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# AN ACADEMIC LITERATURE REVIEW ON REPORTING ON INTANGIBLE ASSETS

*for the European Financial Reporting Advisory Group (EFRAG)*

*by*

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**EXECUTIVE SUMMARY**

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# Executive Summary

## Introduction and methodology

The focus of the present academic literature review is on **internally generated intangibles** (here referred to also as “unaccounted intangibles”) that are not purchased separately or in business combinations, because those would be already dealt with in traditional accounting. Also, **not separable intangibles** (e.g. reputation, business model, and human capital) will be considered owing to their relevance for companies and their value creation broadly conceived.

The aim of the present academic literature review is primarily **to match the knowledge interests and information needs of the European Financial Reporting Advisory Group (EFRAG)**, and, more in general, those of a non-academic audience. However, the aim of the literature review is not to provide recommendations on how to provide additional information on intangibles in the financial statements.

The review will concentrate to the extent possible on **quantitative – but considering also relevant qualitative – papers published from 2007 onwards**. The papers selected for the review are those analysing the capability of intangible resources that are internally developed by entities to contribute to the entity’s **financial performance** (current profit, future earnings and cash flows) and its **financial market value**, as well as the view by **investors and financial analysts**, focusing on information outside financial statements.

The quality of the papers considered comes from the fact that they **are published in double-blind refereed journals**, which is deemed to assure their scientific soundness, or in **international books**. In addition, the good quality of the works analysed is assured by the methodology followed for their selection (see below), which is based on the scientific impact of each paper on the literature measured with the number of citations received divided by the number of years from publication: only the research products that have received the highest score will be examined. A further number of papers that have been judged of interest by EFRAG team and experts of the field enriches this first bunch of works, for a total amount of more than 100 papers scrutinised.

A general limitation is that not many companies produce information and numbers on unaccounted intangibles, and this lack of data entails some limitations for the academic researchers working in this area. Another general warning relates to the inconsistent and discontinuous terminology that is used in the papers analysed. A reader may find confusing the recurrence of different terms such as “intangibles”, “intangible assets”, “intellectual capital”, “intellectual asset”, “intangible resource” and “intangible capital”. It is not an aim of this review to introduce univocal definitions for each of these concepts because in the literature there is not convergence, nor a consensus on their meaning. In very general terms, when the term “assets” is employed there may be an implicit reference to accounting-recognised resources, whilst the concept of “intellectual capital” is wider (see in Ch. 8 its definition provided by the WICI Framework) and the term “intangibles” is a generic one (it may include positive and negative intangible resources).

This literature review has analysed papers relevant to five main research areas:

- A) Intangibles in a macro-perspective;
- B) Unaccounted intangibles and their impact on the relevance of financial reporting;
- C) Information on specific unaccounted intangibles and its impact on company performance, market value, and users;
- D) Information on intellectual capital and its effects on company performance, market value, and users;
- E) Frameworks and models for measuring and reporting on intangibles and their consequences on company performance, market value, and users.

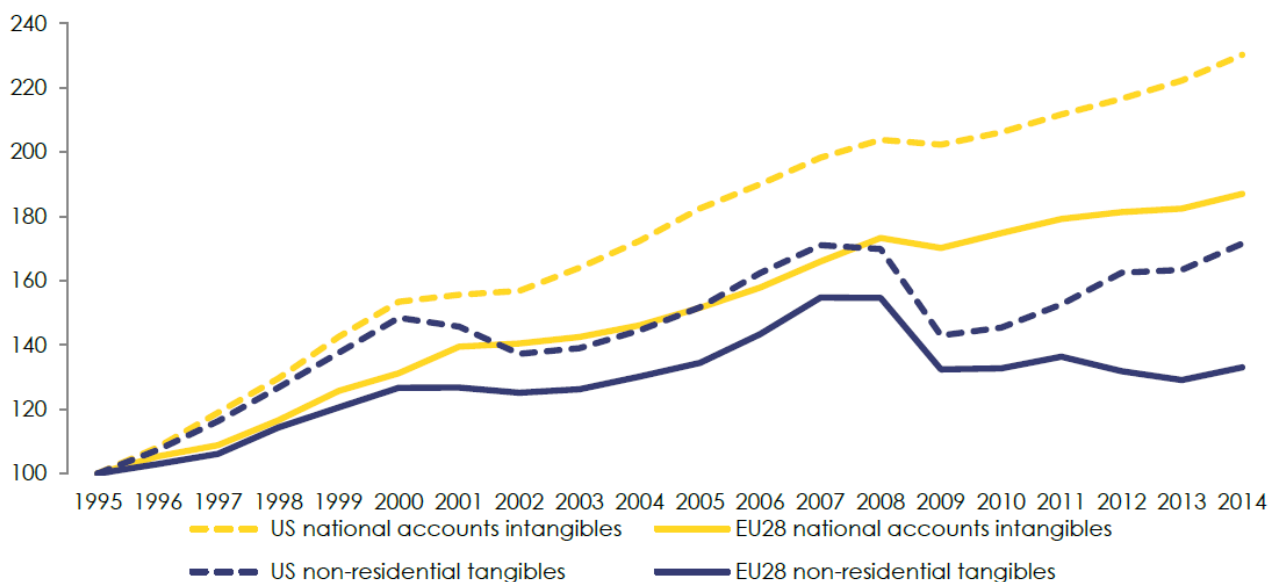
As aforementioned, the methodology followed for selecting the most relevant papers on intangibles is composed of two parts:

- A 1<sup>st</sup> step devoted to a rigorous selection based on bibliographical features of the academic works, drawing on papers’ key-words and the most recognised international bibliographical databases, with the aim of detecting the papers that have received the largest annual citations in the literature, conceived as a proxy for the scientific importance of the work considered;
- A 2<sup>nd</sup> step that is based on the EFRAG’s manifested needs and suggestions as well as expert judgements, in which some other papers on intangibles were introduced in the review, owing to their perceived relevance by EFRAG team and a number of academics and field specialists.

## A) Intangibles in a macro-perspective

This section serves as a general introduction to the systemic importance of intangibles in today's economic systems, and to document this new phase of the capitalism, where investments in intangibles have taken the lead and drive the growth of several national economic systems.

Graph 1: Non-residential intangible and tangible investments in the EU-28 and the U.S., total economy; Chain linked volumes, index 1995 = 100



Source: Thum-Thysen et al., European Commission, 2017, p. 12.

Indeed, this revolutionary trend has been showing in a stronger way in some specific European nations and regions, such the UK, Germany, France and the Scandinavian countries.

In particular, in an ad hoc Study the European Central Bank observes that, although the percentage of intangible assets that are reported in firms' annual accounts is gradually increasing, particularly in the service sector, the underreporting of intangible assets could mean that real output is also being underreported. Moreover, the classification of intangibles as expenses to be deducted from earnings – as opposed to assets – is weighing on profits.

There is therefore plenty of evidence that this macro-economic phenomenon of investment in intangibles has nowadays become quite extensive, and it appears to characterise a new economic phase that has been incisively defined as “capitalism without capital” (Haskel and Westlake, 2017): financial capital remains an important resource, but intangibles and intellectually derived resources mark a new form of capitalism, i.e. a new way to produce wealth and growth. However, as the last European Commission Study (Thum-Thysen et al., 2017) points out: “Also important is an improvement of systematic reporting of investments in all relevant intangibles and as a driver of value creation for individual firms. This may also facilitate getting access to finance (capitalised intangibles might be used as collateral), improve corporate governance and market transparency. In fact, evidence suggests that the market value of a firm tends to be increasingly driven by its productive stock of intangibles than by the firm's tangible assets. Policy can help by suggesting new standards for accounting and corporate disclosure” (p. 35).

### Pre-2007 key papers on accounting for intangibles

The aim of this section is to review some research works that, despite they have been published out of the time span adopted for this review (post-2007), they have provided key insights for the evolution of this field.

Cañibano et al. (2000) find that, although most of the accounting standard setters place greater importance on intangibles, approaches still result to be quite variegated. Hence, financial statements result to be neither comparable nor including relevant information. In general terms, the authors point out that guidelines for the identification, measurement, reporting and management of value relevant intangibles are missing. In addition, they suggest that another field to be examined is the behaviour of investors vis-à-vis intangibles information.

In his seminal book *Intangibles: Management, Measurement and Reporting* (2001), Baruch Lev not only recognises the relevance of these type of resources, but he also proposes a model for their management, measurement and reporting, namely the “Value Chain Scoreboard”. He argues that global trends, such as globalisation and technological change, have forced companies to focus their quest for profitability on innovation, and the primary drivers for innovation are intangible in nature. He also discusses the positive and negative characteristics of these non-standard resources, that are scalability, increasing returns, network effects, costs or limitations of high risk, lack of full control over benefits and absence of a market.

All the above arguments have been taken up again and further elaborated in the 2016 book by Lev and Gu memorably titled *The End of Accounting and the Path Forward for Investors and Managers*. In particular, chapter 8 of their 2016 book is devoted to the discussion of the lack of recognition that intangibles still have in financial statements. This absence is one of the major causes of the loss of relevance of accounting. Indeed, they provide evidence about the fact that the more companies that enter the market are endowed with intangible capital, the less accounting information is relevant. The main reasons for a lack of change are deemed for the authors related not only to accounting regulators but also to managers and auditors.

Lev and Zambon (2003) acknowledged the relevance that managers can have in understanding and appreciating the role of these resources in organisations. They maintain that, while the value in exchange is often taken into consideration, the value in use of intangibles, that is their role *within* the organisation and in particular in the production-organisation nexus, is often overlooked. And this constitutes part of the problem.

## **B) Unaccounted intangibles and their impact on the relevance of financial reporting**

This Section illustrates the various aspects of the impact of intangibles on the relevance of financial reporting and company value. From the analysis of the papers, three main topics of analysis have been identified:

- The role of accounting standards in the recognition and reporting of intangibles;
- The factors influencing the disclosure about intangibles;
- The association of intangibles with the firm financial performance and/or value.

The main findings of the papers belonging to this Section can be summarised by the following points:

1. While the majority of studies finds, in general, a significant positive association between intangibles disclosure and the financial performance or the market value of a firm, there are also more ambiguous results in regards to this set of relationships;
2. As for the disclosure of intangibles in financial statements, different theoretical positions can be noticed. From one perspective, some scholars address the fact that financial statements have lost their relevance, due also to the unaccounted intangibles, and thus they call for modifications in the accounting standards with the aim to close the gap between the book and the market value of the firm. Whereas, others maintain that the value of intangibles that are unaccounted does impact and can be detected in the income statement. Consequently, there is no compelling argument for modifying accounting standards on intangibles (see also “Concluding remarks”).

## **C) Information on specific unaccounted intangibles and its impact on company performance, market value, and user**

This Section reviews the studies concerning the impact of the disclosure (including narrative) on specific internally generated intangibles (such as brands, patents, reputation, R&D, customer satisfaction/awareness, customer list/customer franchise, business model, organisational capital, human capital) on three fundamental elements, i.e. firm profitability and cash flows, market value and positioning, and investors and information users. Inquiries into the specific risks connected to these intangibles will also be included.

In general terms, specific unaccounted intangibles have a positive effect on the financial performance and the market value of companies. For example, greater expenditure on intangibles corresponds to an increase in the value of the company (e.g. Ehie and Olibe, 2010). However, it has also been found that the effect of intangibles on financial performance or market value is positive, but not linear. Also, this effect may not take the configuration of a direct link, because it can be moderated or influenced by other factors (e.g., Sánchez & Sotorrío, 2007). Furthermore, this positive effect is not the same for all the firms and industries, and it does not necessarily happen in the short-medium term (Stam and Wennberg, 2009).

As to the disclosure about specific intangibles, it has been shown that it is negatively associated with earnings (Merkley, 2014 for R&D), but it may have a positive effect on the share price (Chen et al., 2017 for R&D). Finally, this positive effect concerns more the quantity of forward-looking information than the backwards-looking disclosure (Bayer et al., 2017 for customer satisfaction/awareness).

In the following, a Table summarises the main findings from, the in-depth reviewed papers of this Section.

**Table – Synopsis of the main findings from the papers in-depth reviewed**

	<b>Firm profitability and cash flows</b>	<b>Market value and competitive positioning</b>	<b>Investors and information users</b>
<b>Brands</b>	- The stock of brand-association trademarks available to firms in time period $t$ increases their cash flows, Tobin's $q$ , return on assets, and stock returns, while reducing their cash-flow variability in period $t + 1$ . Meanwhile, the stock of brand-identification trademarks owned by firms in period $t-1$ influences the effects of brand-association trademarks on these financial indexes (Krasnikov, Mishra, & Orozco, 2009)	- Firms with a positive brand image are associated with a significant market-value premium, superior financial performance, and lower cost of capital (Smith et al., 2010)	
<b>Patents</b>	- No direct relationship between patents and performance (Artz, Norman, Hatfield & Cardinal, 2010)	- Patent share has a significantly negative effect on corporate market value. However, relative patents position has a significantly positive effect on corporate market value (Chen & Chang, 2010)  - Patent measures reflecting the volume of companies' research activity, the impact of companies' research on subsequent innovations, and the closeness of research and development to science are reliably associated with the future performance of R&D-intensive companies in capital markets (Deng, Lev & Narin, 1999)	
<b>Reputation</b>	- The relationship between the firm's reputation and financial performance is non-linear but positive, and the process of the creation of value of companies by means of their reputation is moderated or influenced by a series of contingent factors (e.g. differentiation strategy, competitive intensity and power of stakeholders) (Sánchez & Sotorrío, 2007)	- Superior reputations increase shareholder value in the long term. In addition, non-financial reputation and financial reputation have a differential impact on shareholder value: superior non-financial reputations produce higher abnormal returns than superior financial reputations (Raithe & Schwaiger, 2015)	- Both likeability and competence are value-relevant in regard to investors' expectations about future firm value, and the value relevance of corporate reputation is stakeholder group-specific (Raithe, Wilczynski, Schloderer, & Schwaiger, 2010)

<p><b>R&amp;D</b></p>	<ul style="list-style-type: none"> <li>- The effect of initial R&amp;D on high-tech firm growth is through increasing levels of interfirm alliances in the first post-entry years. Initial R&amp;D also stimulates new product development later on in the life course of high-tech firms, but this does not seem to affect firm growth (Stam &amp; Wennberg, 2009)</li> <li>- Earnings performance is negatively related to the quantity of narrative R&amp;D disclosure (Merkley, 2014)</li> <li>- Firms capitalize larger amounts of R&amp;D as a means of facilitating access to public debt markets, and capitalized R&amp;D investments reduce the cost of private debt (Kreß, Eierle, &amp; Tsalavoutas, 2019)</li> <li>- The mean level of realized future operating performance is positively associated with patent quality measured as the citation index of a firm's patent portfolio; the standard deviation of realized future operating performance is negatively associated with the quality of a firm's patents (Pandit, Wasley, &amp; Zach, 2011)</li> <li>- The positive association between the level of future earnings and R&amp;D intensity increases with firm size, and that the positive association between the volatility of future earnings and R&amp;D intensity decreases with firm size, consistent with R&amp;D productivity increasing with scale (Ciftci &amp; Cready, 2011)</li> </ul>	<ul style="list-style-type: none"> <li>- R&amp;D investments in the manufacturing sector contribute more positively to firm market value than in the service sector (Ehie &amp; Olibe, 2010)</li> <li>- The R&amp;D-related voluntary disclosure is value relevant to investors beyond the recognized earnings, book values, and capitalized R&amp;D, and it is associated with higher share price informativeness (Chen, Gaviious &amp; Lev, 2017)</li> </ul>	<ul style="list-style-type: none"> <li>- The incremental value-relevance of disclosing patent counts/ citations is greater than that of capitalizing R&amp;D expenses for the firms with high-patent level, and the value relevance of this patent disclosure is more pronounced for firms in industries with stronger protection of intellectual property (Ciftci &amp; Zhou, 2016)</li> <li>- Analysts' incremental contribution to investors' decisions is larger in intangibles-intensive companies than in companies with low levels of intangibles, this meaning that financial report deficiencies are partially compensated for by other information sources available to them (Amir et al., 2003)</li> <li>- The level of R&amp;D-related voluntary disclosure is higher when proprietary costs are lower and when the book-to-market ratio is lower, perhaps because the basic financial statements are less informative about market value. In addition, after controlling for the level of general disclosure and forward-looking disclosure, a negative relation between disclosures about development-stage R&amp;D and both analysts' one-year-ahead sales forecast error and dispersion is found (Jones, 2007)</li> </ul>
<p><b>Customer satisfaction and awareness</b></p>	<ul style="list-style-type: none"> <li>- Firm-level customer satisfaction measures can be economically relevant to the stock market, but they are not completely reflected in contemporaneous accounting book values (Ittner &amp; Larcker, 1998)</li> </ul>	<ul style="list-style-type: none"> <li>- CSR and firm value are positively related for firms with high customer awareness, as proxied by advertising expenditures. The evidence suggests that advertising expenditures enhance the impact of CSR activities on the value of the firm because</li> </ul>	<ul style="list-style-type: none"> <li>- Positive changes in customer satisfaction not only improve analyst recommendations, but they also lower dispersions in those recommendations for the firm (Luo, Homburg, &amp; Wieseke, 2010)</li> </ul>

	<p>- The CSR and firm performance relationship is a fully mediated relationship through the contribution of CSR to firm performance via better reputation and competitive advantage followed by a higher level of customer satisfaction. (Parastoo, So &amp; Saeidi, 2015)</p> <p>- The CSR and firm performance (FP) is mediated, in that CSR is linked to both reputation and customer satisfaction, whilst reputation alone mediates the CSR–FP relationship (Galbreath &amp; Shum, 2012)</p>	<p>advertising creates awareness about the company and its activities, which creates more “goodwill” on the part of customers (Servaes &amp; Tamayo, 2013)</p> <p>- Customer satisfaction is a metric that provides valuable information to financial markets. The robust impact of customer satisfaction on stock return risk indicates that it would be useful for firms to disclose their customer satisfaction scores in their annual report to shareholders (Tuli &amp; Bharadwaj, 2009)</p>	<p>- The quantity of backwards-looking disclosures of customer metrics is not associated with analysts’ uncertainty, and it is weakly associated with investors’ uncertainty. Meanwhile, the quantity of forward-looking disclosures of customer metrics has a significant negative, or an insignificant, effect on analysts’ uncertainty, whilst it has a significant negative impact on investors’ uncertainty (Bayer et al., 2017)</p>
<b>Customer list/customer franchise</b>	<p>- The measure of customer franchise value, based on information voluntarily disclosed by some firms, is significantly positively associated with stock price and it is positively associated with future earnings and analysts’ forecast errors (thus reducing their error rate). The value of the customer equity measure is positively and significantly associated with the market value of the firm, as well as with future earnings and analysts’ forecast errors (thus reducing their error rate) (Bonacchi et al., 2015)</p>		
<b>Business model</b>	<p>- The results suggests generic models emerge in an industry, indicating that there are multiple ways to succeed, such that firms gravitate toward standard models and certain of these perform better (Morris, Shirokova &amp; Shatalov, 2013)</p> <p>- Regarding the business model design, it is expected that the more novelty centred (more efficiency centred) an entrepreneurial firm’s business model design is, the higher the firm performance, especially in environments characterized by high resource (low resource) munificence (Zott &amp; Amit, 2007)</p>		<p>- The results indicate that the specific business model typologies were closest to the analysts’ understanding, incorporating elements of both the narrow and broad comprehensions of the business model. For example, the analysts described the method of doing business, by focussing on the whole enterprise system and the company’s architecture for generating value. Although, the term business model initially was found to be a misunderstood concept, and in fact rendering mainly negative associations amongst the analyst community, the analysis indicates that the particularities of strategy</p>

			and competitive strengths mobilised by the analysts in their understanding of the case company in fact comprised a very comprehensive description of the business model when pieced together (Nielsen & Bukh, 2011)
<b>Organisational Capital</b>	- The authors developed a firm-specific measure of organisational capital and document that it is associated with five years of future operating and stock return performance, after controlling for other factors. Thus, their organisational capital measure captures firms' fundamental ability to generate abnormal performance. They found that executive compensation is positively associated with the measure of organisational capital. Collectively the results show that organisational capital is an important intangible asset related to firm value and crucial corporate decisions (Lev et al., 2009)		- Sell-side analysts particularly use information on intangibles when covering companies with a relatively positive future outlook (positive recommendations). Analysts use more information on intangibles when covering less mature or smaller sized companies. The analysts generally perceived non-financial information as more important than the financial inputs (Grüber, 2015)
<b>Human capital</b>	- Human capital disclosure is found to have a positive relationship with firm internal factors, such as workforce's capabilities, motivation and commitment, or with organisational performance and innovation ability. Human capital disclosure is found to have a positive relationship also with firm external factors, such as the firm attractiveness and reputation for the external stakeholders (Gamerschlag and Moeller, 2011)	- By extracting human capital information from German companies' annual reports, it is found that this information is value relevant. Especially, information on qualification and competence issues is positively associated with firm value. Nonetheless, the disclosed information does not lead to short-term changes in market value. Consequently, human capital information is value-relevant but not immediately (Gamerschlag, 2013)  - Brand Equity and Human Capital are found to have a complementary relationship on firm value and, specifically, there is a significant and positive interaction term for Tobin's q and cash flows, and a negative interaction term for cash flow volatility (Vomberg & Homburg, 2015)	



## **D) Information on intellectual capital and its effects on company performance, market value, and users**

This Section deals with the investigation of the manners in and the extent to which intellectual capital (IC) affects the firm market value and competitive positioning as well as its relationships with financial analysts. The concept of intellectual capital embodies a subset of unaccounted intangibles in that it refers, strictly speaking, only to intangibles that are effectively internalised and usefully employed in the activities of an organisation. For example, a company could have a patent that is not used in any way in its operations: this still represents an intangible, but it should not be considered part of the company's intellectual capital.

Intellectual Capital can be defined as follows: "Intellectual Capital encompasses the internal (competencies, skills, leadership, procedures, know-how, etc.) and external (image, brands, alliances, customer satisfaction, etc.) intangibles which are dynamically inter-related and available to an organization, thereby enabling it to transform a set of tangible, financial and human resources into a system capable of pursuing sustainable value creation" (WICI Intangibles Reporting Framework, 2016).

In the academic literature of the last twenty years, it has been typically conceptualised as being composed of three main capitals, namely Organisational (or Structural) Capital, Human Capital and Relational Capital<sup>1</sup>. The first one relates to the knowledge available to, and procedures that are in place in, the organisation in order to function. The second one refers to the skills and competences of the employees of a company. The third one concerns the relationships that the organisation set up over its existence with those external actors that surround its activities, such as clients, suppliers, communities, etc.

The articles reviewed in-depth in this Section can be categorized as focusing on the following topics:

- Intellectual Capital and its effects on company performance;
- Intellectual Capital and its effects on market value;
- Intellectual Capital and its effects on financial analyst reactions.

From the papers investigated in this Section, it can be observed that in general intellectual capital has a positive effect on company performance, market value and users. In terms of theoretical frameworks adopted to examine these relationships, several studies have adopted the Resource-based View and its different formulations (e.g. dynamic capabilities impact on the relationship between IC and firm-level performance). As for corporate governance mechanisms, Cerbioni and Parbonetti (2007) and Li et al. (2008) found that some of them can influence the disclosure in terms of quantity and/or quality of IC (e.g. proportion of independent directors & audit committee size). In the financial sector (especially in the banking one), Cabrita and Bontis (2008) in Portugal and Mention and Bontis (2013) in Luxembourg and Belgium have investigated the relationship between IC disclosure and banks' performance, they found that the three IC components affect each other, and that human capital affects structural and relational capitals (the latter both directly and indirectly) and business performance.

With reference to innovation, Kalkana et al. (2014) find that intellectual capital, innovation and organisation strategy positively affect company performance. With regards to market value, Orens et al. (2009) examine the impact that web-based intellectual capital reporting has on firms' value and its cost of finance. They observe that the more information on intellectual capital is disclosed, the less is the cost of capital, and this can be referred to all the three components of IC. Finally, intellectual capital information is found to positively influence analysts' coverage and forecast.

## **E) Frameworks and models for measuring and reporting on intangibles and their consequences on company performance, market value, and users**

The aim of this Section is to investigate the proposals of outside-traditional-accounting frameworks, models and tools that address – at least partially – the problem of the measurement and reporting of unaccounted intangibles and intellectual capital, thus representing potential solutions to that issue.

In addition to the academic articles, this Section also illustrates the International Integrated Reporting Framework by the International Integrated Reporting Council (IIRC), as well as the Intangibles Reporting Framework issued by the World Intellectual Capital/Assets Initiative (WICI) in September 2016.

To date the most well-known methods are probably:

- the Skandia Navigator developed by Edvinsson (1997) and Edvinsson and Malone (1997);
- the Intangible Assets Monitor proposed by Sveiby (1997);
- the Balanced Scorecard by Kaplan and Norton (1992, 1996, 2000);

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<sup>1</sup> Although we acknowledge that different theorisations have been proposed over the years, this is the most commonly used.

- the Knowledge Capital Earnings by Lev and Mintz (1999);
- the Value Chain Scoreboard by Lev (2001);
- the Strategic Resources & Consequences Report by Lev and Gu (2016);
- The Value Added Intellectual Capital Coefficient (VAIC) by Pulic (2000, 2003 and 2005).

The main similarities and differences existing amongst the above-discussed models can be summarised as follows.

Table – A comparison of the models and tools proposed for intangibles/intellectual capital disclosure, reporting and valuation

	<b>Purpose</b>	<b>Reporting/ Measurement/ Valuation</b>	<b>IC components/ perspectives included</b>	<b>KPIs proposed (YES/NO)</b>
<i>The Skandia Navigator</i>	Enable a holistic understanding of how a company creates value	Reporting	Five perspectives: (1) financial, (2) customer, (3) process, (4) renewal and development (5) human	<b>No</b>
<i>The Intangible Assets Monitor</i>	Measurement and presentation of information on intangible assets	Reporting and Measurement	Internal and External Structures of a company	<b>Yes</b> (categorised in terms of Growth, Efficiency and Stability)
<i>The Balanced Scorecard</i>	Operationalisation of company vision and strategy	Measurement	Four perspectives: (1) financial; (2) customer; (3) business/internal process, and (4) learning and growth	<b>Yes</b> (for each perspectives indicators are proposed)
<i>The Value Chain Scoreboard</i>	Provide a holistic picture of the firm's capabilities to create economic value	Measurement	Value creation as a cycle of development in terms of discovery/learning, implementation, and commercialization	<b>Yes</b>
<i>Knowledge Capital Earnings</i>	Analysis of the returns on physical and financial capital and determination of the economic value of an enterprise's intellectual capital	Measurement/ Valuation	Value of intangible assets based on the economic concept of "production function"	<b>No</b>
<i>The Strategic Resources &amp; Consequences Report</i>	Provide a holistic picture of the firm's capabilities to create economic value	Reporting and Measurement	Value creation composed of resource development costs, to strategic resources, resources preservation, resource deployment and value created	<b>Yes</b>
<i>VAIC</i>	Measure the extent to which a company produces added value based on intellectual capital/resources efficiency	Valuation	IC efficiency composed of: Human capital, interpreted as employee expenses; structural capital interpreted as the difference between produced value added (VA) and human capital (HC) and capital employed interpreted	<b>No</b>

			as financial capital invested (asset value).	
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Source: authors' elaboration.

### The WICI Framework

The most advanced framework for reporting on intellectual capital is that published in September 2016 by the World Intellectual Capital/Assets Initiative (WICI), i.e. the “WICI Intangibles Reporting Framework” (WIRF). Its purpose is to establish the principles, the contents and the structure for the reporting of intangible resources that are material for an organisation’s value creation process and its communication to stakeholders. Its primary target audience is all companies and other organisations of the private, public and non-profit sectors. The Framework is principles-based and “in its four chapters it describes the contextual background, provides a definition and a classification of intangibles, offers interpretations of the main principles for intangibles reporting and communication, and outlines the possible structure and contents of reporting on intangibles” (WIRF, p. 5).

Intangibles are defined as “non-physical resources which, either alone or in conjunction with other tangible or intangible resources, can generate a positive or a negative effect on the value of the organisation in the short, medium and long term”. (p. 13). In the Framework, intangibles are considered as substantially equivalent to the notion of Intellectual Capital. WIRF also recognises that intangibles may impact two distinct but inter-connected forms of value:

- *Strategic value* is related to the enhancement of the competitive, market, product, reputation, and/or risk profile of the organisation;
- *Financial value* is linked to the generation of net cash flows over time.

Then, it identifies five ‘guiding principles’ according to which information on intangible resources can be reported and communicated, namely materiality, connectivity, conciseness, comparability and future orientation. Finally, it proposes KPIs and a structure for intangibles reporting. With reference to KPIs, the Framework posits that they can be articulated on three levels: a) General KPIs are those that may be relevant for most organisations across industries and sectors; b) Industry-specific KPIs are those specific to a certain industry or sector; c) Organisation-specific KPIs are those specific to each organisation that should be reported in order to best represent its unique value creation mechanism. As for the structure for intangibles reporting, the proposed one includes three main sections, Outline of activities and value creation model, Intangibles and value creation from past-to-present, and Intangibles and value creation from present-to-future. The order of the three sections can be flexible. WIRF is a companion Framework to the International Integrated Reporting Framework presented in the next paragraph (see Figure below).

Figure – WICI’s Framework Focus within the corporate reporting landscape



Six capitals as defined by IIRC

\* Organisational Capital according to WICI Framework

Source: WICI Intangibles Reporting Framework, 2016, p. 9.

### *The International Integrated Reporting Framework by the IIRC*

Integrated Reporting is also a framework that recognises the relevance of intangibles and intellectual capital. Launched through a Conceptual Framework, the International <IR> Framework, in December 2013, it aims to help companies communicate to the providers of financial capital and the other stakeholders how they are planning to continue creating value in the short, medium and long-term. The concept of integrated reporting is based on multi-capital thinking: it recognises that organisations rely on a variety of capitals to create value, namely manufactured, natural, intellectual/organisational, social and relationship, financial, and human. These capitals represent in fact the inputs to the company business model and are then transformed into outputs (products) and outcomes (impacts). It has to be noted that three of the above-mentioned capitals are of intangible nature, intellectual/organisational, social and relationship, and human. For this reason, several papers have been developed by scholars to investigate which is the role of IC in integrated reports.

Aim of this Section has been to review the proposals of frameworks, models and tools that address – at least partially – the problem of the measurement and reporting of unaccounted intangibles and intellectual capital, as well as some academic papers discussing their effectiveness. From this analysis, it has been possible to note that, whilst a variety of models to measure and value these resources still exists, in terms of reporting two are the most valuable solutions, i.e. the WICI Intangibles Reporting Framework and the International <IR> Framework. Despite quite recent, the former has already resulted to be a valuable tool to support companies in that it provides a reporting structure and KPIs articulated by industry. The latter has been – amid other things – an efficient instrument to ‘revitalise’ the attention of managers towards the relevance of intangible capitals.

### **The studies on intangibles reporting by the European Commission, the OECD and the EFFAS**

Over the last 19 years, the European Commission (EC) has tendered studies and set up expert groups devoted to various economic, valuation and institutional issues in the area of intangibles and intellectual capital. In the 2003 EC Study devoted to the measurement of intangible assets, the Expert Group concludes that the priority of European policy should be not so much to define policies to increase individual intangible assets in the European economy, but rather to make intangible explicit, in the sense of defining sure rules and conventions for their measurement, as well as clear administrative instruments in order to penalise those who do not follow the rules.

In the 2006 EC Study known with the acronym “RICARDIS” devoted to research-based SMEs and their accounting problems linked to the lack of information on their intellectual capital in traditional accounting, the Expert Group arrives to the conclusion that the use of IC Reporting as a management and reporting tool can help to counter these accounting failures. Then, creating more transparency, both externally and within enterprises, about the role of intellectual capital and complementary assets in successful innovation will lead to a better understanding of value creation by research-intensive SMEs and provide a better basis for decision-making to managers and investors. Accordingly, appropriate policies should be designed by the EC.

In the 2017 EC Study concerning the importance of intangibles in today’s European economy, Thum-Thyssen et al. (2017) from the staff members of the European Commission state that there is a need to enlarge the general understanding of knowledge creation and to further improve the measurement of intangible assets in order to allow sound and evidence-based policy support. In particular, the EC’s authors state that: “Also important is an improvement of systematic reporting of investments in all relevant intangibles and as a driver of value creation for individual firms. This may also facilitate getting access to finance (capitalised intangibles might be used as collateral), improve corporate governance and market transparency. In fact, evidence suggests that the market value of a firm tends to be increasingly driven by its productive stock of intangibles than by the firm's tangible assets. Policy can help by suggesting new standards for accounting and corporate disclosure”.

Since 2008, the OECD (Organisation for Economic Cooperation and Development) has also published some significant studies in the field of accounting for and reporting on intangibles, providing some clear policy indications for standard setters, policymakers, audit firms and professionals, companies and investors. In particular, in the 2012 Study OECD observes that “the importance of intangible resources and the difficulty of accounting for them were raised and has grown steadily ever since. ... Recent years have even seen the rise of a ‘conceptual company’, characterised by low relevance of physical assets in favour of intangible intensive activities”. Moreover, “the ability to incorporate Intellectual Assets in current accounting frameworks appears to be limited and hence, the value relevance of accounting information has deteriorated, especially in sectors characterised by high intangible capital. This observation raises serious questions about the continued relevance of financial reporting and places growing expectations on non-financial reporting to bridge the information gap.” This situation occurs notwithstanding the fact that “the methodologies for measurement and reporting on intangible assets are abundant.”

In the 2013, the OECD reiterates a similar approach by stating that “while attention has focused on integrated reporting and environmental, social and governance (ESG) reporting, better reporting of corporate spending on, and benefits from, intangibles/Knowledge-Based Capital (KBC) is also important to the broader debate on improving the quality of corporate reporting.... Indeed, despite the fact that the value of many of the world’s most successful companies resides almost entirely in their intangibles, corporate reports provide only limited information on these”. However, “a significant challenge for promoting reporting of KBC is the lack of standardisation of reporting methodologies and the variety of key performance indicators reported by companies. Although full harmonisation of reporting standards is neither feasible nor necessarily beneficial (because of sectoral idiosyncrasies), policy-makers could help promote comparability and consistency.”

In 2008, the European Federation of Financial Analysts’ Societies (EFFAS) has published a short but very significant document titled “Principles for Effective Communication of Intellectual Capital”, where the European financial analysts set the ten principles that companies should follow when they disclose information on their Intellectual Capital. Many of the principles regard several reporting aspects. For example, standardization of the methodology, reliability of the information disclosed, and consistency over time appear clearly related to reporting issues. Also the first principle, i.e. the clear link to the company’s value creation, refers to the relevance of the delivered information on intellectual capital.

## **Concluding remarks**

Intangibles do not represent a new issue per se, but today it has acquired a fundamental economic prominence at both macro and micro level. Companies have become more and more “conceptual”, as OECD (2012) has evidenced, i.e. they tend to have negligible physical assets (property, plant and equipment, and inventories); they are intangibles-intensive (R&D, brands, alliances, human resources, organization capital); they utilize a strong patent/trademark protection; they operate with an extensive outsourcing of manufacturing, distribution and other low-knowledge functions; they extensively trade in intellectual property (patent sale and licensing, know-how sale); and they run flexible business models. In being “conceptual”, a company can grant significant rewards, such as the scalability of operations, that is limited only by demand (e.g., drug sales); virtually zero marginal costs (e.g. search engines); network externalities (e.g. Microsoft operating system); and the “locking-in” of customers with high switching costs (e.g. airlines’ loyalty programs). But also the risks are very high: think of the heavy, largely irreversible sunk-costs, the property rights that on most intangibles are either non-existent (human capital) or hard to enforce (know-how), or the unlicensed use of technology.

Investment in intangibles is associated with high levels of uncertainty. Further, while there is evidence that investment in intangibles leads to innovation and tangible investment, there is a time lag between intangible investments and economic benefits (intangible investment occurs early in the product life cycle).

Over the review, we have examined a large number of academic works dealing with the reporting of unaccounted intangibles, also through the lens of the intellectual capital studies. In general terms, from the academic literature review carried out, it can be synthetically concluded that:

- Information on unaccounted intangibles tends to be directly and positively correlated with company performance and cash flows;
- Information on unaccounted intangibles tends to be associated with the market value of companies, and indeed these resources are (partially) explicative of this value over time (i.e. they are value relevant);
- Information on unaccounted intangibles tends to be well received and useful to users and, in particular, to financial analysts and investors.

While the Sections from B to D of this literature review have helped us to define the contents and the contours of the problem “accounting and reporting for intangibles”, Section E has illustrated some potential solutions that have been elaborated in the academic literature and by the international specialised organisations (WICI and IIRC). However, it is fair to say that to date none of these potential solutions seems to have found a large rate of adoption by companies, investors and professionals.

As to the accounting treatment of intangibles, we have seen that the positions in the academic literature are much diversified. According to Lev (2001) and Lev and Gu (2016), there are serious economic consequences for the firm from the poor accounting treatment of intangibles. Indeed, the mismeasurement of intangibles at the company level has adverse economic effects in terms of:

- External investment decisions;
- The level of information asymmetry concerning a firm (volatility of share prices & insider trading);

- The Internal/Management information systems and decision making;
- The accountability of management for actions/decisions in managing the firm's resources;
- The lack of data for analysis and rational external resource allocation.

Hence, still following Lev (2001) and Lev and Gu (2016), this situation, where intangibles are unaccounted for and – in the best of cases – the related expenditures are treated as a cost rather than as an investment, has negative consequences for

- value measures (e.g., market-to-book ratio) that are biased,
- performance measures (ROE, ROA, EVA) that are deceiving, and
- the prediction of future earnings and cash flows, that is largely flawed.

Also, internal corporate resource allocation may be seriously distorted by deficient information about intangibles.

On the other hand, different authors point out that the effect of intangibles on corporate value creation can be seen in the Income Statement (Penman, 2009), that investors and financial analysts are happy already with the information they have (Skinner, 2008), that this possible accounting change would provide a further occasion for managerial manipulation of earnings and information, and that such a change is very difficult and nobody really wants it.

Another possible solution refers to financial statement disclosure and/or narrative reporting (e.g., management commentary), possibly recurring to ad hoc KPIs for measuring intangibles in the different industries and contexts. However, also in this case, there are positive aspects (more extended information on these resources), but also negative ones, such as the lack of a unified and uniform methodology for the KPI calculation and the provision of information, and the difficult comparability of the resulting data and disclosure.

The review has shown that there are some promising attempts to develop intangibles reporting outside financial reporting, i.e. in integrated reports. The WICI Framework is compatible with the <IR> Framework just in order to facilitate this approach. Yet, we face serious issues of consistency in measurement and disclosure, and hence of comparability.

In closing, echoing the 2003 Study for the European Commission illustrated above, we face a major paradox: the more the economic and corporate system is based on intangible assets, which are its “glue” and “engine”, the stronger the system is, because intangibles are major determinants of growth and value creation. However, at the same time, the more the system is grounded on intangibles, the more vulnerable it becomes because intangibles are more uncertain, unstable and risky. The challenge we accountants face is to learn how to manage and report on these “invisible” resources for a better understanding of organisations' financial performance and their resilience. After all, intangibles are an issue we have to take into account for many years ahead.