INTELLECTUAL CAPITAL:
FROM DEFINITION TO IMPACT ASSESSMENT

NELLJIA TITOVA

Ventspils University of Applied Science (Latvia)

ABSTRACT

Intellectual capital as a discipline appeared a decade ago as a result of practitioners’ observations proving the need to raise the issue up to the scientific level and management discipline. The history of the new science is very short compared to other fundamentals and what is important is it is developing at rocket speed that attracts extensive attention to the field. Intangible assets are major creators of business value and a source of competitive advantage. This statement can be proved by the fact that intangibles represented 87% of the market capitalization of listed companies forming part of the S&P 500 stock-market index in 2015. Moreover, investments in R&D in many cases exceed the profit of the company to ensure long-term progress and business success in the future pioneering in the market. Therefore, innovation leads to investment in the creation of intellectual capital for businesses and provides opportunities for researchers and practitioners. The aim of research is to revise the findings of scientific papers, analysing the evolution of the phenomenon throughout the time span. The findings of the paper present the structure of modern research and the block chain of the research evolution on intellectual capital as well as identify gaps and open questions to analyse.

KEYWORDS: intellectual capital, evolution, research questions, theory, evaluation, performance.

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Introduction

Intellectual Capital (IC) as a discipline was created and established by practitioners, managers and executives of companies who identified the basic IC principles, elaborated on the concept and introduced tools for the measurement of IC already a decade ago. The merit of the practical implementation and as a result the setting of the framework for further scientific research goes to the experts in management all around the world. Implementing the series of initiatives, projects, collaborations and making the information public they have forced the whole world to start speaking and discussing the notion and as a result IC was recognized as a scientific discipline. In 1997, since Karl-Eric Sveiby has published the revolutionary book “The new organizational wealth: managing and measuring knowledge-based assets” and a number of articles on the new organizational wealth and managing and measuring knowledge-based assets, the research has gone through the three stages and is going through the fourth.

The structure of IC is not anymore in the centre of attention as the research literature concentrates on the same distinction of IC between human capital, structural capital and relational capital, digging in the components and elaborating on the up to date meaning and implications of them. Before we come to the measurement system, the efficiency notion of greater extent and add complexity evaluation on the impact of the performance indicators, the literature analysis is presented on the research, methods and critics. There are fragmented research projects, yet the summary on the research structure and evolution is not available. There

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1 Nellija Titova – PhD student, visiting lecturer at the Department of Business Administration, Ventspils University of Applied Science, Latvia
Scientific interests: intellectual capital, intangible assets, business performance, value creation
E-mail: nellija_titova@gmail.com
is no united approach to the impact assessment on the performance, maturity of the content analysis research and there are number of open questions that create the scientific problem to be solved.

The research direction is already seen as well as the issues arising in the centre of the discussion on intellectual capital together with global trends. The research method is framework analysis. This paper is an attempt to trace the discussion and understand the state of progress in the discussion. The idea of the author is to systemize and classify the findings, describe the research evolution and the stage of the research on intellectual capital, elaborate on the challenges and further research.

1. Overview of the three grand theories of intellectual capital

   Intellectual capital theory is based on the three theories proved to be ever-green. Figure 1 shows that the most referenced one is the resource-based view (RBV), the second – competence-based view and the third – the knowledge-based view. These theories have created the knowledge base for the new theoretical planning, set ups, methods and models to analyse IC and related issues.

   ![](Resource-based_view.png)

   **Fig. 1.** Evolution of grand theories of intellectual capital

   *Source: the author’s analysis.*

   The main idea was to cluster the intangible firm-specific resources and competencies to achieve the excellence and what is the most important to create value and scale it up. One needs not to forget that in the centre of attention are business activities thus it is necessary to boost the companies’ performance and confidence to employ knowledge resources and achieve competitive advantage.

   According to A. Lerro, R. Linzalone and G. Schiuma (2014), there is no contradiction in the way resources are treated in both theory strands. All the theories stress that the source of the excellence is internal environment of the organisation, not external, or to be more precise, internal is far more important than the external one.

   In order for the planning, implementation, reporting and decision making to be smooth, the IC literature provides numerous insights to the management issues at each stage of the executive work. Starting with “you can manage what you can measure” to the “lock-in” phenomenon.

   The evolution of the research can be blocked in four stages, although the borders between them are vague and the flow is growing all directions at tremendous speed. The first attempt to define the stages was made by J. Guthrie et al. (2012). Therefore the thinking about thinking is at its embryo stage, it is just the beginning of the massive revision and building upon the IC research stock.
The first stage of intellectual capital research (ICR) has its origins in the late 1980s continuing during the first part of the 1990s when the concept appeared, and the crucial point was to convince the public that the issue is growing in importance and to develop a “framework of intellectual capital”. It was not yet about value but about resources and competitive advantage. That was the start line of the IC research marathon when different guidelines, approaches, methods and modes were raising from other practices and expertise to spill over to IC resources to make them countable, visible and “real”. The first period was the first attempt to convince that “intellectual capital is something significant and should be measured and reported, but with little empirical research provided in support” (Dumay, Garanina, 2013).

The second stage of ICR can be characterised as testing ground for the methods created and offered during the first period with the whole spectrum of the adjustments, critics, suggestions, open questions, created new ones, and what is important, classification as the main arguable point. The second stage has also initiated the wave of thinking about the impact of IC on the performance of companies and the first time value creation as the next step was highlighted. While only in theory, but keeping in mind it was all about profit, practitioners were trying to monetize the value creating as the result of identification and employment of intangible resources. Nevertheless, the absence of the solid testing and empirical analysis, cases, etc., did not yet allow to make sound statements, still only just opinions.

According to J. Guthrie et al. (2012) the third stage of ICR is characterised by research critically examining IC in practice, devoted to managerial implications of how to use IC in a company’s management. That was a period of extensive down-to-earth work to check the validity of the discipline and possibility to call it science.

Modern research is identified to be in the fourth stage when the macro level of integrity is analysed, going beyond the company, still not ignoring the micro level, and evaluating the company and IC at society level and elaborating on social presence and impact.

2. Evolution of the research trends

The last decade is “golden era” of intellectual capital. It was called in different ways over the time, depending on legislation, geographical preferences, occupation and following discussions by practitioners and scientists. It is classified in different ways and have variety of opinions on the research developments and practice. What is clear that the understanding of its importance is unifying the research and business teams and has opened diverse logical frontiers for the current and future research.

Figure 2 sheds the light on the evolution of intellectual capital research. Each of the identified research blocks has great potential to explore and systemize the findings, also it has multiple layers of analysis underneath and is a basis to build on.

2.1. Terminology and definition

Researches and practitioners have used different terminology over the years, for example, intangible resources, invisible assets, intellectual assets, intellectual resources, intangible assets, intellectual capital, etc. The consensus seems to be reached over the years and the choice was narrowed down to the ‘intangible resources’ for accountants and ‘intellectual capital’ for managers and not to forget ‘intellectual property’ for lawyers as similar but still not the same objects. They overlap in the meaning but suit the target groups and allow to speak one language and continue the discussion on the research steps further than definitions.

According to O. Lentjušenkova and I. Lapina (2016), the term ‘intellectual capital’ first appeared in a letter written by John Kenneth Galbraith in 1969 to Michael Kalecki, the Economist chief editor. Later, Stewart (1991) studied this concept and offered one of the first definitions. He defined IC as knowledge, information, intellectual property, experience – that can be put to use to create wealth. The first stage of the research continued with the second and third has brought the definition based on the central topics of the respective periods as its structure and the role that predefined the definitions of the periods under discussion. Edvinsson and Malone (1997) defined IC as knowledge that can be converted into value. Others defines IC as the
2.1. Terminology/Definition

2.2. Components/Classification

2.3. Measurement/evaluation

2.4. Value creation

2.5. Efficiency/Performance

2.6. Reporting/disclosure

2.7. Impact assessment

2.8. Decision making

2.9. Further research

Fig. 2. Block chain of the evolution of intellectual capital research (ICR)

Source: created by the author.

group of knowledge assets that are attributed to an organization and most significantly drive organizational innovation and value creation mechanisms for targeted key stakeholders. These ten years between these two definitions were also significant for research as it allowed many big companies and governments to launch long-term projects and initiatives to develop intellectual capital statements and guidelines to define every single component of the IC they have found crucial.

2.2. Components and classification

While the names used for IC components are at times different, they basically refer to human capital: the knowledge embedded in people; structural capital: the knowledge embedded in the organization and its systems; and relational capital: the knowledge embedded in customers and other relationships external to the organization (Guthrie, Ricceri, Dumay, 2012). The widely accepted intellectual capital structure suggested by Edvinsson, Malone (1997) consists of three components: human capital (HC), relational capital (RC) and structural capital (SC). Other researches have made the suggestions on the extension of the framework adding innovation capital, process capital, protected capital, relational capital, etc., as subdivision of the existing ones or separate group that still creates the confusion on the structure of the classification not the content anymore. The classification by H. A. Ferenhof et al. (2015) synthesizes previous research activities and highlights the main IC dimensions and sub-dimensions (Figure 3).

2.3. Measurement and evaluation

Measurements can be seen as a means of communication, i.e., a process by which information is exchanged between actors through a system of symbols. The main issue in the modern theory of measurement is sense of using the data already collected and data massive to add. In majority of cases reporting on IC is voluntary and accounting practices still limit managers to use the information on IC as it requires additional efforts to design, introduce, implement and proceed the data confronting the variety of opinions as conside-
rable part of the data on IC is of qualitative nature and thus is subject to discussion. Nevertheless, the managers and scientists see the additional effort worth doing to create the high-quality reporting by visualizing and measuring performance and improving the decision making process in organisations. There were two attempts to systemize the models and approaches by K. Sveiby in 2004 and in 2010. It shed the light on the evolving system.

Research on the metrics and IC measurements is called in different ways like IC indicators, parameters, ratios, values, etc., evolved from the list of indicators. Thus, Integrated Capital Reporting system was approved in several countries. IC reporting studies of the Meritum Project, the Danish IC reporting guideline, European the InCas (Intellectual Capital Statement) Project and others have left no doubts about the necessity of the indicators and the need to raise awareness among investors and other interested stakeholders.

2.4. Value creation

The main contribution to the theory of resources was changing the perception of IC from the static to the dynamic view. That brings the possibility to talk about the value creation compared to the static model where the focus was on the measurement of the resource base at one particular moment. In the long run, the process is under the analysis. One of the necessities identified by researches is the need to use longitudinal studies much more that it has been done before. Value chain, value creation and distraction, value assets and liabilities, value chains, value networks, value creation maps, etc., are just examples of the growing number of the issues where dynamic and longitudinal approach is needed and analysis brings to the surface.

2.5. Efficiency and performance

An overwhelming proportion of the scientific literature has stressed the dynamics of ICR (Petty and Guthrie, 2000; Dumay, 2014; Maji and Goswami, 2014). What is not yet elaborated in this article is the dominating topic of the research published. First is the disclosure practice. Second, measurement of IC and its impact on the corporate performance. In the first case, these methods can be clubbed into the four main categories: direct IC method, market capitalisation method, return on assets method and scorecard method (Sveiby, 2007). Most of the methods were theoretical in nature and among the empirical models (Iazzolino, Laise, 2013), just few to mention: Skandia IC Report Method (Edvinsson and Malone, 1997), Value Added Intellectual Coefficient (VAICTM) Model (Pulic, 1998, 2000), and Intangible Asset Monitor Approach (Sveiby,
Among these methods, Pulic’s VAIC is widely adopted by academics and practitioners as a method of value creation efficiency of both tangible and intangible assets of a firm (Nimtrakoon, 2015). A. Pulic insisted on the innovative approach in this method that was not integrated in other models. The higher overall value of VAICTM indicates better management utilization of the firms’ value creation capability. There has been some criticism, however, irrespective of the critique, it provides a standardized and integrated measure, which allows cross-organizational or cross-national comparison and analysis (Chen et al., 2014; Phusavat et al., 2011; Young et al., 2009; Zeghal and Maaloul, 2010; Nimtrakoon, 2015). Nevertheless, there was much of research proving the validity of the method and digging the possibility to improve it taking into account recent changes in the world markets and strategic management theory.

2.6. Reporting / Disclosure

As stated above, one of the two dominant research strands is research on the market value and intangible assets. The pioneering research was conducted at Skandia in Sweden (Edvinsson, Malone, 1997), and since then disclosing information on intangible assets and IC (Stewart, 1997) has increasingly become an integral part of a company’s value creation process from a market perspective (Petty and Guthrie, 2000; Sullivan, 2000; Williams, 2001; Dumay, 2008). IC disclosure is of great importance to investors under the condition it is comparable, consistent, structured and systemized. Hereby the theory on the asymmetric information is one more brick in the theory wall. The most difficult, challenging part is to define the parameters of the financial and non-financial information to disclose and understand the consequences of it. The research article by A. Lardo et al. (2017) was investigating the impact of IC disclosure on share prices and found it ambiguous. Moreover, there are around one hundred articles published recently on the topic of the disclosure and market value and looks if not social media development the research would reach a mature stage or even would come to the finish line. In spite of the fact that companies are talking about reporting and scientists are insisting, the disclosure has to be widely adopted, because the accounting dominance still prevails, and companies are concentrating on reporting required by law. Disclosure is voluntary according the legislative requirements of the majority of the states.

2.7. Impact Assessment

Continuing on the dominant research strand according to A. Lerro et al. (2014), despite many benefits touted by scholars, consultants and managers, and accumulated evidence indicates that the effectiveness of the IC management on organizational performance and the return on investment on IC-related dimensions are difficult to achieve and assess. Still, as the research stream at the same time proves that there is a connection and different components of IC do interact and expanding the practical implementation of the research on IC on, for example, bankruptcy prediction, innovative performance, impact assessment is in the centre of attention of the modern literature on the IC.

2.8. Decision making

In the article by M. Giuliani (2016), the concept of sensemaking has been extensively discussed in diverse managerial fields, such as, strategy, organization, change management, etc. (Gephart, 1993; Gioia and Chittipeddi, 1991; Gioia and Thomas, 1996; Hasan and Gould, 2001; Hill and Levenhagen, 1995; Maitlis and Christianson, 2014; Steinthorsson and Söderholm, 2002; Weick et al., 2005), but relatively less so in the accounting literature (Ahrens and Chapman, 2007; Hall, 2010; Jönsson, 1998; Tillmann and Goddard, 2008). Expanding the reporting to disclosure and elaborating on IC evaluation techniques, stakeholders, investors and all interested parties can significantly improve the management system. Meaningfulness, easy of usage and systematization of the new metrics over time is the tool that scientists do not have though it requires time.
2.9. Further research

Future research will focus on value creation, performance evaluation, building ecosystems around the companies using net technologies, big data analysis, social networks, alternative approaches to the accounting practices. Also, the list of the tools will be expanded to the bundles of the approaches to meet the demands of the government sector, particular the economy sector, specific need of companies and it will allow to operate the value creation mechanisms and resources in the most advanced way than we see today.

Conclusions

So far there exists a fairly broad agreement about the structure and scope of intellectual capital, and the research literature generally reflects the same distinction of intellectual capital between human capital, structural capital and relational capital. Analysing the information available on the IC research we can see repetitive research questions that can be visualized as the block chain of the research evolution. Value creation has been the unambiguous concept within IC research over the recent years and provokes for the adjustment in the measurement system and analysis of IC components and their interrelations.

Numerous researches were devoted to the content analysis of the report and discussions on the reporting, disclosure, integrated reporting with the clear message it is needed. Yet it is time to go beyond reporting to disclosure and learn the first lessons from this mature stage of the research in this field. Impact assessment or correlations between the IC ratios and performance indicators as well as forecasts are very much centred in the discussions of researchers and practitioners since the beginning of the third millennium and will be a hot spot in the nearest future.

The decision making process in the uncertain and saturated environment has to integrate management toolbox to analyse the information available either via reporting, disclosure or stakeholders’ analysis. Further research has to concentrate on the value creation mechanisms via intellectual capital and its components contributing to the research exploring the factors behind the company’s long-term sustainable growth.

References


INTELEKTINIS KAPITALAS: NUO APIBRĖŽIMO IKI POVEIKIO VERTINIMO

Nellija Titova
Ventspilio kolegija (Latvija)

Santrauka


Poveikio vertinimas, arba intelektinio kapitalo koeficientų ir veiklos rodiklių koreliacija bei prognozės, mokslinių tyrimų ir praktikų diskusijose svarbus nuo pat trečiojo tūkstantmečio pradžios ir bus aktualus artimiausioje ateityje. Taigi inovacijos skatina investuoti į verslo įmonių kūrimą ir leidžia tyrėjams bei specialistams stebėti intelektinio kapitalo poveikį. Tyrimo tikslas – apžvelgti mokslinius straipsnius intelektinio kapitalo tema, analizuojant tyrimų raidą nuo intelektinio kapitalo sąvokos atsiradimo. Straipsnio išvadose pateikta intelektinio kapitalo sąvokos raidos analizė ir intelektinio kapitalo poveikio organizacijos vystymuisi vertinimas.

PAGRINDINIAI ŽODŽIAI: intelektinis kapitalas, evoliucija, tyrimų klausimai, teorija, vertinimas, atlikimas.

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