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Intellectual Capital Research: A Route Map to the Highway

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Abstract:

Purpose – This paper develops an idea about intellectual capital (IC) research with a view to extending the types of questions that can be posed and explanations that can be given about the roles and effects of IC. The aim is to contribute to the debate on how it is possible and fruitful to study IC with a contemporary mindset, toolset and skill set. This is done from the theoretical, methodological and pragmatic considerations.

Design/methodology/approach – The paper surveys the extant literature on IC research to know how to review literature, leverage both pure and applied research, make the best of IC both as explanatory and design science, research gaps, the two approaches to IC research and the focus for the future.

Findings – The paper concludes that it is possible for IC researchers to have an eclectic mindset to enrich IC as art and science in the interest of business and industry and society at large. IC will enhance the possibilities of developing new and interesting propositions about how IC works and is involved in organisational and social transformation with the world at large.

Originality/value – The main implication of this paper is that research in IC can take up new forms of inquiry that will complement and optimize the currently used frameworks and methodologies.

Key words: Intellectual capital, Research, pure and applied research, referents, research gaps, research questions, triad

1. Introduction

The significance of intellectual capital (IC) for the success of companies is nowadays widely acknowledged by both researchers and practitioners (see, e.g. Brooking, 1996; Edvinsson and Malone, 1997; Hussi and Ahonen, 2002; Kujansivu and Lo'nnqvist, 2007; Marr and Schiuma, 2001; Mayo, 2001; Roos et al., 1997; Sveiby, 1997). Besides IC being important to organisations, it is also one of the most important factors for social and economic development (Bontis, 2004; Medina et al., 2007). Marr et al.'s (2003) conclude two things on the state of IC research. First, there is a lack of rigorous research in the area and, secondly, research should be organised to tease out how measurement of IC drives business performance. They say (Marr et al., 2003, p. 441): . . . that the majority of research within the IC measurement field is at the theory building stage, and that very little of the proposed measurement theory has yet been fully tested The field of IC research could run into the danger of losing credibility if researchers fail to produce more research that tests the theories put forward rather than further adding to the large body of literature of theoretical discussions and theory building. Without more rigorous research we will not be able to move beyond the stage of only assuming that measurement of intangibles is worthwhile (Marr et al., 2003, p. 456). In this eco-system, three simple questions open debate about the fragile existence of IC research agenda. They are (a) What does IC do? (Rather than what is IC?) (b) Where is IC located? (Rather than who owns it?) and (c) How is IC related to value? (Rather than is IC valuable?) (Mouritsen, 2006). To understand these questions, the themes of IC research must be understood in context.

2. Key Themes for IC Research

Guthrie et al., (2001) have outlined five key themes as a platform on which IC research may proceed:

2.1. Focus A – Questions Related To The Domain Of IC, The Aims Of The Techniques And Their Accomplishments

- What tools/techniques are a part of IC management and measurement as we have knowledge in?
- Do the techniques provide information that aids in decision-making? If so, how? If not, why not, and what is "their" purpose?
- In an effort to deal with the widely promulgated view that an awareness of the value of IC assets improves internal decision-making or action – what level of access do managers have to the valuation(s)? Furthermore, what types of decisions or action are managers involved in making. If so, how might these decisions be impacted by an IC reporting system? Where is information available freely and to what extent do managers really rely upon the information provided when making decisions.?

2.2. *Focus B – Questions Examining The Spread Of IC Management, Measurement And Reporting (ICMMR) Practice. What Drives Its Adoption?*

- Why do some companies adopt or use certain techniques and not others? What are the antecedents for adoption?
- What governs the pattern of dispersion for innovation? How do organizations get exposed to techniques that aim to manage IC better? Who makes the decision to adopt (or not adopt) a given technique – and on what basis is the decision made?
- Is adoption driven by institutional forces, a desire for legitimacy or the belief that some other strategic advantage (additional revenue generation, cost-reduction, improvement in quality) will be conferred?

2.3. *Focus C – Questions Assessing “Organizational Fit”:*

- What is the “fit” between the strategy of the organisation and its IC profile?
- What is the extent of reflexivity between strategy and management of IC resources of an organisation?

2.4. *Focus D – Questions Examining The Role Of Information Technology In The Development Of IC Management, Measurement And Reporting (ICMMR):*

- What impact the proliferation of information technology has had on the management and measurement techniques being adopted?
- How has the development of computer technology affected the application of IC management?

2.5. *Focus E– Questions Relating To Cost Versus Benefit Considerations:*

- To what extent does firms attempt to assess costs versus benefits of IC management systems?
- How do firms measure the benefits and costs of technology aimed at supporting the development and growth of IC (qualitative and quantitative measures)? Are the anticipated benefits realised in practice?
- What other unexpected costs/benefits are associated with adoption /implementation of a strategy of ICMMR?

Having contextualised IC research, the authors would like to explore the various research methods and methodological propositions available for detailed IC research.

3. Research Literature Review

A research literature review is a systematic, explicit and reproducible method for identifying, evaluating and synthesising the existing body of completed and recorded work produced by researchers, scholars and practitioners (Fink, 2010, p.3). One may do a literature review for personal or intellectual reasons or what is currently known about a topic. A research literature review can be divided into seven tasks (Figure 1)

3.1. Selecting Research Questions

A research question is a precisely stated question that guides the review.

3.2. Selecting Bibliographic or Article Databases, Websites, and Other Sources

A bibliographic database is a collection of articles, books, and reports that can provide data to answer research questions. The database is usually accessed online. ProQuest and EBSCO Host are classic examples of this category. The bibliographic databases of interest in research reviews contain full reports of original studies. Other sources for literature reviews include experts in the field of interest, the Web, and the reference lists contained in the articles.

3.3. Choosing Search Terms

Search terms are the words and phrases that you use to get appropriate articles, books, and reports. Intellectual Capital and intangibles are examples. We need to base them on the words and concepts that frame the research questions, and you use a particular grammar and logic to conduct the research

3.4. Applying Practical Screening Criteria

Preliminary literature searches always yield many articles, but only a few are relevant. You screen the literature to get at the relevant articles by setting criteria for inclusion and exclusion from the review. Practical screening criteria include factors such as language in which the article is printed, the setting of a study and its funding source.

3.5. Applying Methodological Screening Criteria

Methodological criteria include criteria for evaluating the adequacy of a study’s coverage and its scientific quality.

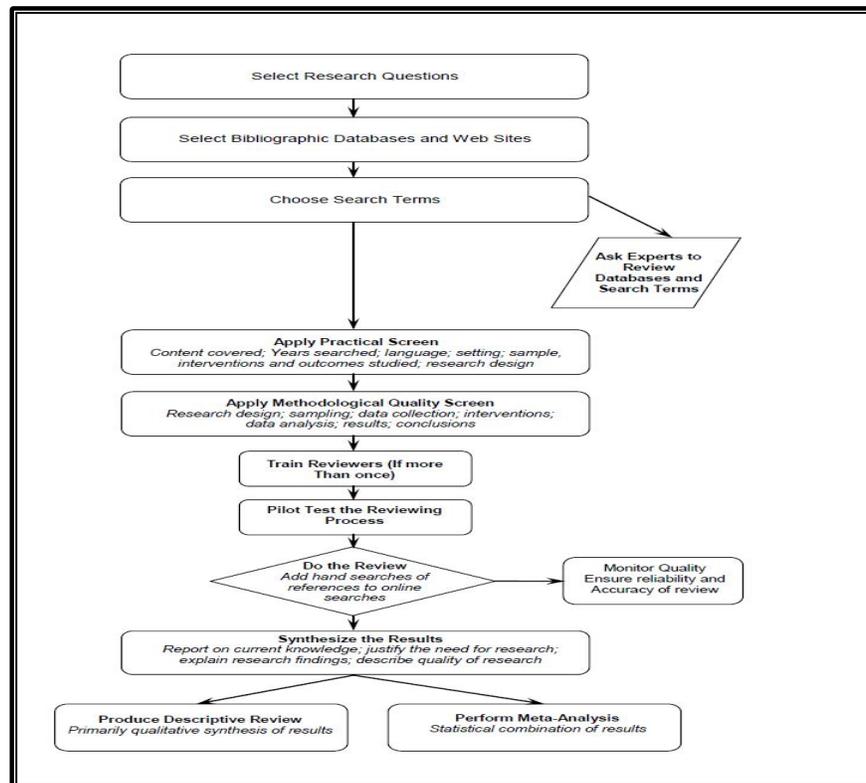


Figure 1: Steps Involved In Conducting A Research Literature Review (Fink, A., 2010, P.4)

3.6. Doing the Review

Reliable and valid reviews involve using a standardised form for abstracting data from articles, training reviewers (if more than one) to do the abstraction, monitoring the quality of the review and pilot testing the process.

3.7. Synthesising the Results

Literature review results may be synthesised descriptively. Descriptive syntheses interpretations of the review's findings based on the reviewers' experience and the quality and content of the available literature. A special type of synthesis – a meta-analysis - involves the use of statistical methods to combine the results of two or more studies. (Fink, 2010, p.5)

A research review bases its conclusions on the original work of scholars and researchers. Focusing on high-quality original research rather than on interpretations of the findings is the only guarantee that one has to have the results of the review to be accurate and under one's supervision (Fink, 2010, p.3)

4. Applied and Pure Research

An IC researcher or any researcher for that matter can no longer think of "pure" and "applied" research as two points on the linear thought-versus-action continuum. Applied research in business management is that research conducted with organizations (or a strategic business unit, a division or a functional area) as the referent, and pure research is one with the idea as a referent. Notwithstanding some theoretical differences between pure and applied research, the two are related in a mutually reinforcing manner. One feeds into another as shown in the scheme (Figure 2) below:

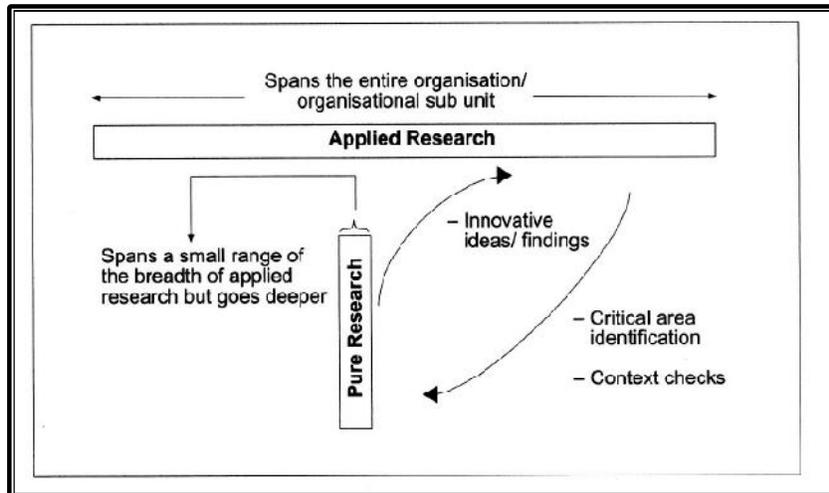


Figure 2 : Relationship Between Applied And Pure Research (Adapted From Sankaran, 2006)

As it is seen in Figure 2, the breadth and depth are two essential characteristics that differentiate the two. Here, the breadth of issues that an applied research would deal with are too numerous. For example, take the case of applied research typically conducted before introducing a product in the market. Such research would touch upon financial, marketing, environmental, infrastructural and other factors. The unit or Strategic Business Unit under consideration here is a particular organisation.. The findings of the study would largely apply only to the organisation for which the study was conducted. Based on applied research the firm may or may not enter the new market. Now let us contrast this with pure research. Pure research by its very nature cannot at one time, take on so many disparate issues as applied research. Its job is to go into fewer issues at a time but dig deeper so that its relevance is more overarching in terms of applicability across place and time. This is vividly shown in Figure 2 by pure research having a deep “vertical” spread with narrow “horizontal spread”. The relationship between applied and pure is indicated by the curved arrows. Inputs from pure research into applied research would be ideas that are new. The curved arrow in the diagram “innovative ideas/ findings” precisely refers to such an application. The reverse flow (applied research to pure research) would call on pure research to deal with real issues that the applied realm needs help in. Besides sending signals for assistance, communication through this downward sloping in Figure 2 would involve reality checks upon pure research for contextual relevance

5. IC Research as Explanatory and Design Science

IC research has primarily evolved from the desires of practitioners (Bontis, 2002). It, at the same time, has the ambition to be an academic discipline. The former requires relevance; the latter requires rigour. Building upon the groundbreaking work of Prof Dr. Joan van Aken and inspired by design sciences which is a form of action research, Andreiessn (2004b) makes a distinction between the more traditional approach of practicing IC research as an explanatory science and the new approach of practicing IC research as a design science (Figure 3)

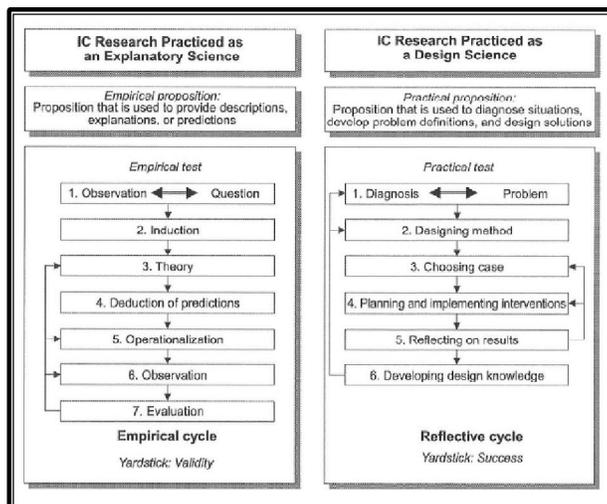


Figure 3: The Empirical And Reflective Cycles (Source: Andreiessen, 2004a)

In scientific research, we can create two rather distinct type of propositions (Van Aken, 2001). First we can create theories that describe, explain and predict the world. This is the purpose of the explanatory sciences, such as physical sciences and major sections of the social sciences. Second, we can use propositions to diagnose a situation, define the problem and design practical methods to improve the situation. This is the purpose of the design sciences, such as engineering sciences, medical science and modern psychotherapy. An example would be knowledge economy which could be used as an empirical proposition and a practical proposition. The purpose of the explanatory sciences is to produce tested empirical theories that are valid. The purpose of the design sciences is to produce tested practical methods that are successful in solving problems. The approaches also complement each other. Explanatory sciences can provide causal models that we can use in the design sciences to ground means-end statements. Design sciences can, by testing which means-end statements are successful in practice, provide an indication for the validity of cause-and-effects statements, gives information about the specific context in which these statements are valid and points towards independent variables that are missing in the empirical theory. IC research is practiced both as an explanatory science (focusing on describing, explaining and predicting) and as a design science (focusing on diagnosing, designing and improving). Both methodologies have their specific advantages, difficulties and limitations. Generally, IC research practiced as an explanatory science results in a reductionistic causal model that can be generalized to a wider population based on a representative sample. However, because of the nature of social world, these causal effects are not deterministic but stochastic (Andriessen, 2004b). The reductionistic and stochastic nature of the explanatory results limits their practical relevance. When we want to make use the tested causal model to design an intervention, we have no certainty (but only a certain probability) that the causal relationship is present in the situation at hand. IC researchers struggle – as do most management researchers – with finding a balance between the rigour and relevance of their work. There is an alternative to the more traditional approach of the explanatory science, which is to practice IC research as a design science. IC research practiced as an explanatory science generated limited, reductionistic knowledge that is valid for a wide population but is of limited practice use. IC research practiced as a design science generated a more and holistic knowledge that does have practical use but that has proved to be a successful in only a limited number of cases. IC research needs to make do with what it has. It can do so by combining both approaches as much as possible. Within the IC research community, there must be room for both approaches to be used in a consistent way. Results must be shared to look for ways both approaches can build upon the other's results. This can result in a multi-approach research agenda (Andriessen, 2004) for both rigorous and relevant IC research (Andriessen, 2004a).

6. Three levels of Knowledge and the Practitioner – Consultant – Researcher Triad

Application of knowledge is called upon at three levels in business. At the first-level, knowledge consists of the immediate, tactical level response to take quick on-the-spot decisions. Here is the referent is a situation best tested when a crisis occurs where decisions are made with limited information and time. First-level knowledge helps the managers to gain tactical and political advantage in their day-to-day activities and the possessor of the requisite knowledge to adequately deal with or save the situation. Second- level of knowledge is needed to make pre-meditated moves made through formalised and communicated plans for managers to understand and relate to situations faced by their organisations . Strategic planning belongs to this genre. Here the referent is collective – activities, individuals, elements within and outside the organisation - which means the organisation itself. Third- level knowledge is the ability to act in the light of seeing the bigger picture, the larger interconnections, and knowledge of meta-protocols that have application possibilities in disparate circumstances. This knowledge is self-transcending and tacit (Nonaka and Takeuchi, 1995) in a wide time-space domain is with the need to recreate and participate (Nonaka, 1991). This knowledge is full of potentiality with deep meaning and wide application possibilities whose application requires wisdom that can only be applied by the right person, nay, the right mind. This is about ideas, the triumph of ideas and the referent here is the idea itself. When an idea gets established as valid, it becomes a principle. In the business world, the universe of valid ideas, or principles, are too complex; perhaps far too complex with far too many caveats than their natural science counterparts. A mind that faces up to this complexity (Cook, 2000) with felicity is what strategic thinking is, which management thinkers have been exhorting practitioners to develop. Managers are called upon to exercise all three types of knowledge at different points. One feeds into another; another draw from the other. In other words, we see that there is a coupling of third-level knowledge (ideas coded in strategic thinking) and second-level knowledge (procedural knowledge of strategic planning as applied in organisations) or first-level knowledge (requiring smart, quick response to situations). Practitioners are the ultimate knowledge beneficiaries, but the generation of three levels may not lie with the practitioners alone. This depends upon the knowledge referent. That is, whether the referent is the “situation”, the “organisation” or the “idea”. There are three professional groups corresponding to the three referents. Their responsibility is to generate knowledge that the practitioner ultimately utilises and gains. These are practitioners, consultants and researchers. It would be correct to connect practitioners with the first referent; situations and consultants with the next; organisations and researchers with the third; ideas. Nevertheless, the Practitioner-Consultant-Researcher Triad is more conceptual than actual. For instance, a management practitioner who is engaged in the corporate planning department of a manufacturing organisation would perform a consultant's archetypal role according to this definition. Likewise, the CEO of a large corporation mulling over a new way of adding value to the customer will take on the role of a researcher. The researcher who chronicles examples of tactical moves by a practitioner will only be working at level-one knowledge. When he or she theorises on tactical moves it would move into the realm of level-three knowledge (Sankaran, 2006, p.20)

7. Referents in Action Research

There are new developments that management research has to incorporate in research. These include new aspirations such as meeting multiple stakeholder interests (Freeman, 1999). In a very influential publication on knowledge development in the scientific field, Gibbons et al (1994) opine that there is a certain demise of pure research:

“The development of science has now reached a stage where many scientists have lost interest in the search for first principles. They believe that the natural world is too complex an entity to fall under a unitary description that is both comprehensive and useful, in the sense of being able to guide further research” (Barnes, 1985; pages 23-24 from Gibbons et al, 1994).

Usefulness of scientific research goes beyond individual products and services, It has utility to contribute towards incorporation of social aspirations in business decisions. For examples, management with its rooting in the marketing paradigm (Jemison,1981) has to be conscious of this. Say Gibbons et al:

“Thus, communication between the research fraternity and society increasingly takes the form of diffusion processes that carry scientific and industrial knowledge into society...” (Page 38)

Given such an environment, Gibbons et al call for a new consciousness in knowledge generation (what they call Mode-II) that is at reflexive, trans-disciplinary and heterogeneous. Action Research, which is a root derivative of the scientific method (McKernan, 1991, Masters, 1995) goes further to incorporate three different types of inquiry. These according to McKernan are:

- Type- 1: The scientific-technical view of problem solving
- Type- 2: Practical-deliberative action research; and
- Type- 3: Critical-emancipatory action research

In Type- 1 research, the researcher’s role is to intervene to solve a problem or enhancing a condition faced by the practitioner. The researcher goes in with a pre-specified theoretical framework or an idea. The practitioner identifies the problem and suggests a specific intervention which is implemented either by the practitioner or by the practitioner-consultants jointly. Type- 1 research is firmly rooted in the positivist paradigm. The discussion in the previous sections on pure and applied research related to this type of research. In Type- 2 practical-deliberative Action Research, the researcher enters into a dialogue with the community (an organisation too may be a community) to identify the problems, their underlying causes and generate solutions. This type of research could also be called empathic or empathetic action research. Leonard-Barton et al (1995) suggest in a participant and empathic approach a deeper understanding of the user environment by the designer-researcher. Empathic research has traditionally been used extensively by management researchers who are inquiring human resources and organisational theory issues. Lei and Greer’s (2003) “Empathetic Organizaion” could be considered a call towards a greater movement from the traditional scientific-technical research perspective to practical-deliberative action research. In Type- 3 critical-emancipatory Action Research, it promotes enhancement in consciousness that creates action to achieve a desired state of being. With rooting in several strands of inquiry, this form of research would enhance the collective consciousness of the people being researched. Even more poignantly, it would enhance the consciousness of the researcher. Adopting Type-2 and Type-3 Action Research would involve a paradigmatic shift. Within Type-2 and Type-3 research, there would be room for interpretivist and consciousness-enhancing roles that are beyond traditional callings. In summary, the classifications and taxonomy of management research and referents are ultimately theoretical constructs. Actual inquiry would involve a healthy mix of research types with their attendant referents. This consciousness would truly be the link connecting the research and action in the most effective manner. (Sankaran, 2006, p.35)

8. Research Gaps in IC reporting

Firms are to increase transparency voluntarily to meet stakeholder expectations Oliveira et al., (2010). Companies have strong incentive to convince stakeholders that their activities are congruent with stakeholder expectations (Branco and Rodrigues, 2008a, b). Disclosure of information on IC to stakeholders is helpful to avoid information asymmetries and litigation risks. Guthrie et al. (2004) have argued that legitimacy theory is related closely to the reporting of IC; and that firms are more likely to report information on intangibles if they cannot legitimise their status via the “hard” assets that traditionally have symbolised corporate success. One can understand and improve the perceptions about disclosure practices held by the industry and the market by examining a key element of disclosure: financial and other performance measures. The authors are of the view that one could analyse communication problems between industry executives and the users in terms of five different gaps (Krambia-kapardis and Thomas, 2006) to delve into for enhancing the legitimacy of IC research. (Figure)

Gap 1: The information gap : An “information gap” is created when the market received inadequate information about measures it considers to be important. Analysts and investors were found to be dissatisfied with the disclosure practices of executives when they receive insufficient information about the performance measures that they view as important. Uncertainty is created in the market, when this happens and as a result it impacts on share prices. According to Eccles et al., 2001 (p.131), when the market lacks the information it considers important, it will most likely err on the side of caution and value the stock of a company lower than the managers will. Because, managers have access to more performance information and future strategies and plans”

Gap 2: The reporting gap: A “reporting gap” is created when executives make very little effort to report to the market information about measures they consider important for running their organisations. It exists for a good reason (Eccles et al., 2001, p. 134) namely that “the market doesn’t have information on the measures it considers highly important because managers don’t provide it. This is the reporting gap, the difference between the importance managers attach to a measure and how actively they work to report it”

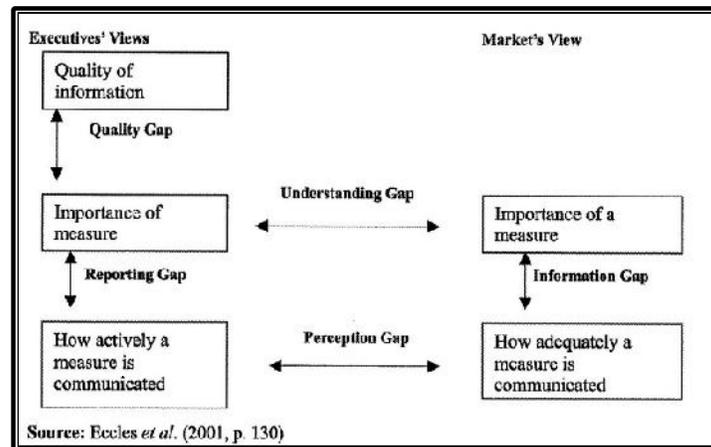


Figure 4: The Role of Information in Valuation

Gap 3: The quality gap: A “quality gap” is created when executives view a particular measure as important but cannot reliably produce information about it on the company’s internal systems. According to Eccles et al., (2001, p.135), some information “lacks sufficient reliability for it to be communicated to the market. When making internal decisions, managers can take a bit more latitude with lower-quality information. They have a good sense of its relative reliability because they know the virtues and faults of the systems that produce it. Managers can also assess the validity and reliability of information within the broader context that the market can”.

Gap 4: The understanding gap: An “understanding gap” is created by differing perceptions held by executives of organisations and the users about the importance of a particular measure. In other words, an understanding gap arises when executives assign different degrees of importance to performance measures than do analysts and investors (Eccles et al., 2001, p. 138).

Gap 5: The perception gap: A “perception gap” is created when executives and the market hold different views about how well executives are satisfying the market information needs. Such a gap is created when executives hold differing views from the market about the value of information they provide about specific measures. It is evidence of the lack of awareness of a communication problem. A “positive perception gap” results when executives believe they are providing better information than the market thinks they are. Conversely, a “negative perception gap” is created when the market is more satisfied with the information than executives would expect. In other words, managers do a good job of providing information to the market but they do not know it (Eccles et al., 2001, p. 138)

The five gaps identified by PricewaterhouseCoopers’ studies cannot be closed by just harmonization of accounting standards. According to Eccles et al., (2001, 141), “when managers fail to report information, a large information gap opens, particularly if the analysts and investors think the measure is important. When a quality gap leads to a reporting gap, companies should start developing a better internal measurement system..... Managers must ask themselves whether the benefits of not reporting information to the market, are really worth the price they pay for not doing so” (Eccles et al., 2001, p. 142). Future IC researchers should identify and close the five gaps by harnessing standardizing the wide variety of models (Labra and Sanchez, 2013). The researchers must also develop skills required for critical (Alvesson and Deetz, 2000, p. 20) and performative research (Mouritsen, 2006, pp. 829-32) which to date have been frowned upon by the academic community (Dumay, 2012)

9. Two approaches to IC Research

How research into IC can happen in a more meaningful way. “Big questions” that other researchers have asked are (a) . How does IC work in firms? (b). What is IC composed of? and (c). How is IC related to value? (Mouritsen, 2006, p.820). Two approaches to intellectual capital (IC) research – the ostensive (IC1) and the performative approach (IC2) are postulated. The concerns raised in the three questions are developed differently via IC1 and IC2 and they are presented briefly in Table I.

Theme	IC1 (IC is related predictably to knowledge and value objects and objectives in a pre-set model)	IC2 (IC is part of a configuration of knowledge management and actively mobilized to condition effects)
<i>The IC proposition</i> Questions about how IC works in an organizational or social context	IC, knowledge and strategy are linked through causal mapping and related to effects of IC on value creation	IC is mobilized idiosyncratically in attempts to make a knowledge-based organization perform towards endogenously defined values
<i>IC concepts</i> Questions about IC elements are to be understood and analysed	IC consists of human, organizational and customer capital, each of which has functional qualities, and they are thus value generating assets not visible in the firm's balance-sheet. IC has descriptive qualities and measurement is essence	IC is representation of knowledge resources whose transformative qualities emerge in application. IC has classification qualities and measurement is convention.
<i>Value of IC</i> Questions about how IC is related to value creation	Risk and return Predictive information Market-to-book	Strategic values User values Ability to accomplish something
Note: Adopted by Mouritsen (2006)		

Table 1: Themes in IC Research (Source: Vlismas and Genieris, 2011)

IC1: This theory says that IC elements are connected to value creation and organisational results in one fundamental way. The task for research is to uncover this formula.

IC2 can help to develop a more nuanced research agenda that takes into consideration the detailed and multiple ways in which IC is involved in organisational and societal practices. In this situation we cannot a priori identify the form and function of IC. This theory of IC says that there is no fundamental formula to understand the role of IC in organisations and society. IC2 may present opportunities for interesting questions because it takes very little for granted, and because it seeks evidence that the connections we claim, are actually in place. there are dilemmas that presumably can be approached in more detailed ways via IC2 than via IC1 and that in order to arrive at possibly surprising research findings, it is necessary to dispense with certain assumptions about IC. A research agenda that has this approach will ask new questions that may take the following format: (a) What does IC do? (Rather than what is IC?) (b) Where is IC located? (Rather than who owns it?) and (c) How is IC related to value? (Rather than is IC valuable?). These three rather simple questions open debate about the fragile existence of IC. They ask how theory connects with practice and establish IC research where the primary purpose of research is to ask questions about the dilemmas and ambiguities in a pool of existing research. It attempts to get beyond what is taken for granted. When research asks questions that provide surprising answers, then the research will progress. Such surprises can emanate from research questions that attempt to open the black box of IC research. (Mouritsen, 2006, p.820)

10. Future IC Research Questions

Some IC research questions that could be formulated as food for thought are: (a) IC elements can be understood as inputs to financial value, but assuming that companies will not invest in human capital when financial results are bad (they will fire employees), how are financial results a precondition for the development of IC? (b) Why do firms adopting IC often justify this by saying that they fear that employees may leave the company when it may be just as plausible that a firm in a dynamic environment should encourage some rotation of employment to make use of experiences developed elsewhere? (c) Since most people say that the interactions between IC elements are important, would it not be a good idea if IC research deconstructed IC elements and reassembled them according to criteria that make them strong in site-use? (d) Since the IC elements (human, organisational and relational capital) are often characterised by the functionality that supports their opposing strategies (e.g. human capital supporting innovation and organisational capital supporting best practices) why can they all be placed in a particular setting that presumably has one strategy rather than many conflicting ones? (e) One important ambition in IC research and practice is to develop measurement of IC elements, but since all measurements is a two dimensional inscription of a three dimensional world why would we expect the measurement to make reality visible? Why will this measurement arbitrate anything and create useful visibility? (Mouritsen, 2006, p.837)

11. The IC Roadmap for the Future

Firstly, to promote the adoption of IC concepts by organisations, the pundits of IC must distance themselves from the overarching themes of the two grand theories of IC, viz., (a) difference between market-to-book values (Stewart, 1997) and (b) as a means to greater profitability (Mouritsen et al., 2001b). To progress this agenda, practitioners and academics need to abandon grand theories and develop what Llewellyn refers to as differentiation theories of practice (Llewellyn, 2003, pp. 670-2). Continually promoting the general management of IC as a pathway to additional wealth for all organisations is misleading. Secondly, organisations must be more internally focused on their core processes. They should to develop IC management practices that focus on how they can better reengineer their organisations towards bottom-up processes that make clear the possible causal relationships between their people, processes and stakeholders (human, structural and relational capital). An organisation may not ever reduce all of the ambiguity in relation to what creates value for their firm but making continued investments in what appears to work by developing internal knowledge is better than gambling on what works in someone else's

business. IC concepts can be better understood if they are examined through the actual practice of IC and the resultant changes within an organisation rather than attempting to link the impact of practice to a generalised outcome, such as higher profitability or the determination of a fixed value of intangibles.

Thirdly, researchers must abandon research methodologies that take a helicopter view of the IC or, as Mouritsen et al. (2006, p. 820) suggests, we should be developing performative research. Here, “it is possible and advisable to develop research that has an ambition to understand IC as a concept and not only as an application of a pre-set idea”. Guthrie et al. in their study of ten years of published IC research (2000-2009) take this one step further and identify what they term as an emerging “third stage” of IC research “which is characterised by research that takes a critical examination of IC in practice”. They also suggest that the focus of past research into IC has in the past been to blame for some of the lack of adoption of IC because of “a concentration of top-down ostensive research instead of bottom-up performative research” (see also Dumay, 2009b, 2009c). Thus, the researcher must develop the skills required for critical (Alvesson and Deetz, 2000, p. 20) and performative research (Mouritsen, 2006, pp. 829-32),

12. Conclusion

In the modern knowledge economy, researchers and practitioners have to keep looking for those invisible opportunity spaces, which is capital-in-waiting. All stakeholders should also take an outside-in view. They need to go beyond IC reporting, to think in terms of cross-disciplinary systematised perspectives that will increase the IC consciousness. Perhaps this can be called IC systems science, a systematic cross-disciplinary study of how intellectual resources can be identified, nurtured, shared and utilised for the larger good:

- on an individual level, an ability to unlearn, to find out what we do not know;
- on an organisational level, to build trust and leverage collective capacity to reach IC multipliers;
- on a societal level, using social networking to grow talent and improve the quality of life; and
- on a global level, shifting from capitalism 1.0 (Adam Smith), capitalism 2.0 (John M. Keynes) and capitalism 3.0 (Milton Friedman) towards capitalism 4.0 based on new insights into values and relationships, with a fusion of IC and societal innovation into evolving social capital and national well-being.

This critical-emancipatory Action Research (Sankaran, 2006, pp. 31-33) highlighting “a new consciousness of the sacred” and that was dealt with in this article elsewhere is the new approach to IC that will also highlight capital-in-waiting as the opportunity space for the future well-being and wealth creation, in the progress towards societal innovation. Talent will be the connector in bridging new IC alliances, creating a strategic and wide-ranging intangible capacity, with impact and societal well-being. Thus, IC is not a zero sum system, but rather an exponential growth ecosystem. This is due to the IC multiplier effect whereby human capital is needed to leverage relational capital and structural capital (Edvinsson, 2013). Little wonder, the research and published literature on measuring and reporting IC is growing rapidly (e.g. Canibano et al., 2000; Guthrie et al., 2001). Hegel’s idea of synthesis or Kant’s transcendental dialectic is the need of the hour. “And/both” thinking involving the reconciliation of opposites seems like an emergent contemporary theme (having spiritual and philosophical roots) that only “critical-emancipatory” mode can accommodate (Sankaran, 2006, p.32)

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