

Intangible assets management and digital transformation: evidence from intellectual property rights-intensive industries

Intangible
assets
management

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Abstract

Purpose – This study aims to investigate the impact of digital technologies for intangible assets management. The authors analyse how technological innovations and regulations of intellectual property affect business models of companies or intellectual property rights (IPR) intensive industries to determine the impact of digital transformation on intangible assets management, highlighting emerging issues and future effects of the digital technology revolution.

Design/methodology/approach – The authors use a case study method to answer our research questions. The authors use Soundreef SpA as our case study, a collecting company that develops technology for monitoring, collecting and maximising the earnings of songwriters and music publishers. The authors also elaborate and adopt the framework of the enhanced intellectual capital as the theoretical lens for presenting and analysing our case study, determining how the digital transformation caused business model innovation and more transparent and timely performance measurement in copyright-based companies.

Findings – The analysis of Soundreef SpA's business model allows us to demonstrate how using new technologies drives the performance measurement of copyright holders and improve the collecting societies' performance, introducing a new key performance indicator. This turning point is made possible by digital transformation and regulatory change. In the IPR industry, copyright holders' performance has never been calculated, so the distribution of copyright revenues was based on the criteria approved by governance bodies/management.

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Originality/value – In the study, the authors demonstrate that digital transformation is able to enhance the intellectual capital of IPR-intensive companies introducing new ways to manage intangible assets and to measure performance.

Keywords Performance management, Business model, Digital transformation, Collecting societies, Intangible assets management, Intellectual property rights management, IPR-intensive Industries

Paper type Research paper

1. Introduction

The process of rapid and widespread adoption and application of digital technologies in commercial settings is commonly referred to as digital transformation (Kretschmer and Khashabi, 2020). Companies in nearly every sector have implemented initiatives to adopt new digital technologies and to exploit their advantages. While there is emerging research on the effects of digitisation on competitive landscapes, organisation design, companies' processes, employees and tasks often only technology-specific (Choudhury *et al.*, 2020), we still see a need for an integrated view to understand how digital transformation affects intangible assets management and business model innovation. Therefore, this article aims to fill this gap.

This study aims to investigate the impact of digital technologies for intangible asset management for companies operating in intellectual property rights (IPR)-intensive industries, especially collecting societies (CSs). We analyse the business models, technologies and regulations of IPR-intensive industries to determine how digital transformation affects business model innovation through intangible assets management and more transparent and timely performance measurement, highlighting emerging issues and future impacts of the digital technology revolution. Our analysis answers several calls for research in this field, including the Meditari special issue "The Influence of Digital Transformation on Performance Management: Outlining a New Research Agenda", which included "What are the emerging and future impacts of the digital technology revolution for intangible asset management?"

We adopt a qualitative case study method to answer our research questions. We use a case that is representative of the IPR industry. We choose Soundreef SpA, a copyright-based company that develops technology for monitoring, collecting and maximising the earnings of songwriters and music publishers. Soundreef SpA. is the first competitor to enter the Italian copyright industry after the European Directive 2014/26/EU (Barnier Directive) that opposed the monopoly of the Italian Society of Authors and Editors (SIAE). The company deals with millions of transactions and analyses a vast amount of data to improve data security and efficiency in the music industry. We elaborate and adopt the enhanced intellectual capital (eIC) framework based on IC theories as the theoretical lens for presenting and analysing our case study, which is based on the improvement in IC caused by digital transformation. Our focus is specifically on the recent and emerging digital technologies (i.e. artificial intelligence, internet of things, big data, blockchain and cloud computing). Our aim is to demonstrate how eIC helps IPR-intensive companies to innovate their business models and, in particular, help copyright-based companies to measure and manage the performance of copyright holders in a transparent and timely manner, which has not been done in the past.

Thus, analysing Soundreef SpA's business model allows us to demonstrate how using new technologies affects the performance measurement of copyright holders. This turning point is made possible by digital transformation and regulatory change. In the IPR industry, copyright holders' performance has never been calculated; the distribution of copyright revenues was done based on criteria approved by governance bodies/management. The originality of this study is in proposing a study that tries to demonstrate that digital

transformation is able to enhance the intellectual capital of IPR-intensive companies introducing new ways to manage intangible assets and measure performance.

The paper is structured as follows. After the introduction, Section 2 presents the literature review. Section 3 shows the theoretical research framework of eIC. Section 4 shows the methodology. The findings and discussion are presented in Section 5. Section 6 presents the conclusions and areas for future research.

2. Literature review

2.1 *Digital economy, digital innovation and business model*

The digital era and the Industry 4.0 paradigm, which combines different technologies, have opened many possibilities to create radically new products and services, share knowledge between different actors of the technology ecosystem and generate innovative business models (Schwab, 2017; Spieth *et al.*, 2016). The definition of digital differs in terms of the types of digital technologies, e.g. internal technologies include analytics, search engine optimisation, competitive intelligence and social media monitoring, whereas external technologies consist of platforms used to reach customers and deliver content website, ads, landing pages, e-mail campaigns and apps of all kinds (Phaal *et al.*, 2004; Routley *et al.*, 2013; Timmers, 1998; Sousa and Rocha, 2019).

The post-dotcom decade has seen improvements in the information and communication technology (ICT) sector, which can lead companies to unleashed new functionalities and adapt their business infrastructure to the new digital era (Bharadwaj *et al.*, 2013). Digital innovation has radically changed the nature and structure of new products and services, enabled novel value creation and appropriation pathways, produced a new breed of innovation processes and, more broadly, transformed industries (Ettlie and Pavlou, 2006; Nambisan *et al.*, 2017; Straub and Watson, 2001).

Digital technologies are fundamentally reshaping the traditional business strategy (Banker *et al.*, 2006; Sambamurthy *et al.*, 2003; Subramaniam and Venkatraman, 2001). Digital technologies enable different forms of dynamic capabilities (Pavlou and El Sawy, 2010) and are transforming the structure of social relationships (Susarla *et al.*, 2012). As Routley *et al.* (2013) argued, companies are adding digital offerings, such as analytics, mobility, social media and smart devices embedded in their core businesses. This has led to perceiving digital technology as a strategic dimension, and as a result, companies are trying to find a way to integrate this capability into their existing business models (Sousa and Rocha, 2019).

New digital technologies have presented challenges and opportunities for companies that pursue digital innovation (Nambisan, 2017). New technologies influence the change in business models and foster the creation of new businesses (Porter and Heppelmann, 2014; Gonçalves, Rocha, and Cota, 2016; Sousa and Rocha, 2019). The emerging smart technologies allow companies to demonstrate and create knowledge and increase their competitiveness (Lombardi, 2019). To improve the possibilities to compete in new contexts, digital technologies (Loebbecke and Picot, 2015; Roden *et al.*, 2017) are powerful forces that push firms towards new business models (Cohen and Kietzmann, 2014; Fjeldstad and Snow, 2018), making the capability to innovate increasingly relevant (Chesbrough, 2010; Foss and Saebi, 2017; Zott and Amit, 2007). Now, companies have the opportunity to radically change their business models using new digital technologies, including social networks, mobile, big data and the internet of things, as well as other innovations, such as blockchain (Ziyadin *et al.*, 2019).

Business model innovation (BMI) has attracted extensive attention from scholars and practitioners. BMI can be considered as the main instrument for enterprises to adapt to environmental changes and continuously create value (Karimi and Walter, 2016; Caputo

et al., 2016; Spieth *et al.*, 2016). Moreover, it is the key driving force for enterprises to create competitive advantages and achieve excellent performance (Martins *et al.*, 2015).

In a broader sense, digital transformation is the integration of digital technologies and business processes in a digital economy (Liu *et al.*, 2011; Lombardi, 2019). Digital technologies have changed the way of doing business, creating new competitive environments (Lardo *et al.*, 2020). In fact, there are industries in which the introduction of new technologies has caused competition, by overcoming structural obstacles and monopolies developed over the years (Trequattrini and Lardo, 2020). An important example is the CSs industry, where new regulations have led to the development of competition through the creation of new companies that are based on innovative business models.

As stated above, digital transformation and new ICTs have historically played an important role in modifying the traditional ways in which culture is produced and distributed and have caused a deep change in the business models adopted by companies (Li, 2020). This revolution exploits the potential of ICTs, which makes it possible to process, extract, copy and transfer creative content at a very low cost; this has had significant effects on the publication, promotion and distribution of artistic works and thus on IPR management.

It is necessary to define the novel digital technologies that are relevant for our study. First, artificial intelligence is a broad category of applications, technologies and processes for gathering, storing, accessing and analysing data to help business users make better decisions (Watson, 2009). It also means the ability of a computer to perform functions and reasoning that is typical of the human mind (Mitchell *et al.*, 2013). In some activities, machines have greater capabilities than humans, whereas, in others, humans are superior to machines. Therefore, proper management consists of combining the abilities of machines and humans (Brynjolfsson and McAfee, 2014). Secondly, blockchain technology is a digital ledger, decentralised and distributed over a network that is structured as a chain of blocks responsible for data storage (Nofer *et al.*, 2017; Ølnes *et al.*, 2017). It represents a resource's database that can be shared and used on a network of multiple sites, geographical areas or institutions (Walport, 2016). Its structure reduces the costs associated with controlling trust. Thirdly, big data is a large amount of data with high volume, velocity, variety, veracity and value (Laney, 2001). It can also be considered as the processes that make it possible to obtain knowledge from data (De Santis and D'Onza, 2021; Gandomi and Haider, 2015; Harlow, 2018; Uden and Del Vecchio, 2018). Furthermore, big data powers platforms; the trend is towards the commercial exploitation of data acquired from customers (Srnicek, 2017).

2.2 Intellectual capital and performance measurement of enterprises

The importance of knowledge resources has increased rapidly in many fields such as accounting, strategic management and economics (Davison, 2014). The knowledge economy principles (Foray, 2004; Zanda, 2012) highlight the relevance of intangible assets. They are considered the determinants of an organisation's success, represent strategic resources that improve the competitiveness of a company and can increase the long-term value of a company (Chen *et al.*, 2004). Intangible assets have grown in importance, and several authors have focused on the strategic role of IC (Petty and Guthrie, 2000; Kaufmann and Schneider, 2004). IC represents a set of knowledge available to a company; it can be defined as the capital or intellectual assets of a company (Stewart, 2007; Nahapiet and Ghoshal, 1998). It can be identified by three components – human capital (Becker, 1964; Edvinsson and Malone, 1997), relational capital (Prahalad and Ramaswamy, 2000; Martín de Castro *et al.*, 2011) and structural capital (Bontis *et al.*, 1999).

Stewart (2007) defines IC as “. . . intellectual material, knowledge, experience, intellectual property, information. . . that can be put to use to create wealth”; this definition emphasises wealth creation. Dumay (2016) replaces the word “wealth” in Stewart’s (2007) original definition with the word “value” to incorporate utility, social and environmental concerns.

Over the years, several models have been proposed to explain the nature of IC, the relations that connect it with a company and its role in value creation (Baum *et al.*, 2000; Lev, 2001; Mouritsen *et al.*, 2001). The IC theory has been increasingly used to explain the origin and dimension of company performance to understand how immaterial assets contribute to value creation (Skoog, 2003; Marr *et al.*, 2004; Fincham and Roslender, 2003; Cuganesan, 2005; Dumay, 2009).

Some authors have confirmed a very strong and positive relationship between IC and business performance (Asiaei *et al.*, 2018; Bontis *et al.*, 2000). Moreover, other scholars have asserted that IC is a critical driver of business performance (Itami, 1987; Nahapiet and Ghosal, 1998). Wang *et al.* (2016) found that the fit between the three components of IC and knowledge management strategies facilitates both operational and financial performance of high-tech firms.

2.3 Collecting societies in the digital era

According to the World Intellectual Property Organisation (WIPO, 2005), copyright-based industries are defined as companies that are engaged in the creation, production, performance, exhibition, communication or distribution and sales of copyright protected subject matter. These include literature, music, theatre, film, the media, photography, software, visual arts, advertising services and collective management societies. Every year, it classifies copyright-based industries based on the following four categories: core copyright, interdependent copyright, partial copyright and non-dedicated support industries.

According to “IPR-intensive industries and economic performance in the European Union Report” (September 2019, p. 7), IPR-intensive industries generated 29.2% of all jobs in the European Union (EU) from 2014 to 2016. On average, over this period, they employed almost 63 million people in the EU. In addition, another 21 million jobs were generated in industries that supply goods and services to IPR-intensive industries. Regarding indirect jobs, the total number of IPR-dependent jobs increased to 83.8 million (38.9%). Moreover, IPR-intensive industries generated almost 45% of the total economic activity (GDP) in the EU, worth €6.6tn. They also account for most of the EU’s trade with the rest of the world and generated a trade surplus, thus helping to keep the EU’s external trade broadly balanced.

A particular group of copyright-based companies is CSs (Riis, 2011; Rochelandet, 2003), whose corporate structure is aimed at defending copyright holders’ economic interests, protecting their intellectual, cultural and artistic works. CSs are networks composed of authors and creators whose aim is to take collegial advantage of copyright (Besen and Kirby, 1989; Hollander, 1984; Watt, 2014). Thus, their model is based on establishing the fees of users and collecting and distributing the revenues of their authors and affiliated creators.

They have the following principal functions: licence the use of the rights they manage, monitor the use of works by the licensee to enforce the rights that the licence grants and collect and distribute royalties on the licence (Hollander, 1984). As CSs are constituted somehow differently in different countries, it is difficult to generalise some of their characteristics and activities (Handke and Towse, 2007).

Generally, economists perceive CS as an efficient way of overcoming the problem of high transaction costs for administering copyright in some markets (Coase, 1960; Williamson, 1979). In addition to the transaction cost theory, the economic function of copyright management companies can be explained using the information economy (Sandler, 2004; Stiglitz, 2002). The

existence of asymmetric information might generate adverse contractual conditions assumed by less informed individuals. When there is no solution in the market, intermediaries' intervention becomes essential. CSs that are devoted to acquiring licences are inclined to take actions based on their transaction experience.

Additionally, CSs are better able to detect violations of intellectual, cultural and artistic works, allowing for litigations and an increase in income from copyright (Tétrel, 2008). Thus, CSs have a strong position in assuming contractual risks. They can easily collect information on the market to fix a price at which the profit connected to cultural and artistic works is maximised. They can offer general licences as an incentive to their users. However, an issue related to the optimal dimensions of CSs is posed; they create a natural monopoly (Watt, 2014, p. 167).

As stated above, digital transformation and new ICTs have historically played an important role in modifying the traditional ways in which culture is produced and distributed and have led to a significant change in the business models adopted by companies (Li, 2020). This revolution exploits the potential of ICTs that allow to process, extract, copy and transfer creative content at a very low cost; this has had significant effects on the publication, promotion and distribution of artistic works and, consequently, on IPR management.

The literature on the impact of digital transformation on intangible assets management has not been extensively investigated. Therefore, this article aims to fill this gap. The aim of our research is to study the impact of digital technologies on the development of new business models for companies operating in IPR-intensive industries, especially CSs. Our research answers the call to explore how digital transformation changes performance measurement and management systems of intangible assets.

Therefore, the questions guiding our research are as follows:

- RQ1.* How has digital transformation influenced the business models of copyright-based companies?
- RQ2.* What are the emerging issues and future impacts of digital performance measurement and management of copyright-based companies?

3. Theoretical research framework of enhanced intellectual capital

To provide a better understanding of our results in answering our research questions, we develop a theoretical framework for IC management in companies facing digital transformation. Particularly, digital transformation is a pervasive way that allows the digital economy to use IT (e.g. hardware, software, application and telecommunications) in all aspects of the economy, including internal operations of organisations as well as transactions between organisations and individuals (Atkinson and McKay, 2007). Several scholars have recognised that knowledge used for the management of enabling technologies is strategic, as these technologies are factors that can strengthen the IC of companies.

Thus, the characteristics of the enabling technologies can affect the IC components (Dumay, 2009; Guthrie *et al.*, 2012; Secundo *et al.*, 2017). Firstly, artificial intelligence means the ability of a computer to perform functions and reasoning that are typical of the human mind (Mitchell *et al.*, 2013). In some activities, machines have greater capabilities than humans, whereas, in others, humans are superior to machines. Thus, proper management consists of combining the abilities of machines and humans (Brynjolfsson and McAfee, 2014); the interaction of individuals' skills and machines affects human capital, leading to an increase in its efficiency and as a result enhancing its value. Blockchain is a digital ledger that is decentralised and distributed over a network and structured as a chain of blocks

responsible for data storage (Nofer *et al.*, 2017); its structure allows to reduce the costs associated with controlling trust, increasing safety and transparency in relationships and as a result enhancing relational capital. Big data is a large amount of data with high volume, velocity, variety, veracity and value (Laney, 2001); it can also be looked at from the perspective of the processes that make it possible to obtain knowledge from data (Harlow, 2018). Furthermore, big data powers platforms; the trend is towards the commercial exploitation of data acquired from customers (Srnicek, 2017). Thus, this huge amount of data represents a worthy asset able to enhance the structural capital value.

Thus, the characteristics of the enabling technologies can affect the IC components (Dumay, 2009; Guthrie *et al.*, 2012; Secundo *et al.*, 2017). Following the previous classification of technologies (Section 2.1), we propose a theoretical framework that is based on the enhancement of IC, as reported in Figure 1.

4. Methodology

This study is a qualitative research (Hair *et al.*, 2019) with a deductive approach of the first application of our theoretical framework of the eIC. A qualitative study design was chosen because a comprehensive analysis of how new technological solutions allow innovative performance measurement and management of innovative business models that are based on IC is lacking. This research design, using a case study analysis, is suitable in a new, complex and evolving context (Birkel *et al.*, 2019).

In qualitative research methods, case studies support researchers when a “how” or “why” question is asked about a contemporary set of events over which the investigator has little or no control (Yin, 2014, p. 14). The case study methodology is an appropriate research method, as it will enable us to test our theoretical framework in a specific research context, leading to a deep understanding of a complex social phenomenon (Yin, 2014; Ridder, 2017). In the next sections, we are going to define our research context and data collection.

4.1 Case study’s description

Soundreef SpA (<https://www.soundreef.com/>) (hereafter also the company) owns Soundreef Ltd and controls Soundreef Media Service S.r.l. and Soundreef CZ s.r.o. Soundreef Ltd is an independent management entity (Directive 2014/26/EU) registered with the Intellectual Property Office of the UK. Soundreef Ltd licences its members’ music to users in over 20 countries; it gathers and distributes royalties on behalf of songwriters and publishers, providing an alternative to traditional copyright CSs. Soundreef Ltd manages the rights of over 43,000 songwriters and music publishers worldwide. It operates in over 90 countries either directly or via representation agreements.

Soundreef Media Service S.r.l. provides ambient sound and music for large retail outlets, and Soundreef CZ s.r.o. is an independent management entity in the Czech Republic. Soundreef SpA is the company that develops the technology behind Soundreef Ltd, and its

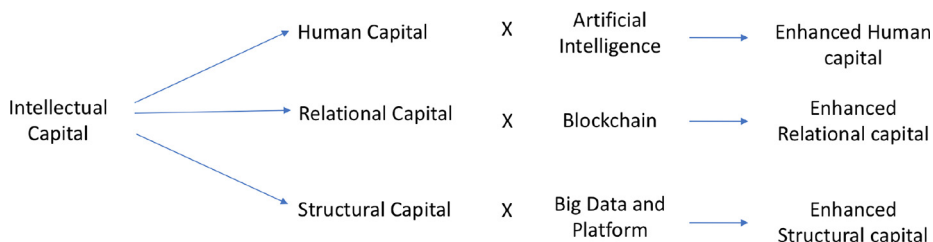


Figure 1.
Theoretical
framework of eIC

main aims are to provide rights holders with quick payments and complete transparency about how their music is used and their royalties are earned. Thus, Soundreef SpA develops appropriate technologies for monitoring, collecting and maximising the earnings of songwriters and music publishers. The company regularly deals with millions of transactions and analyses a vast amount of data to improve data security and efficiency in the music industry. It is financed by investment companies.

Soundreef SpA's mission is to ensure transparency and royalty traceability for copyright owners in the music industry and ensure maximum dependability and speed in royalty payments in full security. The company's management aims to modernise the music industry.

The innovative business model of Soundreef is recognised at the international level. For example, the company won the 12th edition of the prestigious UK-Italy Business Boost Awards in 2018, receiving the Creative Industries Award, a prize for innovative companies; it was awarded to Soundreef for having revolutionised and digitalised the management of copyright protection.

4.2 Data collection

The research method consists of a set of specific procedures, tools and techniques used to gather and elaborate data about the influence of digital transformation on IPR and performance measurement. The first step in internal validation is to ensure that the selected case is an appropriate subject for study. This strategy considers the company's features and their consistency with the research aims, the willingness of the company to participate in the research and the preliminary analysis of information about the company. Soundreef SpA is an ideal company for the case study because it is an innovative company in the creative industry that revolutionised and digitalised the management of copyright protection at the European level. Soundreef offers services that are similar to those offered by national collective management organisations (CMOs), such as SGAE, GEMA, SIAE and SACEM, but there are significant different elements at the basis of its business model.

Primary and secondary data were collected. To increase the validity and objectivity of the coding procedure, the entire process was directed by a research team composed of the four authors of this research paper (Weston *et al.*, 2001). Following Corbin and Strauss (2015), all the data sources, primary and secondary sources, are from a research database, which we coded following the guidelines for the validity and reliability of a qualitative inquiry (Table 1).

Test	Strategy	Phase
Construct validity	Multiple data sources	Data collection
	Validation of the construction through the key components of the organisation	Design of the study
	Application of the theoretical research framework of the eIC through digital transformation	Construction of the research results
Internal validity	The company's unique features and consistency with research aims Willingness of the company to participate in the research Preliminary analysis of multiple data sources and triangulation for case acceptance	Selection of the case
External Validity	Validation with external references	Construction of the research results

Table 1.
Research validation strategy

The data was gathered between January 2020 and February 2021. The sequence and timeline of the data collection began with the SIDREA International Workshop “Sustainability, Business Model, Cultural Heritage and Smart Technologies” held on 23rd January 2020 in Rome. After two informal meetings, a semi-structured interview was conducted with the CEO of Soundreef SpA, Davide d’Atri, to focus on specific aspects of the business activity (the interview procedure is presented in [Table 2](#)). The interview was conducted in Italian.

Secondary sources were coded according to the platform where the data was gathered. Interviews and videos were transcribed, and online data and corporate documents were analysed. The pieces of evidence were categorised based on the theoretical framework proposed. We used secondary data from the official website of the company, newspaper articles providing information about the activities, technologies acquired and used by the firm as well as videos on online social networks. Moreover, we analyse the company’s presentation at the academic conference on “Sustainability, Business Model, Cultural Heritage and Smart Technologies” held in Rome in 2020 ([Table 3](#)). Data triangulation assists our aims both in collecting more comprehensive relevant information and crosschecking the consistency of the source to enhance the robustness of our findings ([Patton, 2002](#)).

5. Findings and discussion

This section presents the results of the case study analysis, providing interesting and new evidence in answering *RQ1* and *RQ2*. The results are reported based on the theoretical framework of eIC.

5.1 Description of case study findings

On 10th April 2014, the EU Directive Barnier 2014/26/EU was implemented, stipulating the liberalisation of music copyright for private operators in the EU. This market is worth about €5 billion in the EU. By adopting Legislative Decree no. 35 on 15 March 2017 (Decree 35/2017), Italy implemented EU Directive Barnier 2014/26/EU on collective management of copyright and related rights. The Barnier directive grants owners of protected works the freedom to choose an organisation to manage their copyright and related rights, allowing them to select any CMO or other independent management body established in the EU. The directive’s aim is to implement a digital single market.

The Directive and Decree 35/2017 identify two types of entities that may be entrusted with the management of copyright and related rights – CMOs and independent management entities.

Before 2017, Art. 180 of the Italian Law on Copyright (Law no. 633 of 22 April 1941) provided SIAE with a monopoly on intermediation activities relating to the management of copyright. However, Law Decree 148/2017 amended this provision to allow copyright intermediation activities to also be carried out by other CMOs. Law Decree 148/2017 did not include independent management entities among those that can carry out

Interviewee	Content of the questions
CEO and founder	Soundreef business model; value proposition; customer relationships; revenue streams; key resources; key activities; distinctive capabilities; intellectual property management; management of the libraries; type and extensions of the technologies used; value generation; cost structure; human resource management; performance measurement and management; future strategic vision; personal awareness of the benefits of adopting smart technologies

Table 2.
Interview track

MEDAR

Type of source	Gathered through	Title
VIDEO	YouTube (1)	“Economia, data mining e giurisprudenza nell’industria della musica”
VIDEO	YouTube (1)	“Come l’innovazione tecnologica cambia la sorte di autori ed editori Davide D’Atri TEDxUniTO”
VIDEO	YouTube (1)	“Davide d’Atri in Audizione alla Camera - 01/17/2017”
Press Releases	Soundreef official Website (3)	-“SIAE, Soundreef Ltd and LEA reach an agreement” -“Copyright in Italy Soundreef: new problem for SIAE” -“Soundreef: Italian Antitrust Authority (AGCM) Rules in Favor of Songwriters’ Rights” -“Soundreef is the first collecting society that monthly reports YouTube “plays” -“Soundreef and SUISA together collect online rights royalties” -“Italian debut of Soundreef S.p.A, the company that improves music royalties management”
EU directives and Italian legislation	European Parliament website	Directive 2014/26/EU of the European parliament and of the council of 26 February 2014
	Gazzetta Ufficiale della Repubblica Italiana	- Law no. 633 of 22 April 1941, as last amended by legislative decree no. 68, of 9 April 2003 - Legislative decree no. 35 of 15 March 2017 - Legislative decree no. 148 of 16 October 2017
PPT PRESENTATION	Conference “Sustainability, Business Model, Cultural Heritage and Smart Technologies” Rome - 01/23/2020	session #smart! - smart technologies and entertainment

Table 3.
Secondary sources

copyright intermediation activities. Furthermore, Art. 20 of Decree 35/2017 stipulates that collection of rights revenues in Italy by foreign independent management entities shall be regulated by representation agreements. This forces such entities to enter into representation agreements with local CMOs.

The Italian Competition Authority (ICA) judges the distinction based on the type of organisation discriminatory because such restrictions raise serious proportionality issues, and it is not based on public interest. The Law Decree 148/2017 removed the SIAE monopoly, allowing other operators to enter into the market, but this entrance is allowed to CMOs only, thereby excluding for-profit independent management entities.

After the Law Decree 148/2017 was adopted, Soundreef made an interesting attempt to enter the copyright management industry of the Italian market. In April 2019, Soundreef reached an agreement with SIAE and a non-profit entity in Italy, called Liberi Autori ed Editori (LEA), to collect the rights revenues of its members.

Over the years, Soundreef has dealt with many challenges, especially in political and regulatory areas. Finally, the antitrust organisation, with its decision on 26th October 2018,

has recognised the existence of the abuse of a dominant position, which had unavoidably damaged other companies, especially Soundreef.

The digitalisation of all processes related to the collecting activities is the major key aspect of Soundreef's innovative business model. Soundreef is revolutionising royalty collection in Europe with its approach by using new technology and digital systems. The vision and goals of the company are to use technology to make royalty transactions faster, easier and more transparent.

During interviews, the chief executive officer (CEO), Davide d'Atri, has maintained that:

[. . .] the digital revolution can no longer be stopped, longstanding monopolies in Italy are set to be demolished. In Soundreef, we believe this will entail a domino effect.

Using digital systems would greatly reduce the accounting and payment times for lyric writers from the current average of 12–24 months to just a few weeks. These payments would be determined punctually and precisely and not on the *ad hoc* basis that is currently the case under the SIAE's system, where 75% of concerts are paid on random estimates of songs played. During another interview, the CEO stated that:

Soundreef factors the usage within 7 days of the concert and pays royalties within 90 days from that concert, whether nationally or internationally. Our accounting is 100% analytical and scientific. Any song which is played will be paid for and its artists can verify in real-time how much they have earned through their online accounts.

Soundreef SpA develops the technologies needed to monitor, measure and manage the IPRs of all the members of its IP portfolio internally. In addition to the reports provided by the law, the company has implemented a monitoring service based on smart technologies that can check tens of thousands of radio and TV broadcasters across Europe and North and South America. All the statistics are available online within 48 h of detection by means of a specific technology adopted to manage data automatically without the need for human capital interaction, thus avoiding all types of mismatches.

Every stream or download of music of the rights holders is accounted for and paid analytically through digital service providers that track the usage of the music and the details, and all information is available on the online account of each member of Soundreef. The company's mechanical rights service allows rights holders to licence their music to record labels and collect royalties in a fast and transparent way.

Moreover, the CEO stated that:

[. . .] a key element of Soundreef business model that distinguishes it from its competitors is the absence of registration fees for copyright holders, who can register online for free. This is a new and relevant element of the business model, which was made possible due to the streamlined management, which differs from other CSs where copyright holders have to pay registration fees every year, and many do not even recover this cost.

Therefore, according to the CEO, the processes of collecting data and money and distributing them to copyright holders are innovative because the entire value chain, from when the author registers to when the revenues and data are collected and distributed, is digitally structured. All the technologies used are internally developed because their essential element is a detailed knowledge of the industry. Therefore, the human capital used in the company has a high level of knowledge of the industry processes because the reconstruction phase is not trivial at all, and it represents the company's strength because they track all the data and collect it in the company's databases. Thus, the human capital is assisted by an automatic monitoring system on all the channels. For example, radio stations that play the music and data on the use of royalties are captured in the database in real time.

They simply enter the amount paid for licences by specific customers (e.g. radio, bars and TV broadcasters), and the system automatically allocates it pro-rata to the authors' accounts. Therefore, digitisation makes the allocation of royalties analytical, timely and efficient.

Moreover, to protect the creativity of the copyright holders with a secure and immutable ledger for music that states the ownership of rights holders, Soundreef offers a service of copyright certification using blockchain technology.

5.2 Discussion of findings according to the enhanced intellectual capital framework

The innovative business model of Soundreef is based on the digital measurement of IPRs holders' performance and transparent payment of royalties in the shortest time possible. The company is able to maximise its attractiveness because of its IC management capabilities. The company strategically uses IT and smart technologies in all aspects and processes of its business, and the technologies implemented in its business model enhance IC.

The digitalisation of all the processes of copyright management is a distinctive capability of Soundreef that is made possible by digital transformation, or as stated by many authors (Liu *et al.*, 2011; Li, 2020), it is made possible by the integration of digital technologies and business processes in a digital economy. The company has received huge investments to develop technologies suitable for tracking all uses of copyright, thus enabling an analytical measurement of the performance of each IPR holder.

Soundreef holds and manages an IPR portfolio (or repertoire) that constitutes a part of its structural capital. The structural capital has been enhanced by digital technologies because, as the CEO stated, "the company that develops the appropriate technology for monitoring, collecting and maximising the earnings of musicians and music publishers". The earnings maximisation of musicians and music publishers requires an analytical and transparent performance measurement by using digital technologies to control and manage all the channels and platforms where the repertoire is uploaded and played. These processes, which are made possible by new tracking and data analysis technologies, are essential to collecting and paying out royalties to rights holders.

Furthermore, through blockchain technology, the business model of Soundreef improves and boosts relational capital, offering a free service of music certification to secure the authorship of copyrighted music works, thereby reducing the costs associated with controlling trust. Finally, human capital is also enhanced in Soundreef because by combining the abilities of machines and humans, they are able to carry out activities that would otherwise require a large number of people, which will make it unprofitable. Thus, they can create new value that constitutes a major competitive advantage over other organisations, especially CMOs.

Soundreef has improved the timing of copyright distribution through the enhancement of intellectual capital management and this allows it to be among the main players in the CSs market. Therefore, analysing our case study, we can define one of the main key performance indicator of CSs' performance, that is the ratio between the time when the author holding the copyright claims his right and the time when he receives it as distribution from the CS. It is basically an efficiency indicator, and the closer it is to 1, the better the society performs. Thus, the determining variables are time and the certain determination of the amount of the right to be collected and distributed for the copyright holder. With new technologies, Soundreef is able to greatly approximate this ratio to 1 and, then, accuracy has become absolutely possible, thanks to human resources that can timely and transparently control these processes improving also the relational capital of the company through the use of its enhanced structural capital.

6. Conclusions, limitations and future research

The research aimed to demonstrate how using new technologies allows a transparent and timely measurement of the performance of copyright holders. Our goal is to understand the influence of digital technologies on designing innovative business models in the IPRs management domain. The case study of Soundreef SpA is analysed using our theoretical framework, which is based on the eIC framework of digital technologies and the relevant IC literature (Dumay, 2009; Dumay, 2016; Guthrie *et al.*, 2012; Secundo *et al.*, 2017).

Digital transformation has created new competitive contexts through new ways to run businesses (Cohen and Kietzmann, 2014; Fjeldstad and Snow, 2018; Sousa and Rocha, 2019). The copyright management industry, which is the focus of this study, is a perfect example of competition that started after the introduction of new technologies, which made it possible to overcome structural obstacles and monopolies developed over the years. In the industry of CSs, regulatory changes have not only brought the development of competition through the creation of new companies based on innovative business models (Spieth *et al.*, 2016) but also enhanced the BMIs of companies previously operating in the market. We analyse how the innovative business model of Soundreef is based on the development of digital technologies and avoids the cost structure of local agencies, which are at the basis of the business models of CMOs.

In the case study of Soundreef's business model, we show how using new technologies allows for transparent and timely measurement of the performance of copyright holders. This turning point is made possible by digital transformation and regulatory changes. In the field of CSs, the performance of copyright holders has never been calculated on a case-by-case basis, but the distribution of copyright has been based on criteria decided by governance bodies. A precise and digital prediction of earnings would particularly favour young lyric writers, who are currently not benefiting from the subscription fees paid to SIAE. The majority of those registered cannot even receive the subscription fees. Furthermore, SIAE grants voting rights based on sales volume. The richest and most profitable copyright holders are also the ones with the greatest voting power, forcing younger and emerging writers, who form the majority, to suffer the burden of the decisions of the richest and most profitable copyright holders.

This study has implications for both academics and practitioners. Based on the analysis of the main findings of the case study and the literature review, this study contributes to the IC literature by proposing a framework for enhancing IC through digital technologies. Moreover, regarding practitioners, the proposed framework will help them to manage intangible assets.

Besides having many theoretical and practical implications, this study might have some limitations. First, we analyse only the sector of CSs and, moreover, our methodology is based on a single case study, due to the specific characteristics of the sector analysed. Other further research will aim to deepen the study on other IPR-intensive industries.

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