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The strategic value of e-HRM: results from an exploratory study in a governmental organization

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This paper presents results from an exploratory study in a governmental organization on the strategic value of electronic human resource management (e-HRM). By applying the organizational capabilities approach, and by means of mixed research methods, data were collected on two generally acclaimed strategic advantages of e-HRM: changing the role of the human resource (HR) function towards becoming a business partner; and increasing the time available for strategic HR issues. The findings show that these strategic advantages are not convincingly realized. While HR professionals perceived role changes, line managers and non-managerial employees in general did not. The frequency of e-HRM practise was low, although it was satisfactorily used as intended. Interviewees stated that strategic advantages might arise if certain conditions are met. E-HRM does however provide some unintended benefits. The findings suggest that e-HRM alone is not sufficient to enable the HR function to create dynamic and operational capabilities. Suggestions for further research are provided.

Keywords: e-HRM; mixed methods research; Oracle HR; organizational capabilities; RBV; strategic value

Introduction

Since the mid-1990s, organizations have increasingly introduced electronic human resource management (e-HRM), which is understood to be a set of information technology (IT) applications that cover 'all possible integration mechanisms and contents between HRM and ITs aiming at creating value within and across organizations for targeted employees and management' (Bondarouk and Ruël 2009, p. 507).

Recent developments in the e-HRM area are driven by rapid technological changes. Complex enterprise resource planning applications offer the integration of a broad range of HRM modules together with numerous modules from other business areas such as sales, production and finance. Consultancy reports, produced since 2000, have indicated increasing confidence in using e-HRM, albeit largely for administrative purposes. They also show that e-HRM projects have remained largely focused on the growing sophistication of IT (HayGroup 2002; CedarCrestone 2006, 2009).

The literature on e-HRM suggests that, overall, the three goals in introducing e-HRM are reducing cost, improving HR services and improving the strategic orientation (Brockbank 1997; Lepak and Snell 1998; Stanton and Coovert 2004; Bondarouk, Ruël and Van der Heijden 2009). Some empirical findings supplement these goals with the finding that globalization is a driving force for e-HRM in large international organizations (e.g. Ruël, Bondarouk and Looise 2004). However, findings also show that these goals are

not clearly defined in practice, and that e-HRM is mostly directed at cost reductions and efficiency increases in HR services, rather than at improving the strategic orientation of HRM (Gardner, Lepak and Bartol 2003; Ruël et al. 2004; Ruta 2005; Parry and Tyson 2011). Recent studies have found that, in nearly half of the companies with a completely integrated HR Information Systems, the HR department was not viewed as a strategic partner (Lawler and Mohrman 2003) and, similarly, the case study by Parry and Tyson revealed that 'goals to improve the HR function's strategic orientation were often inferred' (2010, p. 17). Recently, Parry has emphasized the 'need to establish the relationship between the use of e-HRM and factors such as … a strategic orientation for the HR function' (2011, p. 1147). The debate on the strategic advantages of e-HRM continues: while some researchers argue that e-HRM offers strategic opportunities to HR professionals (Ruël et al. 2004), others report the absence of strategic changes due to e-HRM (Haines and Lafleur 2008), and a third group of researchers suggests that there may be specific conditions that allow e-HRM to create strategic value for organizations and for the HRM function (Marler 2009; Parry and Tyson 2011).

A review of recent e-HRM literature enables us to classify the strategic benefits ascribed to e-HRM into seven groups:

- The generation of HR metrics to support strategic decision-making (Hendrikson 2003; Lengnick-Hall and Moritz 2003; Lawler, Levenson and Boudreau 2004; Hussain, Wallace and Cornelius 2007; Bondarouk and Ruël 2009; Parry and Tyson 2011);
- The automation of routine HR tasks and replacing 'filing cabinets' (Tomeski and Lazarus 1974; Martinsons 1994; Groe, Pyle and Jamrog 1996; Brown 2002; Parry, Tyson, Selbie and Leighton 2007);
- The branding of organizations, and improving the organizational image (Lawler and Mohrman 2003; Martin, Reddington and Alexander 2008; Parry and Tyson 2011);
- Freeing HR staff from administrative burdens and allowing them to undertake strategic people-management activities (Hennessey 1979; Lepak and Snell 1998; Ruël et al. 2004; Shrivastava and Shaw 2004; Martin et al. 2008);
- Empowerment of managers through the development and support of management capacity to conduct HR activities (Parry and Tyson 2011);
- Improving talent management through e-selection, self-assessment and e-performance management (Martin et al. 2008) and
- Transforming HR professionals from administrative paper handlers to strategic partners (Broderick and Boudreau 1992; Burbach and Dundon 2005; Bell, Lee and Yeung 2006; Voermans and Van Veldhoven 2007; Haines and Lafleur 2008; Keegan and Francis 2008).

Although several strategic benefits of e-HRM adoption are thus anticipated, researchers observe a lack of theory that links e-HRM to HR strategic benefits (Strohmeier 2007; Bondarouk and Ruël 2009; Marler 2009; Parry 2011).

To address this inadequacy and contribute to the debate on the strategic contributions of e-HRM, we build on a well-established theoretical framework: the organizational capabilities approach (Teece and Pisano 1994; Teece, Pisano and Shuen 1997) and use this framework to examine the strategic outcomes of e-HRM in organizations.

Driven by the conflicting findings and vague theoretical ideas regarding the strategic contribution of e-HRM, this paper explores the kind of strategic benefits that e-HRM offers to organizations. The goal of this paper is thus to assess the nature of the strategic contribution of e-HRM to organizations. The paper contributes to the literature in three

ways. First, we extend the existing debates on organizational capabilities to the e-HRM field. In particular, we explore whether this conceptualization is sufficiently powerful to explain the strategic outcomes of e-HRM implementation. Second, through an explorative in-depth case study, we assess the strategic 'dreams' of e-HRM, and examine whether HR professionals experience the promised strategic shift and whether this shift is perceived as such by the rest of the organization. Third, we discuss the implications of our results for practice having applied and extended the theory to a highly relevant management challenge.

The paper now proceeds by conceptualizing the HR function capabilities, and the enabling role of e-HRM in enhancing those capabilities. We then present our case study and analyse its findings. The paper concludes with recommendations for future research.

HR function capabilities and e-HRM

The adoption of e-HRM is viewed as an attempt by an organization to maximize the strategic capabilities of the HR function through changing the HR role from that of administrative expert towards becoming a strategic partner, and enabling the HR function to spend less time on HR administration. We start off from the e-HRM debates within the resource-based view (RBV) literature (Marler 2009; Maatman, Bondarouk and Looise 2010; Parry 2011), but go a step further by discussing how the HR function can transform their HRM resource base and give it a strategic orientation. We build on the assumptions underlying the RBV and the dynamic capabilities approach that have, 'over the last 20 years, acquired a pre-eminent position in strategy research' (Maatman et al. 2010, p. 331).

HRM models, based on the RBV, confer a direct strategic role to HRM: the HR function has the potential to sustain those HRs critical to achieving a competitive advantage (Marler 2009). These resources include a pool of human capital that, combined with specific capabilities, results in a superior organizational performance (Wright, Dunford and Snell 2001). It has been argued that a competitive advantage occurs only when certain resource inputs 'are performing heterogeneously across different firms and that the HR are the only resource capable of doing this, meaning that HR are the sources of above normal returns' (Parry 2011, p. 1147). Overall, the RBV conceptualization of the HR role asserts its crucial position within organizations by creating strategic value through the deployment of *HRs* (Marler 2009).

Although the RBV has achieved an enviable position within HRM research, scholars have criticized it for the static and equilibrium-based nature of the model (Ambrosini, Bowman and Collier 2009; Maatman et al. 2010; Sirmon, Hitt, Ireland and Gilbert 2011). The implicit assumption of a given, static environment limits the applicability of the resource-based perspective when undertaking strategic HRM research. Specifically, it fails to address how valuable HRs could be created, or how their current stock could be refreshed to meet the requirements of a dynamic external environment, its demands and competition. Building on the recent critiques on the RBV, we assume that the HR function can achieve a sustained competitive advantage to the extent that it *exploits* the HRs to generate value for the external environment (McWilliams and Smart 1995). The capabilities perspective goes a step further than the RBV, and elaborates on how future HRs could be used to sustain competitive advantages. It is suggested that it is not the unique HR base itself that creates value, but rather the functionality of HRs and how they are used (Locket, Thompson and Morgenstern 2009). In this, we see the importance of the HR function capability as its capacity to purposefully perform a specific task or activity through the deployment of HRs (Helfat et al. 2007; Helfat and Peteraf 2009).

Attaining a sustained competitive advantage requires the HR function not only to use the existing HR capabilities, but also to have the capacity to develop new ones. The capacity to develop new HR capabilities is referred to as 'dynamic capabilities', where the term dynamic reflects a change in the resource base or the renewal of resources (Ambrosini and Bowman 2009), and the term capabilities to the ability to perform a particular task or activity (Maatman et al. 2010). Building on the study of Helfat et al. (2007), we suggest that HRM dynamic capability includes the capacity of the HR function to identify the need or opportunity for change, formulate a response to such a need or opportunity and implement a course of action. Alongside its dynamic capabilities, the HR function also deploys 'ordinary' capabilities, as explained by Winter (2003) and labelled operational capabilities. The operational capabilities, or zero-level capabilities, reflect how the HR function currently justifies its existence (Maatman et al. 2010).

We define HR dynamic capabilities as the capacity of the HR function to 'purposefully create, extend or modify' the HR base (adapted from Helfat et al. 2007). As such, the HR dynamic capabilities serve to respond to environmental changes and as a source of disruptive change (Eisenhardt and Martin 2000), thus conceptually resolving the main shortcoming of the RBV. HR operational capabilities are defined as the capacity of the HR function to purposefully use its current HR base for the performance of day-to-day operational activities (adapted from Maatman et al. 2010).

Having elaborated on the capabilities of the HR function, we turn to the electronic aspects of HRM that, in our view, can serve as an enabler of both dynamic and operational capabilities.

Researchers have broadly elaborated on the anticipated HRM outcomes of introducing e-HRM (Bondarouk and Ruël 2009). e-HRM will probably offer opportunities for the HR function to reduce the time spent on the administrative work, and instead focus on developing practices, designing HR policies, business planning, performance and succession planning, and building human capital (Marler 2009). In other words, e-HRM is expected to act as an enabler of the dynamic capabilities of the HR function. Further, e-HRM is expected to enhance the operational capabilities of the HR function by simplifying administrative processes, reducing the time required for HR transactions, tracking job records, managing the employee payroll and benefit programmes (Marler 2009).

Having recognized the promise in the capabilities approach for e-HRM study, we have combined it with the current e-HRM debates to identify an appropriate focus for the empirical investigation. Two prevalent e-HRM foci act as the starting point for our exploration: changes in HR roles (from administrative expert to strategic partner), and the time spent on HR administration (the assumption being that, with e-HRM, HR professionals spend less time on HR administration). These two foci are considered as encompassing two integrative capabilities (dynamic and operational) of the HR function.

Method

Research approach

As the objective was to explore a previously unresearched subject, we opted for a single case study approach (Yin 1984). Understanding of the strategic benefits of e-HRM was deepened through careful selection and integration of quantitative and qualitative data involving a survey, face-to-face semi-structured interviews, focus groups and document analysis. This enhanced the validity of the results (Jick 1979).

Our study used four stages. *Stage 1* (March–September 2008) involved intensive preparation. The case selected was a large federal governmental organization in Belgium

which had a seven-year history of introducing an Oracle HR project. During this first stage, we held presentations for their HR specialists about e-HRM studies, discussed the research design with the Oracle HR project team and the HR director at the case organization, and prepared a questionnaire for use in a survey. *Stage 2* (October 2008) involved finalizing the questionnaire design, uploading it and collecting responses. *Stage 3* (November– December 2008) involved conducting semi-structured interviews as a follow-up to the survey. *Stage 4* (January–March 2009) was dedicated to transcribing the interviews, discussing the preliminary results, analysing the survey results, and integrating them with the analysis of the documents and interviews.

Throughout the whole project we were greatly assisted by the Oracle HR team, including former and current leaders, members and, especially, the Organization and Development Officer. The latter coordinated all the communications between the research team and the organization, translated the questionnaire into French, and selected respondents (using purposive sampling) for the survey and interviews.

Document analysis

We analysed the following documents: records of 18 presentations from the period October 2006 to February 2008, the implementation plan for the Oracle HR project, SWOT analysis of the Oracle HR project, four different sets of user manuals, documents for new users of Oracle HR ('coaching materials') and operationalizations of the strategic HRM plans.

Survey

The goal of the questionnaire was to obtain an overall picture of e-HRM use within the organization, the HR tasks and HR roles, and the time spent on different HR activities. We were not aiming to test a model but rather seeking a descriptive analysis that would provide background for the subsequent in-depth interviews. In this, we applied a sequential research design, where the results of the survey served as inputs for the interviews.

The population consisted of the 1236 potential users of Oracle HR, amounting to 91% of the Federal Agency's staff. From these users, a stratified random sample of 500 users was drawn that reflected the user demographics in terms of gender (56% female), origin (51% Dutch speakers and 49% French) and educational level (44% educated at university level, 23% with higher vocational education, 16% bachelor studies and the remaining 17% terminating education after high school).

In total, we received 219 completed questionnaires reflecting a 44% response rate with the respondents not differing significantly from the overall population in terms of gender, origin and education level. Since we had used an entry-force technique, all the returned forms were fully completed with no missing values. Only 8.2% of the respondents had less than 1-month's experience of working with Oracle HR, with the majority (91.8%) having worked with Oracle HR for a longer period of time. Sixty-nine per cent of the respondents had been working for the Federal Agency for longer than 1 year. Of them, 140 (64%) were non-managerial employees, 38 (17%) HR professionals, 24 (11%) line managers and 17 (8%) IT specialists.

Scale development involved several stages. First, we developed a pool of items for each construct using a deductive approach. This first round's content validity was assessed using survey research through independent crosschecking by six HRM experts. The initial

questionnaire was shortened and, next, back-translation into Dutch and French was carried out independently by two Dutch- and two French-speaking researchers, to ensure the accuracy of the items (Usunier 1998). These versions were then rechecked during focus group sessions at the Federal Agency, involving four Oracle HR project team members and the HR director, to insure clarity for the targeted respondents of the questionnaire.

All the variables were measured on a five-point Likert scale, ranging from 1 = fully disagree to 5 = fully agree. The internal consistency of the variables was above 0.7 with only one exception (see Appendix A), and these were reconsidered and improved.

Interviews

We conducted interviews after having analysed the data gathered through the survey. The aim of such a sequential design is to go into the results arising from the survey in greater depth. Thirteen interviews, amounting to 21 h of conversation, were conducted with HR specialists, line managers and IT professionals. The interviewees were selected by the Organization and Development Officer, based on purposive sampling, who also scheduled the interviews and explained the reasons for the study to the interviewees (Table 1).

Six HR professionals were invited for interviews based on three criteria: their extensive experience of working with Oracle HR, their involvement in strategic HR planning and the diversity in their involvement in HR operational services. Of these, five including the e-HRM manager and representatives of four HR activities (recruitment, payroll, training and leave administration) were interviewed. Ten line managers were invited for interview via e-mail based on four criteria: their extended experience of working with Oracle HR, large span of control, and an equal distribution between French and Dutch speakers. Of these, five line managers responded positively and participated in the interviews. Three IT specialists, because of their involvement in Oracle HR maintenance, were invited and agreed to be interviewed.

The interviews were based on semi-structured (list of topics) open questions covering the following aspects: strategic importance of Oracle HR, perceived benefits from working with Oracle HR, changes in HR roles and the perceived effectiveness of e-HRM at the Federal Agency.

The quality of the data and information gathered during the interviews is considered reliable given the application of two extra techniques. First, we used a *member check* (Lincoln and Guba 1985): transcripts of the interviews were discussed with the respondents to verify we had a correct interpretation of what they had said. Transcripts of all interviews were then sent to the respondents by e-mail for further verification. No significant alterations were received. Second, we combined various research methods: questionnaire, interviews, document analysis and field notes. Further, we discussed the

Table 1. Number and type of interviewees.

	HR professionals	*IT specialists*	*Line managers*	*Oracle HR project team*
Number of interviews	6	1	3	3
Time	8 h 40 min	1 h 30 min	5 h	6 h
Total	13 interviews – 21 h 10 min			

ongoing results with the project team. At the end of the study, the full case analysis was presented and discussed with the HR director and the HR professionals in a meeting.

Setting the stage: HRM and Oracle HR

The study was conducted within part of the Belgian Federal Public Health Service, where the Oracle HR project had a seven-year history. In 1999, the Belgian Government introduced the Copernicus project as part of a thorough reform of the federal administration, aiming to simplify procedures, automate administration and improve service provision to civil servants while, at the same time, reducing their numbers. As a key component of the Copernicus project, the HR function of the Federal Agency was reorganized. In 2005, the various HR units were integrated into one HRM department with the strategic goals of minimizing administrative HR tasks, focusing on value-adding HR tasks and improving HR services for its internal customers. As part of the HRM reorganization, following careful preparation, customization, weekly meetings with key users, training courses and feedback sessions, an Oracle-based e-HR system was launched in 2006 by the HRM department. Later, in preparation for the system going live for all employees, no less than 40 presentations and training sessions were held between June and November 2007 involving 68% of the intended users.

   This research was essentially exploratory in nature: we were interested in determining whether different HR stakeholders experienced a strategic 'twist' after the introduction of Oracle HR and, if so, in what way. Therefore, we started by exploring the perceived involvement in HR activities. Figure 1 presents the respondents' perceived degree of involvement in HR activities, and adopts the terms used in the organization to describe HR activities.

   The analysis of the survey (Figure 1) revealed that line managers considered themselves mostly busy with what they referred to as organizational development including career opportunities, career planning and development, individual development cycles and personnel planning. Managing the workforce was the most frequent activity.
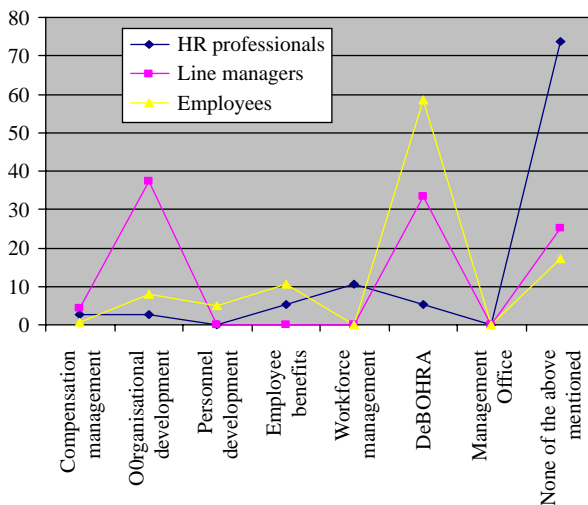

Figure 1.   Perceived involvement in HRM activities by HR professionals, line managers and employees (%).

This included planning, recruitment and selection, promotion, contract management plus retirement policies and procedures. Employees perceived working with Oracle HR as the HR activity they most often performed.

Figure 1 also shows that HR professionals did not perceive themselves as having a strong involvement in any of the HR activities listed in the questionnaire. The HR director explained during the interview that, due to the organizational changes within the Federal Agency, the HR professionals may now sense that they have to take on more strategic roles and become involved in strategic planning of the workforce, while the line managers were tasked with the HR practices listed in the questionnaire. These various responses support the assumed meaning of e-HRM in organizations: to devolve HR responsibilities for individual data administration to the employees themselves.

Our next step was to investigate the frequency of Oracle HR use by organizational role (Table 2).

Oracle HRM contained various modules offering HR applications such as managing personnel data, training and development, recruitment and selection, personnel planning, e-learning, HR report generation, holiday administration, workflow registration and payroll management. Of the 1236 notional employee users of Oracle HR, 126 employees (10.2%) had never logged onto the system, indicating that 89.8% had logged onto Oracle HR at least once. Table 3 summarizes the analysis of documents showing Oracle HR usage. There were 2816 electronic transactions registered in Oracle HR in the period July 2008–October 2009. On average, the employees each used Oracle HR on 8.8 occasions.

The data from the database were triangulated with the survey results. Oracle HR usage was assessed in the survey by asking the respondents their perceptions about frequency of use (i.e. the level of actual use according to users). The data were also compared with the objective transactions administration.

The survey results confirmed the low frequency of Oracle HR use by the employees (typically logging in only once every 2 months). The average non-managerial employee rating of frequency of use was 1.7 (standard deviation (SD) = 0.85) on a five-point scale, and for line managers the corresponding figure was 2.3 (SD = 0.9). HR professionals were the most frequent users, but with quite substantial differences per respondent (mean = 3.5, SD = 1.4; Table 3).

Table 2. Frequency of use of Oracle HR per organizational role.

Organizational role		N	Mean	SD
HR professional				
	Frequency_Use	38	3.5921	1.37966
	Valid N (listwise)	38		
Line manager	Appropriation	24	3.6146	0.74081
	Frequency_Use	24	2.3125	0.89458
	Valid N (listwise)	24		
IT expert				
	Frequency_Use	17	1.7353	1.09141
	Valid N (listwise)	17		
Non-managerial employee				
	Frequency_Use	140	1.6500	0.85600
	Valid N (listwise)	140		

Table 3. An overview of Oracle HR e-transactions (documents analysis).

Type of Oracle HR transaction	Number of transactions	% of total
Application for internal training programs	1441	51.17%
Application for external training programs	747	26.52%
Application for biking compensation payment	174	6.18%
Changing address	102	3.61%
Changing work scheme	96	3.43%
Changing basic personnel data	94	3.34%
Application for paid services	39	1.35%
Changing family status and contact persons	34	1.19%
Recognition of educational level, language proficiency	27	0.95%
Diploma recognition	19	0.68%
Application for vocational training leave	19	0.68%
Training evaluation	14	0.50%
Recognition of success of exams SELOR	5	0.20%
Application for a badge	3	0.11%
Application for the birth allowance premium	2	0.09%
Application for diploma recognition	0	0.00%
TOTAL	2816	100

Strategic benefits of Oracle HR

Oracle HRM and changes in HRM roles

Respondents were also asked about their perceptions of the role of HR. Initially, four HR role types (Ulrich 1997) were considered, but this was reduced to two based on an exploratory factor analysis: HR as people manager and HR as business associate (Appendix B).

The results (Table 4) revealed the following:

- HR professionals rated themselves as moderate or better in terms of both role types (mean scores above 3).
- Other respondent groups (line managers and non-managerial employees) rated the HR professionals as moderate to low on both role types (mean ≤ 3).

These findings suggest that the implementation of Oracle HR was not accompanied by clearly defined and highly visible HR roles at the Federal Agency. In the interviews, the HR specialists expressed the view that they did not see their work as now having less administration or of becoming easier. For example, HR specialists commented:

> People who were busy with HR administration 5 years ago – they still do the same. New HR employees are mostly busy with strategy and policies. But that is due to our new HR director and not due to Oracle HR. (HR sp-1)

> My tasks did not become easier, maybe only making reports and checking the data are easier. But talking about my main responsibility – the staffing plan – this is as intensive as before Oracle HR. (HR sp-3)

At the same time, all the interviewees acknowledged changes in the vision of the HRM department. They saw it as becoming more strategic: oriented towards people and organization development. However, attributing this HR strategic orientation to the introduction of Oracle HR seemed questionable. Mostly, interviewees attributed this re-orientation to the new vision of HRM work at the Federal Agency, and particularly to the

Table 4. Perceptions of the HR Roles per group of respondents.

Organizational role		N	Mean	SD
HR professional	EmplAdvocate (PM)	38	3.6513	0.77446
	HCapDeveloper (PM)	38	3.2434	0.87859
	FunExpert (BA)	38	3.5329	0.76488
	StrategicPartner (BA)	38	3.4408	0.78291
	Valid N (listwise)	38		
Line manager	EmplAdvocate (PM)	24	2.6042	0.77990
	HCapDeveloper (PM)	24	2.4062	0.73282
	FunExpert (BA)	24	2.7813	0.67289
	StrategicPartner (BA)	24	2.5313	0.79164
	Valid N (listwise)	24		
IT expert	EmplAdvocate (PM)	17	2.5147	0.67587
	HCapDeveloper (PM)	17	2.4118	0.72855
	FunExpert (BA)	17	2.4853	0.70418
	StrategicPartner (BA)	17	2.5882	0.72855
	Valid N (listwise)	17		
Non-managerial employee	EmplAdvocate (PM)	140	2.6929	0.87241
	HCapDeveloper (PM)	140	2.5411	0.87973
	FunExpert (BA)	140	2.7893	0.76353
	StrategicPartner (BA)	140	2.7357	0.68892
	Valid N (listwise)	140		

PM = People manager's Ax
BA = Business associate Ax.

HRM director and his highly effective and respected leadership. One of the HR professionals described it thus:

> Nowadays, I think that our P&O department plays a more strategic role than ever before. P&O is becoming strategic. At the same time, given the FOD work environment, such changes go too quickly. People have different knowledge, expectations and experience. I often hear that it is a 'long-life change'. Myself I do not think it is bad, but some people find it too quick. (HR sp-3)

Line managers also expressed the changes they saw as a result of the overall reconstruction of HRM: new roles and new responsibilities. Further, there was a clear commitment to these changes:

> I see lots of advantages compared to the situation of around 10 years ago. There are a lot of changes. Now we have to be busy with the management of people, budgeting, planning etc. I have 3- and 6-year plans, for example. Our targets are high: sustainability and mobility. We determine the goals, and P&O helps us further. We get guidelines from P&O or the board. (Line man-3)

An HR specialist emphasized:

> We are very much up-front. The HR Director is a fantastic leader! He is a driver of this change! I am very glad that we are pushing ahead and are ahead of other ministries. I like it much more than only administration – to be a pioneer in HRM. (HR sp-4)

The e-HRM manager summarized it neatly:

> I feel that we now work very differently from in the past. We now discuss concepts, rules, policies, and less administration. (HR sp-5)

Overall, based on the combined findings from the survey and interviews, the respondents did not see large changes in the HR roles or HR responsibilities as a result of

the introduction of Oracle HR. However, both groups of respondents, HR specialists and line managers, acknowledged that extensive changes had happened to HR management at the Federal Agency. HRM had become more strategic, in their view due to the re-envisioning of the whole HRM programme.

Oracle HR and changes in time spent on different HR activities

In terms of time spent on strategic HRM, IT-related or HR administration activities, the HR professionals on average rate none of these activities at three or above (Table 5). Of these activities, the line managers most highly rated their involvement in HR administration activities with an average score of 3.2 (Table 2). Non-managerial employees similarly rated their involvement in HR administration the highest (mean: 2.9).

Table 5 shows that all respondents perceived that, since the implementation of Oracle HR, most of the time they did spend on HR was on administration activities (checking, recording and organizing personnel data). Of the employee groups, line managers scored the highest for time spent on HR administration since the introduction of Oracle HR, and HR professionals the lowest. Strategic HRM activities (forecasting employees' needs, matching job vacancies with the organizational needs, developing long-term HR policies) were perceived by both HR professionals and line managers as the second greatest time-consuming HR activity (since the Oracle HR introduction). This also echoed the latest strategic developments at the Federal Agency. Maintaining Oracle HR was not perceived as time consuming by line managers, employees or the IT specialists. The HR professionals gave this task a higher score, although it remained their least time-consuming activity.

The interviewees broadly fell into two groups: those who did not see differences, and those who noticed significant time saving due to the introduction of Oracle HR.

> In my view, it does save time. If, in the past, thirty people had a salary increase, we had to change the salary steps thirty times. Now, with the basic data, a list is in Oracle HR, and it makes changes automatically. In the beginning, people were not motivated to make this list.

Table 5. Time spent on Strategic HRM (SHRM), IT related (IT), and HR administration (HR Admin) activities per organizational role.

Organizational role			SHRM activ	IT activ	HR admin activ
HRM professional	N	Valid	38	38	38
		Missing	0	0	0
	Mean		2.6053	2.4539	2.8684
	SD		1.07275	1.29037	0.72768
Line manager	N	Valid	24	24	24
		Missing	0	0	0
	Mean		2.5729	1.7396	3.2188
	SD		0.84210	0.85172	0.68886
IT expert	N	Valid	17	17	17
		Missing	0	0	0
	Mean		1.7059	1.5441	3.1176
	SD		0.94470	0.82080	0.71871
Non-managerial employee	N	Valid	140	140	140
		Missing	0	0	0
	Mean		1.5125	1.3911	2.8804
	SD		0.85206	0.80813	0.86679

Now they see, provided they have good information, that it helps. It takes time to explain and convince people to use it. Time saving is in my view the great benefit. (HR sp-1)

On the contrary, for line managers, the introduction of Oracle HR was perceived as a partial devolution of HR tasks to them. They saw it as time consuming, as one of them said:

At the same time I feel that line managers do more and more HR tasks, ones that were done by the P&O department before. It is not always very pleasant but it has to be done. I can imagine that it is an evolution of the whole organization. (Line man-2)

Oracle HR doesn't support all of our HR policies and responsibilities yet. To take, for example, personnel development circles. I have to spend about two full days per employee working on their evaluation, planning and development plans for the next year because all of this still has to be done on paper. Too time consuming and not flexible at all. (Line man-2)

The e-HRM manager stressed the importance of changes in the *content* of the time spent rather than simply saving it:

The idea is that we spend less time on routine tasks and more on guiding tasks – to partner with line managers. In 2002 the HR had 80 FTE, now 60. (HR sp-5)

The survey showed some differences in the ways that respondents spent time on HR-related activities. However, overall, we could not conclude that the introduction of Oracle HR had significantly affected/changed the time spent on HR. In the interviews, we observed that the respondents had diverse opinions regarding this issue. First, the HR professionals did see time saving in digitization and moving away from paperwork but stressed the shift in activities (from administration towards 'guiding' tasks). Line managers perceived that they spent more time on HR activities than before.

Conditional benefits

Interviewees raised conditions that Oracle HR would have to meet if it was to achieve a strategic re-orientation, and time saving:

- Time saving would be apparent if all the modules and all the ITs were integrated, so cutting down on the need for e-mail communication. The time saved could be spent on policymaking and strategic activities:

Furthermore, I think that we have to do more to get more results out of Oracle HR. Currently, a lot goes through e-mail correspondence. It could all be in Oracle HR. If we save time on e-mails, we could use the freed time for policymaking, reorganizing the processes, improving our collaboration with the salary-providing company, developing tools for calculating net salaries, and more integration with the social departments. (HR sp-1)

- Another condition mentioned by many interviewees as critical was the users' readiness to work with Oracle HR. If all the users were prepared for advanced usage, then all the expected benefits would appear:

At the moment only those who are working at the administrative level gain time from using Oracle HR. However, they are not qualified to accomplish Oracle HR projects. You need to train them, invest in people. So, the first thing to do is to upgrade people. (HR sp-1)

P&O professionals are not always competent to work with Oracle HR. If you are to use such an application, you have to be PC literate. (HR sp-2)

I feel that we can be still more proactive. We could work better with IT. Our image of HRM would be even stronger. (HR sp-4)

- Moreover, involving line managers in HRM processes required them to acquire new analytical skills. To obtain all the benefits of e-HRM, line managers needed to be raised to a higher managerial and analytical level:

I have used many Oracle HR applications, and I think it is interesting. Mostly, we perform statistical analysis with Oracle HR. It could enable us to make in-depth analyses of ROI, strategic orientation and service improvement. However, for this, you again need new skills – analytical ones. In my view, not all managers have such skills. Moreover, they need to think strategically, to broaden their mind-set, to switch to other personnel goals. (HR sp-2)

- Although the usefulness of orderly information was acknowledged, HR professionals saw possibilities to gain more benefits from, for example, better utility of a report generator application:

Until now, Oracle HR has not helped to save time as we have to print many papers to make reports. In the future, if the report generator works better, I believe it will help much more, but now we still produce many documents manually. (HR sp-4)

- There was understanding of the strategic possibilities provided the Oracle HRM implementation was completely successful:

If it works, then I foresee my future as being busy with steering an HR project: working on competencies development. (HR sp-4)

Unintended benefits

Many interviewees observed unanticipated benefits from using Oracle HRM, so-called '*unintended benefits*'. Overall, their expressions reflected the aggregated value of using Oracle HR, for example that Oracle HR contributed to the image of the HRM department.

We are trying to be a modern HR brand. There are other ministries that do not have an 'organization' group within their HRM department. (HR sp-5)

The P&O department doesn't always have a very good symbol / image in an organization. When people talk about P&O, usually they talk about paying salaries. Oracle HR might improve and change such an image. For example, if you need to, you can quickly communicate your problems and get a rapid response. It contributes to the image. (HR sp-2)

I think that, with Oracle HR, P&O has become more 'open' to employees. We get greater insight into a lot of the business and actions that are being taken by P&O. (IT sp-1)

Oracle HR was perceived as a tool that helped the company realize a new way of 'doing HRM'. HR specialists participated in strategic and analytical discussions, instead of just being busy with salary administration. Thus, e-HRM improved the professionalism of the HR specialists.

I feel that we work now very differently from in the past. We discuss concepts, rules, policies, and less administration. It is not easy to explain to all our HR colleagues, mostly we benefit from others' work. Benefits I see are: professionalization of the HR function, strategic discussions and analytical discussions. (HR sp-5)

Workforce overviews were easier:

Nevertheless, we see certain benefits from Oracle HR. Definitely, the administration runs more easily as there is a link with, for example, the position of people within the organization. If we recruit somebody, we can immediately see overviews of similar positions. We also see directly how diverse our workforce is, and whether we should work further on this issue: gender, language, handicaps etc. (HR sp-3)

Administrative HR tasks were now largely automated: reducing paperwork, increasing transparency and information sharing.

An advantage is that certain HR administrative tasks have been automated, less paperwork, documents can be shared and centralized. Everything can be done within one system. No need

to have contacts with P&O for every small administrative question. P&O also tries to keep a Q&A section up-to-date. If we need to ask for a reimbursement for example, it is now just a few clicks, no need to search for many documents as we did earlier. To change your address is the same – very easy. (IT sp-1)

Orderly information in Oracle HR made it possible for HR specialists to participate in strategic workforce planning.

I have an overview of the workforce, and I also take recommendations from FOD P&O concerning personnel planning (levels, functions, diversity etc.), and after that I make vacancy plans. (HR sp-3)

Thanks to Oracle HR, the board now discusses HR issues on another level. Today I presented a balance-score card to all the P&O directors of all the ministries. It is easy to make a balance-score card now, e-HR makes it all much more modern. (HR sp-5)

Having orderly information in Oracle HR made it possible for HR specialists and line managers to manage employee performance objectively.

Oracle HR equals transparency: all jobs are now 'officially' function-matched and not people-matched, which is useful in mapping career opportunities and objectifying promotions. It became more visible with Oracle HR. At least with Oracle HR, people's performances can be objectively evaluated. It is very good. (Line man-2)

Oracle HR was seen as a means to make HRM more efficient. At the time of the research, there were 60 HR specialists and almost 2000 employees at the Federal Agency.

At the moment there are 60 employees in the HRM department working for 2000 workers. The norm for the public sector is 1:60, but here we had 1:33. (HR sp-5)

Discussion

The goal of this paper has been to extend the debate on the question as to what kind of strategic benefits e-HRM offers to organizations. It has aimed to explore the nature of the strategic contribution, if any, of e-HRM to organizations. By executing a single case study in a large governmental organization, and combining the data obtained from the survey with semi-structured interviews, focus group sessions, extensive document analysis and observations, the findings can be summarized as follows.

From the survey results, we found that:

- Since the implementation of Oracle HR, line managers are mostly, in terms of HR, busy with the following tasks: career opportunities, career planning and development, individual development cycles and personnel planning. Managing the workforce is mentioned as the most frequent activity.
- HR professionals reported not being very much involved with operational HR tasks. Non-managerial employees reported that the HR activity they spent most time on was working with Oracle HR.
- HR professionals scored both their People Manager and Business Associate roles as just above moderate.
- Line managers and non-managerial employees rated HR professionals as moderate to low on both these role types.
- More than 90% of the people working for the Federal Agency are using Oracle HR.
- The frequency of use by non-managerial employees is low (mean of 1.7 on a five-point scale), HR professional were more frequent users (mean of 3.6 on same scale).
- In the first 15 months following implementation, employees used Oracle HR just 8.8 times on average.

From a combination of the interviews, the document analysis and the survey, we found that:

- HRM had become more strategic, but that this was largely due to the HRM re-envisioning programme, and the facilitating role of the HR director, not due to the implementation of Oracle HR.
- Whether Oracle HR had resulted in time saving was not clear: one group of users believed it had, another did not.
- HR professionals reported some reduction in time spent on paperwork, whereas line managers reported spending more time on HR.
- HR professionals did not see their work as having fewer administrative tasks or becoming easier.
- e-HRM could lead to benefits such as strategic re-orientation, time saving and even collaboration with other departments if, for example, all the IT modules were integrated, if users were ready for e-HRM, if line managers were to acquire new analytical skills, if the report generator could be better used or if e-HRM was fully successfully implemented.
- e-HRM resulted in unintended benefits including an improved image of the HRM department, the professionalization of HR specialists, easier workforce overviews, greater transparency and information sharing, HR specialists being able to participate in strategic workforce planning, more objective and simpler employee performance management, and a more efficient HRM function (reduced headcount).
- Tables 6 and 7 summarize the integrated overviews of survey- and interview-based data regarding potential (conditional) and realized benefits from working with Oracle HR at the Federal Agency, and conditions for their realization and further enhancement.

Earlier, we defined HR dynamic capabilities as the capacity of the HR function to 'purposefully create, extend or modify' the HR base (adapted from Helfat et al. 2007). These capabilities are needed to respond to environmental changes and to act as a source of disruptive change (Eisenhardt and Martin 2000), thus stressing the non-static nature of the business environment, and in this way conceptually resolving the main shortcoming of the RBV. We defined HR operational capabilities as the capacity of the HR function to purposefully use its current HR base for performing day-to-day operational activities (adapted from Maatman et al. 2010).

Table 6.   Overview of the realized and conditional benefits perceived from using Oracle e-HR.

Perceived benefits	*Perceived status of benefits*
Improved image of the HRM department and HR professionals	Realized
Perceptions about uniqueness of the HRM	Realized
Facilitating a new way of 'doing HRM' and professionalization of the HRM function	Realized
Enabling strategic and analytical HRM discussions	Realized
HRM-related information is orderly and transparent	Realized
Enabling sharing of HRM-related information	Realized
HR administration is easier than without Oracle e-HRM	Conditional
Enabling and simplifying strategic workforce planning	Conditional
Enabling, objectifying, and simplifying strategic performance management	Realized
Strategic re-orientation of HR professionals	Conditional
Time saving for HR pro's by reducing HR administration	Conditional

Table 7. Overview of conditions for enhancing benefits from using Oracle e-HR.

Conditions for Oracle HR benefits realization/enhancement
Increasing ease of use of Oracle HR applications, good and prompt communication about improvements and challenges
Matching of all information technologies
Increasing intrinsic data quality in Oracle HR
Increasing visibility of HR practices, more communication
Improving comprehensibility of HR policies, more explanation
Employees' involvement in the Oracle HR projects (more than just informing)
Increasing analytical skills of line managers and HR pro's
Technology should work well, and all modules should be integrated
Communicating to the users both the advantages and limitations of Oracle HR
Increasing the usability of a report generator

In adopting e-HRM, an organization aims to maximize the strategic capabilities of the HR function through changes in the HR role (from administrative expert towards becoming a strategic partner) and enabling the HR function to spend less time on HR administration. Our point of departure was the e-HRM debates within the RBV (Marler 2009; Maatman et al. 2010; Parry 2011), and we have gone a step further by discussing how the HR function can transform the HRM resource base such that it has more of a strategic orientation.

Drawing on the current body of literature, we assumed that e-HRM offers opportunities for the HR function to reduce the time spent on administrative work, and instead focus on developing practices, designing HR policies, business planning, performance and succession planning, and building human capital (Marler 2009). In other words, we expected that e-HRM would enable the dynamic capabilities of the HR function. Furthermore, we assumed that e-HRM would enhance the operational capabilities of the HR function by simplifying administrative processes, reducing the time required for HR transactions such as tracking job records, managing the employee payroll and running benefit programmes (Marler 2009).

The findings of our single case study reveal that e-HRM did *not* enable the HR professionals to become more strategic, nor did e-HRM enable the HR function to achieve undisputed operational efficiency gains. This confirms Marler's conceptual work in which she builds an e-HRM strategy formulation model and observes that 'relying on e-HRM alone to realize this transformation may be more myth than reality' (2009, p. 525). Similarly, Parry and Tyson (2011) found little evidence of an enhanced strategic orientation of the HR function as a result of e-HRM: 'the introduction of e-HRM alone is not sufficient for an HR function to become "strategic"' (p. 351).

Our single case study, using mixed method data collection, showed that the HR professionals themselves were more positive and to a certain extent saw changes in their roles and the focus of their work, but line managers and non-managerial employees did not perceive this change as such. Parry (2011) suggests that this change in role can explain why e-HRM need not always lead to a reduction in the HR headcount. Interestingly, in our case study, we found that the HR headcount had been reduced since the implementation of e-HRM. More research is needed to understand fully the relationship between e-HRM adoption and the HR headcount.

We found that the line managers did perceive that they were expected to carry out more HR tasks. This supports the 'devolution of HR tasks due to e-HRM' argument advanced by Lepak and Snell (1998) and Ruël et al. (2004). However, Parry (2011) did not find that organizations that used e-HRM had devolved HR tasks to line management.

She suggests that organizations are using e-HRM as an alternative, rather than a means, to devolving HR tasks. Given the mixed findings related to this issue, future research needs to address this, and perhaps combine a large-scale survey (as in Parry 2011) and in-depth case studies (as in Ruël et al. 2004; Parry and Tyson 2011) in a longitudinal research design. This would allow one to observe what exactly happens in organizations over time as e-HRM is implemented and then 'absorbed'.

The non-managerial employees in our study did not use e-HRM that much, although they did perceive their usage as in line with its intentions. The low frequency of use is interesting in the sense that e-HRM, at least in the literature, is seen as devolving HRM tasks to employees (Ruël et al. 2004). The low usage frequency suggests that non-managerial employees have not fully accepted this. The survey results nevertheless showed that employees reported being involved in more HR tasks – which suggests that they were at least aware of the additional new tasks.

Earlier research by Ruël et al. (2004) suggested that it may take 3 years or more for e-HRM to bring a return on investment and to deliver the hoped-for benefits. The findings from the single case study presented in this paper suggest support for this earlier research. In the case study, Oracle HR had only been available for 15 months. The HR professionals were the most positive of the staff about the changes and benefits anticipated, whereas the line managers and non-managerial employees were not that positive. On the basis of the earlier study on this aspect, we hypothesize that it will take at least another 15 months before the organization at large experiences real benefits.

Reflections on the organizational capabilities approach

When we view the current empirical findings in terms of the organizational capabilities approach, we have to conclude that e-HRM does not guarantee that the HR function will improve either its dynamic or its operational capabilities. Nevertheless, the HR professionals did perceive the anticipated changes to a certain extent: that there was a more strategic orientation and more time was spent on strategic HR activities. In view of the earlier finding that it may take 3 years or more for e-HRM to bring a return on investment, the current case study provides evidence of how dynamic and operational capabilities develop. The HR professionals themselves had perceived that they had taken on the two roles suggested by Ulrich (1997), of people manager and business associate, that are associated with an effective value-adding HR function. Perhaps this is the very first stage; from here, maybe, the HR function will continue to develop in line with these roles and deliver to the business. Line managers and non-managerial employees are likely to adapt and adopt over a period of time as they experience HR acting in line with these role typologies. We note that the case study revealed unintended benefits, one of which being the improved image of the HR department, and this could support and encourage the developments proposed above. Future research could usefully focus on how the changing role of HR professionals affects line managers and non-managerial employees. This knowledge would be useful for practice in improving this process, and for e-HRM research to develop clearer theoretical reasoning on this process.

This case study findings make clear that e-HRM is not an 'easy route' for building dynamic and operational capabilities; the impact of e-HRM on the HR function's capabilities seems conditional. A similar finding was reported by Parry and Tyson (2011) who offered five factors that affect the realization of e-HRM goals: HR skills, training in e-HRM use, engagement with e-HRM, design of the e-HRM system and familiarity

with the technology. Follow-up research is needed, preferably quantitative and survey based, to confirm the roles of these conditional factors.

Our study also revealed that line managers were not pleased with their greater involvement in HR activities. This is not an unfamiliar issue as previous research (Bondarouk et al. 2009) reported that line managers are crucial in achieving the expected benefits from e-HRM and in making an e-HRM implementation successful. Line managers' 'distaste' for additional HR activities may also suggest how the HR function could build dynamic and operational capabilities. While line managers do not consider themselves as part of the HR function, and HR professionals are not able to extend their responsibilities to line managers, no substantial dynamic and operational capabilities will be built. Future research could focus on how the HR function can be 'extended' to 'involve' line managers. This would help solve this major issue of how line managers can be involved in successfully implementing e-HRM.

Conclusions

The debate on e-HRM and its strategic value has yet to reach a definitive conclusion: Does e-HRM create strategic value, and if so how? The literature presents different views on this issue. The results from the single case study, using mixed methods, presented in this paper show that e-HRM does not automatically result in direct strategic benefits, and therefore does not necessarily strengthen the HR function's dynamic and operational capabilities. Only if certain conditions are met can the dynamic and operational capabilities of the HR function be strengthened.. The authors are grateful to the Oracle HR team at the Belgian Federal Agency who have informed our thinking: the e-HRM project team who partnered us, the line managers and HR professionals who were supportive and encouraging, the interviewees who were inquisitive as well as open to learning and sharing.

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Appendix A: Scale development

Construct	Variable	Items	Criteria and scale source
Usage of e-HRM	Frequency of use – the extent of actual usage of the system	– I use e-HRM in my daily work – I use e-HRM very intensively	Two items, self-constructed. A = 0.757
HRM roles – a set of norms and expectations that govern the behaviour of HRM professionals, define their responsibilities and the content of the HRM work to be done (Ulrich and Brockbank 2005)	Employee advocate – is charged with making sure that the employer-employee relationship is one of reciprocal value	– HR professionals develop HR activities to take care of employee personal needs – HR professionals are active participants in listening to and responding to employees – HR professionals are active participants in building mutual respect in our organization – HR professionals are seen as advocates for employees	Four items based on Ulrich and Brockbank (2005) $\alpha = 0.854$
	Human capital developer – responsible for developing of the workforce, emphasizing individual employee more than organization processes	– HR professionals develop HR activities to help employees to develop individual plans – HR professionals focus on the future of employees – HR professionals spend time to adjust employees' individual differences to their career plans – HR professionals are seen as human capital developers	Four items based on Ulrich and Brockbank (2005) $\alpha = 0.878$
	Functional expert – responsible for improving decisions and delivering results	– HR professionals develop HR activities to efficiently deliver HR solutions	Four items based on Ulrich and Brockbank (2005)

(*Continued*)

Appendix A – *continued*

Construct	Variable	Items	Criteria and scale source
		– HR professionals are active participants in turning HRM theories into concrete practices – HR professionals work to implement HR activities efficiently – HR professionals are seen as functional experts	$\alpha = 0.884$
	Strategic partner – accountable for aligning HRM policies and practices with the business strategy, and partnering with the line managers	– HR professionals develop HR activities to align HR strategies with business strategies – HR professionals partner with line mangers to help them reach their goals – HR professionals actively participate in making plans for the organization – HR professionals contribute to ensure organizational change	Four items based on Ulrich and Brockbank (2005) $\alpha = 0.866$
Time spent on HR activities – perceived amount of time HR- and non-HR associates spend on different HR activities since the e-HRM introduction	Time spent on strategic HR activities	Since the implementation of Oracle HR I am increasingly involved in: – forecasting of HR needs – matching of job vacancies with organizational needs – developing long-term HR policies – aligning HR policies and the strategy in my organization	Four items Self-constructed $\alpha = 0.933$
	Time spent on IT-related HR activities	Since the implementation of Oracle HR I gain new responsibilities on: – maintaining Oracle HR tools – developing new Oracle HR tools – performing analysis of Oracle HR applications	Four items Self-constructed $\alpha = 0.901$

Time spent on HR administration

- carrying out technical up-dates of Oracle HR tools

Since the implementation of Oracle HR:
- I need less time for P&O administrative tasks®
- I need more time to order personnel administration I spend more time to control personnel administration
- I need more time to record the personnel data

Four items
Self-constructed
$\alpha = 0.618$

Note: ® – indicates a reverse item.

Appendix B: Exploratory factor analysis HR roles

Component matrix[a]

	Component	
	1	*2*
EmplAdvocate_1	0.809	− 0.031
EmplAdvocate_2	0.715	0.153
EmplAdvocate_3	0.753	− 0.156
EmplAdvocate_4	0.764	− 0.342
HCapDeveloper_1	0.822	− 0.199
HCapDeveloper_2	0.804	− 0.347
HCapDeveloper_3	0.711	− 0.244
HCapDeveloper_4	0.763	− 0.332
Funct Expert_1	− 0.134	0.824
Funct Expert_2	0.146	0.785
Funct Expert_3	0.240	0.823
Funct Expert_4	0.109	0.761
StrPartner_1	0.360	0.750
StrPartner_2	0.411	0.707
StrPartner_3	0.400	0.757
StrPartner_4	0.018	0.780

Note. Extraction method: principal component Analysis. ▨ = the HR roles – People Managers Ax (Ulrich 1997). ▣ = the HR roles – Business Associates Ax (Ulrich 1997).

[a] Two components extracted.