E-HRM

The boundary conditions influencing strategic contribution of electronic human resource management

A theoretical exploration on the contingencies that influence the strategic contribution of eHRM

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Track: Human Resource Management

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Management summary

Electronic human resource management (eHRM) is increasingly popular amongst firms. Potential benefits of eHRM are the opportunity to cut back costs (operational benefits), added interactional and basic business support options (relational benefits) and the ability to transform the HR function within a business to be more strategic value adding (transformational benefits). These benefits are proposed to have the potential to strategically contribute within an organization. Research on the presence of these benefits however is scarce and contradictory. This research addresses the gap between potential benefits of eHRM and the lack of empirical verification of these benefits. The following main research question is formulated:

What are the contingencies influencing the strategic contribution of eHRM?

Based on theory and empirical research a contingency framework is designed addressing the contingencies that are proposed to influence the strategic contribution of eHRM. Figure 1 illustrates the conceptual framework.
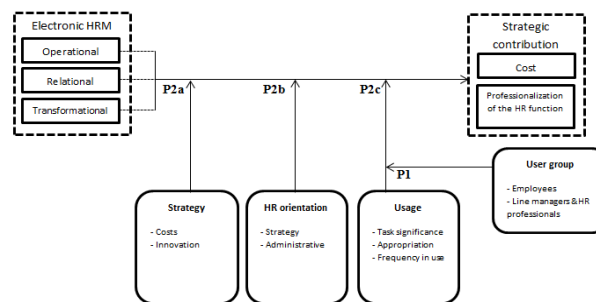
Figure 1. Strategic contribution of electronic human resource management contingency framework

Organizations are proposed to be able to explicitly choose a specific type of eHRM resulting in an specific category of benefits (either operational, relational or transformational focused). Based on the type of eHRM the strategic contribution of eHRM is assumed to be either cost or professionalization of the HR function oriented. In order for a business to fully grasp the strategic benefits of eHRM, it is proposed that the choice for an eHRM type should be in alignment with the business strategy and HR orientation. For example, in order for a business with a cost oriented strategy and an administrative HR orientation to reap the most strategic benefit from eHRM it is proposed that the operational type of eHRM would provide the best fit. Therefore, it is proposed that implementing an operational type of eHRM within this organization would lead to fully grasping the potential strategic contribution of eHRM.

Additionally, in order for eHRM to contribute strategically HR professionals and line managers should use it frequent, in appropriation with its intention and eHRM should have task significance for this user group. In order for eHRM to strategically contribute through employees, usage is proposed to be conditional for HR professionals and line managers. For employees however the factor usage is proposed to be irrelevant based on empirical research.

The strategic contribution of eHRM is proposed to depended on the extent to which the type of eHRM is in alignment with the firm strategy, HR orientation and whether or not linemanagers and HR professionals use it frequent, in appropriation and whether or not it has task significance for this user group.

Abstract

With the rise of the world wide web (Strohmeier, 2009) and accretive technology opportunities eHRM is increasingly popular and one of the most implemented applications in firms (Lee, 2011). Even though the adoption of technology in the field of human resource management is widely acknowledged, theory development is in its earliest stages. The focus of this paper is on the theorized benefits of eHRM (Lepak & Snell, 1998) and the lacking and/or contradictory empirical studies inferring the actual presence of these benefits (Bondarouk & Furtmueller, 2012; Marler & Fisher, 2013; Strohmeier, 2007). The following main research question is formulated:

What are the contingencies influencing the strategic contribution of eHRM?

Based on theory and prior empirical research a contingency framework is designed addressing the strategic contribution of eHRM. This framework proposes a set of factors on which the strategic contribution of eHRM is contingent and answers the main research question.

The benefits of eHRM are categorized as operational, relational and/or transformational (Lepak & Snell, 1998), based on these benefits firms have the ability to explicitly implement a specific eHRM type. These types are coherent with the consequences of eHRM defined by Lepak and Snell (1998), and are formulated by Ruël, Bondarouk and Looise (2004) as the operational, relational or transformational eHRM type. The strategic contribution of eHRM is categorized as being either cost oriented (Parry & Tyson, 2010), resulting in a decline in costs, or oriented towards professionalization of the HR profession (Parry, 2011; Gardner, Lepak, & Bartol, 2003) by for example providing more detailed and accurate data upon which HR decisions can be made.

Whether eHRM contributes strategically is proposed to be contingent upon firm strategy, HR orientation and usage, usage subsequently being dependent on the end user group. The first variable defined is firm strategy, categorized as being either cost or innovation oriented. Strategy is expected to be a contingency in such a way that if the eHRM type does not fit with firm strategy, the strategic contribution of eHRM is proposed to be less strong. The second variable proposed is HR orientation, categorized as being either administrative or strategic oriented. Again, if the eHRM type of a firm does not fit with the HR orientation of a firm the strategic contribution of eHRM is proposed to be less strong. The third variable defined is usage, consisting of frequency in use, appropriation and task significance. Usage is proposed to serve a conditional role: if eHRM is not used frequent, appropriate and is not task significant the strategic contribution of eHRM is suggested to be absent. The last factor of importance is proposed to be end user, which interacts with the usage factor. Since HR professionals, line managers and employees vary in the way they interact and use eHRM the end users group is expected to be the cause of a three way interaction between eHRM type, usage and the strategic contribution of eHRM. For line managers and HR professionals, if eHRM is not used frequent, in alignment with its intention (appropriation) and is not task significant the strategic contribution of eHRM wil cease to exist. Based on prior research however, for employees this conditional variable (usage) is proposed to be absent. This absence of usage for employees is potentially due to the expectancy that employees interact with eHRM with low frequency, not in alignment with its intention and lacks task significance for this user group.

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Preface

This paper is the end product on which the completion of my Master of Science, Business Administration study, specialized in Human Resource Management at the Twente university is based. The last period of my Msc. Study at Twente university has been a fun, challenging and satisfactory experience. Crystalizing my thoughts and ideas using existing theory, empirics and research to translate my ideas into a conceptual model has been a fulfilling challenge. I hereby proudly present my master thesis.

I would like to thank my supervisor Tanya Bondarouk who never failed to give me directions when I needed them supporting not only my continues workflow but also my enthusiasm to keep working and feeding my curiosity with concrete feedback when I was challenged by the abstractness of my ideas. I would also like to thank Jeroen Meijerink for reading my thesis and providing me with feedback helping me to complete my thesis.

Although electronic human resource management is a much used application in organizations theory development is still in its infancy. I was motivated by this early stage of research development to build upon existing research and add to the theory building in the eHRM field. My curiosity feeds the urge towards empirical testing the proposition I formulated in this thesis and I am curious to see where the research field of eHRM will expend too in the future.

Luuk Collou

Introduction

Research context and topic justification

McWhorter (2010) states that "technology is permeating our personal and professional lives" (p. 623) and according to Orlikowski and Scott (2009) it is hard to think of any contemporary organization that does not depend on some kind of technology. Similarly to the impact of technology on organizations described by McWorther (2010), the impact of technology on the field of human resource management (HRM) has been dramatic (Stone & Dulebohn, 2013) affecting operational, relational and transformational HRM aspects (Lepak & Snell, 1998). However, even though eHRM is one of the most implemented applications in organizations according to Lee (2011), theory and research on electronic human resource management (eHRM) is in its infancy (Stone & Dulebohn, 2013).

Whereas manual systems were a major part of the role of human resource management throughout most of the twentieth century, mainframe computer systems were used to automate human resource (HR) processes reducing the administrative burden in the field during the 1960s and 1970s (Stone & Dulebohn, 2013). Fast development of technology and especially the rise of the World Wide Web, helped to modify and enhance the adoption of eHRM (Strohmeier, 2009; Stone & Dulebohn, 2013) resulting in an infusion of HRM processes and the HRM department by information technologies (IT) in today's global networking timeframe (Bondarouk & Ruël, 2009). As a result of these developments eHRM now constitutes a commonly adopted management practice (Strohmeier, 2009). Why do organizations implement eHRM? "eHRM systems are thought to provide a number of key benefits to organizations" (Stone & Dulebohn, 2013, p. 2). Lengnick-Hall and Moritz (2003) formulate a typical argument to implement eHRM:

> "Use e-HR and your organization can reduce process and administration costs. Fewer HR professional are needed because e-HR eliminates the 'HR middleman'. Furthermore, e-HRM speeds up transaction processing, reduces information errors, and improves the tracking and control of HR actions. Thus, e-HR improves service delivery" (Lengnick-Hall & Moritz, 2003, p. 369).

According to Kovach, Hughees, Fagan and Maggitti (2002) companies increasingly introduce eHRM in the hope of administrative and strategic benefits. In alignment with these arguments, Ruël et al. (2004) define three types of eHRM goals, namely (1) improving the strategic orientation of HRM, (2) cost reduction/efficiency gains, and (3) client service improvement/facilitating management and employees. Synonymous with the first goal defined by Ruël et al. (2004) Marler and Fisher (2013) state that "one purpose of eHRM is to make the HRM function more strategic" (p. 18) (i.e. increased role HRM in performance and strategy support), and thus more strategic contribution of the HRM function within an organization.

Altough "empirical evidence on the benefits of eHRM is scarce" (Bondarouk, Harms, & Lepak, 2010, p.1) the consensus among research suggests that eHRM contributes to the strategy of an organization trough the transformational consequences of eHRM. Due to the enabling function of IT to automate activities, HR professionals can spend less time on routine and repetitive tasks and focus on more meaningful information responsiveness (Gardner et al., 2003) and/or activities with a strategic character (Bondarouk & Ruël, 2009). However, this process of transformation of the HR function due to eHRM seems to be fragile.

Strohmeier (2007) concluded that "while robust results that unambiguously evidence persistent transformations are missing, there are mixed findings and some isolated hints that e-HRM may contribute to a more strategic role of HRM" (p. 28). Bondarouk and Furtmueller (2012) acknowledge contradicting empirical findings when addressing the enabling function of eHRM to create a more strategic HRM function inferring that "scholars have placed increasingly opposed findings into the archives" (p.18). More recently Marler and Fisher (2013) infer that "the empirical evidence supporting this perspective is extremely weak" (p. 30) and "the evidence in support of e-HRM as an independent agent creating a positive change for HR is extremely weak" (p. 30).

Based on this lack of consensus concerning the enabling function of eHRM questions arise why empirical evidence showing this enabling function of eHRM is absent or very weak. Additionally, even though it makes intuitive sense to consider only the transformational consequences of eHRM when analysing the strategic contribution of eHRM, in this paper the operational and transactional consequences are considered to be factors of potential strategic contribution as well. Based on the multiple contingencies elaborated upon in this paper operational, transactional and transformational types of eHRM have the potential to contribute strategically depending on the strategic goals of an organization.

The goal of this research is to design a conceptual framework addressing the contingencies affecting the strategic contribution of eHRM based on existing theory and empirical research. This research is done using the contingency perspective implying "that the relationship between the relevant independent variable and the dependent variable will be different for different levels of the critical contingency variable" (Delery & Dotty, 1996, p. 807). This approach is in alignment with HRM research using the system approach. Consideration of different factors and their interaction seems common in HRM research, one example is given by Lepak, Liao, Chung and Harden (2006) stating that "researchers may agree that a system perspective is more appropriate than a perspective that focusses on the role of individual HR practices in isolation" (p.218). The formulated propositions of this paper revolving around a best fit approach are in alignment with this contingency perspective. The best fit perspective is defined by Nadler and Tushman (1980) as "the degree to which the needs, demands, goals, objectives and/or structure of one component are consistent with the needs, demands, goals, objectives, and/or structure of another component" (p.40); the components in this paper respectively being eHRM type and the strategic contribution of eHRM which will be elaborated upon later. Analysing the fit perspective Wright and Snell (1998) state that "inherent in most treatments of fit is the premise that organizations are more efficient and/or effective when they achieve fit relative to when a lack of fit exists" (p.757). Best fit propositions are found in several HRM research papers, Lepak and Snell (2002) for example infer that "a greater fit among human capital, employment, and HR would logically be associated with enhanced performance" (p.538). The best fit approach is applied to the eHRM context since contradicting empirics concerning eHRM hint towards factors affecting the presence of eHRM benefits. While some research acknowledges the existence of these benefits other research questions their presence inferring the possibility of the presence or absence of fit among factors concerning eHRM respectively. Additionally Dulebohn (2013) states that there is a dearth of theory concerning eHRM. The commonality of using the contingency and/or best fit perspective along with the current stage of eHRM theory development, leads to this usage of a theory development, best fit contingency approach for this research paper. Based on empirical and theoretical inferences several proposition are formulated.

Research question

The following main research question is defined:

What are the contingencies influencing the strategic contribution of eHRM?

1   Theory and conceptualization

1.1   Defining electronic human resource management

What is eHRM? According to Bondarouk and Ruël (2009) eHRM definitions have flourished but with little consistency or agreement in sight. Bondarouk and Ruël (2009) underline the importance of considering different definition of eHRM by stating that "minor switches in terminology (discourse) might result in different directions of studies or in diverse subsets of the eHRM population" (Bondarouk & Ruël, 2009, p. 506). One example of an eHRM definition is given by Sanayei and Mierzaei (2012) defining eHRM as "the use of computer systems, interactive electronic media, and telecommunication networks to carry out the function of the human resource management department" (Sanayei & Mirzaei, 2012, p. 79). Before considering a definition of eHRM suitable for this paper, Ruël et al. (2004) emphasize the importance of identifying terms that possibly carry similar meanings to the term eHRM, "terms are used such as virtual HR(M), HR intranet, web-based HR, computer based human resource management systems (HRIS), and HR portals" (Ruël et al, 2004, p. 365). Due to the somewhat narrower intension of these terms (Strohmeier, 2007) and in order to consider the full impact of eHRM (Strohmeier & Kabst, 2009) the eHRM concept is used in this paper.

According to Marler and Fisher (2013) "the two most cited definitions are provided by Strohmeier (2007) and Ruël et al. (2004)" (p. 21). Strohmeier (2007) referred to Legnick-Hall and Moritz (2003) and Ruël et al. (2004) while phrasing his definition of eHRM and states that "even though the e-HRM concept is widely used today, there are hardly any explicit definition" (Strohmeier, 2007, p. 20). Lennink and Hall (2003) answer the question "what is e-HR?" with "a real-time, information-based, self-service, interactive work environment" (Lennink & Hall, 2003, p. 365) and refer to "the 1990s when e-HRM referred to conducting business transactions, in this case human resources, using the internet" (Lennink & Hall, 2003, p. 365). Subsequently Ruël et al. (2004) define eHRM as "a way of implement HR strategies, policies and practices in organizations through a conscious and directed support of and/or with the full use of web-technology based channels" (Ruël et al, 2004, p. 365). Acknowledging these prior definitions and categorizing them as being rather general and emphasizing the internet supported way of performing HR policies and/or HR activities, Strohmeier (2007) expanded the definition to be "more specific about the technological and organizational context" (p. 21) by defining eHRM as "the (planning, implementation and) application of information technology for both networking and supporting at least two individual or collective actors in their shared performing of HR activities" (Strohmeier, 2007, p. 20).

Bondarouk and Ruël (2009) conclude that "researchers have not standardized a definition of e-HRM yet" (Bondarouk & Ruël, 2009, p. 507). Bondarouk and Ruël (2009) put forward a definition that they believe "represent the consensus based understanding of electronic HRM: 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). More recently Marler and Fisher (2013) define eHRM in their study as "configurations of computer hardware, software, and electronic networking resources that enable intended or actual HRM activities (e.g., policies, practices, and services) through individual and group-level interactions within and across organizational boundaries" (Marler & Fisher, 2013, p. 21).

The emphasis in this study is on the potential of eHRM to contribute strategically within an

organization. In order to fully grasp this effect, the definition of eHRM needs to be comprehensive. The terms mentioned by Ruël et al (2004) possibly carrying the same meaning are to be captured within the chosen definition in order to understand the possible effects of 'all' eHRM. Using this argument the definition used by Marler and Fisher (2013) seems operable since it covers a comprehensive set of IT applications (computer hardware, software, and electronic networking), distinguishes between intended and actual HRM activities, individual and group level interactions and within and across organizational boundaries. However, the definition proposed by Bondarouk and Ruël (2009), based on a consensus understanding of eHRM, does not explicitly and/or specifically mention any IT applications. On one hand this leaves room for considering the effect of all eHRM without subtracting possible eHRM related applications due to not being covered in the eHRM definition ('all possible integration mechanisms'). On the other hand it does define eHRM specifically enough to avoid operationalization problems since it mentions 'integration mechanisms and contents between HRM and Information Technologies'. Additionally it considers the implementation levels both across and within organisations and mentions the main stakeholders ("targeted employees and management"). Based on these argument, the definition of eHRM for this study is based upon the definition formulated by is Bondarouk and Ruël (2009):

"eHRM is 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)

1.1.1 Consequences of electronic human resource management

What are the consequences of eHRM? Stone and Dulebohn (2013) point out that "prior to the implementation of automated systems, the human resource function used manual paper record keeping and reporting systems that were typically cumbersome and very time consuming" (p. 2). In their publication Stone and Dulebohn (2013) use the development of IT to indicate the evolution of eHRM using the timespan 1960-2000:

> "In the 1960s and 1970s, mainframe computer systems were used to automate HR record keeping and payroll, and they began to reduce the administrative burden in the field. In the 1980s standalone software packages were developed to provide management system functionality that facilitated HR functions such as applicant tracking, performance appraisal, and training and development. In the late 1980s client architecture and microcomputers emerged as the dominant forms of technology. HR databases were stored on central servers connected to local area networks (LAN) or wide area networks (WAN). The 1990s witnessed a growth in integrated HRIS that managed multiple HR functions, and provided more sophisticated management and reporting features. The next development in the evolution of HRIS was that organizations began to use intranets to gather, store, and disseminate information. Toward the end of the 1990s, the migration to Web-enabled systems began, and companies started developing HR software that would be compatible with Internet architecture. In the early 2000s, this new software enabled the centralization of all HR and organizational data so that users could access it through Web browsers at any time or place"(Stone & Dulebohn, 2013, p. 2).

Using the IT development to contextualize the evolution of eHRM, Stone and Dulebohn (2013) illustrate what technologies were key to the development of eHRM and also, what ends were served. In its infancy, eHRM was mainly used to automate. Mainframe computers

delivered this service whereas more recently eHRM serves a more overarching goal for the HRM function making extensive use of the world wide web (Strohmeier & Kabst, 2009; Ruël et al, 2007). These developments have lead eHRM and/or IT to be an influential factor for the HRM function, as stated by Bell, Lee and Yueng (2006) "information technology has been cited as a critical driver of HR's transition" (p. 295) and made eHRM "a driving force in the transformation of the HR function"(p. 306). eHRM evolved from being a way to automate record keeping and reducing the administrative burden (Stone and Dulebohn, 2013) to being a driver of the transformation of the HR function (Bell et al., 2006). This inference however is considered too generic in order to fully grasp the eHRM concept and its effects.

Strohmeier (2009) states that "eHRM constitutes a commonly adopted management practice in the interim" and that this "is founded on the expectation of diverse positive consequences of eHRM, such as reducing costs, speeding up processes, improving quality, and even gaining a more strategic role for HR within the organisation" (Strohmeier, 2009, p. 528). The categorization suggested by Lepak and Snell (1998), distinguishing between operational, relational and transformational consequences, is used to elaborate upon the effects of eHRM. After the elaboration upon the categorization of Lepak and Snell (1998) these consequences are linked to eHRM types (Ruël et al., 2004).

Operational consequences

"Operational HRM concerns the basic HRM activities in the administrative area, for example salary administration (payroll), and personnel data administration" (Bondarouk et al., 2009, p. 579). "IT can influence the operational aspects of HR by streamlining operations and alleviating much of the administrative burden" (Lepak & Snell, 1998, p. 219). Strohmeier (2007) adds that operational consequences comprise both efficiency and effectiveness related macro-level consequences of eHRM. But are these consequences present? Hawking, Stein and Foster (2004) infer in their case study the operational consequence of using a eHRM system by stating that:

> "The implementation of SAP's ESS (a eHRM system) has provided the Department with a number of tangible benefits. Firstly, there has been a reduction in HR/payroll processing. For example, a recent event which required the calculation of 15 months' back pay including three pay increases for 4000 employees, required only five staff, and took five days to complete with a 99.7% accuracy. A comparison estimate between the new system and the previous system, revealed that it would take twenty staff, five days with a 78% accuracy rate" (Hawking et al., 2004, p. 1024).

Buckley, Minette, Joy and Michaels (2004) infer in their case study that automation in employee selection results in substantial cost savings by stating that "the estimated savings from reducing turnover ($443,520) and staffing costs ($65,400) while increasing hiring process efficiencies ($55,000) are combined, the total cumulative savings would equal $563,920" (Buckley et al., 2004, p. 239) suggesting that eHRM positively affects operational HR aspects and saves costs. However, Ruël et al. (2004) infer that a responsibility shift takes place from the HRM function to the line manager due to eHRM. Therefore, savings on HR department level could be a results of shifting the responsibility to line managers (Strohmeier, 2007). Additionally, Strohmeier (2007) refers to Baker et al. (1998) by stating that "special recruiting systems only partially meet the expectations of saving time and work" (Strohmeier, 2007, p. 27). "In summary, findings concerning the efficiency consequences are limited and mixed" (Strohmeier, 2007, p. 27). While several articles present positive consequences for operational HRM (Hawking et al, 2004; Buckley, 2004) other articles note limitations of these

effects such as the shifting of responsibilities from HR to line management (Ruël et al., 2004) and only partially meeting the expectations of saving time with recruitment systems (Baker et al. as cited in Strohmeier, 2007). Effects of eHRM on operational HRM are evidentially presents, the extent to which these are unanimous positive proves to be challenging.

Relational consequences
"Relational HRM concerns more advanced HRM activities and its emphasis lies not on administering, but on HRM tools that support basic business processes such as recruiting and selecting personnel, training, performance management and appraisal, and rewards" (Bondarouk et al., 2009, p. 579). "IT can influence relational aspects of HR by increasing the timeliness and service levels with employees and managers, as well as outside partners" (Snell et al., 1995, as cited in Lepak & Snell, 1998, p. 220). According to Strohmeier (2007) "Relational consequences refer to the new and extended possibilities of interactions between actors, leading to heterogeneous networks and, therefore, represent a crucial topic" (Strohmeier, 2007, p. 28).

Relational consequences "are for the most part unexamined at present" (Strohmeier, 2007, p. 28). Gardner et al. (2003) infer that "as IT automates and informates activities, HR professionals can spend less time on routine and repetitive tasks and focus on more meaningful information responsiveness, working autonomously and connecting with outside professionals to access information" (Gardner et al, 2003, p. 174) suggesting that IT leads to more interaction with outside professionals for the HR function. In conclusion, Ruël et al. (2004) state that "IT makes it possible to combine centralization and standardization on the one hand and decentralization in the execution and operations at the other" (Ruël et al., 2004, p. 376) relating to the relational consequences of eHRM.

Based on these inferences the relational consequences of eHRM potentially add value by supporting business processes and increasing connectivity with outside and inside partners. The relational consequences are potentially more extensive than the operational consequences of eHRM. However, if these transformational consequences really are present is unexamined. Therefore eHRM theoretically has the potential to contribute trough relational consequences, if it actually does is uncertain.

Transformational consequences
The last, and according to Lepak and Snell (1998) possibly the most striking, category of consequences of IT on structural integration within HR are the transformational consequences. According to Strohmeier (2007) these consequences concern "the overall changes of the HRM function that centrally aim at the role the HRM plays in company performance and strategy support" (Strohmeier, 2007, p. 28).

Hussain, Wallace and Cornelius (2007) refer to the transformational consequences of eHRM explicitly by stating that "human resource information systems (HRIS) usage allows the human resource (HR) professional to become a strategic player" (Hussain et al., 2007, p. 71). But is this true? According to Liff (1997) human resource information system "would appear to have at least the potential to provide the level and form of information about an organisation's human resources which would be a necessary input to strategic decision making" (Liff, 1997, p. 18). Tansley, Newell and Williams (2001) add to this argument by stating that "the introduction of the enterprise resource planning human resource system could potentially provide the stimulus to actually effect the required change (referring to the change from personnel management to HRM style activities) in employee management" (Tansley et

al., 2001, p. 364). However, both articles indicate that despite the potential enabling function of IT for the HR function to become more strategic it has not provided a strategy supporting role (yet) (Liff, 1997; Tansley et al., 2001). On the other hand some research tends to hint towards transformational consequences of eHRM. Teo, Soon and Fedric (2001) infer in their study that 19 % of their 110 respondents indicate that "human resource information system adoption emphasizes the role of HR as an active partner in achieving the organization's strategic objectives" (Teo et al., 2001, p. 106) indicating the potential enabling function of IT for the HR function. Ruta (2005) concludes on the effects of the implementation of an employee portal that "a third effect, at least in Italy, was the rise of the HR department in terms of strategic relevance within the company" (Ruta, 2005, p. 48). Additionally, Parry (2011) states that "eHRM may help HR to increase its value by becoming more strategic" (Parry, 2011, p. 1146) but infers in an earlier study that "no evidence was found of an actual increased involvement of HR in business decision making" (Parry & Tyson, 2010, p. 1)

Research indicates both the potential of IT to increase the strategic contribution as well as the inability to do so thus far. Strohmeier (2007), Bondarouk and Furtmueller (2012) and Marler and Fisher (2013) conclude similar findings by respectively stating that "while robust results that unambiguously evidence persistent transformations are missing, there are mixed findings and some isolated hints that e-HRM may contribute to a more strategic role of HRM" (Strohmeier, 2007, p. 28), "scholars have placed increasingly opposed findings into the archives" (Bondarouk & Furtmueller, 2012, p.18) and "the evidence in support of e-HRM as an independent agent creating a positive change for HR is extremely weak" (Marler & Fisher, 2013, p. 30). Again, theoretically expectations are that eHRM is a driver of change for the HR function towards a more strategic function, due to mixed finding however there is no certainty that it actually does.

eHRM types
Ruël et al. (2004) use the distinction between operational, relational and transformational consequences formulated by Lepak and Snell (1998) to refer to three eHRM types. "The areas mentioned could also be considered as *types* of HRM that can be observed in practice" (Ruël et al., 2004, p. 368). Referring to Wright and Dyer (2000) who infer that an organization can choose to offer HR services face to face or through digital means, Ruël et al. (2004) distinguish between the operational, relational and transformational type of eHRM; "three types of e-HRM can be distinguished: Operational e-HRM, Relational e-HRM, and Transformational e-HRM (Ruël et al., 2004, p. 368):

- **Operational type of eHRM**
"The first, operational HRM, concerns the classic HR activities in the administrative area" (Ruël et al., 2004, p. 386) such as salary administration and personnel data administration. This type of eHRM is closely related to operational consequences of eHRM. Organizations implementing the operational type of eHRM strive for efficiency and effectiveness on macro level HRM activities through their eHRM system.

- **Relational type of eHRM**
"The second are, relational HRM, concerns more advanced HRM activities. The emphasis here is not on administering, but on HR tools that support basic business processes" (Ruël et al., 2004, p. 386) such as recruiting and selection of new personnel, training and performance management. This type of eHRM is closely related to relational consequences of eHRM. Organizations implementing the relational type of eHRM strive for new and extended possibilities of interaction between actors and support for basic business processes through

their eHRM system.

- **Transformational type of eHRM**

"Transformational HRM, the thid area concerns HRM activities with a strategic character" (Ruël et al., 2004, p. 386) such as organisational change processes and strategic competence management. This type of eHRM is closely related to transformational consequences of eHRM. Organizations implementing the transformational type of eHRM strive for changes of the HRM function in the role that HRM plays in company performance and strategy support through their eHRM system.

Using this categorization of eHRM types is closely related to the categorization using eHRM consequences. A difference however is that a specific HRM types could arguably be regarded as an explicit choice of an organization to focus their eHRM implementation, and therefore benefits, on either operational, relational or transformational HR activities. This explicit choice option distinguishes eHRM types from consequences in such a way that if an organization choses specifically for a type of eHRM, the organization expects to gain from the specific consequences related to that type of eHRM. Considering the benefits solemnly as consequences of a eHRM system leaves the specific choice option is absent.

Based on these findings the following conclusions concerning the definition and categorization of eHRM are made and used in this research paper. eHRM is defined 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). eHRM application consequences can be categorized as being either operational, relational or transformational (Lepak and Snell, 1998). Based on this distinction organization have the ability to choose a specific eHRM type; operational, relational or transformational (Ruël et al. 2004).

1.2 What it means to be strategic contributing

1.2.1 Defining strategy

What does it mean to be strategic contributing? In order to answer this question strategy is defined and potential contribution to strategy is analysed. According to Boxall and Purcell (2011) "the notion of strategy is subject to a confusing variety of interpretations" (Boxall and Purcell, 2011, p. 39). Mintzberg (1978) states that "the term strategy has been defined in a variety of ways, but almost always with a common theme, that of a deliberate conscious set of guidelines that determines decisions into the future" (Mintzberg, 1978, p. 935). Mintzberg (1978) refers to the definition formulated by Chandler (1962) as being typical for the definition of strategy in management literature, Chandler (1962) defined strategy as "the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals" (Chandler, 1962, as cited in Mintzberg, 1978, p. 935). Additionally, Mintzberg (1978) points out that strategy is a "plan" in common terminology. According to Evered (1983) "Strategy, in the corporate management field, is seen as a process for generating viable directions that lead to satisfactory performance in the market place, given a variety of legal constraints and the existence of competitors" (Evered, 1983, p. 70). Porter (1996) answers the question "what is strategy' by stating that "strategy is the creation of a unique and valuable position, involving a different set of activities" (Porter, 1996, p. 68). Porter (1996) deliberately distinguishes strategy from operational excellence by stating that "competitive strategy is about being different. It means deliberately choosing a different set of activities to deliver a unique mix of values" (Porter, 1996, p. 64). Miles, Snow, Meyer and Coleman (1978) refer to the product market mechanism when discussing the topic of strategy and formulate four typologies (defender, prospector, analyser, reactor) referring to how a business positions itself, for example a defender strategy would "deliberately enacts and maintain an environment for which a stable form of organization is appropriate" (Miles et al., 1978, p. 550).

What definition of strategy in the context of eHRM fits in this study? Boxall and Purcell (2011) distinguish between the formality of strategic planning and a strategy by stating that "it is possible to find strategy in every business because it is embedded in the important choices that managers and other employees of the firm make about what to do and how to do it" (Boxall & Purcell, 2011, p. 40). Boxall and Purcell (2011) define strategy as "the set of strategic choices that is revealed in the characteristic ways it (a business) behaves" (Boxall & Purcell, 2011, p. 40). Elaborating on this definition of strategy, Boxall and Purcell (2011) state that a strategic activity refers to "something that is critical to survival" (Boxall & Purcell, 2011, p. 42) and thus, "In this context, the strategies of firms are their particular attempts to deal with the strategic problems they face" (Boxall & Purcell, 2011, p. 48). For this paper, strategy is defined based on the definition given by Boxal and Purcell (2011) based on the fact that this definition includes the behavioural component of strategy and explicitly addresses the "need to survive", clearly distinguishing between strategic and non-strategic decisions. Therefore, strategy is defined as:

"the set of choices regarding issues critical to survival of the organizations that is revealed in the characteristic way a business behaves" (Boxal & Purcell, 2011)

1.2.2 Strategic contribution of human resource management

What is the relationship between (e)HRM and strategy? Why and how organizations reach their goals through the use of HR practices is examined by researchers in the last two decades

(Jiang, Lepak, Hu, & Baer, 2012). Empirical work tends to focus on the contribution of HR towards financial organizational goals, or financial performance (Becker and Huselid, 2006). One example of a study analysing the HR performance link done by Jiang et al. (2012) draws on the ability, motivation and opportunity model (AMO), in which HR systems positively affect the ability, motivation and opportunity of employees to perform. Jiang et al. (2012) infer that "the three dimensions of HR systems were related to financial outcomes both directly and indirectly" (Jiang et al., 2012, p. 1264). Additionally, Sels et al., (2006) state that the HRM–performance link is reported as a positive story by the majority of empirical studies and conclude that "greater use of high performance work practices (HPWP) is associated with increased productivity" (Sels et al., 2006, p. 319), in which HR is responsible for these high performance work practices. Both these studies (Jiang et al., 2006; Sels et al., 2006) infer that HR possibly contributes to financial goals of the organization linking strategic contribution to financial outcomes.

However, according to Becker and Huselid (2006) "empirical work in SHRM should be extended to include a focus on measures of effective strategy implementation" (Becker and Huselid, 2006, p. 907). Huselid et al. (1997) introduced the term strategic HR effectiveness. "strategic activities are considered as HRM innovations by companies" (Ruël et al., 2007, p. 283), and even though defining strategic HRM effectiveness tends to stay vague "there is a broad acknowledgement that strategic HRM involves the development and implementation of policies aligned with business strategy" (Ruël et al., 2007, p. 283). In their study Huselid et al. (1997) found that HR effectiveness was associated with capabilities and attributes of HR staff, and inferred a relationship between HR management effectiveness and productivity, cash flow and market value. Wright and McMahan (1992) emphasize the importance of a macro organizational approach when considering strategic human resource management (SHRM) and define SHRM as "the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals" (Wight & McMahan, 1992, p. 298).

Lawrer and Mohram (2003) discuss what it means to be a HR business partner stating that this seems to be associated with a specific set of activities on which the HR function is focused. These activities include "planning, organizational design, and organizational development and analyses of the variances shows that the focus on these activities has increased significantly more in those organizations in which HR is a full partner compared to those in which it is not" (Lawrer & Mohrman, 2003, p. 20). These elaborations (Lawrer & Mohran, 2003; Wight & McMahan, 1992) on human resource management in strategy context clearly connect the activities of the HR professional with the added value of these activities in relation to the organizational goals. Brockbank (1999) distinguishes between the operational HR activities, traditionally associated with HR, and strategic level HR activities based on five criteria. According to Brockbank (1999) strategic HR activities are conceptualized to add long term value, cover the entire organization, are thought out ahead of time and well documented, provide a basis for integrating multiple activities, and focus on issues that are critical for business success. On practice level Delery and Doty (1996) point out that "strategic HR practices are those that are theoretically or empirically related to overall organization performance" (Delery & Doty, 1996, p. 805).

As stated by Sels et al. (2006) the link between HRM and performance is reported as positive. However, between the HRM input (some HRM intervention) and output (some indicator of performance) lies the how and why HRM improves performance. This stage is often referred to as the 'black box' since we know little of what happens at this stage (Boselie, Dietz & Boon, 2005). Based on prior research it can be concluded that the HRM and strategy research

tends to focus on financial indicators and even though we know HR contributes to performance, we do not know how exactly. According to Paauwe, Guest and Wright (2013) "the idea is that the effect of HRM on organizational performance mainly goes through people" (p.70) referring to the relationship between HRM, employee well-being and performance.

1.2.3 Strategic contribution of electronic human resource management

Research has shown that HR possibly contributes to organizational strategy (often measured in financial terms), but what about eHRM? The measures aiming to infer the strategic contribution of HRM in prior research are too abstract and non eHRM related for the conceptual model suggested in this research since they consider the overall impact of the HRM function on strategy whereas this research is dedicated towards the strategic contribution of eHRM. The effects of eHRM are labelled in several ways throughout literature, while this research defines the outcomes of eHRM as (potential) strategic contribution, terms like effectiveness (Ruël et al., 2007) goals (Parry & Tyson, 2010) and value (Parry, 2011) have been found to have similar meanings. Avoiding an discussion based on terminology, the choice for the term strategic contribution of eHRM is based on the consideration of the effect of eHRM on strategy whereas terms like effectiveness and/or goals tend to be perceived as more narrow, even though these terms are used in very similar ways (depending on the usage of the author). In order to classify the potential strategic contribution of eHRM both empirical and theoretical literature discussing outcomes of eHRM is analysed.

"There has been much discussion in the literature about the possible goals and outcomes of e-HRM" (Parry, 2011, p. 1147). According to Parry and Tyson (2010) eHRM supports the general achievements of HR and refers to Lepak and Snell (1998) by stating that "HR goals have traditionally been broken down into three types: being cost effective, improving services for internal customers and addressing the strategic objectives of the business" (Parry & Tyson, 2010, p. 2). Parry and Tyson (2010) infer that " e-HRM is introduced in order to improve efficiency, service delivery, standardisation and organisational image, to empower managers and transform HR into a more strategic function" (Parry & Tyson, 2010, p. 2). Empirically testing whether these goals are realized led Parry and Tyson (2010) to infer that

> "efficiency, service delivery and standardisation goals were commonly realised. Some evidence of a transformational impact of e-HRM was found, as the HR staff had more time and information to support the organisation in achieving its business strategy. However, no evidence was found of an actual increased involvement of HR in business decision making" (Parry & Tyson, 2010, p. 2).

Somewhat contradictory Parry (2011) infers in a later study that "the results from a large-scale survey across 12 countries showed that e-HRM may help HR to increase its value by becoming more strategic, but found no evidence of cost savings due to reductions in HR headcount" (Parry, 2011, p. 1146). According to Ruël et al. (2007) eHRM contributes to the HRM effectiveness which is defined as the contribution of HR to a firm's performance (Ruël et al. 2007). This contribution of eHRM to HR effectiveness is confirmed in their study "the individual assessment of eHRM applications influences HRM technical and strategic effectiveness. This is especially so in the perceived quality of the content and the structure of eHRM applications which have a significant and positive effect on technical and strategic HRM effectiveness" (Ruël et al., 2007, p.280). Lengnick-Hall and Moritz (2003) address the effect eHRM has on the HR function stating that "for the human resource function eHRM has the potential to affect both efficiency and effectiveness" (Lengnick-Hall & Moritz, 2003, p.

366).

Based on these inferences the strategic contribution of eHRM is categorized as being either costs oriented or oriented towards the professionalization of the HR function.

- **Strategic contribution of eHRM: Cost oriented**

The strategic contribution of eHRM is defined as cost oriented when the outcomes are related to HR efficiency. Closely related to the operational consequences and the operational type of eHRM. So what are the indicators of cost oriented strategic contribution? Parry and Tyson (2010) indicate that operational eHRM is measured by reducing headcount within the HR function, improve cost effectiveness meaning using less money do to eHRM, removing the use of paper in HR processes and improving speed of processes. Buckley (2004) relates eHRM savings to reduced employee turnover, reduced staffing costs and increased hiring process efficiencies. Cronin et al. (2006) infers time savings as effect of eHRM. Based on these inferences the following indicators are categorized as being cost oriented strategic contribution of eHRM:

- Reduced headcount within the HR function, full time equivalent (FTE)
  Reduced number of FTE due to the implementation of eHRM, leading to reduction of costs made by an organization on HR staff
- Time savings within HR processes
  Efficiency gains within HR processes (such as recruitment and selection) resulting in time savings, time can be spend elsewhere or not at all (resulting in reduced headcount in HR staff)
- Reduced monetary investment in HR process due to eHRM
  Reduced monetary investment in HR processes such as recruitment and selection due to efficiency gains using eHRM.

If an eHRM system contributes strategically through cost orientation it expected to reduce headcount within the HR function and/or create time savings within HR processes and/or reduce monetary investments in HR processes.

- **Strategic contribution of eHRM: Oriented towards professionalization of the HR function**

The strategic contribution of eHRM is oriented towards professionalization of the HR function when the outcomes are related to HR effectiveness. In order to define indicators operationalization of prior researched is used. Parry (2011) measured the strategic involvement of HR using three items: place on the board of directors; HR strategy; the stage at which HR is involved in the development of business strategy. Gardner et al. (2003) infers that eHRM might contribute to a more strategic function of HR by creating a shift in time spend on operational and strategic activities. According to Gardner et al. (2003) eHRM enables HR professionals to spend more time on strategic activities. Haines and Lafleur (2008) infer strategic effectiveness of HR by measuring how well the HR function supports business needs. Parry and Tyson (2010) state that "transformational outcomes were explained as a result of the increased availability of accurate and detailed information or of the additional time available to HR practitioners" (Parry & Tyson, 2011, p. 14) adding the gain of accurate and detailed information for HR. Based on these inferences the following indicators are categorized as being strategic contribution of eHRM oriented towards professionalization of the HR function.

- Gains in accuracy and detail of information on which HR makes decisions
  Ability to gain access to accurate and detailed (HR) information due to eHRM usage
- Involvement in developing business strategy
  Early involvement of HR in business development due to eHRM usage (ability to use accurate and detailed information gain from systems and ability to forecast based on this information)
- Time spend on activities with strategic character
  Due to reduction in time spend on operational activities, increase in time spend on activities with a strategic character

If an eHRM system contributes strategically through orientation towards professionalization of the HR function it is expected to enable HR to gain accurate and detailed information and/or enable early involvement of HR in business strategy and/or enable HR to spent more time on activities with a strategic character.

2.   Contingencies affecting the strategic contribution of eHRM

2.1   Firm strategy affecting the strategic contribution of eHRM

Strategy is defined as "the set of choices regarding issues critical to survival of the organizations that is revealed in the characteristic way a business behaves" (Boxal & Purcell, 2011). But what issues are critical to survival of organizations an what are the strategic goals of a firm?

Miles and Snow (1978) address strategy discussing the process of environmental adaption in which organizations enact and cope with their environment. Miles and Snow (1978) formulate several organizational archetypes stating that "when competing organization within a single industry are observed, patterns of behaviour begin to emerge which suggests that various organizational forms can be reduced to several archetypes" (Miles & Snow, 1978, p. 29). The four archetypes formulated by Miles and Snow (1978) categorize organizations based on the strategy-structure relationship and therefore these archetypes have corresponding strategic goals and issues that are critical for the survival of a firm. Or, as stated by Miles, Snow, Meyer and Coleman (1978) "each has a particular configuration of technology, structure, and process that is consistent with its market strategy" (Miles et al., 1978, p. 550) and therefore "firms pursuing different strategic orientations can be viewed as different organizational types" (Lepak, Bartol & Erhardt, 2005, p. 146). The archetypes defined by Miles and Snow (1978) are named the defenders, prospectors, analysers and reactors and have the following characteristics:

- **Defenders**

"Organizations which have narrow product-market domains. Top managers devote primary attention to improving the efficiency of existing operations" (Miles & Snow, 1978, p. 29)
- **Prospectors**

"Organizations which almost continually search for market opportunities, because of their strong concern for product and market innovation these organization usually are not completely efficient" (Miles & Snow, 1978, p. 29)
- **Analysers**

"Organization which operate in two types of product market domains, one relatively stable and the other changing. In stable areas these organizations operate routinely and efficiently, in their more turbulent areas top managers watch their competitors and rapidly adopt promising new ideas" (Miles & Snow, 1978, p. 29)
- **Reactors**

"Organizations in which top managers frequently perceive change and uncertainty occurring in their organizational environments but are unable to respond effectively" (Miles & Snow, 1978, p. 29)

Lepak et al. (2005) use the typology of Miles and Snow (1978) and Porter (1980) to categorize organization as having either a cost oriented strategy or an innovation strategy and justify this distinction by stating that "the dominant focus within the strategic HRM literature has been on the influential role of business strategy on the use of HR with an emphasis on cost and innovation" (Lepak et al., 2005, p. 146). Based on this dominance in HRM literature as stated by Lepak et al. (2005) the categorization between cost and innovation emphasis is applied in this paper. The cost oriented strategy used by Lepak et al. (2005) is characterized by productivity and efficiency whereas an innovation strategy is categorized by striving to create change. Elaborating on how strategy serves a contingency role is done presenting both

the cost oriented and the innovation oriented strategy and their relationship with eHRM.

2.1.1 Cost oriented strategy

A cost oriented strategy is characterized by efficiency and productivity by striving for strict control (Miles & Snow, 1978). These strategic goals are in alignment with the operational type of eHRM, compromising both efficiency and effectiveness. Therefore the benefits of an operational type of eHRM seem to be beneficial for organizations with a cost oriented strategy and the operational type of eHRM can be considered as strategic contributing.

However, two more eHRM types are defined; the relational eHRM type, related to the added opportunities to connect within and outside the organization, and the transformational type of eHRM, related to the added strategic orientation of the HR function due to eHRM. Within the cost oriented strategy no strategic goals are related to communication and/or relations. Survival of the firm, for firms embodying a cost oriented strategy, is not depended upon relationships. Therefore the benefits of the relational type eHRM seem to lack alignment with the strategic goals of a cost oriented firms in order for this type of eHRM to be considered as strategic contributing.

The last type of eHRM, the transformational eHRM type, relates to the added strategic orientation of the HR function due to eHRM. According to Lepak et al. (2005) firms with a cost oriented strategy "are often fairly stable and rigid in their structure, the primary benefits of transformational practices are likely to be tapped infrequently" (Lepak et al., 2005, p. 147). This inference suggest that the transformational type of eHRM, resulting in a more strategic position of HR, does not relate to the strategic goals of a cost oriented firm. However, Lepak et al. (2005) define transformational activities as "practices that are oriented toward contributing toward more macro or strategic organizational objectives" (Lepak et al., 2005, p. 143). Therefore, depending on the strategic goals, which tend to be centred around efficiency and productivity for cost oriented firms, it could be argued that the potential transformational consequence of eHRM leads to a more strategic position of HR in which HR could address the efficiency and productivity of its organization's personnel. Analysing this potential of HR to address efficiency through strategic and/or transformational activities is done using the examples of transformational activities given by Carrig (1997). Examples of transformational activities based on the differentiation used by Carrig (1997) are knowledge management, organizational development and strategic planning. These activities do have the ability to address efficiency and cost reduction but do not solemnly focus on doing so. One example of a transformational HR activity as categorized by Carrig (1997) and how it is assumed to be missing fit with the cost oriented strategy is knowledge management. Davenport, de Long and Beers (1998) infer that among other characteristics a flexible knowledge structure enhances successful knowledge management. A firm categorized as cost oriented however strives for control contradicting this need for flexibility and thereby do not facilitate knowledge management. Another example is gained from Barney and Wright (1997) stating that organizations that are looking to cut back costs, or as categorized in this study as cost oriented, will first look at investments in people such as training, wages and headcounts reducing the ability of HR to contribute to organizational development. The activities defined as transformational are assumed to be not strategy related within firms characterised as being cost oriented. Based on these inferences firms with a cost oriented strategy are expected to strategically benefit most from the operational type of eHRM since the benefits of this type of eHRM are closely aligned with the strategic goals of the firm.

2.1.2 Innovation strategy

Firms characterised as having an innovation strategy are comparable with the prospect archetype as defined by Miles and Snow (1978) striving to create change (Lepak et al., 2005). These organizations "are frequently the creators of change in their respective industries" (Miles et al., 1978, p. 553).

The operational type of eHRM, related to cost efficiency, does not seem to relate the strategic goal of firms characterized as having an innovation strategy. Even though cost reduction tends to be a topic of importance in most firms, innovation strategy firms do not differentiate their selves based on efficiency and therefore cost related goals are not categorized as being strategic.

The second type of eHRM, the relational type, potentially enables connectivity within and outside the organization and supporting basic business needs. This enabled connectivity arguably could be a source of new ideas and hence positive change. In a more recent article Chang, Gong, Way and Jia (2012) refer to flexible HRM systems (FHRM) defined as "a set of internally consistent HRM practices that enable a firm to (a) acquire and develop human resources for a wide range of alternative uses and (b) redeploy those resources quickly and effectively" (Chang et al., 2012, p. 1928) and their relationship with firm innovation. Within this reasoning innovation is created through core knowledge employees defined by Collins and Smith (2006) as "employees that are critical for creating new knowledge or developing innovations". These FHRM systems, "by providing selection, training, rewards and performance management systems" (Chang et al., 2012, p. 1929) enhance the development of core knowledge employees and "are positively associated with firm level potential and realized absorptive capacity (AC) and that potential AC, in turn, in positively associated with market responsiveness and firm innovativeness" (Chang et al., 2012, p. 1924). The HR practices related to in these FHRM systems; selection, training, rewards and performance management, are categorized by Ruël et al. (2004) as relational HRM activities (recruiting and selection of new personnel, training and performance management). Based on this reasoning the relational type of eHRM is proposed to be in alignment with the strategic goals of a firm characterized as being innovation oriented.

The third and last type of eHRM, the transformational type, enables improvement of the strategic orientation of the HR function. It could be argued that the potential transformational consequence of eHRM leads to a more strategic position of HR in which HR could address the level of innovation of personnel. According to Carrig (1997) examples of transformational activities are knowledge management, organizational development and strategic planning. Again, using the example of Davenport et al. (1998) stating that flexible knowledge structures are needed for knowledge management, categorized as being transformational by Carrig (1997), which is potentially a source for innovation leads to assume that transformational eHRM fits with the innovation strategy. One example of a how transformational HRM activity enhances innovation is given by Gloet and Terziovski (2004) stating that "the study shows that KM (knowledge management) contributes to innovation performance" (p.402) however at the same time addressing that a mix of multiple HRM practices is needed to yield this result.

Based on these inferences firms with an innovation strategy are expected to strategically benefit most from the relational and the transformational type of eHRM since the benefits of these types of eHRM are closely aligned with the strategic goals of the firm. Based on these inferences the following proposition if formulated:

P1a. The strategic contribution of eHRM is contingent upon the strategy of a firm in such a way that with a cost oriented firm strategy the strategic contribution of eHRM is assumed to rely on the operational type of eHRM.

2.2   HR orientation affecting the strategic contribution of eHRM

How is HR orientation defined? In their study Lam and White (1998) define HR orientation as "a systematic organizational effort to attract, retain, and develop competent and committed human resources" (Lam & White, 1998, p. 353) referring to an overarching firm orientation towards personnel or the human resources and their importance. In this study however the focus is on the orientation of the HR function, not on the extent of orientation of the firm towards HR. The HR orientation concept in this study relates to the dominant role of the HR function (Lepak et al., 2005), being either administrative or strategy oriented.

Based on the work of Ullrich (1997), Marler (2009) proposes three main HR roles, the strategic partner, the administrative expect and the capacity builder. When in a strategic partner role HR "will spend more time on designing HR policies that align with product or service strategies. Such a strategic business partner role might involve performing business planning, work-force planning, performance management and succession planning, and compensation design in support of executing the business strategy" (Marler, 2009, p. 519). The administrative expert consists of "HR functional activities such as tracking job requisitions, managing employee payroll, benefits programs, and EEO compliance role" (Marler, 2009, p. 519). In a capacity builder role "HR managers will spend most of their time on developing practices that develop and build human capital and internal organizational capability" (Marler, 2009, p. 519). Although possibly performing different roles (Marler, 2009), one of these roles will be perceived as dominant. While Marler (2009) distinguishes between these three HR roles, Lepak et al. (2005) distinguish between HR orientation being either long term and strategic related or short term and operational oriented. HR can be categorized as being either administrative or strategy oriented. If HR within an organization is characterised as being strategic it spends most time working on contributing towards the strategic goals of an organization whereas an administrative HR orientation is characterized by working most time on administrative, operational goals.

The HR orientation is expected to influence the strategic contribution of eHRM. The different eHRM types, and explicit choice for either one of these three types, have a different strategic impact or relevance depending on the HR orientation. The benefits of the operational type of eHRM are in alignment with the administrative orientation of the HR function, both being related to operational and efficiency goals. The relational type of eHRM, related to the enabling function of more connectivity, is proposed to be closely related to the strategic HR orientation since being strategic oriented involves HR coming together with other disciplines to formulate and work on strategic goals. The transformational type of eHRM are in alignment with the strategic orientation of the HR function due to its enabling function for HR to become more strategic.

Based on these inferences the following proposition if formulated:

P1b. The strategic contribution of eHRM is contingent upon the HR orientation in such a way that in administrative oriented HR departments the strategic contribution of eHRM is expected to rely on the operational type of eHRM.

2.3 Usage characteristics affecting the strategic contribution of eHRM

The importance of usage in IT context is addressed by research done by Venkatesh, Morris, Davis and Davis (2003): when considering the rise of productivity due to technology Venkatesh et al. (2003) state that "in order for technologies to produce productivity, they must be accepted and used by employees in organization" (p. 426). Similarly, in order for eHRM to have an impact on strategy it must be used by its potential users. The unified theory of acceptance and use of technology (UTAUT) model was designed by Venkatesh et al. (2003) to explain why and how people accept and use technology. Since eHRM is considered to be a technological innovation within a company and it needs to be accepted and used in order to have an (strategic) impact, usage characteristics based on the UTAUT model are proposed to serve a conditional contingency role; if these conditions are not met eHRM is proposed to have no strategic impact since the applications are not and/or will not be used.

The goal of the UTAUT model is to understand the usage of IT (Venkatesh et al., 2003), therefore usage serves as depended variable in the UTAUT model. Venkatesh et al. (2003) state that "the role of intention as a predictor of behaviour (e.g. usage) is critical and has been well established in information systems and the reference disciplines" (p. 427). For example Venkatesh et al. (2003) refer to the theory of planned behaviour formulated by Azjen (1991) stating that "as a general rule, the stronger the intention to engage in a behaviour, the more likely should be its performance" (p. 181). Additionally, Venkatesh et al. (2003) found that "in predicting usage behaviour, behaviour intention was significant" (p. 461). Based on this knowledge Venkatesh et al. (2003) empirically validated the variable facilitating condition to be directly related to IT usage and the variables performance expectancy, effort expectancy and social influence to be directly related to intentions of usage for technologies, the latter explaining up to seventy percent of the variance in intention of usage. "Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance" (Venkatesh et al., 2003, p. 447). Using prior models developed to explain the acceptance and usage of technology Venkatesh et al. (2003) state that "the performance expectancy construct within each individual model is the strongest predictor of intention and remains significant at all points of measurement" (p.447). Additionally Venkatesh et al. (2003) state that even though the moderating variables age and gender play a role "a direct effect of performance expectancy was observed" (p. 461). "Effort expectancy is defined as the degree of ease associated with the use of the system" (p. 450). Similarly to performance expectancy Venkatesh et al. (2003) use prior formulated models and state that " the effort expectancy construct within each model is significant in both voluntary and mandatory usage contexts" (p. 450). Again, as with performance expectancy " the effect of effort expectancy was via a three-way interaction- the effect was moderated by gender and age" (p. 461). The last construct formulated by Venkatesh et al. (2003) having an effect on usage intention, social influence, is defined as "the degree to which an individual perceives that important others believes he or she should use the new system" (Venkatesh et al., 2003, p. 451). Venkatesh et al. (2003) acknowledge different labels of this construct in the prior models they use but state that "each of these constructs contains the explicit or implicit notion that the individual's behaviour is influenced by the way in which they believe others will view them as a result of having used the technology" (p. 451). The role of the construct social influence on technology acceptance is complex and subjected to a wide range of contingent influences (Venkatesh et al., 2003). Based on their own empirics, Venkatesh et al. (2003) infer that "the effect of social influence was via a four-way interaction-with its role being more important in the context of mandatory use, more so among women, and even more so among older women" (Venkatesh et al., 2003, p. 461). The construct facilitating conditions is

defined as "the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system" (Venkatesh et al., 2003, p. 453). Contrary to the constructs performance expectancy, effort expectancy and social influence, facilitating conditions directly affect usage. "The empirical results also indicate that facilitating conditions do have a direct influence on usage beyond that explained by behavioural intentions" (Venkatesh et al., 2003, p. 454). So, even though the construct facilitating conditions was not found to be significant affecting intention "facilitating conditions was not dropped from the model because of its role in predicting use" (Venkatesh et al., 2003, p. 461).

The importance of usage in IT context demonstrated by the work of Venkatesh et al. (2003) is expected to have an affect considering eHRM and the strategic contribution of eHRM discussed in this paper. The usage characteristics proposed to serve a contingency role in the conceptual framework are based on the work of Venkatesh et al. (2003), Bondarouk et al. (2010) and Hackman and Oldman (1975) and consist of frequency, appropriation and task significance respectively.

2.3.1 Frequency

In order for eHRM to have a strategic impact, it needs to be used by HR professionals and line managers. Due to the nature of the work of HR professionals and line managers eHRM potentially could be a tool providing professionals with accurate data, communication opportunities and overall professionalization of their function. However, if HR professionals and line manager do not use the system frequently, whenever the system could be of added value for their work, these benefits are proposed to be absent. Even though eHRM has the potential to contribute strategically, usage of the system is conditional for it to actually do so.

2.3.2 Appropriation

Appropriation is defined by Bondarouk et al. (2010) as "the physical and mental activities that technology users carry out while making a selection from the potential set of technologies, as represented by the intention of the technology and the technical features, in their day to day practice" (Bondarouk et al. 2010, p. 7). eHRM has the potential to contribute strategically, in order for it to do so however it needs to be used in the way that it is intended to be used. For example, an eHRM system providing HR professionals and line managers with detailed data concerning employee age, salary and pension plans used only by line managers and HR professionals only to view the pictures in the database is assumed to not results in strategic contribution. In order for this eHRM system to contribute strategically HR professionals and line managers are expected to need and use this detailed information for short and long term decision and other work context related activities.

2.3.3 Task significance

Task significance is defined as "the degree to which the job has a substantial impact on the lives or work of other people—whether in the immediate organization or in the external environment" (Hackman & Oldman, 1975, p. 161). eHRM needs to be influential when used by HR professionals and line managers. If the eHRM system can or is used solemnly for HR activities such as salary administration this potentially will have a negative effect on the strategic contribution of the eHRM system. eHRM systems providing information on which HR and/or line managers base short and long term decisions affecting both the organization and the external environment are proposed to lead to a higher strategic contribution effect of eHRM for an organization.

The inferences made in this chapter combined with the inferences related to differences in

usage of eHRM between end user groups lead to formulation of the third proposition:

P1c. The strategic contribution of eHRM is contingent upon the usage characteristics of HR professionals and line managers in such a way that the usage characteristics are conditional for the strategic contribution of eHRM

Proposition 1c is formulated using the end user groups HR professionals and line managers, the absence of employees in this proposition is elaborated upon in the following paragraph.

2.4   End users and the usage characteristics: a three way interaction

"The outcomes of eHRM usage cannot be evaluated without understanding the context of its users, who comprehend, interpret and engage the eHRM" (Bondarouk et al., 2010, p.2). Bondarouk et al. (2009) hint towards the consideration of the different users of eHRM by stating that "until the mid-1980s HRIS was primarily directed towards the HR department, by the turn of the century, line management and employees were actively involved in using e-HRM" (Bondarouk et al., 2009, p. 507). Referring to social constructivism challenging the idea that eHRM has a fixed meaning but alternatively viewing eHRM has being grounded in, appropriated and constituted by its users (Bondarouk et al., 2010). "To what extent the benefits of eHRM are realized largely depends on how the eHRM us used by the targeted employees" (Bondarouk et al., 2010, p. 5). Bondarouk et al. (2009) categorize the targeted users of eHRM as employees, line managers and HR professionals. These different user groups are a factor of consideration due to the variety with which they work with eHRM and their respective interpretations. This assumption is based on social constructivism and entails that eHRM is featured with interpretive flexibility (Orlikowski, 1992) meaning eHRM can have different implications for different individuals and or groups within an organization. Or, as stated by Orlikowski (2000) "structures are not located in organizations or in technology, but are enacted by users" (Orlikowski, 2000, p. 404).

In alignment with the variance in interpretation of eHRM, targeted end users (HR professionals, line managers and employees) are expected to differ in frequency (Bondarouk et. al., 2010), appropriation (Bondarouk et al., 2010) and task significance (Hackman & Oldham, 1975). These three usage characteristics are expected to serve as a contingency role for HR professionals and managers in such a way that they are conditional and therefore need to be present in order for eHRM to be strategic contributing. Frequency, appropriation and task significance are expected to serve no contingency role on the relationship between eHRM type and strategic contribution of eHRM for employees. Why is there a difference in the contingency role of usage characteristics between employees and the other end users (HR professionals and line managers)? First of all the categorization of different ends users implies that there is a difference in the interaction between several user groups with eHRM. If this would not be the case this categorization would be futile and literature would describe eHRM users as a single group. Additionally is makes intuitive sense that the interaction with eHRM varies between HR professionals, line managers and employees based on their work context. For example, employees are expected to use eHRM to change bank account numbers and home addresses whereas HR professionals use eHRM to gain accurate data and information upon which decisions are based. Research done by Bondarouk et al. (2010) and Hackman and Oldman (1975) hint towards differences between user groups and their eHRM usage and based upon these studies proposition related to frequency, appropriation and task significance are formulated.

- **Frequency, the difference between end users**

By cutting out the HR middle man (Lengnick-Hall and Moritz, 2003), eHRM enables employees to do their own registration (self-service) saving time for HR professionals to focus on different tasks. Bondarouk et al. (2010) hypothesize that "the frequency of e-HRM use has a mediating role in the realization of the benefits of e-HRM" (Bondarouk et al, 2010, p. 3). but contradictory have to infer based on their study that the frequency of eHRM usage does not mediate the relationship between IT and HRM strength amongst employees: "our study has revealed that the observable outcomes of an e-HRM implementation do not depend on the extent of its use by employees" (Bondarouk et al., 2010, p. 22). Why does frequency of use not affect this relationship? This is potentially due to the interaction of employees with eHRM. Practically eHRM enables employees to process things like a changing bank account or home address without having to contact the HR department. However, these activities (bank account, home address, etc.) do not tend to occur frequently resulting in a low frequency of eHRM usage by employees (the study of Bondarouk et al. (2010) was held amongst employees) whereas HR professionals and line managers potentially use eHRM every day for information supply. Based on these inferences frequency is expected to serve a contingency role in the relationship between eHRM type and the strategic contribution of eHRM for HR professionals and line managers since these user groups use if often. Frequency is expected to have no influence for employees since they do not use eHRM often.

- **Appropriation, the difference between end users**

The appropriation is expected to serve a contingency role difference between end users as well. Appropriation is defined by Bondarouk et al. (2010) as "the physical and mental activities that technology users carry out while making a selection from the potential set of technologies, as represented by the intention of the technology and the technical features, in their day to day practice" (Bondarouk et al. 2010). Desanctis and Poole (1994) elaborate on appropriation by stating that "people actively select how technology structures are used, and adoption practices vary" (Desanctis & Poole, 1994, p. 129), according to Bondarouk et al. (2010) appropriation can be regarded as the continuous institutionalization of eHRM by its users. To indicate the importance of appropriation Bondarouk et al. (2010) refer to Fitzgerald and Russo (2005) who analysed a failing IT system named the 'London Ambulance Service's (LAS) command and control information system':

> "The analysis of the LAS failure revealed intensive usage of the system (the call traffic load had increased) but an inappropriate way of working with it: there was an inability to deal with exceptional messages, breeding incorrect databases and generating repeated messages, that frustrated ambulance crews that, under pressure, became slow to notify the status of their units" (Bondarouk et al. 2010, p. 9).

In their study amongst employees Bondarouk et al. (2010) hypotheses that not only frequency would mediate the effect of IT on HRM strength but that "e-HRM appropriation has a moderating role that affects that mediation" (p.3). However, similarly to the results regarding frequency "the moderated mediation models also show no indication of mediation effects, for either the low or the high appropriation models" (Bondarouk et al. 2010, p. 19) inferring that for employees appropriation has no effect on the relationship between IT and HRM strength. Why? Intuitively it makes sense that HR professionals and line managers are expected to use the eHRM system in alignment with its intention due to the nature of their work (requesting detailed HR data, communicating with both inside and outside parties, etc.) whereas employees are expected to use it for non-intended purposes (looking at photographs, checking colleague salary) as well as intended self-service option (although not frequent). The work of

Bondarouk et al. (2010) however does not provide empirical data to this intuitive logic reasoning. Based on these inferences appropriation is expected to serve a contingency role in the relationship between eHRM type and the strategic contribution of eHRM for HR professionals and line managers, appropriation is expected to have no contingency role on the relationship between eHRM type and strategic contribution for employees (see Figure 3 for the conceptual model).

- **Task significance, the difference between end users**

The last usage characteristic expected to serve a contingency role is 'task significance' based on the work of Hackman and Oldham (1975). Defined by Hackman and Oldman (1975) as "The degree to which the job has a substantial impact on the lives or work of other people—whether in the immediate organization or in the external environment" (Hackman & Oldman, 1975, p. 161). The impact of task significance on employees is demonstrated by Grant (2008):

> "In Experiment 1, fundraising callers who received a task significance intervention increased their levels of job performance relative to callers in 2 other conditions and to their own prior performance. In Experiment 2, task significance increased the job dedication and helping behaviour of lifeguards, and these effects were mediated by increases in perceptions of social impact and social worth. In Experiment 3, conscientiousness and prosocial values moderated the effects of task significance on the performance of new fundraising callers" (p.108).

Although relating these inferences to eHRM usage seems to be a far stretch the effect of task significance on eHRM usage is assumed to be due to the processes that employees (self-service; changing bank account number or viewing own payslip), HR professionals and line managers (providing information upon which decisions are based) engage in with eHRM. The employee interaction with eHRM is expected to not to have an impact on other employees within the organization. HR professionals and line managers gaining information from eHRM, communicating and basing decisions on that information do work with eHRM in such a way that it influences other people in and outside the organization. Therefore it is assumed that task significance is not relevant for employees in eHRM context. Based on these inferences task significance is expected to serve a contingency role in the relationship between eHRM type and the strategic contribution of eHRM for HR professionals and line managers. Task significance is expected to not serve a contingency role on the relationship between eHRM type and strategic contribution for employees (see Figure 3 for the conceptual model).

This difference in frequency of usage, appropriation and task significance between users of eHRM is expected to be the cause of a three way interaction between eHRM type, the effect of usage depended on user group, and the strategic contribution of eHRM: the extent to which usage serves a conditional role for the strategic contribution of eHRM is proposed to be depended on the end user group. Additionally this variance is potentially the cause of different perceptions of the strategic contribution of eHRM. Therefore, to consider the contingencies influencing the strategic contribution of eHRM the end user taken is into consideration using the categorization of employee, line manager and HR professional. Based on these inferences the following proposition is formulated:

Proposition 2: The extent to which usage serves a conditional role for the strategic contribution of eHRM is dependent on the user group in such a way that for HR professionals and line managers usage serves a conditional role.

The eHRM user group categorization of employees, line managers and HR professionals (Bondarouk, 2009) is applied in the conceptual model (Figure 3). This categorization is proposed to be the cause of a three way interaction between the factors eHRM type, usage and strategic contribution of eHRM implying that based on the user group categorization the extent to which usage factors influences the strategic contribution of eHRM varies.

The most frequent use of eHRM is expected from HR professionals since this group of users enter, process and gain information using eHRM. Additionally HR professionals are expected to use the eHRM applications in full alignment with its intention, relating to appropriation, and eHRM is expected to have the most task significance for HR professionals. So, even though usage characteristics are expected to play a contingency role for both HR professionals and line managers (Figure 2), the extent to which these characteristics play a role is expected to differ. Figure 1 graphically illustrates the difference in extent to which the variable usage is expected to serve as a contingency variable between employees, line managers and HR professionals.
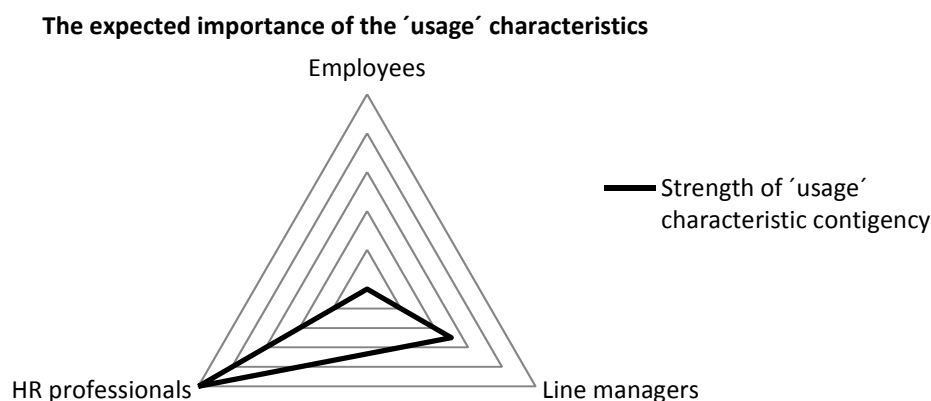
Figure 2. extent to which usage characteristics serve a contingency role between different end groups

- **Strategy, HR orientation and end users: the absence of an assumed effect**

The effect of the usage factor (frequency, appropriation and task significance) is expected to differ amongst end users. This difference expected in usage is assumed to not be transferable to the factors business strategy and HR orientation included in the model (Figure 3). The strategic contingencies are proposed to be not depending on the end user since a business strategy is evidently present. The level of contribution of eHRM in a firm with a cost oriented strategy is suggested to not be different for employees, line managers or HR professionals since all user groups work in a business with the same strategy. Similarly, The HR orientation contingency is proposed to be not depending on the end user since a HR orientation is evidently present. The level of contribution of eHRM in a firm in which HR is administrative oriented is proposed to not be different for employees, line managers or HR professionals since both groups work in a business in which HR has the same orientation. This expected differences between usage, affected by end users, and strategy and HR orientation, not affected by end user is due to the individual nature of usage and organizational nature of strategy and HR orientation elaborated upon in chapter 2.4.2.

- **The contingency model and multiple level factors**

Usage as a contingency factor can arguably be seen as an individual level factor whereas strategy and HR orientation tend to be categorized as organizational level factors. So why include a factor on individual level? Relating to inferences such as "the outcomes of eHRM usage cannot be evaluated without understanding the context of its users, who comprehend, interpret and engage the eHRM" (Bondarouk et al., 2010, p.2) Delery and Doty (1996) infer based on the work of Jackson, Schuler and Revero (1986) that "successful implementation of business strategy relies heavily on employee behaviour" (p.808). Extending that statement eHRM and the potential strategic contribution of eHRM relies heavily on the employees interacting with eHRM. Without this individual level consideration of behaviour of employees it is proposed that the contingency framework was incomplete and would not grasp the full spectrum of factors that needs to be considered in order for eHRM to be strategic contributing.

2.5 Framework

Based on the four formulated proposition (p1a, p1b, p1c and p2) the conceptual models is formulated. Figure 3 illustrates the conceptual model. Additionally, to fully grasp the effect of user on the relationship between eHRM and the strategic contribution of eHRM a perception dimension is presented in chapter three answering which user group is expected to be best served by which type of eHRM. Expectations are that the three user groups differ in the way they perceive eHRM´s contribution towards strategy. More specifically, employees as a user group are expected to have a different perception of what it means for eHRM to be strategic contributing.
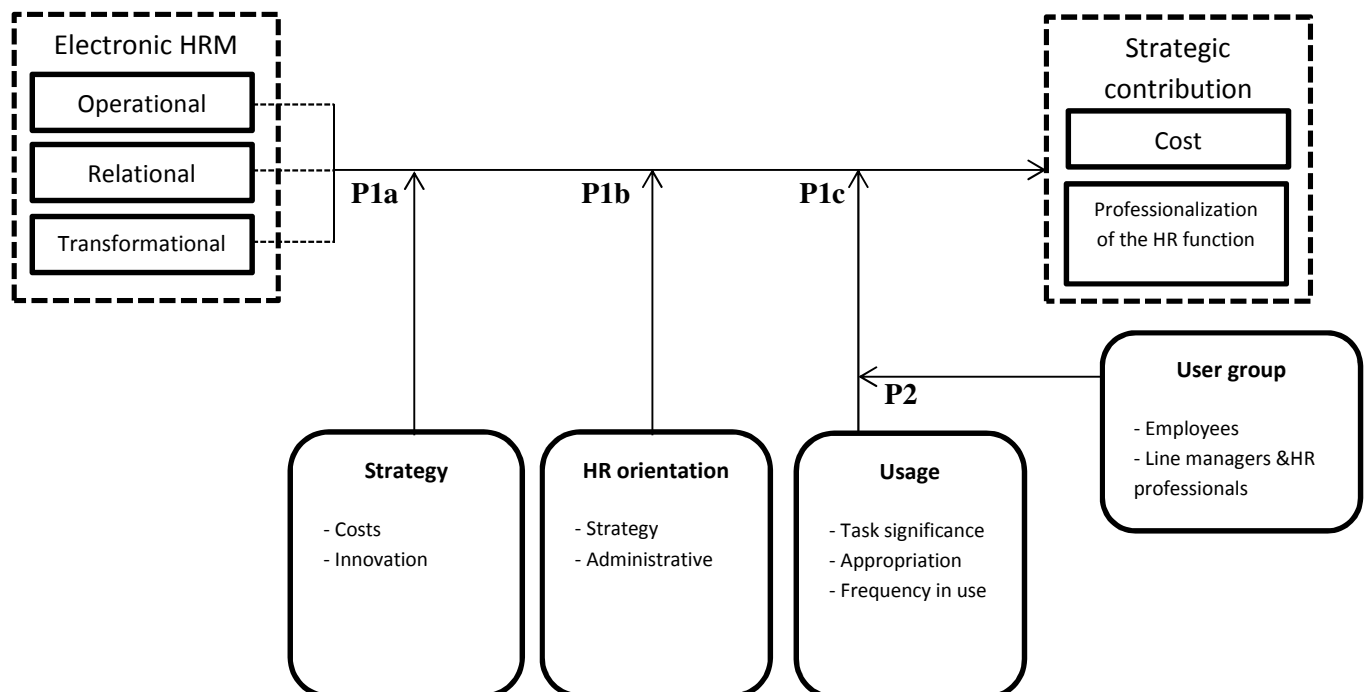

Figure 3. conceptual model, contingency factors influencing the strategic contribution of eHRM

3   The needs of eHRM user groups

In alignment with the categorization of end users used in the conceptual frameworks, the different eHRM needs of the eHRM user groups (employees, HR professionals and line managers) are theoretically analysed to answer the question which type of eHRM is best based on their respective needs.

3.1   Employee

According to Ruël et al (2002) individualism and increased educational level of employees causes a shift in the power balance between employers and employees towards the employees. This resulted in a need of employees to be able set their own career path. According to Ruël et al. (2007) eHRM can provide tools to support such a development. Ruël et al. (2004) state that employees "get the opportunity to be up-dated in the organizational developments, take part in the on-line discussions, chose their career path" (Ruël et al., 2004, p. 376). Ruta (2005) adds to this argument inferring that "by placing more applications and information online, HR portals reduce the reliance employees have on HR personnel" (Ruta, 2005, p.35) supporting the notion that eHRM enables employees to be (more) in control of their own career path.

The need to be in control of own career path developed by employees and the enabling function of eHRM to do so seem to be in alignment with the operational and to a lesser extent the relational eHRM types. Since eHRM enables cutting out the HR middle man (Lengnick-Hall and Moritz, 2003) employees are not depended on HR to get their administrative activities done. Not only is there the need to get administrative things done by employees themselves, if employees want to be in full control they need to have the ability to, for example, apply for a (different) job within or outside the company. eHRM serves this goal by giving employees the ability to connect with people inside and outside the organization creating the opportunity for employees to be in control of their own career path.

Based on these inference employees are best served by the administrative and relational types of eHRM enabling them to be in control of their own career path. The third type of eHRM, the transformational type, referring to the enabling power of eHRM to make HR more strategic oriented, are expected to not have a direct relationships with the needs of (non HR) employees.

3.1   HR Professionals

"Human resource researchers and managers have long maintained that the human resource function plays an important role in firm performance" (Barney, 1997, p. 3) and therefore advocate the function of HR as a strategic partner within an organization, in allignment "one function of eHRM is to make the HR function more strategic" (Marler & Fisher, 2013, p. 18). According to Marler and Dulebohn (2005) "by using web-based technologies, the human resource function can now transform much of its data management and transaction processing responsibilities to employees and managers (Marler & Dulebohn, 2005, p. 137) and "as a result HR is freed to focus less on operational and more on managerial and strategic activities" (Marler & Dulebohn, 2005, p. 137).

This direct relationship with the transformational type of eHRM seems to be straightforward even though empirical evidence verifying this process is scarce. However, HRM does not only benefit from a transformational type of eHRM but potentially benefits from both the operational type, being more efficient and cost aware and the relational type, being more communicative, as well. Based on these inference HR needs are best served if an eHRM

system results in all (operational, relational and transformational) benefits related to the operational, relational and transformational eHRM type enabling HR professionals to be more efficient, communicative and strategic. Compared to employees and line managers however, the benefits of the transformational HR type are evidently more pressing for HR than for the other targeted users and therefore HR might prefer a transformational type of eHRM.

3.3   Line managers

Ruël et al. (2007) states that "E-HRM has led to a radical distribution of the work that HR managers used to do" (Ruël et al., 2007, p. 282) and "on their own desktop, line managers nowadays perform appraisals, evaluate employee costs, generate HR reports, process training requests and oversee competence management" (Ruël et al., 2007, p. 282) and a switch from HR to managers for certain tasks is verified by Ruël et al. (2004) stating that "an administrative component of HR is becoming a task for the line management" (Ruël et al., 2004, p. 377).

Even though Ruël et al. (2004) address the administrative tasks, and therefore relates to the operational consequences of eHRM, the processes referred to by Ruël et al. (2007) imply that eHRM enables managers to do more than solemnly administrative tasks. eHRM enables managers to communicate with employees within and individuals/groups external to the organization.

Based on these inference line managers s are best served by a combination of operational and relational types of eHRM enabling them to handle both administrative and relational HR tasks without being depended from the HR department/ The last category of consequences (or type) of eHRM, transformational consequences referring to the enabling power of eHRM to make HR more strategic oriented, are expected to not have a direct relationships with the needs of line managers.

4. Discussion

eHRM is defined 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). Even though eHRM is a common phenomenon in organizations (Lee, 2011) theory and research on electronic human resource management (eHRM) is in its infancy (Stone & Dulebohn, 2013). This research contributes to the theory building and understanding of the relationship between eHRM and business strategy. Based on the work of Lepak and Snell (1998) the potential benefits of eHRM are present, existing research however shows contradictory results when inferring the presence of these theoretical benefits of eHRM. Additionaly, some benefits of eHRM were unexamined (Strohmeier, 2007) and therefore no inferences can be made yet. Based on this gap between the potential benefits of eHRM and the absence and contradictory empirical results of the actual presence of these benefits this research paper focussed on the following main research question:

'*What are the contingencies influencing the strategic contribution of eHRM?'*.

Based on existing empirics and theory a contingency framework addressing the expected role strategy, HR orientation, usage of targeted users and their influence on the strategic contribution of eHRM is designed. The strategic contribution of eHRM is proposed to be contingent upon firm strategy, HR orientation and usage of eHRM by HR professionals and line managers. In alignment with the framework, four propositions are formulated.

Lepak and Snell (2002) conclude that "a direct implications of this study for SHRM researchers is that it may be too simplistic to assume that a single optimal set of HR practices is ideal" (p.539). Similarly, and trough the contingency perspective, this study implies that it may be too simplistic to assume that one single type of eHRM is ideal. However further research using empirics is needed to address the validity of the designed contingency framework. Lepak et al. (2006) infer that usage of system reasoning in research has some difficulties which are applicable to this study. For example, is there an additive or multiplicative effect between strategy and HR orientation? Are there synergistic effects of the contingency factors on one another? This limitation in this paper is due the empiric nature of the question asking for either multiplicative or additive effects. This paper focuses more on theory building and contributing to the understanding of the contingency factors that affect the relationship between eHRM and the strategic contribution of eHRM. In this study the best fit perspective is used to analyse the strategic contribution of eHRM. However, this approach have some limitations as stated by Lengnick-Hall and Lengnick-Hall (1988) "Research has shown that achieving fit is not always desirable" (p.460) and "a focus on maximizing fit can be counterproductive if organization change is needed or if the firm has adopted conflicting competitive goals to correspond to a complex competitive environment" (p. 460). Another consideration within the fit approach revolves around the element of time: "because fit deals with relationships among some set of dynamic contingent constructs, it can only be assessed as a snapshot: fit at time 1 in no way guarantees fit at time 2" (Wright & Snell, 1998, p. 757).

But how does this research fits within the current eHRM context developments? In order to place the proposed contingency framework in both practice and theory development context recent literature and professional publications are used. This research complements existing scientific eHRM research and the professional context in the following matters.

- **Managerial orientated complementation**

According to Lee (2011) eHRM is a common used application within businesses. But what does the business world state about eHRM and how does this relate to the suggested framework of this paper? The common use of eHRM in organizations is acknowledged in the March edition of McKinsey quarterly (2011), the authors state that "the wide-spread adoption of enterprise resource planning and HR information systems has made data on business operations, performance, and personnel more accessible and standardized" (Gardner, McGranahan & Wolf, 2011, p. 2). The IT advisory department of accountancy firm KPMG published a paper in 2012 discussing the development of eHRM based on a large scale research done between 2004 and 2009. The authors (van Strijen & Hoogstra, 2012) state that "there is an increased demand for human resource management system support for HR information provision" (van Strijen & Hoogstra, 2012, p. 3). Additionally, the key finding of the CedarCrestone 2012-2013 survey is even more optimistic about the rise of eHRM stating that "HR technologies spending is positive with both large- and medium-sized organizations, more frequently citing an increase vs. staying the same or declining" (p. 1). Based on these inferences made in business publication is seems safe to say that eHRM is commonly used. But that does leaves questions open concerning the content discussed within companies.

Analysing integral HRM systems, system that support the 'full' HR domain of the intake, flow and outflow of personnel, KPMG IT advisory compares different systems supporting different stages of the HR domain. These, in a 2012 KPMG publication, observed system differences potentially hint towards types of eHRM suggested in the contingency framework of eHRM (operational, relational, transformational). For example, a HRM system provided by Mercash named 'Dynamic NAV/Dynamic HRM' receives high scores on operational related functionalities classified as HR costs and efficiency whereas a an HRM system provided by UNIT 4 named 'UNIT4 HR solutions' scores relatively low on this item. Although some operationalization difficulties might occur trying to match the KPMG classification to the eHRM type classification used in the contingency framework, a eHRM system such as 'Dynamic NAV/Dynamix HRM' can possibly be classified as operational, relational or transformational. Based on this classification it therefore could be argued that if an organization is cost oriented, and therefore best served by an operational type of eHRM, the 'Dynamic NAV/Dynamix HRM' system would be more fitting (and therefore more beneficial) for that organization compared to other systems. However, some systems, like Oracle Fusion HCM provided by Oracle, scores high on nearly all (operational, relational, strategic) items suggesting one system potentially provides all types of eHRM. Since KPMG IT advisory is a profit organisation the analysis needs to be handled with some scepticism taking possible mixed interests into consideration.

The theoretically argued advantages of eHRM (operational, relational, transformational) are evidently present in business context. Gardner, McGranahan and Wolf (2011), in McKinsey quarterly, relate to these advantages: "Furthermore, the rise of HR information systems has generated a community of software and technology intermediaries that can help HR and business executives use data to find links between talent management and labor productivity" (Gardner, McGranahan & Wolf, 2011, p. 2) relating to both transformational and operational benefits through respectively the enabled a community of intermediaries and the insight and potentially rise of labour productivity. In an example the authors infer how business are looking for the utilization of the relational consequences of eHRM:

"Google is another company with an HR team that partners with business leaders

seeking analytic insights. According to Prasad Setty, head of Google's people analytics group, "We are looking to inform decision makers with data so they can be as objective and bias free as possible." Setty's team has, for example, provided business executives with a systematic approach to reassessing provisionally rejected candidates. The team's analysis of profiles that lead to success at Google helps it identify potential false negatives and to revisit these candidates. This technique has helped the company "save" many hires it would otherwise have missed" (Gardner, McGranahan & Wolf, 2011, P3).

Additionally the authors state that "HR analytics succeeds when human-resources and business leaders work together to address the root causes of problems and to pilot new ways of solving them" (Gardner, McGranahan & Wolf, 2011, P3). These examples arguably infers to the added ability to communicate with outside parties (relational type of eHRM) like rejected candidates, and/or business leaders. Gardner, McGranahan and Wolf (2011) refer to the transformation of HR by eHRM stating that:

> "Most HR teams view, organize, and measure their activities through the traditional employee life cycle: starting with recruiting, hiring, and "on-boarding" and proceeding to evaluation, training, and develop-ment. For HR analytics efforts to work, however, the function's leaders must view problems—and value creation opportunities—as business leaders do" (Gardner, McGranahan and Wolf, 2011, p. 3).

In another business related publication, a column for company UMANID, Van den Bos (2012) states that eHRM is a tool for the professionalization of the HR function (van den Bos, p.2) also referring to the transformational benefits of eHRM.

In order for eHRM to work the business related publications address some conditions that are comparable with contingencies suggested in the framework of this paper. In an publication of Tower Watson (2012) Lawrence (2012) states that ease of usage for employees is necessary for the successful implementation of their online rewards portfolio: "make the portfolio very easy for employees by having a single sign-on for all systems" (Lawrence, 2012, p. 4). This factor is arguably in alignment with the usage factor considered in the contingency framework suggested in this paper. In alignment with the strategic contingency, van de Bos (2012) state that "due to high work pressure people do not take the time to consider strategy" (van de Bos, 2012, p.2) inferring the importance of strategy consideration for successful implementation of eHRM. In a Cornerstone (2013) publication transformational benefits of eHRM are discussed by Belliveau, Reddington and Martin (2013) inferring that introduction of technology offer the potential to transform HR's, for example an increasing influence of the HR function. In the same Cornerstone (2013) publication Oiry (2013) states that "the technology must also align with the strategic goals of the company and the employees" (p.33) hinting towards the importance of considering strategy when implementing eHRM. In a publication of the NVP (Dutch association for personnel management and organisational development) van Tooren (2013) implies that HR professionals should let the systems support them in their work, if their focus is on administration system could support their work really well. This is arguably in alignment with the consideration of the HR role orientation suggested in the framework of this paper.

The business context, described based on publications with a practical consideration, seems to be fitting to the theoretical framework developed in this paper. The consideration of the contingencies are all addressed in these business publication. That does leave the question

what eHRM system or type of system is commonly used. The KPMG IT advisory (2012) paper reviewing eHRM products infers that there is a distinction to be made between different eHRM products, some products perform better in one area than others. However, there are some products that perform well on multiple HR fields according to the KPMG IT operationalization of these areas. In context of this paper that would mean that a eHRM system does not has a specific type (operational, relational, transformational) but is able to perform well on all of these three areas. The 2012-2013 CredarCrestone survey shows that from all the firms included in their survey 95% employ eHRM for administrative functions which could imply usage of an operational type of eHRM. Additionaly the CredarCrestone survey imply the main deployment modes being licensed on premise, licensed hosted, Software as a Service (SaaS) and outsourcing but these do not relate automatically to a type of eHRM discussed in this paper. Deployment, as used in the survey, seems to be significantly different from a type of eHRM. Another noticeable inference from the survey is that "there is clearly a very strong move to SaaS and the delivered best practice of these solutions amongst top performing organizations" (CredarCrestone, 2012, p. 3), this seems to be contradictory to the framework suggested in this paper since a best practice approach seems not to be dependent on firm related characteristics such as strategy.

- **Scientific orientated complementation**

At what stage is research on electronic human resource management and how does this research paper fit in that context? Despite the widespread use of eHRM systems, Stone and Dulebohn (2013) note that "there has been a surprising dearth of theory and research on the topic" (p.1), according to Bondarouk and Furtmueller (2012) research on the intersection between HRM and IT has a history of approximately four decades. Ruël and Bondarouk (2013) do acknowledge growing interest of researchers by stating that "in the past decade there has been a sharp rise in special issues on e-HRM in several journals" (p. 370). Marler and Fisher (2013) conclude in their evidenced based review of eHRM that "theoretical and empirical research in this area is still at an early stage" (p.18) adding strength to the suggestion that the contingency framework proposed by this paper will be well served by empirical verification.

One direction of future eHRM research is proposed by Zafar (2013), in his publication titled 'Human resource information systems: Information security concerns for organizations' he hints towards the importance of security of HRIS (eHRM) since these systems contain valuable business information. The suggested framework does not take security concerns into consideration, even though it is acknowledged that the security of these systems is a justified concern and research on security is potentially valuable. However, the security of a system does not initially affect the potential strategic contribution of eHRM and the extent to which a system is secure is consider to be a technical question.

Research concerning how eHRM fits within companies is increasingly addressed within the standardisation versus localisation debate (Tate, Furtmeuller & Westerom, 2013; Meijerink, Bondarouk, Maatman, 2013) in which local flexibility is opposed to (global) standardisation of the (eHRM) system. The framework suggested in this paper fits within this research in such a way that it, similarly to the local flexibility verses standardisation debate, proposes how eHRM can be successful for organization and in which form. The suggested framework does not consider the flexibility or standardisation form as such but does suggest a form of standardisation based on organizational wide factors such as strategy.

The in the contingency framework suggested consideration of different user groups is present

in recent research. One example is a publication of Garavan and O'brien (2013) in which manager self-service characteristic are analysed. In their paper Garavan and O'brien (2013) analyse the influence of attitudinal, normative, behavioural and national cultural factors on the usage of manager self-service portals. These variables can, to some extent, be linked to the contingency factors (strategy, HR orientation, usage) suggested in the framework. Additionally Bissola and Imperatori (2013) consider the effect of eHRM specifically on employee attitude, confirming the logic to consider the different user groups in the suggested framework. A publication of Schalk, Timmerman and van den Heuvel (2013) consider strategy in eHRM context legitimizing the concern of strategy in the suggested framework. Another variable, not considered in the framework, is suggested by Burbach and Royle (2013). In their research Burbach and Royle (2013) consider the mediating role of power and politics in eHRM decision making. Power and politics are arguably important for decisions made in organizations however this paper does not address the complexity of decision making but serves as a foundation on which the framework is designed, this framework considers possible contribution and considerations of eHRM but not the decisions making processes when choosing an eHRM systems.

The theoretical stage at which eHRM research is found seems to be in alignment with the considerations suggested in the contingency framework developed in this paper. Although some variables such as security and politics are absent, the variables and considerations that are present in the framework are found to be used in recent research. The suggestion for empirical research testing the propositions formulated in this research is in alignment with the total absence or lack of substantial amounts of empirics confirming eHRM research.

- **Future research**

Since clear empirical answers considering the effects of eHRM are absent future research should be focused on creating a consistent answers to whether or not these benefits are obtainable. With the rise of new eHRM applications like using social media for hiring new employees, serious gaming for educational reasons and large databases for storing employee data the effects of these new systems need to be evaluated based on research creating a distinction between value adding eHRM applications and buzz or hype applications. Another interesting field of research concerns the effects of the rise of electronic applications on the HR function, department and competences of HR professionals and the relationship between eHRM and business related items like outsourcing. Another field of research expected to gain interest is the effect of eHRM on the relationship between employer and employee, with new virtual opportunities to work whenever wherever it is exciting to see what new opportunities for labour agreements and work setting arise and how these new configurations will be valued by the users of eHRM.

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