

AN EXPLORATORY ANALYSIS OF E-HRM IN THE CONTEXT OF HRM 'TRANSFORMATION'

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Abstract

The use of technology in HR (e-HRM) is well established for the purposes of improving HR operational processes and allowing distributed access to employees and managers. Likewise, several organisations have successfully adopted new HR business models using technology as a platform for a transformative change at the human capital level. However, many organisations, particularly the UK public sector, are still lagging in their implementation of more sophisticated HR models.

As a practicing consultant in this field, the author regularly encounters organisations that fail to take advantage of the transformational potential of e-HRM. This paper argues that different technological frames between key stakeholder groups may explain why inertia has occurred in some organisations. It contends that the analysis of technological frame domains provides a valuable lens for understanding and interpreting e-HRM and as a means of examining the barriers that may hinder the development of e-HRM. It may also provide the basis for strategies to manage e-HRM related change more effectively. Using a grounded theory approach, the research, currently work in progress in support of a professional doctorate (DBA), is investigating how UK public sector organisations make sense of, plan for and implement HR technology.

Key words: e-HRM, transformation, technological frames, sense-making, public sector

Number of words (including abstract and references): 8,214

Making sense of e-HRM: Understanding barriers to transformation through technological frames

1. Beyond Process Automation

The potential for transformation

A wide range of Human Resources (HR) processes and information can now be managed and devolved to line managers and employees through web-based technologies using e-HRM ('electronic Human Resource Management'), with potentially significant benefits in terms of cost reduction and improved service levels (CedarCrestone, 2006). Organisations make a significant investment of time and resource in implementing e-HR, with more than \$1.5bn pa being spent globally on related software and implementation (Lykkegaard, 2007). At least 91% of midsize and large US organisations use web based HR technology in some way (Keebler & Rhodes, 2002).

However, the predominant focus of many software implementation projects remains administrative efficiency and HR operational cost reduction. Broderick and Boudreau (1992) noted that "*most organisational investments in HR information technology support only a narrow range of administrative decisions*" (p.9) and the author's own experience as a consultant in this field suggests that although now sixteen years old, sadly, the statement remains largely true. This sentiment is confirmed by Ball (2001) who supports the idea that HR systems are still being employed for administrative purposes and are less likely to be used for analysis and support aimed at strategic outcomes. A recent study by the UK's professional HR body, the CIPD (CIPD, 2007) provided evidence through a series of case studies that suggested a small number were using technology to promote a transformational shift in organisations. However, the majority remain focused on operational improvements at the administrative level rather than value-adding people management.

Nevertheless, research strongly supports the idea that e-HRM technology can go beyond simple administrative and operational benefits. For example, Snell et al (2002), suggests that e-HRM technology is capable of more than simply automating business processes, enabling organisations to become more strategic and flexible as well as cost-efficient, by supporting people management. Several other writers including Davenport (1993), Gourley and Connolly (1996), Hannon et al (1996), Liff (1997), Othman (2003) and Tyson and Selbie (2004) have argued the potential of a shift away from administrative applications towards supporting people management processes. Kossek et al. (1994) have noted the role of an HR Information System in strategic positioning, that can "*practically and symbolically represent the transformation of Human Resources into a strategic business partner*" (p.137). Tansley et al. (2001) contend that technology plays a critical part in driving HR transformation, where technology acts as a stimulus for a fresh approach to Human Resource practices and new employment relationships.

The Transformative Effect

We should not be surprised that these claims are being made. While technology has a strong capability for 'Automating', it also has the capacity for 'Informating' (a term first used by Zuboff in 1988), where informating refers to generating new forms of information that empowers managers and provides data that HR specialists can strategically act upon. Reddington et al (2005) comment that the greatest benefits of e-HRM are its transformational outcomes, especially when used in conjunction with organisational solutions such as outsourcing and shared services. At its most bold, technology provides opportunities for virtual and networked organisations, linking e-learning to knowledge management and the potential for new HR business models (Martin et al., 2005).

Kovach et al (2002) conclude that the engagement of line managers in implementing HR technology exposes line managers to HR issues and gives them better appreciation of HR practices, with significant outcomes for HR transformation. Lawler and Mohrman (2003) found that the greater use of information technology may be associated with HR being more of a business partner – where a fully integrated HRIS exists, HR is more likely to be strategic, arguing that “...it is much easier for HR to gather strategic data and analyze them in ways that can contribute to forming and implementing business strategy” (p.21). Likewise, Martin et al. (2005) state that “the fusion of existing HR practices and technology can alter the way in which an HR department perceives itself, interprets its organizational and strategic environment and does business with its clients and contractors” (p8.) While not arguing for a causal relationship, these authors found that successful HR functions tend to invest more time in planning, organisational design and development, career planning and management development.

We may therefore see the advantages of technology enabled HR systems as having three distinct dimensions. Yeung and Brockbank (1995) have differentiated three dimensions of e-HRM: operational (cost reduction), relational (improving HR services) and transformational (improving strategic orientation). Although not necessarily linked, as Ruel et al (2007) point out, in practice, operational e-HRM is the prerequisite for relational and transformational, so we may see the progress of organisation through these stages as a form of e-HRM maturity, during which organisations develop a more strategic capability. Stambaugh (1999) has described this progression as moving from democracy to self-organisation. Bhatnagar (2007) employs an organisational learning lens to look at technology enabled HR in Indian organisations which leads to increased managerial capabilities, competencies and strategies.

Definitions of e-HRM which focus only on operational or administrative outcomes may therefore be inadequate. Indeed, it may be that the term 'e-HR' should apply to its operational usage and 'e-HRM' is reserved for relational and transformational outcomes, to include a fully integrated, organisation-wide electronic network of HR related data, information, services, databases, tools, applications and transactions, such as that given by Watson Wyatt (2002):

“The application of any technology enabling managers and employees to have direct access to HR and other workplace services for communication, performance reporting, team management, knowledge management and learning...in addition to administrative applications”

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Some have suggested (Foster, 2006) that the term 'e-Human Capital Management', or 'e-HCM' should be used to describe the more sophisticated applications of HR technology. However, for the purposes of this paper, the term 'e-HRM' will continue to be used for all categories of HR technology.

2. Research Objectives

Making sense of e-HR technology

As a consultant, the author works with a wide variety of organisations to provide practical advice on planning and implementing e-HRM. A key part of the consulting process involves creating a robust vision for e-HRM and aligning it to broader business needs. It is clear that in many organisations, there remains a lack of understanding among HR professionals about how technology might be applied to transformational objectives beyond basic administrative outcomes. Technology is seen as little more than an 'electronic filing cabinet', little more than a basic repository of data, with little potential to have a strategic impact. These organisations rarely take technology beyond its operational level, lacking leadership and vision at senior levels. Others have been able to create bold plans but have been unable to bring them to fruition because they have failed to engage line managers in their vision, while a small number have succeeded in e-enabling their HR organisation. The technology to bring about a transformational change has existed for some time; software is typically far ahead of the organisational ability to take advantage of it. The current research focuses on these issues and aims to make a contribution to our understanding about how e-HRM is understood and developed and in particular, the barriers to its further development as a transformational tool.

A fundamental premise of the research is that the way that various organisational actors make sense of HR technology – the interplay of action and interpretation – is critical to an organisation's ability to plan for and ultimately deliver HR transformation at the strategic level. The sense-making process is important in many aspects of life - as Weick (2005 p.411) states "*sense-making starts with chaos and involves labelling and categorising to stabilise the streaming of experience, connecting the abstract with the concrete*". Ginzberg (1981) showed how users' expectations of technology influenced their perceptions of it and cognition and 'micro-level processes are important to understanding perceptions (Orlikowski & Gash, 1994). Clearly, to interact with technology, people have to make sense of it; and in this sense-making process, they develop particular assumptions, expectations, and knowledge of the technology, which then serve to shape subsequent actions toward it. Indeed, in the authors own consultancy experience, discussions often take place along the lines of 'the art of the possible', where organisations explore the possibilities that e-HR can offer and explore how it might be used. Unless the full potential of HR technology is clearly understood, I believe it will not be possible to move through the various stages of maturity from administrative to transformational.

A number of explanations have been given as to how organisations make sense of technology. For example, Zahra and George (2002), adopting the earlier work of Cohen and Leventhal (1990), describe the process of absorptive capacity, which they see as the acquisition, assimilation, transformation and exploitation of new knowledge to produce a new organisational capability. Martin et al (2003) believe absorptive capacity to be important, both for understanding and realizing the potential of technology. Arguably, the limits of what e-HR can

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achieve are a product of an organisation's ability to understand and exploit knowledge of what technology can achieve.

Group learning processes have also been seen as important mechanisms in understanding and developing knowledge of technology. For example, Kolb's (1984) learning theory is used to underpin an adaptation by Bondarouk (2006), who describes a 5 step action-oriented group learning approach where individuals start to use technology in a haphazard way and gradually, through shared understanding, mutual adjustment occurs in which the use of technology is agreed. Bondarouk argues that acceptance of technology is related to group learning processes, which can only be achieved through complex interactions.

Technological frames

Orlikowski and Gash (1994) propose a systematic approach to examining the underlying assumptions, expectations and knowledge that people have about technology. They argue that 'technological frames' offer a useful analytic perspective for explaining and anticipating actions and meaning. Frames are cognitive structures or mental models that are held by individuals, typically operating in the background with both facilitating and constraining effects. These individual frames of reference have been described as "a built-up repertoire of tacit knowledge that is used to impose structure upon, and impart meaning to, otherwise ambiguous social and situational information to facilitate understanding" (Gioia, 1986 p.56). Frames are therefore critical to understanding technological development - different groups within an organization may have different technological frames, including different expectations about the impact of technology. Where technological frames are significantly different (frame incongruence), difficulties and conflict may arise. As Zuboff (1988) observed, where expectations are different (for example, with regard to giving workers more autonomy), some can never come to terms with the changes. As Bolman and Deal argue, frames can be both positive (building etc) or negative, to the extent that they can become "psychic prisons" that inhibit learning because people "cannot look at old problems in a new light and attack old challenges with different and more powerful tools - they cannot *reframe*" (1991 p.4).

The current research is intended to examine how the various frames of reference in an organisation shape the planning and development of e-HRM, both before and during implementation. In this case, the frames being analysed included those two groups of organisational actors, HR managers and functional line managers who are critical stakeholders to the process. My argument, stated simply, is that organisations will be unable to make progress towards the more transformational aspects of e-HR because these two groups are often unable to agree common (congruent) technological frames. This failure to make sense of the potential of e-HRM prevents its extension beyond administrative uses.

Technological frames have powerful effects on people's assumptions, expectations, and knowledge about the purpose, context, importance, and role of technology. Their role in shaping perceptions of e-HRM cannot therefore be ignored, since they will strongly influence the choices made regarding the design and use of technology, for example, Orlikowski (1992); Pinch & Bijker (1987). Furthermore, it might be argued that the extent to which e-HR technology can be taken to greater levels of maturity is a function of different referential frames. Orlikowski and

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Gash (1994), researching the introduction of Lotus Notes into a consultancy organisation, found that three 'domains' characterised the interpretations of technology:

- Nature of technology – people's images of the technology and their understanding of its capabilities and functionality
- Technology strategy – their understanding of why the organisation acquired and implemented the technology
- Technology in use – people's understanding of how the technology will be used in a day-to-day basis

This model will form the basis of the current research.

3. Methodology

Approach

The underlying methodology of the research is based on a grounded theory approach (Glaser & Strauss, 1967), that is, to develop a series of theoretical propositions that describe how organisations make sense of and ultimately successfully exploit e-HRM. Through this method, we can achieve a better understanding of the way that e-HRM is being used as a transformational tool, how it is perceived prior to its introduction and how those perceptions manifest themselves through to final implementation and use.

The current research is taking place in preparation for a submission towards a professional doctorate (DBA) and represents research to date as at December 2007.

Research Sample & Approach

The focus of the current study is the UK Public Sector, which generally has a poor reputation for Human Resource Management, associated with low status, low influence roles and representing an 'enclave' in the personnel profession (Lupton & Shaw, 2001). While some research (Kelly & Gennard, 1996) found that Personnel¹ Directors have developed a strategic role in managing the consequences of government changes, in others, the HR role has declined as industrial relations issues have seemingly become less critical. Evidence seems to support the idea that the HR function in the public sector is relatively immature and less sophisticated than its private sector counterparts (Harris, 2002). The Gershon Report (Gershon, 2004) in particular put pressure on HR organisations to become more efficient, the driving force of which was to reduce over-staffing and inefficiency.

While this evidence paints a poor picture of the HR function in the public sector, it equally provides an excellent research platform for monitoring the understanding and sense-making processes with regard to e-HRM. Given that many public sector organisations are embarking on a programme of investment in e-HRM, it would seem to be fertile ground for research into its use. Although to date the research has taken place exclusively in this sector, it is unclear

¹ Many UK Public Sector organisations still refer to their HR function as 'Personnel'

whether this is an important variable in technology decisions and whether HR maturity equates with technology maturity. These questions will be explored further as the research progresses.

Several methods were used to collect data, the primary method being a series of structured interviews. The interviews aimed to obtain an insight into the sense-making processes of human resource professionals and line managers with regard to the use of e-HRM technology. To date, approximately 40 interviews have been held, together with a series of workshops which included line managers. Structured interviews lasted between 45 minutes and 2 hours. Research has also included documentary analysis, participatory observation and the maintenance of a reflective diary.

Interviewees were encouraged to engage in a broad-ranging discussion in order to provoke responses, rather than being a 'speaking questionnaire'. The interviews were structured in a way that encouraged participants to share their views about the way the HR function operates, their opinions on people management capability in their organisation, leading to an exploration of their perceptions of technology and the impact it might have on their roles and the organisation. Where relevant, it included an insight into what progress had been made with technology and their concerns relating to its introduction.

The sample was a mix of organisations in the public sector, at different stages of their implementation of e-HR technology. The organisations participating were:

- 6 Local Councils (with extended access to 2 Councils)
- 1 regional police constabulary
- 2 Government agencies
- 1 Health Authority

Participating organisations were selected from a blend of consultancy clients of the author or direct approaches through networking at conferences, events etc. Participants either used, or expected to use, a range of software products to meet their e-HRM needs. Some initial screening was performed against participants to understand the current stage of their project and whether reasonable access could be granted.

To date, 38 interviews have been conducted, of which 4 have been one-to-one interviews with line managers plus 2 group discussions with managers at which there were 5 and 7 managers present respectively. Although currently weighted towards HR managers, experience suggests that HR managers are reluctant to give researchers extensive access to line managers until they have been through the interview process themselves. Having passed through the 'gatekeeper' stage in sample organisations, plans are now in place to extend the numbers of line managers interviewed to redress the balance.

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4. Analysis of findings to date

Interviews explored the current status of the HR function to provide context for technology decisions regarding e-HRM. Analysis of the interviews revealed two central themes:

Theme 1: Risk-averse, bureaucratic and under-valued: An HR function under pressure

An overwhelming theme arising from interviews supported the idea that the public sector HR function is under pressure to do 'more with less', one that has struggled with establishing a credible reputation and is highly concerned about demonstrating value. The organisations studied typically contained HR functions working under great pressure, with sub-optimal resources which often failed to deliver a good service. The stereotype of the UK public sector is of a highly rule-bound and overly bureaucratic organisation, a view largely borne out in interviews:

"We're probably a bit more slaves to the rules of the processes here. I think probably we made things a bit difficult for ourselves in areas - we do tend to tie ourselves up in knots and I do think it sets us back, a different way with more freedom would be good"
[Council, Line Manager].

In general, line managers are highly unsupportive of the personnel team, criticizing them for their lack of strategic focus:

"I'm not sure we've all got a shared understanding of what the hell they're supposed to be doing. I think that's the problem. For me, it's a people business; we should have a very strategic view of what the role of our HR support is" [Council, Line Manager].

Line managers frequently expressed concerns that the function was defensive, risk averse and often uninterested in strategic people development issues, with comments ranging from:

"Personnel is only concerned with not losing tribunal claims" [Council, Line Manager]

To:

"It's sometimes not pragmatic advice, it's sometimes about protecting Personnel's interests" [Council, Line Manager]

Even HR Directors themselves confess a tendency to:

"Play it safe rather than make a decision which needs to be made. We're less bold in making decisions, we're good at administrative decisions but less bold on big decisions"
[Council, HR Manager]

Line managers were especially critical of the quality of service delivered:

*"They don't give a s**t"* [Council, Line Manager]

And:

*"We get a c**p service"* [Council, Line Manager]

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Theme 2: Line Management capability

A second major theme emerging from research interviews was a series of strong concerns about the capability of line managers. This is an important element in the sense-making process, with important implications for the role of technology and the relationship between line managers and the HR function. HR managers expressed this in terms of line management's need for constant 'hand-holding' whenever people issues arose. A common view was that:

"Some managers would like HR to come along and take away the people management function" [Council, HR Manager]

HR teams were often cynical about the ability of line managers to cope with managing people and did not clearly understand their responsibilities in this area. HR managers were often critical of their ability to perform basic tasks such as attendance interviews and grievance, or even running performance management processes. As one HR manager stated:

"I see that time and time again, one recent example is where a senior manager was in a terrible state, she had never thought that part of being a manager would find herself in an employment tribunal, she didn't have the skills to manage the situation" [Council HR Manager]

Even other line managers shared this cynicism, commenting that their colleagues:

"Won't face up to their responsibilities, disciplinary processes can take forever because the managers don't like disciplining, grasping the nettle and dealing with it" [Council Line Manager].

An often expressed sentiment was that line managers tend to see people management as a secondary activity to the 'real' management duties of managing a budget and providing an operational service, described by one respondent as *"a necessary evil"* [Council, line manager]. Some HR managers had sympathy for this idea:

"There are some managers for whom it's impossible, they're managing huge numbers of people, there is legislation which requires them to work within boundaries, they don't have the luxury to be good people managers" [Council, HR manager].

It is indeed a concern when even HR regards people management as a 'luxury'! Managerial capability is clearly a major issue. To their credit, there is good awareness of this problem and some desire to remedy the situation. Indeed, one participant organisation, a Government Agency, has explicitly defined managerial capability as a key driver in their e-HRM strategy and there is a sense that a transformation in management culture is needed, where managers need to become more accountable and people focused:

"That's part of the culture change, we've been trying to give managers more accountability and trust. It's been a hard year for the centre, because they feel they have

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to check everything - we said we're not going to be checking everything in future. Some of the managers think everything will get checked. [Government Agency, HR manager].

Although this aspiration has not been overtly stated by any other organisation being studied, one local council has acknowledged that improved line management capability may be an additional outcome of the e-HRM investment.

5. Theory Development

Two theoretical propositions are proposed:

Proposition 1: The lens of technological frames can offer insight into the mainly administrative use of e-HRM in the UK Public Sector

Following the structure proposed by Orlikowski and Gash (1994), research findings to date have been analysed from the perspective of an interpretative technological frames model. The three core technological domains form the basis for comparing differing views about the nature, strategy and use of technology, revealing varying degrees of frame congruence and some significant frame incongruence:

Nature of Technology – people's images of the technology and their understanding of its capabilities and functionality

Overall, there was reasonable frame congruence in terms of basic understanding of the functions of e-HRM. However, significant incongruence arose regarding the extent of this understanding. HR managers generally held a positive view about e-HRM, with several describing it in terms of a kind of 'magic bullet' which would solve many of the process problems which exist (see Markus and Benjamin, (1997)). HR managers were generally highly enthusiastic about its arrival:

"Self-service is going through meteoric development, isn't it, in terms of the potential of what it can do, there's nothing that we can't do through self-service". [Council, HR Manager]

HR teams have an expectation that technology will address issues relating to managerial capability and will bring about improved line management skills, allowing them to devolve a range of HR functions to line managers:

"Managers should be able to do the basic HR functions, recruitment, PADA, and carry out interviews without the assistance of a Personnel person" [Council, HR Manager]

However, line managers had generally less ambitious expectations about technology, often focusing purely on administrative outcomes:

"What we're really hoping in terms of the new computer system we're introducing is that it will take away some of that pressure, particularly on some of the administrative things"

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which will now be done automatically. We are relying very much on this new system doing that” [Council, HR Manager].

Indeed, at no point have any of the line managers interviewed acknowledged any strategic outcomes from the use of e-HRM, with the exception of a recognition that management reporting would be improved.

Technology Strategy: People’s understanding of why the organisation acquired and implemented the technology

Unless actors have a common point of reference and understanding for the transformational effect of e-HRM, it is likely to remain an administrative tool, so strong frame congruence about the strategic objectives of e-HRM would appear to be a pre-requisite. However, we find very different frames of reference among the two key stakeholder groups. Some HR Managers took the view that e-HRM would lead to a passive transformation, where the automation or devolvement of administrative workload would simply leave the HR function with more time to concentrate on strategic issues:

“It’s partly about being an enabler, a large percentage of the personnel staff are out there professionally qualified, and I would like them to be using that as much as possible which means having fewer of them and fewer of them passing bits of paper, also it’s much more motivating for them” [Council, HR Manager].

Others saw a more active, direct transformational impact of e-HRM, where the technology itself would enable higher levels of managerial capability:

“Eventually, we want to reduce HR administration, but also it’s about strategic change, giving line managers the tools to be more effective, that’s what it boils down to, putting things on line, PDRs, sickness etc. we’re giving you all that technology, they will have to deal with it in future” [Police Authority / HR manager].

“It was always seen as a way of helping managers do their job better with better management information, understanding learning and development interventions, looking at their record of attendance, all of those things, so it was more a tool to do your job but not the end in itself” [Government Agency, HR Manager]

Others saw operational and transformational objectives as being equally balanced:

“There were two drivers really, one was definitely efficiency to get the cost of the service down and the other driver was to get a more modern and professional service to meet the needs of the business. They were the two catalysts of change really, efficiency and modernising the service, making it a more strategic function” [Government Agency, HR Manager].

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Frame incongruence occurred in this domain. The transformational view of e-HRM is rarely shared by line managers, many of whom do not understand its strategic potential or who felt cynicism about the strategic opportunities:

“My feeling is that time will just be swallowed up with day to day work. I’ve never yet seen – and one of the reasons why I’ve been a bit of a wet blanket in terms of supporting the system – I’ve never yet seen a successful personnel system and I’ve seen three. The reason is they all get watered down and Personnel say “we can’t do this” and managers don’t get engaged and the managers say that it does nothing for them” [Council, Line Manager]

“I’m not sure they would want too many fancy functions because they don’t have very much freedom to act anyway... so any more sophisticated tools wouldn’t be that much use to them” [Council, Line Manager]

Indeed, technology is seen as a lower priority than other organisational initiatives:

“The choice of product here is an opportunity to address that, but we’ve got to effect some really big cultural change to get both the managers and personnel people bought in and working together, there are so many priorities that aren’t being dealt with” [Council, Line Manager].

The most common concerns about the introduction of technology were the passing of administrative responsibilities to managers and the impact on their roles. Even within the HR function, the transformational effects of technology were viewed cynically:

“I think they are very wary, as are most managers, about self-service, because let’s be honest, however you dress self-service up you’re giving them an additional job to do that they didn’t do before, that work doesn’t actually go away and if you transfer it over you can con yourself into thinking you’ve actually made some efficiency savings and you haven’t” [Council, HR Manager]

Even at senior HR manager level, the strategic role of e-HRM was questioned – for many, technology is still seen primarily as a route to greater operational efficiency:

“I wouldn’t see it as giving more time to being strategic, not everything is strategic, and if we’re going to have better personnel services, we should also be careful that it also improves our operational capability” [Council, HR Manager].

When asked whether reduced administration would free up more time to be strategic, one interviewee responded:

“No, I think that’s rubbish. I think because of the nature of HR you are driven operationally. I think the biggest barrier is professionals not having the capability to be strategic and really focusing [Council HR Manager].

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Some HR interviewees had already accepted the limitations of technology:

“The system won’t make us strategic – because we have to believe we are strategic”
[Council, HR Manager].

Comment [S1]: What does strategic mean?

However, in terms of broader transformational change, there is evidence that where e-HRM has been implemented, the profile of the HR function has been raised as a result:

“I think a year ago, some managers would have thought ‘I don’t know what HR does’, but they are now trying to use HR technology to link into their systems, their processes which in turn makes it better for everybody” [Council, HR Manager].

Even where there are transformational aspirations, the ability to realise those aspirations in the form of detailed plans is weak. As one HR professional said:

“I don’t think we’ve thought it through. We know we’re going to save some costs, but beyond that we don’t really know what to expect” [Council, HR Manager].

One finding of concern was that HR Business Partners (those staff directly supporting line managers in an internal consultancy role) have deliberately avoided involvement in e-HRM projects, as if they see no relevance to technology beyond administration. It has been difficult to test this technological frame, since several planned interviews with Business Partners have been cancelled at short notice. It may be that this subset of HR managers underestimates or misunderstands the potential transformational impact of technology, which would certainly affect their roles. Attempts will be made to explore this frame further as research progresses.

Technology in use: People’s understanding of how the technology will be used in a day-to-day basis

Without exception, HR managers are enthusiastic about the impact of e-HRM on managerial capability:

“There is a chain - the technology can drive changes in the way that managers operate and the way we recruit - I also get really enthusiastic about this” [Council HR Manager].

It was assumed that managers would intuitively understand the benefits of using the technology. HR managers tend to make assumptions about how readily managers will adapt to e-HRM:

“Managers will see the benefits quickly... they’re not stupid, they will see it. There’ll be a bit of work, but a lot of gain. So I’m hoping that there will be a balance and the fact that there is a vast amount of information available to them that they will actually appreciate that overall it is a good thing for them. So selling the benefits to managers is very important” [Council, HR Manager]

Expectations of a transformational impact were therefore high among many HR managers, perhaps **too** high. As a consultant, I regularly engaged with one Local Council client in designing

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the new business processes to be implemented through e-HRM. It became clear during these design sessions that what many HR managers wanted was effectively an 'expert system', to prompt managers at each critical stage of a process. This expectation amounted to almost a de-skilling of the management role - for example, they envisaged that when an employee returned to work after a bout of absence, an electronic flag would be sent to tell the manager what to do next and guide them through the process:

"It would be the manager's friend - basically the manager would relate completely to that system and it would help him or her actually manage their staff. It gives them all the information they need, members might say we need to know the turnover in your area. In future no matter what the personnel question is that comes up - I want the manager to feel confident they can interrogate the system easily and out it comes in a report"
[Council, HR Manager]

One HR professional expressed the impact of technology in terms of providing 'failsafe' processes:

"I would hope they understand the purpose of the technology and use it so they can manage better. We need to find a better way of doing things - for example the annual leave cards- it's better if someone sees where they are rather than looking at paperthey won't have to worry whether they've got it wrong, the processes that are designed to help them manage, it gives them that". [Council, HR Manager].

HR managers often talked about technology using the concept of 'empowerment' and allowing line managers to work better, to describe the impact of technology:

"I think it's empowering the employees and putting them in control, it's that link between them and us, using their information so they're in control, its not cloak and dagger, it makes it more transparent that we're all looking at the same sort of thing. The fact that they can download their payslips, they may not have asked for that before but now it's open to numerous things" [Council HR Manager].

"The other aspect to it is that you'd hope that not only will it allow us to take out posts across the organisation, but if set up properly it should allow managers to manage their teams in a better way" [Council Line Manager].

In other organisations, technology was seen as an HR tool for policing or controlling the activities of line managers. From an HR management perspective, e-HRM was expected to have major impact on management accountability and some HR people relished the idea of being able to hold managers to account. Although often subtly expressed, when asked whether technology might be a way to keep track of manager performance one HR Director responded:

"When I ask them what they've done about absence, with this new system, they can't say they don't know" [Government Agency, HR Manager].

Control issues are therefore highly relevant to expectations of system use:

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“It will take us out of the role of chasing managers, having to police them, instead the system should help them and only that small minority of managers that aren’t capable will say the system is coercing them, that the technology isn’t delivering” [Council, HR Manager]

There is also evidence in this domain that e-HRM has had a transformational impact. When asked about the relationship between personnel and managers, an HR Director responded that:

“Yes, the good ones use the information or know the information is there and will ask us to get more involved in professional issues rather than processes. The less good ones will still complain about having to do personnel work” [Council, HR Manager].

“The whole system coming has completely changed their perceptions they are now beginning to see the value of it, to take away the tedious systems and they’ll see it pay back for all the work they’ve put in, I see the self service as a starting point [Government Agency, HR Manager].

Again, there is frame incongruence regarding the day-to-day use of e-HRM. One manager strongly questioned the value of the system without a clear HR strategy and a credible HR function:

“Without a clear vision of where the authority needs to be, we’re struggling to fit with HR initiatives, it’s still an authority with glib statements about what it wants to do. If it embeds properly, the information will be invaluable in helping to develop a strategic approach, but without the information and good quality information, no, it will struggle to be any more than something that enhances processes” [Council, Line Manager]

This last statement is particularly important, suggesting that regardless of the potential of e-HRM, unless the HR function itself has credibility, it may never translate this aspiration into action. As a result, a further proposition has been generated:

Proposition 2: Context is critical and technological frames are moderated by the relationship between groups of actors, in this case, the mutual opinions of HR teams and line managers.

Analysis of the interviews suggests that the three core domains in themselves may be inadequate to explain why organisations implement a purely operational strategy for e-HRM rather than a transformational one. It is suggested that simply exploring the relationship between each group of actors and the technology is not enough to explain the inertia that seems to exist and that additional domains are required. Proposition 2 suggests that technological frames are highly shaped by perceptions and relationships with other actors relative to the technology, in this case, the relationship between HR managers and line managers, forming a three-way relationship to technology. These relationship frames effectively moderate opinions of technology. Using the technological frames model developed by Orlikowski and Gash, we can see similarities between frames about other actors and frames of reference about technology. Table 1 summarises the core technological frames, then adds the moderating frames:

Making sense of e-HRM

Table 1: Technological frames for HR managers and line managers

DOMAIN	STAKEHOLDERS	
	HR Managers	Line manager
Nature of technology	<ul style="list-style-type: none"> Initially see technology as a way of reducing cost of operation, reduction in headcount Technology as magic bullet, expert system, greater control over wayward managers Managers will become better at their roles Will produce better HR information 	<ul style="list-style-type: none"> Should bring about process improvement These things never work. Technology not likely to be sold to managers properly. Assumption that better management information will be delivered
Technology strategy	<ul style="list-style-type: none"> Strategic aspiration often limited to administration and HR services Desire to make long-term shift in HR function Doubt that technology will bring about a shift in strategic focus Unlikely to impact on professional HR roles 	<ul style="list-style-type: none"> Technology is an opportunity but only one among many other strategies Technophobes likely to prevent full exploitation of technology Need to prove operational capability first
Technology in use	<ul style="list-style-type: none"> Conviction that managers will understand and use the system and will intuitively grasp the system The manager's friend – alerts, warnings, guidance Technology will be self-correcting and Empowerment and control over management activity – weed out the weak managers 	<ul style="list-style-type: none"> Technology takes lot of time to get working and needs an investment from users to get benefits - just one more thing to learn Cynicism that it will make managerial role, meta-regulation from the centre Personnel dumping its dirty work Experience is that system doesn't help them much

Moderating frames

HR function strategic capability	<ul style="list-style-type: none"> Under-resourced Under valued Lack of good information or knowledge of how to use it Feel valued by individual line managers 	<ul style="list-style-type: none"> HR is not strategic Poor service HR is 'the emergency plumber' Bureaucratic and policy driven HR doesn't take responsibility for issues Value individual HR people but not the function as a whole No clear idea of the role and strategy of HR Doubts that HR can deliver strategic e-HRM
Management capability	<ul style="list-style-type: none"> Resistance to changing management culture See technology as a route to a better managerial culture Managers need a lot of hand holding Don't understand their people management responsibilities Managers poorly prepared for people management 	<ul style="list-style-type: none"> People management seen as a 'necessary evil' – seen as a secondary activity to functional management Colleagues won't face up to their people management responsibilities Line managers expect hand-holding from HR

Making sense of e-HRM

This table illustrates that there is basic frame congruence about e-HRM as an administrative tool. However, there is significant frame incongruence on a range of issues, including a lack of shared understanding about how e-HRM will bring about a transformation, whether managers have the basic people management skills and, significantly, whether a non-strategic HR function has the credibility to deliver a strategically focused e-HRM toolset.

These issues can be summarised in the following diagram:

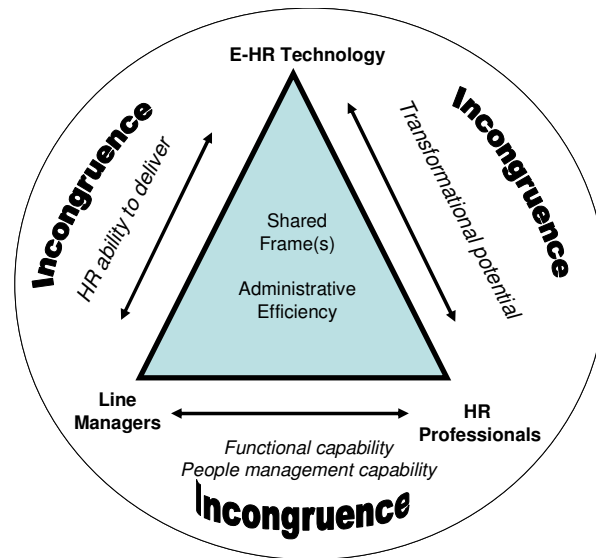


Figure 1: Frame congruence and incongruence

6. Discussion and Conclusion

This paper describes the progress of an ongoing research study into how organisations make sense of e-HRM and related technologies. Using the concept of technological frames, it has examined the different attitudes of line managers and HR teams towards technology as social phenomena, examining which frames of reference are shared within and across groups and with what consequences. Findings to date suggest that while attitudes towards e-HRM technology are important, opinions about technology may well be moderated by the relationship between groups of stakeholders, in this case, HR managers and line managers. These inter-group frames shape attitudes towards technology and may well be a barrier to a transformational approach to e-HRM. For example, line managers frequently express doubts about the capability of the HR function to deliver strategic technology tools when they are unable to operate a strategic HR function, or in some cases, even fail to deliver a good operational service. Lack of confidence at the functional level is therefore linked to poor expectations with regard to transformational technology.

Likewise, where the HR function doubts that line managers are capable of managing people effectively, this may also shape expectations of what technology can contribute. While this factor might lead to a desire to address strategic HR needs, the development of a common vision regarding e-HRM is often problematic. One might argue that HR managers and line managers lack a common language or frame of reference for discussions about technology - as long as there is mutual disrespect between the two groups about their capabilities, these discussions will always be strained.

Technological frames appear to be a valuable lens through which to examine the transformational impact of e-HRM. They may also have significant potential as a tool to manage frame incongruence as part of a change management toolkit.

As explained, the research currently lacks strong enough input from line managers to understand better their relative technological frames and explore the current propositions. To address this, this research will continue over the next 12 months and further interviews are planned with line managers.

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