Challenging the IC Theory – Suggestions for Some Ways Forward

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Abstract:
Understanding how knowledge and related resources has permeated scholasticism and an intellectual capital (IC)-based view of the firm, and it has gained increasing weight in contemporary management literature. Manifold impacts of IC on organizational performance have been widely evidenced with management mechanisms for various IC dimensions to be found in most established organizations. As research is a strongly path-dependent activity, it seems natural that IC research may lean on classical frameworks and conceptualizations from prior decades. However, this consideration may be problematic, since large-scale changes in companies' operating environments, such as digitalization, a crisis in sustainability, as well as reaction to the COVID-19 pandemic through remote-working initiatives. Consequently, call for new knowledge resources comes into play naturally. In this paper, an argument is made that the normative approaches for conceptualizing IC and its performance relevance must be updated. Further, we suggest that the new post-pandemic world of enterprise calls for novel understandings relevant to IC. To spur new thinking that offers a way forward, a theoretical model is proposed for a revised understanding of IC and its role in organizational viability. Important new issues are examined as related to various IC elements. The paper contributes to IC research by constructing a revised model of IC useful for generating topical research models suitable for development and testing in future theoretical and empirical studies. A set of potential research questions is outlined to guide additional research.

Keywords: Intellectual capital, performance, theory, future, digitalization, remote work

1. Introduction

Worklife as we know it is facing fundamental transformations. The spread of Covid-19 has brought a major challenge to companies that have already been facing globalization, sustainability and environmental uncertainty. Companies not only needed to prevent the spread of Covid-19 through organizational isolation, but they also have to find effective ways to maintain optimal performance. Remote work was found to be a good way to achieve both of these goals during the pandemic (Liu et al, 2021).

Given that there are more than three billion Internet users in the world, along with increasing numbers using digital technologies to work "remotely" (Donnelly and Johns, 2021), the need for workers to adopt skill sets to meet the requirements of digitalization for future jobs (Habraken and Bondarouk, 2017), the rise of crowd-sourcing platforms and co-creative networks for innovation and prosperity, leads to the immediate main inquiry of this paper: "Do we need to redefine knowledge-based resources that contribute to organizational value-added process and consequently to re-conceptualize intellectual capital (IC) framework?"

IC theory, which asserts that organizational value is for the most part created with intangible, knowledge-based resources, has become a prevalent way to approach the notion of business viability. Most IC research leans on the classical tripod of IC components, laid down by the first-generation researchers in the field (e.g. Edvinsson and Malone, 1997; Sveiby, 1997; Roos et al, 1997; Bontis, 2002). This tripod divides the value-generating knowledge assets into human capital, structural capital and relational capital; or, more simply put the value vested in an organization's personnel, internal structures and processes, and relationships. Even though this conceptualization has been challenged by some (e.g. Inkinen et al, 2017; Cabrilo and Dahms, 2020) it still remains the cornerstone of the intellectual capital-based view of the firm, and it is astutely followed by most researchers in this field. Because research is a strongly path-dependent activity, it is natural that IC research leans on classical frameworks and conceptualizations, whereby most IC studies adhere closely to the classical conceptualizations of IC components.

However, this modality may be problematic, since large-scale changes in companies' operating environments and worklife have called for new knowledge resources. Thus, it is necessary to rethink the nature and content

of IC along with novel theorizing of IC paradigms. The aim of this paper is to put forward generalized propositions as provocations for both debate and future research impetus, which are likely to shed further light on the revised concept of IC and its performance effects in the digital economy and the post-pandemic work-place.

2. IC-relevant changes in companies' operating environments and the work-place

The work-place is facing large-scale changes due to ecological, political and economic uncertainties. In order to remain competitive in the face of digitalization, diversified work-place arrangements, and the manner of innovation being brought about, organizations require new resources and improved capabilities (Colbert et al, 2016; Habraken and Bondarouk, 2017). In the following, we discuss major changes impacting the nature of IC at present.

2.1 Digitalization

According to Industry 4.0 parameters, digital technologies have increasingly changed the organization and nature of work (Colbert et al, 2016; Habraken and Bondarouk, 2017). Technological developments create greater work flexibility and mobility, which can benefit both workers and organizations (Ludivine, 2017). However, at the same time these present challenges, new technologies are also dramatically changing employment and work features across many fields of work (Cooper and Lu, 2019; Felstead and Henseke, 2017). Digital technology enables the increasing fragmentation of work facilitating complex employment relationships (direct and subcontracted), the growing use of part-time and shift work, and the empowering individualization of employment opportunities, or smaller and more isolated work units, such as virtual teams (Donnelly and Johns, 2021). In a digitized world where work is crowdsourced to freelancers via online platforms, collaboration occurs across geographical, functional, and hierarchical borders (Lepofsky, 2016) necessitating many aspects of IC to update.

Increasingly, robotization and automation require workers to build digital competencies and to adopt new skill sets needed to work in the new jobs being created (Habraken and Bondarouk, 2017). Furthermore, the rise of crowd-sourcing platforms which are online organizations that organize work by sourcing tasks to their members, independent contractors, so-called gig workers 'hired' on-demand (Nakatsu et al, 2014) has fundamentally changed working relationships.

Proposition 1: Digital skills are an important aspect of human capital in digitalized work-place

Digital-era organizations must not only cope with disruptive technologies and innovation, but adapt their business philosophies and business models, including mindset (organizational and individual), culture, and competencies to a digital way of working (Murakowski and Bick, 2017). Creating an open culture that embraces independent and on-demand workers allows organizations to benefit from external ideas and to engage them in innovation and value creation (Smith, 2020). Digital organizational culture has been found to support digital capabilities and innovation performance (Zhen et al, 2021).

Proposition 2: Open digital culture is an important facet of structural capital in digitalized work-place

2.2 Remote work and gig work

The term 'remote' work, sometimes also referred to as telework, locationally-distributed work, or virtual work, can be defined as any work that is detached from a traditional fixed places of employment (Felstead and Henseke, 2017). Remote working is not a product of the Covid-19 pandemic, but it has gained momentum and proved its significance as a result of the Covid-19 crisis' catalytic effect (Liu et al, 2021; Donnelly and Johns, 2021). It is evident that remote-work has increased in scope and relevance, and the profile of the remote worker has changed and become diversified (Mahadevan et al, e 2022). What was an exception or evolving concept has suddenly altered the standard during the pandemic crisis. It will very likely remain an important way of working in the future because workers have already experienced the benefits of remote working or working from home.

Established concepts exist in the human resources management literature for flexible work arrangements (Berkery et al, 2017), gig work (McDonnell et al, 2021; Williams et al, 2021; Boons, Stam, and Barkema, 2015), virtual teams (Adamovic, 2018), and digital nomads (Hannonen, 2020). These practices allow for new ways of

work outside of traditional organizational boundaries and have been related to the larger phenomenon of 'remote work'. Externalization of employee work has been seen principally as a negative trend from an employment perspective, as work relationships become more fluid, and shorter in duration (Hollister, 2011) and somehow 'less under traditional control' mechanisms. It has been suggested that the restrictions of managerial control under remote work arrangements are compensatory to employees' self-management and displayed leadership skills.

Self-leadership (Manz, 1986; Manz and Sims, 1986) is a process through which people are influenced to achieve the necessary self-direction and self-motivation to behave and perform in desirable ways. Self-leadership is a broader concept of self-influence that encompasses self-control, self-regulation and self-management. It draws upon intrinsic motivation theories (e.g. Deci and Ryan, 1985), social cognitive theory (Bandura, 1986), and positive cognitive psychology (Seligman, 1991) to understand sets of behavioral and cognitive strategies designed to shape individual performance outcomes (Houghton and Neck, 2002; Neck and Houghton, 2006). Self-leadership theory posits that even though external contexts and activities influence behavior, actions are ultimately controlled internally by the individual, which is focused on how people manage and lead themselves (Stewart et al, 2011). It includes self-imposed strategies for managing performance of tasks of low intrinsic, motivational potential, and self-influence that capitalizes on the natural/intrinsic, motivational value of task activity (Manz, 1986). Three distinct but complementary categories of self-leadership influence its eventual outcome: behavior-focused strategies, natural reward strategies, and constructive thought pattern strategies (Prussia et al, 1998). It is argued that in remote work arrangements, self leadership is an important skill for both internal and external human capital, and it should be included in the associated research models.

Proposition 3: Self leadership is an important aspect of human capital in remote work contexts

Furthermore, in today's digital economy, the traditional full-time employed labor force seems to be dwindling, and a growing number of workers, especially highly-skilled professionals, prefer to work as autonomous and independent self-employed, freelance contractors (Vaiman et al, 2011). Contingent work is a form of 'non-standard' employment, which presents the hiring of workers on 'contingency', or on 'fixed-term contracts' (Conelly and Gallagher, 2004). Organizations around the world benefit from contingent work situations by saving on labor and related costs (Smith, 2020), and by becoming more agile and able to respond to rapid-fire change.

Gig work is made up of short-term jobs (gigs) and presents a type of contingent work that typically falls outside the boundaries of an organizational purview. Digital platforms connect gig workers directly with customers and clients (Harris, 2017), and therefore gig workers are rather classified as independent contractors than as employees (McDonnell et al, 2021; Halliday, 2021). In the gig economy, organizations do not hire workers, but rather mediate an exchange between gig workers and customers with all work and requested tasks managed by algorithm (McDonnell et al, 2021). In this new economic system workers are not engaged in 'jobs' and have no long-term connections with a company, but are instead hired on-demand for 'gigs'. This allows for flexible arrangements as independent contractors, working only for a defined time, are able to complete a particular task without the need for connection with an 'employer' (Friedman, 2014).

However, since gig workers have no traditional employment relationships with organizations (Halliday, 2021; Friedman, 2014), managing this workforce may become a considerable challenge. These on-demand, 'hired' workers may feel disconnected to an organization resulting in diminished loyalty to any organization. Therefore, further analysis regarding implications of contingent work on organizational structure, leadership and talent management, organizational culture and trust should be made to facilitate a reexamination of specific organizational theories and models, among others, knowledge-based theory (Grant, 1996) and the overall concept of IC.

Thus, the question remains on how to consider knowledge, skills and experience of workers with zero-hour contracts that do not require a minimum number of working hours by an employer - as a part of an organization's intellectual (human) capital, or not? We argue that no matter of their formal employment status, workers that create value for a company, should be counted as its human capital. However, there have been the opposite views, for example, in financial accounting, an asset is any resource owned or controlled by an economic entity, and following this definition, remote workers that are not fully owned or controlled by a company do not represent its human capital. In any case, it seems important to rethink concepts and theories being affected by

externalization of work and other changes in nature of work, including the concept of IC, which is the main aim of this paper.

> *Proposition 4*: Gig work and other contingent work should be acknowledged as an important aspect of human capital

2.3 Open innovation and crowd-sourcing

Recently, open innovation and crowd-sourcing have received much attention in the innovation management literature (Cricelli et al, 2021). There is a successive change occurring in how innovation has been viewed throughout time. The innovation paradigm has shifted from 'closed innovation' to 'open innovation' or 'networked innovation' models, and subsequently to 'participative innovation', to become an integral characteristic of Open innovation 2.0. (Chesbrough, 2003; Curley and Salmelin, 2018). As innovation has become the most typical performance variable in IC research (Inkinen et al, 2017), this novel 'participatory innovation' paradigm should also entail changes in the IC field.

Open innovation (OI), as introduced by Chesbrough (2003), is an innovational practice that strives to provide a greater knowledge flow allowing innovation to become quicker, easier and more effective through an exchange of ideas by means of collaborative and open network environments (Curley and Salmelin, 2018). It is characterized by shared knowledge, critical resources and capabilities, within and across the boundaries of organizations in order to exploit both, the internal and external knowledge and ideas (Chesbrough, 2003). In open innovation, ideas pass to and from different organizations for purposes of exploitation. Based on bi-direction knowledge flows, two distinct directions in open innovation process have been referred as inbound OI (outside-in processing) and outbound OI (inside-out processing) (Gassmann et al, 2010; Huizingh, 2011). Inbound OI refers to the internal use of external knowledge, from various innovation sources such as partners, customers, universities, and research organizations; and, outbound OI refers to external exploitation of internal knowledge, through the sale of patents, or through direct licensing (Cricelli et al, 2021).

For IC theory, this creates knowledge-based value resources that not only relate to intra-firm resources and capabilities, but also to those over and across organizational boundaries. Thus, the available "external" human, structural and relational capital should be better acknowledged for understanding open innovation practices.

> *Proposition 5*: External IC resources are important for open innovation

Crowd-sourcing, with its multidisciplinary nature, is a complex phenomenon (Cricelli et al, 2021). It is consistent with the open innovation paradigm (Bogers and West, 2012), as it basically refers to the use of outside sources for ideation, and crowd wisdom or collective intelligence in value creation (Brabham, 2013). Crowd-sourcing indicates the practice to open the process of getting ideas or performing tasks up to the public, and ask a body of people (the crowd) to share its knowledge as users in order to improve their own experience (Buettner, 2015). The adoption of OI strategies asks for the reorganization of how processes are carried out, that need to be linked to a new and more open and entrepreneurial culture, a cooperative behavior, and a collaborative mindset of the people involved (Cricelli et al, 2021).

> *Proposition 6*: Open and entrepreneurial culture is an important facet of structural capital that supports crowdsourcing and use of collective intelligence

3. Consequences for IC theory

3.1 IC components

Considering the global externalization of work, changing employment and work relationships, required skills and workplace mindset, we argue that the IC concept would benefit from updating due to digitalization. The large-scale changes discussed in previous chapter have brought new challenges for IC and addressing them requires expanded knowledge assets.

To retain performance and competitiveness in the changed and digitalized economy, companies must rethink and revise the concept of IC by initiating updated metrics in manage practices. Changes in implementing organizational environment, work relationships, nature of work, job-demand skills, and innovational practices ask for a more 'open approach' to the concept of IC. This means necessitates opening IC management boundaries to the outside and to adequately emphasize the external dimensions of IC (Chen et al, 2015). All previously-mentioned changes redefine the boundary between the firm and its surrounding environment, making the firm more porous and then connecting loosely with other value creators in an open innovation eco-system (Chesbrough, 2003).

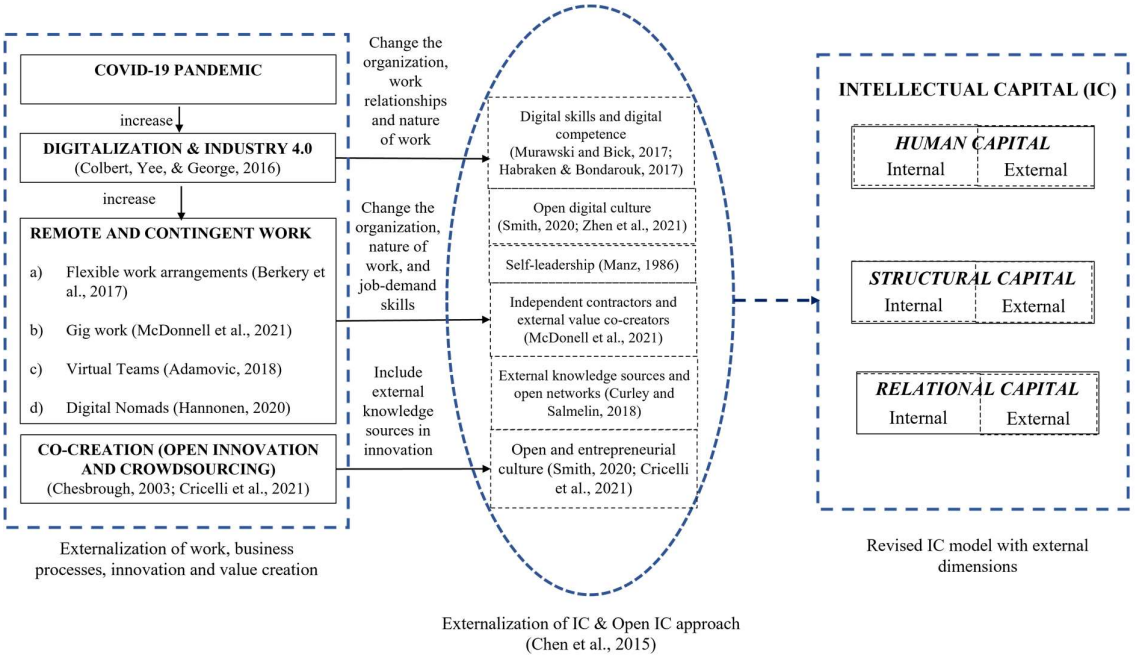

Figure 1. Reconceptualization of intellectual capital

3.1.1 Human capital

As remote/hybrid work forms have become the norm across organizations, the organizational abilities of employees demonstrable outside the office work become increasingly relevant. Accordingly, a crucial new feature of human capital has emerged: digital competence. Digital competence encompasses the knowledge, abilities, skills, and attitudes needed to work in the digital age (Murawski and Bick, 2017). On an individual level, it is an umbrella term covering both the general digital competencies needed for nearly every occupation, and the specific role- or task-related digital competencies differentiated for every occupation. Digital competence can be defined as the ability to adopt and to use new or existing technology to analyze, select and evaluate digital information that solves problems and develops a collaborative framework of knowledge within a specific organizational context (Vieru, 2015).

Furthermore, the increase of gig work means that there is an increasing amount of human intellect working for a firm that may come from outside the realm of its fully employed human resources (McDonnell et al, 2021; Williams et al, 2021). Thus, the inclusion of freelancers in terms of human capital gains in importance. In a remote work context, self-leadership skills are an outstanding aspect of human capital, which impacts the performance of organizational employees, freelancers and other contingent workers alike (Neck and Houghton, 2006).á

3.1.2 Structural capital

Open innovation and related crowd-sourcing activities require an active management of knowledge and information. Crowd-sourcing is an innovative way to organize flexibly using the dispersed skills and ideas of a wide set of actors (e.g., organizational members, customers, suppliers, consultants and gig workers). Capturing value from "the wisdom of crowds" necessitates wider participation, which can be supported by crowd management activities, such as platform design, building a crowd culture, and sharing captured value (Cricelli et al, 2021). Consequently, open and collaborative entrepreneurial culture and its associated activities represent an important new facet of structural capital vis-á-vis open innovation models.

Further, the success of digitalization is dependent on how well an organizational culture already in place supports it. Digital culture is often comprised of a set of shared assumptions and an overall understanding of mutually-held values concerning organizational practices in a uniquely digital context (Zhen et al, 2021). It is known that culture both restricts and guides activity, but it also provides tools for actor's agentic behaviors. Digitalization can be significantly leveraged by espousing a culture that encourages risk-taking, supports innovation, and both facilitates and enables wide collaboration. (Grover et al, 2022)

3.1.3 Relational capital

While the conceptualization of relational capital is manifold, ranging from the internally-oriented social capital construct of Subramaniam and Youndt (2015) to the externally-oriented customer capital of Edvinsson and Malone (1995), we think these two variants should be divided once and for all. Instead, we follow Inkinen et al (2017) and suggest splitting relational capital into basic internal and external components, referred to as relationships with intra-organizational and inter-organizational stakeholders (Inkinen et al, 2017). Internal and external relationships create value in different ways, as internal relationships present crucial infrastructure for knowledge exploitation and facilitate process and management innovation; meanwhile, external relationships may become more beneficial in knowledge exploration and therefore better for product/service innovation (Cabrilo et al, 2020).

External relational capital includes relationships with external knowledge and value co-creators, such as traditionally-covered users, suppliers, competitors, universities, and other cooperative partners, along with relationships among newly-added stakeholders, including gig workers, freelancers, virtual teams, and digital nomads. External relational capital is a critically important aspect for successful collaborative innovation to occur (Chen et al, 2015; Chen and Chen, 2008). Open innovation requires entrepreneurial culture, cooperative behavior and a collaborative mindset (Cricelli et al 2021). Of additional importance are innovation intermediaries, who facilitate innovational processes through knowledge transfer, technology exchange, and transfer among organizations and crowds (De Silva et al, 2018).

4. Conclusion

This paper argues that relevance in the face of recent wholesale changes in companies' operating environments, such as with digitalization, maintaining sustainability, facing the COVID-19 pandemic, and related forced relocation to remote work platforms, necessitate an immediate update to general IC theory. This requires novel understandings and viewpoints concerning the nature of IC components, organizational performance dimensions, and moderators in relationship to them.

We hope that our ideas contribute to the topicality and relevance of IC research by inspiring new thinking and offering ways forward to revise the research models that are developed and tested within this important field of endeavor. Obviously, this short paper is fraught with limitations. Perhaps the most notable one is the selective perspective on the key issues that impact the changes inherent in IC. Other important issues include organizational resilience, risk management, ecological and societal sustainability, and innovative openness.

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