Introduction and a Holistic Framework for Human Capital

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ABSTRACT

The chapter will frame the discussion of human capital by providing a general, brief introduction to the new knowledge-based economy. This will be followed by an introduction to human capital providing a holistic framework for the study of human capital, including a praxis based framework, taxonomy, dimensions and paradigms, and will conclude with a new definition of human capital based on information, energy and entropy. This will be followed by the introduction to the twelve chapters introduced in this book, originating from different disciplines, industries, countries and using different research traditions and methodologies. Finally, the holistic framework introduced will be used to categorize the chapters and case studies.

INTRODUCTION

The new knowledge-based economy, globalization and the unrelenting stream of technology-driven revolutions are creating a society and an economy unlike anything else the human race has ever faced (e.g., Arora & Gambardella, 1994; Leydesdorff, 2006). The mid-1980s (several experts from different perspectives identify slightly different points in time) are characterized by knowledge, which is a very unique production factor and product, becoming a major factor in the global economy (e.g. Russ, 2014a). In this new knowledge-based economy, a number of trends are making the management and valuation of human capital and assets both increasingly significant and challenging for academics and business executives. These trends include the changing characteristics of the labor force, experimentation with new organizational structures, the greater attention to customers’ relationships, the rapidly growing pace of technological innovation, and greater international competition (e.g. Russ, 2014a). From the macroeconomic perspective, the prominence of human assets might be even more significant. According to some estimations, more than 80 percent of the economies of developed countries (at the end of the twentieth century), as measured by their gross domestic product (GDP) are intangibles (Nakamura, 2001), and become the prime systematic source of economic growth (Corrado & Hulten, 2010). Still, the present accounting and legal systems in those countries marginally recognize the value of intangible assets (Corrado, Hulten, & Sichel, 2009). Such marginal ability of the financial markets to recognize and monetize human assets results in major market failure. For example, one of the least studied (and
Introduction and a Holistic Framework for Human Capital

practiced) subjects in the academic and practitioner human capital literature is that of risk and insurance (Hartog, Ophem, & Bajdechi, 2007). Given that companies or individuals presently cannot monetize knowledge as an asset and companies cannot “own” human capital, even though they may “lease” it (Lev & Schwartz, 1971), what form of insurance can they use to monetize the risk of damaging the value of the human capital they have (Jaaskelainen, 2011; Mäenpää & Voutilainen, 2012; Ostaszewski, 2003)? Some researchers recently proposed (e.g., Lambrecht & Pawlina, 2013) that a large number of firms are utilizing cash (or negative debt) as an insurance policy to shield themselves from losing transferable (i.e., not company-specific) human capital, and since more and more of the knowledge presently created (due to the prominence of the Internet and social media) is transferable, the volume of cash accumulated by companies is mounting, also resulting in minimal hiring and investing. Berk, Stanton, and Zechner (2010) and Pratt (2011) suggested that due to the need to insure firm-specific knowledge assets (due to lack of formal insurance alternatives), firms are using less financial debt, resulting in slower growth. If this hypothesis can be supported, it can explain why American companies are retaining trillions of dollars in cash (Sánchez & Yurdagul, 2013) while abstaining from investments and from hiring new full-time employees. This may also explain why financial markets are providing minimal returns on financial and capital assets and searching for new sources of income and for new opportunities for value monetization. Augmenting the above mentioned perspective, research also proposes that financial capital and cost of labor, as resources, combined, account for only 14% of economic growth (referenced in Rifkin, 2014; Abramovitz, 1989). The accompanying 86% are explained by energy (Ayres & Ayres, 2010) and knowledge-human capital, which currently are not reported and/or depicted directly by the financial markets as assets. The increasing national debt, as well as the rising velocity of economic bubbles and the more recent data about the extremely high and still growing level of economic and educational inequality, and the high level of unemployment and underemployment, especially among the younger demographics, among others, suggest a desperately needed solution for this major market failure (e.g., Kümmel, 2011, p. 172; Piketty, 2014; Rickards, 2014; Rifkin, 2014).

In the rest of this introductory chapter I intend to offer some first steps to finding a comprehensive solution to these issues. I will begin with a discussion of human capital, presumably, the most important asset organizations have, and discuss a proposal for an updated taxonomy and dimensions for and of human capital. This will be followed by a discussion of the leading research paradigms governing the study and thinking in the praxis of human capital. Next, I will use information theory and entropy to define capital, and specifically, I will include a recently proposed new definition of human capital. Finally, I will briefly introduce the chapters in this book.

INTRODUCTION TO HUMAN CAPITAL

Organizations and their leaders acknowledge that the decisive source of sustainable capabilities, competencies, and competitive advantages, is their ability to attract, develop, manage, and retain their human capital and talent. The effective and efficient placement and engagement of human assets and intellectual capital in organizations is commonly recognized as a vital characteristic of striving organizations. Their capacities and capabilities to learn and respond to the rapidly changing environments, and to be effective, efficient and competitive depends to a significant degree on the individuals within their boundaries. The management and leading of the organization and its associates in a way that is congruent with the
short and long term goals of the organization and that creates value for its stakeholders will result in the
development of human capital as an asset (e.g., Colvin, 2010; Russ, 2014a).

The study of human capital and assets was initiated in economics (Becker, 1962, 2009; Fisher, 1906;
Romer, 1989; Schultz, 1961; Smith, 1776) and was later progressed by accounting, human resources,
behavioral perspectives, and management, among many other disciplines (Lev & Schwartz, 1971; Snell
& Dean, 1992; Wright, McMahan, & McWilliams, 1994). As a multilevel construct that is researched
from multiple perspectives (Coff & Kryscynski, 2011; Ployhart, Nyberg, Reilly, & Maltarich, 2013),
and notwithstanding its decisive importance, it should not be a surprise that there is no consensus on the
definition of human capital (e.g., Mahroum, 2000; Russ 2014a) or on the methods to value, measure,
and report it (e.g., Gavious & Russ, 2009) at the organizational level of analysis. Regardless, most of
the researchers and writers agree that human capital is characterized by the aggregation of investments in
endeavors, such as education, health, and on-the-job training that enhance an individual’s productivity
in the organization and/or in the labor market.

HUMAN CAPITAL AND ASSETS: NEW RESEARCH FRAMEWORK

To respond to the above challenges a comprehensive new research framework was recently proposed
emerging from the study of human capital praxis, taxonomies, dimensions, paradigms and indicators
(Russ, 2014a).

Human Capital Praxis Framework

The two books about human capital I recently edited (Russ 2014a; Russ, 2014b) go beyond the current
literature by providing a platform for discussion that broadens the scope of human capital and assets
type building and encouraging a multidisciplinary fusion between diverse disciplines. This approach
should be conducive to breaking the silos between the traditional academic perspectives and sponsor-
ing the development of a new research paradigm. The framework (see Figure 1) assumed for the books1
shapes their content around five major topics grounded in the praxis of human capital and assets while
offering an opportunity for triangulation to study human capital and assets issues from diverse academic
traditions, perspectives, and theories. The focus on the praxis of human capital recognizes the radical
difference between data and metadata (or what others call data and information) and knowledge (See
also Biggiero, 2007, Russ, Fineman, & Jones, 2010); allowing for the dynamic, nonlinear value creation
activities of autopoietic actors to take a center stage (see more below). The five issues are as follows:
definitions, origins; management; valuation, risk; value creation; and reporting, signaling.

Definitions, Origins

As mentioned earlier, there is no single accepted and shared definition for human capital. Different
academic traditions and perspectives have different definitions and use different methodologies, adopted
by different research paradigms (see discussion below) for the study of human capital and assets. As
such, it is a critical first step in any study that the definition and perspective used by the authors will be
clearly delineated.
Introduction and a Holistic Framework for Human Capital

Management

Human capital management has a number of alternative definitions and scopes, and some are broader than others (e.g., Baron, 2007). In the books (Russ 2014a; Russ, 2014b) I used an assiduously asserted definition, one that comprised the operational (e.g., recruiting, acquisition, retaining), cultural (e.g., rewarding), and developmental (e.g., training) aspects of human capital management and the alignment (e.g., planning, leading, implementing) among the different facets of management for present and future value creation (Hayton, 2003; Van Marrewijk & Timmers, 2003), as well as employment relationships and human resource configurations (Lepak & Snell, 1999).

Valuation, Risk

The scope of human capital valuation and risks concentrates on examining and assessing the financial value of, and the liabilities and risks conjoined with: the value of human capital and assets, the effect that nonfinancial qualities of human assets as antecedents have on financial valuations, the consequences that the lack of standardized financial measures has on the workforce and financial outcomes, and the potential for insurance coverage (e.g., Fulmer & Ployhart, 2014; Garcia-Parra, Simo, Sallan, & Mundet, 2009; Jaaskelainen, 2011; Mäenpää & Voutilainen, 2012; Ostaszewski, 2003).

Value Creation

The scope of the value creation facet of human capital converges on distinctive attributes and qualities of the process and content of organizational learning as the antecedents of value creation. Examples include internal and/or external processes of learning, exploitative and explorative practices, positioning
in networks, and the use of social capital for learning and value creation outcomes (e.g., Kang, Morris, & Snell, 2007; Lepak, Smith, & Taylor, 2007; Martín-de Castro, Delgado-Verde, Amores-Salvadó, & Navas-López, 2013).

Reporting, Signaling

The scope of the reporting, disclosure, and signaling aspect of human capital (as complementary but different from valuation) contemplates on human capital qualities and attributes reported and their outcomes and trends (e.g., Abeysekera & Guthrie, 2004; Abhayawansa & Abeysekera, 2008; Gamerschlag & Möller, 2011; Lin, Huang, Du, & Lin, 2012); stimuli that support and hinder, and the advantages and disadvantages of disclosure (Samudhram, Sivalingam, & Shanmugam, 2010); different channels and platforms applied for disclosing human capital (e.g., Bozzolan, Favotto, & Ricceri, 2003; Cormier, Aerts, Ledoux, & Magnan, 2010; Kent & Zunker, 2013); and finally, the benefits, costs, and characteristics of human capital signaling, and their association with human capital reporting (e.g., Lang & Siniver, 2011; Lee & Yoo, 2013; Weiss, 1995).

Taxonomy of Human Capital

Next, let us discuss the proposed (Russ, 2014a) taxonomy of human capital (see Figure 2) and begin our discussion with two fundamental dimensions: uniqueness and value (e.g., Chen & Lin, 2004), ensuing in four quadrants. Using this composition, we can distinguish between personnel who have low and high uniqueness (to the firm and/or to the market) and low and high value (to the firm and/or to the market), which could suggest that not all employees of the firm should be seen as alike internally (to the firm) and/or externally (by the market). I identified the low-uniqueness/low-value cell as routine labor; the high-uniqueness/low-value cell and the low-uniqueness/high-value cell as skilled labor; and the high-uniqueness/high-value cell as talent (see more in Russ, 2014a). Two additional dimensions should be added to the framework in regard to the value of human capital. The third dimension is the specificity of the knowledge: Is the knowledge held by the employee firm-specific or transferable (e.g., Ployhart, Nyberg, Reilly, & Maltarich, 2013)? The last and fourth dimension is the perspective of the observer: Is the perspective (or the “market”) internal to the firm or external to the firm (e.g., Bidwell & Keller, 2014)?

Applying the dissimilarities between employees that have low and high uniqueness and low and high value (to the firm and/or to the market), as well as high and low uncertainty and risk, suggests that not all employees of the firm should be seen internally (to the firm) and/or externally (by the market) as undifferentiated (e.g., Chen & Lin, 2004) and tenders that some employees should be considered and reported as an asset and some as an expense or liability, thus questioning the effort for a uniform accounting treatment of such assets. This framework could also be used to frame the discussion within the human capital and assets literature regarding the different aspects and implications of value creation versus appropriation (e.g., Bowman & Swart, 2007; Carpenter, Sanders, & Gregersen, 2001), as well as that regarding the valuation of human capital (e.g., Eaton & Rosen, 1980; Eiling, 2013; Fulmer & Ployhart, 2014; Levhari & Weiss, 1974) and the potential for insurance coverage (De Santis & Giuliani, 2013; Garcia-Parra et al., 2009; Harvey & Lusch, 1999; Jaaskelainen, 2011; Mäenpää & Voutilainen, 2012; Ostaszewski, 2003).
Dimensions of Human Capital

I also proposed to add four supplementary dimensions (see Figure 3), combining time (short, mid, and long term), uncertainty (low and high), risk (low and high), and the degree of asymmetry of information (low and high) between actors (Russ 2014a).

First, the transforming nature of knowledge and the tightening half-life of knowledge supporting the value of human capital and assets must be captured by the examination of human capital and assets stressing the importance of time, time flow, and time horizon (Russ, 2010). Next, the two dimensions of uncertainty and risk are associated but very different (Jarvis, 2011; Knight, 1921; Langlois & Cosgel, 1993) and both should be included. If the tightening half-life of knowledge and the accelerated pace of change in the economy matter, ensuing higher uncertainty, then uncertainty as a dimension must be encapsulated as framing the discussion about human capital and assets (Alessandri, Ford, Lander, Leggio, & Taylor, 2004; Eaton & Rosen, 1980; Fama, 1977). Similarly, the importance of the asymmetry of information and its impact on risk is broadly accepted in economic investment, agency theory, theory of the firm, and other economic literatures, and its bearing on the diverse talent markets (executives vs. performers) cannot be overstated (Levhari & Weiss, 1974; Miller, 1977; Sapienza & Gupta, 1994). Finally, particularly for human capital valuation purposes, the tools offered by “real options” and game theory sanction the consideration of the listed four additional dimensions for valuation purposes.3

Human Capital Paradigms

Three major paradigms are presently well accepted in the academic literature as framing the study of human capital, knowledge, and knowledge management: the cognitivist, the connectionist, and Maturana and
Varela’s (1980) autopoiesis (e.g., Jelavic, Tan, & Nya, 2011; Magalhães, 2004; Russ, Fineman, & Jones, 2010). An extended, multilayered, transdisciplinary perspective of autopoiesis was added by Luhmann (1986, 1987), which recently was embraced into the study of management (Seidl, 2004), knowledge management (Vines & Hall, 2011), and information theory (Di Prodi, 2012) academic literatures. These four paradigms could be categorized into the following three dimensions (see Figure 4): (a) single-actor (e.g., Bertrand & Mullainathan, 2001) versus multi-actor (e.g., Currid-Halkett & Ravid, 2012), (b) open (e.g., Cornelissen, de Jong, & Kessels, 2012; Katz & Kahn, 1978; Koskinen, 2013) versus operatively closed (e.g., Blyler & Coff, 2003; Seidl, 2004) systems, and (c) the linear systems theory (e.g., Weiss, 1995) versus the dynamic systems theory (e.g., Hazy, 2012; Schneider & Somers, 2006).

Diverse academic perspectives, while studying human capital and assets, are applying various paradigms to frame their theories and research, while other academic perspectives use them consistently and systematically over the years (e.g., the economic, financial, and accounting perspectives). Some perspectives are transitioning to different paradigms (e.g., organizational behavior, human resources) and are even changing their units of analysis and their relevant measures.¹

### Challenges and Dilemmas

I recently suggested that the current state of the human capital praxis is posing three major challenges and four major dilemmas for human capital valuation (Russ, 2013; Russ, & Catasús, 2014).

The three major challenges are:

1. The *accounting* aspect of human capital valuation—-we do not know how to measure it.
2. The *monetization* aspect of human capital—-we do not know how to directly monetize human capital.
3. The *lack of* effective and efficient internal (within a firm) and external *markets* for human capital.
The four major dilemmas are:

1. Whether human capital valuation should be standardized or if human capital is unique and company specific.
2. Whether human capital is one building block of intellectual capital but a different construct from social capital, organizational capital and intellectual capital, or, whether intellectual capital is one asset and construct that just has different parts, like human capital, social capital, organizational capital, etc.
3. Whether human capital is static, or dynamic.
4. Whether everyone should be considered as assets or just some will qualify as assets.

What is clearly missing from this discussion are the environmental concerns and the utilization of natural resources, mainly energy, as a production factor and as entropy (Kümmel, 2011). Kümmel (2013) suggested that contemporary economic analysis and studies are underestimating the cost of energy and overvaluing the cost of labor and the value of human capital. This would suggest that energy conversion processes and energy entropy production both must be reviewed when studying intellectual and human capital (e.g., Collins et al., 2010; Osranek & Zink, 2014; Zeleny, 1997).

The other aspect that is missing in this discussion is the effectiveness (not efficiency) of the markets. For example, since markets of technologies are not neutral, what impact technological paths have on the environment or on social responsibilities, and what are the implications of that on management and valuation of human capital (e.g., Russ 2014b). Such an economy may suggest that the current market and legal structure are deficient for facilitating how the majority of the population and institutions are confronting the extraordinary changes of the early 21st century (Rainie & Wellman, 2014; Rickards,
2014; Rifkin, 2014), as well as, questioning some basic assumptions we hold to be true for a healthy, free, democratic and a prosperous capitalistic society.

Such a major weakness of the present economic system demands new markets (Dror, 2011; Russ, 2011) that will be grounded in information theory, and a new currency, one that will respond not only to the present economic scarcities but also future states and scarcities in the economic, as well as in the social and environmental spheres (Russ, 2014b). It is time (early 21st century being a knowledge-based economy) to move the base of the value of our currencies from being commodity and government backed (Kelly, 2015) and being the scarce resource to become knowledge and creativity backed, given that this is now the scarce resource (e.g., Colvin, 2010) and acknowledge the constrains of energy and the environment.

Consistent with this discussion, recognizing the need to accept that knowledge and creativity are presently the scarce resource (and not financial capital), and suggesting to ground the definition of capital in information, energy and entropy, I recently defined human capital as “the scope and amount of controlled negative entropy an entity possesses at any point in time, within a context (goals and constraints; economic, social, environmental), that can create (presently and potentially in the future) value for an exchange” (Russ, 2014a, p. 22). Other forms of capital were also defined using a similar perspective (see Russ, 2015) but the detailed discussion and the specific definitions are beyond the scope of this introductory chapter.

Such complex and interdisciplinary by nature issues, their origins and potential solutions require, at least as a first step, a broad scope dialogue grounded in dependable multidisciplinary and cross-disciplinary research (e.g., Kotler, 2015). In my opinion the issues listed above are too important to be left to any specific audience; or to be reconciled prematurely by any specific methodology or scientific discipline, sidestepping aspects resulting from praxis and preventing an appropriate solution (c.f. Ferguson, 2009; Kratochwil, 2014; Orlikowski & Scott, 2014; Rickards, 2014; Taleb, 2014). My hope is that this book will contribute to such a discussion by providing a broad set of cases and methodologies covering different aspects of human capital, the most important asset that we have.

Next, I will introduce the chapters and cases in this book.

CHAPTERS

A Multidisciplinary Critical Approach to Measure and Analyze Human Capital Productivity

Marko Kesti; Jaana Leinonen; and Antti Syväjärvi, University of Lapland, Finland

This chapter illustrates the complex and multidimensional relationship between human capital management and organizational performance and provides tools and a method to support organizational development. The proposed method is the outcome of the amalgamation of a number of research areas, including system intelligence, tacit signals, quality of the working life index, and the theory of human capital production function. Consequently, the chapter depicts a holistic approach of multi-disciplinary research that accentuates the complexity and richness of the association between human resource management and organizational performance. When measuring organizational performance with monetary value, the complexity is even more challenging. The chapter proposes using human capital production function as a tool to associate human capital intangible assets with monetary scorecards. This allows the model
to have both explanatory and predictive power, including quantifying the human resource development payback. An example is included to illustrate the method. This method and the tools presented in the chapter provide solid stipulations for effective and efficient organizational human capital performance development and also frames a future multi-disciplinary research stream that has significant potential for both academics and practitioners.

**Leveraging Human Capital Assets with Cognitive Computing**  
Daniel J. Worden, *The MetaCogni Project, Canada*

This chapter introduces the study of cognitive computing systems, an emerging computer science specialization, into the human capital arena, suggesting it has a complementary yet potentially disruptive role in the business domain. Using individual and organizational learning feedback loops during software development takes multi-disciplinary approaches to human capital into a new research paradigm. The chapter references IBM’s Watson, the cognitive science cloud-based computing service, as a concrete example and illustrates how the tool enables experts to employ a knowledge system for high abstraction and enriched information processing activities. Watson’s learning cognitive system capabilities allow organizations to create new types of codified knowledge and generate additional value. The system uses a complex, supervised, machine-learning process in the dynamic collaborative company of experts, uncovers learning inhibitors, and augments insight at the individual, team and organizational levels. The chapter also offers early steps in considering the accounting and financial aspects of such a system. Finally, the chapter proposes that leading organizations considering the adoption of such a system create a new position, the Meta Cognition Analyst. This chapter is a major contribution to an emerging field that will only become more influential in the future.

**Towards An Understanding of Team Dynamics in Very Small Enterprises: An Exploratory Study in Software Development Firms**  
Rory V. O’Connor, *Dublin City University, Ireland*

The chapter starts with the premise that having the requisite human capital in terms of software development staff is critical for software development project success. Converting this human asset into actual outcomes requires in-depth understanding of the dynamics of the governing processes, specifically the team dynamics of the software developers. The author studies these dynamics using a grounded theory approach in ten very small software product development companies in Ireland. Team dynamics is defined here as the nature, quality and quantity of interactions among a firm’s human capital at the team level. Particularly, the author focuses on the collaborative dynamics among human capital team resources to indicate the extent to which valuable information is shared, levels of engagement, the existence of a collective sense of awareness, and the ability to learn from one another. The results of a study identified four aspects as critical in the practice of process management of the team dynamics: management style, team structure, communications, and learning and sharing. This chapter provides an early map for practitioners and academic researchers studying critical success factors of a complex and dynamic process in an industry that is moving extremely fast and where knowledge sharing and new knowledge creation is of critical importance.
Human Capital Accumulation in Medical Simulated Learning Environments: A Framework for Economic Evaluation

Fiorentina Angjellari-Dajci, *Jacksonville University, USA*
Christine Sapienza, *Jacksonville University, USA*
William F. Lawless, *Paine College, USA*
Kathleen Kavanagh, *Jacksonville University, USA*

This chapter is attempting to develop one of the early models of financial analysis to be used in the development of human capital in nursing, in the context of a simulated learning environment for teaching purposes. As a first step, the authors develop a conceptual model of the use of simulated learning environments in nursing curricula and connect the simulation use with clinical and patient outcomes. This is followed by an extensive review of financial evaluation methods that could be potentially used in medical simulation contexts. Lastly, the chapter provides a methodological framework for conducting full economic evaluations of simulated learning environment programs, which includes the identification, measurement, valuation and comparison of all relevant economic benefits with financial costs for alternative programs. The proposed financial analysis has the potential to be applicable in other health care arenas, where medical simulations are used as an alternative program, to serve as a guide for decision making. This chapter is an important early step in developing a solid financial methodology for inclusion of a new technology incorporated when advancing a new teaching curricula and is closing an important gap for academics and practitioners in this field.

Human Capital Management for the Improvement of Competitiveness in Firms

Knut Ingar Westeren, *Nord-Trøndelag University College, Norway*

In this chapter the author first provides an overview of the link between knowledge capital and the sustainable competitiveness of firms. This is followed by a framework of the measurement of knowledge capital, using the MERITUM framework which allows measurement of different aspects of the knowledge of the employees as relevant to the company specific competitive advantage. The author illustrates the method using a case study of a Norwegian producer of equipment for the offshore oil sector, which is characterized by an intensive capital investment which is operating in extreme conditions. The findings suggest that the critical and most valuable aspect of human capital in this case is the knowledge transfer process between the group leaders and the welders which is affected by the communication capabilities of leaders and their training. This chapter is a major contribution to human capital valuation literature by suggesting a valid and reliable method of measuring economic value that is both company specific and provides specific guidelines of how to extend its sustainable competitive advantage while operating in very unique and difficult circumstances.

Strategic Human Capital, Team Composition and Project Team Performance: The Role of Flexibility and Experience

Francesca Vicentini, *LINK Campus University, Italy*
Paolo Boccadelli, *LUISS Guido Carli University, Italy*

This chapter explores what characteristics of human capital at the individual level are associated with performance in project-based organizations. Specifically, the authors are concerned with the individual
Introduction and a Holistic Framework for Human Capital

flexibility construct, which has received minimal attention in the academic strategic literature, but has significant impact on the agility of the organization. These aspects are extenuated in the study’s particular context of project-based organizations. The chapter specifically discusses the case of TV drama series production, where individuals’ flexibility and their contribution to organizational performance is confounded by the interaction within the temporary teams they belong to, while performing on the set. The authors’ findings support the notion that individuals’ flexibility within teams is positively influencing the project performance. Most interesting, the individual’s role flexibility and the presence of novice performers has a positive impact on performance, while the individual’s content flexibility has a negative impact on performance. The chapter is an excellent example of the complexity of the construct of human capital within a unique industry and organizational structure, and illustrates the difficulty of managing and measuring the creation of human capital value.

Strategic Inertia vs. Strategic Change: The Role of Human Capital in Fiat’s Turnaround Pathway

Silvia Vernizzi, University of Verona, Italy
Andrea Beretta Zanoni, University of Verona, Italy
Meir Russ, University of Wisconsin–Green Bay, USA

The chapter describes the continuous and systematic re-evaluations of business strategies and plans and the coherent and effective strategy implementation of Fiat since 2008. The increasingly dynamic, complex and unpredictable global and local economic circumstances require constant change and when missed, a turnaround is required for company survival. This case is using the lens of the Resource Based View theoretical framework to shed light on the role of human capital in such a strategic change process.

Specifically, the chapter points out the application and the critical nature of human capital in a complex process that has driven Fiat’s competitive and financial turnaround since 2008. Particularly, the chapter spotlights the relevance of human capital in the organizational attitude change, strategy formulation, choices implementation, and more in general, in Fiat’s business model re-definition. The chapter ends with case questions that can be used for graduate class discussion or assignments. This chapter is a major contribution for practitioners and academics seeking to understand the critical role of human capital at critical strategic infliction points facing companies going through tough strategic circumstances.

Human Capital and International Assignments

Jack Aschkenazi, American Intercontinental University, USA

This chapter addresses the strategic importance of expatriate managers’ development and management in the process of knowledge acquisition, and consequently the augmentation of the human capital of a multinational firm. The author is proposing guidelines for effective and efficient selection, training, compensating, and retaining of foreign or third country expatriate managers. The proposed process should minimize interruptions of foreign assignments or attrition, which can be very expensive in terms of knowledge loss and financial impairment to the multinational firm. Specifically, the author is emphasizing the importance of international human resource management capabilities and the need to develop new skills and structures for the expatriates in the internet/social media context. The chapter is a valuable addition to the human capital literature in the international context for the practitioners and academics by pointing to key success factors in this delicate and expensive endeavor.
It gives me great pleasure to review the last four chapters in this book since they were written by several of my former students. I have been lucky to have some very bright students in my graduate classes in the US and Europe. The chapters below are a sample of what they can offer.

**A Study on the Effect of Culture and Human and Social Capital on Entrepreneurial Strategies in Family Businesses in Iran**

Hossein Moghadam, *University of Pisa, Italy*

Meir Russ, *University of Wisconsin–Green Bay, USA*

This chapter covers family businesses formed in order to achieve both financial and non-financial desired outcomes. Culture, religion, and human and social capitals are some of the variables that influence decisions of the founding entrepreneurs and owners of family businesses regarding business strategies and outcomes as well as socioemotional gains and losses. What makes family business unique is that family business owners take into account socioemotional gains or losses for the family when considering the relative risks and benefits of various strategic choices. To study the effect of the mentioned variables the authors have studied three family businesses in Iran which is a family oriented country with a strong cultural consistency. The results document how culture, and social and human capital affect the preservation and development of socioemotional wealth in families and how they effect the firm’s performance. This chapter is suggesting and later modifying, five specific propositions in regard to the moderating effect that culture and religion will have on such decisions while considering the impact of human and social capital. This chapter is a major addition to the human capital and family owned business literature by incorporating the richness of cultural context and providing a solid starting point to future research. The findings can also be relevant to enhancing the strategic decision making process of the family owned business by increasing the scope of their decision space.

**An Application of Knowledge Management and Human Capital Valuation: The Case of Credit Unions**

Sarah Robertson, *University of Wisconsin–Green Bay, USA*

This chapter is investigating the state of knowledge management and appraises human capital valuation tools as applied in credit unions. Knowledge management applications and strategies have become critical and significant in the credit union industry as the credit unions operate in a highly competitive, dynamic and knowledge-intensive financial marketplace. Human capital valuation tools apply the balance sheet metric that can tie employee behavior to value offered back to the member owners. A knowledge management audit and a human capital valuation were conducted by the author in a mid-sized credit union in the Midwest region of the United States. The major finding of the case was that organizations have not been able to capitalize on the expected benefits and leverage their performance with knowledge management solutions and human capital strategies, unless it was a strategic priority and a planned process. This case study is then followed by a number of short scenarios with specific questions provided by the author, based on her business and consulting experience. This chapter brings together the study of knowledge management and human capital over a number of years, illustrating a broad scope of strategic issues facing a specific industry. The short cases provide for a much needed teaching vehicle, especially in a graduate management program, regarding knowledge and human capital management.
Cybersecurity and Human Capital in Community Banks
   Joel F. Williquette, University of Wisconsin–Green Bay, USA

This chapter covers the topics of cybersecurity and human capital in the context of community banks (credit unions). The fundamental subject explored in the chapter is whether the United States community businesses have the appropriate human capital and technology resources to effectively counter the currently rising threat of cybercrime. The findings suggest that American small and medium sized businesses, specifically credit unions, need to augment their efforts and increase their investment in technologies, staff and technical training of staff, and programs and processes targeting minimization of their exposure to cyber-attacks by improving the use of risk-based assessments, defenses, intrusion and anomaly detection, as well as their ability to recover should a cybercrime take place. This chapter is a major contribution to an emerging field that will only become more protuberant in the future.

Innovation and the Value of Human Capital in a Collegiate Setting
   Rachel Erin Johnson, University of Wisconsin–Green Bay, USA

This chapter explores the state of innovation management and evaluates human capital valuation tools as applied in an academic unit within a public university. The case study discussed in this chapter illustrates the value of intellectual capital measurement, specific to human capital and innovation capital within an academic unit at a University of Wisconsin System campus. An audit of the unit’s innovation practices was performed and was followed by the examination of the valuation of human capital on the unit’s front line employees. Innovation and creativity continues to be a crucial component within the academic public sector to provide for a sustainable competitive advantage. Appreciating the value front line employees generate for a non-profit organization in academia continues to be a growing concern for many public sector and not-for-profits entities. The case study contains three parts; an innovation audit, several models and formulas to quantify the value of human capital, and an overall conclusion and recommendations. This chapter brings together the study of innovation management and human capital over a number of years, illustrating a broad scope of strategic issues facing a public entity. The case provides for a much needed teaching vehicle, especially in a graduate management program, regarding innovation and human capital management.

CHAPTERS AND THE NEW RESEARCH FRAMEWORK

Next, I will apply the framework described earlier to index the chapters in this book. The chapters will be listed by the last name of the first author. This indexing will illustrate the use of the framework and could also allow the selection of an article or a case for pedagogical purposes.

Human Capital Praxis Framework

All the chapters have clearly defined their origins and have the definition of human capital in use, as well as other appropriate definitions. The majority of the chapters cover the managerial and the value creation aspects of human capital, when only some are covering the valuation and the risk aspects and very few the reporting/signaling aspects of human capital. The industries and the academic perspective
are coming from a wide variety of fields and as such, the book’s chapters are a good representation of the broad scope of issues, as suggested earlier in this introduction, needed for the in-depth multi-disciplinary discussion mentioned earlier.

**Taxonomy of Human Capital**

The chapters and cases in this book have a balanced presentation of the market, uniqueness and value elements of the taxonomy of human capital. The only area that is less balanced is the knowledge specificity element, and consistent with the book focusing on cases, only two chapters discuss knowledge that is transferable within an industry or a profession.

**Dimensions of Human Capital**

The chapters and the cases cover most of the spectrum of all four dimensions. The one covered least is the low risk, which is appropriate for a discussion of human capital that creates value, since there is little potential value to be created in an environment where there is low uncertainty and low risk.

**Human Capital Paradigms**

Lastly, the use of paradigms is also well balanced. All the paradigms identified earlier are represented and provide a good illustration of the broad scope presently used by the academic literature when discussing and researching human capital.

### Table 1. Human capital praxis framework: The chapters

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<thead>
<tr>
<th>Chapter</th>
<th>Definitions, Origins</th>
<th>Management</th>
<th>Valuation, Risk</th>
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Introduction and a Holistic Framework for Human Capital

Table 2. Taxonomy of human capital: The chapters

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Table 3. Dimensions of human capital: The chapters

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CHAPTERS AND THE NEW DEFINITION OF HUMAN CAPITAL PRAXIS

The new definition of human capital praxis emphasizes the importance of new knowledge creation, reusability of information, control over complexity, sustainability of energy sources and of course the measurement of these items. The chapter by Kesti et al., illustrates how the focus on specific areas and the measurement of them can improve the organizational outcomes resulting in the increased value of human capital. The chapter by Worden illustrates the aspects of new knowledge creation (complexity/entropy
Table 4. Human capital paradigms: The chapters

<table>
<thead>
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<th>Chapter</th>
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Introduction and a Holistic Framework for Human Capital

The chapter also illustrates the complexity of the ability to separate human capital from organizational capital (e.g., Watson, Meta Cognition Analyst) and social capital (the ties between the different actors, including the new player–Watson). Finally, the chapter presents a major future option for value creation by restructuring the relationships between the different aspects of intellectual capital (new business model) for creation of new value to the organization and its customers while making the measurement of the inputs and outputs more plausible. The chapter by O’Connor exemplifies how knowledge is shared within a team, and the importance of leadership in reducing uncertainty and enhancing sharing of knowledge. The chapter by Angjellari-Dajci et al., demonstrates how tacit knowledge can be codified into an organizational capital and then shared for educational purposes while accelerating and improving the results of training programs and allowing, in the future, for measurements of the inputs, process, and outcome variables. The chapter by Westeren exhibits the role leaders have in sharing knowledge. The chapter by Vicentini and Boccardelli reveals the complex role flexibility (entropy) has on the performance of a team. The chapter by Vernizzi et al., illustrates the critical role leaders have in defining the business scope for the organization and the role human capital has in implementing the new strategies. The chapter by Ashkenazi shows how selection and training of expatriates can reduce entropy in their assignments. The chapter by Moghaddam and Russ illustrates the impact culture and religion has on the definition of the chosen business scope and the complexities (or simplifications) of the chosen business model. The chapter by Robertson reveals the tradeoff and complexities of managing knowledge and human capital within a specific industry segment. The chapter by Williquette discusses and ascertains some of the costs of minimizing business interruptions. And finally, the chapter by Johnson brings to light the tradeoffs between innovation and human capital management in an exclusive industry and utilizing a unique organizational structure. All chapters are clearly dealing with information and entropy, while minimizing or increasing the complexities and scope of information according to strategy explicitly or implicitly driven from the top. Not even one chapter discusses the importance of energy utilized or saved, emphasizing the need to add this dimension to business strategies explicitly as was suggested earlier in this introduction.
LAST WORDS

Finally, I hope you will agree that this book is a valuable academic resource, and that you will consider using it in your discussion, research and/or teaching of human capital. I am looking forward to an exciting and challenging future and I am sure that the subject of human capital will continue to play a significant role in this future.

ACKNOWLEDGMENT

A call for chapters challenged potential authors to consider providing a robust scientific and quantitative foundation for a multi-disciplinary, multi-level theory of human capital arriving from different academic traditions and perspectives. The authors were invited to contribute to the book based on approved proposals. Each complete chapter received external, blind review in addition to the editor review. The author thanks Kelly Anklam for her assistance in editing this introduction and rest of the book, the members of the editorial advisory board, the reviewers, and also wishes to thank the Philip J. and Elizabeth Hendrickson Professorship in Business at UW-Green Bay for partial financial support. Finally, the author hopes that the discussion of creating a unifying, multi-level theory of human capital will continue based on the chapters and cases presented in this book. As always, all mistakes are his.

REFERENCES


Introduction and a Holistic Framework for Human Capital


xxxv


Introduction and a Holistic Framework for Human Capital


xxxvii


**ENDNOTES**

1. Following and significantly modifying Marzo’s (2013) framework for intellectual capital.
3. Chevalier-Roignant & Trigeorgis, 2011—see chapters 8 and 13 for discussion and examples
4. e.g., from individuals to organizations: Reilly, Nyberg, Maltarich, & Weller, 2014