

HUMAN CAPITAL AND ASSETS IN THE NETWORKED WORLD

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Edited by

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INVESTOR IN PEOPLE

This book is dedicated to my wife Fay, whose continuous unconditional loving support is a daily miracle and without whom the search for a better human condition would have been a lonely and cold journey.

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He joined Lakeridge Health Ajax/Pickering (LHAP), formerly known as Rouge Valley Health System, in 1997 and after serving for many years as Chief of Orthopedic Surgery, he has recently taken on the role of Chief of Surgery for the Ajax and Pickering campus. He is also a Consultant Shoulder Surgeon with the Working Condition Program at Sunnybrook hospital's WSIB Shoulder and Elbow program, and co-founder of mySmartSimulations (a US company specializing in simulation-based virtual reality training for healthcare).

Although Stephen's clinical passion has always been Arthroscopic and Reconstructive Surgery of the shoulder, he is also equally passionate about improving the healthcare system through the development of novel models of care.

Stephen's healthcare system learning has been enriched by having been the President of the Ontario Orthopedic Association, a member of the 2008 Ontario Medical Association Negotiations Team and various subsequent trilateral working groups with the

Ontario Ministry of Health (MOH) and Local Health Integration Networks (LHINs). He has also served on Health Quality Ontario's Panel on quality-based procedures for degenerative conditions of the shoulder. Currently he is a provincial clinical Champion and member of two key MOH committees dedicated to improving musculoskeletal access to care for Ontarians. Furthermore, Stephen has co-founded The Shoulder Centre Integrated Shared-Care Network in the Central East LHIN and has overseen its development into one of the three priority MSK models of care for Ontario.

Leire Gartzia, PhD, is Professor of Leadership at Deusto Business School, Spain. She earned a joint European PhD in Organizational Psychology with the Rotterdam School of Management and was a postdoctoral fellow at Northwestern University, USA. She has collaborated as a Visiting Scholar in several research projects about people management at relevant business schools, including the Technische Universität München School of Management (Germany), the Hanken School of Economics (Finland), or the Haas School of Business, University of California, Berkeley. Her research has been recognized by international awards including the Academy of Management Best Paper and the Dorothy Harlow distinction in Gender Studies. Next to her academic activities, Leire Gartzia has combined research with the business world, giving lectures and courses about organizational behavior to employees, managers, and politicians. Her research focuses on organizational behavior and psychology, including topics such as leadership, organizational change/innovation, and gender issues in management.

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Joel Lobo completed his medical school and residency in Orthopaedic Surgery at the University of Toronto, and subsequently, two fellowships: Trauma and Upper Limb Reconstruction and Sports Medicine and Arthroscopy. His current practice at Lakeridge Health, Ajax-Pickering Hospital includes reconstruction of sports-related knee injuries, as well as Arthroscopy and open reconstruction of the shoulder with a special interest in complex shoulder instability and complex rotator cuff surgery. He also serves as an operative consultant for Ontario's Workplace Safety and Insurance Board's Shoulder and

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He is a co-founder of The Shoulder Centre, an innovative central intake and assessment model for shoulder care in the Province of Ontario. He is involved in educational outreach to family physicians, training of Shoulder Champions in the family physician community, development of the electronic referral form for The Shoulder Centre, and the physician lead for the Ajax Pickering Foundation for fundraising activities related to The Shoulder Centre.

His hobbies and interests include woodworking, music, graphic design, coding in JavaScript, electronics, and cooking gourmet food. He is a student of enology and high performance driver education, and an avid fan of professional hockey.

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Federico Niccolini is Associate Professor of Organizational Science at the University of Pisa (Italy). He has been Professor of Organizational Theory and Behavior at the University of Macerata from 2011 to 2015 and researcher from 2005 to 2010. His research interests are focused on protected areas management and organization, organizational dynamics related to sustainable development, organizational vision, and knowledge management. He has been visiting scholar or professor at universities in United States, including Stanford. Since 2007, he has been affiliated with the Department of Natural Resource Recreation and Tourism at the Colorado State University (USA).

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Jesse Slade Shantz is a sports and shoulder surgeon and is a past Chief Medical Officer for OMSignal, a wearable tech company and co-founder of spxtrm, a healthcare tech company. He is interested in applying technology and management principles (Lean, etc.) to create a more patient-centered healthcare system focused on increasing value to users.

As well as holding a medical degree from the University of Western Ontario, with his residency in Orthopaedic Surgery at the University of Manitoba, he completed fellowships in bone biology research and orthopaedic trauma at the University of California, San Francisco, and shoulder and sports at the University of Toronto. His research focuses on technology, simulation and clinical trials. Concurrently, he holds an MBA from the Ivey School of Business. With his cross-enterprise training he advises start-up companies in the digital health field specializing in data use and privacy issues.

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Victoria Choi Yue Woo has 20 years experience in start-ups and international business development, she has experienced and led change efforts, and learned that *Thriving* can become a “normal”

outcome of experiencing change. She lectures at Stanford and UCHastings Law School.

She is an entrepreneurial spirited professional with broad experience in start-ups, global marketing, business development, and executive education. She had primary responsibility for marketing products and services and managing teams in more than 20 countries for technology companies and financial and academic institutions. Eudaimon Inc., her sixth start-up, leverages findings from her doctoral research.

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Daniel J. Worden <ideas@metacogni.com> has gained a wealth of experience working with emerging computer and communications technologies since 1982 and through focusing on their commercialization since 2000. He has published five books on topics ranging from Storage Networks to Java and relational databases. His work has been translated into Chinese and Japanese language versions. Currently, his research interests include smart contracts and provenance using blockchain technologies, as well as leveraging social media to create double loop learning dynamics as an integral part of organizational development and project management.

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The call for chapters for this book challenged the authors to consider the subject of human capital in the networked global economy from the connectionist epistemology of knowledge. The authors were invited to contribute chapters to the book based on proposals approved by the editor. Each complete chapter received external, blind review in addition to the editor review. The editor wishes to thank the Philip J. and Elizabeth Hendrickson Professorship in Business at UW-Green Bay for partial financial support.

INTRODUCTION

The effective employment and deployment of intellectual capital and human assets in organizations are widely recognized as a critical characteristic of successful economies and organizations. Their abilities to respond to changing environments, to “learn,” and to be efficient and competitive all depend, to some extent, on the individuals within their boundaries. It is the management of those individuals and their interactions with other actors and systems, in a way that is consistent with the goals and policies of the entities, that creates value for the organization and results in the creation of human and social capitals as an asset that will be the focus of this book. A number of developments are making human and social assets management and measurement increasingly salient to today’s executives, including changing characteristics of the labor force, the rapid pace and implementation of technological innovation, greater international competition, new experiments with organizational structures, and greater attention to customers’ relationships. Following a recent advanced definition of human and social capitals (among other forms of capital) using information, energy, and entropy, the focus of this book will be on the impact of new technologies (e.g., mobile, blockchain, and Internet of things) on the intersection of human and social capital, being grounded on the ensuing understanding of the importance of information and information processing as well as the perspective of humans as “being their data.” Some of the recent resulting changes are the growth of direct bartering within the social exchange economy (e.g., Collaborative Commons or Sphere of Reciprocity), creation of new alternative currencies (e.g., Bitcoin),

and growth of outsourcing and the “gig” economy. Research needs to be done at the macro, mezzo, and micro level (including multiple levels), from numerous perspectives and disciplines, focusing on different and diverse units of analysis (country, region, organization, groups, and individuals).

This book is going beyond the current literature by providing a platform for a broad scope of discussion regarding human capital and assets, and, more importantly, by encouraging a multidisciplinary fusion between diverse disciplines. Multilevel and multidiscipline chapters are represented, as well as, when appropriate, plurality of empirical methods from diverse disciplines that are enhancing the building of a holistic theory of human capital and assets in the new networked society are reported.

The book’s chapters discuss *human capital* and *human assets* from a **connectionist** (e.g., Russ, Fineman, & Jones, 2010) perspective, focusing on the growing infusion of the traditional human capital and social (e.g., Nahapiet, 2011; Nyberg, Moliterno, Hale, & Lepak, 2014) and knowledge-based systems (e.g., Kasabov, 2015), organizational capital perspectives. The book extends the discussion of the interaction between the three (and other) types of capital among different actors over different time frames (e.g., Wright, Coff, & Moliterno, 2014), assuming that the nature of such interaction is revolutionized; and continuously and dynamically changing resulting from the application of new networked technologies. As such, this book is going beyond the classic network building perspective of using knowledge when the individual, team, and organizations are the unit of analysis. The proposed alternative perspectives are viewing humans alternatively as *homo economicus*, *technologicus* (Puech, 2008), *sustainabilityticus* (Russ, 2014b) or *socialis* (Helbing, 2014), *inforgs* (Floridi, 2014); interacting in a multilevel system which is enabled by the pervasive mobile technologies and the Internets of things and “blockchain” technologies. This book broadens the human capital praxis introduced and used in Russ (2014a, 2014b, 2016),

into the new networked society (e.g., [Floridi, 2014](#)) focusing on definitions, management, value creation, valuation, and reporting of human capital and assets.

Chapter 1, written by Knut Ingar Westeren and titled “Epistemological Perspectives in the Analysis of Human Capital and Human Assets and the Development of the Knowledge-Based Economy,” discusses the use of the three epistemologies: cognitivism, connectionism, and autopoiesis, in the context of knowledge management. The author reviews the use of the three epistemologies in the academic literature and suggests that a combination of the three might be more fruitful while studying different aspects of knowledge management and human capital in the knowledge-based economy.

Chapter 2, also written by Knut Ingar Westeren and titled “Knowledge Transfer Networks, Value Creation, and Cultural Aspects of Industrial Production,” studies knowledge transfer in meat producing firms in five different countries. The author found the connectionist epistemological platform as the most conducive for knowledge transfers in this traditional manufacturing industry, with a characteristic routinization of production. The most effective knowledge shared was typically: short, explicit, logic, and at the equivalent shared knowledge level; when there was shared understating of the operational context, the receiver’s unique situation, the context of cooperation and allowing the receivers a space of finding a new solution when disagreeing with the proposed decision. At the organizational level of analysis, the author suggests that the autopoietic perspective was the most fruitful, when considering that the firm’s organizational system is a quasi-closed system that mainly reproduces itself by sharing knowledge. Finally, the author suggests that productive companies must invest in human capital in order to benefit from the knowledge exchanged.

Chapter 3, written by Daniel J. Worden and titled “Emerging Technologies for Data Research: Implications for Bias, Curation,

and Reproducible Results,” investigates the positive and negative impact of big data and artificial intelligence on how individuals specifically researchers scan their environment. The author considers different biases facing the researcher while scanning the environment and their risks. The use of recently developed tools that employ artificial intelligence (which are based on visualization) and cognitive analytics is demonstrated. The author also revises some of the networked world tools and web services available to researchers. The chapter suggests that such tools can enhance the value of human capital of a researcher, and their productivity by using such tools effectively and efficiently on a continuous basis.

Chapter 4, written by Victoria Choi Yue Woo, Richard J. Boland Jr., and David L. Cooperrider and titled “Thriving Transitional Experiences: Self-knowledge Improvisation and Transformation Quotient in a Highly Dynamic World,” studies the adaptation of individuals to the fast-changing environment. The authors suggest that a transition in life can be viewed in terms of the magnitude of change and the individual’s ontological experience of change. The proposed and studied four-quadrant framework represents different approaches to living in a highly dynamic and complex world. Specifically, the four types of individuals are identified as Survivor Incremental, Survivor Radical, Thriver Incremental, and Thriver Radical. In the chapter, the authors identify social, cognitive, psychological, and behavioral factors that contribute to thriving transition experiences, embracing dynamic stability. The chapter also offers two new constructs: (1) *Transformation Quotient* — measures the receptivity to change and (2) *Thriving Transitional Experiences* — measures the range of responses to transitions from surviving to thriving. The authors use quantitative and a mixed-methods study methodology to examine individual’s responses to life transitions. Finally, the authors suggest that individuals can use the four-quadrant framework to mobilize resources to design a response and hypothesize a

desired outcome, so when facing change they embrace and engage proactively with transitions.

Chapter 5, written by Sukanto Bhattacharya and Michael B. Cohen and titled “Tacit Knowledge and Intra-Firm Teams: Reaping the Benefits of Co-operation in a Networked World,” explores the conditions under which intra-organizational network’s learning might be feasible and successful by using a Monte Carlo simulation model. The chapter’s focus is on sharing tacit knowledge, since, according to the authors, the conditions under which the ability to share this form of knowledge between individuals and/or teams are yet to be understood. The authors frame their study using transaction cost economics, explaining the boundary of the firm, as well as the formation of teams within firms. The simulation examines and demonstrates the effects of costs and benefits that can be expected from “learning” in a multi-team firm. The authors consider for simplicity two extreme scenarios: (1) there is almost no specialization between teams and (2) the specialization is extreme. They conclude that only in cases of very large differences in tacit knowledge between teams is the transfer of such knowledge profitable, and as a rule, the existence of separate silos within firms should not be excluded, since in many cases, the loss in operational efficiency is not offset by the gains from network learning.

Chapter 6, written by Federico Niccolini, Elizabeth B. Davis, Monia La Verghetta, and Valentina Pilotti and titled “Integrating Values, Purposes, and Visions for Responsible Development,” documents a study revealing that knowledge sharing and envisioning processes can have positive effects on human and social capital growth within an international network. The chapter compares the responsible development perspective with the sustainability perspective regarding integrating values, purposes, and visions of organizations in such a context. The authors conducted a study using the “Participatory Action Research” methodology analyzing a process of building a strategic vision within a network of

organizations with the goal of improving their responsible development orientation. Specifically, the implementation of the envisioning process was studied via quantitative/qualitative research tools, confirming the importance of envisioning processes in building social and human capital at the inter-organizational level. The authors also suggest that the relevant “learning-by-interacting” experience can create a growth process for the human and social capital of entire communities. The project was selected as a best practice by a European Union Commission.

Chapter 7, written by Mikel Larreina and Leire Gartzia and titled “Human Capital Gone into the Dark Side: XXI Century’s Financial Centres: Is FinTech a Solution?,” reviews the recent and current challenges of the financial industry from the lens of human and social capital. The authors survey some of the factors that allowed unethical behavior and a short-term financial focus in the financial sector, and exposes, how, in their opinion, the compensation structure and an extremely competitive culture became key elements that favored greedy and manipulative behavior and ultimately generated socially detrimental human and social capital in the financial sector. Finally, the authors suggest that a number of emergent game-changers (e.g., Brexit, FinTech, the growing weight of ethical standards, and the increasing participation of women and millennials in the FinTech industry) might represent an opportunity for change and help restructure and reshape the financial industry.

Chapter 8, written by Farah Nabi, Stephen Gallay, Erik Hellsten, Joel Lobo, and Jesse Slade Shantz and titled “Transforming Shoulder Care with Innovative Networks and Shared-Care Accountability Models,” studies a new model of collaboration in the Canadian healthcare system introduced by The Shoulder Centre (TSC) in Ontario. According to the authors, the TSC is a transformative novelty that addresses the healthcare system’s constraints through the development of an innovative and comprehensive model of care which builds on (1) novel

collaborative and legal partnerships between community providers and the Centre's clinical team, (2) A Patient-Centered Specialty Practice (PCSP), and (3) leveraging existing technology solutions. The collaborative arrangement has transformed the system and the health services by converting service providers into partners with shared accountabilities, ensuing in economic value through human capital optimization and improved system efficiencies through the building of social capital. The authors found that TSC's performance results proved measured system savings, increased patient and provider satisfaction, and targeted knowledge growth. This innovative solution confirms that the healthcare system contains a greater than expected abundance of human and financial resources, if combined appropriately with social capital and supported by legal arrangements to provide access to high quality and timely care without any further system investment. This chapter suggests that with the suited leadership and available legal and organizational space for innovation, the mix of human, social, organizational, and financial capital can be rearranged synergistically benefiting all constituents.

Chapter 9, written by Carolyn M. Youssef-Morgan, Paul P. Poppler, Ernie Stark, and Greg Ashley and titled "Human-Derived Capital: The Search for "Yeti" or an Evidence-Based Approach?," selectively reviews the interdisciplinary literature on exemplars of human-derived capital academic literature. The authors systematically examine specific epistemological strengths, weaknesses, and gaps in academically established theories, measures, and in practices of human capital. Specifically, a multidisciplinary, multilevel, connectionist point of view is utilized by the authors. Their analysis suggests that in many cases the theories and measures are non-binding, non-measurable, idiosyncratic, tautological, and therefore practically impossible to use for any comparative market valuation. The authors conclude that much like "Yeti," the Abominable Snowman whose footprints are everywhere but itself

nowhere to be seen, unfounded assertions of human capital as valuable contributors to strategic success continue to proliferate.

As a solution, the authors present the case for an evidence-based classification system of human-derived capital at the micro-, meso- and macro-levels. Their framework goes beyond static stock models by emphasizing dynamic human-derived capital flows, as well as their within-level and cross-level linkages, all within the context of a modern technologically intensive society that increasingly is networked, fluent with technology and prodigious with social media.

Chapter 10, written by Krishna Priya Rolla and titled “Human Capital: The Mathematics of Measurement!,” systematically reviews the interdisciplinary studies deliberating the challenge of measuring intangibles, specifically human capital. The author makes a concise mention of research precedents, including among others, the Bhutan’s Gross National Happiness and the Cobb-Douglas Model. The author’s intention is to develop clarity of the concept of human capital measurement by systematically analyzing the literature. The author concludes with a number of recommendations for practitioners and academic researchers.

Chapter 11, written by Raphael Bar-El, Ilanit Gaviious, Dan Kaufmann, and Dafna Schwartz and titled “Under-Investments in Innovative SMEs: The Effect of Entrepreneurial Cognitive Bias,” dissents the impact of the CEOs cognitive biases and perception from external financial constraints on innovative SMEs’ growth opportunities. The study proposes that in addition to the shortage of financial capital available to innovative and entrepreneurial SMEs, there exists a twofold problem on the demand side for external financial capital by such companies: the CEO’s over-pessimism and negative cognitive bias. Specifically, the authors find that there is a tendency for these companies to avoid approaching external funding sources, especially ones that gear their investments toward innovation. Also, the authors find a cognitive bias (over-pessimism) affecting the entrepreneurs’ (lack of) demand for

external financing over and above other firm-specific factors. CEO tenure — the study proxy for human and social capital — is significantly lower (higher) in firms that did (did not) pursue external funding. Thus, it seems that the more experience (human capital) the CEO has, the more s/he is aware of the reality of a lack of external funding for SMEs (possibly indicating lack of social capital with financial institutions), which drives the enterprise's human capital to not exert any effort (in approaching sources) that would ultimately prove irrelevant. The authors, using in-depth interviews with the CEOs of 115 SMEs, also document a negative impact for this finding resulting in under-investment in the company at the microlevel and the macro-level, due to under-realization of the potential for employment, productivity, and growth of the SME firms. Finally, the study also illuminates market failures that are associated with the demand side of external financial capital and encourages creation of policies aimed at encouraging SMEs to make use of different supply options, including more advanced tools such as VCs, mezzanine, or crowd financing, to complement policies directed toward the supply side of financial capital. This final chapter in the book is an illustrious example of using a multi-disciplinary approach, combining micro-organizational behavior and financial analyses and utilizing the cognitivist research paradigm.

As the reader can see, the chapters apply diverse epistemologies (and sometimes a mix of them); a very diverse set of research methodologies, covering multiple units of analysis and industries and responding to a very broad scope of research questions, from very basic ones, such as do we need human capital as a construct at all, to very practical and operational ones, such as the role of knowledge transfer in meat processing firms. Regardless, the intersection of human and social capital and the growing role of technology should be obvious to the reader. Their synergies will only become more important in the near future.

I hope you will enjoy reading the chapters and use them in your research as I enjoyed editing it.

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