Introduction

Organizations have increasingly been introducing web-based applications for HRM purposes, and these are frequently labeled as electronic human resource management (e-HRM). Much is expected of e-HRM in terms of improving the quality of HRM and increasing its contribution to company performance. Major investments are involved and are justified given the expectations that e-HRM will improve HRM quality in organizations by freeing staff from administrative loads. These beliefs originate from ideas about the endless possibilities of information technologies (IT) in facilitating HR practices, and about the infinite capacity of HRM to adopt IT.

At the same time, it is not clear where e-HRM research should be positioned. Is it a new and substantial research area, or at the "crossroads" of other academic domains, such as Innovation Management, IT implementation, and/or HRM? Theoretical complexity has practical consequences for e-HRM projects and their management. The one-sided scholarly e-HRM works available fail to fully address this lack of clarity and, if anything, deepen the divisions between the various academic domains.

To this end, we have been involved in a series of research projects, academic workshops, and conferences exploring the application of information technologies to various HR practices. Along with the special issues of the *International Journal of HRM*, *International Journal of Technology and Human Interactions*, and *International Journal of Training and Development*, this volume is a tangible outcome of three European e-HRM Academic Workshops (2006, 2008, and 2010), and two International Workshops on Human Resource Management (2007 and 2008). Further, we gratefully acknowledge Graeme Martin, Martin Reddington, and Heather Alexander for their 2008 book on technology and transforming HR. By focusing on the theories and practices of technology in HRM in a range of international settings, it provided a foundation for our project and this volume and has, hopefully, allowed us to bring a greater focus to the theoretical developments within the field of e-HRM research.

We hope that this book clarifies the need to crystallize a theoretical framework for e-HRM research, raises further questions, and supports discussions.

A Topic of Broad Interest

The field of e-HRM and human resource information systems (HRISs) has developed very rapidly in recent years. More than two decades have passed since the publication of

DeSanctis's (1986) seminal work on HRISs, and the topic continues to command the attention of scholars and practitioners around the world. If anything, interest in this topic has been increasing, as evidenced by citation counts, international academic workshops dedicated to this topic, and a number of special issues of international journals. In line with this trend, and responding to a perceived need to advance our understanding and theoretical grounds in this field, this volume forms a timely contribution.

Throughout the first two decades of e-HRM research, an initial body of empirical findings and distinct conceptual propositions has appeared. We attribute our knowledge about types of e-HRM applications, positive and negative consequences of e-HRM implementations, assumptions about various architectural compositions of IT-based HRM channels, differing popularity of e-HRM tools, and business-driven promises (goals) of e-HRM to this research period. However, e-HRM research to date has been scattered throughout numerous journals, concentrating on several distinct focal points and remaining patchy (Strohmeier, 2007).

This volume with its nine chapters aims to facilitate the transition of e-HRM research from its infancy stage of gathering scattered knowledge toward a more mature stage. To achieve this, this book sets out to:

- Deliver a state-of-the-art overview of e-HRM theoretical developments.
- Address methodological issues in e-HRM research.
- Identify future cutting-edge research directions.

There are undoubtedly many reasons for the intense interest in the topic of e-HRM. These interests shape the main debating points within e-HRM research, which we see as fitting within three broad categories:

- Theoretical backgrounds and use of theories in e-HRM research
- Methodological rigor
- A new phase of the practical relevance of e-HRM research.

Key Theoretical Approaches in e-HRM Research

Research in e-HRM is associated closely with various fields of management research. It is connected with innovation management studies such as those looking at socio-technical innovation (Allen, 2000; Prescott & Conger, 1995; Ryan & Harrison, 2000), innovative HRM (De Leede & Looise, 2005; Shipton, Fay, West, Patterson, & Birdi, 2005), and innovation implementations (Bondarouk & Ruël, 2009; Klein & Sorra, 1996), which are themselves areas of significant research activity. As in the field of innovation management, e-HRM research focuses not only on the products and technologies (applications for HRM practices) but also on the process of e-HRM innovation. Further, e-HRM research has strong ties with the broad field of IT imple-mentation: end-user satisfaction, data quality, acceptance, and success of IT (Davis, 1989; Delone & McLean, 2003; Venkatesh, 2000). In contrast to the IT implementation studies, e-HRM research seeks to uncover the idiosyncratic role of the application domain, i.e. HRM practices, in

the complex process of integrating e-HRM into organizational life. Clearly, it adheres to HRM by considering the impact of e-HRM on the HR function and on the distribution of HR responsibilities (Lepak & Snell, 1998; Farndale, Paauwe, & Hoeksema, 2009) and the strategic advantages of HRM (Marler, 2009; Paauwe, 2009).

Thus, the e-HRM field is fed and complicated by three academic research domains: studies oriented toward social and technical innovations, toward IT implementations and, finally, "pure" HRM studies. While innovation studies tend to integrate social and technical issues, we see clear distinctions between IT and HRM contributions. The IT-centric studies usually investigate the use of IT for HR purposes and tend to focus on the growing sophistication of the technology and the qualities necessary for its adoption. Such studies usually cover topics such as IT acceptance, resistance, effectiveness, equality, information security, and privacy in the context of e-HRM technology usage. However, they remain silent about changes in HR practices resulting from e-HRM. HR-based e-HRM studies, on the other hand, generally only examine single e-HR practices and focus on the changes in HR processes and functions that follow automation. These studies tend to avoid issues related to the implementation and ongoing use of IT.

As the breadth of these topics suggests, the opportunities to advance e-HRM research come from a range of directions. Accordingly, scholars with a variety of research interests, foci, expertise, disciplinary training, and methodological leanings have become involved in e-HRM research. The broad interests and scope of e-HRM do not impose limitations on its study as such. However, its multidimensional orientation and background call for a clear overview of the diverse theoretical concepts and methodological approaches used in and recommended for e-HRM research.

The above discourse provides a summary of the current discussion on the use of various theories in e-HRM studies, and provides a background against which the chapters in this volume can be viewed.

The first five chapters of this volume propose clear theoretical frameworks with which to work further and enrich e-HRM research: e-HRM implementation concepts (Bondarouk), the HRIS hub (Ruël, Magalhães, and Chiemeke), web mining as a novel approach in studies of e-HRM usage (Strohmeier and Piazza), lining up e-HRM strategy and architectures (Reddington, Martin, and Bondarouk), and value creation by HR Shared Services (Bondarouk). By starting with five distinct theoretical chapters, this volume has a strong focus on the importance of theory within e-HRM research and offers directions for future studies.

Methodological Rigor of e-HRM Research

In terms of domain questions, e-HRM research has been trying to deal with the question of how to define e-HRM. Since a clear definition has been lacking, many researchers have introduced different descriptions (for an overview, see Bondarouk & Ruël, 2009). Therefore, we start with the definition of e-HRM accepted by the e-HRM researchers present at two e-HRM conferences (a "consensual definition"), where we agreed to define e-HRM as: "An umbrella term covering all possible integration mechanisms and contents between HRM and Information Technologies

aiming at creating value within and across organizations for targeted employees and management'' (Bondarouk & Ruël, 2009, p. 507).

In this definition, we emphasize four aspects: the content of e-HRM (any type of HR practices that can be supported with IT), the implementation of e-HRM (the process of adoption and appropriation of e-HRM by organizational members), targeted employees and managers, and e-HRM consequences. Further, we have included an appendix at the end of this volume that provides definitions of key terms used in the discussion of e-HRM research in this volume.

In terms of epistemological issues, e-HRM research has been largely dominated by positivist studies (four chapters written by Bondarouk; Heikkilä and Smale; Girard and Fallery; and Strohmeier and Piazza, this volume) and, as a result, methods affiliated with this paradigm have been considered appropriate for theory or model building. However, this volume also reveals fresh approaches when researchers break away from this dominant paradigm. There are three chapters dealing with the e-HRM field that question its positivist fundaments in theory building and propose new routes and ways of looking at e-HRM (Reddington, Martin, and Bondarouk; Guiderdoni-Jourdain and Oiry; and Parry and Olivas-Luján, this volume).

Practical Relevance of e-HRM Research

So far, the practice has expected e-HRM research to validate the promised benefits, such as a strategic re-orientation of the HR function, cost reductions, and HRM service improvement. Indeed, many reviews exist that have tried to illustrate the value of e-HRM. While we acknowledge the relevance of such studies, we think that organizations now accept their findings and are looking ahead to a new wave of e-HRM research. Therefore, we propose taking the next step. One possibility is to orient e-HRM studies toward a new generation of employees. We should recognize that a new generation, born after 1982, will be entering the labor market and will be anticipating new methods in HRM. This generation has already been labeled as the millennium generation, the virtual generation, or the Net generation (Howe & Strauss, 2000; Proserpio & Gioia, 2007; Alsop, 2008). It is important to recognize that most of this generation grew up with IT and that the Internet was part of their teenage years. This generation is used to IT and social networks, the web is no longer a take-it-or-leave-it issue, and this has consequences for how they expect HR services to be delivered. That means that e-HRM has to be a driving force and a major provider of future HR services. e-HRM is becoming a ''vehicle'' for new ways of managing a new generation.

An Outline of the Volume

In Chapter 1, Bondarouk addresses the issue of e-HRM implementation. In order to reach an all-encompassing, overarching, and clear definition of e-HRM implementation, she bases her chapter on a rich overview of the literature on IT implementation, transferring

different views and theoretical approaches from IT to e-HRM implementation, and describing the consequences of applying these views and approaches to research outcomes. In Chapter 2, Ruël, Magalhães, and Chiemeke set out a research agenda for HRIS studies based on what the authors call an integrative perspective, one that sees HRISs as social as well as technical in nature. The authors present a historical account, starting from the early 1970s, of phenomena that emerged from the integration of IT (the technical) and the organization (the social) and go on to derive research questions from each of those phenomena that are relevant for HRISs. They see the purpose of presenting this research agenda as deepening and broadening HRIS research. Moving on to Chapter 3, Strohmeier and Piazza present how web mining can be a useful approach in e-HRM research, especially for gaining comprehensive and objective information on e-HRM usage. The authors are of the opinion that relevant and accurate usage data is a valuable by-product of practical e-HRM, and that such data can easily be enriched by further data collection. In Chapter 4, Reddington, Martin, and Bondarouk develop a model for e-HRM adoption and its outcomes, based on a strategic form of HRM that combines four central elements: HR strategies, e-HR goals, e-HR architectures, and e-HR outcomes. In the authors' view, the model sheds light on how the HR strategies adopted by an organization and the e-HRM outcomes are connected. The theoretical part of this volume concludes with Chapter 5 by Bondarouk on HR Shared Services that she considers closely related to e-HRM developments. She reassesses the classic contingency theory to conceptualize the governance structure of HR Shared Services, and therefore to evaluate their inter- and intra-organizational value proposition.

The chapter by Guiderdoni-Jourdain and Oiry opens the empirical part of this volume. It describes a study on the use of an HR intranet by middle managers in a major aeronautical and space company. In particular, the authors aim to identify and explain the diversity in HR intranet use and, to this end, propose Orlikowski's structurational perspective of technology as an appropriate conceptual framework for analyzing middle managers' HR intranet use. Chapter 7 by Heikkilä and Smale introduces the issue of language into the complex nature of e-HRM system implementation in multinational corporations (MNCs). In the light of scant empirical research on language in international business in general and e-HRM in particular, this chapter reviews the research on language issues in the MNC context. Girard and Fallery in Chapter 8 empirically address issues in the newest developments in e-HRM: the role of Web 2.0 in the recruitment processes. The final chapter in this volume, by Parry and Olivas-Luján, introduces the Diffusion of Innovations Theory (DOI) that it is arguably a very fertile basis for e-HRM research. This theory is applied to the adoption of e-recruitment from an organizational perspective. In this way, the chapter examines the factors that influence the take-up of corporate websites and commercial job boards.

Concluding Remarks

We believe that the chapters reveal some of the major conceptual and methodological tensions, paradoxes, and doubts that currently plague the e-HRM research field.

Nevertheless, we also see good reasons for strong optimism as they show the way toward the next phase of e-HRM research development. The three key issues represented in this book lead us to the conclusion that e-HRM research is now moving toward:

- Crystallizing its theoretical backgrounds
- Broadening its methodological approaches
- Meeting the needs of real-life e-HRM projects.

<div align="right">
Tanya Bondarouk
Huub Ruël
Jan Kees Looise
Editors
</div>

References

Allen, J. P. (2000). Information systems as technological innovations. *Information Technology & People*, *13*(3), 210–221.

Alsop, R. (2008). *The trophy kids grow up: How the millennial generation is shaking up the workplace*. San Francisco, CA: Jossey-Bass.

Bondarouk, T., & Ruël, H. J. M. (2009). Electronic human resource management: Challenges in the digital era. *The International Journal of HRM*, *20*(3), 505–514.

Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*, 319–339.

De Leede, J., & Looise, J. C. (2005). Innovation and HRM: Towards an integrated framework. *Creativity and Innovation Management*, *14*(2), 108–118.

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year up-date. *Journal of Management Information Systems*, *19*(4), 9–30.

DeSanctis, G. (1986). Human resource information systems: A current assessment. *MIS Quarterly*, *10*, 15–27.

Farndale, E., Paauwe, J., & Hoeksema, L. (2009). In-sourcing HR: Shared service centers in the Netherlands. *The International Journal of Human Resource Management*, *20*(3), 544–561.

Howe, N., & Strauss, W. (2000). *Millennials rising: The next great generation*. New York: Vintage Books.

Klein, K. J., & Sorra, J. S. (1996). The challenge of innovation implementation. *Academy of Management Review*, *21*, 1055–1080.

Lepak, D. P., & Snell, S. A. (1998). Virtual HR: Strategic human resource management in the 21st century. *Human Resource Management Review*, *8*(3), 215–234.

Marler, J. (2009). Making human resources strategic by going to the Net: Reality or myth?. *The International Journal of Human Resource Management*, *20*(3), 515–527.

Paauwe, J. (2009). HRM and performance: Achievements, methodological issues and prospects. *Journal of Management Studies*, *46*(1), 129–143.

Prescott, M. B., & Conger, S. A. (1995). Information technology innovations – A classification by its locus of impact and research approach. *Omega, International Journal of Management Science*, *27*(4), 467–484.

Proserpio, L., & Gioia, D. A. (2007). Teaching the virtual generation. *Academy of Management Learning and Education*, *6*(1), 69–80.

Ryan, S. D., & Harrison, D. A. (2000). Considering social subsystem costs and benefits in information technology investment decisions: A view from the field on anticipated payoffs. *Journal of Management Information Systems*, *16*(4), 11–40.

Shipton, H., Fay, D., West, M., Patterson, M., & Birdi, K. (2005). Managing people to promote innovation. *Creativity and Innovation Management*, *14*(2), 118–129.

Strohmeier, S. (2007). Research in e-HRM. *Review and implications. Human Resource Management Review,*, *17*(1), 19–37.

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research*, *11*(4), 342–366.