinking and reporting

In 2012, DBS became the first listed company in Southeast Asia to adopt IR as a basis for its annual report[7]. Its decision to adopt IR was based on the desire to better articulate the long-term sustainable value created for its stakeholders. DBS was becoming an international bank,

External documents	Annual report
	Integrated report
	Management letter
Internal documents	Strategic maps
	Balanced scorecards
	KPIs dashboard
	Slides presented during internal meetings
Interviews	CFO (referred to as "M1")
	Managing Director and Head of Group Tax and Accounting Policy (referred to as "M2")
	Team responsible for IR project

Table II. Data source categories

and top management felt a growing need to be able to compare the group with international, rather than local, peers. The company's CFO ("M1") and Managing Director and Head of Group Tax and Accounting Policy ("M2") felt that the annual report's existing format did not provide the tools to effectively articulate this new value; it also did not fully reflect the firm's integrated thinking or its relevance to various stakeholders. As M1 explained:

> While the financial numbers go some way in explaining DBS's success, we also accept the limitations of the accounting framework, in terms of capturing in the short term the value we generate through our franchise. For example, traditional reporting does not capture the way we do business, the value of our brand and franchise, our strong employee engagement, our relationship with clients, and how we serve the broader community.

At this stage, IR was still very new in Asia, but DBS's managers felt it was worth attempting to use IR as a more effective communication tool. As M2 explained:

> We truly felt that we operated in a way that was integrated across our different business and support units and that this was a unique differentiator. We just never called it "Integrated Thinking". The concepts in the IIRC Framework were therefore intuitive to us. To us "integrated thinking" – the alignment of values, priorities, and objectives throughout the organization towards the execution of a common strategy – is critical to the value creation.
>
> We wanted to explain how DBS's unique approach to strategy, governance, performance measurement, and use of resources creates sustainable value. As a regional bank, DBS faces the same macroeconomic factors as our peers. We broadly have access to similar resources. How we differentiate ourselves and create value is in the choices we made, in terms of the business areas we choose to operate in, the resources we choose to develop and deploy, and the values with evidence of how we do business. Execution of a consistent strategy is critical.

M1 added:

> We joined the [IIRC's] Pilot Programme because the concept of integrated reporting fits well with how we drive our strategic thinking. Integrated reporting enables us to better communicate how we are executing against strategy and creating value for our key stakeholder groups. The 2012 Annual Report marks the start of this journey, which we are committed to continuing.

M2 became the champion for IR initiatives in DBS and has subsequently led this journey. DBS's internal management system focuses on strategies and priorities revolving around its balanced scorecard, which outlines the KPIs used to measure firm success in creating value. It was, therefore, decided that the balanced scorecard would become the pivotal point of DBS's IR, and it remains so today. The scorecard drives incentives and remuneration across the organization (Table III).

DBS's approach to IR is shown in Figure 3[8].

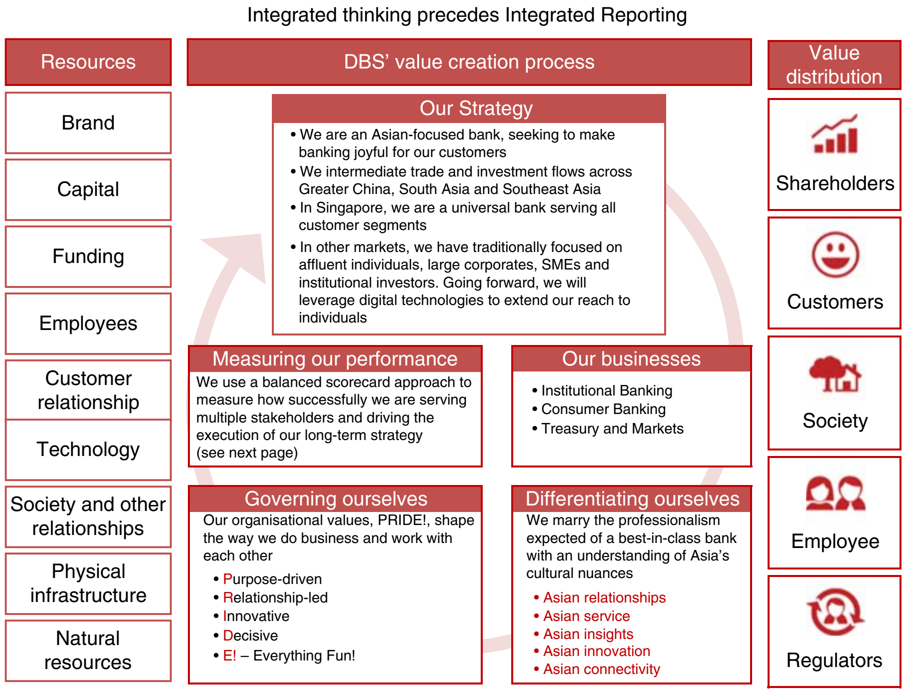
4.3 DBS's approach to managing and reporting capital

In 2015, DBS increased its focus on "Making Banking Joyful," involving further growth in its innovation and use of financial technology, and the development of an entrepreneurial

Table III. DBS' balanced scorecard

Our Balanced Scorecard is based on our strategy and is cascaded throughout the organization	To create value for multiple stakeholders, the scorecard is divided into two parts of equal weighting. The first part of the scorecard comprises KPIs and strategic objectives set for the current year. The second part of the scorecard sets out the initiatives we intend to complete in the current year as part of our long-term journey toward achieving our strategic objectives

Source: DBS Annual Report 2015



Source: Diagram developed from DBS Annual Report 2015

Figure 3. DBS' integrated thinking and reporting

mindset amongst its employees, together with awareness that the firm's core values were changing. Creating a technology-enabled and innovative bank was a viable and successful route for survival, and this strategy distinguished DBS from its competitors.

Multiple initiatives were endorsed[9], but the value generated thereby was clearly not directly captured in the annual report. Therefore, M2 considered how this value could be better articulated using the International < IR > Framework and decided to opt for a better articulation of DBS's philosophy in managing its various forms of capital, which DBS termed "resources"[10]. M2 explained his feelings, thus:

> […] how the management capitals had been reflected by most companies did not reflect DBS's approach to its management of capital and thus a new approach was needed to reflect two key principles:
>
> (1) the capitals were a store of value that would eventually, at least in part, be converted into profit, and increase equity; and
>
> (2) the capitals had an intrinsic value beyond any future financial value they might help to create.

The first principle was important because it explained DBS's financial value to anyone considering investing. M2 stated that DBS was building significant intangible assets that were not captured in a traditional balance sheet. In addition, such assets required a different approach in terms of classification and measurement. The second principle was more conceptual and harder to articulate. In essence, by creating an innovative bank with a future-ready workforce, and by fulfilling its vision of "Making Banking Joyful," intrinsic value could be created directly for DBS's stakeholders, including employees, customers and society. There were only a few possible options to measure or even articulate this intrinsic value:

(1) capturing the financial value of capitals – a more traditional accounting way to measure the present value of future profit from the capitals, which would conceptually form part of value creation;

(2) articulating the "value distribution" (explained in DBS's annual report since 2013[11]), taking into account the distribution of its financial capital; and

(3) using relevant KPIs to show how DBS was tracking the intrinsic value it created.

M2 was clear that the choice would be determined by a consideration between data availability and accuracy and the desire to be precise and unbiased in articulating value. Though DBS recognized desirable features of financial measure of intangible capital and the good work of their peers in this regard[12], this approach was deemed inconsistent with DBS's existing internal management of resources. There were also insufficient data to measure the financial value of intangibles.

The concept of a store of value led M2 to the balance sheet approach, since changes in the value of DBS's material capitals are captured annually in the same way on a conventional balance sheet. This aspect has been addressed at the beginning of DBS's balance sheet by disclosing the overall alignment between financial asset values reported in the traditional financial documents and the matching values disclosed in the business model. Specifically, DBS "classifies and measures financial assets based on their nature and the purpose for which they are acquired. This generally corresponds to the business models in which they are applied and how management monitors performance" (DBS, 2015, p. 122). Instead of – or as a proxy for – the financial value of intangible capitals, DBS reports the most important KPIs used for managing each intangible capital. The balance sheet also shows the key initiatives undertaken by DBS to deplete or grow its capitals (see Figure 4 for an extract from the 2015 Annual Report)[13], and, compared with the International <IR> Framework, highlights the value stemming from the interconnectivity among them.

4.4 DBS's further work with capitals

DBS's balance sheet approach was well received by various stakeholders. M2 described it as a basis on which to build and enhance reporting on capitals: by providing insight into both current and future periods, the balance sheet was able to better depict DBS's initiatives for increasing or utilizing resources. However, this aspect of the balance sheet can take considerable time to fully develop. M2 described the following five components that would need addressing in the future:

(1) Data enhancement: more work is needed to show both correlations and causality between investment in capital and the financial results. This is a challenging area, given the interconnectivity of capital types, time lags and the lack of data. It is not clear whether such causal relationships can ever be established with a reasonable level of confidence.

(2) Organization of a broader value concept: thanks to its balance sheet approach, DBS has tackled the first of M2's two key principles. More work is needed to explain how value is created for stakeholders. The improvement of value distribution reporting might refine the depiction of value created. For instance, giving a better customer experience, easing access to banking for more people, or creating a strong workforce may ensure that DBS generates value to society and also enhances its own social and relational capital[14].

How we use our resources

A sustainable business model requires us to manage our resources in a way that maximises value creation in the long term

We have various resources[1] available that we can use to create value for stakeholders. We seek to strike a balance between using them in the current period on the one hand, and enhancing and retaining them for future periods on the other

We recognise the difficulty in measuring the exact value of many of these resources. Hence, we provide proxies of the values at discrete points and explain the initiatives undertaken during the year that enhanced of made use of the resources

Resources		2014[2]	How we manage our resources	2015[2]
Brand Our well-recognised name that embodies our values and differentiates us	Brand value[1]	USD 4.2 bn	Our brand value in 2015 reached a record high of USD 4.4 billion. The increase was driven by impactful branding and marketing activities, improvements in customer satisfaction, strong business results and positive analysis' outlook	USD 4.4 bn
Capital Our strong capital base	Shareholders' funds	SGD 38 bn	Another year of record earnings created distributable financial value of SGD G.03 bilion. We retained SGD 3.03 bilion and in doing so strengthened our financial soundness, resulting in an increase in our Based II fully phased-in CET1 CAR from 11.9% to 12.4%	SGD 40 bn
	Basel III fully phased-in Common Equity Tier 1 Capital Adequacy Ratio (CET1 CAR)	11.9%	Refer to "Capital management and planning" on page 109	12.4%
Funding Our diversified funding base	Customer deposits	SGD 317 bn	The Group's funding strategy is anchored on strengthening our core deposit franchise. Despite intense competition, we grew our customer deposits and achieved a significant improvement in the quality of deposit mix	SGD 320 bn
	Wholesale funding	SGD 32 bn	DBS became the inaugural issuer of covered bonds in Singapore in 2015. This enabled us to raise cost-efficient term funding from a new dass of institutional investors Refer to "Liquidity management and funding strategy" on page 96	SGD 38 bn
Employees The skills, knowledge, engagement and effectiveness of our people	Number of employees	>21.000	We grew our workforce by approximately 1,000, primarily in Institutional Banking (IBG) and Consumer Banking (CBG), to support strategic initiatives and meet business needs	>22,000
	Employee engagement score[1]	4.36	We enhanced our human resources through training and development initiatives, which included establishing the DBS Academy and cultivating a digital mindest in our people. 129,000 training days were delivered. Our internal mobility programme also broadens employee skills and exposure	4.39
	Voluntary attrition rate	13.6%	Refer to "Employees" on page 40	13.2%

Note: This figure sets out the use of DBS's resources by comparing the value for the current year (2015) and previous year (2014), using the Balance Sheet approach
Source: DBS (2015) Annual Report

Figure 4. The use of DBS' resources

(3) Use of "free" capital: the balance sheet approach is conceptually based on the idea of a finite and costly asset pool that can be depleted or grown. However, this is not true for strategic or natural capital (Adams and Oleksak, 2010). It is not possible to take stock of the natural capital (e.g. water and infrastructure) at distinct balance sheet dates. DBS's consumption of these kinds of capital and the risks to future availability may provide relevant information. Therefore, the reporting of these capitals needs to be addressed, inside or outside, the scope of the sustainability report.

(4) Unbiased reporting: it remains important for reporting on capitals and IR itself to be unbiased. There is a natural tendency (which may be conscious or unconscious) to disclose initiatives that aim to enhance capital rather than thinking about its depletion. Concepts such as amortization may not be sufficient to capture the depletion of some capitals.

(5) Interaction between capitals and stakeholders: stakeholders are the most important contributors of capital, and DBS's interaction with them is both complex and critical. For instance, employees are both pivotal generators of capital and stakeholders to whom value is distributed. Relevant trade-offs could emerge in terms of value distribution, because employees also act as investors. How companies manage these trade-offs might significantly affect future corporate value. Such information could be crucial for readers of IR (Eccles and Youmans, 2016).

These elements are relevant to any company preparing an integrated report.

5. Discussion

The case study analysis of the managing and reporting of six forms of capital yields several implications for understanding banks' IR adoption. It also provides suggestions for innovative practices that might lead to significant improvements for both managers and other users. The processes implemented by DBS to measure and manage capitals (resources) have both theoretical and practical implications. The basis of this approach is to frame capitals in a strategic context, as required by investors (Adams *et al.*, 2013). Since traditional reporting tools cannot capture a business's full value creation, comprehensive disclosure of the six capitals is needed. Traditional corporate reporting overlooks an organization's intangible competencies, systems, processes, data, networks, relationships and external impact on society and the physical environment (Adams, M., 2015). This is not because data on intangibles or sustainability issues are unavailable, rather these aspects are inadequately measured and disclosed through traditional indicators. Companies must consider how to organize and combine the different types of measures (financial, quantitative and qualitative) with the aim to satisfy investors' multifaceted needs for information on capitals, corporate strategy and action plan and improve performance over time (Adams *et al.*, 2013).

To satisfy investors' multifaceted demands for information on capitals, companies must consider how to organize and combine the different types of measures (financial, quantitative and qualitative).

The approach used by DBS elucidates the main operational issues affecting the categorization and measurement of multiple capitals in the banking industry. DBS identified and distinguished a wider range of nine types of resources: brand, capital, funding, employees, customer relationship, technology, society and other relationships, physical infrastructure and natural resources. As a member of the banking industry, the transformation of financial capital requires disclosures about its two main activities, i.e. institutional banking and consumer banking businesses offering a large range of banking products and services. In DBS's business model, financial capital has been categorized into two forms of resource: capital and funding. The first is measured by shareholders' funds and by the Common Equity Tier 1 Capital Adequacy Ratio (CET1 CAR). In this case, there is a cross-reference to another part of the annual report, i.e. capital management and planning (see DBS, 2015 Annual Report, p. 109) that shows only financial data about capital requirements stipulated by the Basel Committee. The second form of financial capital is measured by customer deposits and wholesale funding. Similarly, there is a cross-reference to a specific part of the annual report, i.e. liquidity management and funding strategy. DBS usually provides KPIs for "outputs and outcomes" only, rather than for "inputs" (resource use) or net contribution, as confirmed by the IIRC's (2015a) Banking Network survey. DBS's IR is not limited to disclosing financial capital: it also addresses the IIRC's main recommendation to disclose the interaction between financial capital and other capitals. In doing this, DBS also re-conceptualizes capitals as a form of non-financial value, and explicitly reveals the interactions and potential tensions (trade-offs) among them. Such reporting of multiple capitals is, however, in line with the IIRC's (2015a) recommendations.

Since the quality and interconnections of capitals can differ among banks, the IIRC suggested that trade-offs, net contributions, balancing and disclosure are key issues to be shared with stakeholders.

The qualitative analysis of DBS's approach to reporting capitals highlights the following operational issues and practical tools:

(1) Use of terminology: DBS decided not to use the IIRC terminology of six capitals and to even avoid using the word "capitals." The International <IR> Framework does not require the use of this specific terminology, which is intended "to serve: as part of the theoretical underpinning for the concept of value creation; and as a guideline for ensuring organizations consider all the forms of capital they use or affect" (, p. 12). Though DBS uses the term "resources" instead of "capitals," it still discusses the full range of capitals (resources) within a single report. For instance, the DBS (2015) Annual Report (p. 17) notes that "Resources are referred to as 'Capitals' in the International <IR> Framework. We have classified our resources differently from the framework to better reflect how we manage our resources."

(2) Connectivity between capitals: the IIRC (2013a) suggested the importance of being careful about connectivity between capitals, referring to "interdependencies and trade-offs between the capitals, and how changes in their availability, quality and affordability affect the ability of the organization to create value" (p. 17). All transformations of capitals may involve some form(s) of trade-off. Few organizations fully and thoughtfully disclose the influence of trade-offs on the value creation process or the trade-offs between capitals and components of capitals (e.g. reporting on creating employment vs negative effects on the environment). DBS prioritizes measuring and managing various resources through indicators, rather than disclosing the interconnections and trade-offs between resources (see DBS, 2015 Annual Report, p. 23).

(3) Link between capitals and performance measures and strategy: DBS has developed a balanced scorecard to align resources, KPIs and strategy. This has two parts. The first focuses on three KPIs: shareholders, customers and employees, and strategic objectives for the year. The second sets out the initiatives DBS intends to complete that year as part of its long-term journey to achieving strategic objectives (see DBS, 2015 Annual Report, p. 27). This confirms the importance of management accounting information and the crucial role of the connection between internal and external reporting systems (Gibassier and Schaltegger, 2015; McElroy and Thomas, 2015; Mio *et al.*, 2016) in improving the disclosure of multiple capitals.

(4) Impact of triple bottom line on multiple capitals: there are several different initiatives that promote a multiple capitals framework, including The SIGMA Project's (2003) framework of five sustainable capitals and work by Forum for the Future (2009). The International <IR> Framework draws on these two approaches, adding IC and amplifying the concept of social and relational capital. The concept of sustainability is also associated with the multiple capitals. The different degrees of sustainable development can be measured by the organization's effect on the overall stock of man-made and natural capital (Coulson *et al.*, 2015). This approach emphasizes the concept of complementarity, but not necessarily interchangeability, of capitals (De Groot *et al.*, 2003; Ekins *et al.*, 2003; Figge, 2005; Brand, 2009). DBS discloses its commitment to sustainability in different parts of its annual report. In 2015, it developed the DBS Sustainable Sourcing Principles, which outline DBS's values and expectations in four key areas: human rights, health and safety, environmental sustainability, and business integrity and ethics (see DBS, 2015

Annual Report, p. 47). DBS also follows the GRI G4 Guidelines (see DBS, 2015 Annual Report, p. 196).

(5) Multi-capital scorecards: multiple capitals may be described using different practical tools, such as worksheets and scorecards/snapshots, to create a customized value creation model and gather data on all capitals (Adams, M., 2015; McElroy and Thomas, 2015). DBS has developed different KPIs for different capitals, such as the Employment Engagement Score (human capital) and the Customer Engagement Score (social and relational capital).

(6) Value-added statement: reporting on resources requires a description of their use, measurement of the value created, and discussion of the process of distributing value to shareholders and stakeholders, distinguishing financial from non-financial value (see DBS, 2015 Annual Report, p. 18). According to Haller *et al.* (2018), the concept of value added and its representation through the value-added statement could be an important IR tool. Value added is a broader performance concept, and represents a company's wealth creation through business activities and the value distributed to major stakeholders. It, therefore, covers most of the six capitals, and managers are expected to consider them as part of the corporate strategy and decision-making process, alongside the International <IR> Framework.

6. Conclusion

This empirical study seeks to answer the call for more in-depth insights into the firm-level implementation of the International <IR> Framework (Kolk, 2010; de Villiers *et al.*, 2015). The case study reported in this paper investigated the reporting of multiple capitals in a multinational bank adopting IR. The banking industry was chosen due to recent challenges that have made it necessary to re-examine "the scale, scope, governance, performance and the safety and soundness of financial institutions" (Wilson *et al.*, 2010, p. 154). Over recent decades, phenomena such as deregulation, technological development and globalization have dramatically altered banks' competitive environment (Chen *et al.*, 2014). Enhanced competition has forced banks to explore resources that could generate competitive success. Banking industry players provide similar financial intermediation and payment services. Bank's product portfolio is relatively easy to copy and lack adequate patent protection (Watkins, 2000). Therefore, different forms of capital, such as intangible and natural capital, tend to be fundamental to creating competitive advantage (Holland, 2010). There was also an active call for clear use of a model for categorizing capital forms in the policy speech by Andy Haldane (2015), the Bank of England's Chief Economist and Executive Director for Monetary Analysis and Statistics.

One of the most crucial evidences is the identification and appraisal of non-traditional forms of capital, particularly non-financial, used in banks and financial institutions. Assessment of capitals in banks is a complex process influenced by many regulations and practices. IR, as an innovative form of corporate reporting, offers organizations an opportunity to reflect on their non-traditional forms of capital. The model of capitals in the International <IR> Framework provides a benchmark for companies in considering performance with respect to all forms of capitals they use and affect. The six capitals framework theoretically underpins explaining the concept of value in terms of increases and decreases in capitals (Adams *et al.*, 2013). Companies create value for themselves and for stakeholders, and this value depends on both the stock of the six capitals and on the interrelations among them.

In DBS, reporting on financial and manufactured capitals is mainly quantitative, and is recognized in financial statements. Qualitative reporting on financial and manufactured capitals has also increased over time, with additional disclosures and the introduction of a management commentary. Information on the other capitals, particularly intellectual and social/relational, can mainly be found in other reports, rather than in financial statements.

The analysis presented in this paper highlights several operational issues affecting the implementation of the IIRC's Guiding Principles and Content Elements. Based on observations of DBS, the categorization and measurement of resources through the balance sheet approach and the integration of the balanced scorecard into IR are found to provide better insights into corporate value creation.

Some recommended elements of the International <IR> Framework did not fully reflect DBS's organizational context, and so the management had to find innovative approaches to ensure DBS's corporate reports fully described the value creation process.

Notably, DBS's approach to financial risk disclosure and, more generally, to financial risk management do not seem to align with DBS's two key principles: the appreciation that capitals are stores of value that will generate future profits, and the appreciation that capitals have intrinsic value. Admittedly, much of DBS's IR[15] has been focused on financial risk management, given the importance of preserving financial capital and strengthening the resilience of banking business activities. In this regard, DBS notes that "a challenge remains for the banking and other industries to effectively link disclosures around strategy, risk and financial results" (see DBS, 2015 Annual Report, pp. 57–58).

This case study demonstrates an interesting adoption of managerial tools, such as the Balanced Scorecard, and some KPIs focused on measuring the firm's success in creating value. This represents a potentially effective way to embed IR into business practices through an integrated performance measurement system, aligned with internal organizational structures (Lodhia, 2015).

6.1 Implications

With reference to managerial implications, this study's findings provide incentives for managers in the banking industry to develop other innovative approaches to measure increases and/or decreases in different capitals.

DBS's attempts to incorporate sustainability within the multiple capitals model highlight the need for international organizations to identify better ways of disclosing sustainability with the multiple capitals model. Policy makers and the IIRC may find DBS's approach useful when refining the International <IR> Framework, especially on reporting the impacts of multiple capitals and integrated thinking on organizational practices. A more general managerial implication is the need to develop a new comprehensive model for reporting not only the value of a company's own capitals but also the trade-offs between them and those capitals not owned by the organization.

6.2 Limitations and future research

This empirical analysis explored an innovative way of managing and reporting on multiple capitals in a large bank, and provides useful insights for academics, managers, and practitioners. It does, however, have some limitations. First, we used data from just one company, although it can be considered a holistic single case study (Yin, 2003) with a unique approach to the framing of capitals. Second, the investigated company may be unrepresentative of the banking industry, as DBS is a leading, large financial services group in Asia. Third, the findings may have been influenced by the fact that one of the authors was a DBS employee. However, as outsiders, the other authors provided a more objective view (Lueg *et al.*, 2016).

Further research may overcome these limitations. In particular, a multiple case-study analysis might compare different framings of capitals in various reporting practices

(Ansari *et al.*, 2010; Carroll and Shabana, 2010). It could also be interesting to investigate the extent to which IR might drive change in the management and reporting model of multiple capitals in different settings where IR is mandatory (e.g. South Africa) or voluntary (e.g. Europe or the USA). Future studies should accurately assess how business models can help companies to report on multiple capitals, and how the IR model could improve the evaluation of particular issues and enhance the framing of capitals within organizational value creation. Finally, given the scarce assessment of financial resources and their related risks in corporate reporting, a further development of this research might focus either on the crucial role of financial capital and risk management or on their interactions with other capitals.

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Notes

1. http://csimarket.com/Industry/Industry_Data.php
2. Applying the integrated reporting concept of "capitals" in the banking industry – http://integratedreporting.org/wp-content/uploads/2015/08/IR-Banking-Network-Publication.pdf
3. There are other shifts: from short termism to sustainable capital markets with incentives that stimulate long-term decision making, and from "silo" reporting to a more integrated approach.
4. Myer (1946, p. 8) noted that: "During the past quarter of a century the approach used in the teaching of accountancy that has become almost universally accepted is that commencing with the balance sheet. The balance sheet is not only the first topic discussed in the usual accountancy course but is also made the end and aim of all accounting, and almost every step in the development of the accounting technique is taught with reference to its effects on the balance sheet." The balance sheet approach (Nelson, 1935) continues to be useful to this day (Larson *et al.*, 2017).
5. Members of the IIRC Banking Industry Group that use the International <IR> Framework in preparing annual reports or integrated reports include HSBC, Deutsche Bank, Bank Itau, DBS and NAB.
6. Using an exchange rate of US$1 = SGD1.41, as at December 31, 2015.
7. DBS only claimed full compliance with the International <IR> Framework in its 2015 Annual Report.
8. Figure 3 shows the use of resources (capital) during DBS's value creation process and the distribution of the value created by identification of stakeholders.
9. See, for example, explanations of initiatives on pp. 30, 33 and 40 of the DBS (2015) Annual Report.
10. For further details, see the DBS (2015) Annual Report, particularly, p. 16.
11. See DBS (2015) Annual Report, p. 18.
12. See, for example, Crown Estate 2015 Annual Report and SAP 2015 Integrated Report.

13. See DBS (2015) Annual Report, p. 18.
14. For specific consideration of this topic in the banking industry, see IIRC (2016).
15. For instance, see the CFO's statement (p. 22) and the Risk Management section (p. 81). DBS's approach to risk disclosure is explained in the following statements: "We have implemented most of the Enhanced Disclosure Task Force (EDTF) recommendations for improved bank risk disclosures (1) in 2015. We have also implemented the temporary and permanent disclosure recommendations (2) of the EDTF's November 2015 report 'Impact of expected credit loss (ECL) approaches on bank risk disclosures' insofar as they are applicable to DBS."

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Further reading

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