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Hallmarks of Integrated Thinking

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ABSTRACT

Integrated Thinking, the management approach associated with Integrated Reporting, has been hailed as a way of improving organisational decision-making and internal communication, leading to sustainable value creation. Yet Integrated Thinking remains poorly defined and understood. By analysing and synthesising the findings from an emerging body of case study evidence, this paper brings new theoretical insights into how Integrated Thinking is conceptualised and practised and its unique relationship with Integrated Reporting. We reveal Integrated Thinking to bring considerable tension to organisations as managers attempt to adapt to conflicting stakeholder priorities. Organisations which manage this tension and experience some success with Integrated Thinking typically exhibit four 'hallmarks', namely: 1) a deliberate drive by the board and CEO to encourage Integrated Thinking, 2) an Integrated Strategy developed through extensive stakeholder engagement and understanding of value creation, 3) the creation, or enhancement, of an organisational culture of trust and collaboration, and 4) the development of Integrated Intelligence, comprising integrated Performance Management Systems (PMS) and the use of multi-functional teams for decision-making. We present a new conceptual framework of Integrated Thinking in practice, reflect on its relationship with developments in sustainable management practices more broadly and propose several avenues for future research.

1. Introduction

The shareholder primacy model that has dominated organisational thinking and reporting over the past few decades is gradually being replaced by a value creation model that recognises organisations' broader impact on the environment and society. Stakeholders are demanding more non-financial information from organisations, not only to determine how they create value, but also to hold them accountable (Deegan & Blomquist, 2006; De Villiers et al., 2014). Managers are seeking to incorporate sustainability into their strategy and embed sustainable practices into their organisations (Gond et al., 2012; Hansen & Schaltegger, 2016). There have been rapid developments in the corporate reporting field, with various reporting frameworks proposed to address the needs of internal and external stakeholders for forward-looking information relevant to sustainable value creation and the development of a global baseline of reporting standards. What remains unclear is whether such changes in reporting encourage the internal changes necessary to embed sustainable practices within organisations.

Integrated Reporting (IR) is a form of combined financial and non-financial reporting that has developed from earlier forms of

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combined reporting such as the Triple Bottom Line (Elkington, 1998). IR has been promoted as having the dual benefit of improving the provision of information to a broad set of external stakeholders while simultaneously triggering internal change through its underlying management philosophy of Integrated Thinking. Integrated Thinking is intended to improve decision-making and communication within organisations leading to sustainable value creation (Eccles, 2014; IIRC, 2017a). Integrated Thinking has been described as a “management philosophy that unites the constituent parts of an organisation and focuses the whole organisation on value creation for the enterprise and its key stakeholders” (IFAC, 2022, p. 1).

The past two years have witnessed increasing consolidation across the voluntary disclosure landscape towards the adoption of a global baseline of sustainability-related financial disclosures (IFRS, 2022a).¹ In 2020, the leading promoter of Integrated Reporting, the IIRC, merged with the Sustainability Accounting Standards Board (SASB) to form the Value Reporting Foundation (VRF). Then in 2021, at COP26 in Glasgow, the International Financial Reporting Standards (IFRS) Foundation announced the formation of a new body, the International Sustainability Standards Board (ISSB), to incorporate the VRF with the Climate Disclosure Standards Board (CDSB). The ISSB aims to “develop—in the public interest—standards that result in high-quality, comprehensive global baseline of sustainability disclosures focused on the needs of investors and the financial markets” (IFRS, 2022b, p. 1). The IFRS’s formation of the ISSB and its proposal to develop a single set of global non-financial reporting standards has been met with criticism from both sides of the political spectrum (Eccles, 2021), although this has not slowed rapid developments in this area, including the release of IFRS S1 and IFRS S2 global standards for sustainability reporting in 2023. Accompanying these developments has been an increased promotion of IR and Integrated Thinking (De Villiers & Dimes, 2022). On May 25, 2022, a joint statement by the chairs of the financial and non-financial reporting standard-setting arms of the IFRS, the International Accounting Standards Board (IASB) and the ISSB, strongly endorsed both IR and IR’s underpinning philosophy of Integrated Thinking:

“We are convinced that the **Integrated Reporting Framework drives high-quality corporate reporting** and connectivity between financial statements and sustainability-related financial disclosures which improves the quality of information provided to investors. Therefore, **we strongly encourage continued use of the Integrated Reporting Framework and the Integrated Thinking Principles** underpinning it.” (IFRS, 2022a) [Emphasis added by authors.]

These bodies claim that Integrated Thinking principles can help embed sustainable business practices (IFRS, 2022a). If Integrated Thinking provides the mechanism through which external reporting results in internal change, then Integrated Thinking could help organisations navigate difficult conversations when trying to find compromises between financial and other capitals (van Bommel, 2014). Yet prior research has found that external reporting does not necessarily lead to changes in organisational decision-making (Pucker, 2021). The lack of a sound conceptualisation of Integrated Thinking by academics or practitioners (Feng et al., 2017), suggests the need to understand Integrated Thinking more comprehensively and is, therefore, the focus of our study.

As Integrated Thinking is a term strongly associated with IR (the phrase ‘Integrated Thinking’ being coined by the IIRC), the focus of our paper is the existing empirical research on Integrated Thinking in practice, which mainly consists of case study evidence from organisations adopting IR (Di Vaio et al., 2020; Ecim & Maroun, 2022; La Torre et al., 2018). These studies often centre on specific aspects of organisations, such as corporate culture (Dumay & Dai, 2017; Lodhia, 2015) or the role of particular organisational actors or bodies (Argento et al., 2019; Herath et al., 2021). The diverse foci of these papers limit the ability to form an overall understanding of Integrated Thinking from any individual study. We adopt an interpretivist approach, considering Integrated Thinking to be a social construct based on the views of agents. Our approach synthesises findings from multiple research papers, with our robust empirical analysis allowing us to develop new middle-range theoretical insights around Integrated Thinking. A deeper understanding of Integrated Thinking enables a more accurate assessment of whether it can be operationalised to create value and, if so, how. We use our practice-informed definition of Integrated Thinking to consider whether Integrated Thinking is unique, or whether it is simply a conceptualisation of good management practices that have been researched for decades. While we (and many other researchers and reporting bodies) refer to Integrated Thinking as a noun, we also reflect on the consequences of doing so rather than using the verb form ‘integrated thinking’.

Although Integrated Thinking is inherently unobservable, analysing a large body of case study evidence on the topic reveals overarching themes. We focus on an emerging body of evidence from organisations adopting IR, some of which experience benefits through Integrated Thinking and some of which fail to. Our analysis reveals ‘hallmarks’ of Integrated Thinking that are evident in organisations claiming benefits from Integrated Thinking and absent in otherwise similar organisations. We identify a total of 32 themes from an analysis of 66 academic articles, which we synthesise into a conceptual model of four hallmarks of Integrated Thinking, namely a deliberate drive by the Board and CEO, an Integrated Strategy, an organisational culture of collaboration and trust, and investment in Integrated Intelligence.

Our critical analysis of these four key hallmarks contributes to an improved understanding of Integrated Thinking and leads us to the following specific observations. Firstly, contrary to the view that Integrated Thinking is a natural ‘trickle-down’ effect of adopting IR, Integrated Thinking represents a deliberate and often difficult change to an organisation’s strategy, culture and systems. This comprehensive change needs to be driven by the board and is particularly successful when the CEO shows a personal commitment to Integrated Thinking as a driver of value. The second hallmark is an Integrated Strategy, which considers financial and non-financial drivers of value and matches managerial incentives and policies to this goal. Active engagement with a broad set of stakeholders is critical to developing an Integrated Strategy. The third hallmark is the creation, or enhancement, of an organisational culture of trust

¹ The diagram in Appendix 1 shows the recent consolidation in the field and the relationships between the ISSB, Global Reporting Initiative (GRI) and the Task Force for Climate-Related Disclosures (TCFD).

and collaboration. A culture of trust encourages knowledge sharing and helps engage employees with the ultimate purpose of the organisational value creation strategy. Such a culture is critical in overcoming the tensions likely to eventuate from Integrated Thinking. Finally, there needs to be an investment in enhanced information systems and organisational alignment to provide the Integrated Intelligence necessary for decision-making. We find that strength in some hallmarks can compensate for weaknesses in others, and we explore the multiple connections between the hallmarks, and the impacts of these connections, in our paper. Our findings indicate the need for an appropriate balance between informal and formal management control mechanisms to achieve the benefits of Integrated Thinking.

This paper makes several contributions, presenting the first comprehensive literature review of Integrated Thinking in practice and distilling the multiple themes in the prior Integrated Thinking literature into four hallmarks that are necessary to bring value to organisations. The conceptual framework for Integrated Thinking presented in this study, and the links between the elements of the framework, represent a middle-range theoretical contribution (Laughlin, 1995). Our findings help to further understand the nature of accounting within organisations and society and to guide future studies. Our study defines Integrated Thinking through observations of practice, providing evidence of how Integrated Thinking is used by organisations to create sustainable value and what might help and hinder this process. In doing so, we respond to calls from Churet and Eccles (2014), De Villiers et al. (2014) and Joshi and Li (2016) for a more in-depth understanding of the potential for Integrated Thinking to contribute to sustainable value creation. We provide a more critical interpretation of Integrated Thinking than that promoted by reporting bodies such as the ISSB, while also providing a more comprehensive definition. While we acknowledge that Integrated Thinking has much in common with good stakeholder management practices, we highlight Integrated Thinking's unique relationship with IR as an important historic development in the field of sustainability reporting and management practice. We suggest several new research avenues, including gaining a deeper understanding of the personal capacity of individuals and organisations for Integrated Thinking, developing potential measures for Integrated Thinking, and exploring its similarities and differences with other management practices.

The remainder of this paper is structured as follows: Section 2 defines and provides background on Integrated Thinking and IR, and links between Integrated Thinking and the prior literature on sustainable management practices. Section 3 explains the literature review methodology. Section 4 presents the results and introduces a new framework of four hallmarks of Integrated Thinking. Section 5 critically analyses how our findings develop the current understanding of Integrated Thinking. Section 6 concludes with the contribution of this paper to existing literature and practice and outlines avenues for further research.

2. Integrated thinking and reporting

2.1. Definitions of integrated thinking

The IIRC, the leading promoter of IR, coined the phrase Integrated Thinking in 2013, defining it as “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” (IIRC, 2013, p. 2). This definition of Integrated Thinking has remained in the more recent issue of the Integrated Reporting Framework by the IFRS Foundation (see IIRC, 2021, p. 3). According to the IIRC, Integrated Thinking “leads to more joined-up decision-making and actions that consider the creation of value over the short, medium and long term” (IIRC, 2013), taking into account the connectivity and interdependencies between capitals. There have been various other attempts by IR's promoters at providing a definition of Integrated Thinking. These include the IIRC's description of Integrated Thinking as “a multi-capital management approach” in its ‘Integrated Thinking and Strategy’ report (IIRC, 2020, p. 5). This 2020 report by the IIRC proposes a ‘spring’ model which shows how organisations need to combine the six capitals of Integrated Reporting in internal decision-making to realise internal benefits. In 2021, the VRF released a set of six ‘Integrated Thinking Principles’: purpose, strategy, risks and opportunities, culture, governance and performance. These principles are interconnected, and the ISSB proposes that they be implemented through senior management and employee engagement, providing case study examples to support the notion that Integrated Thinking is a form of management that can bring organisational benefits (IFRS, 2022a).

The IIRC's 2013 definition is the most frequently cited in academic and practitioner literature. This definition is likely to influence IR adopters (Higgins et al., 2014) and shape IR's narrative and cognitive base (Rowbottom & Locke, 2016). Despite this, Integrated Thinking is not well understood, and several scholars consider it to lack a common conceptualisation and theoretical underpinning (Feng et al., 2017; La Torre et al., 2018). Practitioners have raised multiple concerns about how to implement Integrated Thinking, demanding more guidance on the topic (IIRC, 2017b). Many practitioners do not understand how the connections between the six IR capitals might lead to better decision-making (Doni et al., 2019).

2.2. Integrated thinking as a form of management

Many consider Integrated Thinking to be a form of management. The International Federation of Accountants (IFAC) describes Integrated Thinking as a “management philosophy that unites the constituent parts of an organisation and focuses the whole organisation on value creation for the enterprise and its key stakeholders” (IFAC, 2022, p. 1). Several academic studies also consider Integrated Thinking to be a form of management, as “the systematic management of all the forms of corporate capital” (Knauer & Serafeim, 2014, p. 59) or the capacity for senior management to “constructively face the tensions between corporate efficiency and a model that considers broader societal health and well-being” (Oliver et al., 2016, p229). Churet and Eccles (2014, p. 60) suggest that Integrated Thinking is shown through senior management's attention to Economic, Social and Governance (ESG) issues, which shows an ability to “manage sustainability issues on a strategic level and in their daily operations”. Likewise, Vesty et al. (2018) consider

Integrated Thinking to be shown through senior management's commitment to a broad stakeholder base and incorporating these commitments in performance evaluation and resource allocation decisions.

If Integrated Thinking is considered a form of management, this raises the question of whether Integrated Thinking is really something entirely new, or whether it is just the latest name for management practices that incorporate sustainability and a broader stakeholder perspective. Such practices have been around for decades, although they have gained prominence recently through increasing stakeholder interest in organisational commitment to sustainability. In the mid-twentieth century, [Cyert and March's \(1963\)](#) research on behavioural theory challenged the prevailing view at the time that profit maximisation was the central purpose of firms. [Thompson \(1967\)](#) highlighted how organisational goals were established largely by reference to the external environment. [Freeman and Reed \(1983\)](#) furthered the idea of stakeholders rather than just shareholders as being central to value creation. The challenge of managing competing interests in internal decision-making has been noted by [Lowe and Chua \(1983\)](#) as essential to effective decision-making. The tension involved in balancing competing interests described as paradoxical by [Hahn et al. \(2014\)](#) has been noted by others such as [Adams \(2017\)](#) in later research on IR. One of the most popular performance measurement systems, the Balanced Scorecard (BSC) has long been criticised for focusing on profit maximisation as the ultimate goal, leading to one of the BSC's original authors, Robert Kaplan, issuing a working paper in 2020 aimed at 'rebalancing' the BSC towards broader stakeholder outcomes ([Kaplan & McMillan, 2020](#), p. 23). Although the BSC is still deemed by some as being too linear and more focused on organisational unit outcomes than broader societal outcomes ([Hahn & Figge, 2018](#)), others have developed further versions of the sustainability balanced scorecard (for example [Hansen & Schaltegger, 2016](#)).

The many parallels between Integrated Thinking and systems thinking have led to calls to consider Integrated Thinking more from a systems thinking perspective ([Williams et al., 2017](#); [Hurth, 2017](#); [Oliver et al., 2016](#)). Indeed, some studies consider them almost interchangeable terms ([Barnabè & Nazir, 2022](#)). It may also help to distinguish between 'hard' Integrated Thinking (systems-based) and 'soft' Integrated Thinking (holistic) ([Oliver et al., 2016](#)). Whereas 'hard' systems thinking focuses on the individual contribution of parts to a whole, focusing on organisational efficiency through a business case approach, soft systems thinking considers the properties of the whole ([Checkland, 1981](#)). From an accounting perspective, a soft systems approach should promote a more holistic view of accountability which extends to broader stakeholder concerns, including environmental ones ([Gray, 1992](#)). Integrated Thinking could alternatively be considered as part of a journey toward Integrative Thinking ([Schorger & Sewchurran, 2015](#)), defined as "the ability to think and act responsibly and responsively in the face of multiple, incommensurable, and possibly conflicting models of oneself, the world, and others" ([Moldoveanu, 2008](#), p. 48). Integrative Thinking requires leaders who welcome change, complexity and disequilibrium and are focused on learning ([Martin, 2007](#); [McGuigan et al., 2020](#)). This is similar to the dynamic capabilities view of the firm: "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" ([Teece et al., 1997](#), p516). Integrated Thinking has also been compared to "the actions of worker bees in keeping the Queen Bee alive executing the ultimate strategy of survival and sustaining the colony" ([La Torre et al., 2018](#), p. 45). This notion of collective ownership and ability is similar to the organisational 'DNA' concept associated with Integrated Thinking mentioned in some IIRC publications ([IIRC, 2017](#)).

The opinion has been expressed that it may never be possible to provide an exact definition of Integrated Thinking or determine when organisations have 'achieved' it ([Higgins et al., 2014](#)), and some scholars have gone so far as describing IR and Integrated Thinking as 'mythical' ([Gibassier et al., 2018](#)), and stating that achieving the desired connectivity may be impossible ([La Torre et al., 2018](#)). Others suggest that the 'journey' towards Integrated Thinking may in fact be the goal, with Integrated Thinking viewed as a type of organisational education ([Massingham et al., 2019](#)).

Our discussion in this section highlights the confusion around how best to define Integrated Thinking. The definition provided by IFAC, of Integrated Thinking as a "management philosophy that unites the constituent parts of an organisation and focuses the whole organisation on value creation for the enterprise and its key stakeholders" seems the closest to combining the various features of Integrated Thinking highlighted by researchers and practitioners. Yet this definition still fails to provide much insight into what Integrated Thinking might look like at an organisational level, and whether it could be operationalised to drive value.

2.3. *Integrated thinking, or integrated thinking – noun or verb?*

Integrated Thinking is an unobservable and poorly understood construct ([Malafrente & Pereira, 2020](#)). Unlike natural science research, social science research often concerns abstract phenomena that are socially constructed and based on human interaction ([Bryman & Bell, 2015](#); [Sayer, 1992](#)). Furthermore, these phenomena are often multi-dimensional in nature ([Short et al., 2010](#)). The object of our enquiry, Integrated Thinking, is both an abstract and a multi-dimensional concept. All existing evidence on Integrated Thinking is subject to the observations and actions of organisational actors and outside observers (researchers), rendering complete objectivity impossible and reaching a form of reliability challenging. Phenomena may exist outside the researcher's observation or be subject to the researcher's interpretation. Integrated Thinking, if considered a form of management, is also likely to be under constant revision as managers seek to improve their decision-making ([Bryman & Bell, 2015](#)). When supporters of Integrated Thinking claim that it leads to organisational benefits, these benefits are often socially constructed (such as improved collegiality or teamwork). We adopt a constructivist approach to understanding Integrated Thinking in this paper, acknowledging that Integrated Thinking is a social construct. We explore the nature of Integrated Thinking by analysing all primary research evidence in the field and allowing themes to emerge from the aggregated data. Primary evidence, as reported in prior studies, is the main focus of this study, as this is an important source of evidence which concerns practitioners as key social actors in Integrated Thinking. Practitioners are the closest observers of Integrated Thinking in practice and play a role in creating Integrated Thinking.

In this paper, we refer to Integrated Thinking as a noun, capitalising it following other research on the topic and publications by IR

promoters such as the ISSB. If Integrated Thinking is a novel and unique management philosophy, it should be possible to consider whether or not organisations exhibit it and what they need to do to ‘achieve’ it. As a noun, Integrated Thinking refers to the process of considering multiple perspectives and integrating different domains of knowledge (financial, social and environmental) to make more informed decisions. However, we acknowledge that integrated thinking could also be a verb. As a verb, integrated thinking refers to the act of engaging in the process of considering multiple perspectives and integrating different domains of knowledge. The verb form suggests a way of thinking about value creation that is not necessarily ‘achievable’ but concerns the ongoing development of pre-existing notions of strategy and governance, developing these in a more ‘integrated’ way. A noun describes the mindset, whereas the verb form describes the act of applying the mindset to decision-making.

We consider there to be an Integrated Thinking ‘mindset’, highlighting examples from the literature that suggest that this is the case. Where we consider Integrated Thinking to differ from good managerial decision-making more generally, and the reason we continue to refer to it as a noun in this paper, is through its unique relationship with IR as an external reporting mechanism. The symbiotic relationship between IR and Integrated Thinking, and the deliberate promotion of this relationship, is central to our interpretation of Integrated Thinking as a noun. The potential contribution of IR and Integrated Thinking in the field of sustainable management is through this deliberate and actively promoted link between external reporting and internal management, a link which is not promoted in such an explicit manner by any other external reporting framework or management practice. Although sustainability reporting and other forms of non-financial reporting are presumably intended to change management behaviour (otherwise they are just sterile instruments (Dierkes & Antal, 1986)), this intention is not always explicitly stated. From an organisational perspective, developments such as the sustainability BSC may focus management on broader stakeholder interests when making decisions, but there is no deliberate link made between the BSC and any form of external reporting. The management conceptualisation of sustainability within organisations may also differ from the broader environmental one of other stakeholders (Gray, 2006). There have been many attempts to link reporting with behavioural change (see for example Gray (2006) and Gray et al. (1996), who describe the ‘information inductance’ between reporting and behaviour), and to actively promote reporting to managers as change-enhancing (see for example the work by consulting firm *SustainAbility* (1998) and by the New Zealand Business Council for Sustainable Development *NZBCSD* (2002)). Despite these attempts, a lack of sustained and effective connectivity between sustainability reporting and practice arguably provided the impetus for the formation of the IIRC in the first place (Stubbs et al., 2020), influencing the IIRC’s deliberate focus on and promotion of connectivity between corporate reporting and thinking.

We recognise, however, that in using the noun form Integrated Thinking in this paper we are potentially perpetuating and promoting the use of the noun form ourselves, which has both advantages and disadvantages. The main advantage of using the noun form is that it can be used by managers to encourage major changes to organisations that terms such as ‘good management’ or ‘good stakeholder management’ are less likely to encourage. Later in this paper, we discuss a case study by Dimes and De Villiers (2020) where the term Integrated Thinking was specifically used by an organisation to promote a move towards more sustainable behaviour (deemed successful in that instance). The main disadvantage relates to the same point – that Integrated Thinking can easily be used as a bandwagon by consulting firms keen to sell the idea of sustainable management practices. Milne et al. (2006) note that ‘purveyors of corporate rhetoric’ may use certain terms and metaphors to perpetuate their own existence. The literature on management fads also indicates that external actors (consulting firms, management ‘gurus’ and business publications) are central to the promotion and development of ‘new’ management ideas which are often just developments of prior fads - see Gibson and Tesone (2001). As we consider the relationship between IR and Integrated Thinking to be central to our interpretation of it as a noun, we explore this relationship further in the next section.

2.4. *The relationship between integrated thinking and Integrated Reporting*

We consider Integrated Thinking distinct from other forms of management practice through its association with IR. The purpose of IR is not just information provision via IR but the transformation of the information-providing entity through Integrated Thinking (Eccles & Serafeim, 2015). One of the goals of IR (according to the IIRC) is for IR and Integrated Thinking to become a virtuous circle, whereby the information produced for external reporting purposes is also used to generate discussion and improve decision-making. It is also notable that, unlike other forms of reporting such as annual financial reports or sustainability reports, IR’s focus is on forward-looking information. In addition, IR, with its focus on six capitals, takes into account the importance of multiple stakeholders, including silent stakeholders such as future generations (Adams, 2015; De Villiers et al., 2014). It is this forward-looking and broad approach to sustainable value-creation reporting that is intended to influence management decision-making. Managers with an Integrated Thinking mindset should, in theory, be able to make trade-offs between the six capitals and also consider a long-term approach to sustainable value creation. However, critics consider the IIRC to have led Integrated Reporting to become increasingly focused on investor concerns rather than broader environmental and social concerns (Bouten & Hoozée, 2015; Deegan, 2020; Flower, 2015), questioning the notion of how balanced decision-making using the six capitals would be in practice.

The IIRC considers IR to have two goals: improved information for investors and enhanced decision-making through Integrated Thinking. The results from studies on the first goal show that IR adoption is associated with an enhanced understanding by investors of the future risks and cash flows for adopting companies, reducing information asymmetry and resulting in improved firm value (Barth et al., 2017; Cahan et al., 2016; Ittner & Larcker, 2001; Lee & Yeo, 2016). Companies adopting IR have been found to have a higher quality of management and a higher return on invested capital (Churet & Eccles, 2014), and be more likely to attract longer-term investors (Serafeim, 2015). IR can also have a disciplining role for managers, reducing agency costs (Obeng et al., 2021). Contrary to the notion that CSR-type initiatives increase agency costs and consequently destroy wealth (Jensen, 2001), these results suggest that meeting the needs of a broad range of stakeholders can create value (Porter & Kramer, 2011).

Evidence to support the IIRC's second goal, improved decision-making through Integrated Thinking, is mixed. An emerging body of case study and interview evidence shows positive internal benefits from IR adoption, which may be a consequence of Integrated Thinking. Adopting IR has been shown to be beneficial for internal processes (Feng et al., 2017; Oliver et al., 2016; McNally & Maroun, 2018), with the use of the integrated information required for IR bringing reporting and decision support systems closer to each other (Adams & Simnett, 2011). A commitment to Integrated Thinking can also bring external benefits from involving different stakeholders in the accountability process (Cavicchi et al., 2019; Al-Htaybat & Von Alberti-Alhtaybat, 2018) and can improve the confidence of management in their stakeholder engagement strategy (Knauer & Serafeim, 2014). In a survey of early adopters of IR in the mandatory setting of South Africa, 70% of respondents felt that IR was a catalyst for enhancing Integrated Thinking in organisations (SAICA, 2015). Some quantitative studies have indicated that internal decision-making, measured by improved investment efficiency, improves with IR quality (Barth et al., 2017). Experiments have found that participants provided with linked financial and non-financial information make decisions leading to higher sustainable value creation (Esch et al., 2019).

Another body of case study evidence indicates that adopting Integrated Reporting may be superficial and may not lead to internal change through Integrated Thinking, though. Although reporting systems might change, this does not necessarily result in significant reconfiguration of business models or broader integration (Higgins et al., 2019; Stubbs & Higgins, 2014). Not every organisation has a disconnect between strategy, governance, past performance and prospects, nor do they have disconnected departments that need reconnecting through Integrated Thinking (Dumay & Dai, 2017). The considerable discretion allowed under IR may lead it to be used as a PR tool rather than as a mechanism for internal change (Flower, 2015). In South Africa, where IR is mandatory for listed companies, only 16% of early adopters reported cost reductions (including cost of capital reductions) as a benefit of IR, and few experienced the other purported benefits of IR, such as improved resource allocation decisions and sustainable product development (Steyn, 2014).

There is also some evidence of the principles of Integrated Thinking existing without or before Integrated Reporting (Adams, 2017; Al-Htaybat & Von Alberti-Alhtaybat, 2018; Caruana & Grech, 2019; Dimes & De Villiers, 2020). Other studies consider Integrated Reporting to be a facilitator rather than a driver for Integrated thinking (Favato et al., 2021). These findings are similar to those in the sustainability reporting literature that indicate that external reporting alone is unlikely to achieve change within organisations without supporting formal and informal management controls, including a focus on organisational culture (Bui & De Villiers, 2018; Journeault, 2016). The management controls that we identify as critical to Integrated Thinking in this paper have also been associated with other management accounting developments such as the Balanced Scorecard, in particular with the incorporation of sustainability into the Balanced Scorecard (Hansen & Schaltegger, 2016). However, such management initiatives do not have the intention of simultaneously changing and aligning external reporting, with IR and Integrated Thinking being unique in this particular dual goal.

Several theories can help explain the success or failure of Integrated Thinking to enable change within organisations. Using external reporting as a legitimisation tool to validate a company's activities is unlikely to result in internal change (Lodhia, 2015; Stubbs & Higgins, 2014). Institutional theory also suggests a disconnect between external reporting and Integrated Thinking. Stewardship theory, which considers managers to be motivated by the organisation's collective goals (De Villiers & Maroun, 2018), could be used to explain the development of Integrated Thinking (Dumay et al., 2019). Agency theory aligns with the intentions of the IIRC and other non-financial reporting bodies, balancing some elements of impression management with the need for genuine change (Jensen & Meckling, 1976). Therefore, we consider agency theory the most likely explanation for adopting Integrated Thinking.

2.5. Hallmarks of integrated thinking in practice

Confusion around the various Integrated Thinking definitions may lead organisations to delay or suspend implementation, leaving any potential benefits unrealised. The desire to embed Integrated Thinking 'perfectly' may mean that practitioners may choose to wait for more guidance, even if a less than perfect adoption could still yield considerable organisational benefits in the interim (Eccles & Spiesshofer, 2016). If practitioners adopt a 'tick-box' approach to adopting the IR framework (an increased risk where IR is mandated), this may put at risk the underlying intention of IR to change organisational behaviour. Many financial report preparers show frustration with the lack of guidelines on Integrated Thinking and additional report preparation costs associated with IR (De Villiers & Sharma, 2020; La Torre et al., 2018) and may be sceptical about IR and its future (Chaidali & Jones, 2017). Therefore, instead of focusing on definitions of Integrated Thinking, this paper takes a different approach, focusing on the experiences of organisations attempting to adopt it, allowing for differing interpretations of Integrated Thinking over time. Our approach acknowledges that a lack of conceptual clarity does not necessarily prevent practitioners' deeper understanding of Integrated Thinking from emerging through self-interpretation (Feng et al., 2017). This allows us to develop a practice-informed definition of Integrated Thinking based on robust empirical analysis and to provide a middle theory contribution. Our construction of a new conceptual framework provides a comprehensive definition of Integrated Thinking in action. We refer to Integrated Thinking as a noun in this paper consistent with IR promoters and the majority of the academic literature, considering it distinct from other forms of management through its association with IR.

The growing interest in and promotion of Integrated Thinking, combined with considerable confusion about what it is, and how it may relate to other management practices, leads to our research question: What are the hallmarks of Integrated Thinking in practice?

3. Method

We conducted a comprehensive literature review on Integrated Thinking, incorporating guidance for emerging fields in accounting by Massaro et al. (2016). We sourced peer-reviewed academic articles from a search on both ABI/INFORM and Business Source

Premier databases in February 2023. All journals were included due to the relative infancy of the research field (Massaro et al., 2016). SSRN, ResearchGate and Google Scholar searches were also conducted to understand the latest thinking (De Villiers & Dumay, 2013). As the IIRC claims that IR has the unique dual goal of changing both external reporting and internal decision-making concurrently, the search was kept to the field of IR and not extended to sustainability or CSR reporting more broadly. Searches were conducted for articles in English dating from 2010 onward, containing the Boolean search phrases ‘Integrated Thinking’ or ‘Integrated Reporting’ in their titles, abstracts or keywords. We extended the search to include ‘Integrated Reporting’ rather than just ‘Integrated Thinking’. Although organisations adopting IR may see internal benefits, they may not necessarily use the term Integrated Thinking. We chose articles from 2010 onwards when IR became mainstream and more heavily promoted following the formation of the IIRC. In their bibliometric analysis of IR, Di Vaio et al. (2020) note few relevant publications on IR before 2010.

Based on the parameters above, the ABI/INFORM search returned 76 results for Integrated Thinking and 382 results for Integrated Reporting. The Business Source Premier search returned 112 results for Integrated Thinking and 495 results for Integrated Reporting. The SSRN search returned 27 results for Integrated Thinking and 220 results for Integrated Reporting. The Google Scholar and ResearchGate searches were used to cross-check our search results. As the Google Scholar search returned millions of results (due to the inability to review abstract content only), the first 100 results were reviewed (the articles were automatically sorted by relevance). All relevant peer-reviewed papers were duplicates of articles already included in the primary database searches. The ResearchGate search did not show the total number of results, so we reviewed the most recent 100 papers. Again, these papers were already present in our database searches (as we did not include unpublished articles). In addition, existing literature reviews for IR, such as those by Dumay et al. (2016) and De Villiers et al. (2014), were reviewed to cross-check our results. No comprehensive literature review was identified for Integrated Thinking in practice. Songini et al.’s (2023) review of the IR literature up to 2020 notes few significant papers on the topic of Integrated Thinking. Busco et al. (2021) present an early review of the Integrated Thinking literature that outlines a framework for future research, presents a selection of research papers on Integrated Thinking in practice and calls for more research in this area, which we respond to. An early review of publications by Di Vaio et al. (2020) also provides a bibliometric analysis focusing on the role of IR and Integrated Thinking in achieving sustainable business models. We extend both of these reviews by analysing specific findings from research papers with primary evidence, providing a more comprehensive overview of the topic. The abstracts of all articles were downloaded into Excel, duplicates were removed, and the remaining 344 abstracts were manually reviewed for their suitability for the study. Fig. 1 below shows a summary of the numbers of search results and the articles selected (based on a search conducted in February 2023).

To be suitable for this review, the articles needed to relate directly to Integrated Thinking (and required that specific term) or to the internal organisational consequences of IR adoption (whether termed Integrated Thinking or not). We excluded measurement papers on Integrated Thinking, papers which use proxies of Integrated Thinking and secondary data in quantitative studies and those using accounting students to test aspects of Integrated Thinking. Conceptual papers on the internal consequences of IR adoption were separated from those with primary evidence. This separation was important to focus on primary evidence relating to Integrated Thinking and internal change. Appendix 2 lists the 66 articles containing primary evidence, showing the journals, publication dates, research methods, geographies, industries and (where possible) organisational details covered by the sample. The articles are listed chronologically, showing increasing publication interest in Integrated Thinking over time. More recently, papers have considered Integrated Thinking independent from Integrated Reporting and potentially linked to broader developments such as the circular economy and the UN SDGs. The range of journals publishing articles on Integrated Thinking has also developed beyond accounting journals to those focused on broader sustainability and corporate social responsibility issues. The 18 conceptual papers are listed in Appendix 3. We recognise that these conceptual papers form an essential part of the literature on the internal consequences of IR adoption. Therefore, we incorporate these papers into our discussion in Section 5.

We applied Braun and Clarke (2019)’s six phases of thematic analysis for our review of the 66 selected articles and used an inductive strategy, allowing codes to emerge from the data. An initial overview of the articles was conducted for familiarisation, with emerging themes captured in Excel. The articles were subsequently analysed in detail using NVivo and coded into categories representing factors necessary for Integrated Thinking or those restricting its success. For example, Dumay and Dai (2017) discuss how a pre-existing organisational culture was a potential barrier to Integrated Thinking, whereas Lodhia (2015) finds organisational culture to be an important part of Integrated Thinking adoption. Both studies referenced culture, and both findings were captured under the overall code of ‘culture’. Opposing examples such as these helped to develop the themes and ensure construct validity. The thematic review resulted in a total of 32 codes, which were subsequently reviewed to ensure the accuracy of underlying attributed texts. We engaged in an axial coding process to develop subordinate categories, resulting in four overarching themes we term the ‘hallmarks’ of

Search results:	ABI/INFORM	BS Premier	SSRN	TOTAL
“Integrated Thinking”	76	112	27	215
“Integrated Reporting”	382	495	220	1097
Total	458	607	247	1312
Removal of duplicates				(968)
Total unique papers				344
Not related to Integrated Thinking				(257)
Relevant papers				87
Full text not available				(3)
Conceptual papers				(18)
Selected papers				66

Fig. 1. Literature review article selection process.

Integrated Thinking and present in Section 4. The coding categories are presented in Fig. 2, with a short description for each hallmark. Our discussion of findings in Section 4 focuses on the most frequently occurring themes.

4. Findings

Our coding process resulted in four overarching themes, which we term ‘hallmarks’ of Integrated Thinking and present in Fig. 2 below, along with a brief description of each hallmark.

We also analysed our findings by organisation type (Fig. 3) to see if there were significant differences between large, listed organisations and SMEs, for example. Our results in Fig. 3 indicate that the four hallmarks are present in all organisation types. However, Hallmark 3 (culture of trust and collaboration) is proportionally higher in SMEs, and Hallmark 4 (Integrated Intelligence) is proportionally higher in the mixed/other category. Hallmark 2 is proportionally higher in public sector organisations. We discuss these findings in more depth when discussing each hallmark and present ideas for further research that explores these differences in our conclusion.

We subsequently developed the four hallmarks into a conceptual model, which we present in Fig. 4. Based on our analysis of the findings, Hallmark 1 was necessary for the other three hallmarks to develop. Without a drive by the board and CEO, the strategic, cultural and systems changes required for successful Integrated Thinking seemed unlikely to eventuate. This meant that the presentation of the hallmarks in a simple table did not adequately reflect the relationships between the hallmarks. The choice of a Venn diagram for the other three hallmarks acknowledges that they aren’t mutually exclusive. The hallmarks are discussed in sections 4.1 to 4.4, and the multiple relationships between them are discussed in section 4.5. In this discussion, we highlight specific examples from the literature that show how some of these hallmarks are revealed at an organisational level. We recognise that our study focuses on the existence of the four hallmarks rather than their development. In our conclusion, we indicate avenues for further research around the hallmarks, the relationships between them and their development over time.

4.1. Hallmark 1: the board and CEO drive integrated thinking adoption

Despite the IIRC’s aim for IR and Integrated Thinking to be contemporaneous and mutually enforcing, our analysis of the research evidence in this section suggests that Integrated Thinking is unlikely to occur without deliberate and specific focus from the top of the organisation. Tension and difficulty, the theme of Hallmark 1 mentioned most frequently, is unlikely to be harnessed constructively

Hallmarks	Hallmark 1: Board and CEO drive Integrated Thinking adoption	Hallmark 2: Integrated Strategy	Hallmark 3: Culture of trust and collaboration	Hallmark 4: Integrated Intelligence
Description	The Board, supported by the CEO, drives the principles of Integrated Thinking throughout the organisation. The board defines the organisational purpose, sets the ethical tone and demonstrates clear leadership and accountability.	There is active engagement with a broad set of external stakeholders to develop a strategy that creates mutual long-term value. This integrated strategy balances financial and non-financial capitals with an understanding of materiality and the need for trade-offs. Performance incentives are linked to the integrated strategy.	An organisational culture of trust, collaboration and teamwork is promoted, encouraging knowledge sharing and building. Employees are motivated and engaged and take collective ownership of value creation.	Investment in enhanced management information systems provides the data necessary for decision-making. There is a deliberate attempt to promote a cross-functional approach to decision-making and improve information flow across the organisation.
Associated Nvivo codes (ranked in order of references, highest to lowest)	Tension and difficulty (58)	Stakeholder engagement (95)	Employee engagement (82)	Multi-disciplinary teams (113)
	Leadership (CEO) (48)	Formal strategic planning (41)	Organisational culture (68)	Integrated PMS (98)
	Board engagement (35)	Business model and capitals (41)	Collaboration (55)	Role of finance function (53)
	External consultancy (21)	Materiality (31)	Internal messaging (24)	Assurance (7)
	Committees (13)	Risk management (22)	Continual improvement (19)	Cost (2)
	Internal champions of change (9)	Incentive structures (22)	Management approach (16)	Savings (1)
	Active push (3)	Intangible assets (6)		
	Policy (4)	Adaptability (3)		
	Ethics (1)	Organisational agility (1)		
	Benchmarking with peers (3)	Longer-term perspective (1)		

Fig. 2. Coding themes.

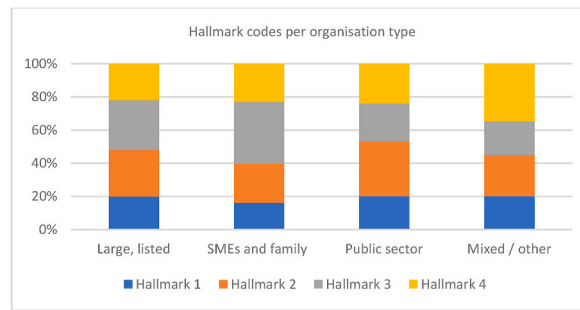


Fig. 3. Breakdown by organisation type.

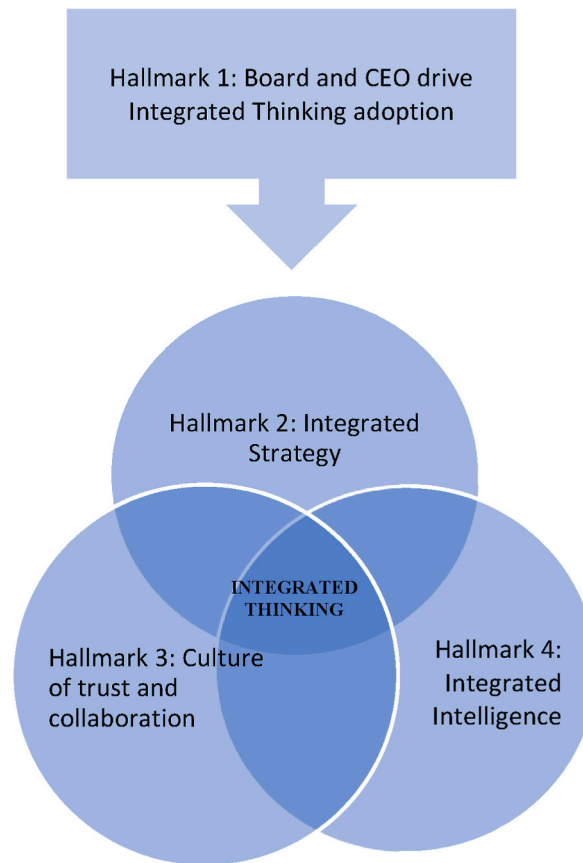


Fig. 4. Hallmarks of integrated thinking.

without a concerted effort from senior leaders. The roles of the board and the CEO as critical drivers of Integrated Thinking are explored in this section, with the roles of other internal actors and external influencers (consultants, professional bodies and peers) also considered.

4.1.1. *Integrated thinking brings tension and difficulty*

Most research evidence supports the view of Gibassier et al. (2018) that IR is a much more complex notion than envisaged by the IIRC and that realising the benefits of Integrated Thinking may be difficult. Early adopters have referred to Integrated Thinking as a “painful” process, pushing organisations to report on things that might make them uncomfortable (Burke & Clark, 2016), particularly since some organisations prefer to report positive news (McNally, Mary-Anne, Cerbone and Maroun, 2017). Managers are likely to be confused with the wealth of new information needed, the concept of trade-offs between capitals and conflicting internal and external expectations of IR (Higgins et al., 2014; Macias & Farfan-Lievano, 2017; Parrot & Tierney, 2012). Determining materiality in IR can be problematic as it is entity-specific and, therefore, less objective (Lakshan et al., 2022). A rigid interpretation of IR (using six capitals

where five might be better understood by stakeholders, for example) can also bring unnecessary and unproductive tension (Vesty et al., 2018). Silvestri et al. (2017) discuss how actively asking stakeholders for their opinions and engaging in dialogue may be a new and challenging undertaking for many organisations.

The struggles and tensions identified may be essential to Integrated Thinking, though. Both Adams (2017) and Le Roux and Pretorius (2019) consider 'healthy' tension a necessary part of Integrated Thinking, and Devalle et al. (2020) show how tension around trade-offs can be used positively to encourage productive conversations. Argento et al. (2019) give an example of tension being used to trigger the IR process, although their case is the only one in our sample. Parrot and Tierney (2012) go a step further to suggest that if organisations are not experiencing difficulties with Integrated Thinking, their adoption of IR is likely to be more superficial. IR represents a fundamental change in how many managers conceptualise corporate sustainability, moving from a business case frame to a more paradoxical one (Adams, 2017). Faced with this uncertainty, van Bommel (2014) finds that managers may struggle to align different 'orders of worth'. Without sufficient support and guidance, managers may not realise that tension is an integral part of the process.

Due to the inherent difficulty in adopting Integrated Thinking, several studies conclude that a very deliberate 'push' is necessary for it to be successful (Al-Htaybat & Von Alberti-Alhtaybat, 2018; Burke & Clark, 2016) with a 'time will tell' approach unlikely to bring much change (Higgins et al., 2019). A CEO interviewed by Adams (2017) summarised this well: "you have to be obsessed because if you don't push it and follow it through, it falls away [...] because it's hard work" (Adams, 2017, p. 919). The 'push' needs to be supported by fundamental, persistent change, termed a 'pull' strategy by Guthrie et al. (2017). Without a deliberate push, there is a danger that IR will be viewed differently at the top of an organisation than from the perspective of employees (McNally & Maroun, 2018). IR should then increase employee awareness of the overall agenda, encouraging proactivity (Mio et al., 2016). Although McNally et al. (2017) note that there is a danger that an 'active push' could stifle creativity, this may be a concern particular to the mandatory IR setting of their study as it is not mentioned elsewhere.

4.1.2. *There are many critical actors in the diffusion of integrated thinking*

Many studies in our sample consider the board's role to be critical to Integrated Thinking's success, particularly in encouraging middle management adoption (Feng et al., 2017). Adams (2017) finds that board members considered a broader notion of value creation useful at the board level and found positive changes in the mindset of boards initiated by IR. However, the board needs to appreciate that the goals of IR are fundamentally different from the production of a traditional annual report. McNally et al. (2017) show that if the focus of the board is on the production of the integrated report alone, then necessary changes to organisational structures and systems are less likely to eventuate.

The CEO is mentioned as critical to the adoption of Integrated Thinking and a drive towards sustainability in several studies, including Knauer and Serafeim (2014), Guthrie et al. (2017) and Dimes and De Villiers (2020). Effective Integrated Thinking requires well-coordinated efforts to diffuse Integrated Thinking principles across the entire organisation (Knauer & Serafeim, 2014). Managers do not have the agency or the responsibility for bringing about organisational change such as that required by Integrated Thinking (Higgins et al., 2014), and bottom-up approaches to Integrated Thinking adoption are rare. Argento et al. (2019) provide an example of a CSR manager driving Integrated Thinking, but the board and CEO were still critical in its subsequent institutionalisation. This is consistent with Robertson (2021), who also finds that internal champions need board support. Both Cavicchi et al. (2019) and (Robertson and Samy (2019) show how CEOs who do not understand the benefits of pursuing Integrated Thinking within organisations are less likely to adopt it successfully and more likely to meet resistance. This may also be due to CEOs' critical role in the clear internal communication of the value creation story (Adams, 2017). Different CEO perspectives on value creation have been found to change the perspective of Integrated Thinking and its relative success within organisations (Herath et al., 2021).

There are mixed views on the role of internal committees for successful Integrated Thinking. Rodríguez-Gutiérrez et al. (2019) show that adopting IR can lead to a better position for an existing sustainability/CSR department within the organisational hierarchy. However, the existence of such committees does not necessarily mean they are effective (Guthrie et al., 2017). A study by Higgins et al. (2014) shows committees to be essential to the cross-functional working required by Integrated Thinking. In contrast, others such as Lodhia (2015), view true Integrated Thinking as a collective responsibility, rendering separate committees obsolete.

Influences on Integrated Thinking may also come from outside an organisation. When adopting IR, financial reporting and investor relations departments are likely to use peer benchmarking. They may participate in meetings with external consultants or even interventionist researchers who are likely to be promoters of IR (Corbella et al., 2019). There may be peer pressure on CEOs and CFOs to adopt IR and Integrated Thinking (Robertson & Samy, 2015). Alternatively, a change in structure or ownership may trigger reflection and a change in structure and values towards an Integrated Thinking approach (Busco et al., 2021). However, even if outside actors may promote Integrated Thinking as a benefit of IR adoption, they are unlikely to be able to drive change within organisations. Akbas et al. (2021) also note that while external consultants are regularly used to produce sustainability reports, this may be less effective for Integrated Reports, where in-depth knowledge of the organisation is necessary. External consultants seen as 'pushing' IR are also more likely to meet resistance than internal champions (Sonnerfeldt and Aggestam Pontoppidan, forthcoming).

4.2. *Hallmark 2: an Integrated Strategy*

Our analysis of the research evidence in this section shows that an Integrated Strategy is required for Integrated Thinking to thrive. An Integrated Strategy considers and engages with a broad range of stakeholders and shows how an organisation's capitals combine to create future value. Key themes discussed below include the importance of stakeholder engagement, a deep understanding of the business model and capitals to determine materiality and risk and embedding this understanding through formal planning and

incentive structures.

4.2.1. Active engagement with a broad stakeholder base is essential for integrated thinking

Most studies support Vesty et al.'s (2018) view that active and deliberate stakeholder engagement is a crucial feature of Integrated Thinking. Le Roux and Pretorius (2019) consider organisations and stakeholders to benefit from an improved mutual understanding through the engagement process. Improved employee involvement with stakeholders can improve Integrated Thinking (Cavicchi et al., 2019) and increase confidence in the organisation's stakeholder engagement strategy (Knauer & Serafeim, 2014). Parrot and Tierney (2012) discuss how early involvement of key stakeholders can help avoid potentially costly future problems (by reducing later opposition) and allow for creative solution generation by addressing inherent tensions earlier in the decision-making process. Al-Htaybat and Von Alberti-Alhtaybat (2018) show how their case company benefitted from using spare capacity at a competitor site and improved internal efficiency and agility. Their example shows how extending trust towards external stakeholders could increase value creation by developing collaborative partnerships toward a circular economy, supporting the view of Devalle et al. (2020).

Studies such as Vesty et al. (2018) found stakeholders willing to undertake their role seriously, even if Feng et al. (2017) note that stakeholders who lack IR knowledge can be reluctant to share their views and needs, potentially compromising the success of Integrated Thinking. Without a frank exchange of stakeholder views, there is a danger that internal perceptions of meeting stakeholder needs may not be the same as external ones (Marasca et al., 2020). Even if stakeholders are interested in engaging with IR, unless there is deliberate and direct engagement, the potential benefits may be lost regardless (as Cavicchi et al. (2019) found in their study in an Italian university hospital setting). Cultural and industry factors may be at play, as McNally et al. (2017) regarded South African organisations as generally poor at stakeholder engagement, and others note that certain sectors such as utilities are more accustomed to considering stakeholder needs due to regulation (Parrot & Tierney, 2012).

4.2.2. Formal planning and incentives improve understanding and help alignment

Expecting the production of the Integrated Report itself to trigger Integrated Thinking appears optimistic based on the research evidence. Higgins et al. (2019) find a causal asymmetry between reporting and strategy, suggesting that reporting alone is insufficient to change strategy or trigger organisational change. Most studies consider that the report should be an outcome of an organisation's strategy rather than a tool to change behaviour (Chaidali & Jones, 2017; Stubbs & Higgins, 2014). The planning processes occurring before the construction of the report (and not the report itself) need to be shared. This shared process can emphasise connectivity and engage employees (Cavicchi et al., 2019). Sustainability must be embedded into strategy and the business model for Integrated Thinking to succeed (Dimes & De Villiers, 2020; Robertson & Samy, 2015).

The business model is a crucial feature of IR, explaining how an organisation's business activities create and destroy value in relation to six capitals (Silvestri et al., 2017). Conceptualising the business model can help improve communication and Integrated Thinking in the early stages of IR by defining organisational purpose (Feng et al., 2017). This helps employees better understand organisational cause-effect relations (Mio et al., 2016; Al-Htaybat & Von Alberti-Alhtaybat, 2018) provide an example of how the business model can enable Integrated Thinking. Their case company decided they needed less manufactured capital because of their strong relationships with competitors with spare manufacturing capacity. The company considered the adoption of an 'asset-light' model to encourage Integrated Thinking and improve organisational agility. Applying the principle of materiality when developing the business model can help to explain an organisation's strategy to stakeholders (Lai et al., 2017) and can help to focus an organisation on its key capitals internally, helping Integrated Thinking in practice (Feng et al., 2017). The IR approach to materiality is different to the traditional financial accounting approach (Knauer & Serafeim, 2014) and the sustainability approach (Mio et al., 2020), requiring a high degree of judgment and numerous strategic considerations. Interestingly, Lakshan et al. (2022) found organisations using materiality disclosure as an external branding tool rather than a tool to enhance internal decision-making.

Alongside formal planning and materiality considerations, fundamental changes to executive remuneration schemes are likely to be necessary to meet the long-term goals of IR and Integrated Thinking. There is evidence of changes to top executive remuneration structures in several studies (Argento et al., 2019; Doni et al., 2019; Al-Htaybat & Von Alberti-Alhtaybat, 2018), although this was often less apparent further down organisations (Dimes & De Villiers, 2020). Dumay and Dai's (2017) case study of a customer-owned bank in Australia showed how stewardship was engendered through a remuneration policy that offered 'fair and competitive' salaries, removed sales-based commissions and executive bonuses and disclosed this externally. This is the only example of this, though, as a considerable shift in organisational purpose and culture may be needed to move away from short-termism and recognise the lag effects of investments in intangible assets (Sewchurran et al., 2019). Incentives may also be problematic. If employees are held accountable for the future-orientated information required for IR, they may tend toward conservative predictions (Lakshan, Low and De Villiers, 2021).

4.3. Hallmark 3: a culture of trust, collaboration and knowledge-sharing

Analysis of the research evidence in this section demonstrates that a culture of collaboration, transparency and knowledge-sharing is critical to the success of Integrated Thinking. As discussed earlier, many organisations find the adoption of Integrated Thinking difficult, and such a difficult change is hard to achieve without a supportive culture. This section explores the role of organisational culture, employee engagement and collaboration for successful Integrated Thinking.

4.3.1. An organisational culture of trust

Integrated Thinking challenges conventional thinking, including established work routines (Feng et al., 2017) and studies such as

McNally and Maroun (2018) show that it may lead to resistance. Dumay and Dai (2017) consider an open and transparent culture critical in stopping Integrated Thinking from getting stuck at a senior management level and encouraging middle manager engagement and accountability, findings echoed by Del Baldo (2017) and Feng et al. (2017). Much depends on an organisation's existing culture and ways of working, and it is naïve to assume that all organisations have cultural problems that need to be 'fixed' by IR and Integrated Thinking (Dumay & Dai, 2017).

It is unclear whether Integrated Reporting adoption helps to drive the cultural changes necessary for Integrated Thinking, or whether the success of Integrated Thinking depends on a pre-existing culture of trust and collaboration. Mio et al. (2016) show that IR adoption increased employee awareness of a broader stakeholder base, shaping organisational values and culture, breaking down silos and increasing trust. Others including Al-Htaybat and Von Alberti-Alhtaybat (2018), Rossi and Luque-Vílchez (2020) and Favato et al. (2021) consider the success of Integrated Thinking to be dependent on a pre-existing culture of trust and collaboration, which IR needs to adapt to. Gibassier et al. (2018) found that culture was essential to their case organisation continuing with IR adoption after a brief break. The journey toward Integrated Thinking can be facilitated by deliberate investment in corporate culture, as shown in Dimes and De Villiers (2020). Several studies (Al-Htaybat & Von Alberti-Alhtaybat, 2018; Dimes & De Villiers, 2020; Knauer & Serafeim, 2014; Steyn, 2014) find this trust extends outside the organisation to external stakeholders. However, Dumay and Dai (2017) present an example of IR potentially at odds with an entrenched corporate culture (in their case a responsible banking culture), as the pre-existing culture was strongly associated with corporate success. Sonnerfeldt and Aggestam Pontoppidan (forthcoming) show a similar experience in the public sector, where pre-existing cultures and practices led to resistance to IR and associated changes.

4.3.2. Employee engagement and collaboration

An organisational culture of trust is important as employees are key to the success of Integrated Thinking (Devalle et al., 2020). Even if change is driven from the top of an organisation, middle managers are enablers of change and critical to its subsequent institutionalisation (Argento et al., 2019). In one of the few studies that consider Integrated Thinking as a driver of IR, Al-Htaybat and Von Alberti-Alhtaybat (2018) discuss the value placed on employees, with the relatively flat organisational structure conveying a sense of 'family', and senior management figures viewed as very approachable. This encourages a sense of collective responsibility, which is important for IR (Guthrie et al., 2017). Lodhia (2015) discusses how this sense of collective purpose can potentially reduce the need for incentives. The importance of a collaborative approach is mentioned in several studies, even if there are no structural changes that directly encourage this, as in Higgins et al. (2019). Interestingly, Steenkamp and Roberts (2022) found collaboration to be stronger when led from the bottom up in state-owned enterprises, in contrast to findings in the private sector which considered the tone to be set at the top (consistent with most other studies). Strategies to encourage a collaborative approach are also discussed in Hallmark 4, which considers teamwork as a critical tool.

4.4. Hallmark 4: investment in Integrated Intelligence

The research evidence introduced in this section shows that successful Integrated Thinking recognises the need for people, information, and systems to be integrated, reflecting IR's 'connectivity' element (Mio et al., 2016). We adopt the term 'Integrated Intelligence' from Lyons (2013), considering this term to encompass not only the structural (departmental and systems) changes necessary to facilitate information flow but also how information is used for decision-making and the knowledge, experience, and organisational environment of decision-makers. This section explores integrated PMS systems, multi-functional teams and the finance function's role in Integrated Thinking.

4.4.1. Integrated systems are necessary, but few organisations have them

If the data, systems and processes are insufficient to support Integrated Thinking, evidence shows that IR is unlikely to lead to internal change (Higgins et al., 2019; Stubbs & Higgins, 2014; McNally et al., 2017). Integrated information has been found to lead managers toward more sustainable investment decisions (Esch et al., 2019). Despite the importance of quality data for Integrated Thinking, many companies embark on IR adoption with no clear basis for collecting, aggregating and reporting information (McNally et al., 2017). Most organisations have difficulties identifying useful, reliable and timely indicators for non-financial data and identifying future-orientated information in particular (Badia et al., 2019; Burke & Clark, 2016). Organisations often have different databases for financial and non-financial data (Robertson & Samy, 2015). This may result in IR preparers not recognising the needs and different expectations of financial and nonfinancial stakeholders (Lai et al., 2018). Some organisations did not want to produce more information but wished to improve the quality of the data they already had (Favato et al., 2021). Others (Steenkamp & Roberts, 2022; Sonnerfeldt and Aggestam Pontoppidan, forthcoming) considered substantial investment necessary to develop suitable datasets for the short, medium and long-term data required for IR and metrics that could show the connectivity between the capitals.

Improving the flow of quality information to decision-makers can be achieved by focusing on improvements to underlying PMS. The widely used Balanced Scorecard (BSC) offers potential for development to support IR and Integrated Thinking, as it balances financial and non-financial, short-term and long-term, as well as qualitative and quantitative success measures (Mio et al., 2016). Knauer and Serafeim (2014) suggest that adopting a balanced scorecard approach is evidence of an Integrated Thinking mindset, as it helps show interconnecting activity, encouraging sustainability to be cascaded and individuals empowered. Designing a perfect integrated PMS may be impossible, and as such integrated indicators remain the 'holy grail' of IR (Gibassier et al., 2018).

4.4.2. Multi-functional teams can be used to break down silos and encourage information sharing

Several studies (Guthrie et al., 2017; Rodríguez-Gutiérrez et al., 2019; Giovannoni & Maraghini, 2013; Feng et al., 2017) view

cross-functional teams as fundamental mechanisms of change in the Integrated Thinking journey. Establishing cross-functional teams is usually a necessary part of producing an Integrated Report (Stubbs & Higgins, 2014), ensuring that information is collated for external reporting and internal planning processes. Integrated Thinking can therefore arise during the IR preparation process as preparers develop a common understanding of the value creation process (Stacchezzini et al., 2019; Feng et al., 2017). Deeper social binding may result from a 'shared sense of doing' (Lai et al., 2017; Vitolla & Raimo, 2018) and may change employee behaviour, as found in Dumay and Dai (2017). Cross-functional teams may facilitate organisational knowledge-sharing irrespective of the actual IR preparation process (Feng et al., 2017; Dimes & De Villiers, 2020), encouraging productive dialogue among employees, managers, and the board (Lai et al., 2018). Del Baldo (2017) found that smaller businesses appreciated the benefits of small workgroups combined with external consultants to gain a broader perspective. Establishing cross-functional teams does not necessarily mean that resistance to IR and Integrated Thinking will not exist, though, particularly if employees don't understand the overarching purpose of IR (Higgins et al., 2019; McNally & Maroun, 2018), as a cross-functional team does not necessarily share information (Giovannoni & Maraghini, 2013).

Integrated Thinking can be considered the antithesis of 'silo thinking', which exists to varying degrees in many organisations. The adoption of IR could even lead managers to realise that such silos exist (Le Roux & Pretorius, 2019). 'Silos' can be physical (location of departments and offices) and cultural (established ways of working). Physical constraints may reinforce a silo mentality, which can increase data complexity if different sites maintain different information databases (Robertson & Samy, 2019). Changes to ways of working may have more of an impact on reducing a 'silo mentality' though (Dimes & De Villiers, 2020; Dumay & Dai, 2017). While some evidence was found of specific functions, such as risk management, preferring to work in silos for practical reasons (Dumay & Dai, 2017), the overwhelming body of evidence did not support this view. Indeed, Oliver et al. (2016) suggest that if management systems remain focused on siloed areas of responsibility, then the 'soft' systems thinking associated with Integrated Thinking is unlikely to eventuate.

4.4.3. The finance function can enable or hinder integrated thinking

It is often the CFO and the finance function that are tasked with producing the Integrated Report and with making any structural and systems changes necessary to produce the data for the report. Arora et al. (2021) note that accountants have many skills that benefit the IR process, including developing KPIs and control systems and understanding auditing and assurance processes. The finance function can bring rigour and consistency to the data collection process (Higgins et al., 2019), and management accountants can be champions of Integrated Thinking. Some evidence suggests that business partnering ensures that the finance function continues to develop its understanding of IR and Integrated Thinking at an enterprise level (Dimes & De Villiers, 2020). Finance business partners tend to be seen as working with organisations to achieve their goals rather than as record keepers (Oliver et al., 2016). The influence of the finance function may depend on the size of the firm, though, as smaller firms may have external accountants who may or may not bring similar benefits (Del Baldo, 2017).

Other studies suggest that accountants can be resistant to IR, however (Stubbs & Higgins, 2014; Higgins et al., 2014), with Akbas et al. (2021) suggesting that accountants may be expected to resist due to their focus on financial rather than non-financial information. Adams (2017) suggests that accountants could hamper long-term value creation if they do not broaden their views. van Bommel (2014) suggests that because accountants like clarity, this could cause challenges when reaching the many compromises necessary for IR and Integrated Thinking. This view is supported by Arora et al.'s (2021) study on enablers and barriers to accountants being involved in the IR process, which found that accountants could be uncomfortable with the 'inexact science' that is IR. Organisational ownership of IR can bring problems with Integrated Thinking (Higgins et al., 2019), and Argento et al. (2019) found the finance team to be 'hostile' when someone else was tasked with IR (in their case, a CSR manager). Interestingly, Gibassier et al. (2018) found that the CFO had more ability to implement IR when in a CSR director role.

4.5. Interplay between the hallmarks of integrated thinking

The four hallmarks of Integrated Thinking have several links between them. The Board and CEO influence strategy, culture and information flow considerably. Vesty et al. (2018) discuss how having a clear strategy can help to overcome tension and difficulty, and Sewchurran et al. (2019) show how a clearer strategy enabled by IR can help leaders with their focus. Al-Htaybat and Von Alberti-Alhtaybat (2018) view culture as necessary for strategy, particularly as culture emanates from the top of an organisation (Dumay & Dai, 2017). Sewchurran et al. (2019) give an example where a culture of short-termism and the accompanying fear of failure led to the proposal and adoption of lower-risk projects. In contrast, Dimes and De Villiers (2020) find a culture of trust to encourage early conversations around poor performance, improving strategy and outcomes. The CEO's attitude impacts culture (Oliver et al., 2016), with a committed CEO more likely to engage employees (Knauer & Serafeim, 2014). Giovannoni and Maraghini (2013) provide an example of how direct intervention by the CEO can substitute for a PMS that produces conflicting priorities.

Culture may help organisations move away from hard systems thinking focused on data to softer systems thinking (Oliver et al., 2016). A supportive culture may also enable strategy execution (Busco et al., 2021). If culture is seen as a barrier, then leadership from the CEO and board is needed to overcome this (Sonnerfeldt and Aggestam Pontoppidan, forthcoming). A deep understanding of strategy is also essential as if the strategy isn't clear, it isn't clear why integrated information would be necessary (McNally & Maroun, 2018). Oliver et al. (2016) found an example of employees being actively empowered and encouraged to create better accounting systems. McNally and Maroun (2018) show how the accounting system itself can engage employees, particularly if they take ownership of metrics relevant to their area of the organisation and understand the importance of these individual metrics to generate positive outcomes for different stakeholders. Arora et al. (2021) consider accountants to be able to add value to the IR process by using their

contacts with all departments, their stakeholder knowledge, their skills in target setting and their data assurance and materiality knowledge. [Marasca et al. \(2020\)](#) suggest that connecting with stakeholders outside the organisation can improve the metrics used by management, as focusing on investors as key stakeholders can limit the information provided ([Adams, 2017](#)). Employees need to be engaged, or they may be reluctant to provide information, particularly if it is forward-looking ([Argento et al., 2019](#)). This may be particularly important when concerns around competitive risk are present ([Mirsadri et al., 2021](#)).

The external environment may impact the relationship between elements of the framework. For example, a recent market listing may skew information provision toward capital providers ([Badia et al., 2019](#)). Industry sectors may influence the provision of information and the consideration of stakeholders. [Al-Htaybat and Von Alberti-Alhtaybat \(2018\)](#) also show how an organisational strategy can be affected by political uncertainty. There is some suggestion that the order in which organisations focus on hallmarks is important. As an interviewee in [Argento et al. \(2019\)](#) states (p 501): “With the Integrated Report, we started with the aim of integrating information, and we reached this aim only when we achieved a cultural and organisational integration.”

4.6. Summary of findings

[Fig. 5](#) below highlights the key findings from this review, highlighting features that may enable and constrain each of the hallmarks, and potential interplay between the hallmarks.

5. Discussion

Our findings reveal that the joined-up decision-making associated with Integrated Thinking is possible but by no means guaranteed if organisations adopt IR. Indeed, the relative success of Integrated Thinking seems to be dependent on numerous other factors, all of which can exist with or without IR. These findings support the notion that Integrated Thinking is a development of management practices that encourage sustainability. While these may be triggered or encouraged by the adoption of IR, IR does not seem to be a prerequisite. In our findings, we highlighted and discussed four hallmarks that seem to enable organisations to have more success with Integrated Thinking, showing how these hallmarks may interact with one another. Importantly, our findings persist over the ten-year period of the study, despite major changes in external reporting over this timeframe. The list of the research articles (in [Appendix 2](#)) highlights increasing interest in Integrated Thinking across different industries and also as distinct from IR. Nonetheless, the hallmarks we identify remain consistent over time. This section considers how these findings contribute to a broader understanding of Integrated Thinking in practice.

5.1. Integrated thinking as a difficult journey

The IIRC’s claim that Integrated Thinking ‘flows naturally’ from IR adoption is not borne out in our findings. Instead, Integrated Thinking seems a complex and challenging process requiring continued attention. Our findings align with [Massingham et al.’s \(2019\)](#)

	Hallmark 1: Board and CEO drive Integrated Thinking adoption	Hallmark 2: Integrated Strategy	Hallmark 3: Culture of trust and collaboration	Hallmark 4: Integrated Intelligence
Enablers	1. Board understands IR is more than reporting 2. CEO passionate about IR and Integrated Thinking 3. Internal champions of IR and Integrated Thinking	1. Active stakeholder engagement 2. Formal shared planning process that engages employees 3. Incentives geared towards the long-term	1. Employee engagement in IR process 2. Approachable management and encouragement of collaboration	1. Integrated systems 2. Multi-functional teams 3. Finance business partnering
Constraints	1. Management and/or CEO lack of understanding around IR and Integrated Thinking 2. Rigid interpretation of IR 3. External consultants ‘pushing’ IR	1. Industry norms discourage stakeholder engagement 2. Incentives geared towards the short-term	1. Rigid management practices that discourage collaboration 2. Entrenched existing culture	1. Finance function (if focused on traditional role)
Hallmark 1 interplay	-	-	-	-
Hallmark 2 interplay	Board and CEO influence strategy	-	-	-
Hallmark 3 interplay	Board and CEO influence culture (top-down)	Culture of trust improves strategic decision-making	-	-
Hallmark 4 interplay	CEO can intervene if PMS produces conflicting results	PMS informs strategic decision-making	Culture overcomes focus on hard data and rigid PMS	-

Fig. 5. Summary of findings.

conceptualisation of Integrated Thinking as a journey rather than a destination. They also support Parrot and Tierney's (2012) view that if organisations don't find the process difficult, they are likely to have adopted IR and Integrated Thinking principles at a more superficial level. Difficulties experienced as part of Integrated Thinking adoption should not come as a surprise. Moving organisations from a Friedman model of shareholder value maximisation toward a broader model that considers future societal and environmental concerns is likely to be challenging. The trade-offs between capitals and the intertemporal nature of these trade-offs require managers to be more comfortable with uncertainty and difficult conversations (Oliver et al., 2016; van Bommel, 2014). Changing from a business case frame to a paradoxical one is likely to necessitate significant changes for managers (Adams, 2017; Hahn et al., 2014; Hurth, 2017). Our evidence shows that managers find this difficult and struggle to balance financial and non-financial metrics appropriately (Coulson et al., 2015).

The difficulty of achieving IR in practice is a significant feature of our findings yet is not referenced by the IIRC, the VRF or the ISSB. This is probably unsurprising given their role as promoters of IR, but if these bodies are genuinely committed to IR catalysing organisational change, then difficulties should be acknowledged. Practitioners have repeatedly expressed concerns about implementing Integrated Thinking in practice (Chaidali & Jones, 2017; La Torre et al., 2018). Accountants have been found to be reluctant to champion IR due to its lack of clarity and requirement for considerable interpretation compared to other reporting frameworks (Arora et al., 2021). Therefore, although it might appear counterintuitive, acknowledging difficulty as a necessary and essential part of the Integrated Thinking journey might help alleviate practitioner frustration and encourage the adoption of the Integrated Thinking Principles.

5.2. The need for organisational and individual capacity for integrated thinking

People (the board, the CEO, the finance function, stakeholders and employees) are critical to every hallmark of Integrated Thinking we identify. Our findings support the view of many others (Oliver et al., 2016; Knauer & Serafeim, 2014; Vesty et al., 2018; Churet & Eccles, 2014) that Integrated Thinking is a form of management. Our findings align with the view that the board is essential for effectively integrating environmental and social sustainability into corporate practices and the corporate value system (Eccles et al., 2014; Gibassier et al., 2016). The board determines KPIs for executive remuneration, focusing CEOs on organisational priorities (Eccles et al., 2014), and the CEO is a critical actor in our findings. In this respect, our findings align with the Integrated Thinking Principles and their promotion of the Board and CEO as critical enablers of Integrated Thinking. As the median tenure of CEOs is five years (PwC, 2019), Knauer and Serafeim (2014) express the concern that Integrated Thinking could fall victim to a change in senior leadership, meaning that the role of the board remains critical to the longevity of an Integrated Thinking agenda (Zhou et al., 2018).

Yet our findings indicate a potential lack of capacity for Integrated Thinking at a collective and individual level. Gibassier et al. (2018) suggest that boards may lack the necessary skills for IR and Integrated Thinking, being too accustomed to focusing on the short-term. As board skills and knowledge about Integrated Thinking are often developed through IR adoption, it remains unclear who should have the knowledge and ownership of Integrated Thinking within an institution (Caruana & Grech, 2019). It also raises the question of how boards can drive an initiative they may not fully understand or develop the capacity for Integrated Thinking further down the organisation. The CEO and finance function may help or hinder the adoption of Integrated Thinking. CEOs who do not understand Integrated Thinking deeply are less likely to adopt it successfully and more likely to meet resistance (Cavicchi et al., 2019; Robertson & Samy, 2019). A finance function focused on financial metrics may find the compromises and 'soft metrics' necessary for IR and Integrated Thinking challenging. Organisational ownership of IR has been shown to bring problems with Integrated Thinking (Higgins et al., 2019), and may result in insufficient accountability for its development.

A lack of capacity for Integrated Thinking within an organisation could have consequences outside the organisation. The IIRC foresees organisations developing win-win relationships with a broad range of stakeholders (Madden, 2017), which can bring competitive advantage and improved performance (Hillman & Keim, 2001). This finding supports literature that highlights the importance of the engagement of external stakeholders in strategy development (Freeman & Reed, 1983). We show that consideration of multiple stakeholders and effective engagement with them is essential to Integrated Thinking (Mio et al., 2016). Improved employee involvement with stakeholders can improve Integrated Thinking (Cavicchi et al., 2019) and increase management's confidence in their stakeholder engagement strategy (Knauer & Serafeim, 2014). IR can become a governance tool to be used with stakeholders (Barnabè et al., 2019) thereby improving accountability (Gibassier et al., 2016). Failure to embed Integrated Thinking capacity at the organisation's lower levels could have wider repercussions. It is unclear from our findings though, how an individual capacity for Integrated Thinking can be developed and nurtured.

5.3. The importance of a balanced suite of controls

Organisational culture and ways of working emerge as critical informal controls in our findings. Culture addresses three fundamental management control problems: a lack of employee direction, poor employee motivation and limitations to employee abilities (Merchant & Van der Stede, 2012). Our findings show culture to be essential to employee engagement and willingness to engage with Integrated Thinking. Developing a culture of trust not only provides employees with a feeling of individual safety that is likely to engage them (Schein, 1996), it can also give employees a sense of trust toward organisational change (Busco et al., 2006). It may also make organisations more agile and entrepreneurial and make the work environment more empowering, challenging, and meaningful for employees (Hurth, 2017). The sense of collective responsibility and employee collaboration associated with Integrated Thinking may help address weaknesses and identify opportunities to optimise performance (Dimes & De Villiers, 2020; Lyons, 2013).

Although Higgins et al. (2014) claim that employee understanding and socialisation of the goals of IR can reduce reliance on formal

control mechanisms, our findings reinforce the importance of formal controls. A fully integrated PMS is necessary for organisations to understand cause-effect linkages and measure these (Chenhall, 2005; Ittner et al., 2003). Although Knauer and Serafeim (2014) suggest that the adoption of a balanced scorecard approach is evidence of an Integrated Thinking mindset, a criticism of the BSC is that its overall measure of success is still a financial one (Flower, 2015; Hansen & Schaltegger, 2016) and that it doesn't incorporate broader stakeholders such as the environment and future generations. Even if there is evidence that management remuneration metrics are starting to change, remuneration in many organisations remains predominantly based on financial KPIs, with many people paid to do single-capital thinking (Malafronte et al., 2020). Changing compensation metrics to align with broader, longer-term goals sends a strong signal around what an organisation values, consistent with an informativeness hypothesis (Eccles et al., 2014). However, there may be issues if the finance function is tasked with developing new performance metrics. The finance function may perceive non-financial performance measures to be less reliable (Ittner & Larcker, 2001), may be biased towards non-financial indicators that are financially material (van Bommel, 2014), or may try to monetise non-financial capitals (Coulson et al., 2015). Designing a perfect integrated PMS appears to be a stumbling block for most organisations and may even be impossible (Wouters & Wilderom, 2008). Overall, this study shows that the concerns raised by Atkins et al. (2015) and Oliver et al. (2016) around the institutionalisation of profit-based performance measures seem of particular importance in the context of Integrated Thinking.

Our findings indicate the need to balance informal control mechanisms such as organisational culture with more formal controls such as performance management and incentive systems. For Integrated Thinking to effect change, a broad and comprehensive set of Management Control Systems (MCS) will be necessary to embed it into core business decision-making (Gond et al., 2012). Studies in values-led organisations have shown informal social controls to be used extensively to drive the strategic agenda, often overriding formal controls (Norris & O'Dwyer, 2004; Sandelin, 2008). However, our findings align more with Mundy (2010), who discusses how the right balance between control systems can facilitate creative dynamic tension. For the tension associated with Integrated Thinking to be productive, there is a need for informal and formal control systems to complement and support each other (Riccaboni & Luisa Leone, 2010).

6. Conclusion

This paper provides the first comprehensive literature review on Integrated Thinking in practice, analysing an emerging body of case study evidence. Our approach gains overarching theoretical insights into Integrated Thinking by synthesising the findings of several studies with diverse foci. The underlying research evidence focuses on Integrated Thinking as associated with IR, and covers multiple countries, industries and organisation types, as suggested by Guthrie et al. (2017). Our findings show that IR can lead to positive outcomes through Integrated Thinking, but only when the four organisational hallmarks we identify in our study are present. Our findings also show that Integrated Thinking can exist and develop independently of IR, and that Integrated Thinking has much in common with general good management practices that promote sustainability. We consider Integrated Thinking to be unique due to its relationship with IR but recognise that Integrated Thinking also represents developments in management practice that prioritise the recognition of broader stakeholder groups in decision-making. Our study finds that a combination of organisational and accounting mechanisms is necessary if the benefits associated with Integrated Thinking are to be realised. The paper's findings are depicted in a new conceptual framework, showing the links between four interrelated 'hallmarks' necessary for Integrated Thinking. Our framework, firmly supported by empirical data from the field, develops new middle-range theory about the nature of Integrated Thinking in practice. Our approach adopts Laughlin's view that empirical research can help in understanding the nature of accounting within organisations and society, but that only 'skeletal' theories, rather than grand theories, can be developed to explain social phenomena (Laughlin, 1995, p. 79). Our new way of defining Integrated Thinking in practice provides detailed, empirically supported insights for both academics and practitioners that have been lacking in previous definitions of Integrated Thinking.

This study proposes that four key hallmarks of Integrated Thinking exist to varying degrees in organisations claiming to experience internal benefits through Integrated Thinking, while they are less pronounced in other organisations. The first of these hallmarks is an active focus on Integrated Thinking from the top of an organisation. Boards and CEOs must understand Integrated Thinking and communicate the changes to organisational purpose and ways of working effectively throughout the organisation. The second hallmark is an Integrated Strategy, where a broad stakeholder base is actively involved in IR, and the business model and capitals are well understood throughout the organisation. Integrated Thinking brings tension and conflict to decision-making, which can be reduced with the third hallmark, a shared sense of purpose and a culture of trust, encouraging strategic alignment, employee engagement and collaboration. The fourth hallmark is an investment in Integrated Intelligence –the underlying PMS and decision-making processes that collate financial and non-financial information and enable organisational agility.

Failure to understand the difficulties associated with Integrated Thinking, in particular changes to ways of working and thinking that may be well established, remains a challenge for many organisations. This finding is consistent with literature on sustainability management that highlights the paradox that managers face when trying to manage competing priorities (Hahn et al., 2014). While our findings show that people (the board, the CEO and all employees) are essential to embedding Integrated Thinking, it is unclear how a capability for Integrated Thinking develops and how well-understood the idea is throughout organisations. The importance of balancing formal and informal control mechanisms to address the tensions arising from Integrated Thinking also emerges from our findings. While organisational culture emerges as a critically important informal control, equally important yet more problematic in practice are appropriate performance management and incentive systems.

In addition to the insights above, a key contribution of this paper is that it moves the debate away from poor definitions of Integrated Thinking towards a deeper understanding of how it may be used within organisations to generate value and what barriers might exist. Dumay et al. (2017) argue that vague definitions of Integrated Thinking may represent a barrier to IR implementation. Our

framework allows for multiple interpretations of Integrated Thinking and offers the potential for organisations to consider embedding Integrated Thinking without the need to adopt Integrated Reporting. Our conceptual framework addresses the criticism that academic research on IR is too far removed from the internal workings of organisations (Perego et al., 2016). Our conceptual framework provides a middle-range theorisation of the construct of Integrated Thinking, which could be useful for researchers to identify, measure, or study the concept in future research. Our study responds to calls by Feng et al. (2017), Churet and Eccles (2014) and Rinaldi et al. (2018) for in-depth academic research to understand the changes effected by IR within organisations. As interest in non-financial reporting continues to grow and rapid changes are occurring in the field, academic enquiry such as ours is essential to enable a deep, independent, and rigorous understanding of developments.

Our findings are helpful for practitioners considering adopting IR and for IR adopters struggling to realise the internal benefits they may have expected. Our research also has implications for the IIRC, the VRF and the ISSB in their promotion of IR and Integrated Thinking Principles. Although the ISSB continues to extol the benefits of IR and Integrated Thinking and has recently provided more guidance in the form of case studies, there is no suggestion by them that Integrated Thinking may be difficult to achieve. Yet for managers trying to balance multiple conflicting priorities, tension and difficulty is likely to be part of the process (a point that has been made in prior research - see Hahn et al., 2014). Our research suggests that further guidance provided by Integrated Thinking promoters should stress the importance of a 'healthy' tension as an essential part of organisations moving from a shareholder value creation mindset to one of sustainable value creation for a broader set of stakeholders. This applies not only to Integrated Thinking in its original context of IR, but also if practitioners seek to implement Integrated Thinking alongside a focus on other targets, such as the UN SDGs. If practitioners don't recognise and anticipate difficulty as an essential part of Integrated Thinking adoption, they may be more likely to abandon it in frustration when faced with any challenges.

6.1. Limitations

Although our framework shows clear themes emerging in a growing body of literature, Integrated Thinking remains inherently unobservable. Positive changes attributed to Integrated Thinking by research participants could potentially be due to other factors such as a change in CEO or a change in strategy (as suggested by Higgins et al. (2019)). The hallmarks we identify may have developed from other concurrent developments in management and reporting, and we discuss the potential influence of these developments in our literature review. Nonetheless, the consistency of themes we identify across the body of evidence indicates that underlying hallmarks of Integrated Thinking exist. While every effort has been made to ensure transparency in our literature review process, the emerging themes and the framework remain subject to interpretation. As Feng et al. (2017) suggest, how practitioners and other stakeholders interpret Integrated Thinking may also depend on how Integrated Thinking is conceptualised and operationalised within their organisations. As IR is a relatively recent form of reporting, interpretations of IR and Integrated Thinking are likely to develop over time and additional themes may emerge in the future which enhance the framework.

6.2. Avenues for future research

The findings of our study indicate that Integrated Thinking brings uncertainty and difficulty and that this tension is a key feature of Integrated Thinking. Accepting this tension and difficulty is likely to require changes in the decision-making capabilities of individuals and teams. Our framework proposes that a shift towards Integrated Thinking needs to come from the board. However, Gibassier et al. (2018) raise concerns about the board's capacity to think in an integrated way. Rich-Tolsma and Oliver (2016) suggest that only 3% of individuals have the necessary skills for Integrated Thinking, indicating future research opportunities to understand how Integrated Thinking develops at a collective and an individual level. Al-Htaybat and Von Alberti-Alhtaybat (2018) suggest that Integrated Thinkers can generate value through influential analysis and communication and their ability to handle disruption in an agile and innovative manner. One of the interviewees in Adams's (2017) study considered women to be more capable of Integrated Thinking than men, suggesting that gender, alongside age, experience and personal characteristics of CEOs and CFOs, may provide interesting research avenues.

A deeper understanding of the development of Integrated Thinking over time would also be a valuable future research avenue. In particular, the development of Integrated Thinking as an extension of other types of management practice would add further insights. Also, although we present four hallmarks of Integrated Thinking together in a single framework, studies such as Argento et al. (2019) suggest that the order in which organisations focus on the hallmarks may be important. Longitudinal studies of organisations would add insights here. Our early analysis of differences between types of organisations and how they approach and embed Integrated Thinking suggests that comparisons between the experiences of large companies, SMEs and public sector organisations may be helpful. Lessons in Integrated Thinking may also be drawn from exploring the decision-making capabilities of different civilisations and cultures and how these develop over time (McGuigan et al., 2020). Event studies may also be insightful, as organisations with a sound understanding of dependencies between capitals and stakeholders should be better positioned to navigate disruption (Atkins et al., 2020). Case study evidence suggests that Integrated Thinking could help navigate crises (Al-Htaybat & Von Alberti-Alhtaybat, 2018), with early evidence showing its potential to help organisations survive the disruption of the Covid-19 crisis (Dimes & De Villiers, 2021). Exploring links between Integrated Thinking and other types of voluntary corporate reporting, such as reporting on the UN SDGs, would develop further insights.

Our new conceptual framework is based primarily on case study and interview evidence on Integrated Thinking. Other research methodologies may contribute to a deeper understanding of Integrated Thinking and help define and develop the framework. For example, Esch et al. (2019) show how experiments can reveal insights into the use of integrated information for decision-making.

Secondary data sources may also reveal insights into Integrated Thinking as a form of management, for example, the analysis of management commentary in formal corporate disclosures and through other less traditional channels (Beattie, 2014; Arul et al., 2021). Once a deeper understanding of Integrated Thinking develops, this could be used to create measures of Integrated Thinking, for example extending work by Malafronte and Pereira (2020). This could enable larger data sets to be used for Integrated Thinking studies and could help address measurement issues identified by De Villiers et al. (2017).

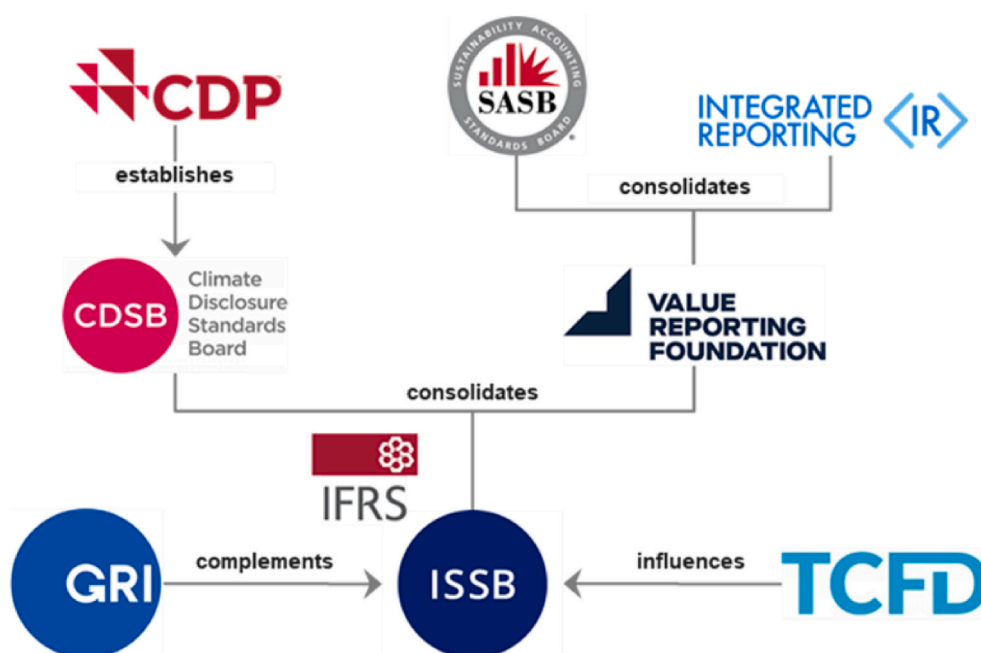
This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data availability

Data will be made available on request.

Appendices.

Appendix 1: Convergence of Voluntary Sustainability Disclosure Standards (Kirkland & Ellis, 2022)



Appendix 2: List of Articles based on primary evidence

Year	Author	Title	Country	Method	Industry	Size/complexity	Journal
2012	Parrot & Tierney	Integrated Reporting, Stakeholder Engagement, and Balanced Investing at American Electric Power	US	Case study	Energy	Large, listed, complex	Journal of Applied Corporate Finance
2013	Giavonnoni & Maraghini	The challenges of integrated performance measurement systems	Italy	Case study	Fashion	Medium-sized family firm	AAAJ
2014	Higgins et al.	Walking the talk(s): Organisational narratives of Integrated Reporting	Australia	Interviews	Mixed	Mixed	AAAJ
2014	Knauer & Serafeim	Attracting Long-Term investors through Integrated Thinking and Reporting: A Clinical Study of a Biopharmaceutical company	Ireland	Case study	Pharma	Large, listed, complex	Journal of Applied Corporate Finance

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Year	Author	Title	Country	Method	Industry	Size/ complexity	Journal
2014	Steyn	Organisational benefits and implementation challenges of mandatory Integrated Reporting	South Africa	Survey	Mixed	Mixed	SAMPJ
2014	Stubbs & Higgins	Integrated Reporting and internal mechanisms of change	Australia	Interviews	Mixed	Mixed	AAAJ
2014	Van Bommel	Towards a legitimate compromise: An exploration of Integrated Reporting in the Netherlands	Netherlands	Interviews	Mixed	Mixed	AAAJ
2015	Lodhia	Exploring the Transition to Integrated Reporting Through a Practice Lens: An Australian Customer Owned Bank Perspective	Australia	Case study	Financial services	Large, mutual, unlisted	Journal of Business Ethics
2015	Lueg et al.	Integrated Reporting with CSR practices	Denmark	Case study	Manufacturing	Large, listed, complex	Corporate Communications: An International Journal SAMPJ
2015	Robertson & Samy	Factors affecting the diffusion of integrated reporting - a UK FTSE 100 perspective	UK	Interviews	Mixed	Mixed	
2016	Burke & Clarke	The business case for integrated reporting: Insights from leading practitioners, regulators, and academics	Global	Interviews	Mixed	Mixed	Business Horizons
2016	Mio et al.	Internal application of IR principles: Generali's Internal Integrated Reporting	Italy	Case study	Insurance	Large, listed, complex	Journal of Cleaner Production
2016	Oliver et al.	Conceptualising Integrated Thinking in practice	Australia	Case study	Mixed	Mixed	Managerial Auditing Journal
2016	Perego et al.	A lot of icing but little cake? Taking integrated reporting forward	Global	Interviews	Mixed	Mixed	Journal of Cleaner Production
2017	Adams	Adams Conceptualising the contemporary corporate value creation process	South Africa	Interviews	Mixed	Mixed	AAAJ
2017	Beck et al.	In Pursuit of a 'Single Source of Truth': from Threatened Legitimacy to Integrated Reporting	Australia	Case study	Financial services	Large, listed, complex	Journal of Business Ethics
2017	Chaidali & Jones	It's a matter of trust: Exploring the perceptions of Integrated Reporting preparers	UK	Interviews	Mixed	Mixed	Critical Perspectives on Accounting
2017	Del Baldo	The implementation of integrating reporting in SMEs	Italy	Action research	SMEs	SMEs	Meditari Accountancy Research
2017	Dumay & Dai	Integrated Thinking as a cultural control?	Australia	Case study	Financial services	Medium-sized, mutual, unlisted	Meditari Accountancy Research
2017	Feng et al.	Exploring Integrated Thinking in integrated reporting: an exploratory study in Australia	Australia	Interviews	Mixed	Mixed	Journal of Intellectual Capital
2017	Guthrie et al.	Integrated reporting and Integrated Thinking in Italian public sector organisations	Italy	Case study	Public sector	Mixed – public sector	Meditari Accountancy Research
2017	Lai et al.	What does materiality mean to integrated reporting preparers? An empirical exploration	Italy	Case study	Insurance	Large, listed	Meditari Accountancy Research
2017	Macias & Farfan-Lievano	Integrated reporting as a strategy for firm growth: multiple case study in Colombia	Colombia	Case study	Mixed	Mixed	Meditari Accountancy Research
2017	McNally et al.	Exploring the challenges of preparing an integrated report	South Africa	Interviews	Mixed	Mixed	Meditari Accountancy Research
2017	Silvestri et al.	A research template to evaluate the degree of accountability of integrated reporting: a case study	Italy	Case study	Agriculture	Medium-sized family firm	Meditari Accountancy Research
2018	Al-Htaybat & Alberti-Alhtaybat	Integrated thinking leading to integrated reporting: case study insights from a global player	Middle East	Case study	Technology	Large, listed, complex	AAAJ
2018	Gibassier et al.	Integrated reporting is like God: no one has met Him, but everybody talks about Him	Europe	Action research	Consumer Goods	Large, listed, complex	AAAJ
2018	Lai et al.	Integrated reporting and narrative accountability: the role of preparers	Italy	Interviews	Insurance	Large, listed, complex	AAAJ

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Year	Author	Title	Country	Method	Industry	Size/ complexity	Journal
2018	McNally & Maroun	McNally Maroun It is not always bad news: Illustrating the potential of integrated reporting using a case study in the eco-tourism industry	South Africa	Case study	Tourism	Medium-sized	AAAJ
2018	Vesty et al.	Integrated reporting as a test of worth	Australia	Interviews	Financial services	Large, mutual, unlisted	AAAJ
2018	Vitollo & Raimo	Adoption of Integrated Reporting: Reasons and Benefits-A Case Study Analysis	Italy	Case study	Insurance	Large, listed, complex	International Journal of Business and Management Organisation and Environment
2019	Argento et al.	From Sustainability to Integrated Reporting: The Legitimizing Role of the CSR Manager	Italy	Case study	Public utility	Large, listed, complex	Journal of Management and Governance
2019	Badia et al.	Integrated reporting in action: mobilizing intellectual capital to improve management and governance practices	Europe	Case study	Mixed	Mixed	Journal of Management and Governance
2019	Caruana & Grech	Tweaking public sector reporting with integrated reporting concepts	Malta	Case study	Public sector	Public sector	Public Money and Management
2019	Cavicchi et al.	On the feasibility of integrated reporting in healthcare: a context analysis starting from a management commentary	Italy	Case study	Healthcare	Public sector	Journal of Management and Governance
2019	Corbella et al.	Integrated reporting and the performativity of intellectual capital	Europe	Case study	Oil and Gas	Large, complex	Journal of Management and Governance
2019	Doni et al.	Exploring integrated reporting in the banking industry: the multiple capitals approach	Singapore	Case study	Financial services	Large, listed, complex	Journal of Intellectual Capital
2019	Esch, Schulze and Wald	The dynamics of financial information and non-financial governance information in the strategic decision-making process	Germany	Interviews	Mixed	Mixed	Journal of Strategy and Management
2019	Higgins et al.	Journey or toolbox? Integrated reporting and processes of organisational change	Australia	Interviews	Mixed	Mixed	AAAJ
2019	Le Roux & Pretorius	Exploring the nexus between integrated reporting and sustainability embeddedness	South Africa	Case study	Property	Large, listed	SAMPJ
2019	Robertson & Samy	Rationales for integrated reporting adoption and factors impacting on the extent of adoption	UK	Interviews	Mixed	Mixed	SAMPJ
2019	Rodriguez Guitierrez et al.	Is integrated reporting transformative? An exploratory study of non-financial reporting archetypes	Spain	Interviews	Mixed	Mixed	SAMPJ
2019	Sanches et al.	Sensemaking of Financial Institution Actors in the Adoption and Elaboration of Integrated Reporting	Brazil	Case study	Financial services	Large, listed, complex	RBGN
2019	Sewchurran et al.	Experiences of Embedding Long-Term Thinking in an Environment of Short-Termism and Sub-par Business Performance	South Africa	Action research	Logistics	Large, listed, complex	Journal of Business Ethics
2019	Stacchezzini et al.	An intellectual capital ontology in an integrated reporting context	Italy	Case study	Energy	Large, listed, complex	Journal of Intellectual Capital
2020	Cerbone & Maroun	Materiality in an integrated reporting setting: Insights using an institutional logics framework	South Africa	Interviews	Mixed	Mixed	British Accounting Review
2020	DeValle et al.	Integrated Thinking rolls! Stakeholder engagement actions translate Integrated Thinking into practice	Italy	Case study	Consumer Goods	Large, complex, family owned	Meditari Accountancy Research
2020	Dimes & De Villiers	How Management Control Systems Enable and Constrain Integrated Thinking	New Zealand	Case study	Energy	Large, listed, complex	Meditari Accountancy Research
2020	Iacuzzi et al.	Integrated reporting and change: evidence from public universities	Italy	Case study	University	Public sector	Journal of Public Budgeting, Accounting

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Year	Author	Title	Country	Method	Industry	Size/ complexity	Journal
2020	Marasca et al.	The how and why of IR in a public health care organisation: The stakeholder's perspective	Italy	Action research	Public health	Public sector	and Financial Management Business Strategy and the Environment
2020	Mio et al.	Materiality in integrated and sustainability reporting: A paradigm shift?	Italy	Case study	Insurance	Large, listed, complex	Business Strategy and the Environment
2020	Mirsadri et al.	To what extent are the underlying concepts of integrated reporting applicable for hi-tech knowledge based organisations?	Iran	Mixed methods	Technology	Large, complex, unlisted	SAMPJ
2020	Rossi & Luque-Vilchez	The implementation of sustainability in a SME and the emergence of Integrated Thinking	Italy	Action research	Waste	SME	Meditari Accountancy Research
2021	Akbas et al.	Internal Change Mechanism of Integrated Reporting: A Field Study	Turkey	Interviews	Mixed	Mixed	Sustainability
2021	Arora et al.	Enablers and barriers to the involvement of accountants in integrated reporting	Global	Interviews	Mixed	Mixed	Meditari Accountancy Research
2021	Barnabe et al.	Conceptualising and enabling circular economy through integrated thinking	Italy	Action research	Agriculture	SME	Corporate Social Responsibility and Environmental Management
2021	Busco et al.	Understanding integrated thinking: evidence from the field, the development of a framework and avenues for future research	Europe	Case study	Energy	Large, listed	Meditari Accountancy Research
2021	Favato et al.	Integrated Thinking and Reporting Process: Sensemaking of Internal Actors in the Case of Itaú Unibanco	Brazil	Case study	Banking	Large, listed	Journal of Financial and Risk Management
2021	Herath et al.	Integrated thinking, orchestration of the six capitals and value creation	Sri Lanka	Case study	Healthcare	Large, listed	Meditari Accountancy Research
2021	Lakshan et al.	Management of risks associated with the disclosure of future-orientated information in integrated reports	Sri Lanka	Interviews	Mixed	Mixed	SAMPJ
2021	Lakshan et al.	Challenges of, and Techniques for, Materiality Determination of Non-Financial Information used by Integrated Report Preparers	Sri Lanka	Interviews	Mixed	Mixed	Meditari Accountancy Research
2021	Robertson	Social network influences on integrated reporting adoption and implementation – a UK perspective	UK	Interviews	Mixed	Mixed	Journal of Global Responsibility
2021	Sonnerfeldt	The continuous translation of the idea of integrated reporting (IR): the travel of IR to a public sector entity	UK	Case study	Public sector	Public sector	Accounting and Finance
2021	Steenkamp	Managing material value creation matters in integrated reporting	South Africa	Interviews	Mixed	Mixed	Meditari Accountancy Research
2022	Arora et al.	Preparers' perceptions of integrated reporting: a global study of integrated reporting adopters	Global	Case study	Mixed	Mixed	Accounting and Finance
2022	Hosada	Adoption of integrated reporting and changes to internal mechanisms in Japanese companies	Japan	Case study	Mixed	Mixed	Corporate Social Responsibility

Appendix 3: List of Conceptual Papers

Date	Author	Title	Journal
2011	Adams & Simnett	Integrated Reporting: An Opportunity for Australia's Not-for-Profit Sector	Australian Accounting Review
2012	Kiron	Get Ready: Mandated Integrated Reporting Is The Future of Corporate Reporting	MIT Sloan Management Review
2013	Beattie & Smith	Value creation and business models: Refocusing the intellectual capital debate	The British Accounting Review

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Date	Author	Title	Journal
2013	Frias-Aceituno et al.	The Role of the Board in the Dissemination of Integrated Corporate Social Reporting	Corporate Social - Responsibility and Environmental Management
2014	Eccles & Serafeim	The Impact of Corporate Sustainability on Organizational Processes and Performance	Management Science
2015	Adams	The International Integrated Reporting Council: A call to action	Critical Perspectives on Accounting
2015	Coulson et al.	Exploring metaphors of capitals and the framing of multiple capitals	Sustainability Accounting, Management & Policy Journal
2016	Meyrick	Telling the Story of Culture's Value: Ideal-Type Analysis and Integrated Reporting	Journal of Arts Management, Law, and Society
2016	Martinez & Wachira	Does Integrated Reporting Foster Integrated Thinking? Evidence from Firms Listed on the JSE	SSRN
2017	Maniora	Is Integrated Reporting Really the Superior Mechanism for the Integration of Ethics into the Core Business Model? An Empirical Analysis	Journal of Business Ethics
2019	Esch, Schnellbacher & Wald	Does integrated reporting information influence internal decision making? An experimental study of investment behaviour	Business Strategy & the Environment
2019	Barnabè et al.	Visualizing and managing value creation through integrated reporting practices: a dynamic resource-based perspective	Journal of Management & Governance
2019	Stroehle & Rama Murthy	Integrating Frameworks for Multi-Capital Accounting, Reporting and Valuation	SSRN
2019	Dumay et al.	Developing trust through stewardship	Journal of Intellectual Capital
2019	Massingham et al.	Improving integrated reporting	Journal of Intellectual Capital
2019	Busco et al.	The determinants of companies' levels of integration: Does one size fit all?	British Accounting Review
2020	Cordobes et al.	Integrated Thinking in the reporting of public sector enterprises: A proposal of contents	Meditari Accountancy Research
2021	Busco et al.	Understanding integrated thinking: evidence from the field, the development of a framework and avenues for future research	Meditari Accountancy Research

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