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**IASB<sup>®</sup> meeting**

Date **April 2024**  
Project **Intangible Assets**  
Topic **Academic literature review**  
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**Purpose and structure**

1. This literature review summarises evidence from academic papers on topics that the International Accounting Standards Board (IASB) might explore in its project on Intangible Assets (see Appendix A of Agenda Paper AP17C for further information on possible topics).
2. This review does not include academic papers on the topic of goodwill because these have been covered in the *Business Combinations—Disclosures, Goodwill and Impairment* project<sup>1</sup> and the IASB has not decided to what extent, if any, goodwill will be part of a project on Intangible Assets.
3. The list of academic papers in this review is not exhaustive but is based on:
  - (a) three papers submitted to the IASB Research Forum in November 2023, held in conjunction with the *European Accounting Review* and *Accounting in Europe*;
  - (b) papers selected by academics who participated in an IASB workshop with the European Accounting Association (EAA) and EFRAG and who were asked to

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<sup>1</sup> [Agenda Paper 18F](#) to the IASB's May 2021 meeting summarised academic evidence on topics relevant to the questions in the Discussion Paper *Business Combinations— Disclosures, Goodwill and Impairment*.

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- gather academic evidence relevant to the questions the IASB might explore in a project on Intangible Assets;
- (c) an academic literature review on the reporting of internally generated intangible assets commissioned by EFRAG to inform its Discussion Paper *Better Information on Intangibles: Which is the Best Way to Go?*;<sup>2</sup>
  - (d) a project report from a joint IASB, KPMG and International Association for Accounting Education and Research (IAAER) research programme; and
  - (e) additional published and working papers not included in the sources described in paragraphs 3(a)–3(d), which were located via EBSCO, Google Scholar, Social Science Research Network and other databases of academic studies.<sup>3</sup>
4. This review also includes academic papers focusing on US generally accepted accounting principles (GAAP) reporting of intangible assets because US-based evidence may highlight issues that are relevant to the application of IAS 38 *Intangible Assets*.
5. The summary of the academic literature is structured as follows:
- (a) Key messages (paragraphs 6–22);
  - (b) Detailed research findings (paragraphs 23–100);
  - (c) Question for the IASB; and
  - (d) Appendix—List of academic references.

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<sup>2</sup> Zambon, S., Marzo, G., Girella, L., Abela, M., and D'Albore, N. (2020), 'A Literature Review on the Reporting of Intangibles', *EFRAG Academic Report* [Download \(efrag.org\)](https://www.efrag.org/Download).

<sup>3</sup> Even though the results of working papers may change prior to publication, working papers were included in this review for the purpose of outlining the scope of academic research related to intangible assets.

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## Key messages

### *Overall studies*

6. Some academic papers showed that financial statements may not capture the full value of internally generated intangible assets, suggesting a need for modification of accounting standards.
7. Other academics countered that changes to current accounting standards may not be necessary because the income statement provides information about unrecognised internally generated intangible assets.
8. Despite disagreements about the need for more recognition, there is a consensus about improving information disclosed, either by amending disclosure requirements or providing guidance about the disclosure of voluntary information.

### *Detailed topics*

#### *Recognition*

9. A large number of academic papers have shown that internally generated intangible assets, which do not meet the IAS 38 recognition criteria (or are prohibited in IAS 38), such as brands, and items that do not meet the asset definition (such as reputation), are linked to future benefits.
10. The question of whether the cost or fair value of internally generated intangible assets can be reliably measured was generally considered in the discussion of their recognition on the balance sheet.
11. Research indicated that initial recognition at cost was value relevant but subsequent amortisation and impairments of intangible assets were less useful or not useful for investors.
12. Research suggested that intangible assets have specific properties, including non-rivalry in use, low excludability, sunkness (relating to irrecoverable costs) and synergies, that need to be taken into account when considering recognition criteria.

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13. There is limited academic evidence directly addressing the question of whether there should be a recognition difference between acquired and internally generated intangible assets.
  14. Academic research in support of separate recognition of identifiable intangible assets acquired in business combinations has shown that identifiable intangible assets are more value relevant and have stronger predictive ability for future operating and financial performance than goodwill.

### *Measurement*

15. The use of fair value measurement for intangible assets is uncommon.
16. Researchers proposed relaxing the requirements for an active market to fair value intangible assets under the revaluation model in order to align the valuation of intangible assets with IFRS 13 *Fair Value Measurement*.
17. Some studies proposed treating cryptocurrencies as intangible assets using a revaluation model.

### *Disclosure*

18. Research indicates that high-quality information disclosed about intangible assets and intangible items can have a positive effect on an entity's market value.
19. Some studies suggest recognition and disclosure complement one another.
20. The academic literature provides mixed evidence on the benefits of expense disaggregation in the income statement with concerns over revealing commercially sensitive information.
21. The best location for information about intangible items to be disclosed is a developing topic with some academics suggesting dedicated value creation reports, integrated reports, management commentary or notes to the financial statements.

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*Other topics*

22. Some evidence suggests consistent terminology in categorising intangible assets is desirable, whereas other evidence suggests standardisation should not be attempted due to the specificity and the evolving nature of intangible assets.

**Detailed research findings**

23. The detailed research findings are organised in the following sections:
- (a) Overall studies (paragraphs 24–40):
    - (i) Academic literature reviews (paragraphs 24–27); and
    - (ii) Value relevance of financial statements (paragraphs 28–40);
  - (b) Detailed topics (paragraphs 41–100):
    - (i) Recognition (paragraphs 41–67);
    - (ii) Measurement (paragraphs 68–75);
    - (iii) Disclosure (paragraphs 76–98); and
    - (iv) Other topics (paragraphs 99–100).

***Overall studies****Academic literature reviews*

24. The literature review by Zambon et al (2020) provided an overview of academic research on ‘intangibles’ focusing on more than 100 papers published in the period 2007–2019. The report used the term ‘intangibles’ to refer to unrecognised internally generated intangible assets that are not acquired separately or as part of a business combination and non-separable intangible items (for example, reputation, business model and human capital).
25. Two of the authors of the report who participated in the IASB academic workshop with EAA and EFRAG highlighted key findings relevant to the IASB’s possible project topics:

- (a) a number of academic papers showed that financial statements have lost their value relevance in recent decades and some studies linked the loss of value relevance to unrecognised intangible assets; the authors of these papers called for modifications of accounting standards that would narrow the gap between entities' market values and book values;
- (b) other academics said there was no compelling argument for modifying accounting standards related to intangible assets because, for example, the value of intangible assets not recognised on the balance sheet can be detected in the income statement;
- (c) there was evidence that expenditure on expensed intangible items was positively associated with measures of financial performance and an entity's market value;<sup>4</sup> this association was influenced by factors such as company strategy and industry competitiveness;
- (d) many academics did not support different accounting requirements for acquired and internally generated intangible assets;
- (e) disclosure of information about intangible items was positively associated with entities' market values;
- (f) one study found that entities adjusted the narrative information disclosed about research and development (R&D) based on earnings performance (for example, increasing the narrative information when performance fell). The main intent of this adjustment was found to be meeting investor needs rather than obscuring performance; and
- (g) limited evidence on investors' information needs about unrecognised intangible assets suggested that:
  - (i) analysts expended greater effort to follow intangible-intensive entities; and

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<sup>4</sup> A positive (negative) association between two variables means that higher levels of one variable are associated with higher (lower) levels of the other variable—in this case higher expenditures on expensed intangible items were associated with higher measures of financial performance and market value.

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- (ii) analysts' forecast accuracy (forecast dispersion) increased (decreased) when entities disclosed voluntary information about intangible items such as human capital and information risk.
26. The academic report suggested improving the information disclosed about unrecognised intangible assets in financial statements or narrative reporting, including key performance indicators (KPIs) related to such assets. Drawbacks, such as a lack of unified KPI methodology and potential comparison difficulties, were also noted.
27. A literature review by Nichita (2020) summarised research on the accounting and management aspects of intangible assets in the 2000–2019 period. Based on an analysis of 36 selected papers, the review concluded that:
- (a) recognition and measurement of intangible assets is complex and controversial.
  - (b) intellectual capital is becoming a key determinant of entity value.
  - (c) intangible assets (for example, brands, patents, software), expenditure on internally generated intangible assets (for example, R&D and advertising) and intangible items (for example, cybersecurity awareness) have an effect on an entity's performance indicators and market value.
  - (d) information disclosed about intangible assets is influenced by the size, industry, accounting standards used, and the listing status of an entity. There is some evidence that managers may disclose more when expecting increased profits.
  - (e) technological assets, as a subset of intangible assets, have significant value especially in the digital economy.

#### *Value relevance of financial statements*

28. This sub-section provides more detail about academic evidence on whether the relevance of financial statements has declined due to current accounting practices for intangible assets.

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29. Based on a global survey of 314 respondents (20.7 % preparers, 22.6 % financial analysts and investors and 56.7 % auditors, professionals and academics) and two focus groups of 16 users of financial statements (users) and 17 preparers in 2021, Zambon, Marzo, Bonnini and Girella (2023) found:
- (a) users and preparers (93% of users, and 61% of preparers) said that financial statements do not fully capture the information on intangible assets that they considered useful;
  - (b) preparers said that financial statements, compared to ‘modified’ financial statements including for example, internally generated intangible assets measured at fair value and recognised on the balance sheet or including broader non-financial information (for example, KPIs related to strategy, business model, stakeholder engagement, and specific types of intangible items), provide the least, but the most, useful information;<sup>5</sup>
  - (c) preparers were more sceptical than users about the ability of current accounting standards to provide useful information about intangible assets; and
  - (d) preparers and users agreed that information on intangible assets should be reported through a single document rather than spread across multiple documents.
30. Dugar and Pozharny (2021) analysed the value relevance of equity book value and earnings for a large sample of US GAAP and IFRS reporting entities from 15 high-GDP countries (1994–2018). They separated entities into high- and low-intangible intensity groups based on reported intangible assets (excluding goodwill), R&D expenses, and selling, general and administrative (SG&A) expenses. Findings showed reduced value relevance within the high-intangible-intensity group during the period for both US and IFRS reporting entities, whereas within the low-intangible-intensity

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<sup>5</sup> To assess the respondents’ preferences, the researchers used three types of reports as case studies: financial statements prepared in accordance with IFRS Accounting Standards; ‘modified’ financial statements including internally generated intangible assets measured at fair value and recognised on the balance sheet with notes providing information about the recognised assets; and ‘modified’ financial statements including disclosures of non-financial information such as KPIs related to strategy, business model, stakeholder engagement, internally generated intangible items of human, organisational and relationship nature, and related risks and opportunities.

group relevance remained stable (for US GAAP entities) or increased (for IFRS reporters). The researchers concluded that traditional metrics became less effective over time for entities with high investments in intangible assets.

31. Using a large sample of US GAAP reporting entities, Srivastava (2014) examined the value relevance of earnings, earnings volatility, and the matching between concurrent revenues and expenses over the 1970–2009 period. The paper showed:
  - (a) value relevance of earnings decreased over time due to increasing intangible intensity of newly listing entities;
  - (b) revenue and cash flow volatility increased over time, due to, in the author's view, high uncertainty about the benefits of investments in unrecognised intangible assets; and
  - (c) matching of concurrent revenues and expenses decreased and expense volatility increased over time, due to, in the author's view, immediate expensing of investments in unrecognised intangible assets.
32. Gu, Lev, and Zhu (2023) showed that US GAAP entities reporting losses that resulted from expensing R&D and SG&A expenditure in the period 1980–2018 subsequently generated greater value from their investments in technological innovations and human capital than other loss reporting entities and even profitable entities with similar characteristics. The study highlighted the increasing prevalence of loss reporting and suggested that financial statements prepared in accordance with current GAAP requirements distorted the value and performance of highly innovative entities.
33. Lev (2018) highlighted a decline in the ability of IFRS and US GAAP financial statement information to accurately depict company performance, predict future outcomes, and explain share prices and returns. The researcher attributed the decline to a transition from an income statement model to a balance sheet model, and standard-setters' lack of adjustment of asset recognition rules to accommodate the transition from tangible to intangible corporate value-creating resources. The author proposed restoring financial information usefulness by improving revenue-expense

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matching via capitalising and amortising value-creating expenditure and enhancing reliability of accounting estimates through refined calculation methods.

34. Several academic papers challenged the view that more intangible assets should be recognised on the balance sheet to prevent the loss of financial statements' value relevance. These papers emphasised the role of the income statement in providing information about unrecognised intangible assets.
35. Penman (2009), for example, showed that it is possible to derive an estimate of entity value that is close to the actual market price using financial statement data for two large entities with significant investments in (unrecognised) intangible assets and applying the residual income valuation model.<sup>6</sup> The researcher concluded that the income statement can effectively account for the value of unrecognised intangible assets but also acknowledged that the income statements of loss-making start-up entities may be less informative than those of the examined entities.
36. Barker, Lennard, Penman and Teixeira (2022) highlighted the income statement's supplemental role to the balance sheet, pointing out the distortion caused by current practices of expensing investments in unrecognised intangible assets. They cautioned that over-recognising intangible assets can also distort the income statement with subsequent impairments and amortisation resulting in mismatched revenues and expenses. Despite mismatching in the income statement being inevitable, they argued for its minimisation, the establishment of ex ante amortisation schedules for recognised assets, and separate presentation of future-oriented expenditure.
37. Some researchers believe that the current accounting requirements do not need amending, arguing that the focus should be on income from intangible assets or on providing guidance to entities for voluntary disclosure of information.
38. Basu and Waymire (2008) advocated that the value of intangible assets is in their potential to generate income. Trying to assign a value and recognise internally generated intangible assets would be highly subjective and inaccurate because

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<sup>6</sup> The Residual Income Valuation Model estimates an entity's share price as the sum of its book value and the present value of its future residual income, which is the net income minus the equity charge (equity capital multiplied by the cost of equity).

intangible assets are complex and interdependent—they are ideas that build on other ideas making it difficult to determine a separate value of a single idea. In the researchers' view, the income intangible assets generate together and disclosure of voluntary non-financial information are much more useful inputs for equity valuation than an estimate of a separate accounting value of an intangible asset.

39. Skinner (2009) further challenged calls for changes in accounting and disclosure practices related to intangible assets on the basis that:<sup>7</sup>
- (a) capital markets perform well in financing investments in innovative, high-technology and knowledge-based activities if these investments are capable of generating cash flows.
  - (b) recognising intangible items in the financial statements is problematic because:
    - (i) many intangible items are not separable, saleable, or discrete items—it is therefore difficult to identify the costs associated with these items.
    - (ii) there are no liquid secondary markets for many intangible items which makes it difficult to reliably estimate their fair values.
    - (iii) intangible items do not have well-defined property rights.
    - (iv) it is difficult to write contracts for intangible items.
  - (c) mandating disclosure of information about intangible items is likely to be challenging because:
    - (i) many of the measures for intangible items are industry- or entity-specific, and therefore not subject to standardisation or comparison.
    - (ii) the cost of assuring such disclosures would be high.

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<sup>7</sup> The focus of his paper was on a broader definition of intangible items including any type of intangible resource that lacks physical substance and is of economic value to the entity although he noted that his arguments also apply to a narrower view, focusing on 'identifiable' intangible items that have value on a stand-alone basis and meet conventional definitions of assets.

- (iii) costs of disclosing commercially sensitive information could be significant and lead to objections from preparers.

40. The author concluded that it is difficult to modify the requirements for recognition of internally generated assets without revising the recognition rules for liabilities, for example. In his view, standard-setters' efforts would be more effective if they focused on providing guidance to entities for structuring the disclosure of voluntary information, rather than mandating specific information to be disclosed. This approach would allow entities to tailor the information they disclose to their specific circumstances, which could provide more relevant and useful information to investors.

### ***Detailed topics***

#### ***Recognition***

##### ***Recognition criteria and prohibitions in IAS 38***

41. The academic participants in the IASB/EAA/EFrag academic workshop on Intangible Assets identified a number of papers relevant to questions on recognition criteria and prohibitions in IAS 38.
42. A large number of papers provided evidence of the future benefit generating potential of expenditure on intangible items that meet the definition of an asset but do not meet the recognition criteria in IAS 38 (or are prohibited by IAS 38), for example brand, and intangible items that would not meet the definition of an asset, for example, workforce and culture. Banker, Rajiv, Huang, Natarajan and Zhao (2019) showed that the market viewed SG&A expenses as investments that will generate future benefits. Relatedly, Enache and Srivastava (2018) showed that predictability of earnings and share returns increased when SG&A expenses were separated into maintenance and investment components.
43. More examples of academic evidence that expenditure on intangible items is associated with future benefits are:

Intangible item	Summary of evidence	Examples of academic papers
Information technology (IT) spending	Positively associated with future operating performance (increased productivity)	Brynjolfsson and Hitt (2000)
Employee training expenditure	Positively associated with future financial performance	Cleland and Bruno (1997)
Customer satisfaction	Some evidence of positive association with future operating and financial performance and relevance to investors	Ittner and Larcker (1998)
Corporate reputation	Higher reputation, measured by perceptions of the general public, increases shareholder value, measured by future stock returns	Raithel and Schwaiger (2015)
Intellectual capital	Intellectual capital and intellectual capital management capability are associated with entity market value	Yang, Brashear, and Asare (2015)

44. Central to the discussion of whether internally generated intangible assets that are associated with future benefits should be recognised on the balance sheet or expensed in the income statement is the question of whether their cost or fair value can be reliably measured.
45. Barker et al (2022) suggested that there has to be an investment expenditure for balance sheet recognition—recognising intangible assets that do not require explicit cash expenditure, such as organisational capital, social capital, market share, geographical positioning, network externalities, and political connections, would be challenging. For an intangible asset to be recognised at cost, they said the expenditure must be separately identifiable from other transactions—for example, the investment component of advertising could be difficult to identify and separate as advertising can generate future sales (brand building) but can also be incurred for maintaining current sales.
46. Iqbal, Rajgopal, Srivastava and Zhao (2023), however, proposed a method for identifying the investment component of R&D and SG&A expenditure that they

viewed as reliable. Using a sample of 6,335 R&D- and 15,797 SG&A-intensive entities over the 1970–2022 period, they estimated industry-specific and time-varying capitalisation and amortisation rates to estimate internally generated intangible assets. They used a regression of R&D and SG&A expenses on current and future revenues (up to seven years for R&D and up to five years for SG&A) and then iterated this process to achieve reliable estimates. Adding their estimates to reported capitalised intangible assets, the researchers derived modified values of total assets and equity which had stronger predictive ability for future company performance than reported values or values derived assuming previously used ‘for convenience’ fixed percentages for R&D (for example, 100%) and SG&A (for example, 30%) investment components.

47. Several academic papers have considered whether the accounting treatment of expenditure on intangible items as expenses in the income statement or as assets on the balance sheet would influence their usefulness to investors.
48. For example, Oh and Penman (2024) showed that expensing expenditure on unrecognised intangible assets was more useful to investors because it provided information about risk (see also Penman and Zhang, 2020). Using a sample of 75,133 US entity-year observations over the 1964–2017 period, the researchers found that:
  - (a) the market perceived expenditure on unrecognised intangible assets expensed in the income statement as riskier than expenditure on assets recognised on the balance sheet (measured as cash flow from investing activities) and applied a higher discount to expensed expenditures.
  - (b) after separating expenditure on unrecognised intangible assets from other expenses in the income statement, there was little evidence of a decline in the value relevance of financial statements over time.
49. There is also some evidence that the initial recognition of intangible assets at cost was useful to investors. However, the subsequent amortisation and impairments of these assets were less useful or not useful at all. This evidence was established by comparing how strongly recognised intangible assets and subsequent amortisation and impairments of those assets were associated with future earnings and share returns

(Lewellyn and Resutek, 2016; Dechow, Larson, Chad and Resutek, 2021; Ball and Nikolaev, 2022). Similarly, Marton and Starica (2023) showed that earnings before depreciation, amortisation and the estimated investment component of SG&A expenses were more useful than cash flow from operations, whereas earnings after depreciation, amortisation and the estimated investment component of SG&A expenses were not. In the authors' view, the recognition of intangible assets was useful to investors only to the extent of helping them separate maintenance and investment components of expenditure. The researchers commented that disclosure would be a much less costly way to provide information on unrecognised intangible assets than recognition.

50. Research has also shown that recognition of R&D development expenditures is associated with higher uncertainty. Using a sample of UK listed R&D-intensive entities from 1999 to 2013, Dargenidou, Jackson, Tsalavoutas, and Tsoligkas (2021) showed that before the switch to IFRS reporting, when entities had the option to capitalise or expense R&D development costs, 'capitalising entities' had a stronger association between R&D and share returns and future earnings—a measure of the market's ability to anticipate future earnings—than 'expensing entities'. In the post-IFRS adoption period there was no evidence of such a difference between the two groups of entities. In the authors' view, mandatory capitalisation affected the market's ability to anticipate future earnings performance.
51. King (2024) also focused on the concept of uncertainty, modelling a time lag between R&D expenditure and future revenues over an indeterminate number of periods. The researcher showed that immediate expensing of R&D expenditure applying US GAAP resulted in R&D accounting numbers that are as good or better at explaining entity market values as those using a capitalisation and amortisation approach.
52. Consistent with this evidence, Dihn, Eierle, Schultze and Steeger (2015) showed for a sample of German entities that analyst forecast accuracy decreased and forecast dispersion increased after entities started capitalising R&D development costs applying IAS 38. These entities had previously expensed their development costs applying German GAAP. The paper suggested that complexities of capitalisation

affected analyst accuracy although the results varied with the level of uncertainty of R&D-related benefits and other factors.

53. Other academic papers provided evidence that the recognition of R&D development costs as intangible assets was associated with economic benefits. Examples of such evidence are:

- (a) Oswald, Zarowin and Simpson (2022) showed that UK entities that switched from expensing before IAS 38 adoption to capitalisation of R&D development costs after IAS 38 adoption increased their R&D expenditure more than entities that had capitalised R&D before IAS 38 adoption.<sup>8</sup> ‘Switching’ entities had lower cost of capital and higher investment efficiency (sensitivity of R&D growth to sales growth) post-IAS 38 adoption;
- (b) Bhattacharaya, Saito, Venkataraman and Yu (2024) found that German entities that switched from expensing to capitalisation of R&D development costs after IAS 38 adoption increased their efficiency relative to non-R&D intensive entities and entities that were not subject to a reporting regime change.<sup>9</sup>
- (c) Wu and Haider (2023) analysed the effect of SFAS-86 *Accounting for the Costs of Computer Software to Be Sold, Leased, or Otherwise Marketed*, which allows some software development costs to be capitalised, on software entities’ innovation. The research revealed that the adoption of SFAS-86 enhanced the quantity and quality of these entities’ innovation and helped diversify their innovation strategies.
- (d) Dinh, Sidhu and Yu (2019) examined the effect of capitalisation of R&D development costs on under- or over-investment in the software development industry after SFAS-86 adoption. The paper found that managers of capitalising entities were less likely to cut investment in

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<sup>8</sup> UK GAAP allowed entities to capitalise or expense development expenditures.

<sup>9</sup> The efficiency that the entities generate revenue from a unit of input.

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intangible assets to achieve short-term earnings goals, and less likely to over-invest if they had financial flexibility.

54. Mazzi, Slack, Tsalavoutas and Tsoligkas (2022) documented users' views about the decision-usefulness of R&D related information provided applying IAS 38. They interviewed 17 senior sell-side and buy-side equity analysts who follow large international IFRS reporting entities with significant R&D activities. When asked about the recognition criteria, users were generally supportive of the requirement in IAS 38 for capitalisation of development expenditures but said that:
- (a) the recognition criteria lacked clarity and were subject to multiple interpretations by preparers allowing room for earnings management and impairing the decision-usefulness of capitalisation.
  - (b) IAS 38 lacked application guidance and detailed examples for applying the recognition criteria.
  - (c) they would be less concerned about the subjectivity of the recognition criteria if IAS 38 required supplementary disclosures about their application.
55. Echoing the views expressed by users on the lack of clarity of recognition criteria, Russel (2017) showed that the decision to recognise intangible assets was influenced by managerial incentives. Using a sample of Australian entities in the period 1987–2012, the researcher found that the decision to capitalise intangible assets was related to earnings management incentives such as executive bonuses and share issues.
56. Academic research has also highlighted that intangible assets have certain properties that would need to be taken into account when considering recognition criteria.
57. Crouzet, Eberly, Eisfeldt, and Papanikolaou (2022) outlined these properties in a discussion of the role of intangible assets in the production process:
- (a) non-rivalry in use—the property of an intangible asset that allows it to be used simultaneously in different locations and processes; and

- (b) low excludability—difficulty to establish and enforce exclusive property rights to intangible assets.
58. In addition to non-rivalry in use and low excludability, also referred to as scalability and spillovers, Haskel and Westlake (2018) discussed two additional key properties of intangible assets:
- (a) sunkness—having value for specific entities but not for others, making them difficult to sell; and
  - (b) synergies—being more valuable when used together with other intangible assets.
59. Barker et al (2022) summarised, based on academic literature, defining characteristics of intangible assets that may include some, or all, of the following:
- (a) non-separable and defined by creating value when used alongside other resources;
  - (b) lacking well-defined property rights, allowing for appropriation by others;
  - (c) unique in nature, implying absence of liquid markets and exchange value;
  - (d) not always having identifiable costs;
  - (e) often non-rival in use;
  - (f) network effects enabling high added value;
  - (g) relatively high uncertainty of outcomes; and
  - (h) often incompatible with the writing of complete contracts, due to non-separability, lack of well-defined property rights and uncertain economic outcomes.
60. In the authors' view, the lack of physical substance of intangible assets is not a relevant defining characteristic; the focus instead should be on whether there is an expenditure that is separately identifiable from other transactions.

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***Recognition difference between acquired intangible assets and internally generated intangible assets***

61. There is limited academic evidence that directly addresses the question of whether there should be a recognition difference between acquired and internally generated intangible assets.
62. One academic paper showed that contractual or legal property rights may justify such a recognition difference. Specifically, Brown and Kimbrough (2011) showed for a large sample of US manufacturing entities in 1980–2006 that the recognised intangible assets had different earnings properties than goodwill and R&D capital (their proxy for internally generated intangible assets).<sup>10</sup> In the authors' view this could be because the recognised intangible assets are more likely to arise from contractual or legal rights and thus are less susceptible to expropriation by rivals. Consistent with that view, they documented a similar result for R&D capital in industries with strong legal property rights mechanisms for R&D innovation.
63. Barker and Penman (2020) proposed that assets be recognised only if an evidence-based amortisation scheme could be established or the uncertainty of realising future benefits was low at the time of asset recognition. In their view, if the acquisition did not in itself make the expected economic benefits from an intangible item less uncertain, the acquisition of an intangible item should not justify recognition of an intangible asset.
64. Hunter, Webster and Wyatt (2012) analysed the economic and accounting properties of intangible assets. Drawing from economists' views that uncertainty associated with the outcomes from expenditure on intangible items mainly arose from weak property rights, the researchers proposed that the presence of (verifiable) property rights could be the basis for a capitalisation test for intangible assets.

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<sup>10</sup> The researchers estimated R&D capital using current and past R&D expenditures and an annual amortisation rate of 20%.

***Intangible assets acquired as part of a business combination***

65. The academic contributors to the EAA-IASB-EFRAG workshop commented that identifiable intangible assets acquired in business combinations are an important source of information to investors.
66. The academic literature has shown that acquired identifiable intangible assets are value relevant and have predictive ability for future operating profits and cash flows. In addition, research found that identifiable intangible assets provided incremental information to investors beyond information provided by goodwill, lending support for their separate recognition from goodwill. Examples of such academic papers are:

<b>Intangible asset/item</b>	<b>Sample</b>	<b>Summary of findings</b>	<b>Academic papers</b>
Identifiable intangible assets (intellectual property and other rights, R&D expenditure, other intangible assets) and goodwill	354 entity-year observations of Portuguese listed entities in 1988–2008	Higher value relevance after IFRS adoption compared to their value relevance before IFRS adoption	Oliveira, Rodrigues and Craig (2010)
Identifiable intangible assets and goodwill	1,855 European listed entities in 2002–2007	Higher value relevance after IFRS adoption compared to their value relevance before IFRS adoption	Boulerne, Sahut and Teulon (2011)
Goodwill, intellectual property and other rights, start-up costs and other intangible assets; R&D expenditure	Italian listed entities in 2000–2015	Goodwill, intellectual property and other rights, start-up costs and other intangible assets (R&D expenditure) were (not) value relevant before IFRS adoption; after IFRS adoption the value relevance of goodwill and R&D expenditure increased and the value relevance of start-up costs decreased	Cordazzo and Rossi (2020)
Intangible assets recognised in business combinations	599 Australian listed entities in 2005–2006	Goodwill and identifiable intangible assets were value relevant; the value relevance of goodwill increased after IFRS adoption	Chalmers, Clinch and Godfrey (2008)

Intangible assets recognised in business combinations	603 business combinations over the 2004–2016 period in seven African countries	Intangible assets recognised in business combinations were value relevant	Tunyi, Ehalaiye, Gyapong and Ntim (2020)
Intangible assets recognised in business combinations	234 German IFRS reporting entities over the 2004–2014 period	Identifiable intangible assets recognised in business combinations were value relevant; identifiable intangible assets were associated with lower uncertainty about future economic benefits than goodwill	Buxbaum, Schabert, Schultze, Wilhelm and Wyatt (2023)
Intangible assets recognised in business combinations*	2,980 US business combinations over the 2009–2016 period	Strategically important and wasting intangible assets provided more information than goodwill. Non-strategic and organically replaced assets did not provide more information than goodwill.	King, Linsmeier, Wangerin (2023)
<p>*Strategically important (non-strategic) assets are defined as assets whose book value as a percentage of total asset value was above (below) the average in the industry or in the class of assets.</p> <p>*Wasting assets (organically replaced assets) are defined as assets whose useful lives are legally or contractually determined (depend on future investments over an uncertain horizon).</p>			
Intangible assets recognised in business combinations	3,952 US business combinations over the 2003–2014 period	Customer-related intangible items (for example, customer contracts or backlog) and trademarks had the highest predictive ability of all identifiable intangible assets for future operating income and cash flows; disaggregating the acquired intangible assets into separate identifiable intangible assets and goodwill improved the predictive ability of the model.	McInnis and Monsen (2023)

67. The academic workshop participants commented that the evidence on the relevance and predictive ability of goodwill and identifiable intangible assets cannot be interpreted without considering the influence of managerial incentives and

institutional environment in the determination of purchase price allocation and fair values of identifiable intangible assets. Examples of managerial incentives and institutional environment factors considered by academic papers are executive compensation (Shalev, Zhang and Zhang, 2013); tax incentives (Lynch, Romney, Stomberg and Wangerin, 2019); entity and chief executive officer characteristics (Zhang and Zhang, 2016); non-GAAP reporting (Ashby, Chyz, Myers and Whipple, 2024); and ownership structure (Frii and Hamberg, 2021; Tunyi et al, 2020).

### *Measurement*

68. Sellhorn and Stier (2019) reviewed the academic evidence on the usefulness of fair value measurements for long-lived operating assets. The authors discussed that whereas the use of fair value was pervasive for investment property, it was extremely rare for intangible assets (and property, plant and equipment). None of the 228 UK and Australian sample entities they studied employed the revaluation model. The researchers observed that the use of external appraisers enhanced decision-usefulness of fair values and that verifiability, context, and understanding of factors influencing fair-value-related reporting choices could vary across recognised and disclosed fair values.
69. Several researchers have argued in support of relaxing the requirements for an active market to measure the fair value of intangible assets that are accounted for using the revaluation model. For example, Mehnaz, Scott and Zang (2023) propose aligning the fair value requirements for intangible assets to IFRS 13 as a relatively low-cost solution to reduce the difference between the market value of the entity and its book value; in the authors' view, this gap is partly due to the lack of recognition of intangible assets and improper valuation of intangible assets.
70. In a comment letter to EFRAG's Discussion Paper, although acknowledging the challenges of determining the fair value of particular intangible assets due to the lack of an active market, the 2022 EAA-Financial Reporting Standards Committee Intangibles Research Group noted that in recent years there are many options for buying and selling intellectual property rights.

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71. The researchers discussed that fair value estimates of specific intangible assets were generally not considered particularly relevant by some users. This is because most intangible assets cannot be directly associated with a particular revenue stream or market value. However, in the researchers' view, exceptions may exist when there is an active market.
72. Although a large number of academic papers have examined cryptocurrencies, only a limited number of papers have discussed their accounting treatment.
73. Prokazka (2018) showed that when cryptocurrencies are acquired for investment purposes, fair value measurement provides the most useful information for users. The paper identified scenarios when cryptocurrencies should be treated as (foreign) currencies, even though financial system regulators do not consider cryptocurrencies as being money (fiat currency).
74. In Hubbard (2023)'s view, the best accounting treatment for cryptocurrencies is an intangible asset revaluation model. In the author's view, this model would allow entities to:
- (a) elect a fair value option to measure their cryptoassets on the balance sheet and thus improve their relevance; and
  - (b) record gains and losses from fluctuations in market value in other comprehensive income—this would not introduce significant volatility to the income statement and preserve the relevance of income statement amounts.
75. Beigman, Brennan, Hsieh and Sannella (2023) proposed a theoretical model for fair value measurement in inactive cryptoasset markets. They proposed to assess the quality of digital currency exchanges and determine a principal market. Once a principal market was identified, a fair value was obtained to price the investment in cryptocurrencies. The paper also discussed the reliability of data extracted from cryptocurrency exchanges, considering factors such as exchange oversight, microstructure efficiency, transparency, and data integrity. These findings could be relevant for other intangible assets that do not have an active market.

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*Disclosure****Usefulness of disclosures***

76. Srivastava (2023) discussed the limitations of current accounting practices noting that financial statements of modern companies did not adequately capture the value of intangible assets. The researcher proposed that enhanced disclosure of information about intangible assets be mandated or that entities report what they consider to be a value relevant earnings number with added disclosure of how it was calculated. The paper also discussed a blueprint for disclosure requirements that would provide useful information to investors. This included provision of detailed information about an entity's market and market prospects, the drivers of revenues, and a description of all expenditure in three broad categories:
- (a) expenditure that supports current operations;
  - (b) expenditure that is expected to produce future benefits; and
  - (c) one-time expenditure or expenditure on special items.
77. In the author's view, such disclosures would allow analysts to project an entity's future revenues, estimate the outlays required to sustain the entity's business model, and calculate the present value of future cash flows.
78. Ibrahim, Alkilani, Elmarzouky and Bowden (2024) examined differences in the reporting of intangible assets by acquisitive and non-acquisitive UK entities (3,228 observations over 2017–2021 period). They focused on three types of intangible assets:
- (a) contractual intangible assets—based on contractual rights often featuring clear ownership rights and existing markets (for example, brands, computer software, copyrights, and patents);
  - (b) non-contractual intangible assets—controlled by the entity, but may lack well-defined, legally protected ownership rights, and for which markets are weak or non-existent (for example, R&D and trade secrets); and

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- (c) broader intangible items—relating to human and relational capital for which entities have few control rights and markets do not exist (for example, employee training programs, business models, and customer relationships).
79. Their key findings showed that recognised intangible assets for acquisitive entities were around 32% of total assets, compared to 8% for non-acquisitive entities. Non-acquisitive entities reported more non-contractual intangible items than acquisitive entities. Entities in more competitive industries disclosed less information about non-contractual intangible assets due to, in the authors' view, concerns about commercial sensitivity. Some entities disclosed additional information to compensate for limited recognition.
80. Evidence of commercial sensitivity deterring the disclosure of information was provided by Ho, Sidhu and Yang (2023). They showed that after AASB 138 *Intangible Assets*, the Australian equivalent to IAS 38, became effective in 2005 which changed entities' previous practice of recognising internally generated intangible assets and mandated de-recognition of previously recognised internally generated identifiable intangible assets, Australian entities did not provide additional disclosure of information about these assets anywhere in their annual reports. In the authors' view, the costs of disclosing commercially sensitive information outweighed the perceived benefits of such disclosure.
81. Discussing real effects of disclosure on aggregated innovation, Simpson and Tamayo (2020) noted in a literature review that while increased R&D disclosure can foster innovation through positive spillover effects (for example, knowledge dissemination), the costs from mandated disclosure of commercially sensitive information might not be fully offset by positive spillover effects. Such a scenario could lead to an overall reduction in innovative activities among entities subject to such disclosure requirements, especially entities for whom innovation is key to competitive advantage.
82. Some academic papers provided evidence on the complimentary nature of the recognition of, and disclosure of, information about intangible items. For example, Chen, Gavigus and Lev (2017) provided evidence on the usefulness of additional

information about R&D expenditure. Using a sample of Israeli high-technology and science-based entities over the 2007–2011 period, some applying IFRS Accounting Standards and others applying US GAAP, the researchers showed that disclosure of extensive voluntary forward-looking information on product pipeline development and its expected consequences was informative to investors beyond the mandated financial information, including the capitalised R&D asset. The paper also showed that the capitalised development costs were highly associated with share prices and enhanced the value relevance of the voluntary information disclosed.

83. Mehnaz et al (2023) showed that greater information disclosed about unrecognised intangible assets facilitated a better understanding of capitalised intangible assets. Based on 226 observations from listed New Zealand entities (NZX) between 2016 and 2021, and a small sample of public benefit entities, the findings were:
- (a) eighty-eight per cent of NZX entities reported intangible assets, with software costs (63%) being the most commonly capitalised intangible asset, followed by goodwill (59%).
  - (b) of intangible-related expenditures, donations (46%) were the most frequently reported followed by advertising (31%), R&D (16%), and IT expenses (14%).
  - (c) intangible assets were value relevant, confirming that current capitalisation practices were viewed as useful by market participants.
  - (d) qualitative information disclosed about human, relational, and structural capital was more prevalent than quantitative information—almost half of the entities disclosed qualitative information compared to a third disclosing quantitative information.
  - (e) entities disclosing more information about unrecognised intangible assets had a stronger association between capitalised intangible assets and market value, revealing, in the authors' view, the complementary nature of disclosure and recognition.

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84. A number of academic papers have shown that disclosures about intangible assets have a favourable effect on entity market value. For example, Dinh, Schultze, List, and Zbiegly (2020) examined the effect of R&D disclosures and capitalisation on entities' cost of capital and market values. Based on a sample of R&D-intensive German listed entities applying IFRS in the period 2005–2016, the researchers found that entities with higher levels of information disclosed about R&D, that were not suspect of earnings management, had lower cost of capital and higher market values. However, for these entities cost of capital increased and market values decreased with higher levels of capitalised R&D expenditure. In the authors' view, capitalisation introduced information uncertainty that could not be resolved by better disclosure; therefore, disclosure requirements could be used as a credible substitute for capitalisation.
85. There is some academic evidence of what information users and preparers considered useful. For example, using a sample of 6,487 observations of entities reporting using IFRS Accounting Standards from 15 countries over the 2006–2015 period, Mazzi, Slack, Tsalavoutas and Tsoligkas (2024) showed that information disclosed about R&D conveyed information about future earnings, which was incorporated in current returns. They found that most relevant to investors for anticipating future earnings were:
- (a) information disclosed in the front end of the annual report, which included the management commentary section; and
  - (b) R&D information disclosed about the development phase of R&D, conditions for capitalisation and patents and innovation.
86. In the survey conducted by Mazzi et al (2022), users said that although the information provided applying IAS 38 is useful for decision-making, its usefulness could be further improved not by changing the recognition criteria in IAS 38 but by providing more guidance and requiring additional information to be disclosed (for example, disclosure of technical information supporting the decision to capitalise R&D expenditure) to accompany the application of the recognition criteria.

87. In their survey of users and preparers, Zambon et al (2023) showed that users considered information about intellectual property and know-how, and intangible-related risks and opportunities to be the most relevant information missing from today's financial reports. Asked to rank the usefulness of specific intangible items on a scale from 0 to 10, users and preparers assigned the following scores:

<b>Intangible item</b>	<b>Average score assigned by preparers</b>	<b>Average score assigned by users</b>
Brands	5.5	7.1
R&D	7.2	7.9
Intellectual property and know-how	6.2	7.8
Software and information systems	6.9	7.3
Strategy and planning	6.9	7.3
Business model	7.2	7.8
Customer satisfaction and loyalty	6.0	7.8
Customer list	4.0	6.3
Corporate reputation and image	5.6	6.4
Relationships with suppliers	5.7	7.3
Training	5.2	6.9
Human capital (skills)	6.6	7.8
Organisational culture/climate	6.5	7.1
Intangibles-related risks and opportunities	6.5	7.7
Stakeholder engagement	6.5	5.9

88. Other information that users and preparers view as useful that the academic participants in the IASB-EAA-EFRAG workshop highlighted, based on academic research, though a little outdated, was:
- (a) information on human capital for preparers (Mavrinac and Siesfield, 1997);
  - (b) information on relational capital for preparers and users (Flöstrand, 2006);<sup>11</sup> and
  - (c) information on intellectual capital for preparers and users (Ousama, Fatima and Hafiz Majdi, 2001).

<sup>11</sup> Relational capital is one of the three primary components of intellectual capital (along with structural capital and human capital) and is the value inherent in an entity's relationships with its customers, vendors, and other important constituencies. It also includes knowledge, capabilities, procedures and systems which are developed from relationships with external agents.

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***Disaggregation of expenses in the Income Statement***

89. The evidence on disaggregation of expenses in the income statement is mixed. Although some of this evidence applies generally to disaggregation of expenses in the income statement it may also be relevant to expenditure on intangible items that are expensed. Examples of such evidence highlighted by the academic participants in the EAA-IASB-EFRAG workshop include:
- (a) Berger, Choi and Tomar (2024) found that withholding disaggregated information as a result of a reporting rule change led to an increase in entities' profitability through reducing the transfer of competitive information to peer entities.
  - (b) Holzman, Marshall, Schroeder, and Yohn (2021) showed that disaggregation of earnings into homogenous components was associated with greater investor disagreement and a less efficient market response to the earnings announcement suggesting that while disaggregation generally benefits investors, there may be costs associated with specific types of disaggregation.
  - (c) Chen, Miao and Shevlin (2015), on the other hand, showed that more disaggregation of income statement (and balance sheet) components was beneficial—being associated with:
    - (i) lower analyst disagreement;
    - (ii) higher forecast accuracy;
    - (iii) lower bid-ask spreads; and
    - (iv) lower cost of equity capital.
90. There is specific evidence related to disaggregation of expenses on intangible items. For example, the literature has examined entities' non-disclosure of advertising expenses:
- (a) Liang (2024) established that entities facing greater advertising competition were more likely to withhold advertising expense information, especially if advertising involved less trackable media or focused on more mature

products. The information disclosed was driven by fears of revealing sensitive details to competitors.

- (b) Simpson (2008) found that entities often refrained from disclosing their advertising expenses after a regulatory change that enabled them to do so. This reluctance stemmed from striking a balance between potential valuation benefits from disclosure and the cost of revealing commercially valuable information.

91. Campbell, Chen, Guan and Ye (2024) showed that R&D quantity and quality can be increased by requiring entities to disclose information about components of R&D expenditure, specifically labour costs. Using a sample of 3,018 Chinese entities over the 2017–2021 period, their findings were:

- (a) capitalisation of R&D costs was limited—R&D costs were capitalised in less than one third of the examined entity-years and for these entity-years only one fifth of total R&D costs were capitalised.
- (b) entities with higher R&D-labour costs—a proxy for higher R&D quality—were more likely to capitalise R&D costs.
- (c) R&D costs were value relevant but only for entities with higher R&D quality.
- (d) a requirement for entities to present R&D costs in the income statement and disclose the components of R&D costs led to an increase in both the level and quality of R&D expenditure.<sup>12</sup>

92. In a comment letter to EFRAG’s Discussion Paper, academics emphasised the importance of disclosure of information about future-oriented expenses as potential sources of intangible assets. The researchers said that:

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<sup>12</sup> The China Security Regulatory Commission mandated public companies to disclose the number of R&D personnel, the total R&D expenditures for the year, and the percentage of capitalised R&D expenditures. In 2018, the Ministry of Finance required public companies to disclose R&D expense as a separate item on the income statement. R&D expenses and their components became available in financial statements from 2018 onwards.

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- (a) disclosure of information about future-oriented expenses could be a less costly way to convey the value of internally generated intangible assets as evidenced by experimental research.
  - (b) a balance should be achieved between proprietary and administrative costs, and users' benefits when standard-setters decide on requiring disclosure of information about future-oriented expenses.
  - (c) some guidance is needed, but flexibility in classification of future-oriented expenses should be allowed; without meaningful content and format, disclosure of information about future-oriented expenses would not be useful.
  - (d) an appropriate narrative about future-oriented expenses could convey management's view and help users' understanding, although at the risk of moral hazard by managers.

***Disclosure of information about risks and opportunities***

- 93. The literature on risks related to intangible items is still developing, as discussed at the IASB-EAA-EFRAG workshop. Perrott (2007) emphasised the importance of managing knowledge risks, which include both financial and non-financial components (Durst, 2013). Durst and Zieba (2017) proposed a step-by-step guide for organisations to manage knowledge risks, which were categorised into human, operational, and technological knowledge risks in their later work (Durst and Zieba, 2022; Durst, 2024).
- 94. An academic report by Crovini, Giunta, Nielsen and Simoni (2022) explored the disclosure of intellectual capital in the annual reports of 154 European high-tech entities. The researchers found that nearly 29% of the entities did not provide essential business model and risk disclosures in report narratives, suggesting non-compliance with the EU Directive 2014/95 on non-financial reporting. Among compliant entities, structural capital was the most disclosed element, yet overall disclosures remained

limited.<sup>13</sup> The researchers emphasised the need for improving guidelines for disclosure of information about intellectual capital and enforcing sanctions for non-compliance.

***Placement of information***

95. There is consensus in academic research that financial statements may not contain all information users need about intangible items. However, as highlighted in the EAA-IASB-EFRAG workshop, little comparative research exists on the best location for this missing information.
96. Innovative proposals like the Value Creation Report by Lev and Gu (2016) aim to provide comprehensive information on an entity's tangible and intangible strategic assets, business model, KPIs, and competitive landscape.
97. The initiation of integrated reporting, incorporating intangible items in a multi-capital approach, has sparked research into its effectiveness (for example, Abhayawansa, Elijido-Ten, and Dumay, 2019; Beretta, Demartini and Trucco, 2019). A multi-capital approach offers a systemic way to disclose information (for example, Corbella, Florio, Sproviero and Stacchezzini 2018), though some argue it may be used opportunistically to enhance an entity's reputation (Melloni, 2015).
98. In their survey of 71 users and 65 preparers, Zambon et al (2023) provided evidence that the preparers and users that took part had similar views about the placement of information about intangible items:
  - (a) Supplementary notes to financial statements (45% of preparers; 55% of users);
  - (b) Non-financial reporting statement required by the 2014 Non-Financial Reporting Directive (35% of preparers; 40% of users);
  - (c) Integrated Reporting (33% of preparers; 40% of users); and

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<sup>13</sup> The elements of structural capital were patents, copyrights, trademarks, corporate culture, management processes, information systems, networking systems, research projects and management philosophy.

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- (d) Management Commentary (26% of preparers; 26% of users).<sup>14</sup>

*Other topics*

***Consistent labels and terminology***

99. Empirical evidence on whether consistent terminology in the classification of intangible assets is needed is very limited. Some academic papers have highlighted the diversity in labels and terminology used in entities' intangible asset disclosures, emphasising the lack of comparability and a need for more guidance with regard to categorisation of intangible assets:
- (a) Examining the IAS 38 disclosures of 544 companies from 23 developed and emerging countries, Tsalavoutas, André and Dionysiou (2014) found significant differences in disclosure practices across different entities and countries. In the authors' view, more specific and comprehensive guidance from the IASB on the identification and categorisation of intangible assets could enhance the clarity of financial reporting and improve comparability across entities and jurisdictions.
  - (b) Garcia (2022) found that a sample of pharmaceutical entities often changed the labels of intangible assets over time (for example, a license could be classified as 'intellectual property rights' at the beginning of a period and later reclassified as 'customer-related intangibles'). The labels of some intangible assets in the notes to financial statements were different to the labels of intangible assets in the primary financial statements.
  - (c) Garcia, Denoncourt, and Quagli (2023) focused on the tagging of information using XBRL and found that large pharmaceutical entities tend to group intangible assets by function which differs from the categories available in the XBRL taxonomy. Small to mid-sized entities reported intangible assets based on the nature of assets (for example, patents and trademarks) but tended to include several categories of intangible assets

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<sup>14</sup> The percentages do not add up to 100 because respondents were allowed multiple answers.

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under the same label, which results in imprecise tagging. In the authors' view, providing for several levels of granularity in the taxonomy for IAS 38 would greatly improve the comparability of information.

100. Some academics oppose the standardisation of intangible asset labelling. For example, Beerbaum (2021) mentioned the principle-based nature of IFRS Accounting Standards not being conducive to a restrictive taxonomy, and Chalmers and Godfrey (2006) highlighted that intangible assets tend to be industry-specific and often entity-specific. Furthermore, Garcia (2022) emphasised that intangible assets are consistently evolving into new forms.

**Question for the IASB**

Does the IASB have any comments or questions on the academic literature presented?

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## Appendix—List of academic references

Abhayawansa, S., Guthrie, J., and Bernardi, C. (2019), 'Intellectual Capital Accounting in the Age of Integrated Reporting: A Commentary', *Journal of Intellectual Capital*, 20 (1), 2-10.

Ashby, J.A., Chyz, J.A., Myers, L.A., and Whipple, B.C. (2023), 'Non-GAAP Earnings and Definite-Lived Intangible Asset Allocations in Mergers and Acquisitions', *The Accounting Review*, 99 (1), 31-56.

Ball, R. and Nikolaev, V.V. (2022), 'On Earnings and Cash Flows as Predictors of Future Cash Flows', *Journal of Accounting and Economics*, 73 (1), 1-20.

Banker, R.D., Huang, R., Natarajan, R., and Zhao, S. (2019), 'Market Valuation of Intangible Asset: Evidence on SG&A Expenditure', *Accounting Review*, 94 (6), 61-90.

Barker, R., Penman, S., Linsmeier, T.J., and Cooper, S. (2020), 'Moving the Conceptual Framework Forward: Accounting for Uncertainty', *Contemporary Accounting Research*, 37 (1), 322-357.

Barker, R., Lennard, A., Penman, S., and Teixeira, A. (2022), 'Accounting for Intangible Assets: Suggested Solutions', *Accounting and Business Research*, 52 (6), 601-630.

Basu, S. and Waymire, G. (2008), 'Has the Importance of Intangibles Really Grown? And If So, Why?', *Accounting and Business Research*, 38 (3), 171-190.

Beerbaum, D.O. (2021), 'Green Quadriga?-Eu-Taxonomy, Non-Financial Reporting Directive, EBA Pillar III ESG Risks and IFRS Foundation', *EU-Taxonomy, Non-Financial Reporting Directive, EBA Pillar III ESG risks and IFRS Foundation (October 2, 2021)*.

Beigman, E., Brennan, G., Hsieh, S.-F., and Sannella, A.J. (2021), 'Dynamic Principal Market Determination: Fair Value Measurement of Cryptocurrency', *Journal of Accounting, Auditing & Finance*, 38 (4), 731-748.

Beretta, V., Demartini, C., and Trucco, S. (2019), 'Does Environmental, Social and Governance Performance Influence Intellectual Capital Disclosure Tone in Integrated Reporting?', *Journal of Intellectual Capital*, 20 (1), 100-124.

Berger, P.G., Choi, J.H., and Tomar, S. (2024), 'Breaking It Down: Economic Consequences of Disaggregated Cost Disclosures', *Management Science*, 70 (3), 1374-1393.

Bhattacharya, N., Saito, Y., Venkataraman, R., and Jiewei Yu, J. (2024), 'R&D Reporting Rule and Firm Efficiency', *Journal of Accounting, Auditing & Finance*, 39 (2), 335-363.

Boulerne, S., Sahut, J.-M., and Teulon, F. (2011), 'Do IFRS Provide Better Information About Intangibles in Europe?', *International Journal of Business* 10 (3), 267-290.

Brown, N.C. and Kimbrough, M.D. (2011), 'Intangible Investment and the Importance of Firm-Specific Factors in the Determination of Earnings', *Review of Accounting Studies*, 16 (3), 539-573.

Brynjolfsson, E. and Hitt, L.M. (2000), 'Beyond Computation: Information Technology, Organizational Transformation and Business Performance', *Journal of Economic Perspectives*, 14 (4), 23-48.

Buxbaum, M., Schabert, B., Schultze, W., Wilhelm, J., and Wyatt, A. (2023), 'Economic Consequences of Purchase Price Allocation Reporting', *Working paper*.

Campbell, J.L., Chen, H., Guan, J., and Ye, K. (2024), 'The Amount and Quality of R&D Capitalization under International Financial Reporting Standards (IFRS)', *Working paper*.

Chalmers, K. and Godfrey, J. (2006), 'Intangible Assets: Diversity of Practices and Potential Impacts from AIFRS Adoption', *Australian Accounting Review*, 16 (40), 60-71.

Chalmers, K., Clinch, G., and Godfrey, J.M. (2008), 'Adoption of International Financial Reporting Standards: Impact on the Value Relevance of Intangible Assets', *Australian Accounting Review*, 18 (3), 237-247.

Chen, S., Miao, B.I.N., and Shevlin, T. (2015), 'A New Measure of Disclosure Quality: The Level of Disaggregation of Accounting Data in Annual Reports', *Journal of accounting research*, 53 (5), 1017-1054.

Chen, E., Gavigus, I., and Lev, B. (2017), 'The Positive Externalities of IFRS R&D Capitalization: Enhanced Voluntary Disclosure', *Review of Accounting Studies*, 22 (2), 677-714.

Cleland, A.S. and Bruno, A.V. (1997), 'Building Value: Customer and Shareholder', *Strategy & Leadership*, 25 (3), 22-28.

Corbella, S., Florio, C., Sproviero, A.F., and Stacchezzini, R. (2019), 'Integrated Reporting and the Performativity of Intellectual Capital', *Journal of Management and Governance*, 23, 459-483.

Cordazzo, M. and Rossi, P. (2020), 'The Influence of IFRS Mandatory Adoption on Value Relevance of Intangible Assets in Italy', *Journal of Applied Accounting Research*, 21 (3), 415-436.

Crouzet, N., Eberly, J.C., Eisfeldt, A.L., and Papanikolaou, D. (2022), 'The Economics of Intangible Capital', *Journal of Economic Perspectives*, 36 (3), 29-52.

Crovini, C., Giunta, F., Nielsen, C., and Simoni, L. (2022), 'Do Companies Disclose Relevant Information About Intangibles? Insights from Business Model Reporting and Risk Reporting', *ICAS Research Report*.

---

Dargenidou, C., Jackson, R., Tsalavoutas, I., and Tsoligkas, F. (2021), 'Capitalisation of R&D and Informativeness of Stock Prices: Pre- and Post-IFRS Evidence', *The British Accounting Review*, 53 (4), 100998.

Dechow, P.M., Larson, C.R., and Resutek, R.J. (2021), 'The Effect of Accrual Heterogeneity on Accrual Quality Inferences', *The Accounting Review*, 97 (5), 245-273.

Dinh, T., Sidhu, B.K., and Yu, C. (2019), 'Accounting for Intangibles: Can Capitalization of R&D Improve Investment Efficiency?', *Abacus*, 55 (1), 92-127.

Dinh, T., Eierle, B., Steeger, L., and Schultze, W. (2015), 'Research and Development, Uncertainty, and Analysts' Forecasts: The Case of IAS 38', *Journal of International Financial Management and Accounting*, 26 (3), 257-294.

Dinh, T., Schultze, W., List, T., and Zbiegły, N. (2020), 'R&D Disclosures and Capitalization under IAS 38—Evidence on the Interplay between National Institutional Regulations and IFRS Adoption', *Journal of International Accounting Research*, 19 (1), 29-55.

Dugar, A. and Pozharny, J. (2021), 'Equity Investing in the Age of Intangibles', *Financial Analysts Journal*, 77 (2), 21-42.

Durst, S. (2013), 'An Exploratory Study of Intangibles Risk Disclosure in Annual Reports of Banking Companies from the UK, US, Germany and Italy-Some Descriptive Insights', *Financial Reporting*, (2013/1), 81-120.

--- (2024), 'Understanding risks related to intangibles and knowledge for sustainable business development'. In Zambon S. and Girella L., Eds., *Handbook on Intangibles: Accounting, Reporting, and Valuation* (Edward Elgar Publisher), *Forthcoming*.

--- (2020), 'Knowledge Risks Inherent in Business Sustainability', *Journal of Cleaner Production*, 251, 1-10.

Enache, L. and Srivastava, A. (2018), 'Should Intangible Investments Be Reported Separately or Commingled with Operating Expenses? New Evidence', *Management Science*, 64 (7), 3446-3468.

Flöstrand, P. (2006), 'The Sell Side—Observations on Intellectual Capital Indicators', *Journal of Intellectual Capital*, 7 (4), 457-473.

Frii, P. and Hamberg, M. (2021), 'What Motives Shape the Initial Accounting for Goodwill under IFRS 3 in a Setting Dominated by Controlling Owners?', *Accounting in Europe*, 18 (2), 218-248.

Garcia, C. (2022), 'National Differences in the Disclosure of Intangible Assets in IFRS', *ISS Research Series No. 3*, 1-19.

---

Garcia, C., Denoncourt, J., and Quagli, A. (2023), 'Disclosure Patterns of Intangibles in the Pharmaceutical Industry: Implications for Structured Electronic Reporting', *Proceedings of the Korean Accounting Association Conference*, 2023 (2), 1-34.

EAA Financial Reporting Standards Committee Intangibles Research Group, (2022), 'Comment Letter on EFRAG Discussion Paper on "Better Information on Intangibles: Which Is the Best Way to Go?"'.

Gu, F., Lev, B., and Zhu, C. (2023), 'All Losses Are Not Alike: Real Versus Accounting-Driven Reported Losses', *Review of Accounting Studies*, 28 (3), 1141-1189.

Haskel, J. and Westlake, S. (2018), *Capitalism without Capital: The Rise of the Intangible Economy* (Princeton University Press).

Holzman, E.R., Marshall, N.T., Schroeder, J.H., and Yohn, T.L. (2021), 'Is All Disaggregation Good for Investors? Evidence from Earnings Announcements', *Review of Accounting Studies*, 26, 520-558.

Hubbard, B. (2023), 'Decrypting Crypto: Implications of Potential Financial Accounting Treatments of Cryptocurrency', *Accounting Research Journal*, 36 (4/5), 369-383.

Hunter, L., Webster, E., and Wyatt, A. (2012), 'Accounting for Expenditure on Intangibles', *Abacus*, 48 (1), 104-145.

Hyung, I.O. and Penman, S. (2023), 'Income Statement Mismatching Has Not Reduced the Informativeness of Earnings over Time', *Journal of Business Finance and Accounting*, 51 (3-4), 756-782.

Ibrahim, S., Alkilani, M., Elmarzouky, M., and Bowden, J. (2024), 'Recognition and Disclosure of Intangibles under International Financial Reporting Standards', *Working Paper*.

Iqbal, A., Rajgopal, S., Srivastava, A., and Zhao, R. (2023), 'A Better Estimate of Internally Generated Intangible Capital', *Working paper*.

Ittner, C.D. and Larcker, D.F. (1998), 'Are Nonfinancial Measures Leading Indicators of Financial Performance? An Analysis of Customer Satisfaction', *Journal of accounting research*, 36, 1-35.

King, Z. (2024), 'A New Perspective on R&D Accounting', *Working paper*.

King, Z., Linsmeier, T.J., and Wangerin, D.D. (2023), 'Differences in the Value Relevance of Identifiable Intangible Assets', *Review of Accounting Studies*, 1-49.

Lev, B. (2018), 'Ending the Accounting-for-Intangibles Status Quo', *European Accounting Review*, 28 (4), 713-736.

Lev, B. and Gu, F. (2016), *The End of Accounting and the Path Forward for Investors and Managers* (John Wiley & Sons).

Lewellen, J. and Resutek, R.J. (2016), 'The Predictive Power of Investment and Accruals', *Review of Accounting Studies*, 21 (4), 1046-1080.

Liang, C. (2024), 'Advertising Rivalry and Discretionary Disclosure', *Journal of Accounting and Economics*, 77 (1), 101611.

Lynch, D., Romney, M., Stomberg, B., Wangerin, D., and Robinson, J.R. (2019), 'Trade-Offs between Tax and Financial Reporting Benefits: Evidence from Purchase Price Allocations in Taxable Acquisitions', *Contemporary Accounting Research*, 36 (3), 1223-1262.

Marton, J. and Starica, C. (2023), 'Recognition of Intangibles from the Investors Perspective', *Working Paper*.

Mazzi, F., Slack, R., Tsalavoutas, I., and Tsoligkas, F. (2022), 'Exploring Investor Views on Accounting for R&D Costs under IAS 38', *Journal of Accounting and Public Policy*, 41 (2), 1-24.

Mazzi, F., Slack, R., Tsalavoutas, I., and Tsoligkas, F. (2024), 'R&D Disclosures and the Informativeness of Future Earnings', *Working Paper*.

Mavrinnac S., Siesfield G.A. (1997), 'Measures that Matter: An Exploratory Investigation of Investors' Information Needs and Value Priorities'. In: OECD, Ernst & Young (Ed.): Enterprise Value in the Knowledge Economy: Measuring Performance in the Age of Intangibles, pp.49-72, 1997

Mcinnis, J. and Monsen, B. (2023), 'The Usefulness of Acquired Intangible Asset Fair Values in Predicting Future Payoffs', *Working Paper*.

Mehnaz, L., Scott, T., and Zang, Z. (2023), 'The Disclosure of Recognised and Unrecognised Intangibles: Evidence from a Mid-Sized Market', *Working Paper*.

Melloni, G. (2015), 'Intellectual Capital Disclosure in Integrated Reporting: An Impression Management Analysis', *Journal of Intellectual Capital*, 16 (3), 661-680.

Nichita, E.-M. (2019), 'Intangible Assets – Insights from a Literature Review', *Journal of Accounting and Management Information Systems*, 18 (2), 224-261.

Oh, H.I. and Penman, S. (2024), 'The Accruals–Cash Flow Relation and the Evaluation of Accrual Accounting', *Abacus*, 60 (1), 23-48.

Oliveira, L., Rodrigues, L.L., and Craig, R. (2010), 'Intangible Assets and Value Relevance: Evidence from the Portuguese Stock Exchange', *The British Accounting Review*, 42 (4), 241-252.

Oswald, D., Simpson, A., and Zarowin, P. (2022), 'Capitalization Vs. Expensing and the Behavior of R&D Expenditures', *Review of Accounting Studies*, 27 (4), 1199-1232.

- 
- Ousama, A.A., Fatima, A.H., and Hafiz Majdi, A.R. (2011), 'Usefulness of Intellectual Capital Information: Preparers' and Users' Views', *Journal of Intellectual Capital*, 12 (3), 430-445.
- Penman, S.H. (2009), 'Accounting for Intangible Assets: There Is Also an Income Statement', *Abacus*, 45 (3), 358-371.
- Penman, S. and Zhang, X.-J. (2020), 'A Theoretical Analysis Connecting Conservative Accounting to the Cost of Capital', *Journal of Accounting and Economics*, 69 (1), 1-25.
- Perrott, B.E. (2007), 'A Strategic Risk Approach to Knowledge Management', *Business Horizons*, 50 (6), 523-533.
- Procházka, D. (2018), 'Accounting for Bitcoin and Other Cryptocurrencies under IFRS: A Comparison and Assessment of Competing Models', *The International Journal of Digital Accounting Research*, 18, 161-188.
- Raithel, S. and Schwaiger, M. (2014), 'The Effects of Corporate Reputation Perceptions of the General Public on Shareholder Value', *Strategic Management Journal*, 36 (6), 945-956.
- Russell, M. (2015), 'Management Incentives to Recognise Intangible Assets', *Accounting & Finance*, 57 (S1), 211-234.
- Sellhorn, T. and Stier, C. (2018), 'Fair Value Measurement for Long-Lived Operating Assets: Research Evidence', *European Accounting Review*, 28 (3), 573-603.
- Shalev, R., Zhang, I.X., and Zhang, Y. (2013), 'CEO Compensation and Fair Value Accounting: Evidence from Purchase Price Allocation', *Journal of Accounting Research*, 51 (4), 819-854.
- Simpson, A. (2008), 'Voluntary Disclosure of Advertising Expenditures', *Journal of Accounting, Auditing & Finance*, 23 (3), 403-436.
- Simpson, A. and Tamayo, A. (2020), 'Real Effects of Financial Reporting and Disclosure on Innovation', *Accounting and Business Research*, 50 (5), 401-421.
- Skinner, D.J. (2008), 'Accounting for Intangibles – a Critical Review of Policy Recommendations', *Accounting and Business Research*, 38 (3), 191-204.
- Srivastava, A. (2014), 'Why Have Measures of Earnings Quality Changed over Time?', *Journal of Accounting and Economics*, 57 (2-3), 196-217.
- (2023), 'Trivialization of the Bottom Line and Losing Relevance of Losses', *Review of Accounting Studies*, 28 (3), 1190-1208.
- Tsalavoutas, I., André, P., and Dionysiou, D. (2014), 'Worldwide Application of IFRS 3, IAS 38 and IAS 36, Related Disclosures, and Determinants of Non-Compliance', *ACCA Research Report*.

---

Tunyi, A.A., Ehalaiye, D., Gyapong, E., and Ntim, C.G. (2020), 'The Value of Discretion in Africa: Evidence from Acquired Intangible Assets under IFRS 3', *The International Journal of Accounting*, 55 (02), 2050008.

Wu, H. and Haider, S.N. (2023), 'The Real Effects of Accounting for Software Development Costs on Corporate Innovation', *Working Paper*.

Yang, J., Brashear, T.G., and Asare, A. (2015), 'The Value Relevance of Brand Equity, Intellectual Capital and Intellectual Capital Management Capability', *Journal of Strategic Marketing*, 23 (6), 543-559.

Zambon, S., Marzo, Bonnini, and Girella, L. (2023), 'The Production and Consumption of Information on Intangibles', *ICAS Research Report*.

Zambon, S., Marzo, G., Girella, L., Abela, M., and D'Albore, N. (2020), 'A Literature Review on the Reporting of Intangibles', *EFRAG Academic Report*.

Zhang, I.X. and Zhang, Y. (2016), 'Accounting Discretion and Purchase Price Allocation after Acquisitions', *Journal of Accounting, Auditing & Finance*, 32 (2), 241-270.