

Visionary Intellectual Capital Landscapes: An Invitation for Discussion

Aino Kianto , Slađana Čabrilo , and Lina Užienė 

Abstract

This chapter is an editorial overview and interpretation of the most critical topics concerning future development of intellectual capital (IC) theory, research and practice. Based on the 16 ground-breaking and future-oriented core chapters in this book, we identify eight emerging themes for futurizing the field of IC: 1) the need for multilevel approach towards IC; 2) an examination of IC dynamics; 3) redefining of value and economic models at the basis of IC; 4) a better recognition of sustainability and ethics in IC research; 5) a focus on the role of AI in IC; 6) a renewed emphasis on humans and culture; 7) a focus on non-rational and non-technological aspects of IC; and 8) an interdisciplinary approach towards research. We also compile a list of theoretical and practical highlights to futurizing IC, provided by the authors of the individual chapters in this book. The ideas presented in this chapter contribute to opening up new perspectives for the development of IC theory and practice, and inviting scholars and practitioners to a global and future-oriented discussion on IC.

A. Kianto (✉)

Lappeenranta-Lahti University of Technology (LUT), Lahti, Finland

e-mail: aino.kianto@lut.fi

S. Čabrilo

I-Shou University, Kaohsiung, Taiwan

e-mail: sladjana@isu.edu.tw

L. Užienė

Kaunas University of Technology, Kaunas, Lithuania

e-mail: lina.uziene@ktu.lt

1 Overview

As editors of this volume, in this concluding chapter, we do our best to make sense of the future directions suggested in the wise and thoughtful contributions of the chapter authors of this book. However, we are very mindful of the fact that every reader will have their own interpretations and find their own inspirations, which may differ from ours. We hope this book is not an end to the discussion concerning futurizing intellectual capital (IC) but a beginning to a continuous global dialogue.

To inspire the future of IC research and practice, the authors of this book have provided a thorough and groundbreaking compilation of perspectives, which pave the way for future thinking about IC. The 16 chapters in the book represent the thinking of leading IC scholars and enthusiasts across the globe.

This collection of future-oriented chapters demonstrates how IC research and practice create significant value and may contribute to the global societal transformation through intellectual connectivity and companionship, between individuals, organizations, governments, nature, and technology. Chapters illuminate future IC research and practice by highlighting IC as a complex and multilevel, dynamic ecosystem that includes IC at the individual, team, process, organizational, and finally national levels.

In this book, the authors explore tacit IC, humanization of IC, emotional and spiritual capital, trust, connectivity and contactivity, areas of interconnectivity, and “ba” as a shared space for knowledge creation. It is notable that all of these issues are fundamentally human affairs that differentiate humans from machines.

Nevertheless, in the era of increasing artificial intelligence (AI), intellectual companionship between humans and machines has become essential for sustainable growth. As AI rapidly transforms industries and societies, points of intersection and overlap between IC and AI become extremely intriguing. The chapters address questions such as the following: Where does IC meet AI? Where are the boundaries of IC in the era of advanced technology? How can such emerging technologies as AI redefine the concept, model, measurement, management, and value of IC in knowledge-intensive ecosystems?

Finally, the chapters demonstrate a strong impetus toward fundamentally rethinking economic models, performance measurement, and the concept of value. The book offers critique and extension to existing economic theories and principles, as well as a re-evaluation of assumptions concerning value and its distribution, along with associated reporting practices. The chapters strengthen IC’s theoretical foundations by highlighting the specific areas where the existing theories fall short and providing new suggestions, such as complexity theory, the knowledge management perspective, and the attention-based view of the firm. Overall, these chapters provide a groundbreaking review and discussion of the essential tenets of future IC research and practice.

To do justice to the brave new ideas on IC research and practice that the contributors have provided, we will give voice to them. [Appendix](#) compiles the theoretical and practical highlights of the chapters in the words of the authors themselves.

2 Editorial Insights into the Future of IC

We invite readers to study the table in [Appendix](#) with an open and curious mindset and to find what inspires them. However, we cannot resist the opportunity to share with the readers of this book our own editorial ideas for future emphases.

There are, in particular, eight strong themes that emerge from the chapters as key insights for futurizing IC theory and practice: a multilevel understanding of IC; IC dynamics; repositioning and re-constructing IC theory based on alternative economic models and a redefinition of “value”; sustainability, ethics, and social justice; the intersection of AI and IC; emphasis on humans and culture; the potentiality of widening the rationality and technology-based views of IC; and interdisciplinarity.

2.1 A Multilevel Understanding of IC

One important conclusion raised by the chapters is that IC is not related only to profit-seeking private firms or knowledge-intensive companies. Rather, as the wicked problems facing the planet and humanity concern everyone, it is more important than ever that we examine IC from a macro-perspective that addresses not only single firms but also other types of organizations, as well as ecosystems, networks, regions, and societies.

IC is created and applied in the context of interconnected webs of many types of actors and institutions and the interactions and relationships between them. This realization points to a multilevel IC model, where IC consists of affordances at the individual, team, organizational, and institutional levels, based on personal resources and individual IC, team climate and practices, organizational systems and culture, and infrastructural, ecosystem-level, and societal IC.

The contributions in this book clearly point out that single-level focus is not sufficient anymore and that IC must be addressed beyond organizations for the global societal transformation. In the future, to an increasing extent, it will be important to acknowledge the complex and interconnected nature of the global ecosystem and economic environments.

On the one hand, the multilevel IC model implies a need for improved recognition of individual-level IC and the fact that individuals in organizations differ in terms of what IC they possess, as well as what kind of IC is needed from them in their work roles. In addition, individuals contribute in various manners to value creation, and they can benefit from a variety of IC management methods. For example, the individual IC approach may help to evaluate the intellectual contribution of IC safeguards, freelancers, gig workers, and other unstandardized forms of employment in organizational, social, and global value creation. The small amount of literature on individual-level IC merits being extended, especially as concerns the emerging skills needed in the work life, such as resilience or AI and analytics skills, according to the World Economic Forum (2023) survey.

On the other hand, the multilevel approach to IC emphasizes groups, networks, and collectives as an intermediate level of knowledge-based value creation, as well

as a mediator between individual contributions and organizational outcomes. At present, this socio-psychological group and team dimension seems to be the most overlooked layer in the emerging multilevel IC model.

The macrolevel of IC has hence far been discussed most notably under the auspices of the New Club of Paris (<http://new-club-of-paris.org>), which provides support for societal transformation into the knowledge society. The chapters in this book extend that discussion and demonstrate powerfully that sustainability is a fundamental goal and value for IC activities, and hence IC should not be considered cut off from the societal and natural ecosystems in which it exists.

From a future research perspective, a more explicit acknowledgment of the various levels of phenomena at play should offer many interesting possibilities. Questions range from IC components across individual, team, organizational, and societal levels to effective management methods and metrics.

2.2 IC Dynamics

Based on the chapters of this book, consideration of the dynamic dimension of IC (Kianto, 2007) is no longer a supplementary exercise but a mandatory element when dealing with research and development in any system. Nowadays, the need for agility, resilience, and renewal confronts everyone in the global system alike, and the complexity perspective allows examination of the interactions among systemic elements.

The chapters in this book have opened the floor for dialogue concerning the interactions and dynamics between IC elements at different levels, from individuals to teams, organizations, institutions, ecosystems, and nations. Even with these contributions, the dynamic approach to IC has not reached its full potential yet, and we expect to see significant advancements in this field in future research and development endeavors.

Enticing research gaps exist, for example, in terms of understanding what kinds of bundles of IC resources are needed and how to develop them, how IC is enacted in organizations, and how IC is renewed and applied to promote sustainability. Regardless of which dynamic perspective is applied to examine IC, it is clear that the static snapshot type of approach can only afford a limited and retrospective understanding of IC. The dynamic approach will help to understand the complex web of inter-relationships that build the IC ecosystem, as well as what kinds of interconnections and interactions exist between the different analytical levels under various contingencies and conditions. One may see enticing research trajectories in addressing, for example, the role that individual skills and emotional capital play in building customer satisfaction and a knowledge-friendly organizational culture or exploring the employee skills that matter the most for creativity or customer satisfaction. Multilevel empirical research seems to be lacking in the IC literature and could be applied to improve understanding of IC dynamics and the complex interactions among IC elements.

Furthermore, there is a mismatch between theory and methods regarding knowledge dynamics (Bratianu, 2023) and outcome complexity. When IC is considered from a multidimensional and dynamic perspective, it becomes clear that value

created has no relationship with different knowledge-based resources independently; rather, it is associated with an integrated bundle of such knowledge assets. Therefore, interpreting IC should be based on the configuration thinking that considers causal conditions not as adversaries in the struggle to explain variation in the outcome but as potential collaborators contributing to the outcome (Ragin, 2008). It is possible to overcome the gap between theory and method by applying a configurational rather than a symmetric approach to IC (Cabrilo & Dahms, 2018). Asymmetrical techniques such as fuzzy-set qualitative comparative analysis (fsQCA) allow us to look beyond associations between single variables and a limited set of interaction terms, as well as to understand equifinality and causal asymmetry (Kumar et al., 2022); therefore, in the context of multilevel and dynamic IC, they can improve the explanatory power to IC theory and practice.

2.3 Alternative Economic Models and the Redefinition of Value

In this book, an essential question is often raised about the fact that the usual economic models, which have been functioning in the world for many years, no longer meet the needs of society or the planet and therefore require fundamental changes. The IC approach demands a radical questioning of economic theory and its foundational principles, as these are not able to accommodate and explain the current reality of IC-based value creation.

A few decades ago, the highly emphasized stage of economic development called the knowledge economy recognized IC as an essential factor for organizational and regional development, creating prosperity for business, the economy, and society. Unfortunately, this has been overshadowed recently by the prevailing capitalistic mindset that focuses on purely economic value creation. Chapters in the book propose alternative economic models that emphasize sustainable and equitable forms of economic organization and prioritize human well-being, environmental sustainability, solidarity, and the planet over GDP growth and financial gain.

Based on the discussions developed in this book, a whole series of important questions emerge that are worth exploring as central to the intersection of knowledge, value, well-being, and society. These new questions require an ecosystem and multilevel IC approach to society, future generations, and well-being that is based on ethical political convictions, sustainability, and the common good.

The issue of harnessing IC for well-being creation while preserving the interests of business, society, and the planet is crucial but hardly solvable. Ethical, sustainable, and common good-oriented IC management is vital in today's world and requires novel economic models, repositioning and re-constructing of IC theory, and novel approaches to measurement of value added.

A fundamental issue coming up across this book is that an essential questioning of what is valued, as well as who gets to decide what is valued, is needed across IC activities. Not only practitioners but also researchers should ask who gets to decide what is valued—and hence, strived for. This is very closely connected to the next theme, which considers sustainability, ethics, and social justice as critical values in the global ecosystem.

2.4 Sustainability, Ethics, and Social Justice

The future of IC research and practice should recognize sustainability as one of the critical factors for organizational, national, and societal success. This issue is fundamentally connected to the questions of what value is, what is valued and by whom, and who has the power to determine whose conception of value is adhered to. It is crucial for IC research and practice to be critical about what is supposed to be sustainable in order to develop global trust in the sustainable IC concept and its metrics. Although it has become obvious that a complex, dynamic, and multilayered IC ecosystem is not isolated from—but organically integrated with—nature and society, the IC research and practice that tackle issues of IC and sustainability together seem to be in an embryonic stage. One way to proceed may be to reconceptualize IC frameworks and metrics to address environmental, social, and governance (ESG) criteria and sustainable development goals (SDGs) more clearly (Alvino et al., 2021; Kianto et al., 2023). This approach may clarify how intangible assets contribute to sustainable business practices and sustainable regional competitiveness (Januškaitė & Užienė, 2018).

It can be anticipated that human knowledge can simultaneously contribute to the three pillars of sustainability, environmental, social, and economic. Therefore, future research should be more focused on intersections between the concepts of IC, sustainability, the circular economy, and open innovation. It is worthwhile to explore collaborative and coordinated efforts that combine the knowledge of multiple agents in innovation ecosystems to increase economic, societal, and environmental well-being. It is also relevant to use IC management to put into practice green innovations that optimize production and consumption to achieve a balance between economy, society, and the environment. We believe that addressing sustainability from the IC perspective requires cross-disciplinary insights from social sciences, economics, environmental science, and business management to develop holistic models and solutions.

Taken together, the themes of value and sustainability point to a new sphere of discussion for the IC field—namely, that of IC ethics. Until now, questions of justice have mainly been addressed from the limited approach of intangible property rights and knowledge protection mechanisms. Based on the chapters, there are other, wider questions which must be brought to the fore in IC activities, for example, ethical considerations related with AI usage, as well as fair and socially equitable distribution of value and societal justice. We further suggest considering ethical leadership, based on a leader's honesty, justice, credibility, and integrity (Brown & Treviño, 2006; Anderson & Sun, 2017), as one of the essential IC-related drivers of not only organizational well-being and success but also global trust and peace. Further research questions stemming from this stance include the following: How can societally transformative IC research be conducted? What is the role of IC and related resources in IC diplomacy for peace?

2.5 The Interplay Between IC and AI

AI is fundamentally changing humanity, organizations, economics, and value creation. These changes open up a new set of opportunities—and challenges. On the one hand, together with AI, new enriched forms and opportunities for more efficient use of IC arise, which speed up value creation by increasing access to intellectual resources. This supplements and enriches them with artificial assistance, which may lead to better performance and higher productivity. On the other hand, there are challenges, such as the risk that AI will outcompete human potential and that organizations will be left with a portfolio of resources that lack emotional value, empathy, and human spirit.

Delving into the discussions by the authors of this book, fundamental questions arise as to whether AI can be treated as a unique form of IC? How tolerable is the substitutability of IC with AI? How can human knowledge be protected to avoid losing human authenticity? How dangerous is the loss of human spirituality in the era of AI? How can we address and possibly solve the ethical issues arising from the interplay between IC and AI?

There is no doubt that AI, along with other emerging technologies, is having a disruptive effect on IC. However, it is not yet clear which forms of IC are most susceptible to the disruptive nature of AI and how we should balance between the desire to create greater added value and the loss of authenticity of IC.

The book chapters bring together culturally diverse perspectives, spanning from the Japanese “ba” to the German “companionship.” This diversity raises a new and interesting question for future research on how diverse cultures impact the understanding of the opportunities, risks, and ethical issues of AI integration in business and economies. In future regional research, the question will undoubtedly need to be answered as to what impacts different AI adoption rates will have on countries’ national IC. In addition, we need to ask what impacts they will have on the overall performance of the regions.

Returning to the multilevel aspect of IC that is frequently highlighted in the chapters, it becomes important to understand whether the same AI-related trade-offs apply across the different IC layers—the individual, organizational, national, regional, and societal layers. What knowledge in the multilevel IC ecosystem are we at risk of losing in the era of AI? Who is responsible for acting as an IC safeguard and protecting IC on different layers from harmful exploitation?

Finally, the theme of value, which is also central to this book, demands special attention when IC faces the new realities of AI. The questions here are these: Who owns the value created by AI-based IC? Who will benefit from it? Can we distinguish between human and machine-based values? And how can we ensure sustainable and fair sharing of risk and value added in the modern world? These and questions related to intellectual resource replacement, more effective management, loss, and synergy in the interface of AI raised in this book deserve the attention of future IC researchers and are likely to be addressed as important in IC theory in the near future.

2.6 Humans and Culture at the Core of IC

For value creation, however that value may be understood, the essential factor is what humans do—or don't do: whether and how they use information systems and AI, the extent to which they share their knowledge, apply it in their productive activities, and integrate it with others. In addition, organizational IC cannot be fully comprehended by focusing only on systems and processes. Humans and their interactions remain at the core of IC. The human capital dimension has always been at the heart of the IC movement (cf. Edvinsson & Malone, 1997; Sveiby, 1997), and this seems to be unchanged in our current times. However, the humanizing of IC takes different forms according to the needs of the specific socio-historical context.

The Future of Jobs Report by the World Economic Forum (WEF, 2023) offers a glimpse into human skills and abilities that are likely to matter most in the near future. According to this report, analytical and creative thinking are the most critical employee skills for the future, followed by resilience, flexibility, and agility; motivation and self-awareness; and curiosity and lifelong learning. This points to the future importance of the human ability to adapt to disrupted environments. Moreover, the WEF report emphasizes the essential role of human empathy in the age of AI and points out that investing in learning, reskilling, and upskilling will become a priority for everyone in the global ecosystem. We also propose self-leadership (Neck & Houghton, 2006; Kianto et al., 2023) to be one such crucial skill to develop across the workforce. These recommendations certainly pave the way for future IC research and practice.

The chapters in this book also emphasize that collective features of the work environment, such as organizational culture and leadership approaches, will be crucial facets of IC in the future. The social environment where IC is embedded, created, exerted, and appropriated must be recognized if the field is to provide valid understandings and actionable insights on IC-based value creation. Related deepening topics to explore include not only the development of knowledge-friendly “ba” and organizational cultures and establishment and valuation of transformative, servant, and ethical leadership behaviors and philosophies but also the intersection of IC and work well-being and happiness.

2.7 Non-rational and Non-technological Dimensions of IC and IC Management

The new perspectives opened in this book also suggest that it may be useful to deeply and critically examine what we really mean by IC and what kind of facets we expect it to consist of. As long as we are addressing how humans handle knowledge in organizations, which exist within cultures, the emotional, intuitive, and spiritual facets of knowing, deciding, and taking action will prevail alongside rational, data-driven, and evidence-based elements (Nonaka, 1994; Nonaka et al., 2000). Chapters in this book have provided pioneering discussions of such deeper layers of IC.

The chapters of the book point toward the future of IC, which—perhaps rather curiously in this age of the IT and AI boom—emphasizes the nature and role of

human beings as prime actors in value creation, for whom technology may be a more or less applicable tool for achieving their goals. Rather than *homo ecologicus*, they imply *homo sociologus*—the social human being. This is the conception of individuals in their socio-historical context, where they are influenced by and simultaneously influence the social structures they are embedded in.

A conception of human nature not addressed in the chapters is *homo ludens* (Huizinga, 1938/1998), the playful human being. This alternative perspective teases out some enticing questions related to the role of creativity, playfulness, and divergent thinking in the IC realm.

2.8 Interdisciplinarity

As has been seen throughout IC history and in this book, the question of how knowledge produces value and what can be done to support this can and indeed has been approached from many perspectives. It is also crucial for future IC theory and practice to integrate knowledge and insights from different disciplines, such as economics, psychology, sociology, political economy, engineering and technology, environmental science, neuroscience, art, human resource management, and accounting, to provide a more holistic understanding of the complex nature of IC, its management, and its valuation. IC, seen as a complex and dynamic ecosystem, spans from individual to societal levels and covers different disciplines. Therefore, IC research must go beyond a single discipline.

This book is an invitation to open the doors for new explorations crossing disciplines and to integrate insights from various fields to address complex, real-world challenges, including the sustainability crisis, climate change, public health, social equality, global peace, and well-being, that cannot be solved by any single discipline alone. Only interdisciplinary research that fosters collaboration, knowledge sharing, continuous learning, and innovation may reveal hitherto invisible solutions and opportunities to fully translate IC into value and global societal well-being.

3 Instead of a Conclusion: The IC Journey Continues

The journey of futurizing IC is ongoing and never ending. The potential for IC-based value creation is boundless. As a response to environmental and socio-economic changes, as well as global geopolitics in the world, conceptual knowledge is constantly being rethought and redesigned. Facing the new realities of a changing world requires new perspectives and approaches. The insights provided in this book are a step forward in the discussion of the future of IC theory, bringing researchers together and creating a new energy charge for future companionships.

The interlinks between the past, present, and future are important for understanding human and collective experience, continuity, and growth. As we stand at the intersection of technological advancement and human ingenuity, we face many issues that bring new complexities to the IC arena. We hope this book will serve as a comprehensive guide for IC scholars and professionals to understand and navigate the complexities of the rapidly evolving world and its implications. Let it serve as a

source of direction, insight, and inspiration in an increasingly dynamic world, encouraging new ideas, thinking, and debates.

The Editors

Appendix: Table of Author Provided Chapter Highlights

Part	Title	Author(s)	Theoretical contributions	Practical recommendations
Part I. Intellectual Capital in Flux: Navigating Complexity				
1	A Complexity Framework for Understanding Intellectual Capital	Constantin Bratianu	<p>1. Adopting a complexity perspective of the IC that opens new directions for research. The future research of IC should extend beyond the borders of a given organization and embrace a larger perspective based on the complexity approach</p> <p>2. Adopting a nonlinear approach for understanding much better the nature of IC. Intellectual capital is nonlinear because it is composed of intangible resources which are nonlinear. Therefore, it is necessary to change the linear models used so far into nonlinear models</p> <p>3. Adopting a dynamics approach that challenges the potential view of IC and shows its transformation into kinetic IC as a result of KM action. The future IC should be understood as being composed of two components which have the capability of transforming one into another: the potential IC, and the kinetic IC. The transformation is moderated by the knowledge management</p> <p>4. Proposing a multi-scale framework for IC to offer solutions for IC building up from the individual level to organizational level and beyond. Future IC models should incorporate different framework scales and mechanisms of scaling up the individual IC</p> <p>5. Identifying the kernel of the similarity property of being composed of the three basic IC fields: rational IC, emotional IC, and spiritual IC. These components result from the processing the three basic knowledge fields: rational knowledge, emotional knowledge, and spiritual knowledge. Therefore, the future of IC should be based on the theory of knowledge fields and knowledge dynamics that has a thermodynamics support</p>	<p>1. Aligning the IC model to the practical multilevel structure of management. In practice, management is structured on different levels: self-management at the individual level, middle management at the team level, and top management at organizational level. Therefore, the future of IC should be considered at the same structural levels</p> <p>2. Aligning the IC model to the needs of nonlinear organizational processes. The new business environment induces nonlinear phenomena like change, learning, resilience, and employees' wellbeing which act on the potential IC</p> <p>3. Managing the dynamics of IC. Knowledge management acts on the potential IC to transform it into kinetic IC, like a generic force that transforms potential energy into kinetic energy of a given body</p> <p>4. Designing a better motivational system and creating a dynamic organizational culture. The future IC model based on the knowledge fields and knowledge dynamics theory contains the rational, emotional, and spiritual intellectual capital components and the dynamics between them</p> <p>5. The new model opens new directions for designing new measurement systems. There is a need for new measuring models which are capable of reflecting the intangibility and nonlinearity of IC</p>

(continued)

Part	Title	Author(s)	Theoretical contributions	Practical recommendations
2	Unleashing Intellectual Capital: Toward Dynamic Theory through the Humanization of Intellectual Capital	Noboru Konno	<p>1. Relationship between IC and Knowledge Assets (KA): Utilizing an accounting analogy, the eq. $IC + Intellectual\ Debt = KA$ is proposed to provide a framework for understanding the contribution of IC to an organization's KA</p> <p>2. Concept of "Ba": The concept of "ba" (a shared context or space) is integral to the activation of IC and the facilitation of knowledge creation (KC). "Ba" is considered a component of IC, aiding in the transformation of KA into tangible value during the knowledge creation process</p>	<p>1. Dynamic nature of IC: IC should be conceptualized not as a static asset but as a dynamic and vital resource essential for enhancing competitiveness and ensuring long-term success. The effective management and utilization of IC and KA are critical drivers of innovation</p> <p>2. IC in ecosystems: The significance of IC within ecosystems is increasingly recognized. As organizations collaborate within ecosystems, the relevance of IC and value creation in these contexts becomes apparent. "Ba" plays a crucial role in connecting internal and external ecosystems, thereby facilitating knowledge sharing among diverse participants</p> <p>3. Humanization of IC: The future of IC management should incorporate more humanized aspects, including emotional and subjective elements. The emotional dimensions of IC, which are connected to human physical sensations and instincts, will become increasingly important, particularly with the rise of artificial intelligence (AI)</p>
3	Intellectual Capital as a Basis for Cash Flow and Renewal	Tomi Hussi and Aino Kianto	<p>1. IC is not only relevant for organizational renewal but also for the ability to generate cash flow</p> <p>2. Both cash flow and renewal can be understood with an IC-based value creation model that consists of knowledge assets dynamics through knowledge flows</p> <p>3. A new terminology for knowledge assets is provided: Cash flow and renewal can both be approached from the perspective of three types of knowledge assets: energy, demand, and platform</p> <p>4. Knowledge flows are clarified alongside with knowledge assets, adding to the so far relatively neglected understanding of the dynamic dimension of IC: Both cash flow and renewal are energized by the three knowledge flows that put the assets in motion: reflection, dialogue, and offering</p>	<p>1. The current terminology within IC is too academic and difficult to understand by the practitioners. Increasing flexibility in terminology could enhance the adoption of IC framework in business management practices</p> <p>2. The introduction of the cash flow dimension of IC makes it more inviting to the C-suite manager as they are mainly evaluated by the short-term performance of an organization</p> <p>3. The process of renewal based on knowledge assets and knowledge flows supports the innovativeness of an organization</p> <p>4. Clarified understanding of the business model based on IC-related cash flow can increase the motivation and commitment of the employees</p>

(continued)

Part	Title	Author(s)	Theoretical contributions	Practical recommendations
4	Individual-Level Intellectual Capital—A Framework for Future Management and Reflection	Sanna Mari Alppivuori and Aino Kianto	<ol style="list-style-type: none"> 1. For understanding IC, it is crucial to better acknowledge its individual dimension and to examine it from the perspective of individuals at work 2. This chapter deepens the analysis of individual-level intellectual capital 3. Individual IC (IIC) consists of human, structural, relational, renewal, and emotional intellectual capitals 4. Emotional IC is an important completely new dimension of (I) IC that has been neglected in previous studies 5. Our chapter provides a model that can be used for identifying and assessing IIC 	<ol style="list-style-type: none"> 1. From the managerial perspective, the chapter supports understanding the holistic nature of employee IIC and its contribution to firm-level IC 2. The model presented in the chapter enables an improved assessment of employee IIC in recruitment and personnel development 3. From the employee perspective, the chapter provides a framework for reflecting on one's own IIC
5	The Liability of Tacitness in Intellectual Capital: Overcoming Research Challenges with Grounded Theory Designs	Carla Curado and Tiago Gonçalves	<p>Future IC research should engage in:</p> <ol style="list-style-type: none"> 1. Dense theory development emerging from adequate match of tacit IC research gap-spotting and GT features 2. Theory creation resulting from tacit IC literature review process and data analysis integration supported by suitable GT approaches 3. Tacit IC research coding processes and matching GT approaches promoting theoretical clarification and new theoretical drivers in tacit IC 4. Tacit IC research goals and appropriate GT data coding rationales and thus providing strong theoretical development of the field 	<p>Forthcoming tacit IC practices will offer new support for sustainable competitive advantage:</p> <ol style="list-style-type: none"> 1. Tacit IC governance development in organizations will rise after the identification of emerging types of tacit IC components. The challenges of digital and remote environments for tacit IC management will be softened 2. Tacit IC auditing will flourish when using the appropriate performance measures for tacit IC. The different organizational, ethical, and sustainable options will press the creation of distinct measures 3. Tacit IC retention will result from the finding of adequate strategies and practices to retain tacit IC in organizations, by turning individual forms into collective forms of tacit knowledge. Particular attention should be given to industrial context when designing the strategic actions and management procedures to capture, keep, and develop the maximum value of tacit IC

Part II. Smart Societal Growth: Intellectual Capital in Sustainable Ecosystems

(continued)

Part	Title	Author(s)	Theoretical contributions	Practical recommendations
1	IC as Intellectual Companionship	Günther M. Szogs	<p>1. IC-companionship rediscovers IC as an intellectual attitude beyond IC as a label for a profession</p> <p>2. IC-companionship connects to arts and divers other actors via intrinsic intellectual activity thus enhancing meaningful outcome</p> <p>3. IC-companionship uses humanistic holistic sources to reconnect research with others not just as quantitative add-on but as qualitative integral transformation</p>	<p>1. IC-companionship is as well IC compassion-ship. It focusses on interdependencies of disciplines and areas of interconnectivity like SDG 17</p> <p>2. IC-companionship adopts, reinforces, and adjusts IC navigating tools like intellectual balance sheets not for static mechanical comparisons but for interactive monitoring of well-balanced societal innovation</p> <p>3. IC-companionship honors all necessary intellectual specialization but tries to transcend categories like human, structural, and relational capital to a broader scope of beneficial potentials</p>
2	Sustainable National Intellectual Capital (SNIC) and Its Applications	Carol Y.Y. Lin	<p>1. Proposing an IC ecosystem for a more comprehensive IC field of research</p> <p>2. Conducting interdisciplinary IC research helps tackle problems in an increasingly sophisticated world</p> <p>3. Crossing levels (e.g., organizational IC + national IC) IC studies enables proper context positioning</p>	<p>1. The SNIC model provides a guideline for utilizing SNIC data to enhance national intangible assets</p> <p>2. Government can prioritize and achieve better national investment through SNIC trend analysis</p> <p>3. SNIC trend analysis assists international business to make better international expansion decisions</p>
3	Relevance and the Future of Intellectual Capital Management in the Public Sector	Harri Laihonon and Paula Pusenius	<p>1. In the public sector, IC theory or IC management practices may not only consider the organizational goals of efficiency, cost minimization, or profit maximization; they must also consider aspects such as fairness, accessibility, and benefits to society</p> <p>2. The complexity of the institutional framework compels a change in the unit of analysis in public sector IC management from individual organizations to hybrid networks and ecosystems, combining the IC of public, private, and the third and fourth sectors</p> <p>3. Changes in both the expectations toward public services and the ways of organizing these services call for a more profound understanding of administrative capabilities enabling the accumulation and utilization of IC</p>	<p>1. By systematically managing IC and effectively leveraging intangible resources, public organizations can enhance their capability to address societal challenges and deliver valuable services</p> <p>2. Public organizations can play a decisive role as platforms or ecosystems pooling national, regional, and local IC to enhance collaboration and create public value</p> <p>3. There are many IC management frameworks, practices, and tools available for the use of public managers to explore and develop administrative capabilities</p>

Part	Title	Author(s)	Theoretical contributions	Practical recommendations
1	Intellectual Capital and the Era of Raising AI	Bror Salmelin	<p>1. The focus in this chapter is to give a snapshot on the challenges intellectual capital and fast developing AI bring to organizational operations. Knowledge management is the key when building intellectual capital, and AI leads to high risks in developing the structural, human, and relational capital. The corruption of information together with deepfake technologies sets high demand on understanding and developing and protecting the IC assets and use of them in any organization</p> <p>2. It is essential to interlink the different functionalities and relationships between these components of the IC when AI enables harvesting of large amounts of information faster, but with quite poor quality control of the output, and also the relational capital being jeopardized by new AI-based application which enables, e.g., deepfake connections</p> <p>3. From a theoretical perspective, we need methods to assess the risks of poor quality information and connections and to ensure where possible to use high-quality data, often internal to the organization to teach the AI system and users. This will lead to the immediate need of new skills in any given organization using AI tools</p>	<p>1. AI develops fast, and to have organizations grow into the use of it requires a clear development strategy for the take-up. When we understand the operative principles of AI systems and tools, we simultaneously will understand the role of verifying the quality of the AI implies in IC of organizations, being a powerful tool to speed up the processes of using the multilayer IC in a safe(r) manner</p>

(continued)

Part	Title	Author(s)	Theoretical contributions	Practical recommendations
2	From a Data-driven to Information-driven Management Paradigm: Reflections on Generative AI and Intellectual Capital Management	Henri Hussinki and Josh Morton	<p>1. Gen AI is a catalyst in IC value creation, contributing to the organization's IC and augmenting the organizational capabilities to efficiently utilize its intellectual capital, drive its key processes, and create value</p> <p>2. Structural capital has an emphasized role in the information-driven paradigm, as organizations can process all their accumulated text-based data and augment their human and other organizational capabilities with Gen AI</p> <p>3. Gen AI enables an organization's personnel to know everything about an organization's proprietary information through this new technology, bolstering its human capital</p> <p>4. The emergence of Gen AI is likely to affect the relationships through which organizations access and gather information from extra-organizational sources. However, information accessed through customers, suppliers, distributors, partners, supply chains, markets, and so on will remain at the core of an organization's relational capital</p>	<p>1. Organizations must identify and harness their critical human, structural, and relational capital resources for the proprietary Gen AI model, as the technology itself cannot integrate to these key organizational resources</p> <p>2. Efficient Gen AI utilization sets demand for new employee skills, such as information engineering for Gen AI specialists and Gen AI literacy for all employees, having implications for human capital management. For instance, organizations should develop and retain the ambidextrous experts who possess a deep understanding of this new technology and the context in which Gen AI is used</p> <p>3. Contemporary, information-driven organizations seek actionable insights from unstructured data, such as text documents created by humans or information systems. This emphasizes the role of controlled generation of new information and the design and maintenance of adaptable information systems</p> <p>4. Gen AI value creation requires collaboration between the context experts who can identify valuable information and the Gen AI experts who can establish robust data pipelines and information system architectures that enable the efficient collection, cleaning, storage, and use of relevant data</p> <p>5. Organizations should be prepared to participate in the emerging market of commercialized information products and services, whether it is in the form of a provider or customer</p>

(continued)

Part	Title	Author(s)	Theoretical contributions	Practical recommendations
3	IC Related Risks and AI—Friends and Foes!	Susanne Durst	<p>1. This chapter advances intellectual capital (IC) theory by stressing the relevance of considering positive and negative risks associated with the three IC dimensions</p> <p>2. The risks associated with human capital (HC), structural capital (SC), and relational capital (RC) are presented with regard to the increasing use of artificial intelligence (AI)-based tools and are embedded in a small firm environment</p> <p>In particular, the IC theory for small companies is strengthened and expanded</p> <p>3. Looking at risks from both the positive (opportunity) and the negative (threat) side and AI as a complementary resource and as a substitute enables a more differentiated understanding of IC in general and its most important dimensions</p>	<p>1. This chapter advances intellectual capital (IC) practice by stressing the relevance of considering positive and negative risks associated with the three IC dimensions</p> <p>2. The risks associated with human capital (HC), structural capital (SC), and relational capital (RC) are presented with regard to the increasing use of artificial intelligence (AI)-based tools and are embedded in a small firm environment</p> <p>3. Viewing AI from the perspective of a complementary resource and a substitute opens up scope for different IC practice</p> <p>4. The results could help decision-makers in smaller companies to better understand the importance of rigorous IC management in order to be better equipped for current and future change and adversity. This in turn could improve IC practice</p>

Part IV: Reenvisioning Intellectual Capital: Rethinking Economic Models, Value, and Progress in the Knowledge Era

(continued)

Part	Title	Author(s)	Theoretical contributions	Practical recommendations
1	Considerations Towards the Development of a Foundational Theory of Intellectual Capital	Anthony K.P. Wensley and M. Max Evans	<p>1. Currently there is no foundational Theory of Intellectual Capital (IC). However, research in IC, Knowledge Management (KM), and Economics (i.e., Theories of the Firm) demonstrate important considerations that need to be reflected on in the development of such a theory. Presently no theory adequately incorporates the varied characteristics of organizational knowledge or the rich variety of organizational forms that create, manage, and share IC</p> <p>2. At present, there is no adequate theory that explains the process by which organizational knowledge underpins the creation of organizational value. This is largely rooted in an inability to fully operationalize and measure organizational knowledge or IC. Ultimately, this makes it difficult to establish the relative importance of individual sub-components of IC or explain how they influence organizational performance. To develop a theory of IC, it will be necessary, at minimum, to be able to articulate the manner that IC and its subcomponents create value in any organizational setting</p> <p>3. Any theory also must be able to provide an explanation for the multiplicity of organizational forms involved in the creation, sharing, and articulation of IC and provide some explanation/ prediction with respect to their evolution</p>	<p>1. It is important to systematically revise knowledge and remove inaccurate and false knowledge. This works best when the organization has a culture where continual questioning is encouraged because organizational knowledge needs to be recognized as being uncertain, revisable, and even false</p> <p>2. There is a need to look to the future to identify organizational knowledge needed for operational and strategic planning, especially knowledge that is not currently possessed. One of the best ways to do this is to recruit individuals who have general organizational knowledge and specific domain knowledge (when it can be identified). If one element is missing, provide them with an environment which proactively encourages them to acquire the skills. A proactive environment will be one that combines appropriate values, rewards, and infrastructure for them to be successful. Increasingly they should become better judges of what skills to develop and what knowledge to acquire and share</p> <p>3. There is a need to create a culture where the value of existing knowledge is constantly reviewed in the light of changes in the micro- and macro-organizational environments</p>

(continued)

Part	Title	Author(s)	Theoretical contributions	Practical recommendations
2	Futurizing Intellectual Capital: New Economic Models and the Venue of AI Requests for an Update	Günter Koch	<p>1. ICR taking into account Natural Capital Accounting (NCA) as a source of additional financial and non-financial data to be entered in an ICR</p> <p>2. Open question if objects generated by an AI system/AI algorithms are to be valued as knowledge objects and in case they are: how will they be emancipated to be entered in an ICR?</p>	<p>1. Alternative economics models</p> <ul style="list-style-type: none"> – Degrowth (or post-growth) economy: proponents argue for a shift toward sustainable and equitable forms of economic organization that prioritize human well-being and ecological sustainability over GDP growth – Solidarity Economy: emphasizes solidarity, cooperation, and social justice as central principles for organizing economic activities – Economy for the Common Good (ECG): redefining the goals and metrics of economic activity to prioritize the well-being of people and the planet over mere financial profit. The ECG offers a reference model motivating enterprises ethical enterprise mgt <p>Conclusion: none of these models will replace the currently predominant “capitalistic model” in a near future</p> <p>2. The two dimensions of any model as required by Europe’s Green Deal</p> <p>Green Deal and “Double Materiality”: It emphasizes the interconnectedness of financial performance (financial materiality) and environmental, social, and governance (ESG) factors (non-financial materiality)</p> <p>3. Natural Capital Accounting</p> <p>Natural Capital Accounting (NCA) as defined in ISO 14054 involves incorporating the value of natural resources and environmental impacts into the financial accounting of companies</p>

(continued)

Part	Title	Author(s)	Theoretical contributions	Practical recommendations
3	The Future of Intellectual Capital in the Era of Artificial Intelligence: Analysis from the Perspective of Value Creation	Ante Pulic	<p>1. IC is placed in a new theoretical framework. Namely, there was no place for IC in the mainstream economy, either at the micro- or macro-level. This new environment represents Complexity Economics, which in all its characteristics corresponds to what IC is. On the other hand, treating IC as an integral part of that contemporary economic framework not only complements Complexity Economics but becomes its driving force</p> <p>2. What can be called “capital” is precisely explained. Only that which fulfills three conditions: that it is measurable, that it can be expressed in money, and that it can be collateral</p> <p>3. Division of SC into passive and active parts. In the following years and especially in the next decade, AI will be increasingly used in business, so it is very important to monitor its role in value creation. It is precisely the division of structural capital into passive and active parts that opens up the possibility of calculating AI’s contribution to added value</p>	<p>1. Measurement of HC efficiency in processes. This is essential for wider application in practice and increasing business efficiency. The level of business processes is crucial in the analysis of value creation because business processes are the place where value and entropy are created</p> <p>2. Introducing the concept of entropy into everyday business. Namely, entropy is all around us; it accompanies us even when we cook dinner and when we drive a car. That is why it is important to know that he is with us in business as well. You should have knowledge about the level of entropy in business processes and the company in order to increase the responsibility of management</p> <p>3. Treatment of gig and freelance work. Now this type of work is treated as a cost, so it does not enter into the added value even though it creates it. This creates the wrong picture of the achieved business efficiency, i.e., it shows it higher than what it would be if it were treated as HC. That is why expenses for gigs and freelance work should be treated as temporary HC of the company</p>

(continued)

Part	Title	Author(s)	Theoretical contributions	Practical recommendations
4	Effective Intellectual Capital Management as the Enabler of Future Value and Success in a Knowledge Economy	Stefan Güldenber	<p>1. This paper aims to challenge our outdated and backward-looking understanding of value and success by linking the IC framework with the attention-based view of the firm, system dynamics, organizational learning, and sensemaking</p> <p>2. Organizations exist today not because they are more efficient than the market but because they are more intelligent. Intelligent organizations therefore attract intelligent people, which ideally increases the overall organizational intellectual capital</p> <p>3. In intelligent organizations, in contrast to traditional industrial organizations, almost every employee is directly or indirectly involved in the decision-making process. Therefore, in contrast to the past, the strategy must also be communicated to all these employees. This places enormous demands on strategic performance measurement and control</p> <p>4. This contribution tries to redefine strategic performance management for today's companies as a central component of strategic thinking, learning, and action in a knowledge economy. In doing so, the weaknesses of financial performance measurement tools have been outlined, and the need for action toward IC measurement and management has been highlighted. At the same time, the limitations of existing IC measurement frameworks have been critically discussed</p> <p>5. In a nutshell this contribution develops a research agenda of IC measurement and management based on a system dynamics perspective</p>	<p>1. A mindshift among our leaders is needed: Intellectual capital measurement and management require an important mindshift of our leaders from a backward to a forward-looking approach, from a focus on financial metrics to non-financial metrics, from a view of the organization as a money-making machine to a view of the organization as a brain and living organism</p> <p>2. At the core of IC measurement and management systems lies the idea to develop a strategic map that shows the path to be taken into the future and at the same time provides orientation for all stakeholders</p> <p>3. As a conclusion five principles have been proposed that should guide the implementation of IC measurement and management tools in order to improve the existing strategic performance management in organizations</p> <p>4. Properly applied, IC can not only help to accelerate the necessary sustainable transformation of our businesses and society but also redefine what we teach in business schools about corporate value, role models, and successful careers for the next generation</p> <p>5. If we stop defining value and success in financial terms only, we will open the doors to many more opportunities to shape our own destiny and the future viability and resilience of organizations and our society at large</p>

(continued)

Part	Title	Author(s)	Theoretical contributions	Practical recommendations
5	Being Critical About Intellectual Capital in 2024: Chocolate as a Manifesto for Social Change	John Dumay	1. Provides a case study based on fifth-stage IC research that shows how research is worthwhile and connected to improving society and the environment 2. Questions the morality of the shared value business model 3. Demonstrates how researchers must consider the three traditional IC elements alongside financial, manufactured, and natural capital to form a more complete analysis of a particular context	1. Demonstrates how emphasizing financial capital above other capital can have a detrimental effect on human and natural capital 2. Demonstrates how financial capital is not equitably shared using the shared value business model due to the excess power of companies over individuals (farmers) in the supply chain 3. Demonstrates how it is possible to change business models to positively impact people's lives (human capital) and the environment (natural capital), and this is certainly worthwhile

References

Alvino, F., Di Vaio, A., Hassan, R., & Palladino, R. (2021). Intellectual capital and sustainable development: A systematic literature review. *Journal of Intellectual Capital*, 22(1), 76–94.

Anderson, M. H., & Sun, P. Y. (2017). Reviewing leadership styles: Overlaps and the need for a new ‘full-range’ theory. *International Journal of Management Reviews*, 19, 76–96.

Bratianu, C. (2023). Knowledge dynamics: Exploring its meanings and interpretations. *Management Dynamics in the Knowledge Economy*, 11(2), 100–111.

Brown, M. E., & Treviño, L. K. (2006). Ethical leadership: A review and future directions. *The Leadership Quarterly*, 17(6), 595–616.

Cabrilo, S., & Dahms, S. (2018). How strategic knowledge management drives intellectual capital to superior innovation and market performance. *JKM*, 22(3), 621–648.

Edvinsson, L., & Malone, M. S. (1997). *Intellectual capital: Realizing your company's true value by finding its hidden brainpower*. Harper Business.

Huizinga, J. (1938/1998). *Homo Ludens: A study of play-element in culture*. Taylor & Francis.

Januškaitė, V., & Užienė, L. (2018). Intellectual capital as a factor of sustainable regional competitiveness. *Sustainability*, 10(12).

Kianto, A. (2007). What do we really mean by the dynamic dimension of intellectual capital? *International Journal of Learning and Intellectual Capital*, 4(4), 342–356.

Kianto, A., Cabrilo, S., & Hussinki, H. (2023). Futurizing the intellectual capital theory to uncover pertinent and unexplored horizons. In C. Bratianu, M. Handzic, & E. Bolisani (Eds.), *The future of knowledge management: Reflections from the 10th anniversary of the International Association of Knowledge Management (IAKM)* (pp. 67–90). Springer.

Kumar, S., Sahoo, S., Lim, W. M., Kraus, S., & Bamel, U. (2022). Fuzzy-set qualitative comparative analysis (fsQCA) in business and management research: A contemporary overview. *Technological Forecasting and Social Change*, 178. Article 121599.

Neck, C., & Houghton, J. (2006). Two decades of self-leadership theory and research, past developments, present trends, and future possibilities. *Journal of Managerial Psychology*, 21(4), 270–295.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14–37.

Nonaka, I., Toyama, R., & Konno, N. (2000). SECI, Ba and leadership: A unified model of dynamic knowledge creation. *Long Range Planning*, 33(1), 5–34.

- Ragin, C. C. (2008). *Redesigning social inquiry: Fuzzy sets and beyond*. University of Chicago Press.
- Sveiby, K. E. (1997). *The new organizational wealth: Managing & measuring knowledge-based assets*. Berrett-Koehler Publishers.
- World Economic Forum. (2023). The future of jobs report.

D.Sc. Aino Kianto is Full Professor of Knowledge Management at the LUT Business School, Lappeenranta-Lahti University of Technology (LUT), Finland. She is the leader of the LUT Knowledge Management Team, one of the world's leading academic laboratories working on knowledge-related management topics and executing the Master Programme on Knowledge Management and Leadership since 2001. Prof. Kianto's research focuses on knowledge management, intellectual capital, innovation, resilience, and organizational renewal. Her research on these topics has been published widely and acknowledged with several international awards. Her papers have appeared in, for example, *Journal of Business Research*, *Technovation*, *R&D Management*, *Human Resource Management Journal*, *Journal of Knowledge Management*, *Journal of Intellectual Capital*, and *Accounting, Auditing and Accountability Journal*. Prof. Kianto has delivered keynote speeches and acted as a track chair in many international conferences and currently serves in the editorial board of four academic journals. She promotes the transfer of research-based insights to work life by collaborating with companies and public organizations in research projects and consulting, press interviews, lectures in industry events, and teaching MSc and MBA courses. In the intellectual capital field, she is especially known for advancing the dynamic dimension of intellectual capital and her studies addressing the intersection of intellectual capital and knowledge management, innovation, and organizational performance.

D.Sc. Sladana Čabrilo is a Full Professor of Management in the Department of International Business Administration, I-Shou University, Taiwan. She holds degrees in technology, engineering, and management from the University of Novi Sad, Serbia. Her research focuses on intellectual capital, knowledge management, innovation, digital transformation, and international business. She published in highly ranked journals such as *Journal of Business Research*, *Industrial Marketing Management*, *European Management Review*, *Management Decision*, *Review of Managerial Science*, *Journal of Intellectual Capital*, and *Journal of Knowledge Management*. Her experience includes participation in scientific and industry-related projects; publishing academic articles, books, and book chapters; holding lectures and presentations worldwide; and serving on editorial boards of academic journals and conferences. She is known in the field of intellectual capital for insights from emerging economies and recently for using complexity theory, configurational analysis, and fuzzy set qualitative comparative analysis (fsQCA) techniques to uncover complex relationships and patterns between intellectual capital and organizational performance. Her research has been awarded and recognized as "most prestigious across knowledge clusters" in ranked journals. Through her work she contributed to both academic literature and practical applications, offering insights that help knowledge-intensive organizations navigate the challenges of the digital age.

D.Sc. Lina Užienė is an Associate Professor at Kaunas University of Technology (KTU), School of Economics and Business, Lithuania. She holds a PhD in Business and Administration from Kaunas University of Technology. Her scientific research focuses on intellectual capital, knowledge management, digital transformation, societal innovation, and national policy development based on efficient management of intangible resources and innovation-oriented infrastructures. She acts as a national and international expert on knowledge and intellectual capital management. She is an author of numerous academic publications, a consultant, a research project manager, and

a speaker to promote the knowledge economy and intellectual capital development via public forums and platforms. She is the vice president of The New Club of Paris which is an agenda developer for the knowledge economy in Europe and worldwide aiming to support nations, cities, communities, and organizations in their transition into a knowledge society. She is also a member of different scientific committees and bodies responsible for the development of methodologies and the transfer of knowledge from educational systems to business practice. Her recent research and consulting activities focus on emerging technologies, societal transformation, and the development of ecosystems based on intellectual resources and innovation.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

