Advancing the Intellectual Capital Theory: Some Ways Forward

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Abstract: The development of intellectual capital theory has been guided by the ideas and thoughts of a handful of influential practitioners, including Sveiby (1997), Kaplan (Kaplan and Norton, 1992), and Edvinsson (Edvinson and Malone, 1997). These pioneers established the basis of the "intellectual capital standard theory". More recently, other authors have advanced some contributions integrating an ecosystem approach in line with sustainability concerns. The present paper discusses the assumptions and principles that support the standard theory (the prevailing paradigm). The paper then introduces other models and methodologies as alternatives to the standard theory—such as the "Value Explorer" (Andriessen and Tissen, 2000) and the "Intellectual Capital Benchmarking System (ICBS)" (Viedma and Cabrita, 2012)—and examines the foundations and principles on which the alternative new theory (the 'new paradigm') is based. Finally, the paper attempts to synthesize both theoretical approaches with other new views and contributions and rises discussion avenues on the topic.

Keywords: Intellectual capital, Knowledge management, Strategic management, Models, Paradigms, Theory

1. Introduction

Intellectual capital (IC) issues have undergone extraordinary development since the beginning of the 1990s. The increasing difference between company market value and company book value has prompted academics and practitioners to consider the concept of "intellectual capital" as a key determinant of the process of value creation for shareholders, managers, and society. In this paper, we define IC as the knowledge and other intangibles that produce or create value in the present and other intangibles that will produce value in the future. It's true in any dimension (micro, macro, meso). In such a context, it is vital to identify what is value creation and the ingredients to drive the value creation process. This paper intends to contribute to this field.

The development of IC theory has primarily been guided by the ideas and thoughts of a handful of influential practitioners, including Sveiby and Edvinsson. These pioneers established the foundations of the way in which intangible factors determine the success of companies. In the words of Andriessen (2001), the pioneers established the basis of the "intellectual capital standard theory". Their respective models - "Intangible Assets Monitor" (IAM) (Sveiby, 1997) and "Skandia Navigator" (Edvinsson and Malone, 1997) - are representative of the assumptions, principles, and foundations of the IC standard theory. Nevertheless, the academic contributions to the IC theory came later, mainly due to the pioneering efforts of Nick Bontis (2002), who promoted the first "World Congress on Intellectual Capital and Innovation" in 1996 and contributed to the creation of the "Journal of Intellectual Capital". Later contributions from other academics and practitioners have developed and refined the standard theory. Among many, some authors (Dumay, 2009; Dumay and Garanina, 2013; Dumay *et al*., 2020; Paoloni, *et al*, 2023) have contributed to the field of IC theory consciousness, examining IC methods and applications, and critically analyzing how evolving approaches have been explored and contributing to additional understanding of IC. In the 2020s, IC research has advanced beyond its original strategic focus on identifying, measuring, managing, and reporting. Today, this theory is the pre-eminent guide to the management of intangible assets and has facilitated success through sustainable competitive advantage for leading companies and organizations. While acknowledging all the contributions in the sense of a more comprehensive theory of IC, this work focuses on the assumptions and foundations of a new IC paradigm, discussing the limitations of the IC prevailing concept.

The paper is structured as follows. Following this Introduction, Section 2 presents the representative models and methodologies from the standard theory (or "prevailing paradigm")—the IAM, the "Balanced Scorecard", the "Skandia Navigator" and the InCaS "Intellectual Capital Statement, Made in Europe", exploring the assumptions and principles that support the standard theory (or prevailing paradigm). In Section 3, other models, and methodologies as alternatives to the standard theory are introduced. These include the "Value Explorer" (Andriessen, 2001), and the "Intellectual Capital Benchmarking System" (Viedma, 2001). These two

models share similar goals and taken together, propose some new approaches, opening avenues for discussion on the topic. Section 3 also examines the foundations and principles on which the new approach is based. In Section 4, the paper attempts to synthesize both theoretical approaches with other new views and contributions. Finally, in Section 5, some of the most relevant conclusions are presented.

2. Representative Models and Principles Underlying the Standard Theory (or Prevailing Paradigm)

2.1 Classification of Intangible Assets

Intangible assets (IAs) have been extensively analyzed in the economic literature, however, there seems to exist little agreement on issues such as their economic nature, definition, and classification, the way in which they affect the value of companies or the criteria that should be adopted for their recognition, measurement, and depreciation. Although IAs are assets without physical substance, many do not meeting traditional accounting standards' recognition criteria, but they contribute significantly to the market value (Balzer *et al*., 2020). Many attempts have been made to develop theoretically consistent classifications of IAs. One such simple classification is given by Sveiby (1997), including its Intangible Assets Monitor (IAM). This tool aims to guide managers on the use of intangible assets and is focused on three types of IAs: external structure assets, internal structure assets, and competence of assets used.

2.2 Representative Models of the Prevailing Paradigm

Because IC is the key source of wealth creation, it is logical that firms pay close attention to the effective management of such capital. Therefore, the ability to identify, audit, measure, renew, increase, report, and communicate these intellectual assets is a key factor for the success of companies in the modern environment. In this regard, significant effort has gone into the search for methodologies/models to improve the management of IC—although, it must be said, with mixed success. The main reason for this is the nature of these assets and the fact that each business has its own business model, knowledge mix, specific objectives, and market environment. The literature provides different intangible asset evaluation approaches and levels of detail, which change according to the purposes of each proposed approach. Three authors have been of special significance in this search for useful models of IC: i) Sveiby (1997), author of the first intellectual capital model—the "Intangible Assets Monitor" (IAM); ii) Kaplan and Norton (1992) who devised the Balanced Scorecard methodology (especially with respect to effective strategy implementation); and iii) Edvinsson and Malone (1997), architects of the "Skandia Navigator".

A more recent collective effort synthesizes contributions of the European project called InCaS (Intellectual Capital Statement. Made in Europe, (2006).

2.3 Assumptions and Principles of the Prevailing Paradigm

The main assumptions and principles that support the standard theory (or the prevailing paradigm) can be summarised in seven points:

- *The accounting view;
- *The strategy implementation view;
- *Breakdown of intellectual capital;
- *Cause-and-effect relationships;
- *Relatively static approach to value-creation processes;
- *Limitation of the concept of IC;
- *Use of the same models and methodologies to manage and produce reports; and
- *Attempts to treat intangible assets as if they were tangible.

Each of these is discussed briefly below.

The accounting view

Among representative models of the standard theory, there are some that try to explain the causes of the difference between the company market value and the company book value. The aim is to establish an IAs accounts plan that allows the identification of the relevant IAs and their later valuation. This is an accounting approach to IC.

The Strategy implementation view

Most of the representative models corresponding to the standard theory follow a strategy implementation approach. It is assumed that in the company where the IC model will be applied, there is a strategy already formulated in implicit or explicit terms.

Breakdown of intellectual capital

This is a common denominator of all models. Despite the different terminology that they each use, the four models previously mentioned all breakdown IC into its distinct elements. These elements can be summarised as human capital, structural capital, and relational capital. For each of these elements, the company establishes a set of indicators that are used to consider each specific type of capital.

The daily firm's operations show that this division is artificial because, in the value-creation processes, all three types of IC act together, and such a division never arises. Furthermore, physical, and financial assets act together with the intangible assets in the value-creation processes.

Cause-and-effect relationships

The models of the prevailing paradigm examine cause-and-effect relationships between each of the three types of capital (human, structural, and relational) and each of the objectives (strategic and financial). These are extremely difficult to establish—due mainly to the artificial division of the model's intangible assets. In the value-creation processes, the human assets act together with the structural and relational assets, making it difficult to determine such cause-and-effect relationships.

Relatively static approach to value-creation processes

The artificial categorization of IC lacked consideration of how firms deploy their resources through their organizational core activities. Because of this, the above-mentioned models fall short of explaining how firms effectively compete.

Although Sullivan (2000) deemed the IAM and the "Skandia Navigator" models to be oriented toward value creation, it should be emphasized that they lack the dynamism and flexibility required in the turbulence of the modern environment. By focusing on existing IAs (human, structural, and relational intellectual capital), these models become prisoners of a dangerous reductionism. Indeed, the most common reason for failure in firms today is deficient strategy implementation—which demands paying close attention to what the firm does (rather than what it has). In short, the prevailing paradigm lacks an activity-based view (ABV).

Limitation of the concept of intellectual capital

Existing models limit discussion of IC to ideas of means of production, and do not take proper account of other non-intellectual intangibles—such as values, organizational culture, and so on. The models described above consider IAs as being mainly intellectual assets or knowledge assets—that is, those that psychologists ascribe to the left side of the brain. However, other IAs (such as values, organizational culture, talent, motivation, and employee commitment) also exist.

Use of the same models and methodologies to manage intangibles and produce external reports

The above-mentioned models are too often identified with the reports of IAs that they generate, which supplement the balance sheets of the company's tangible assets. Usually, the same models and methodologies that are used to prepare such external reports of IAs are also used to manage the same intangibles—even though the requirements of management are quite different from those of preparing an external report. One exception is the "Balanced Scorecard", which was specially conceived as a management tool. Moreover, the end users of intangibles reports are shareholders, suppliers, financial, institutions—that is, external stakeholders in general. In contrast, the end users of management models and methodologies are the organization's internal managers.

Attempts to treat intangible assets as if they were tangible

The use of the term "intangible assets" is dangerous—in that it induces people to think of "intangibles" as assets that can be entered into the books as if they were tangibles, using the extended accounting system of double entry.

Several efforts have been made to assimilate IAs with tangible assets. Some models attempted to apply to IAs similar procedures to those that have been universally applied to tangible assets—with the aim of generating balance sheets and earnings statements that could be used to make comparisons among any type of company,

no matter its nature. Caddy (2000) followed a similar approach in his attempt to discover and assess not only IAs but also intangible liabilities.

3. Representative Models and Principles Underlying the New Theory (or New Paradigm)

3.1 Representative Models of a New Paradigm

In the late 1990s, the problems encountered (particularly by small and medium-sized enterprises) when trying to put into practice the prevailing IC models and methodologies led to the development of new methodologies and an alternative theoretical paradigm. Among these new methodologies are the "Value Explorer" (Andriessen, 2001), and the "Intellectual Capital Benchmarking System" (Viedma, 2001, 2003a, 2003b), explored below in a little detail because it represents an introductory methodology to the new theory of IC.

"Intellectual Capital Benchmarking System" (ICBS)

The "Intellectual Capital Benchmarking System" (ICBS) has a strategic view—as does the "Value Explorer". Nevertheless, there is a substantial difference between ICBS and the rest of the IC models. ICBS focuses mainly on strategy formulation whereas the other IC models essentially consider strategy implementation.

In the following paragraphs, we describe the fundamentals of ICBS.

In today's knowledge economy, the Resource-Based View (RBV) and the Activity-Based View (ABV) are the fundamental cornerstones that determine company competitiveness. The RBV (Barney, 1991, 1999; Grant 1991, 1998; Teece *et al*., 1997) stresses that, in turbulent times and in times of rapid change in technology and in customer and industry needs, sustainable competitive advantages are mainly due to the intangible resources of a company or, more specifically, to core competencies (which are, in practice, equivalent to core knowledge). But resources *per se* do not create value, and because the RBV focuses only on what the firm *has*, this view does not, in isolation, adequately explain *how* to deploy scarce resources to create superior value. To that end, the ABV (Porter and Rivkin, 1998) is a necessary complementary perspective that focuses on what the firm *does* and considers that value creation results from the activities to which the resources are applied. If core knowledge is the key strategic asset, improving existing core knowledge and building new core knowledge are fundamental tasks. Building and improving core knowledge requires organizational learning capabilities, including the appropriate learning structures and information systems. World-wide industry hyper-competition has ensured that strategic competitive benchmarking has become an essential learning tool. In fact, companies and organizations are now competing based on core knowledge and core competencies. Opportunities and threats come mainly from competitors who offer the best in the same industry segment.

As a result of the above discussion, the SWOT analysis framework moves from that shown in Figure 1 to that shown in Figure 2. In effect, there is a change from a simple SWOT analysis to an extended SWOT analysis.

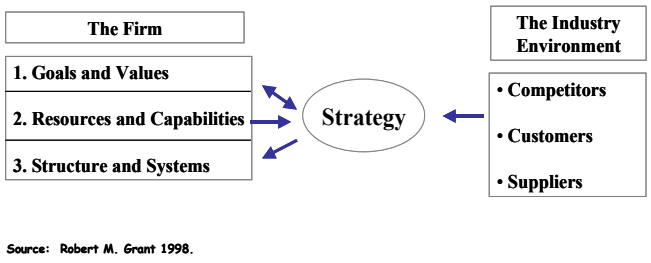

Figure 1: SWOT Analysis

The extended SWOT analysis gives us the main factors to consider when seeking strategies that lead to entrepreneurial excellence. The main factors of the extended SWOT analysis also determine the information system required to measure and manage those factors. In other words, the main factors produce the strategic benchmarking of the intellectual capital system (ICBS) that we have defined as a knowledge-based strategic management methodology and information system framework. Nevertheless, strategy formulation in dynamic environments has different features when dealing with the innovation process than when dealing with the operations process. Core capabilities can be very different in the two processes.

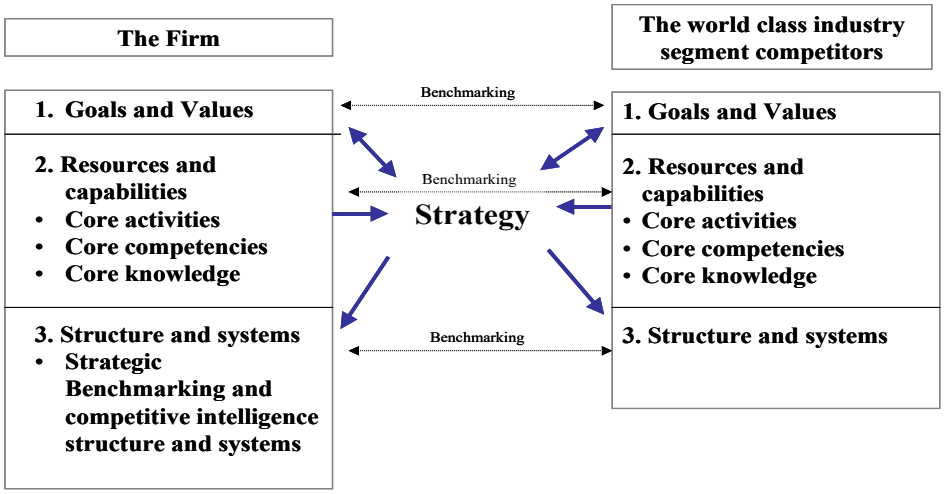

Figure 2: Extended SWOT Analysis

The innovation process points to new products and services through the innovation value chain in which innovation capabilities are basic and fundamental. ICBS has a specific system for the innovation process—the innovation intellectual capital benchmarking system (IICBS) (Viedma, 2002).

The operations process, which produces ordinary products and services through the systematic and repetitive operations value chain, also requires core competencies and core capabilities to be competitive. However, these competencies and capabilities will probably be of a different nature from the ones mentioned above in the discussion of the innovation process. ICBS also has a specific process for the operations value chain—the operations intellectual capital benchmarking system (OICBS). Figure 3 illustrates the business process broken down into its two constituent parts, and the specific methodologies and information systems that correspond to each of the constituent parts.

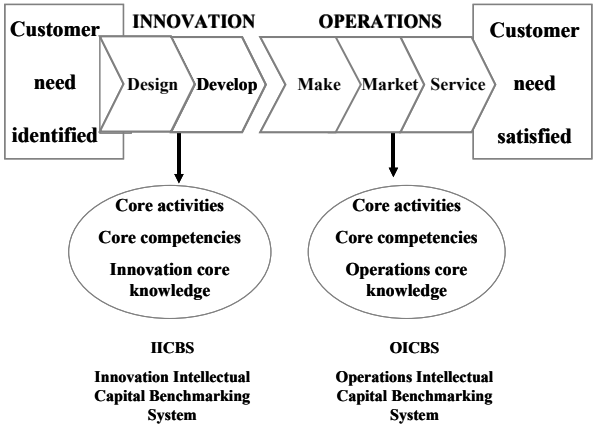

Figure 3: Business Process Value Chain

In summary, the general model of the ICBS can be divided into two partial models. The IICBS, refers to innovation core activities and core knowledge, whereas the OICBS, refers to operations core activities and core knowledge.

The two models have a similar structure but there is a fundamental difference. The IICBS model refers to the core activities and core knowledge of the different projects that make up the innovation process. In contrast, the OICBS model refers to the core activities and core knowledge of the different business units that make up the operations process.

Detailed information on the ICBS systems can be found in Viedma, (2003a, 2003b), Viedma (2001), and Viedma and Cabrita, (2012).

3.2 Assumptions and Principles of the New Paradigm

The main assumptions and principles that support the new intellectual capital theory (or the new paradigm) can be summarised in seven points:

- *The complete strategic view (strategy formulation as well as strategy implementation);
- *Not breaking down IC into its constituent parts;
- *Core competencies as the only IAs to manage;
- *Reality and dynamism in the value-creation processes;
- *Breaking down core competencies into their constituent intangible assets;
- *Core competencies linked with core capabilities of professionals who work independently or in teams;
- *Evaluation and assessment of the value-creation potential of future core competencies.

The complete strategic view

The models of this new paradigm support decision-making, not only in the process of strategy implementation but also in the key process of strategy formulation. According to this approach, it is not important to determine and appraise every intangible asset—because only a few are relevant to a firm's strategy formulation and implementation. These few relevant IAs are usually grouped according to the firm's core competencies or core capabilities—which are the true IC and then, the key variables to manage.

The theoretical background to the significance of core competencies is grounded in resources and capabilities theory (Barney, 1991, 1999; Grant, 1991, 1998; Teece et al., 1997). In short, this view focuses on the fact that, in turbulent and changing environments, competitive sustainable advantages are due mainly to resources and capabilities—in particular, the core competencies or capabilities that Andriessen (2001) describes in terms of a "coordinated bundle" of IAs that constitute the roots of the firm's competitive sustainable advantage.

Not breaking down intellectual capital into its constituent parts

The new theory focuses on a strategic view in achieving the firm's mission and objectives and in surpassing its "best in class" competitors. Thus, the artificial division of IC into human, structural, and relational capital is of little use because the products and services that result from a specific strategy have no relationship at all with these three types of capital considered independently. Rather, these products and services are associated with an integrated bundle of such assets as reflected in core competencies and capabilities.

Core competencies as the only intangible assets to manage

From the above discussion, it can be concluded that, for each business unit in the operations value chain, and for each project in the innovation value chain, the only assets to manage are those grouped in the core competencies, which are not usually very numerous (Del Giudice et al., 2021).

Reality and dynamism in the value-creation processes

One of the main questions that have always been at the core of the strategy theory is: 'How do firms create and exploit value?'. This leads to an examination of what is deemed to be the essence of entrepreneurial success—good strategy formulation and implementation. Seeking answers to these sorts of questions leads back to both the RBV and the ABV (because implementation is mainly about activities) to try to explain how firms deploy resources to create sustainable competitive advantages and achieve superior performance.

From a knowledge perspective, this is possible only if the models pertain to the new emerging paradigm of IC—the ICBS and the Value Explorer. The focus of these new models on a firm's core competencies allows considerations not only of which intangible resources are crucial to achieving success, but also of which core activities must be acted upon (if it is accepted that value creation and exploitation are both intrinsically resource-oriented and activity-oriented). It is not only what the firm has, but what the firm does, that matters in value creation (Haanes and Fjeldstad, 2000).

Breaking down core competencies into their constituent intangible assets

Once the principle that core competencies constitute the firm's authentic IC has been accepted, the improvement, strengthening, and enrichment of the intangibles' "bundle" is enhanced if they are broken down into their constituent parts. This should be undertaken in a broader sense, including not only intangibles that are intellectually based but also intangibles that are effective in origin.

Core competencies linked with core capabilities of professionals who work independently or in teams.

Core competencies are the result of aggregating IAs of different types. But each asset is made up of knowledge and skills, and skills are always generated by human beings—working either independently or in teams. Thus, core competencies management is essentially dependent upon the effective management of the core competencies of professionals who work either individually or in coordinated teams.

Evaluation and assessment of the value-creation potential of future core competencies

Finally, the strong relationship between future products and services and the competencies that support them allows an assessment of the future potential of each core competency or core capability. The "Value Explorer" appraises the strength of each core competency by means of the following four criteria: (i) value-added to customers; (ii) future potential; (iii) sustainability; and (iv) robustness.

4. A Comprehensive Theory of Intellectual Capital

4.1 Other new Views and Contributions

Following the above discussion, the present paper attempts to synthesize both of these theoretical approaches with other new views and contributions. The new views and contributions considered in this context are:

- *The essential role of commitment and action;
- *IC as the difference between intangible assets and intangible liabilities;
- *IC as a dynamic concept;
- *IC identified with the concept of a 'business recipe' in action;
- *Benchmarking as a strategic tool.

Each of these is discussed below.

The essential role of commitment and action

Commitment and action have an essential role in the process of wealth or IC creation. Firm competencies are the ultimate creators of IC. As such, they are a necessary but not sufficient condition for wealth creation. However, firm competencies must be established with the incorporation of certain personality characteristics and attitudes that reflect a strong commitment to convert competencies into competitive and profitable products and services. This positive emotionality embedded in the concept of commitment, together with an appropriate bundle of competencies, is what ultimately accounts for differences in human and organizational behavior (Fait et al., 2021). Commitment is the 'copper wire' that leads human competencies through to superior organizational performance. It is the element that enables these competencies, purposefully aligned with the firm's strategy and objectives, to find their way to market considerations.

Furthermore, commitment accounts for the sustainability of the firm's competitive advantages. The demands for innovation that the knowledge economy has exerted on firms have, in turn, emphasized talent as the main value driver of capital creation. Given that talent is acknowledged as a key source of competitive advantage, the ability of a firm to manage this intangible also becomes a core competence that adds to the firm's value. In such an environment, commitment needs to be managed as well as competencies (Mayo, 2001; Criado-Gomis et al., 2017).

It is therefore apparent that IC theory needs to develop new ways of systematically including commitment in its appraisals. It has long been recognized by theorists in organizational behavior that commitment is a basic driver of a firm's performance, and its explicative power has been clearly demonstrated in entrepreneurship research (Fichter and Tiemann, 2018).

Intellectual capital as the difference between intangible assets and intangible liabilities

Practically all models (both those of the prevailing theory and of the new paradigm) refer only to IAs. Caddy (2000) was the first to consider the existence of both intangible assets and liabilities in organizations. Whereas IAs are oriented toward wealth creation, intangible liabilities are oriented toward its destruction.

It is apparent that IC should be defined as the difference between intangible assets and intangible liabilities, such that positive and negative drivers of value creation are both considered—thus allowing effective intellectual capital management. Given that managing IAs is a difficult task, identifying and measuring intangible

liabilities would appear to be an even more difficult task. However, IC theory is mature enough to undertake this exercise.

Intellectual capital as a dynamic concept

Most models approach IC only in terms of a static concept, without reference to how intangible categories create and destroy wealth. They fail to consider wealth creation and destruction as taking place through virtuous circles and vicious circles.

A virtuous circle can be said to be in place when there is a good alignment of the personal and professional objectives of key people with those of the organization, thus leading to an environment of creativity and positivity. In contrast, vicious circles reflect a malalignment of the objectives of employees and those of the organization. It is possible to identify and manage these circles only through a dynamic approach to intellectual capital assets and liabilities. This identification of virtuous circles and vicious circles must be combined with the identification of intellectual assets and liabilities (as noted above).

All of this emphasizes the need to include ABVs within the new general theory of IC.

Intellectual capital identified with the concept of 'business recipe' in action

Core knowledge and core competencies are brought to bear in creating value through a successful 'business recipe' (BR). The difference between a successful business formula and a successful business recipe is the same as that between a successfully formulated strategy and a successfully implemented strategy. Superior performance that ends in value creation is a natural consequence of a firm's success in bringing a superior business formula into the market. This emphasis on implementation is thus significant for any new general theory of intellectual capital—especially in view of the comments already made (above) about the importance of activity-based views in identifying intellectual liabilities and vicious circles.

Benchmarking as a strategic tool

Recognizing the importance of benchmarking as a strategic tool allows early identification of virtuous and vicious circles and facilitates the management of IC in accordance with the new views and contributions outlined thus far. The only IC measurement tools that introduce benchmarking techniques in their appraisals are those of the Innovation Intellectual Capital Benchmarking System (IICBS) (Viedma 2003a) and the Operations Intellectual Capital Benchmarking System (OICBS) (Viedma 2003b). The objective of both -IICBS and OICBS - is to determine whether the firm possesses superior core competencies in relation to the world's best competitor. This can be used to account for sustainable competitive advantages that might lead to superior performance.

In terms of assessing world competitiveness, IICBS and OICBS benchmark a firm's business recipe against that of its world's best competitor. A firm will be able to create value in the long run if its BR has proven to be superior to the world's best. A detailed and thorough process of benchmarking will enable the identification of superiority (or inferiority)—signaling the presence of virtuous (or vicious) circles that will have to be subsequently managed.

However, a firm's intellectual assets and liabilities, together with its virtuous and vicious circles, remain a matter for the firm's internal management.

4.2 The Formulation of a Comprehensive Theory of Intellectual Capital

The discussion above stresses the main ideas of a general theory of intellectual capital, depicted in Figure 4. This new theory rests on the following principles:

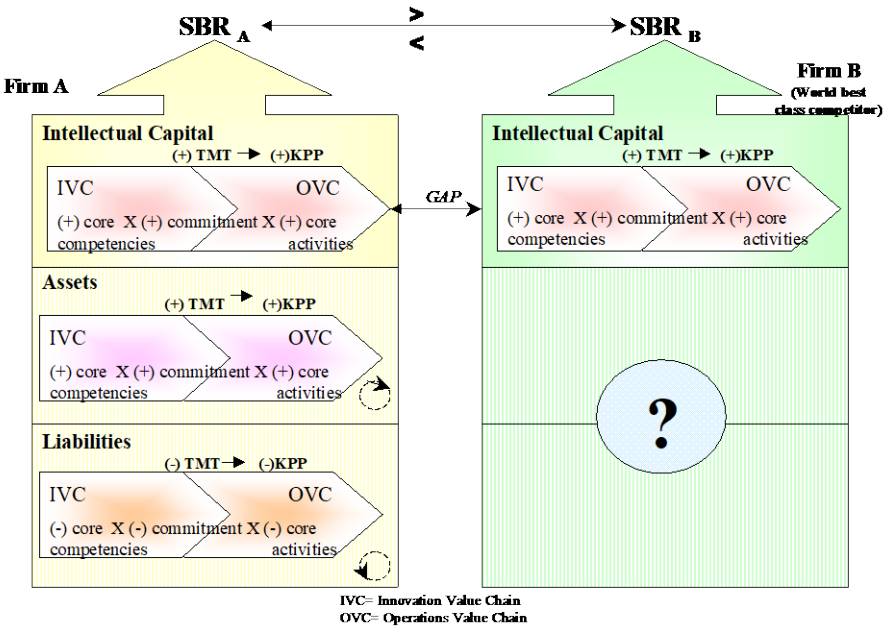

Figure 4: A Comprehensive Theory of Intellectual Capital (Main Concepts)

- *A firm's success is always the result of both well-formulated and well-implemented strategies (Grant, 1998).
- *Successful strategy formulation and execution crystallizes in a successful business recipe (SBR) that offers customers competitive and good-quality products and services. Ultimately, an SBR is the market's validation of the firm's competitive quality offer.
- *Strategy formulation and execution is always a human task. It is in the hands of the top management team (TMT) and the firm's most important technicians and managers—its key professional people (KPP).
- *The TMT and the KPP start from a business formula (that is, a formulated strategy), work through the innovations and operations value chains, and finally accomplish an SBR (as an implemented strategy). Those activities can be performed in a superior way due to the core knowledge and core competencies of the KPP.
- *Apart from the core knowledge and competencies of the TMT and KPP, the process also requires commitment from the TMT and KPP to convert the business formula into an SBR, and thus carry the firm to success. Such a commitment fosters a climate of positivity and trust that is essential for knowledge sharing, organizational learning, and value creation.
- *A firm's BR can only be judged as being successful (that is, an SBR) when it has been proven to be clearly superior to those of the best international competitors as a consequence of a complete and detailed process of benchmarking.
- *For analytical purposes, core knowledge and core competencies can be broken down into their constituent parts of human assets, structural assets, and relational assets.
- *The engine of the process leading to an SBR are the core knowledge, core competencies, and strong commitment of the TMT and KPP who strategically manage value-chain activities in a motivating and knowledge-sharing environment. This is the dynamics of IC creation through virtuous circles. An effective SBR must constantly transform itself to fit the demands of an ever-changing environment.
- *It should not be assumed that the TMT always develops certain activities and actions that are perfectly aligned with the firm's strategy and objectives. Frequently these top managers coexist with others whose professional and personal strategies are not aligned with those of the organization—thus producing vicious circles.
- *The engine of the process leading to wealth destruction (BR deterioration) starts in the TMT—in those managers whose personal objectives prevail against the organization's strategic objectives. These managers put their core knowledge, core competencies, and commitment into effect in a way that does not produce value creation.
- *The above description of virtuous and vicious circles represents two extremes in a continuum of typologies. For a given firm, it is to be expected that several circles of both types might coexist, each

of them more or less important, thus placing the firm in an intermediary position between the two extremes of 'virtuous' and 'vicious'. These configurations evolve through time. They change, expand, and contract—depending on the firm's ability to manage them effectively. It is worth noting that the negative effects of the vicious circle are generally more pervasive than the positive effects of virtuous circles—causing a given firm's performance to shift to the left (thus invading the virtuous positive zone). Figure 5 depicts these ideas.

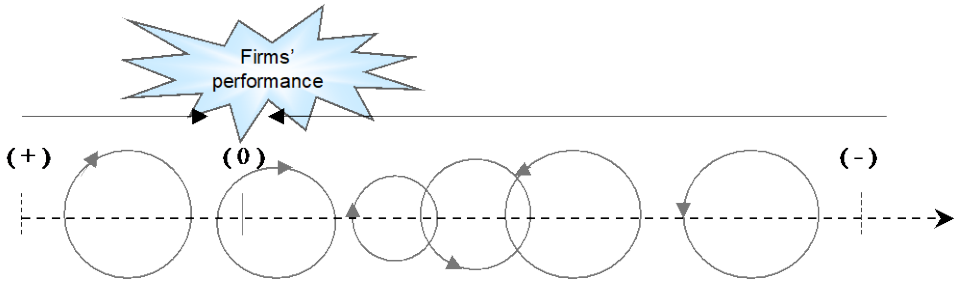

Figure 5: The Coexistence of Virtuous And Vicious Circles

5. Conclusions

An analysis of representative models of the prevailing theory, together with those of the alternative new theory, followed by a synthesis of the two and the integration of new views and contributions, has enabled the present paper to open promising avenues of discussion towards a comprehensive theory of intellectual capital. By conceptualizing IC as the difference between intellectual assets and liabilities, this new general theory attempts to unravel and tackle the fundamentals of the value-creation process in firms. At the inner core of such an analysis is the concept of the management of virtuous and vicious circles, and the importance of the personal objectives of top management and key personnel being aligned with the objective of the organization in a spirit of strong commitment. The general theory of IC introduces a new concept of superior business recipe (SBR) to emphasize the importance of successful implementation in a context of a dynamic understanding of IC.

Finally, in the search for new methodologies to manage IC in accordance with the principles of the new general theory, the OICBS and IICBS methodologies have been emphasized in the belief that strategic benchmarking is the best available tool to keep track of the innovations and value-creation processes of competitors.

References

Andriessen, D. (2001). "Weightless wealth: four modifications to standard IC theory". Journal of Intellectual Capital, 2(3), 204-214.

Balzer, R., Uzik, M. and Glova, J. (2020). "Managing growth opportunities in the digital era: An empiric perspective of value creation". *Political Journal of Management Studies,* 21, 87–100.

Barney, J. (1991). "Firm resources and sustained competitive advantage", *Journal of Management*, 17(1), 99.

Barney, J. (1999)."How firm's capabilities affect boundary decisions". *Sloan Management Review. S*pring, 137

Bontis, N. and Choo, C. W. (2002), "The Strategic Management of Intellectual Capital and Organizational Knowledge", New York: Oxford University Press

Caddy I. (2000) Intellectual Capital: recognizing both assets and abilities. *Journal of Intellectual Capital*. 1(2), 129-146.

Criado-Gomis, A., Cervera-Taulet, A. and Iniesta-Bonillo, M.-A. (2017). "Sustainable entrepreneurial orientation: a business strategic approach for sustainable development", *Sustainability*, 9, 1667.

Del Giudice, M., Scuotto, V., Orlando, B. and Mustilli, M. (2021). "Toward the human–centered approach. A revised model of individual acceptance of AI", *Human Resource Management Review*, 100856.

Dumay, J. (2009). "Intellectual capital measurement: a critical approach". *Journal of Intellectual Capital*, 10(2), 190-210.

Dumay, J., and Garanina, T. (2013). "Intellectual capital research: a critical examination of the third stage". *Journal of Intellectual Capital*, 14(1), 10-25.

Dumay, J., Guthrie, J. and Rooney, J. (2020). "Being critical about intellectual capital accounting in 2020: an overview". *Critical Perspectives on Accounting*, 70. https://doi.org/10.1016/j.cpa.2020.102185

Edvinsson Leif and Malone Michael S. (1997) "Intellectual Capital", *Harper Business*.

Fait, M., Cillo, V., Papa, A., Meissner, D. and Scorrano, P. (2021). "The roots of 'volunteer' employees' engagement: The silent role of intellectual capital in knowledge-sharing intentions", Journal of Intellectual Capital, 24(2), 399-429. Doi: 10.1108/JIC-04-2020-0133.

Fichter, K. and Tiemann, I. (2018), "Factors influencing university support for sustainable entrepreneurship: insights from explorative case studies", *Journal of Cleaner Production*, 175, 512-524.

Grant, M.F. (1991). ”The resource-based theory of competitive advantage: Implications for strategy formulation”. *California Management Review*, 33, 114-135.

Grant, R. M. (1998). Contemporary Strategy Analysis, Blackwell Publishers Ltd., Oxford. U.K.

Haanes, Knut and Fjeldstad, Øystein. (2000). “Linking intangible resources and competition”, *European Management Journal*, 18(1), 52-62.

Hood, J.N. and Young, J.E. (1993). “Entrepreneurship’s requisite areas of development: A survey of top executives in successful entrepreneurial firms”. *Journal of Business Venturing*, 8, 115-135.

Gubman, E.L. (1998), *The Talent Solution*. McGraw-Hill.

InCas, Intellectual Capital Statement. Made in Europe, (2006). http://wissenskapital.info/wp-content/uploads/2014/10/european_ics_guideline.pdf

Kaplan R.S and Norton D.P (1996). “Using the Balanced Scorecard as a strategic management system" *Harvard Business Review*. Jan-Feb

Kaplan R.S and Norton D.P (1996a). “The Balanced Scorecard”. Harvard Business School Press. Boston Masachussetts.

Kaplan R.S and Norton D.P. (1992) ”The Balanced Scorecard” *Harvard Business Review*, Jan-Feb 71-79.

Mayo, A. (2001), *The Human Value of the Enterprise: Valuing People as Assets – Monitoring, Measuring, Managing*. Nicholas Brealey Publishing, UK.

Paoloni, P., Modaffari, G., Ricci, F. and Della Corte, G. (2023). "Intellectual capital between measurement and reporting: a structured literature review". *Journal of Intellectual Capital*, 24(1), 115-176, https://doi.org/10.1108/JIC-07-2021-0195

Porter, M., and Rivkin, J. W. (1998). Activity systems as barriers to imitation (Working Paper 98-066). Boston: Harvard Business School.

Roos, J., Roos, G., Edvinson, L. and Dragonetti, N. (1997) “Intellectual Capital. Navigating in the New Business Landscape”, Macmillan Press Ltd, 59–78.

Sullivan, Patrick. H. (2000). Value-Driven Intellectual Capital. How to Convert Intangible Corporate Assets into Market Value. John Wiley & Sons, Inc.

Sveiby, K. E. (1997) ”The new Organisational Wealth”. *Berret-Koehler Publishers Inc.* San Francisco CA.

Teece, DJ, Pisano G. and Shuen A. (1997). ”Dynamic Capabilities and Strategic Management”. *Strategic Management Journal* 18(7), 509-533.

Ulrich, D.; Zenger, J. and Smallwood, N. (1999), *Results-Based Leadership*. Harvard Business School Press.

Viedma (2001) ICBS Intellectual Capital Benchmarking System. *Journal of Intellectual Capital,* 2(2), 148-164.

Viedma,J.M. (2003a) OICBS: Operations Intellectual Capital Benchmarking System. An operations intellectual capital strategic management methodology, (on-line) http://intellectualcapitalmanagementsystems.com/(Products and services)

Viedma,J.M. (2003b) IICBS: Innovation Intellectual Capital Benchmarking System. An innovation intellectual capital strategic management methodology, (on-line) http://intellectualcapitalmanagementsystems.com/(Products and services)

Viedma, J.M and Cabrita, M.R (2012). “Entrepreneurial Excellence in the Knowledge Economy”. Palgrave MacMillan