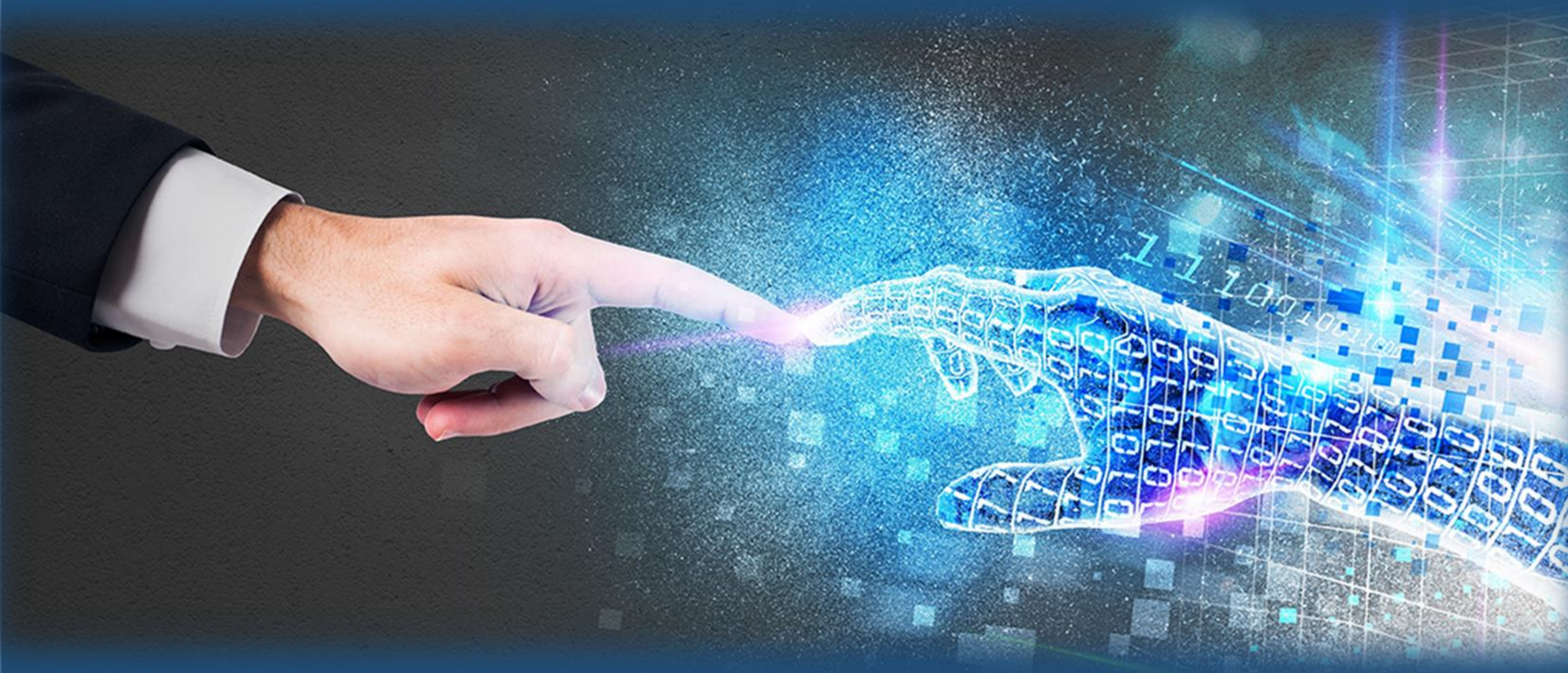
Investigating the coherence between the material and social dimensions during the implementation of e-HRM while looking at the effects of user's HR attributions



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Contents

Introduction

It is essential for organisations to modify their business strategy, policies and practices and align them with the changing demands of the business environment to achieve long term sustainability and overall organisational effectiveness (Maheshwari & Vohra, 2015). Currently, organisations start to realise they have to rethink their business model more frequently than in the past due to the fast changing and complex business environment (Giesen et al., 2010). *Digitalisation* is one of the factors that contributes to the changing (business) environment which represents the integration of multiple technologies into all aspects of daily life which affects everything from personal relationships to business relationships (Gray & Rumpe, 2015). Schallmo and Williams (2018) define digitalisation as: *"the use of digital technologies and of data in order to create revenue, improve business, replace/transform business processes and create an environment for digital business, whereby digital information is at the core"* (p. 6). Digitalisation can be valuable for different parts of the organisation. For example, digitalisation has increased the importance of the Information Technology (IT) function where the demand is increasing to identify technological innovations to transfer into marketable solutions so it can contribute to the organisational success (Legner et al., 2017). Digitalisation can also support the development of new forms of distribution to gain benefits (Hagberg, Sundstrom & Egels-Zandén, 2016). Digitalisation is also seen in the communication mechanisms of an organisation to improve communication, for example Grunig (2009) refers to a study showing: *"widespread use of digital media for employee communication programmes, including social media (used frequently or occasionally by 80% of survey participants), emails (75%), intranet (88%), websites (76%), virtual meetings (55%), and podcasts (20%)"* (p. 13). However, digitalisation is not about turning existing processes into digital versions, but about rethinking the existing processes with new digital perspectives.

Digitalisation can also take place in the field of Human Resources (HR). The field of HR is of great importance since significant results are found that HR can have a positive effect on the organisational performance (Becker & Gerhart, 1996). Digitalisation can be valuable for the HR function which is mostly referred to as electronic Human Resource Management (e-HRM), referring to the integration between HRM and IT to support the HR function (e.g. Bondarouk & Ruël 2008, 2009; Voermans & Van Veldhoven, 2007). For HR professionals this means they do not only need to master the traditional HR skills and knowledge, but also have the ability to apply this knowledge by the use of technology. Offering e-HRM not only means that a lot of paperwork is saved and that information (about such as employees and contracts) is more secure, but also other benefits can be realised by the HR department. Through the use of e-HRM, managers can take over various tasks that were previously performed by the HR department which will contribute to the increasing time HR professionals can spend on strategic HR activities (Ruël, Bondarouk & Van Der Velde, 2007). In addition, e-HRM can ensure that the HR service quality will be improved and that cost reduction is provided (e.g. Bondarouk, Harms & Lepak, 2017; Marler, 2009; Bondarouk, Parry & Furtmueller, 2017; Bondarouk & Ruël, 2013).

However, attention must be payed to the implementation of e-HRM as employees and managers can perceive e-HRM differently than it is intended by the HR department (Wright & Nishii, 2007). Several studies have already examined the implementation stage of an innovative process, such as Wolfe (1995) who states: *"While the decision to adopt an innovation may be made relatively easily and quickly, the challenge lies in implementation"* (p. 317). The implementation of e-HRM is successfully completed when it is used on a routine basis within the organisation (Klein & Sorra, 1996). To achieve this, the users of the e-HRM system need to accept the new technology meaning that they need to be convinced about the value of implementing the e-HRM system and should be stimulated for effective usage (Bondarouk, Parry & Furtmueller, 2017).

Many research has been done to investigate the implementation of e-HRM (e.g. Ruël, Bondarouk & Looise, 2004; Bondarouk, Parry & Furtmueller, 2017; Voermans & Van Veldhoven, 2007; Bondarouk & Ruël, 2008). According to Klein and Sorra (1996) and Kaur (2013) the success of an e-HRM implementation depends on how the new system is used by its users. Therefore, this research attempts to understand the needs of the users to properly use the system to benefit from it. This research adds more by focussing on different organisational members using e-HRM since there is a lack of knowledge concerning this (Marler & Dulebohn, 2005). Bondarouk, Harms and Lepak (2017) also emphasize on the fact that more research must be done where the sample should be split based on the performed tasks through the use of e-HRM. Furthermore, Bondarouk, Ruël and Van Der Heijden (2009) recognized that the e-HRM implementation was perceived differently between two stakeholder groups, namely of line managers and shop floor employees. In this research the sample will be split between the employees and managers. Based on this information, the following main research question is developed: **What are the needs of managers and employees for a sustainable e-HRM implementation?** Continuing, two sub questions are developed based on this research question.

To get a better understanding of the implementation process of e-HRM, the focus in this paper lies on two dimensions which will both be from the users' point of view, namely on (1) the system itself concerning the user-friendliness and whether it is useful, this is referred to as the *technical dimension*, and (2) the process of the implementation concerning the communication towards the users and the support for using the system, this is referred to as the *social dimension*. According to Orlikowski and Scott (2008) the technical and social dimension are inseparable and affect each other continuously. This is referred to as the theory of sociomateriality (Orlikowski & Scott, 2008). The title of this research mentions the 'coherence between the material and the social dimensions' referring to the actions in both dimensions during the implementation process which need to be aligned and harmonised with each other for a sustainable e-HRM implementation. Bos-Nehles, Bondarouk and Smit-Methorst

(2019) refer to the challenges of the interaction between the social and technical dimensions within the organisational context when implementing e-HRM. This paper adopts a sociomaterial perspective to gain a better understanding of the implementation of an e-HRM system. Since the technical and social dimensions are inseparable, value is created by examining both dimensions. The following sub question is formulated based on the theory of sociomateriality: **How do the social and material dimensions interact during an e-HRM implementation?**

From the user's point of view, not only the elements of the material and social dimensions are relevant but also their opinion towards *why* the e-HRM system is implemented referring to the HR attribution theory. The HR attribution theory refers to the individual's usage of the new e-HRM system being influenced by the perception of the employees on *why* the HR department wants to implement it (e.g. Hewett, et al., 2018; Nishii, Lepak & Schneider, 2008). The individuals' HR attributions can be affected by the aspects of the material and social dimension but also by previous implementation experiences, personal opinions towards IT or change, and more. Since it can be affected by different aspects it makes it more complex for an organisation to understand and affect these HR attributions while this can be of crucial value to the implementation process. Therefore this research investigates which positive or negative HR attributions of the users can affect the outcomes of the implementation as the users in the end determine the success of the implementation. The second sub questions is formulated as follows: **In what way is the e-HRM implementation influenced by its users' HR attributions?**

To answer the main research question and the two sub questions, a qualitative study is performed in a Dutch hospital. First, a theoretical framework is provided where an in-depth review of the current literature is shown on the topics of the e-HRM implementation. Second, the methodology will be elaborated where it is explained how the data is collected and coded, and where the trustworthiness will be guaranteed. Next, the results of the interviews are provided followed by a discussion. The paper closes with the discussion including a theoretical contribution, practical implications, limitations, topics for further research and a conclusion.

Theoretical framework

Main research question

- Defining e-HRM

Scholars have provided many definitions of e-HRM, but in short, it entails the integration mechanisms between IT and the HRM field (Bondarouk & Ruël, 2009; Bondarouk, Harms & Lepak, 2017). More extensive definitions of e-HRM are formulated as follows:

- *"Covering all possible integration mechanisms and contents between HRM and Information Technologies (IT), aiming at creating value within and across organizations for targeted employees and management"* (Bondarouk & Ruël, 2009, p 507).

- *"E-HRM is the (planning, implementing and) application of IT for both networking and supporting at least two individual or collective actors in their shared performing of HR activities"* (Strohmeier, 2007, p. 20).
- *"The administrative support of the HR function in organisations by using IT"* (Voermans & Van Veldhoven, 2006, p. 887).

In these definitions the focus on IT is similar which can be further elaborated on as computer hardware, software, and electronic networking resources (Marler & Fisher, 2013). However, the reason for using e-HRM is slightly different in these definitions as it is to create value for the organisation, for networking and support in HR activities, or for administrative support for HR. Bondarouk, Parry and Furtmueller (2017) state that e-HRM is used to make HR processes distinctive, consistent and efficient that create long-term opportunities for the HR department and the organisation. This captures more possible intentions for organisations to implement e-HRM. Findıklı and Bayarçelik (2015) performed a descriptive study focussed on the perspectives of implementing e-HRM in which their results showed that time management, easy acquiring and access to personal data, and reducing administration costs are the main motivators for implementing e-HRM. Based on all, it can be concluded that e-HRM concerns the support of HR with technology, in every possible form, to support HR activities (including HR systems, policies and practices) to create long-term opportunities for HR and the organisation.

Kaur (2013) put all advantages and disadvantages of e-HRM next to each other. Some advantages include that e-HRM has the potential to influence both efficiency and effectiveness, a higher internal profile can be developed for HR leading to better work culture, the reduction of administrative burden and the decentralisation of HR tasks. Some disadvantages include that it is prone to corruption/hacking/data losses, it could increase the requirements for technical staff with specific knowledge, data entry errors could occur, it causes less interpersonal contact, and due to rigid mindsets improper usage could occur. Kaur (2013) concludes that despite the barriers that need to be faced, a useful, efficient and increased performance can be provided by the use of e-HRM. Overcoming these barriers is done in the *implementation* stage which will be focussed on next. Kaur (2013) states that *"the impact of e-HRM technology on the HR system would always be dependent on the way the technology is used."* (p. 36) in which the implementation will be decisive for.

- Implementation of e-HRM

Ruël, Bondarouk and Van Der Velde (2006) state that research on e-HRM is still in its 'youth-phase'. There are still many questions unanswered regarding e-HRM, such as issues in the implementation stage. As mentioned before, the success of e-HRM depends on how the users adopt it and how they cope with it which depends on the *implementation*. Bondarouk (2011) provides two examples of e-HRM implementations where the exact same system is implemented in two different organisations. It appears that both implementations proceeded completely different. Bondarouk (2011) wanted to show that e-HRM implementations can develop differently even when using the same technology. Therefore, the focus will lie on the implementation process instead of e-HRM systems.

According to Gottschalk (1999) *''the term implementation is given a variety of meanings in the literature''* (p. 80) where Bondarouk (2011) adds that various authors have different views on the final stage of the implementation process. Zhang, et al. (2005) refer to implementation as the process that begins with the managerial decision to choose for the system and is complete when it is operating as an integral part of the organisation. The implementation of such an innovation as e-HRM can be defined as *"the process of gaining targeted employees' appropriate and committed use of an innovation"* (Klein & Sorra, 1996, p. 1055). In addition, Klein and Sorra (1996) state that the transition period of the implementation includes that targeted organisational members need to become increasingly skilled, consistent, and committed in their use of the innovation to increase the success of the implementation and the innovation. According to Ruël, Bondarouk and Looise (2004) the implementation is done when it is actually realised and optimal used by the targeted users. It can be noticed that these definitions of implementation are not only focussed on the product itself being implemented, but also on the social part concerning the acceptance of the users. This paper intends to align with this thought where both a technology-driven approach and a human-driven approach will be used. So, in this paper the implementation process entails a dynamic process initiating with the decision of HR to adopt an e-HRM system and is successfully completed when the users of the system properly use the system and they perceive it as normal and not new anymore.

During the implementation of e-HRM it is important to control how the users perceive the system since this needs to be in line with the intentions of the system to actually benefit from it (Wright & Nishii, 2007). This is important as the benefits of the e-HRM system are dependent on the usage of all targeted organisational users (Klein & Sorra, 1996; Kaur, 2013). According to Parry and Strohmeier (2014) "*there is often a discrepancy between the promised benefits and its realised outcome*" (p.125) in which the implementation of e-HRM is determinant for. Bondarouk (2011) contributes to this by describing the following: *"Implementation projects are known to be time consuming, indirect, and sometimes impulsive developments, leading to a mismatch between the initial ideas behind information technologies and the use in practice, the employees' perceptions and their experience"* (p. 1). Therefore, a successful implementation is of crucial value for the success of the e-HRM system.

According to Corley (2004), large organisations need to be careful that each department, horizontally or vertically seen, can have different experiences during an e-HRM implementation. If this is the case, appropriate tactics are needed for every situations to get to the same level where e-HRM can be successfully implemented. As mentioned before, according to Bondarouk, Ruël and Van Der Heijden (2009), it is stated that the e-HRM implementation is perceived differently by the managers and employees. This can be explained by the fact that both groups need to use the system differently.

To anticipate on this, HR needs to take this into account while implementing the system as both target groups require different implementation approaches. Voermans and Van Veldhoven (2017) contribute to this where their results show that managers and employees are generally approached in a similar way when implementing e-HRM, while providing adequate system support may be especially relevant for the managers during e-HRM implementation since it will have a larger impact on their jobs. For this reason it is important to continue in research with the distinction between managers and employees which will be done in this paper.

Sub question 1

- Sociomateriality

According to Leonardi (2013) the topic of sociomateriality is one of the most popular, most cited, and most debated topics in the field of Information Systems (IS) and management. However, according to Ellmer and Reichel (2018) the potential of sociomateriality is not yet fully exploited as researchers on this topic tend to be more on the background instead of in the central of analysis. Sociomateriality can be applied to all forms of digitalisation where technology and people are involved, including e-HRM. According to Leonardi (2012) the concept of sociomateriality is simply the distinction between the social and material dimension and where it is not more than the fusion of these two words. However, sociomateriality concerns much more than this simplicity where the starting point entails that entities, human being, and things only exist in relations, they are continuously carried out and created by these relationships (Cecez-Kecmanovic, et al., 2014). There has been a lengthy discussion of the definition of sociomateriality in IS research (Leonardi, 2013; Mutch, 2013; Orlikoski, 2007, 2010; Scott & Orlikoswki, 2013). Sociomateriality in general can be explained as where *"the social and the material are considered to be inextricably related – there is no social that is not also material, and not material that is not also social"* (Orlikowski, 2007, p. 1437). So, this means that technology and people only exist in relation to each other where a technology on itself would not hold when people are not using it. This view entails the idea that technologies do not influence people, but by using the technology on a regular basis they are brought together in practice (Bos-Nehles, Bondarouk & Smit-Methorst, 2019). So, based on the concept of sociomateriality, the technical (material) and social part of an e-HRM implementation are inseparable (Orlikowski & Scott, 2008). On both, the social and material dimension, attention must be paid to investigate what bottlenecks could possibly occur during the e-HRM implementation so improvements can be made to still accomplish a sustainable implementation. To do this, the needs of the e-HRM users need to be identified so HR can enact on it. So far, it is known that the social and material part are intertwined with each other where a balance must be found between both dimensions. So, a sociomaterial perspective entails that when changes are made in the technical dimension, the social dimensions needs to react to this if a sustainable implementation wants to be realised, where the technical dimension acts as an initiator in this process. Both the social and the material dimension, will be further explored towards how both dimensions can be analysed in this research to discover the needs of the targeted e-HRM users.

- Technological dimension of e-HRM implementation

As mentioned before, the material dimension refers to the technology part. Research on the topic of technology within organisations is still limited according to Orlikowski and Scott (2008). They investigated four managerial journals where they analysed 2027 articles which showed that: *"over 95% of the articles published in leading management journals do not consider or take into account the role and influence of technology in organizational life"* (p. 435). This is noteworthy since technology has become such an essential and important part of organisations in the last few decades. Within e-HRM, the technical part of the implementation is important as it determines the usage and success of the system. The technology of the system should be a well-designed IT solution for the HR issue. Besides, it should be user-friendly for the employees to properly work with the system which refers to a system which is easy to interact with and allows immediate and meaningful participation (Coombs, 2000). This will allow the users to master the system more quickly.

There are several theories/models where it is explained how individuals respond to the implementation of IT. Based on a critical review of Tarhini, Arachchilage and Abbasi (2015), it appeared that the Technology Acceptance Model (TAM) of Davis (1985) has a solid theoretical basis, persistent predictive power (40%), robustness and a broad applicability to understanding the predictors of human behaviour towards accepting or rejecting the use of IT. Continuing, the limitations of TAM are minor compared to its great supportive achievements. For these reasons, TAM has become one of the most popular and most widely used models for predicting behaviour regarding IT (Lee, Kozar & Larsen, 2003; King & He, 2006; Tarhini, Arachchilage & Abbasi, 2015). Given the great advantages of the model, TAM, partly however, will be used to examine the material dimension of implementing e-HRM in this study.

TAM is based on the TRA which is a psychological theory that seeks to explain people's behaviour (King & He, 2006). TAM can be used to understand the user's individual behaviour towards a technological innovation such as an e-HRM system. Only two elements of the model will be used in this study, namely the perceived ease of use (PEOU) and the perceived usefulness (PU) as these are the major determinants of the usage (Amoako-Gyampah & Salam, 2004). TAM can be seen in figure 1 where the two elements used in study are highlighted with a rectangle. As mentioned before, since this research examines the needs of the employees and managers we are looking from the user's point of view (social). For users, an e-HRM system needs to be easy to use and useful for it to be beneficial.

PU entails the degree of which an individual believes the system would benefit his/her work. So when an employee believes that using an e-HRM system would provide advantages for him/her, the e-HRM system has a highly valued PU. This results in the fact that the employee *"believes in the existence of a positive use-performance relationship" (Davis, 1989, p.320)* which will benefit the implementation of the e-HRM system. PEOU refers to *"the degree to which the … user expects the target system to be free of effort"* (Davis, Bagozzi & Warshaw, 1989, p.985) relating to the user-friendliness of the system. This can differ on individual level depending on personal characteristics, for example, some people can experience more difficulties using a new system than others due to every individuals' experiences of digitalisation in general. As seen in figure 1, PEOU does not only affect the usage of the system but also affects PU. Even if PU is high among the users, they can at the same time believe that the system is too hard to use and that the advantages of using the system are outweighed by the effort of using the system (Davis, 1989). When both PU and PEOU are valued as positive by the users of the e-HRM system, this will enhance the chances of achieving a successful implementation.

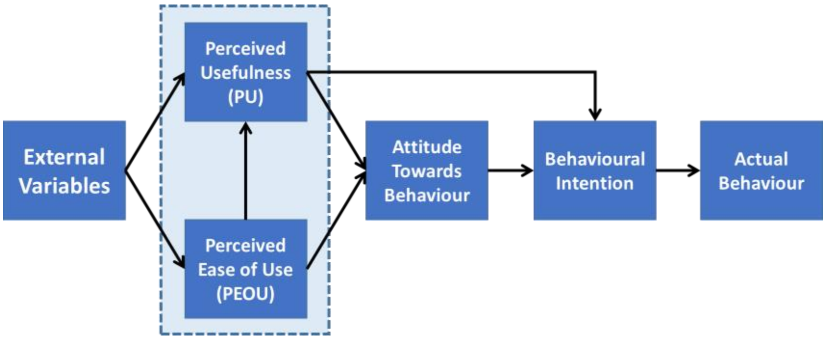

Figure 1 – Technology Acceptance Model by Davis (1985)

Little attention has been paid to understanding the factors that influence the constructs of PU and PEOU of the TAM model (Karahanna & Straub, 1999). Therefore Amoako-Gyampah and Salam (2004) performed a study where they examined how two implementation success factors, communication and training, affect the core TAM variables PU and PEOU. In this paper, this will be further elaborated to measure the social dimension during the e-HRM implementation where the focus will lie on the communication and support. Instead of using 'training' which is done in the study of Amoako-Gyampah and Salam (2004), the topic 'support' will be used since this has a broader meaning of the content including training, one-on-one consultations, a helpline, and more (Karahanna & Straub, 1999).

- Social dimension of e-HRM implementation

Many studies have shown that *communication* is crucial for the success of implementation processes (Ford & Ford, 1995; Amoako-Gyampah & Salam, 2004). In fact, many project failures have been linked to a lack of communication. In this ever-changing business environment, organisations have to consider more than ever how they communicate with employees, which is called internal communication (Kitchen & Daly, 2002). According to Welch (2012), successful internal communication can increase employee awareness of their organisation's changing priorities and its opportunities and threats. Communication is especially important during implementations of change processes, as *"it is* *used as a tool for announcing, explaining or preparing people for change and preparing them for the positive and negative effects of impending change."* (Kitchen & Daly, 2000, p. 50).

Within the implementation of e-HRM, communication can take place in many different forms and situations. It is likely that the use of specific forms of communication effects the targeted user's thoughts, interpretations and actions (Heracleous, 2001). Welch (2012) agrees by indicating that the type of media used to communicate, including its characteristics such as direction, speed, level of difficulty, audience reach, and more, can be decisive for the physical, psychological and social effect of the communication towards its employees. Therefore, according to Welch (2012), *"the potential benefits of internal communication rely on appropriate messages reaching employees in formats useful and acceptable to them" (*p. 246). Effective internal communication reduces uncertainty and the possibility of conflicting interpretation (Kydd, 1989). However, factors contributing to an effective communication for acceptance of the e-HRM system are likely to vary regarding the context, target users, and type of e-HRM (Moon & Kim, 2001).

Since the entry of the digital era, digital media has increasingly reshaped organisation's communication which will continue innovating for new and improved forms of organisational communication (Tyrväinen & Päivärinta, 2003). Despite the many advantages digital communication provides, it is argued that a humanising approach is needed to renew digital ways of communication to personalise relationships (Morris, Tasliyan & Wood, 2003) since receivers possibly may misinterpret the information or simply do not feel addressed (Kitchen & Daly, 2000). So, whether communication about the e-HRM system is done with a form of social presence will positively influence the users. The users of the system are human beings who appreciate face-to-face communication which is characterised as having high social presence whereas electronic media and paper-based messages are characterised as having low social presence (Karahanna & Straub, 1999).

As mentioned before, besides communication, *support* also affects the implementation of e-HRM on social level. Support can be valued as facilitating conditions needed for the users to increase proper system use (Karahanna & Straub, 1999). According to Becker (2010) there is a difference between informal and formal support, where informal support entails support from managers and colleagues which informally occurs and formal support entails written documentation and provided training. The formal support is designed and provided by the organisation to positively influence proper usage of the new system while the informal support, not designed by the organisation, can also affect the usage of the system. Concerning the formal support, developing and conducting effective support programs is not an easy task (Tracey, Hinkin, Tannenbaum & Mathieu, 2001). The organisation needs to consider how the support activities fit the employees' interests and resources and the context within the employees function (Nielsen & Randall, 2015).

However, the formal support is not sufficient enough for it to be effective as the support needs to be effectively *communicated* towards the individuals (Becker, 2010). Therefore, the communication plays a crucial role where the communication regarding the support will affect the support outcomes. Communicating about the provided support towards the individuals is not only meant as dissemination of information, but also to increase motivation for the individuals as "*motivation has a direct influence on knowledge and skill acquisition" (Tracey, et al., 2010, p. 6).* In addition, it is important that the e-HRM users will be prepared for which types of support will be provided to increase awareness and to facilitate a positive perspective towards the system implementation (Becker, 2010). So, when users are aware of what support will be provided and its benefits, it is more likely they will attend/use the support which stimulates the usage of the system and their perception towards it.

- The material and social dimensions in balance

A recent study is done showing how sustainable e-HRM implementation is achieved by finding harmony between the technology and social dimension (Bos-Nehles, Bondarouk & Smit-Methorst, 2019). This shows that sustainable implementation of e-HRM is a social-material process in which these dimensions continuously interact during the implementation and need to be in balance. It is expected that the process of finding a balance between the social and material dimensions in e-HRM will lead to proper usage of the system meaning that a sustainable e-HRM implementation can be realised with long term benefits (Bos-Nehles, Bondarouk & Smit-Methorst, 2019). In practice, finding a balance between the social and material dimensions during an e-HRM implementation implies investigating the needs of the e-HRM users to see whether more or less is needed from one dimension to find this balance. This is necessary since "*understanding the interaction between e-HRM stakeholders and their perceptions and needs about e-HRM is believed to be of vital importance within the sustainable e-HRM implementation process"* (Bos-Nehles, Bondarouk & Smit-Methorst, 2019, p. 7). For this research, finding a balance would for example mean that when PEOU is low, more support is needed for the users to better understand how to use the system. Another example could be that PEOU is high but PU is low, which would indicate that the users need more communication regarding the usefulness of the system for them on individual bases. It could also be the case that both PEOU and PU are high, which could indicate that the users only need little of the social dimension as too much communication and support can work counterproductive as this can be experienced as annoying. To illustrate, a model is designed where both sub research questions are included which is shown in figure 2. Sub research question 1 regarding sociomateriality is pointed out with 'Q1'.

Sub question 2

- HR attributions regarding the e-HRM system

The HR attribution theory describes the causal explanation of the employee's response to HR practices based on the attributions made regarding the organisation's motivations for the implemented HR practices (Nishii, Lepak & Schneider, 2008). In other words, it is about the employees perception towards *why* the HR practices are implemented which they individually experience. A distinction can be made between internal and external HR attributions (Nishii, et al., 2008). According to Van De Voorde and Beijer (2015), internal attributions are formed based on the motives for the use of HR practices that lay in the choices the management makes. External attributions are formed based on the causes of HR activities that are outside the organisation's responsibility such as external forces due to external constraints. Since this research focusses on the e-HRM implementation, which is a HR practice developed by choice, this research only focusses on the internal HR attributions.

The HR attribution theory shows that different employees may have different attributions towards the same HR practice resulting in different outcomes related to usage, commitment, satisfaction and behaviour (Nishii, Lepak & Schneider, 2008; Piszczek & Berg, 2020). Researchers emphasize on the importance of employees' perception, the *why*, behind an HR practice in determining its outcomes (Hewett, et al., 2018; Piszczek & Berg, 2020). Therefore, the HR attributions are included in this research since it is expected that the research outcomes concerning a sustainable e-HRM implementation may be affected by the users' HR attributions.

The HR attributions can be measured in positive or negative HR attributions. According to Hewett, Shantz and Mundy (2019), HR attributions can be explained by three factors, namely: information, beliefs, and motivation. The first factor, information, refers to the stimulus (including its features and environmental context) where the focus lies on the "*perceived fairness of the HR practice as a source of information*" (p.571). In practice this would mean that the factor information is influenced by for example what is communicated towards the individuals about an implementation. The second factor, beliefs, is characterised by negative affect towards an organisation and a general belief that the organisation lacks integrity and sincerity referring to organisational cynicism. Hewett, Shantz and Mundy (2019) consider organisational cynicism a belief since it is an employee's overall impression of an organisation which is based on past experiences, which thus informs employees' expectations with regard to HR practices. The third factor, motivation, refers to the individual's motivation for developing attributions where, for example, if an employee considers an HR practice to be personally relevant, he/she would be more motivated to make context-specific attributions (Hewett, Shantz & Mundy, 2019). Understanding the employees' attributions about e-HRM systems is essential when an organisation intends to use systems for employee welfare and organisational improvement (Mahfod & Khalifa, 2017). Sub research questions 2 concerning the HR attributions is also presented in the model in figure 2 and is pointed out with 'Q2'. As shown in the model, the connection between sociomateriality and HR attributions is that the elements of the material and social dimensions can partly influence the HR attributions. For example, if the PU is perceived as high, it is likely to positively influence the users' HR attributions, but if, for example, the communication is perceived as poor, it will negatively influence the users' HR attributions.

Research model

So, all aspects of this research are incorporated in the model in figure 2. The sub research questions are initially unrelated to each other, however, it can be speculated that the matter of sociomateriality affects the HR attributions. Therefore a dotted arrow can be seen from 'Q1' to 'Q2' showing this relationship. An example is given to provide a better understanding: after implementing an e-HRM system some administrative functions are shifted from supportive departments towards managers and employees (HR in line). Users can interpret it as gaining more insights and control on certain subjects (positive) or they can interpret it as HR pushing off tasks to lower their work pressure and giving the users more work (negative). In this case, the user's perception on why the system is actually implemented can possibly be influenced by proper communication.

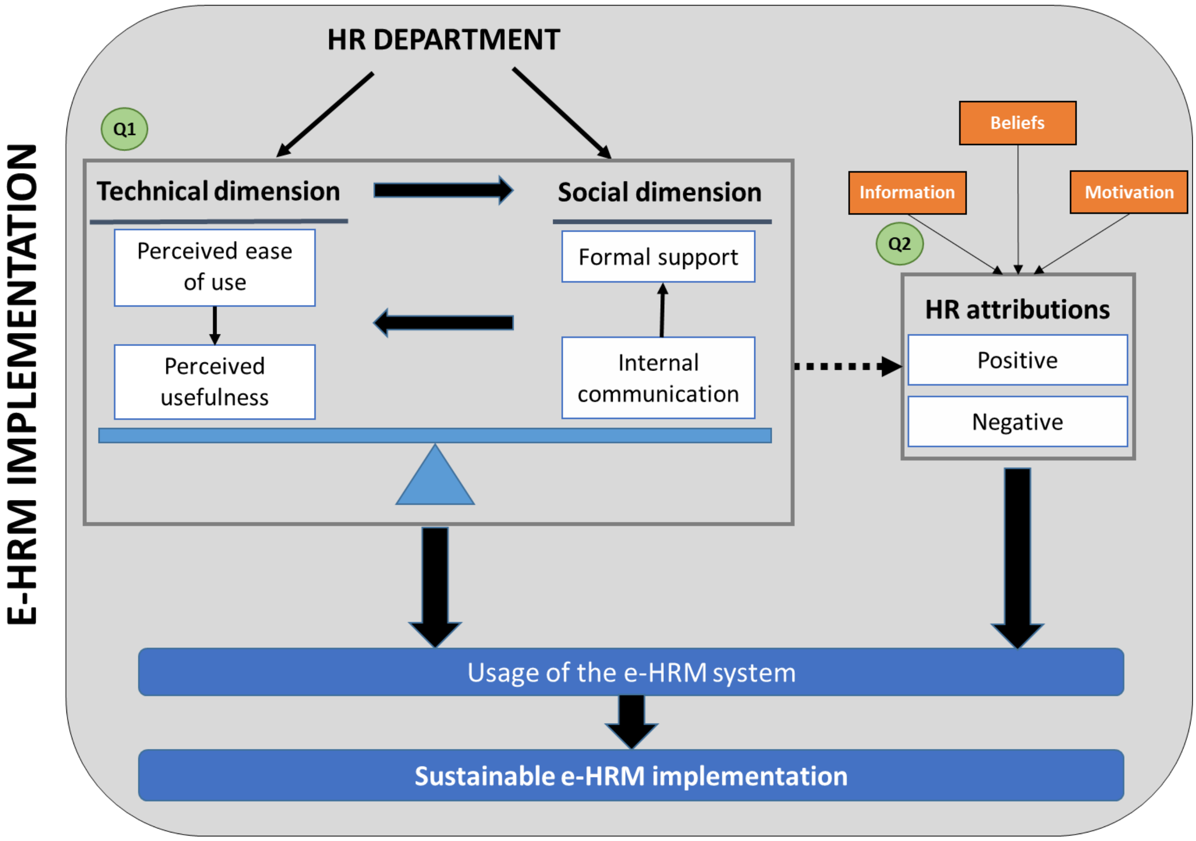

Figure 2 – model of e-HRM implementation focussed on the concept of sociomateriality and HR attributions

Methodology

In order to answer the research question "What are the needs of managers and employees for a sustainable e-HRM implementation?" an inductive qualitative research is conducted in a large hospital in The Netherlands. According to Black (1994) qualitative research "*helps us to understand the nature, strengths, and interactions of variables"* (p.425) where it seeks to find the answers to the "what" and "how" questions instead of the "how often" question in contrast to quantitative research. Performing a qualitative research can help to explore how the elements of the social and material dimension of the e-HRM implementation can influence the implementation success according to the users, where a more in-depth approach is needed to find answers. The in-depth approach involves a more thorough questioning of the respondents to discover underlying factors influencing the matter of sociomateriality on the e-HRM success. For this explorative research with in-depth approach, a single case study is appropriate. Single case studies can be very powerful examples (Siggelkow, 2007) and can be generalised *if* certain aspects are considered during the research such as the objectivity, a well conducted interviewing technique and that the results are not presented as facts (Flyvbjerg, 2006).

The organisation being examined is selected for this research because the organisation has only started a few months with the e-HRM implementation before the interviews were conducted where it is expected that this phase will generate the most useful information for this research. This is the case as participants are able to provide a good representation of the actual situation and their experiences of the implementation since they are experiencing it at this very moment. The organisation is also interesting since the organisation is quite large making the e-HRM implementation more complex and interesting than small organisations as more difficulties/challenges can arise.

This research is of explorative nature where the needs and HR attributions of the managers and employees are investigated regarding the social and material dimensions of the e-HRM implementation. In this section, the following subjects will be discussed: the case description, the procedure of data collection, the sample selection and characteristics, strength of the research design and data analysis.

Case description

The history of the hospital begins in 1797 when the world and the hospital looked very different at that time. After many years with lots of societal changes and changes in the field of health care, a fusion between two organisations resulted in 2005 in a new organisation with the name: Universitair Medisch Centrum Groningen (UMCG). The hospital is now one of the largest hospitals of The Netherlands with approximately 12.000 employees ranging from all types of jobs and educational levels working on medical care, research, education and training. Since the large size of the hospital and the many disciplines they are operating in, employees can have a life-time employment in the organisation while still developing themselves in many different ways. Employees are given the chance to keep developing themselves vertically in the organisations where for example, a nurse can become a manager over the years of the department, or horizontally when an employee can choose a different discipline in the health care. This does mean that the organisation has many employees with a long employment history in the organisation implying they have experienced many organisational developments. In the last few years the organisation has attempted to innovate several processes in different parts of the organisation by the use of IT. These IT implementation processes went pretty rough as difficulties arose during the process. Since the diverse nature of all personnel, the employees have different experiences with technologies which can make it more difficult during IT implementations to get everyone to the same level. The organisational structure can be described as complex with many hierarchical levels.

The organisation had a system for the administration and payroll of all employees which was getting outdated. There was lots of paperwork relating to this, for example hiring new employees, employees claiming costs made for the organisation, mutations were made such as salaries changing, changing a home address or bank account, arranging days off and many more administrative tasks. When employees wanted to change some of these things themselves, this mostly used to be done on paper which needed to be approved by their superior which was then send to someone else depending on the issue. This was a very time- and paper-consuming process which in this era is seen as outdated. The managers used an e-HRM system for personnel issues such as absenteeism, contracts, salaries, and more. However, the license would expire which meant the organisation had to choose a new system to replace the other. Next to this reason for having a new system, the main reason was that the organisation wanted to digitalise these processes and innovate. Therefore, the HR department decided to choose a new system which was completely digitalised, faster, easier, and less paper-consuming. After comparing different systems, the organisation has decided to implement Insite from AFAS as this would have the most benefits. This system consists out of three elements, namely:

- Payroll: containing the whole salary administration;
- Manager Self Service (MSS): this part is only for employees who also have a managerial position. This system allows them to see general information of their employees, contains the approval of mutations submitted by their employees, and other functions such as absenteeism;
- Employee Self Service (ESS): this part is for all employees employed at the organisation which allows them to look in their own personal information and make changes or requests. They can, for example, arrange changes in their personal information, request days off, submit a claim when expenses are made, and more.

So, for employees with a managing position, it means they will work with both MSS and ESS. Insite helps organisations to digitise by efficiently arranging a large part of their (HR) processes online. The system has many functions to offer. There is no hassle of paperwork, but a digital file accessible everywhere and the system makes employees more involved in (HR) processes which is one of the most important advantages for employees. Managers become more involved in HR tasks and can make adjustments where necessary. Shifting tasks to the employees themselves saves the HR department time, money, paperwork and unnecessary mistakes.

After the design was made, a long period followed where the implementation of the system was being prepared. The organisation and its employees needed to be prepared for the new system which was amongst others done by testing the system, organising information meeting, trainings for usage, practices, etc. There were in total three information meeting for all employees (working with ESS) and two for the managers (working with MSS). In addition, instruction videos were made for employees for performing specific tasks. However, behind the scenes happened a lot more than only preparing the users such as getting the hierarchy clear and incorporating it into the system. This was more complex than expected causing that this part of the preparation planning took too much time meaning that other elements could not have paid full attention to as intended. On the 2^{th} of January 2019, the system went live.

Since the e-HRM system was completely new for all employees, a 'floor support team' was set up. Every day at lunch time, a team was standing at the staff shop (in Dutch 'de personeelswinkel') where all employees could enter to ask questions about the system, report failures, etc. There were many reports of ambiguity and an enormous number of questions. Therefore, questions arose at the HR department whether they could have done more before and/or during the implementation to prevent/tackle errors and for a better understanding of the system and proper usage.

Procedure of data collection

In this qualitative research, semi-structured interviews are held. Based on the theoretical framework an interview scheme is made which is the basis of every interview. However, if interviewees tend to discuss other issues relating to the implementation of the e-HRM system, the researcher will continue with this subject. The duration of all interviews ranged from 20 minutes to a little over an hour.

It is important that the privacy of the interviewees will be safeguard. Invitations are send via e-mail in which this is guaranteed and it is repeated at the beginning of all interviews. The information they provide will only be used for this research and will not be transferred to the organisation or used for any other purposes. By doing this, the interviewees might be more willing to provide their actual opinion and experiences regarding the implementation of the e-HRM system. Besides, the interviews will be held in Dutch which is the mother tongue of all interviewees and the interviewer. By doing this, the interviewees are likely to give more extensive answers and miscommunication by translation issues will be avoided. The interview scheme is presented in appendix I.

The sample selection and characteristics

For this research a sample needed to be selected. Since it is a large organisation, different departments are involved in the research as these departments might show different results and it is more representative for the entire organisation. Five departments are randomly selected which is done by the project manager and an HR employee who is involved in the project. For every department included in the research, three individuals are being interviewed, namely one manager (working with ESS and MSS) and two employees (working only with ESS). So, a total of 15 participants form the sample for this research. All 15 participants can be asked about the ESS part and only the five managers can be asked about the MSS part. However, in practice, it appeared that some employees had some managerial functions added to their account. These managerial functions are differentiated from the manager to an employee. Available functions for some of these employees are for example a staff employee who also checks financial components of the department or someone who reports absenteeism in the system. Input from employees with any experience with the MSS part themselves will be included in the results concerning the MSS part. The codes and function of all participants are shown seen in figure 3.

Type	**Function**	**Access to MSS?**	**Code**
Employee	Staff assistant – research support facility	No	EM1
	Assistant controller – business office	Partly: approving invoices	EM2
	Secretary HR department	Partly: absenteeism	EM3
	Staff employee	Partly: multiple functions	EM4
	Teacher anatomy	No	EM5
	Research analyst	No	EM6
	Staff assistant	Partly: multiple functions	EM7
	Manager policlinic orthopaedics	No, but is supposed to	EM8
	Nurse	No	EM9
	Directional nurse	Partly: absenteeism	EM10
Manager	Manager orthopaedics	Completely	M1
	Head nurse	Completely	M2
	Veterinarian and executive	Completely	M3
	Manager of Ageing Biology and Medical Sciences Of Cells & Systems	Completely	M4
	Manager surgical care	Completely	M5

Figure 3 – overview respondents

'Strength' of the research design

Evaluating the quality of the research is essential if findings are meant for further usage. Since this research is of qualitative nature, there is no possibility to use certain tests to assess the trustworthiness of the research such as done in quantitative studies (Noble & Smith, 2015). So testing subjects as reliability, validity and generalisability are not that simple for this (type of) research. Several authors have written about this issue where it seems there is no single type of method to assess trustworthiness in qualitative research. Especially for novice researchers this topics can be hard as stated by Noble and Smith (2005): *"For the novice researcher, demonstrating rigour when undertaking qualitative research is challenging because there is no of accepted consensus about the standards by* *which such research should be judged."* (p. 34). However, there are a number of ways to address this issue where Shenton (2004) developed certain constructs and Noble and Smith (2015) came up with strategies to ensure trustworthiness for this type of research. Elements of both will be used to ensure the trustworthiness of this research.

The credibility of the research indicates that the study measures what it is supposed to. To start with, the way in which the data is collected influences the credibility. Random sampling can be done to ensure that the researcher cannot influence the sample, and thus the outcomes of the research, so the sample will be representative for the entire organisation. By using random sampling, different characteristics emerge with respect to the experiences of the implementation, such as similarity, dissimilarity, redundancy and diversity in order to gain more knowledge of a broader group (Shenton, 2004). In this research random sampling is partly done where the researcher wanted to include five different departments in the sample where it did not matter which departments were included. This is a form of triangulation in which a wider range of informants is used. In this way, different viewpoints and experiences can be verified against others which will contribute to more enriched data (Shenton, 2004; Noble & Smith, 2005).

Another aspect of increasing the credibility of the research are certain tactics that can be used to help ensure honesty during the interviews with informants (Shenton, 2004). Tactics used during these interviews are that the interviews were anonymous, that they were performed in the mother tongue of the participants (Dutch) and it is emphasized that their information may help to improve the new e-HRM system and future changes in the organisation. Shenton (2004) also mentions that frequent debriefing sessions between the researcher and his/her superior improve the credibility of the research. During this study the researcher had several sessions with the contact person of the organisation. In addition, Shenton (2004) state that the background, qualifications and experiences of the researcher are especially important for the credibility of the research as the researcher itself is the major instrument of the data collection and analysis. In this case, the researcher has a background in the field of HR and this is not the first time the researcher has performed a qualitative research. Previous experience of the researcher will contribute to the quality of this research. Finally, when discussing the results, for each item that is being discussed a verbatim description is included to support the findings which supports the trustworthiness of the research (Noble & Smith, 2005).

Data analysis

In this research, a theoretical framework is set up first before the data collection is started, so a meaningful direction can be given. So, existing theory is used as a bases which can benefit from further research, this refers to the directed content analysis (Hsieh & Shannon, 2014). After the data collection, the data will be coded with the use of the coding system Atlas.ti. According to Basit (2003), coding electronically facilitates to carry out the analysis in more depth and reports generated via electronically coding are seen as more valuable. First, codes will be made based on the theoretical framework followed by codes which will arise during the coding based on the occurrence of repetition of certain subjects. The codes will be ordered in groups where each group receives a different colour.

Code group	Code
Technical dimensions	Perceived ease of use: negative
	Perceived ease of use: positive
	Perceived usefulness: negative
	Perceived usefulness: positive
	Failure of the system
	Other issues concerning the system itself
Social dimension	communication: negative
	communication: positive
	support: negative
	support: positive
	Not using the support or communication
	Social: use of own personal network
Focus on technical or social dimension	Focus on technical or social dimension
	point of improvement
HR attributions	HR attributions: negative
	HR attributions: positive
Success of the e-HRM implementation	Success of the e-HRM implementation

Figure 4 – Code groups and codes

Results

In this section the results will be presented derived from the analysis of the transcripts. We will start by discussing the different subjects based on the theoretical framework starting with the sustainability of the e-HRM implementation, followed by the technical dimension, the social dimension and the HR attributions. First, a quote will be presented from a manager providing a better view on the difference between using the system as an employee (ESS part) or as a manager (MSS part).

"I have all the possibilities for myself now, I have just requested a bike for myself for example. Claiming costs for studies, travel, such things I can do for myself privately. I can see my pay checks there as well. And as a manager, all the changes that go with personnel management are available, such as sickness reports, payment reports, hiring people, changing contracts, you name it." (M2)

Success of the e-HRM implementation

The e-HRM implementation is overall experienced as a process that went quite fast. The arrival of the system was barely introduced while the system already went live. Many of the interviewees mentioned that the preparation before implementing the system could have been improved. This concerned for the technical dimension mainly the hierarchical classification in the system which has gone wrong in many cases. For the social dimension it mainly concerned the communication about what users could expect of the new system and about the support. However, it also appeared that there was a lot of pressure to get everything ready to implement before the deadline. Once the system went live, the introduction phase went too fast concerning the social dimension as mentioned by the interviewees. Next to this, interviewees also mentioned they would have preferred that the system was implemented in one piece instead of different stages. In the beginning the new system had a lot of errors. In the following months, little improvements were constantly made which users appreciated. Still they would have preferred that everything went right at once in the beginning. These issues created a bad image for the organisation towards its employees and employee's trust in the implementation success decreased (negative spiral). Finally, it is mentioned that no or little aftercare is experienced which would be appreciated by the users. However, despite all of these improvement points regarding the implementation, most ESS users do already find that the implementation is (almost) done as it can be used properly. The MSS users see that the system has many benefits to offer even though they cannot make full use of it as the system is still improving. Therefore, managers are not very pleased with the implementation process, however, with the prospect of an improved and optimally functioning system, they are pleased with the new system.

Experienced as new: "No, not anymore. It's already a real part of it. It's not a hill you're looking at anymore or anything. If you want to know something you just look in the system." (EM1)

"But somehow things just go wrong. What I've heard from my supervisor is that he can see things from people who don't belong to him at all. What I mean by that is that people talk about that. Of course, that also causes a certain allergy. Then there's not much that needs to happen that people really think negatively about it again." (EM5)

Technical dimension – Perceived ease of use

To recap, the PEOU concerns the degree to which the user experiences the system to be free of effort. Based on all interviews it appeared that all interviewees experience the new e-HRM system as modern and easy to use. This is especially the case for the ESS part of the system. Some said they first had to search a bit in the system to discover how it works, but most are happy since they can perform tasks easily and quickly find what they need in the system. Experiencing the new system as user-friendly increases proper usage of the system. In contrast, the MSS part is somewhat more challenging as these functions are a little bit more complex at first sight. Based on the interviews, it appeared that the opinions from the managers regarding the MSS part of the new e-HRM system, and others dealing with MSS, are quite diverse. All managers of the interviews are aware that the implementation of the system is not complete yet. Some managers accept this and respond quite calm regarding the topics of MSS where they simply accept the fact that the system is not yet working at a full 100 percent. They work with what they have and make the best of it. They experience the MSS part in general as user-friendly and easy to use.

"As an employee, I find it very user-friendly. As a manager I also find it very user-friendly. You don't have to follow any training to understand what it's like. It's very clear, it's almost childish and very simple with the icons and the explanation and everything. I think that's a very positive thing." (EM4)

So, the managers experience the new system as easy to use, however, their opinions might also be influenced by comparing the new system to the old system. The managers had different systems including some digital systems but also paper based 'systems'. The digital system concerning personnel was called 'Peoplesoft'. Managers experienced this as difficult, disorganised and not practical to use.

"Of course, I'm used to People Soft. I didn't really think People Soft was user-friendly, it was a lot of searching, what's underneath, I always thought it was a rather difficult system, also to print lists, that was always very difficult for me. I think this could be a lot easier in the new e-HRM system. It looks very user friendly. It's also logical that if you think about it I'm going to find out this or that, then the steps towards it seem very logical." (EM7)

However, even though the PEOU is high, there are still many points of improvements that have to be made before using the system optimally. This applies to the entire system. For the ESS part for the employees, interviewees spoke most about the function for claiming costs which appeared to have some difficulties. It also appears that the employees use this function most often from all possible functions in the ESS part. Since this function is most frequently used, this could also clarify the fact that most points of improvement are related to this function as the interviewees made little use of the other functions so far. In addition, claiming costs is seen as something that has to happen but is not the priority of the employees' job so therefore they want to spend as little time as possible to this. However, this is not always possible since they can come across small problems during this process such as not knowing the project code or which item to choose, or the fact that multiple claims need to be made for one business trip. This is found to be illogical and very time-consuming.

"Often declarations are something you want to do at the end of the day and then you run into something and it doesn't work. People just don't like this" (EM1)

Also for the MSS part the PEOU is in some cases experienced as low according to the interviewees who came up with many examples. First of all, it is experienced that some functions are illogical to find in the system where the users have to search for what they need which is time-consuming. Another point which causes frustrations is related to performing mutations as a part of the MSS part. It appears that it is not possible to perform more than one mutation at the same time. This entails that someone should wait before the first mutation is done, before starting with the second mutation which causes many frustrations. Another example is that all managers cannot see all information they need such as the employment history of the employees of the organisation such as how long the individual is employed, previous absenteeism or finances. This obstructs them in their activities where they need to think of a way to get the information needed in a different way.

"Sometimes you have to pretend that you are going to renew someone or change a position and only then can you see how someone has been financed. It is also possible that someone is working on multiple projects. So that someone stands for 20% here and for 80% there. And you can only see this if you pretend that you are going to change something in the system." (EM4)

Another issue in the MSS part is concerning the hierarchical role division in the system which appeared to contain many errors. All managers are supposed to have an overview in the system of all employees of whom they are manager of, however, in practice it appeared that some managers are missing some employees, others have some extra or other mistakes appeared to be present. This resulted in some impractical situations which made the PEOU somewhat more negative.

"I'm manager of two departments, with two department heads. And then you immediately see the problems in InSite, because it doesn't make that distinction between two departments, so I've got all my people in InSite mixed up." (M4)

Overall, many practical errors/inconveniences were mentioned during the interviews for both the ESS and MSS parts of the system. An overview of this is presented in appendix II. Overall, despite the many errors and the fine-tuning, the system is experienced as easy to use which results in a high PEOU. It is expected that this will even increase when the system is more optimised.

Technical dimension – Perceived usefulness

In the previous section it appeared that the PEOU is high for both the employees and the managers. This positively affects the PU of the users towards the new system since the user-friendliness of the system is one of the main benefits. Since the system is very easy to use, some tasks can be done much faster.

"The advantage is that some actions really go much faster: sickness reports I'm very happy with, claiming costs, it's just a matter of uploading and then it's gone as well." (EM3)

Before implementing the new e-HRM system, the employees did not have any insights on the information known about them as a staff member. With the arrival of the new system employees can look at their own (personal) information, easily make changes when necessary and even follow the process online when a request is made which is considered positive. Besides, all functions which can be relevant for them as an employee, are bundled in just one system which makes it more organised. The fact that it is digitalised now is also seen as one of the great advantages of the system causing that the PU increases. Earlier a lot needed to happen on paper which was experienced as outdated, not practical and processes took longer. Also, in the past papers sometimes got lost which cannot be an issue anymore due to the new system. Some were even surprised that the organisation still had no digital personnel system as it is the era of digitalisation. Managers are happy that more is digitised now with the arrival of the e-HRM system which makes their managerial tasks more organised.

<u>For ESS:</u> *“On the positive side, you don't have to fill in separate forms anymore if you want to change something in your bicycle plan, for example, or if you want to change your travel expenses with the allowance or kilometres, you can just fill it in and it's sent. Otherwise it had to be sent by e-mail to HR or other departments or by internal post. That was always a risk of loss or delay. Here it just stays in the system, on our side an action remains open and on their side as well.” (EM6)*

<u>For MSS</u>: *“That I'm glad it's one system and that we don't have to run back and forth to HR with papers because someone has been hired.” (M2)*

<u>For MSS</u>: *“With the new system I can have an overview in one quick glance: these are the people, this is what's in the file. That also helped me to structure things. That makes it easier to cluster the organisational things you have to do for your staff which you can do right away.” (M3)*

Another benefit for the MSS part is that extra functions are available which were not included in the previous system. These functions vary from small points which are convenient to larger points which provides more information to the manager to better perform their job than they could before such as with the departmental absenteeism.

“I've also seen that there's a tool for absenteeism. That you can generate nice graphs of what absenteeism is and things like that. That's beautiful.” (EM7)

With the arrival of the new system, more has changed concerning whom performs which actions. Through the self-service employees can do more tasks on their own now instead of via secretary or administrative division. Most of the users experience this as a positive change where they can do this themselves now and have more control, however, others have a different perception towards this. In order to clarify this, an example. When employees go on a business trip, they can claim their expenses back. Earlier employees could make use of the secretary when claiming costs, while with the new system they need to do this themselves. For the employees who have to do this themselves now, more work arose since a business trip often involves lots of different tickets that all need to be put in the system. Besides, when it involves employees high in the organisation’s hierarchy, it is found that their time is too valuable and expensive to deal with a single (non-important) issue as claiming costs. This new procedure also influences the MSS part as managers have to check what their employees filled in and approve or disapprove. One interviewee who supports his manager on the financial front mentioned that reviewing submitted cost claims earlier took him quite a long time as all tickets needed to be processed and manually calculated. However, since the system is now a self-service, the employees have to do this themselves. This only needs to be checked which is done quite fast compared to how it was before.

“I do hear feedback from others, there are many professors who travel a lot, who think it is a big mess because they used to be able to hand in their receipts to the secretariat, and the secretary did their job. Now they have to do it all on their own and that takes time.” (M4)

"Cost claims are much faster done. Previously I had to sign them, had to put a date on them, wanted to check everything, etc. And there was a lot of paperwork, all receipts that came with it. Especially if they were foreign trips, these were whole packages I received, now they all have to do their own reading. A lot of work now lies with the employee. They now have to attach everything as a pdf, which is of course much easier for me. I click on it, I check if all the receipts are there and I count it up a bit and if it's correct then I click on it and it's ready. So this is really much faster." (EM4)

For managers, PU consists of some more issues than with the employees. It appeared that the MSS part contained some improvement points as some functions were not fully working yet and the distribution of roles was not done as it should. Through this distribution of roles in the system, exceptional functions such as secretary of managers were not authorised to perform certain tasks they used to such as the absenteeism or approving specific personnel requests. Quite soon the organisation made adjustments to this to restore these issues. Another example regarding the authorisations concerns a managers who still does not have any authorities as a managers while the system has been live for already six months. These errors have quite a large impact on the managers as they have to think of a way to manage without the system. In addition, managers wish to see more information concerning employment history of the employees and tasks/approvals already done by the manager. Since this is not visible, it appeared that many have created their own 'system', such as an Excel sheet, to keep record of important information which is not presented in the system. This is negatively experienced as it is found that the new system should relieve the managers in their administrative tasks, not add to it. Besides these issues, more errors appeared to be present as the hierarchical roles were not all classified as it should causing that some employees could be listed in the wrong department. If this was the case, the manager or secretary of the other department has to report the employee sick causing illogical situations. Moreover, other issues came forward during the interviews concerning the MSS part where some functions do not yet work as it should. It is known that improvements are still being made to the system meaning that it is expected that the system will soon start to support the managers in a better way which will increase the PU.

"At first it went wrong, I got no rights. I manage 25 people, but the permission for them lies with the manager of care and business operations, so every time someone wants a day off, for example, he has to approve it. That just doesn't work. We have been working for six months to get the permission for me, this has still not worked out. There is a delay, the project manager has to implement this and apparently this has not yet succeeded. While this is a priority for us." (EM8)

"But I think it's a pity that you have to come up with your own way of working, your own administration, while I think you now have a system that can support that. The system should be supportive and you shouldn't have your own system next to it. I find that very unfortunate. I hope that at some point it will be expanded with something that can support us." (EM7)

Concluding, the PU is high for the employees and the managers, mainly because of the high PEOU, the fact that lots of processes are digitalised, the self-service for employees providing more responsibility and more insight, better overview for all users and more functions. However, through the many errors and improvements the organisation has to make including the role distribution, authorisations, and other functional errors, the PU has decreased. Similar to the PEOU, it is expected that the PU will increase again after fixing these issues.

Social dimension – Communication

Different communication forms have been used to inform the users about the e-HRM implementation. This applies to both the ESS and the MSS part, however, it can carefully be mentioned that the managers were more informed about the arrival of the system than the employees. This is also more logical since the new system has a larger effect on their daily work than it is with the employees as using the ESS part is done next to their regular job while using MSS is part of the manager's job.

"You really must have lived under a rock if you weren't going to pick that up. There were those intro sessions with choice dates, nicely announced in time. It was just a very small effort to put in your diary that you could go to one of those sessions." (M3)

"I honestly didn't get much from it. I let it all run its course and didn't really get involved. I did hear that something would happen, that there would be a change. But well, as a nurse I'm not the one who will check if it all works." (EM9)

An explanation for the users who were not up to date concerning the arrival of the system and the support is that these people have other priorities than the new e-HRM system where they did not read the information provided about the implementation. Some experienced that they received too many e-mails and information or that they did not feel addressed by the messages. Others mentioned that these messages are too long for them to read where they find it unimportant at that moment. Some interviewees who mentioned this are aware that it is partly up to themselves for not being up to date.

"But you know the thing is, sometimes you get so many emails with information. Then I think get rid of it, I'm not going to read all that. I'm also in those general mailboxes of the department, then you really get all kinds of stuff sent to you. Then I sometimes have the tendency not to read it, so then it's also partly up to me." (EM4)

As mentioned before, users also received an automated e-mail from the system itself when a certain task needs to be done or a request is approved. This is the communication from the system itself which is experienced as useful. For employees this communication is especially convenient because they do not have to log in the system very often and they still will be informed about important matters. For managers this automated e-mail is differently experienced as some find it convenient and others find it annoying since they already receive so many e-mail each day/week and they check the system anyway on weekly bases.

“The fact that I receive an email as an employee that there is something for me in the system is very nice. Otherwise you are waiting every day whether what you have requested is already there. For the people who have to do something sporadically I think this is very nice.” (EM2)

Communication regarding the provided support is also an important topic for the e-HRM implementation as users cannot use or participate the support when they are not aware of it or do not know what the support is about. A lot of users did not know what to do when problems/struggles arose when using the system showing that these users were not aware of the provided support. Employees mentioned that too little was communicated towards them about the support. However, the interviews also revealed that when employees were aware of the provided support, they often did not know if the support would be of added value for them since they did not know the system or its difficulties yet. They sometimes did not know what to expect from the support or it was thought to be for another target group. Therefore it can be stated that the communication about the support and its value could have been improved for the employees and employees with some MSS access.

“And then we did have walk-in sessions with the new system, but if you have no idea what's changed then you don't go to those walk-in sessions either.” (EM2)

“There have been a lot of instructions in the blue room where you could go. This was very general, and I must also say that it went a bit past me, because the secretariat was told all the time that it could not do anything with it. That was said from HR. So then I thought, why should I go there if I can't do anything with it anyway. That went a bit past me as far as that's concerned.” (EM7)

For the managers, communication about support went quite different. In contrast to the employees, some even state that it was too often communicated towards them via different channels. However, this is noteworthy as it is also stated that the communication towards managers was too poor. It has therefore emerged that there are different opinions regarding the communication of the new system and the support offered among the various departments.

“Through all kinds of letters, e-mails. From all angles, you sometimes receive triple the same information: from the board of directors, from the ICT, from the HR, then you already receive three identical letters. And then somebody sometimes passes it on with the question whether you've already read it. Well, you know, that's the way it goes.” (M1)

“A lot went wrong in the configuration and implementation. There was little or no communication about it. This is now slowly getting started, but the way in which the users were included in the implementation is very minimal.” (M4)

Managers have different viewpoints on how the communication proceeded during the implementation. Overall, everyone agrees that more and better communication should have been used. Especially during the preparation stage before the system went live more specific communication was desired so the managers knew what to expect and could prepare their employees.

In addition, in some situations false information was given related to resetting the authorisations in the system which managers need to perform their job. In addition, more communication was desired on detailed level such as where certain documents can be found in the new system that are important for managers. This negatively influences the perception of the managers towards the communication.

“Then I get a notification via e-mail. It said that I, as manager, now get the authority. Look here: "Dear ..., you've been granted leave entitlements and it takes effect on February 11, 2019." Well it hasn't been settled yet. Coincidentally, we had a meeting with the project manager to check whether everything is going as planned. Well, the authority still isn’t there, I told him. He said yes we are a bit behind. And I thought, yes that's fine but for us this is very important.” (EM8)

Another issue that came forward during the interviews concerned the expectancy management regarding what users can expect of the new system and what is expected from them. If the users do not know what to expect they cannot react to it as the organisation had wished for. This concerns issues such as the support (1), whether specific items are obligated to use or not (2), and more specific issues in the system (3). Concerning the support (1), employees were not completely aware what to expect of the provided support and whether they were expected to use the support. Employees were mostly aware of the possibilities in the system, but (2) they were also questioning if there are specific functions that they are obligated to use which is now unclear. More specific issues (3) were unclear for some employees, such as the date of payment of cost claims that have changed with the arrival of the new system. This information was provided in a work instruction, however, employees were not aware of this and would have appreciated that this information would have been highlighted somewhere.

“But very black and white for myself, I haven't really felt the need since it was implemented to see what I'm going to do and what I can do with it. I've been clicking in the system but then I ran into things I have to fill in. I haven't heard anybody say anything about it so I will not do it. A lot of things are still unclear. I miss the part about expectation management. What does my manager and the organisation want us to do with the new system?” (EM2)

As a final topic, employees and managers prefer when new information about the system or implementation is known, this to be communicated to them via intranet and/or e-mail. Also managers would like to be informed more personally via people of the project itself with the intention to properly inform the people of their department when needed which indicates they would be more involved during the implementation.

“I prefer the website. We have an intranet that is very current, put it on there and announce it.”(EM3)

“Yeah, but I do read all my e-mails. I think especially from the project group and the project leader, that he has to inform people when new things come in. But he is sort of already doing that. And then I inform the people on the floor again who it concerns.” (M1)

In summary, the communication has been experienced very different among the users. While some were aware of the arrival of the new system, others were not aware of anything at all. This is a large difference which can probably be explained by the fact that some employees do not read the messages concerning the implementation which might be due to too long and many messages, not feeling addressed, or they experience it as not being a priority in their job. Communication about the support did also not go flawless.

Social dimension – Support

Support was provided during the implementation of the e-HRM system such as training, walk-in hours, floor support, instruction videos, and more. The opinions towards the formal support were overall neutral or positive experienced by the users where it was also mentioned that more support was desired during the implementation. Therefore, some support sessions were provided a few months after the start of the e-HRM implementation. This was positively experienced by the users, however, it is also mentioned that these specific sessions were preferred to be held earlier in the change process.

"I think I'm already at 80 to 90 %, because once again it's very user-friendly. And that's why I'm also going to that course to see if I can get that last 20%. I'm curious if they still have something to tell me or not, then I know that too." (EM4)

In addition, a lot of employees mentioned that they did not use any of the support which was provided. There are some possible explanations for this. (1) Users did not attend the information/training sessions since the system is experienced as user-friendly where no or little support is required for proper usage. There are also quite some users who want to figure out themselves how to use the system, however, this is mainly for the ESS part since the MSS part requires some more depth. (2) Another reason for not attending the support sessions is that the users were unaware of these sessions or the relevance/value of it for them as an individual. It came forward that some users of the ESS part (and some with MSS rights) were aware of the support sessions but believed that this was meant for managers only. This is related to the communication which is also mentioned before. (3) In addition, since using the system is not a priority on a daily or weekly basis for the employees, they are less motivated to attend any of the support sessions.

(2) "What I think in general in the hospital is that we need to take much better care of instructions and less walk-in sessions. That's kind of a vision of mine, perhaps I'm too old for this too. Of course you can get information, but you have to know what to get there." (EM2)

(3) "Yeah, because it's new. It's new and they don't take the time to get into it. I can tell. It all has to be quick and quick. And then it's often just a matter of help me out because I don't like doing this. It's all administration, especially doctors don't like it at all." (EM6)

The employees were asked about the provided formal support. The topic that came most forward was the floor support team which was specially set up for the e-HRM implementation. Overall, different opinions came forward about the floor support team where most of them were a bit negative or neutral. The users who had contact with the floor support did not get an answer to their question and for a lot of employees they were too far away from them in terms of distance as the building is very large which would take them too much time to visit them. More about the topic floor support is shown in appendix III. Other forms of formal support were also not very positive experienced. For example, the walk-in hours are unknown what to expect from and wrong timed as these were held at the beginning of the implementation while a lot of employees still had questions after a few months. Another example concerns the instruction videos which a lot of employees were not aware of (concerns communication) and employees who did, experienced these as time-consuming and too simple (almost childish) where it did not give them an answer they needed. So overall, employees were not aware of all formal support and, at the same time, did not find it very useful.

"The videos were there, for example, I watched one and then I thought I'd figure it out myself. That's for people who are very much in the resistance or who just don't understand it at all. When you're looking for something, you actually want an answer to your question right away, and if that doesn't happen, it stays put. Here it says to look on the intranet, then you come back to those videos again, but not if you want information who to approach, or an email address." (EM8)

On the contrary, most managers did attend specific training which was specifically provided for managers. Managers were positive about the support offered where mostly the basis of the MSS part was explained during these sessions. Despite this, it appeared that more in-depth information was wished for regarding the MSS part. Managers appeared to have questions when using the system in more difficult and exceptional situations such as long-term absenteeism or when an employee switches to a new department and gets more hours. In these kind of situations uncertainty arises and it is not exactly clear how to act. Managers are also aware of the possible consequences that can arise when using the system incorrect. Regarding the given examples, when the system is not used properly problems can arise such as inaccuracies concerning absenteeism, wrong salary payments or breach of contract. Therefore, managers are aware that proper usage of the system is essential.

"I think we've had one lesson, a kind of introduction to the system, as a manager. That was fine. You can't make mistakes anyway. The system shows itself." (M5)

"No, it's just the tricks and useful things and niceties where you have doubts and would like to know. And then even HR doesn't know and then I think: okay wait a minute, now I have to continue asking that not someone will have a breach of contract for a day for example". (M2)

Next to the formal support which was offered during the e-HRM implementation, it appeared that the users made a lot of use of informal support. Employees mostly turned themselves to a colleague or their superior when they needed help which was experienced as positive, easily accessible and pleasant. Moreover, during the implementation it appeared that some departments have a specific person where employees go to when having questions about the use of the system. Mostly this concerns the managers of the department but also secretary or financial assistants can take up this role which happens on its own. In one department it concerned a staff assistant because, according to him, he is seen as 'the financial guy' of the department. This employee was asked several times by colleagues to help with their cost claims in the new system, after which he devised a step-by-step plan for other colleagues of the department who struggle with the same problem.

"I've been asked that question many times so I've figured it out and made a step-by-step plan for colleagues how this works. We have three sections, we are actually research profacility (the CDP), research instrument making and the central freezing facility. So if people in those departments don't know anything I can send them that step-by-step plan explaining it to them in simple and understandable language." (EM1)

Managers mostly turned themselves to someone of HR of their section when having questions next to the sessions they had. The help they received from HR made a lot clearer and it was experienced as positive and easily accessible for the managers.

"Once I had to do a new contract in the system, I went to see someone from the HR department in sector B. She guided me through the system for a while, that went fine too. That all works. The support is there, if you need it I know where to go. Then you'll get good help." (M1)

Managers also wanted to contribute to a sustainable e-HRM implementation on their department as managers tried to stimulate their employees for proper usage by pointing out important messages, support or upcoming changes. Next to this, managers also supported employees by preparing them for what is coming, answering questions or stimulate employees for actual usage of the system. It appears that managers can play an important role during the implementation as through this personal approach from their managers, employees are more likely to act on a message from their manager instead of a standard message via e-mail or intranet.

"At certain times there were stands where you could go to ask for help, a helpline, floor support. Of course, you do need to read the announcements, don't you? Employees rarely if ever look on the intranet. As a manager, however, you have to inform your employees about this. If you don't, they really don't know." (M5)

Continuing, the managers and/or secretaries tried to include the employees of their department during the changes where they tried to lower the threshold to start using the system and helped when certain questions or difficulties arose. However, managers were limited in supporting their employees as they did not receive much more information than the employees themselves did while managers did wish for more information to properly inform their employees about important matters.

"I think it would also have been nice, especially in such a position that I and, for example, my manager and the policy manager have, that we would also have had a little more information so that we could have helped the employees on their way. I think that would have been nice. So I'm missing something in that." (EM7)

"My head of department arranged it, during a working meeting she said that the new system was coming soon and she wanted to help us through it a bit. So she showed us if you're going up and down to Amsterdam, how are you going to declare this, just a little bit to get everyone started and familiar with it. Because of that you already had an impression of this system which I liked." (EM9)

In addition, during the interviews it came forward that the users preferred other types of support which are easy approachable and easy to understand. One example which came forward is a helpdesk which is available via a phone number which can easily be found in the system itself. Users who brought this idea up are aware of the floor support team which is also available for questions, however, not everyone was satisfied about this. A second example which came forward regarding other types of support is that users prefer tangible support such as a roadmap, step-by-step plan or paper range which users can easily look into the subject they have questions about or want more information about. Based on the examples given by the users regarding the support during the e-HRM implementation, it appears that the users want to spend little time to understand the new system. As mentioned before, an explanation for this could be that using this system is not the priority of their function. So the users want to quickly perform their tasks in the system and when having questions or uncertainties they want to quickly find a solution.

"That only takes time, I want to do something NOW so I want to call a number and say 'help me'. So if I have a question right now I miss a phone number that I can call to help me." (EM3)

"I think they should have made something like a quick reference card. We do have that from other training courses. I've got one right here. They could've just made a card and handed it out. This is in addition to the training. This is from the EEP, but we didn't get anything from the new e-HRM system. I would still like to get that. You can always grab it anytime. Hang it on a pin board or something. But we didn't get anything, I just think it's a must, something like that." (M4)

It can be concluded that managers were overall content with the formal support for the MSS part, however, more in-depth was wished for. Whenever they had more questions, HR was most of the time available to them. For the employees, formal support did not work out very well as they were not aware of the support sessions or its value. Other support such as instruction videos were time-consuming or had no added value. Employees would rather use informal support as this is easier accessible, less time-consuming and more specific questions can be asked.

Focus on technical or social dimension

Now it is known how employees and managers experienced the technical and social dimension during the e-HRM. It appeared that opinions and experiences were quite different among the users showing that employees and managers have different needs concerning the technical and social dimension. Despite the different opinions, the main essence can be derived from it. Concerning the technical dimension, employees and managers have a high PEOU and PU. However due to many errors in the system, the PEOU and PU are negatively influenced. These errors need to be fixed in order to increase the users' PU and PEOU to benefit more from the system which the organisation is working on. In addition, some users ran into some difficulties while using the system which they do not have a solution for. This relates to the social dimension as it appeared that users overall had wished for other forms of communication and support. The communication forms did not reach many employees as they were not properly aware of the arrival of the system and the provided support. Managers were better informed as the new system also has a larger impact on their job, however, more information was desired during before and during the implementation. Concerning the formal support, managers were content with the formal support but had preferred more in-depth support, while employees barely made use of the support which is partly to them not being aware of it. Employees would rather use informal support or formal support that is easily accessible and/or more tangible. So overall, considering these results, more is desired on both the technical and social dimensions. The organisation should pay attention to adjust the actions from the social dimension towards the changes being made in the technical dimension to increase the chance of a sustainable implementation. So when for example an error in the system is fixed, this needs to be communicated towards the users.

HR attributions

As stated by Hewett, Shantz and Mundy (2019) the HR attributions of all individuals are influenced by the three factors information, beliefs and motivation. During the interviews it came forward that there has been no clear communication towards the users of the new e-HRM system regarding why the organisation wanted a new e-HRM system (or the communication has not reached the users) which relates to the factor information. This means that the HR attributions are mainly created by the beliefs and motivation of the individuals and little by information. It is also likely that the HR attributions are different for employees and managers as for example, managers have received more information about the (reason of) implementation. The opinions overall were quite divers. i.e. negative, neutral and positive perceptions came forward which will be all explained in this section.

First, the users having **negative** opinions regarding *why* a new e-HRM system is implemented will be discussed. It is mentioned by these users that the system is only implemented as a replacement for the previous system whose license was about to expire. Quite negative reactions came forward about this topic since it is found that this is a poor motivator for implementing a new e-HRM system. Even though only managers had access to the previous system, both managers and employees were aware of the license expiration in which the new e-HRM system came to replace. This refers to the factor beliefs (organisational cynicism, based on previous organisational events) and partly to the information (users know about the expiration date and made up their own opinion about it).

"That in itself was communicated, only with steam and boiling water and that had everything to do with the fact that the previous system was taken off the air as of January 1st, as far as the salary part was concerned, so that means that in a short time the new program had to come, but that's always a bit of the wrong drive." (M4)

Besides, through the digitalisation created by the arrival of the new system some users only saw that extra tasks arose for employees and managers in which it would ease the workload for supportive departments such as finance or administration. The latter would mean that less staff is needed at these departments in order to cope with cutbacks and savings in the organisation. Users who mentioned this mainly see disadvantages of the new e-HRM system for themselves on an individual level where in their opinion, advantages are mainly present on organisational level. To elaborate on this, some mention that claiming costs was earlier easy done, now the new system saves time for the payroll department, not for the employees. This relates to the factor motivation as the users experience disadvantages for them on an individual level which in this situation impacts the HR attributions negatively. It also concerns the factor beliefs as statements and beliefs are present in this situation which are affected by previous experiences with the organisation.

"What they do is they lay down tasks for the employees, they lay down tasks for the managers. This means that support is reduced. We are currently in a huge, they call it a cost reduction program, that's just a cutback. 20% of my colleagues have to go out. That has something to do with this new system, there's a relationship between them. That is ongoing now and should be ready by the end of this year. That's when the second round will start for secretaries and jobs like that, that's where they're going to make a 15% cut across the organisation. That's a lot. Then you can't ignore the fact that this has nothing to do with it." (EM4)

"Earlier, you just wrote it down on one stencil and then you wrote down everything you did. That was more pleasant for the employee because the employee sends it in and I can imagine that the payroll administration or whoever paid it out had more work to do because they had to code it, put it in the system, etc. So for them, in principle, there could be a time gain because of the new system." (EM2)

The implementation process itself also affected the opinions of the users. To start with, a lot of users do not understand why the deadline of implementation at the beginning of the year was that important. It was preferred by many that the deadline would be postponed for better preparations. Many errors occurred in the system where users assume more time was needed for preparation. Besides, more attention could be paid to the communication and support during the implementation of the system when more time is available for preparation according to the interviewees. So, there is no or little understanding for not postponing the deadline of the system. This would refer to the factor information, however, in a negative way as no communication has been provided on this.

"In addition, I would have preferred that they had waited with the implementation until the moment when it was completely right. But I can also imagine that this could be done on a yearly basis, for example, and they had no other choice. I don't know exactly what the motivation was to set a deadline." (EM1)

In the last few years the organisation has implemented multiple different IT systems on different fronts. It appears from the interviews that employees and managers experienced these IT implementations as quite negative. These bad experiences of previously implemented IT systems affected the perception of users negatively even before the e-HRM system was implemented as they would expect this to happen on a similar bases which relates to the beliefs of the individuals.

"No, look at the EPD, it's really very complicated. That's the Electronic Patient Dossier, that must really be a huge implementation. It also takes far too long and everyone is still whining about it now, even though it's been a year and a half." (EM8)

There is also a group of users who have **neutral** HR attributions. However, it concerns same topics as mentioned earlier, such as the license expiration of the old system and the deadline for implementing. Others saw this as a fact where they did not have a negative nor positive opinion towards this. Some users simply did not have an opinion about why the system was implemented or they were simply content with it as they still did not know a lot about the system or its implementation. This was mostly the case for employees as the system is not a priority in their job.

"Because the old system was no longer supported. Until a certain time that was still possible and after that not anymore. That's why they switched to this system." (M1)

Finally, there is also a group of users which is **positive** about why the e-HRM system was introduced. It even appeared that there were quite a lot of people belonging to this category. The previous way of working was experienced as old-fashioned and not of this time anymore. Many of the users see the benefits of the system (digitalised, more information, organised, all administration combined in one system, saving time, etc.) where they look at this as the main reasons why the system is implemented. This relates mostly to the motivation of the individuals as many advantages are recognised and partly to the information.

"Above all, it also means that this involves a lot less paperwork, literally, that it is a bit more orderly and that the work is digitized. Moreover, approving the work is also much easier instead of postbox to postbox, in which case it can also get lost." (EM5)

"I'm glad it's one system, let me put that first. That's the way I think it should be, this is also the era of the digital approach. The fact that we are already this late is actually absurd." (M2)

For the MSS part specifically, other benefits are the reason why managers believe that the system is implemented. This involves the differences between the new system and the previous system in which the new system is more user-friendly, more supportive for the managers since managerial functions are added, it can save time and it is more innovative. This refers to the motivation of the managers as they individually will benefit the new system.

"I think because the old system was outdated and in need of renewal. It was also quite a tricky system from time to time. I think they wanted a better and new system. The way it looks as far as I know it, I think you can get on with it for a longer period of time. I think it has better options, digital as well. I think it's very web-based. I can imagine that it has more possibilities technologically speaking. It looks user-friendly, so in the end I think if all options are implemented, it will be more user-friendly." (EM7)

Concluding, it is observed that mostly the employees had positive HR attributions concerning why the new e-HRM implementation since the new system offers them many benefits. The managers had different opinions, which however were also mostly positive with the idea in mind that the system would improve over time. Managers were not all positive, but negative opinions were mostly targeted to the implementation process instead of the system itself and the reason for implementing it.

Next to the main subjects the research focussed on, other subjects came forward during the interviews which may also influenced the e-HRM implementation results. As this does not concern the main research question this is explained in appendix IV. In appendix V additional information is provided which is mostly interesting for the organisation being studied.

Discussion

In this chapter an answer will be given to the research question by discussing the findings of this research. First some more about the e-HRM system will be discussed: what is so special about this administrative system? Following, the difference between the employees and the managers will be discussed concerning both the material and social dimension. Continuing, an answer will be provided to both sub questions concerning the concept of sociomateriality about the e-HRM implementation and about the value of the users' HR attributions affecting the e-HRM implementation. Also some findings of two other master theses will be compared to this master thesis. Afterwards, the theoretical and practical implications will be addressed continued with the limitations of this study and suggestions for further research. This chapter ends with a conclusion.

e-HRM system

There are many benefits on implementing an e-HRM system as mentioned earlier in the theoretical framework. However, it is still only an administrative system, can this really provide that many advantages? First of all, this is only the case when the system is implemented well and sustainable where employees and managers make proper use of it. Despite the fact that people need to get used to it, it is preferred that these HR activities are digitalised and that employees can see their own personal file, make changes when necessary and can see what the status of their request is. It is nowadays more common that employees have more responsibilities and control on these HR matters. Managers also received some more tasks and responsibilities which leads to different reactions. In the end the administrative system should support the managers in their managing tasks by making tasks easier, giving notifications for important issues (e.g. an employee's contract ends), and providing extra information convenient for managers (such as graphs on absenteeism). Besides, since more functions are decentralised, HR can focus more on HR strategical issues. For the organisation it is beneficial as less errors will be made, a lot of paper is saved which is cost-saving and it lifts the organisation to a higher level in terms of digitisation. Overall, if it concerns a sustainable implementation, many benefits occur for the employees, managers, HR, and the organisation even though it is still only an administrative system.

Influence of different target users on e-HRM implementation

The study findings show a large difference between managers and employees in their usage and response to the e-HRM implementation. The e-HRM system has been implemented for several months now. For the employees only using ESS, it appeared that overall the system is successfully implemented while according to the managers using MSS, the implementation has not been completed yet as many improvements still need to be made. This means that both target groups perceive the e-HRM implementation differently. This can be clarified by the fact that both target groups work on a completely different basis with the e-HRM system.

Sociomaterial view on the needs of the target users

The findings of this study show that the PU and the PEOU are overall experienced as positive by both the employees and managers. However, this does not indicate that the material dimension is at its best since many errors appeared to be present according to all interviewees, especially concerning the MSS part. During the e-HRM implementation, HR needed to design certain practices concerning the communication and support as a response to the changes in the technical dimensions. By doing this, a balance in the attention towards both dimensions can be restored. So, when more technical changes are made during the implementation process, it is important to align the social dimension to ensure that it is communicated towards the users and when needed, support is provided. For a successful e-HRM implementation, this process needs to be repeated every time a technical change is being made.

In practice, it appeared that this is not as easy as it seems. It appeared that the users were not content with the technical dimension due to the many system errors. However, these errors are independent of the PU and PEOU. Despite the system errors whereby the system was not optimally working, users did saw the benefits of the system. The PEOU of the system scores very high for all users. In line with the TAM model of Davis (1985), a positive influence from PEOU on PU is detected whereas this applied mostly to the managers as they could compare the new e-HRM system with the previous system. The new system was much more user-friendly which was next to the digitalisation, experienced as one of the biggest advantages for the users which concerns the PU.

With regard to the social dimension, overall, the communication and support were experienced as reasonable for all target users. However, many individual differences occurred to be present regarding this topic. It might be possible that too less communication and support is provided and/or not the right forms are used. Concerning the internal communication, it appeared that some users did not feel addressed by the messages and information was misinterpret which is also earlier seen by Kitchen and Daly (2000). To solve these issues, Karahanna and Straub (1999) mentioned that having a form of social presence in the communication can increase the chances that the messages will actually reach the targeted users. As mentioned before, some users were reached by the provided communication while others were not. This can be clarified by the fact that the organisation being studied has many different characteristics amongst all individuals differing in age, educational background, length of employment, etc. For the organisation it is challenging to align the type of communication form with the individual characteristics of the target users with the purpose of effecting their thoughts, interpretations, and actions which is in line with Heracleous (2001) and Welch (2012) who also believe that appropriate messaging towards the users can be decisive for its outcomes. So, therefore it can be stated that a large organisation such as in this study, first needs to examine its target users and their preferences regarding communication before starting with it.

In line with Becker (2010) a clear difference is detected in this research where formal and informal support was both clearly present. The formal support which was provided during the e-HRM implementation was differently experienced by the employees and managers, where employees appeared to have made very little or no use of the provided support. This might also be related to the positive PEOU and PU as mentioned before in which employees did not need any support for proper usage of the system. Besides, employees do not see the new e-HRM system as a priority in their job, which is true as it supports certain functions important for them as an employee of the organisation. Therefore, attending or using any of the provided support is seen as time-consuming where employees mostly only want support when needed after they run into trouble while using the system. Based on the research, it appears that informal support is used quite a lot and has been chosen over the formal support many times by the employees. For managers this is different as using the system properly is essential for performing their job. Therefore formal support is desired so managers know how to properly use the system. However, only the basics of using the system as a manager were explained in the support sessions while the managers preferred more in-depth support so also the more difficult and exceptional cases are known to be dealt with. It appeared that when managers do use informal support, they would mostly contact HR or the project leader which indicates that managers search for answers higher in the hierarchy and only do this when struggling with the system. Managers find this time- and effort consuming since it is preferred to use the system quickly and efficiently. So, more and better formal support is desired for the managers while the employees mostly prefer to find for themselves how the system works and use informal support when needed. As mentioned before in line with Nielsen and Randall (2015), it is important for an organisation to consider how the support activities fit the user's interests and the context of the function.

Especially for the employees, it can carefully be stated that the higher the PEOU, the less support is needed for them to understand the system and make proper usage of it. This applies more to the employees than to the managers as the functions they use in the system are not important in their daily work. A careful statement can also be made regarding the technical dimension and communication, as when PU and PEOU are high during an e-HRM implementation, less communication is needed about the technical dimension as users can easily discover how to use the system themselves and what benefits it has to provide. So, when the aspects of the technical dimension are valued negative by the users, the organisation should invest more in the social dimension to explain the system and its benefits to the users to improve their perception of the technical dimension implying that a sustainable implementation is still possible. When the aspects of the technical dimension are valued positive by the users and the social dimension is minimally invested in, it is still possible to achieve a sustainable implementation since the system is very user-friendly and the users see what benefits it provides. Based on this research, these statements apply to all users of the system, but for the MSS part for managers higher standards are required for both the technical and the social dimension to achieve a successful implementation.

HR attributions effecting the e-HRM implementation

While the benefits of the system are mostly known among the users (motivation and information) the HR attributions are still of a somewhat negative value since the beliefs are mostly negative based on previous experiences of the users in which they would expect a poor implementation. Overall, all opinions creating the factors information, beliefs and motivation were all differently experienced creating different HR attributions amongst all e-HRM users where employees had more positive attributions and the managers had more negative attributions. However, the negative attributions were more due to the implementation process than the e-HRM system itself. As stated by Mahfod and Khalifa (2017) it is essential for an organisation to understand the employee's attributions about the e-HRM system as the organisation can respond to the different factors influencing the HR attributions. Once it is clear which factors possibly create negative HR attributions, HR can respond to this before and during the e-HRM implementation to increase the chance of a sustainable e-HRM implementation.

Is the e-HRM implementation evolving over the years?

Two other master theses which also concern e-HRM implementations in the health care were looked into to compare with this master thesis. The master theses were conducted in 2009 and in 2010 which makes it interesting to see whether similarities or differences concerning the same subject in the same sector can be found. Several similarities are found including:

- Support offered during the e-HRM implementation is an important factor in the acceptance of the new system in which the support should be a relevant and structured source of information (Evers, 2009). Engbersen (2010) also recognised that due to a lack of support, no (proper) use is made of the HR technologies, indicating that support is of crucial value.
- The master thesis of Evers (2009) also investigated the PU and PEOU during the e-HRM implementation which were also both positive as it was the case in this research where it was in both studies found to be useful that personal files are all digitalised now.
- Concerning the overall implementation, both this research and that of Evers (2009) recognised that it is not easy to make people accept and pick up new or changed responsibilities. What also did not help was that both implementation processes went too quickly and that more time was needed to improve the system before implementing. It is quite noteworthy that this was the case in both organisations.
- In this research it was experienced that the users did not exactly know what to expect from the new system and what was expected from them. This was similar in the master thesis of Engbersen (2010) as the users did not know what to expect from HR and the HR system.

Besides the similarities that have been found, also some differences were recognised. It is expected that since we are now ten years later, people are becoming more used to technologies than it was when the two other theses were conducted. Evers (2009) mentioned that people's thoughts about papers savings were mixed while in this research every individual was pleased that no paperwork was needed anymore. Besides, Evers (2009) expected that people would see the benefits of the HR portal as they perceived the IT characteristics as easy to use and useful, however, this relation was not found while in this research the positive experienced PU and PEOU were one of the main benefits of the system.

Theoretical implications

This study investigated the perceptions of the employees and managers towards an e-HRM implementation focussing on the balance between the material and social dimension and on the HR attributions as these are crucial elements for proper usage of the system. Results showed a large difference in the experiences between the employees and the managers which supports Bondarouk, Harms & Lepak (2017) and Bondarouk, Ruël, and Van Der Heijden (2009) meaning that when studying the process of an e-HRM implementation it is highly important to continue to split the sample in the different target groups.

As for the concept of sociomateriality, it appears that an organisation should continuously focus on putting effort in both the material and the social dimension to increase the chance of proper usage by its users in order to achieve a sustainable implementation. So when new changes are made in the material dimension, the social dimension should respond to it with the right communication and/or support depending on what the users need. The latter indicates that better appropriate communication and support forms can be used when the organisation first investigates the targeted user's characteristics and the context within the user's function so the organisation can respond to this where a better fit between the social dimension and its users can be realised. This is in line with several authors including Heracleous (2001), Welch (2012), Nielsen & Randall (2015). Concerning the technical dimension including the PU and PEOU, an extra topic should be included which is relevant for the study and influenced the outcomes, namely 'system errors'. Every organisation has the intention to have no system errors when implementing a new e-HRM system, however, in practice this did appear to be present and of crucial value to the perceptions and experiences of the users.

Concerning the HR attributions of the e-HRM users, all three factors (information, beliefs and motivation) of Hewett, Shantz and Mundy (2019) came forward in this research. In line with several researchers such as Hewett, et al. (2018) and Piszczek and Berg (2020), the HR attributions of the users did appear to have a tremendous effect on the usage of the e-HRM system and the implementation success. Therefore it is in fact highly important to include the HR attributions of the users. Concerning the three factors in an e-HRM implementation, it would appear that the factor information is mostly influenced by the communication during the implementation, the factor beliefs is mostly influenced by previous experiences of other (IT) implementation processes and other organisational experiences (which is already formed before the actual e-HRM implementation) and the factor motivation is mostly formed by the technical dimension in terms of user-friendliness and usefulness.

Based on all results of this research, a new model has been developed which is presented in figure 6. The model shows the probability of achieving a sustainable e-HRM implementation influenced by the social dimension, material dimension and HR attributions. The model shows that even when the organisation has put minimal effort to the social dimension, when the material dimension has been put maximum effort in, a successful implementation can be achieved. This is the case as the system is experienced as user-friendly and useful (PEOU and PU), where users do not need many communication and support to properly use the system. The same holds for the other way around as when the organisation has put minimal effort to the material dimension, if maximum effort has been put in the social dimension, a successful implementation can be achieved. This would mean that the system is experienced as difficult to use and where the usefulness is not clearly detected, so therefore a well-designed plan should be executed concerning the support and communication that fit the users' characteristics, to help the users understand how the system works and what benefits it has to offer. As seen in the model, a distinction is made between the employees and the managers. Since the managers use the e-HRM system differently where they need the system to perform their job meaning this contains more (complex) functions, more effort should be put in both the material and social dimension for a sustainable implementation than is needed with the employees. Including the HR attributions another perspective is offered. If HR attributions are already quite negative of the users (holds for both the employees and managers) the line shifts a bit where a little more is desired of both the technical and social dimension to achieve a sustainable implementation. However, if HR attributions are already positive, it is expected that less is needed of the dimensions for a sustainable implementation as users are more open towards the change. Note that all lines do not touch the bottom or side line indicating that there is at least some effort needed for both the social and technical dimension where it would be impossible to succeed an e-HRM implementation while putting no effort in one of the dimensions, relating back to the concept of sociomateriality.

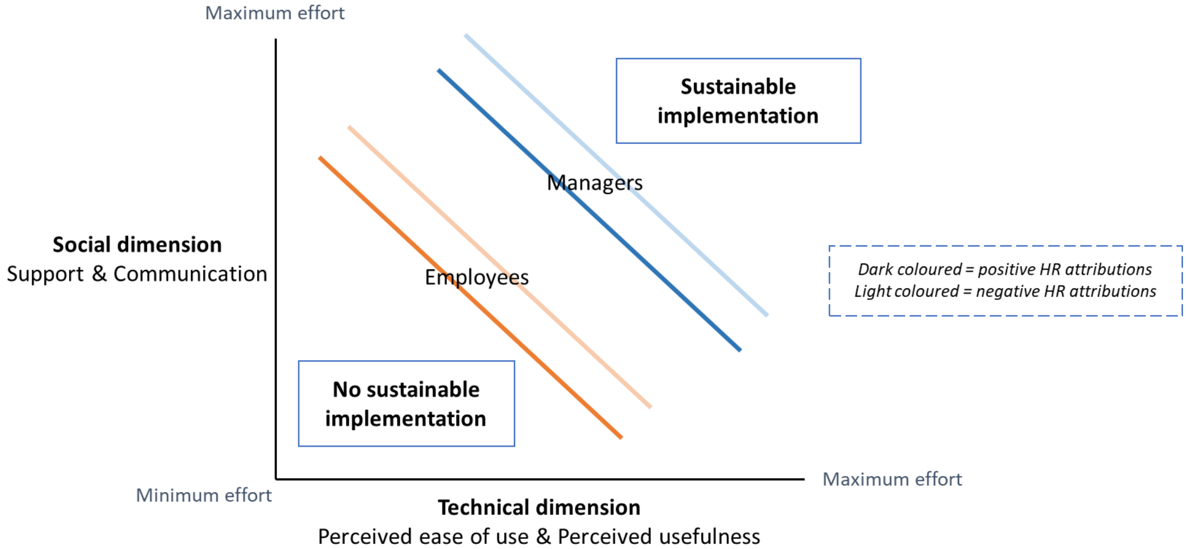

Figure 6 – e-HRM implementation success based on the concept of sociomateriality including the user's HR attributions

Practical implications

Additionally, this study offers practical implications to HR departments when implementing e-HRM in their organisation. Overall, as mentioned before, while preparing the e-HRM implementation it is wise to differentiate the different target groups based on how they will use the system (material dimension) so the communication and support forms can be designed based on this. Besides, the e-HRM implementation should be seen as a continuous process of development where it should be noted that when technical changes are coming, the organisation should respond to this by setting the right communication and/or support to this. To start with, the organisation will benefit a system that is user-friendly and in which the users will quickly recognise its benefits. Concerning the communication as part of the social dimension, it is valuable to look at other forms of communication than the obvious ones where it is advisable to first have a clear overview of the users' preferences in terms of communication so HR can respond to them. In addition, it appeared that more social presence in terms of communication is preferred which can be translated to, for example, in managers informing the employees about the new system in working meetings placing more responsibility with the managers during the implementation by which managers would feel more involved during the implementation. So, by doing this both the employees and managers would benefit from it.

Moreover, study findings reveal that for employees, more informal support is preferred by the users over formal support. The organisation can anticipate on this by making sure that the right information is spread among the employees by influencing how this informal support would look like. The organisation can for example choose one or two employees at every department who can become experts on the system for the ESS part so employees can easily reach them with their questions. Besides, if many of the same questions arise on one department, this person can also collect them and forward these to someone of HR or the project implementation team. By doing this, these employees do need some kind of extra training to be able to do all of this. However, this can be instead of other formal support sessions for the employees. In this situation, there is also increased social presence which will also benefit the effects of the support. Concerning the support for managers, it is wise to focus especially on formal support where it should be noted that it is important to provide enough in-depth information instead of only the basics. Moreover, before starting the e-HRM implementation the employees and managers have probably already formed their opinion, or HR attributions, based on previous experience (beliefs), the communication about it so far (information), and if it will be beneficial for them as far as they know (motivation). An organisation should try to understand the HR attributions before and during the implementation so the organisation can respond to negative and/or incorrect values of the factors. If HR attributions are negative, this will negatively affect the e-HRM implementation despite of all the effort.

Limitations

This study also faces some limitations. In this research a sample is used of 15 participants including 10 employees and 5 managers of in total 5 different departments. It is known that in qualitative research the sample size is smaller than with quantitative studies as acquiring more data does not necessarily lead to more information. With a critical view, it can be stated that still a larger sample could have been used for this research including several more departments. One of the reasons this is mentioned is because it appeared that all departments work separately of the other departments which indicates that all departments can react differently to the e-HRM implementation which would provide different research outcomes. Another limitation of this research involves the bad previous experiences the users had with IT implementations in the organisation. Therefore, some users were already negatively biased about this e-HRM implementation. Even though this was also included in the HR attributions, it is unknown how the results would differ if this was not the case. Finally, the researcher's background, qualifications and experiences are as stated by Shenton (2004) one of the most important aspects of the credibility of the research. Although the researcher has some experience, there is a possibility that a beneficial difference is made if the research would be conducted by someone with more experience.

Further research

This study also provides input for further research including five different topics. (1) In this research, all managers were obligated to use the new system, while for the employees this is more of voluntary nature. The study findings show that some employees did not know that the system was coming and/or did not use the system in a long period of time, while managers needed it to perform their function. This research is not the first to notice that research outcomes on e-HRM can differ depending on voluntary or mandatory usage. Marler and Dulebohn (2005) indicate that e-HRM is in most cases based on voluntary use, although organisations clearly prefer their employees to use it. Only when used the organisation can benefit from ESS where labour costs can be reduced, data accuracy can be increased, and improvements can be made regarding HR service delivery (Walker, 2002; Marler & Dulebohn, 2005). An e-HRM system can have elements of mandatory use and elements of voluntary use at the same time which is also the case in this research. So, it appears that the mandatory and voluntarily use of e-HRM can impact the e-HRM implementation (Marler & Dulebohn, 2005; Bondarouk, Harms & Lepak, 2017). However, more research is needed on this topic for better understanding.

(2) The organisational climate can also influence the outcomes of e-HRM research as a supportive climate for innovation implementation can be of crucial value according to Klein and Sorra (1996) where the individuals gain an open mind towards innovations instead of showing immediate resistance without giving it a chance. In addition, Ruël, Bondarouk and Van Der Velde (2007) state that good support from colleagues and managers, which contributes to setting a supporting climate, and a proper information provision lead to a more positive assessment of the quality of e-HRM.

(3) Continuing on the issue that the e-HRM implementation may work out differently over the departments, this is worth investigating. As already stated by Corley (2004), large organisations need to be careful that each department, horizontally or vertically seen, can have different experiences indicating that the supporting climate and image towards IT can be experienced differently over the departments. If this is the case, appropriate tactics are needed for every situations to get to the same level where e-HRM can be successfully implemented.

(4) As illustrated before, every implementation process is different regardless whether it concerns the same technology. According to Senior and Swailes (2010) the informal part of the organisation containing the more covert aspects of organisational life, is responsible for influencing

the success of organisational change. It includes *"the values, beliefs and attitudes held by management and other employees, the emergent informal groupings that occur, the norms of behaviour which are rarely talked about but which influence how things are done and the politics of organisational life that drive decisions and actions."* (Senior & Swailes, 2010, p. 128). This informal part of the organisation determines the way employees and managers respond to certain changes. With this in mind, it is important to understand what the users need to accept and support the change. Understanding the needs of the e-HRM users can be used for HR to create a work environment in which employees would rather accept than resist the change (Iverson, 1996).

(5) Finally, this research has not taken into account that it was conducted in the health care sector. The health care has certain typical characteristics that may influence research results compared to other sectors. Hospitals are semi-public organisations which are described as *"often unruly venues where professional, ethnic, and organisational cultures mix and churn"* (Goes, 2011). Health care organisations often need changes based on external forces, while externally driven changes are mostly likely to be resisted as they do not originate from the organisation itself (Goes, 2011). Overall, it appears that the health care sector can be characterised by contextual limitations and when it comes to HRM trends, a slow process of change is in order (Boselie, 2010). This HR change also turned out to be a slow process of change with the intention to change, primarily due to external pressure (because the license of the old system would expire). The master thesis of Engbersen (2010), which was also performed in a large hospital, also recognized that the decision making process is slow because of the large hierarchical structure. Engbersen (2010) also recognised many different departments and functions in the hospital which do not have a joint focus since all departments have different subcultures which makes them not aligned with each other. This is also recognised in this research which makes it more challenging to increase the chance of a sustainable e-HRM implementation. Since the health care cannot be compared to other sectors, the outcomes of this research can also not be generalised to other sectors.

Conclusion

When studying the process of an e-HRM implementation, it is important to make a distinction in the population depending on the performed tasks in the new e-HRM system. Concerning the needs of employees and managers, results show that the users value a system that is high in both PEOU and PU where the right amount of communication and support is provided with preference with a high social presence. Note the continuous circle in which an e-HRM implementation is situated where when a technical change is made, a response is necessary of the social dimension presented in support and/or communication which will influence the PU and PEOU of the users. In addition, the technical dimension would not only include the PU and PEOU, but in practice it also includes the system errors which are of a crucial value to be aware of so the organisation can respond to it. Concerning the social dimension, before taking action on the communication and support, the target users' characteristics and context of the user's function should be investigated to design certain forms of communication and support which will fit the target users to increase its effects. The HR attributions also needs to be taken into account as this can influence the usage of the system by its users which makes it relevant for the success of the implementation. When the value of the HR attributions are known and its factors, HR can respond if necessary to turn negative attributions into positive attributions to increase the chance of a sustainable implementation. Also, a model has been developed which shows that it is still possible to achieve a sustainable e-HRM implementation while one of the dimensions lacks effort if the other dimensions can compensate.

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Appendix I – interview scheme (in Dutch)

Zoals u weet, is afgelopen 2 januari het nieuwe AFAS systeem ingevoerd binnen het UMCG wat drie onderdelen bevat: de payroll (salarissysteem), de 'Manager Self Service' en 'Employee Self Service'. Middels dit interview wil ik graag een beeld krijgen van uw mening en ervaringen over de implementatie van het nieuwe AFAS systeem. Ik richt mij op de technische en menselijke aspecten van de implementatie van het systeem. Zoals eerder vermeld in de uitnodiging zal alles wat hierin worden gezegd vertrouwelijk behandeld worden waarbij deze informatie niet bij het UMCG terecht komt.

- Zou ik dit gesprek mogen opnemen om dit voor mezelf uit te typen?
- We hebben als het goed is allebei een uur voor dit gesprek uitgetrokken, komt dit nog steeds uit?

Algemeen

1. Wat is uw functie binnen het UMCG?
2. Hoe lang bent u hier werkzaam?
3. Wat is uw algemene indruk van het AFAS systeem?
4. Hoe gebruikt u het AFAS systeem?
5. Waarom is het AFAS systeem in uw mening geïntroduceerd?
6. Op welke manier wordt over het systeem gecommuniceerd?
    - In het begin en nu?

Het AFAS systeem – ESS en MSS gedeelte

- Wat is uw ervaring met het ESS gedeelte van het AFAS systeem?
    - Wat zijn hierbij positieve punten?
    - Wat zijn hierbij negatieve punten?
    - Kunt u eventueel een voorbeeld geven bij beide punten?
- <u>Voor managers</u>: Wat is uw ervaring met het MSS gedeelte van het AFAS systeem?
    - Wat zijn hierbij positieve punten?
    - Wat zijn hierbij negatieve punten?
    - Kunt u eventueel een voorbeeld geven bij beide punten?
- Wat is in uw mening het doel van het ESS gedeelte van het AFAS systeem?
- <u>Voor managers</u>: Wat is in uw mening het doel van het MSS gedeelte van het AFAS systeem?
- Is er iets wat u heeft gemist in de communicatie, cursussen, etc. voorafgaand dat het systeem online ging?
    - Kunt u dit verder toelichten? Voorbeelden?
- Wat is uw ervaring in <u>het gebruik</u> van het systeem?
    - Wat zijn hierbij de positieve punten?
    - Wat zijn hierbij de negatieve punten?
    - Kunt u eventueel voorbeelden hiervan geven?
- Welke ondersteuning krijgt u voor het systeem?
    - Hoe heeft u gebruik gemaakt van deze ondersteuning?
    - Bij wie kunt u terecht voor technische vragen?
    - Bij wie kunt u terecht voor personeels-/inhoudelijke vragen?
- Op welke manier zou u het ESS gedeelte optimaal kunnen gebruiken?
    - Kunt u hier een voorbeeld van geven?
    - Wat heeft u hiervoor nodig wat u op dit moment niet wordt aangeboden?
- <u>Voor managers:</u> Op welke manier zou u het MSS gedeelte optimaal kunnen gebruiken?
    - Kunt u hier een voorbeeld van geven?
    - Wat heeft u hiervoor nodig wat u op dit moment niet wordt aangeboden?
- Op welke manier beïnvloedt het AFAS systeem uw werk?
    - Kunt u een voorbeeld hiervan geven?
    - Wat vindt u hiervan?

- Kunt u toelichten hoe het AFAS systeem u wel of niet tijd bespaart?

Afsluiting

- Als u terugkijkt op de implementatie van het systeem, wat zou u dan liever anders hebben gezien?
    - Wat waren in uw mening wel positieve punten van de implementatie?
- Zijn er momenteel nog punten waar u tegenaan loopt met het gebruik van het systeem?
- Om af te sluiten en samen te vatten, vraag ik graag nog een keer naar uw punten op het gebied van de technische en sociale punten: wat heeft u nodig om optimaal gebruik te maken van het systeem?
- Zijn er nog punten die u graag bespreekbaar maakt over het AFAS systeem naar mij toe of naar de organisatie wat we tot nu toe nog niet hebben besproken?

Appendix II – Addition results technical dimension

Section	Subject	Quote
ESS - PEOU	When using the function in the system to claim costs, it is needed to link a specific code to your action. The costs need to be linked to a code which stands for the departments or project the employee is working for. It appears that some participants find this annoying and they do not know where to find this code.	*“Also, several managers have asked me questions about how to declare. So I know how to fill this in and I find it cumbersome. If you've made a business trip abroad and you've spent a night in a hotel, travelled and had refreshments there, you'll find this in three different places.” (EM2)*
		“Often declarations are something you want to do at the end of the day and then you run into something and it doesn't work. People just don’t like this” (EM1)
	Sometimes unclear where to look for something in the system as some functions can be found via different ways.	*“It's all a quest. You might end up with the same thing in three different ways. I find that confusing.” (EM3)*
		“So I wanted to declare my bike, then you know where to go. "My Insite", that's where all the education stuff is, leave. I think that's all clearly stated. At first I thought with that bike, from where should I do that in the system. That falls under tax regulations, you need to know that you'll get 1250 euros back from the hospital. That falls under tax regulations, that sort of thing, if you don't know that, you have to click all those things open.” (EM7)
	Overtime hours cannot be put in the system.	*“Unfortunately, we cannot fill in overtime hours. You can only enter everything that goes off. So if someone works an extra day, I can't enter those hours in the plus line. So that's very impractical. We are now facing that this is an issue. We are currently dealing with people who are pregnant, people who are ill, etc. So then you have people who work extra or start earlier.” (EM8)*
ESS - PU	As mentioned before employees make most use of the function to claim costs and with the implementation of the new e-HRM system, not only the procedure changed but also the date of payment changed. Earlier this payment happened twice a month where now it only happens once a month together with the salary payment. Employees must make their claim before the 15th of the month if they want to receive it within their next salary payment. This is experienced as unpleasant by some employees as this can take a long(er) time before this is paid out while it sometimes involves large amounts of money.	“This is a minor disadvantage with these cost claims because they are only paid together with your salary. So if you submit a claim on the 16th of the month, you will only receive it on the 25th or 26th of the following month. Then you have to wait quite a long time. You have to send it before the 15th, I understood, if you do this, it will be taken into account that month.” (EM4)
MSS - PEOU	Hierarchical roles: Some managers have jurisdiction for too less employees of their department, others have too many and some do not have any	“I'm manager of two departments, with two department heads. And then you immediately see the problems in InSite, because it doesn't make that distinction between two departments, so I've got all my people in InSite mixed up.” (M4)

	jurisdiction at all while they do need to.	"I thought our appointments were super clear. So I don't understand why that didn't go well, because names are missing. You'd map that out, and it would be solved. That would be solved June 1, but it's not. I do not know when it will be solved." (M3)
	Illogical to find certain functions	"What we do encounter, and this also applies to my heads, is that it is sometimes rather illogical where we have to apply for something. Then you think you have done something right but then you get it back because it has to be applied for somewhere else. So that's still unclear, but it's a matter of getting used to it." (M5)
	Only performing one mutation at the same time	"What really is a big disadvantage of the system is that you can only perform one mutation at a time. That means, imagine that someone has been appointed to a project and I want to renew that person and then, after a certain period of time, transfer them to another project. Then I first have to extend that person to a certain date, then I have to wait until it's completely done and only then can I take the second step that I put that person on another project. So I can't do both steps at once." (EM4)
	No history can be found on previous activities or on employees	"Looking back at someone's file is not possible. The other day someone retired and I wanted to give a speech, he had worked here for 45 years. I wanted to take a look at his file to see what he has done in the organisation. But you can't find that in the system, I think it's a shame." (M1)
	Overtime hours cannot be put in the system. So when someone works an extra shift, managers/secretary needs to keep track of this instead of the system.	"In an ideal situation, time registration could also be fully integrated into that system, I think. You still keep track of the work cards, but if you have a good system, it would be great if you don't have to keep track of it anymore. And also if you can retrieve your declarations, that there will be an archive in it, then I don't have the need to keep a shadow archive anymore and that as a department you can see how much money we have spent on declarations in total this year." (8)
	Absenteeism: there is no connection between the system and the company doctor concerning certain appointments or other issues. The connection between the system and company doctor fails.	"I get advice about the situation of a sick employee of the company doctor and I want to upload that in the system, but the system has a questionnaire that I have to fill in with the same topics that I got from the company doctor, but I'm not going to retype as this costs lots of time. The step that the company doctor can fill out directly in the system has not yet been made and I have no idea if that will come yet." (10)
	The link does not work between the MSS system and the company doctor.	"And I signed someone up for a visit to the company doctor last week, this can also be done in the system. You give a reason for this, also in consultation with the employee. That's all very well, but then you don't get any feedback from them. You will only receive a message that the request has been made, but I already knew that. Then you get a message that my application has been picked up or something. But I don't get a message that an appointment or something like that has been made. So I will contact the employee again if she has already received an invitation. But then I have to remember this, well, you write that down on a note or something. That's just not convenient. You already have so many things to think about." (EM6)

Appendix III – Addition results social dimension

Section	Subject	Quote
Communication	All users of the system were informed about the implementation via a letter and brochure they received at their home address. However, while some of the interviewees were aware that the system was coming, others mentioned they were not or barely aware of the arrival of the system. This might be explained by the fact that letters have been returned and are still coming back as the home address was not correct of the employees.	"We still get letters from people who didn't give their home address, so those letters all end up here and they're still coming in. So these are letters dated from December 2018 to all employees explaining that we are switching to a new e-HRM system and including a brochure." (EM3)
	Date of payment has changed for payments of the cost claims which is something employees preferred to be informed about.	"I think it's for the eleventh of the month, but I'm not sure. But I don't think the employee knows. I know this from my financial position. I know approximately when the salary runs. I think the employee would like it very much if it is clear and known what exactly this date is because it can be large amounts of money." (EM2)
	In addition, it appeared that it is unclear where some management forms can be found (and/or need to be uploaded). These forms could earlier be found in the previous personal system. Some mention that it would be logical that this would also be added to the new e-HRM system, however, this is unclear to them which indicates that the communication on this topic was not optimal. In closing, it was mentioned that some small management tasks were changed since the arrival of the system which the managers would have preferred to be enlightened about before or at the beginning of the implementation.	"The leave applications must be submitted by the employees, their manager must approve them. But you can see that these managers then ask themselves what they should do with it, what do I care and how should I know? Well, that's true, they also didn't have to do that before. So you can't just expect those people to suddenly find that important. But of course it's also a matter of time. But that hasn't been communicated to those people either. They did have one course, but I don't think that everyone was aware of what was going to happen to them." (EM4)
	Managers had wished for more information to provide their employees of all important matters and upcoming changes.	"If there are these kinds of changes, which of course we don't have very often, I like to do such a lunch break session here at our location at the end or beginning of the day. A moment to get everyone together so that everyone is informed. I actually couldn't do that very well myself, because in fact I was introduced to InSite at the same time as my colleagues. I asked our HR staff, can't one of your people come and explain for half an hour? No, they couldn't, there really wasn't time, because if everyone was going to ask that... Then I thought, but you know, we're a special department, we're located far outside the hospital. I would have liked to have seen that." (M3)

	Managers stimulated their employees to use the system.	“Yes, I certainly explained in the work meetings and departmental meetings what you see and what you can do in the system. I also indicated whether they would like to practice, when they have some time left over or in a night shift or whatever, but click through it, take a look and play with it a bit. That's how you often find out. But it's so user-friendly, if you're a bit computer-skilled and you're not afraid to click on something, then it's ready. You don't even need an explanation like that.” (M2)
	Concerning the start of the implementation where too little communication has been used towards the users.	“Furthermore, I only wonder if people are still embracing the new system, because they were given too little information in the preliminary stages and the interests did not come forward.” (EM2)
	No attention has been paid to the aftercare of the implementation process.	“Aftercare is part of every project and in aftercare you solve what is not going well in the implementation. The worse you do the implementation, the more attention you will have to pay to aftercare. When you see how quickly the aftercare has been phased out, this is not balanced.” (M4)
Support	Floor support team: they were visible to a lot of employees which is positively experienced. However, It stood out that the positive or neutral opinions regarding the floor support were poorly reasoned as none of those users actually made use of the floor support, they only had heard of it and saw them.	“I did see that they were there. Downstairs, they were standing. No, I thought that was okay. It's just easy if you're just in the picture then you'll be approached more quickly. I thought it was okay. But I didn't have to make use of that because I don't have any questions.” (EM10)
	Floor support team: as it concerns a large building other employees mentioned that it was too far away from them in terms of distance which would take too much time for them to go there and make use of it.	“But we're here, on the other side of the hospital, and the staff shop is a long walk from here, so I wouldn't walk there fast either.” (EM1)
	Floor support team: it was mentioned that users who did ask questions at the floor support did not receive any answers causing these employees to develop a relatively bad image of floor support.	“We've had a lot of floor support. I've had one person from floor support opposite of me because that's a flexible workplace. Sometimes I could put my questions to them. But if I'm very honest, I didn't think much of them. They couldn't answer the questions I asked. What I also noticed is that they didn't get a lot of phone calls either. I also noticed that they answered only a few of everyone's questions. The questions were almost always passed on to someone else in the organisation. But this was my perception.” (EM2)
		“So I did it once, that was a phone number just for within the sector, that was also a student. He would write it down and forward it. But I've never heard of that again. Then the trust is immediately gone.” (EM4)

		"A large part of the floor support is already gone. And that floor support can't solve a lot of things either, e.g. if there are errors in the program. I had to change the function with some people and I only got error messages and nobody knew how to solve it." (M4)
	Floor support team: many mentioned they could not find a phone number to contact someone when having questions while floor support did was available over phone.	"I'd rather find out who I can contact for this, there's a phone number. But if you don't find one here, you have to search the whole system for a phone number, or a contact. And that would be handy if you can do that easily with one click. But of course that has to be manned, I can understand that." (EM8)
	Floor support was only available during the start of the implementation and stopped at a certain moment which was found to be too soon. This is found to be annoying for the users of the ESS part who did not had the need to use the system at the very beginning. So when an employee starts to use the system a while after the implementation date and has questions, it could be possible that the floor support team was already disbanded. So it would be desirable for floor support to be longer available than it currently was.	"There has been little or no attention to that. A large part of the floor support is already gone." (M4)
	Walk-in hours were organised before the e-HRM implementation. Besides not knowing what the value of these sessions would be for the individuals, it is experienced as ineffective where more practical information is desired.	"And then we have the new system that you have walk-in sessions, but if you have no idea what's changed then you don't walk to those walk-in sessions." (EM2)
	Instruction videos were also provided which is mainly experienced as time-consuming and too simple which would be needed for employees who do not understand any of IT and for whom this is completely new.	The movies were there, for example, I watched one movie and then I thought I'd figure it out myself. That's for people who are very much in the resistance or who just don't understand it at all." (EM8)
	Based on the interviews, it appeared that managers had different experiences and perceptions towards the support which was provided during the e-HRM implementation. It could be questioned whether support was provided differently over the different sections/ departments of the organisation or whether it is only the differences in the perception of the managers themselves. Some managers find the support provided during the implementation sufficient enough while other would prefer more and better support.	"I thought that was all right. We all went to some kind of lesson, one morning, on the fourth floor. You got to see the basics of the program." (M1) "Most mistakes are made because people don't know what to do, so it's just a training issue and that applies to the management part as well. This part isn't right either and you could have solved that within the implementation. A large part lies in communication and training. I think you clearly should have sent a team along the departments. It's very broadly implemented. You could have planned several sessions for managers and employees. There's been little or no attention to that." (M4)

	Because of these experiences with floor support, MSS users had to find other ways to find answers. Most of them turned themselves to HR as it was unknown who else to contact for help. For employees who partly use MSS, it was it was unclear which support they could go to. All MSS support sessions were only meant for managers, but not for employees using parts of MSS. So for the last group specific support sessions were desired for the specific parts they use.	"… but they didn't know at the time that I was standing next to the manager. So I'd be kicked out of that whole hierarchy. So they never approached me. I do know that my manager was there, he was invited. This was very short before the implementation, I thought. It was all very fast." (EM4)

Appendix IV – other factors

1. *Personal differences/interests/skills*

During the interviews it appeared that every individual acts differently towards the e-HRM implementation. Initially, it was thought to direct this to age differences between the users as this was also mentioned by some of the employees themselves.

"I think age plays a role here." (EM1)

All interviewees are from different age categories. If age would indeed affect the use of the system, it would indicate that all older people would experience difficulties when using the e-HRM system. However, it appeared that this was not the case based on the interviews done. Continuing, it did appear that personal differences, interests and skills can affect individual usage of the system and the ability to cope with the changes that have been made. Every individual acts differently towards IT changes depending on previous experiences, familiarity with IT, interests in it, the degree of importance/usage in their job, and more. All of this is different for each individual, which causes that each individual responds differently to the implementation of the e-HRM system. This can be found in both the technical and the social dimension. So, for the same system, the PEOU can be found positive for one individual while it is negative for another individual. Another example is that when someone is already interested in IT systems, that person is more likely to attend any of the trainings or walk-in hours on voluntary basis while someone who is absolutely not interested in this is more likely not to attend. For the social dimension, this would also mean that users have different perceptions towards the implementation process concerning communication and support. Users who are capable of adjusting easily to the system, will probably need less communication and support than users who are not capable of this.

"And besides that, in my job I work more with these kind of systems, so it's more logical that you sometimes click on some things to find out how it works. It's not weird for me to work with such systems. And I think this is more difficult for others." (EM1)

"You have so many stages of implementation and then I heard the names 'AFAS' and 'Insite' before I started. Until I figured out that Insite is the program you work in and AFAS, yes well that's the name of the ziggo dome somewhere in the neighbourhood of Amsterdam or something." (EM3)

2. Duration employment

Except for two employees, all interviewees are employed at the organisation for quite a long time with peaks up to 38 and 39 years and with an average of 18 years employment (figure 5). This long time employment could influence certain aspects which could influence the success of the e-HRM implementation. Due to their long time employment at the organisation, employees and managers know the organisation well including how (IT) changes at the departments and in the organisation are dealt with in general. This could affect the perception of them even before the e-HRM implementation has started. Besides, because of the long employment, the individuals know a lot of people in the organisation at their own department and others where they for example have worked previously. It appears from the interviews that individuals make use of their own social network when they run into difficulties or questions arise which they cannot solve themselves. This relates to the support offered during the e-HRM implementation. It appears that users would rather ask help within their social network than turn towards the offered support from the organisation. This could affect the success of the implementation negatively as they could be wrongly informed in their own network which could cause wrong usage of the system.

"From my old job I know enough people I can turn to for help. And then I will be redirected to the right person." (EM1)

Interviewee number:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Duration of employment at organisation in years:	13	20	16	18	3	4	38	18	17	26	17	10	15	20	39

Figure 5: overview interviewee's employment at organisation in years.

3. Organisational climate

The organisation being studied is a large organisation which is experienced as slow and inhibiting. Interviewees also mentioned that there are no short lines to reach others in the organisation such as on a higher hierarchical level. Similar to the precious point, these issues negatively influence the perception of the employees towards the implementation success even before the e-HRM implementation has begun as they create their own expectations. Besides, after working at an organisation for a long period of time, individuals have developed a lot of knowledge about the organisation and (probably) experienced many changes on different fronts. Therefore, these individuals are also biased before the start of an implementation before it has even begun based on their experiences in the organisation.

"You can figure it out, but sometimes it costs you extra energy and time. By now I think it has become a bit of an inhibiting organisation. With all the lines, for this you have to be there, and with that you have to be there, etc. It has become much more complex. It's a time when people want to work more efficiently, sometimes because they have to cut back. Anyway, we'll see." (M1)

4. Mandatory versus voluntary use

The new e-HRM system is for employees mostly voluntary to use, unless they want certain tasks done which are only possible by using this system. For managers the system is mandatory to use as they need it to perform their job. Based on the interviews, it turns out that when users can use the system on a voluntary bases, they use the system considerably less than when they are obligated to use it.

One of the possible reasons for this is that using the system is not part of their function itself which is their daily priority. Another possible reasons is when users are not digitally skilled, they lack motivation and interests to use the system. However, it must be paid attention to the fact that these possible reasons are not more than speculations. The group of users not using the system more than what is necessary can possibly negatively affect the success of the implementation. This way users are not aware of all the benefits the system has to offer and when they decide to use certain elements of it anyway the chances are there that no support is offered anymore. In addition, some elements of the ESS part of the system are unclear whether employees are obligated to use it or if it is on voluntary bases. This relates to the communication.

"I know of one employee who said after three months that she hadn't had time for it yet to login the system. Then I sat down with her at a flexplace and we did it together for a moment. That threshold was too high, she said, I'll just get my salary anyway." (M3)

"In addition, there are a lot of possibilities in the system that make me wonder if we are going to use them and if I am obliged to use them. These are things like the working hours schedule, for example, which is not yet clear to me." (EM2)

Appendix V – Additional information results

All results related to the main topics of this research have been described in the chapter. Besides this, other possibly important issues came forward during the interviews which are not directly related to one of the main research topics but could still be important practical matters for the organisation itself. Therefore these topics will be presented below as additional information.

1. <u>Availability system from other devices:</u>
    a. Doesn’t work properly on a phone (negative)
    b. Other places and devices does work well (positive)
2. <u>Changes in tasks</u>: most have extra tasks they need to do (positive and negative experienced). Some less. Impact is different for each individual. “changes in roles” code.
3. <u>Shadow accounting</u>: Since the system is not fully working yet, a lot of users keep records of administration next to the system (for MSS, costs extra time).
4. <u>English version</u>: of the system wanted.
5. <u>Consequences wrong usage</u>:
    a. Some don’t get paid
    b. Costs extra time
    c. Fear of breach of contract
6. <u>Differences in departments</u>
    a. Different interests
    b. Different finance
    c. Different communication
    d. Exceptions
    - *All effects the implementation (should be taken into account)*
7. <u>Many other systems</u>: are still used next to AFAS.