The role of IT in HR policies convergence, divergence, crossvergence: *a process model based on evidence from the Middle East*

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Preface

The report you are about to read is a product of the research done for my graduation assignment for the Master of Business Administration with specialization in International Management.

The preparation of this report would not have been possible without the support and guidance of my supervisors from the University of Twente. I would like to thank Dr. Huub Ruël for two reasons. First of all, for all the work he has done for me in Lebanon. It was really a fantastic experience which I will not forget. Secondly, I want to thank Mr. Ruël for encouraging and inspiring me to set up and conduct the research. Moreover, I would like to thank Dr. Tanja Bondarouk for fulfilling the role of second supervisor.

Furthermore, I would like to thank all the participating companies for their time and effort spent in providing information about their experiences with information technology for HRM purposes. I especially want to thank the American University of Beirut for offering me their facilities.

Last but not least, I would like to express my gratitude to my family and friends who have supported and helped me though my education and thesis.

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Management summary

This explorative study aims to contribute to the debate of convergence-divergence in the field of organization and management practices. Convergence means that technology is the catalyst of society that motivates individuals to develop a values system that is consistent with the technology of their society, while with divergence socio-cultural influence is the driving force that will cause individuals from a society to retain the specific values system of their culture over time. Ralston (1993) extended convergence-divergence with the concept of crossvergence, a combination of both technology and socio-cultural influences. After all those years, the debate is far from concluded, and new directions are still being explored. This study is focused on a relatively new field of research, information technology (IT) and human resource management (HRM). The aim of this study is not to conclude if convergence or divergence takes place, but how does the deployment of IT for HRM purposes, like HRIS and e-HRM, impact the convergence, divergence or crossvergence of HRM policies and practices?

The research was conducted in the Middle East. Due to difficulties like funding and limited access to data, there is a lack of HRM literature focused on the Middle East. However, this does not mean that the region is not familiar with HRM. The literature review shows that several countries are reforming their economy and policies in order to benefit from globalization. One of the main factors that influences the development of HRM is Islam. The state of HRM differs strongly between the countries in the region. Factors like geographical location and the history of a country play a large role in this. Therefore, there is no single HRM model with distinct Middle Eastern characteristics.

Over the years the role of IT has increased. In the early days it was nothing more than mechanized payroll activities. Nowadays, IT for HRM purposes, like HRIS, are advanced systems used to improve HRM in terms of administrative and analytical purposes. The rise of the internet in the mid-1990s led to a new way of delivering HR services, also labeled as e-HRM. One of the functionalities of e-HRM is to provide employees with applications that allow them to modify and update their personal records. e-HRM is also used to improve (strategic) decision-making. Companies implement e-HRM to reduce costs, improve the quality and timeliness of HR service, and to improve the overall organizational efficiency. One of the decisions an organization has to make during the deployment process of IT for HRM purposes is if it wants to develop the system in-house or buy an off-the-shelf package.

The present convergence-divergence, HRIS, and e-HRM studies do not provide insights in how IT functions in an organization. Therefore, a different type of theory has to be used. In organizational studies the role of technology in organizations has been studied for a long time. In an attempt to overcome the limitations of contingency theory in linking technology and organizational structures, a number of studies (Barley, 1986; Orlikowski, 1992, 2000; DeSanctis and Poole, 1994) have drawn on Giddens's (1984) theory of structuration. The essence of structuration is that social reality is shaped by both subjective human actors and institutional properties. This led to a new view of studying this relation, assuming that technology is dualistic in nature.

Technology is a product of human action, it is created by humans, and they are responsible for adjustments to it, but it also has to be used by humans in order to accomplish some action. Later on, technology is seen as an emergent structure, meaning that during their interaction with technology in the daily use, humans enact structures which shape their emergent and situated use of that technology.

Based on the literature, a preliminary research model was developed (see figure 1). The model of Ruël et al. (2004) was chosen as the foundation. The model distinguishes four phases: the first phase is concerned with the HRM strategy and HRM policies. The second phase describes the goals of e-HRM, followed by the types of e-HRM (third phase) and then the outcomes of e-HRM (fourth phase). In the center of the model are concentrated the internal agents, like top and line management. They are involved with each of the phases of the model and are influenced by environmental factors, like competition or religion.

In order to study how technology functions in an organization, the preliminary research model is extended with the perspective of structuration. Therefore, appropriation of DeSanctis and Poole (1994) is implemented in the model. This will function as a central mechanism between each of the phases. As DeSanctis and Poole (1994) describe, Advanced Information Technologies (AITs) like e-HRM are realized by their use. Therefore, internal agents have to make

Figure 1 - Preliminary research model

decisions, based on the group's internal system, between every phase. This is influenced by environmental factors, but also by the experience of the group, their knowledge, etc. Groups or users make choices (deliberately or not) about how technologies or structures are used in their deliberation. Besides this, the use of technology is influenced by conditions, like tools and data available to users, and consequences, intended an unintended, and can lead to three types of enactment: inertia, application, and change.

The data for the research were collected in Lebanon. Based on snowball sampling, four case companies were selected at which semi-structured interviews were conducted. The findings were analyzed by using a narrative analysis. Based on the finding, a final research model was developed.

The findings show that each of the four phases of the preliminary research model are consistent with the Middle East context and therefore do not need any adjustment. The reasons why organizations are using e-

HRM are in line with the goals described in the model; the types of e-HRM and the e-HRM outcomes are all in line with the preliminary model. The only difference is found in the technological and institutional conditions.

One of the main conclusions of this research is that the use of IT for HRM purposes leads to convergence of HRM policies and practices. In three of the four companies, the policies and practices are standardized and not customized to the local situation. The only local factor that plays a role is the legal context. Although convergence takes place, it does not mean that Western policies and practices are simply implemented. Today's companies only select the policies and practices that fit the organization.

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1. Overview

In the area of organization and management practices, the debate of convergence versus divergence has been going on for several decades. The debate started with the increasing globalization. With organizations that are expanding globally and economies that are becoming more and more integrated, questions that were becoming relevant included: are policies and practices adopted to the local situation or standardized in order to create a universal corporate culture? and what are the main reasons for this? Although this debate has been going on for such a long time, there is still no conclusive answer, but the debate is far from irrelevant. Even today, new directions are still being explored.

This study tries to contribute to the debate about whether there is convergence or divergence in the area of management practices. It is focused on a relatively new field of research, information technology (IT) and human resource management (HRM). The aim of this study is not to conclude if convergence or divergence takes place, but how this takes place. It will start from the assumption that increased deployment of IT-based applications for HRM purposes impacts convergence, divergence or crossvergence processes regarding HRM policies and practices.

Most of the studies that contribute to the convergence-divergence debate are focused on the West and the large emerging economies like China and India. A region that is still relatively blank is the Middle East. The main reason for this is not that the region is irrelevant, on the contrary, the governments are reforming their economies in order to catch up with the increasing globalization. Most of the studies that try to focus on the Middle East fail because of the difficulties in conducting research. Despite the difficulties, this research will try to contribute to the body of knowledge about IT for HRM purposes in the Middle East. The host country of this study is Lebanon. The country is influenced by Islam, like most other Middle Eastern countries, but it is also opening up its economy to benefit from globalization. Therefore, it is an ideal host country for this study.

This research aims at modeling the process of how IT deployment for HRM purposes, or in short HRIS, impacts HRM policies and practices convergence, divergence or crossvergence. By means of a multiple case study design, HRIS development, implementation, usage and outcomes are studied. The results are compared with a literature-based model and result in a final model.

1.1 Objectives

The aim of this study was to contribute to the debate of convergence-divergence and to the body of knowledge on HRIS in the Middle East by providing insight into the deployment process of IT for HRM purposes and what its influence is on HRM policies and practices. Does the deployment lead to standardization of work processes, polices, and practices, or is it customized to the local context? Which factors play a role in this process, who is involved, and what goals are the organizations trying to achieve with this deployment? Based on the literature,

a preliminary research model is developed and evaluated with practical findings which result in a final model that can be used for future research.

1.2 Problem statement

Based upon the background of the research and the formulated objective, the following research question was formulated:

How does the deployment of IT for HRM purposes impact the convergence, divergence or crossvergence of HRM policies and practices in Middle Eastern companies?

1.3 Research question

The research tries to contribute to the convergence-divergence debate, therefore the following research question was formulated:

1. *What views are there on convergence-divergence?*

Once the current state of the debate is known, the role of HRM in the Middle East needs to be explored. Therefore, the following research question was formulated:

2. *What are the factors that influence the development of HRM in the Middle East?*

Next, in the past few decades the role of technology has increased in organizations, including the field of HRM. Developments like the internet have led to new ways of delivering HR services to clients. Therefore, the following research question was formulated:

3. *What is the role of IT in the field of HRM?*

Finally, it is important to know how IT functions in an organization. Therefore, the following research question was formulated:

4. *How does technology functions in an organization?*

1.4 Research strategy

The research aims to determine how the deployment of IT for HRM purposes impacts HRM policies and practices, therefore it is inductive in nature. Considering the limited body of knowledge about HRM and IT in the Middle East, exploratory research is the most applicable method. This type of research is useful to find out "what happened" or to seek insights and understanding of a problem and fits the objective of this study (Saunders et al., 2007). Data collection was conducted through several semi-structured interviews and analyzed with narrative analysis.

1.5 Thesis structure

The research is structured as follows. In order to accomplish the research in a systematic way, the "Case study method model" of Yin (2003) was used to conduct the research (see figure 2). Based upon this model, the second chapter contains a preliminary research model based on a literature review in order to solve the problem statement. Next, the methodology used for this research is discussed, and in chapter 4, the findings are presented and analyzed, followed by a discussion and the final research model. Chapter five contains the conclusion, directions for future research, and the limitations of this study.
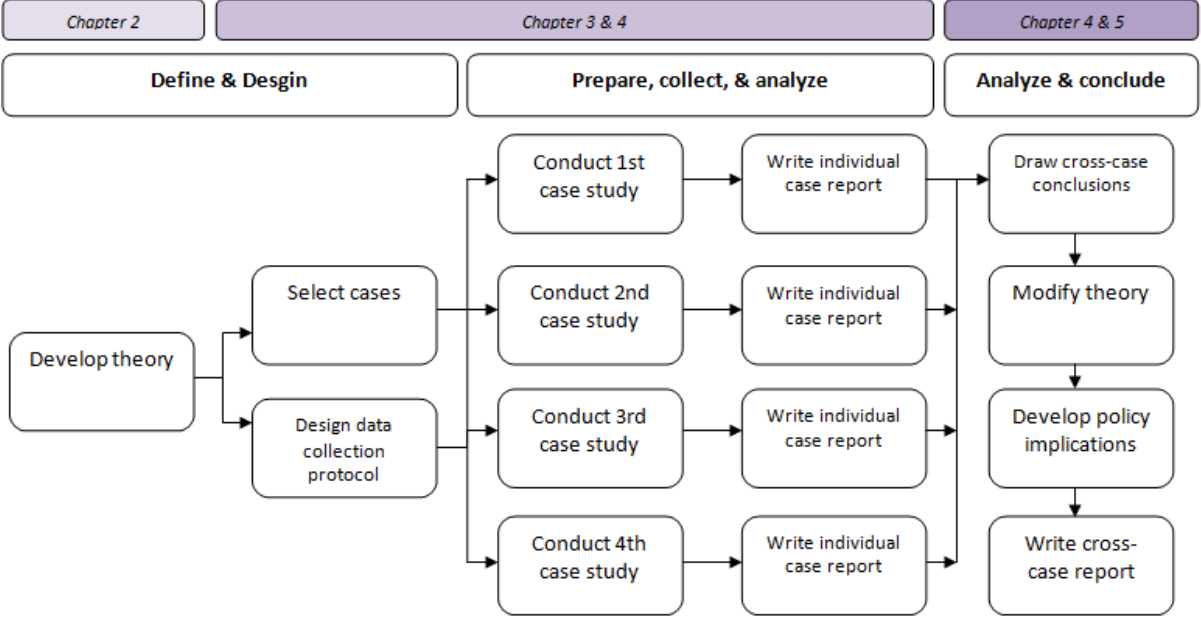

Figure 2 - Case study method, Yin (2003, p. 50)

2. Theoretical background

This chapter is subdivided into five sections. The first section provides an overview of the convergence-divergence debate. Who are the important contributors to this debate, and what are their views? The sections ends with the standardization-localization debate and the question of should this debate be seen as separate from the convergence-divergence debate or not? Next, HRM in the Middle East is discussed, as are the import factors that shape HRM in this region. The third section outlines the development of HRIS and e-HRM. What are the components of a system, what role do they play in HR service delivery, when do companies outsource the system development and the implementation of a system. The fourth section provides a theoretical overview of the role of technology in organizations. In the final section, a preliminary research model is developed based on the information provided in this chapter.

2.1 The convergence-divergence debate

The convergence-divergence debate has been keeping researchers busy since the beginning of the 20th century. Around that time the modern debate started with Veblen's statement that developing countries have an advantage by adapting technologies that are developed by the more mature countries (Elmslie, 1995). Nowadays, the debate on convergence-divergence is widespread in all kinds of research areas. For instance, Baumol (1986) is one of the researchers who initiated the debate on economic convergence.

One of the most quoted definitions of convergence-divergence is from Webber (1969). He defined convergence as: "technological influence is the catalyst that motivates individuals to develop a values system that is consistent with the technology of their society, regardless of the socio-cultural influences"; and divergence as: "socio-cultural influence is the driving force that will cause individuals from a society to retain the specific values system of the societal culture through time, regardless of other possible influences, such as technological, economic and political change" (Webber, 1969; Ralston, 2008, p. 32).

Today's convergence-divergence debate in the area of organization and management practices started in the mid-1980s with increasing globalization. Since that time, economies have become more and more integrated, and there is increasing collaboration between companies. This integration led to a spreading of global management structures and the adoption of similar operating techniques. Hence it can be argued that global organizations are converging (McGaughey and De Cieri, 1999). The following circumstances led to this convergence: the rise of the internet, which simplified the global communication process and data exchange, increased travelling and the deregulation of economic activities by governments (Levitt, 2006; Doz and Prahalad, 1991; McGaughey and De Cieri, 1999). However, opponents of convergence state that despite the structural and technological convergence, cultural differences remain (McGaughey and De Cieri, 1999). One of the first studies on the convergence-divergence theory was done by Adler and Redding (1986). Because of the increasing shift in business from West to East, Adler studied the impact of cultural diversity on organizations in

the Atlantic and the Pacific region. Douglas and Wind (1987) examined whether a global strategy for products and brands is the key to success or whether adaption to the local situation leads to better results.

The debate on convergence-divergence was extended in 1993 with the crossvergence perspective (Ralston et al. 1993). The results of their study showed that the managerial values of a country are often influenced both by culture and business environment. Therefore, they suggested a third perspective, a combination of convergence and divergence: crossvergence. In 1997 Ralston et al. broadened the definition of crossvergence: "crossvergence advocates that the combination of socio-cultural influences and business ideology influences is the driving force that precipitates the development of new and unique values systems among individuals in a society due to the dynamic interaction of these influences" (Ralston, 1997, p. 183).

McGaughey and De Cieri (1999) developed a conceptual framework based on micro-, macro-, and meso-level organizational variables and processes, which offers four different types of convergence-divergence: Assimilation, integration, separation, and novelty. Assimilation takes place when an entity loses a part of its own characteristics by adopting norms from another entity. Integration is a combination of characteristics of two or more entities. Separation purposefully avoids integration of the characteristics of the other entity. Novelty does not maintain its own characteristics nor that from the other entity. In addition to convergence and divergence, McGaughey and De Cieri (1999) introduced '*maintenance'* as a third option: keeping the level of similarity or dissimilarity as a possible direction.

It took researchers up to 2006 to go beyond the concept of crossvergence. In 2006 Spicer offered a new view on the debate. Instead of arguing that organizational logics are converging into one model or diverging into national types, he argued that organizational logics are *transforming* (Spicer, 2006). This means that when organization logics move across space, they undergo a process of transformation. A remarkable aspect of the convergence-divergence debate is that the researchers did not try to extend each other's work; instead, it seems like they more or less ignored it.

2.1.1 Standardization-localization

Besides the convergence-divergence debate, the standardization-localization debate plays a role in the area of organization and management practices (e.g. Porter, 1986; Prahalad and Doz, 1987). This debate is concentrated on the company or meso-level, while convergence-divergence is more focused on the macro-level (Pudelko and Harzing, 2007). Rosenzweig and Nohria (1994) defined standardization-localization as: to what extent are subsidiaries of multinational companies (MNCs) behaving as local firms (localization) versus to what extent are their practices similar to those of the headquarters (standardization). HRM plays an important role in this debate because it deals with the management of people and is therefore seen as the least likely to converge across countries. MNCs are more likely to localize practices than to export country-of-origin practices (Pudelko and Harzing, 2007; Leat and El-Kot, 2007).

Over the years numerous studies examined cross-cultural comparisons of HRM. Some studies examined the transfer of HRM practices, while others were focused on what HRM practices and issues are relevant for a certain country (Myloni et al., 2004). Laurent (1986) argued that HRM practices represent the values of national culture, and because of this a HRM system that is successful in one culture doesn't have to be successful in another. Rosenzweig and Nahria (1994) examined what the influence of national culture is on HRM policies and practices. Schuler et al. (1993) addressed the tension between integration and differentiation between interunit linkages and how to operate effectively in the local environment. Lu and Bjorkman (1997) examined the tension between standardization or localization in joint China-Western ventures using five "classical" HRM practices.

Recently, Pudelko and Harzing (2008) extended the debate. In their study they examined whether MNCs from different countries (Germany, Japan, and the USA) put different emphases on the extent of standardization versus localization of the HRM practices of their foreign subsidiaries. Based on 849 surveys (mostly filled in by highly placed HR managers), they conclude that the debate of standardization and localization needs a major extension. The results showed that standardization not only takes place towards the headquarters but can also take place towards global best practices, wherever they originate from. Based on these findings, they stated that in today's globalized corporate environment, ethnocentric approaches to management are no longer sustainable.

There are several factors that determine the degree of standardization. Prahalad and Doz (1987) mention seven pressures for standardization, like high technological intensity, the presence of multinational competitors, and cost reduction. Parry et al. (2008) mentions four reasons why companies are likely to standardize their processes: HRM practices are more likely to be transferred from the headquarters if they are regarded as superior; HRM policies and practices can be standardized in order to support their wider business strategy; ethical issues like minimum rights and precluding child labor can lead to international standardization of practices; and finally, knowledge transfer, quality standards, and creating an international network can lead to standardization of HRM practices and policies. There are numerous factors which determine the degree of standardization, like the relationship between the headquarters and the subsidiary, organizational culture, authority structures, market characteristics, work norms, etc. (Parry et al., 2008). Local factors that have an influence are unions, labour market, legal and political context (Ngo et al., 1998; Brewster, 1995).

2.2 HRM and the Middle East

There is a long history of trying to understand human behavior in the workplace. For over a century researchers have developed theories and practices to explain and influence the behavior of humans in organizations (Price, 2007). Until the mid-1980s, HRM was better known as personnel management, having an operational focus on technical skills and day-to-day functions like salary administration and recruiting (Storey, 1992; Price, 2007). Since that time, the focus has changed to how to manage people in the long-term interest of the organizations, which is more strategic. Today's concept of HRM in organizations, used around the globe, originates mostly

from the Western world (Welch, 1994; Metcalf, 2007). Despite its wide use, there is no single definition of HRM. Boxall and Purcell (2008) defined HRM as: "all those activities associated with the management of work and people in firms and in other formal organizations" (Boxall and Purcell, 2008, p. 1).

A particular new subfield of HRM is international HRM (IHRM). This is focused on HRM in companies operating across national boundaries (Boxall et al., 2007). Previously, IHRM was mainly focused on the management of expatriates. Later developments considered IHRM as a larger version of the national HRM, operated on a larger scale with a greater complexity of strategic decisions, co-ordination and control demands. The focus of the research field moved to identifying important contingencies that influenced the HR function when a company went international, like the size of the company, the countries it operates in, and the life cycle. More recently, the strategy of the organization was combined with HR policies and practices, also known as strategic IHRM (Brewster et al., 2005).

2.2.1 HRM in the Middle East

The boundaries of the Middle East are not very clear. In the most restricted sense, the region only includes: Syria, Lebanon, Israel, Palestine and Jordan; and in the broadest sense as far as Iran in the east and countries in North Africa up to Morocco in the West (Budhwar, 2007). In this study, the Middle East is taken in the broadest sense.

There is a lack of HRM literature focused on the Middle East (Budhwar and Mellahi, 2007; Robertson et al., 2001). An analysis of articles published in the *Journal of International Business Studies* showed that less than 1% (1990-1999) was concentrated on the Middle East region. The main reasons for the limited interest are: the costs for doing research, difficulties with funding, limited access to data, and problems in gathering fieldwork data (Robertson et al., 2001).

The influence of the West in Arab companies is recognizable. In the early 1990s Arab managers went to the West to become educated, follow training programs, and attend management conferences to learn how to apply Western management methods and techniques in their companies (Atiyyah, 1993). The influence of the outside world on Arab

> "Until recently, Middle Eastern employers have shown little interest in using HRM practices. For many of them, 'personnel' means 'payroll' and not much else"
> (Murphy, 2002, p. 1)

companies affected the way employees behaved in their work environment; in particular, the influence of Western technology played an important role in changing this behavior (Nydell, 1996).

The state of HRM in the Middle East differs strongly per country. There are several reasons for this: the stage of industrialization and economic development differs strongly, the impact of the conflicts in the region, and the influence of the government. Several countries have a militarist and autocratic regime with Islam-based laws. The geographical location of the country also plays a role in the state of HRM. Countries like Morocco, Egypt

and Turkey are more influenced by European culture, while countries from the Gulf Co-operation Council (GCC) like Qatar and Saudi Arabia are strongly influenced by Arab culture (Budhwar et al., 2006).

Islam is a dominant factor and has a major influence on the life of people. The effects are seen in all aspects of daily life, and for most believers the religion comes for tribe and family (Al-Hamadi et al., 2007). According to Leat and El-Kot (2007), Islamic values are consistent with the findings of Hofstede (1980): "these include the emphasis upon the importance of relationships and co-operation which are consistent with low individualism. The emphasis upon hard work and keeping busy, living by the rules, along with consultation as a means of avoiding mistakes, might all be indicative of the desire to avoid uncertainty" (Leat and El-kot, 2007, p. 151). The influence of Islam also affects governments and the development of HRM policies and practices. One of the best examples is Iran. Until 1979 this was one of the most Westernized countries in the Middle East, but after the Islamic revolution, it transformed into a fundamentalist Islam country. The skilled workforce was replaced by a loyal workforce, and technocrats by ideologists. HRM and Western management concepts were no longer needed or necessary (Namazie and Frame, 2007). In another example, the Saudi Arabian government influenced HRM with several laws to force firms to hire local employees in order to reduce unemployment (Mellahi, 2007).

Most countries in the region are realizing that in order to benefit from the globalization, they should initiate reforms. For instance, in Oman the government is stimulating the development of HRM with the initiative "Vision 2020". This initiative is focused on more attention for education and vocational training and a better position for women. The last topic, gender inequality, is an issue that most Middle Eastern countries are struggling with (Al-Hamadi et al., 2007; Metcalf, 2007). In Qatar the program ictQatar is aimed at increasing the technological skills of the youth in hope that the IT-sector will be boosted in the long term (Mansar and Weinberg, 2008). A country that started as one of the first with reforms is Israel. Since the adoption of the free-market approach two decades ago, HRM has gone through a huge transformation. Especially the new industries are adopting new policies and practices faster. For example, employee qualifications, employee development, and incentive programs are more important in high-tech companies than in the traditional industries. An important task of the new industry HRM departments is integrating the (increasing) diverse workforce with the organization's culture (Sagie and Weisberg, 2001).

Another factor that plays a role in the development of HRM is the influence of institutions. According to Mellahi (2007), HRM policies and practices are expected to change because of the monitoring by institutions like the World Trade Organization (WTO) and International Labor Organization (ILO, a UN agency). These institutions are closely monitoring whether the country is respecting and following international labor standards, such as providing a safe workplace, non-discriminatory work practices, and fair treatment of employees.

The findings above are in line with Budhwar et al. (2006). In his book *Managing human resources in the Middle East*, he analyzed 14 HRM studies conducted in the Middle East. Based on this, he states that "there is no such thing as a 'Middle Eastern HRM Model', that is, a single HRM model with distinct Middle Eastern characteristics" (Budhwar et al., 2006, p. 296). However, he recognizes that there are similarities, besides national factors like religion, power distance and collectivism, which shape the HRM function. First, the increased privatization led to changes in the HRM landscape. Second, public organizations have more freedom in dealing with HRM issues, resulting in an increase of individualized HRM practices where salary is based on performance. Third, a change in the role of governments towards HRM by giving companies more freedom to develop their own HRM policies and practices instead of HRM fulfilling a purely administrative role. Fourth, investments in the educational system are lower than expected, which make it difficult to meet the demands of the labor market. Finally, the increasing pressure of the governments to employ locals.

2.2.2 Convergence-divergence in HRM

In the field of IHRM, Brewster is one of the most active researchers who tries to understand the relationship between globalization and HRM. In 2008 Brewster et al. examined if there was similarity, isomorphism or duality in the HRM policies and practices in host countries of multinational corporations (MNCs), based on three schools of thought: global homogeneity/ethnocentricity, local isomorphism, and duality theories. They found evidence for common global practices, but the duality theories provided the best explanation. Brewster conducted more research to explore the relation between globalization and HRM. In 2005 Brewster et al. examined HRM in a global context.

Wöcke et al. (2007) examined the differences between HRM practices of parent MNCs and affiliates. He concludes that there are several factors that influence the need for standardization or localization: variation in the business model, the need to accommodate national culture, and the type and role of organizational culture in the MNC. Additionally, the evolution of a MNC leads to a higher level of standardization of HRM practices.

One of the few studies focused on the Middle East is that by Robertson et al. (2001). They examined the presence of convergence or divergence in the perception about work and demographic differences in three Middle Eastern countries (Saudi Arabia, Kuwait and Oman). For this study they gathered 600 surveys among managers and employees, of which 365 were usable. The results show, based on a survey instrument already tested in the US, Russia and Scotland, that the perception of work for Saudis is divergent in comparison with Omanis and Kuwaitis. For example, younger people have less authority or are kept away from decision-making responsibilities, whilst the results of Oman and Kuwait are more in line with those from the US and Russia (convergent). A possible explanation for this is that the Islamic tradition is deeply rooted in the culture of people living in Saudi Arabia.

2.3 IT for HRM purposes

The first influence of the developments of automation in the area of HRM dates from the 1940s. At that time, companies started to mechanize their payroll activities and employee records. The developments continued,

and new areas, like accounting and finance, were gradually mechanized (DeSanctis, 1986). The landscape of HRIS purposes really started to take shape with the beginning of automation within offices in the 1980s. Orlikowski and Gash (1994) defined IT as: "any form of computer-based information system, including mainframe as well as microcomputer applications" (Orlikowski and Gash, 1994, p. 2). At that time, cost reduction was seen as one of the main advantages of IT, like HRIS, because it could replace employees (Kovach et al., 2002).

Nowadays, IT and the delivery of HRM services are indissolubly connected. HRIS, often integrated as a HRM module of an enterprise resource planning (ERP) system like SAP or Oracle, is used to improve HRM in terms of administrative and analytical purposes (Kanthawongs, 2004). The greatest benefits of implementation of HRIS are the quick response and access to information, and the greatest barrier is insufficient financial support (Ngai and Wat, 2006). However, this does not mean that all organizations are using HRIS and their functionalities. A study by Ball (2001) showed that there is a significant relation between the use of HRIS and the size of an organization and which modules it adopts (like core personnel administration, data management). Based on a quantitative study in 115 organizations in the UK, she found that smaller companies (<500 employees) are less likely to implement HRIS, and if they adopt HRIS, they will mostly use core modules and no additional training and recruitment modules.

Over time, the definition of HRIS did not change much. Walker (1982) defines it as: "a systematic procedure for collecting, storing, maintaining, retrieving, and validating data needed by an organization about its human resources, personnel activities, and organization unit characteristics". Tannenbaum (1990) defines it as: "a system used to acquire, store, manipulate, analyze, retrieve, and distribute pertinent information about an organization's human resources". Boyett et al. (2001) defines it as: "The main intent of a Human Resources Information System (HRIS) is to keep an accurate, complete, updated database that can be used when needed for reports, recordkeeping and automating routines and tasks such as application tracking".

2.3.1 E-HRM

In the middle of the 1990s, the influence of the internet became noticeable in the field of HRM (Ruël and Al-Ibraheem, 2009). HRIS started to become more of an internet-based technology. The focus changed from mainly supporting the HRM department to targeting the effectiveness of managers and employees. The term e-HRM, which stands for electronic HRM, is used for labelling HRM services provided through the use of internet technology. The term ESS, employee self-service, is also used to refer to web-based HRM technology. That e-HRM is not a temporary phenomenon is illustrated by a recent study which examined the adoption of e-HRM in Europe. The results show national adoption rates varying from less than 20 to almost 90 percent of organizations (Strohmeier 2007). A study by Foster (2008) stated that at least 91% of midsize and large US organizations use web-based HRM technology in some way. According to a survey in 2006, the most frequently used application is administrative e-HRM (62% of the surveyed companies) followed by talent acquisition services (61%) and performance management (52%) (CedarCrestone, 2006).

Nevertheless, there is still little consistency or agreement on definitions of e-HRM (Strohmeier, 2007; Bondarouk and Ruël, 2009). Ruël et al. (2004) defined e-HRM as: "a way of implementing HR strategies, policies, and practices in organizations through a conscious and directed support of and/or with the full use of web-technology-based channels" (Ruël et al., 2004, p. 365). In a recent editorial Bondarouk and Ruël (2009) state that after two years of debate with e-HRM researchers, the following definition represents the consensus-based understanding of e-HRM: "an umbrella term covering all possible integration mechanisms and contents between HRM and Information Technologies aiming at creating value within and across organizations for targeted employees and management" (Bondarouk and Ruël, 2009, p. 507).

One of the functionalities of e-HRM is to provide employees with applications that allow them to modify and update their personal records and to enroll in benefit programs. It provides managers with information in the form of reports, tools to improve decision-making, and the systems to ensure compliance with government regulations (Lukaszewski et al., 2008). The main reasons for implementing e-HRM are cost reduction, enabling employees to take responsibility and ownership of their personal information, improving the quality and timeliness of HR service, and improving the overall organizational efficiency (Bell et al., 2006; Lukaszewski et al., 2008)

The use of e-HRM can also lead to a competitive advantage (Ruta, 2009). In today's organizations, creating, maintaining, measuring and leveraging intellectual capital is one of the main sources of competitive advantage. It is hard to imitate, and therefore the focus is shifting more to creating and developing this. Providing employees with specific personalized applications through HR portals means e-HRM can be a key method in the creation of competitive advantage through intellectual capital. Marler (2009) argues that although e-HRM has the capability to be strategic, few will realize its potential to create competitive advantage because in a competitive environment, companies will respond in the same way and won't allow competitive advantages to exist for too long.

Despite all the benefits of e-HRM, there are also some growing concerns about privacy and the potential to violate the employees' confidentiality. Bloom (2001) argues that systems like this may decrease employee satisfaction with the services provided by HR departments. Individuals may be less likely to accept e-HRMs when they perceive that these systems invade privacy or reduce the level of HR service provided. Therefore, acceptance by the employees is crucial in the success of the implementation of such a system (Lukaszewski et al., 2008).

2.3.2 Implementing IT for HRM purposes
One of the first questions that a company should ask itself during the deployment process of HRIS is if it wants to develop the system in-house or buy an off-the-shelf package. According to Kovach et al. (2002), smaller organizations are more likely to outsource activities concerning deployment while larger organizations are

expected to develop the system in house. One of the main reasons to consider outsourcing is to achieve operational costs savings, assuming that external providers based on a larger scale can provide lower costs. It also avoids capital outlays for upgrading HRIS technology, and fixed costs are turned into variable costs because the HR services can be purchased at desired levels. It also allows organizations to easily buy "best in class" services (Coggburn, 2007; Fernandez et al., 2006).

There is no single way for implementing HRIS in an organization. "As with any information system development project, care must be taken to ensure that the system is built properly. Typically, decisions must be made regarding development and design strategy, implementation, and operation and maintenance" (Kovach et al., 2002, p. 46). An important step in the whole process is the design phase. This process depends on the knowledge and perceptions of the persons involved (Tansley and Newell, 2007). It is also important that the goals of the technology are clear. For example, it is possible that it will only be used as an electronic filing system, increasing the efficiency and reducing overhead costs, or as a more strategic approach. Lepak and Snell (1998) distinguishes the levels for the delivery of HR services through the use of technology: operational, relational, and transformational. Operational HR services are the more traditional administrative services like salary administration and record-keeping. Relational HR services support the basic business process, like recruitment, compensation, and training. Transformational HR services have a strategic character, like knowledge management, strategic redirection, and renewal and cultural change. It should be noted that there is no consensus in the literature about the different delivery levels and their description. For example, Lepak et al. (2005) defined them as transactional, traditional, and transformational.

To design the system, a project team can be formed which includes persons for both the HRM and IT department (Tansley and Newell, 2007). Other actors who can be involved are external consultants, management, and internal specialists with knowledge of the old system (Ehie and Madson, 2005; Yusuf et al., 2004). The implementation phase is mostly concerned with testing and making adjustments to the system. Before going live with the system, users need to test the system for acceptance and will require training to understand the new system (Yusuf et al. 2004). In smaller organizations it is possible that some or all phases of the project are outsourced (Kovach et al., 2002).

An important factor in the success of HRIS is user satisfaction. A HRIS which is sophisticated and has a proper architecture can still be unsuccessful because of a complicated interface or limited access to equipment. Haines and Petit (1997) found that support of a HRIS department, providing training, and good documentation are important. They increase the user satisfaction and the usage of the system. When the HRIS support more HRM applications, the user satisfaction is higher. Spreading the implementation of applications over a longer period will lower the satisfaction.

Summarizing, the discussion above recognizes the importance of IT in the delivery of HR services. By using IT, several advantages can be achieved. However, the above discussion does not provide insights into how IT

functions in an organization. In order to answer the research question (how does the deployment of IT for HRM purposes impacts HRM policies and practices?), a different type of theory is needed. Therefore, the next section will discuss theories that are applicable to studying technology in an organization.

2.4 Technology in organizations

2.4.1 The influence of technology on HRM

Despite the wide use of technology within the area of HRM, there were no articles found about IT for HRM purposes focused on the Middle East. Furthermore, there are also almost no studies which address the influence of technology on HRM (Shrivastava and Shaw, 2003; Huselid, 2004). One of the few studies is by Ramirez and Fornerino (2007). They analyzed the influence of technological factors and national culture factors (focused on the educational system) on HRM (recruitment, training, and compensation), using three levels of technology: high-tech, mid-tech, and low-tech. The results are based on 172 usable questionnaires from private manufacturing companies in France (76) and Britain (96), in several sectors, with an average size of 400-1000 employees. According to the results, the recruitment and training process of high-tech and mid-tech firms is more sophisticated than that of lower-tech firms. Low-tech firms do not require high levels of investments in HRM because their jobs require general skills which can be easily purchased on the labor market. The relevance in the diffusion of certain patterns of HRM policies and practices advocates that employees working in intensive technology firms need a creative and adaptive HR management approach.

2.4.2 Theorizing technology in organizations

Standardization leads to the use of the same processes throughout the entire organization. In order to achieve this, the technology, "material artifacts mediating task execution in the workplace" (Orlikowski, 1992, p. 409), will also be standardized. Present convergence studies only recognize that there is standardization and do not address how this process takes place. Therefore, this section will provide an overview of theories that can be used to study technology in organizations.

The role of technology in organizations has been studied for a long time (Markus and Robey, 1988, p. 538; Orlikowski, 1992, 2000). Over the years, different views on technology have developed in parallel with theoretical perspectives on organizations (Orlikowski, 2000, p. 405). She mentions for example: contingency theory, strategic choice models, Marxist studies, symbolic interactionist approaches, transaction-cost economics, network analyses, practice theories, and structurational models. Nowadays, technology and organizations undergo rapid and radical changes in form and function. Therefore, researchers on technology are also using the ideas of innovation, learning, and improvisation for a better understanding of the implications of new technologies on organizations (Orlikowski, 2000, p. 405).

In an attempt to overcome the limitations of contingency theory in linking technology and organizational structures, a number of studies have drawn on Giddens's (1984) theory of structuration (Schuessler, 2006). This led to a new view of studying this relation, assuming that technology is dualistic in nature. Until that time,

researchers assumed that technology would have a deterministic impact on organizational properties. Later on, when the research was more focused on the human aspect of technology, it was seen as an outcome of strategic choice and social interaction (Orlikowski, 1992, p. 399).

2.4.3 Structuration theory

The structuration theory originates from the British social scientist Giddens (1984). The essence of the theory is whether social reality is shaped by subjective human actors or by institutional properties. The theory assumes it is affected by both. He introduced the *duality of structure*, which shows that human actors create institutional properties or structures of a social system, and then these structures serve to shape future human action. So human action is responsible for composing the institutional properties, but it is also considered to be constituted by these institutional properties. Both need to be taken into account when social reality must be explained.

In the context of this theory, structure doesn't mean something concrete or tangible that is constructed like a building or an organization. Structure is a set of rules and resources of social systems, and it cannot exist without human actors. They enact and interpret the dimensions of the structure. Structure is not only subjective but also objective because it provides conditions for human action.
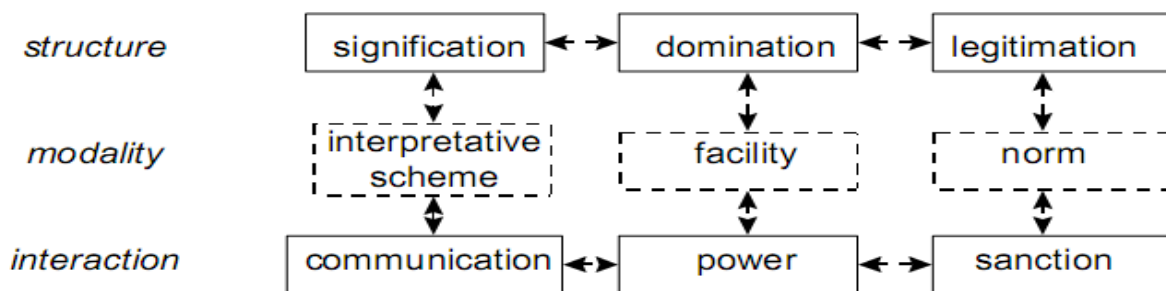

Figure 3 - Giddens's Dimensions of the duality of structure (Adapted from: Rose 2001 p. 4)

The duality between structure and human action can be divided into dimensions (see figure 3). For structure or institutional properties, these are: signification (which represents the rules that inform and define interaction), domination (reflects the fact that all social systems are marked by an asymmetry of authoritative and allocative resources), and legitimation structures (whereby a moral order is articulated and sustained through rituals, socialization practices, and tradition). For action, they are: communication, power, and sanction. The recursive interaction between structure and interaction is mediated through interpretive schemes, facilities, and norms. The three modalities which link structure and interaction determine how the institutional properties of social systems mediate deliberate human action that constitutes social structure. This linkage is referred to as the process of structuration.

2.4.4 Structuration studies

Barley (1986) was one of the first researchers to use the structuration theory of Giddens in order to study the relation between technology and structure. The structuration theory argues that technology can be

constraining and enabling, the so-called duality of structure. Barley examined the introduction of medical devices like a CT-scanner in organizations. In his research he treated technology as a social object instead of a physical object, by which he meant that the context of use defines its meaning, while the technology's physical form and function remain fixed across time and context of use. Structure was seen as process instead of an entity. The results showed that technology triggered structural change, like greater centralization. It also showed that the organizations responded differently to the implementation of the same sort of technology. He concluded that: "technologies do influence organizational structures in orderly ways, but their influence depends on the specific historical process in which they are embedded" (p.107).

Orlikowski (1992) argued that Barley's view on technology isn't applicable to information technologies. Barley states that the technology's physical form remains fixed across time, but according to Orlikowski information technologies may vary by different users and contexts and by the same users over time. Based on *the duality of structure*, she developed the *duality of technology*: Technology is a product of human action, it is created by humans, and they are responsible for adjustments to it, but it also has to be used by humans in order to accomplish some action. She developed the 'structurational model of technology' which shows her new concept of technology in organizations (see figure 4).
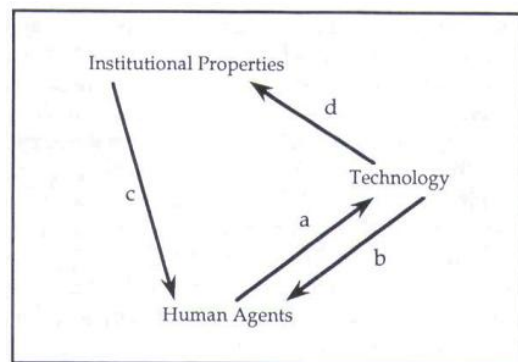

Figure 4 - Structurational model of technology, Orlikowski (1992, p.410)

The model shows three variables and their relations. Arrow A shows the relation between human agents (the designers and users of the technology and decision makers) and the technology. The relation shows that technology is a product of human action, meaning that it can only be developed and maintained by humans. Arrow B, technology is a medium for human action. Arrow C shows the influence of institutional properties (IP), like business strategies, culture, government regulation, competitive forces, and socio-economic conditions, on human agents. Finally, arrow D shows that the interaction with technology influences the institutional properties. To implement technology into an organization, three stages can be distinguished: initial development of the technology, institutionalized use of technology, and ongoing interaction with the technology (Orlikowski, 1992).

However, Orlikowski's model has its drawbacks. She states that technology by itself influences institutional properties, arrow D in her model. But technology without human action cannot have any influence, it remains inanimate and hence ineffectual unless it is given meaning and is manipulated (directly or indirectly) by humans. So on its own, it cannot affect Institutional Properties. By drawing an arrow between human agents and arrow D, the role of human agents will be recognized (see figure 5).

DeSanctis and Poole (1994) adapted the structuration theory to study the interaction of groups and organizations with advanced information technologies (AITs), like group decision support systems (GDSSs). They developed the adaptive structuration theory (AST). "The AST examines the process from two positions: the type 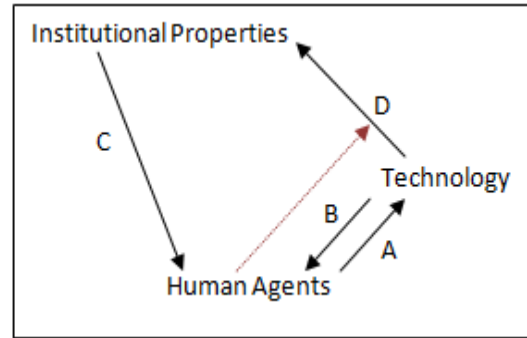of structures that are provided by advanced technologies and the structures that actually emerge in human action as people interact with these technologies" (DeSanctis and Poole, 1994, p.121). Or formulated differently, it is focused on the rules and resources of advanced technologies and how users in small groups adapt to the rules and use the resources. The adaption can lead to different outcomes even in the same context because users can act differently when using the same technology.

Figure 5 - Adjusted structurational model of technology

An important aspect of the AST is *spirit*: "The spirit is the 'official line' which the technology presents to people regarding how to act when using the system, how to interpret its features, and how to fill in gaps in procedure which are not explicitly specified" (DeSanctis and Poole, 1994, p.126). "The spirit of a technology provides what Giddens calls 'legitimation' to the technology by supplying a normative frame with regard to behaviors that are appropriate in the context of the technology" (DeSanctis and Poole, 1994, p.126). The spirit can also provide signification to the users, because it helps users understand and interpret the meaning of IT. Finally, the spirit can also contribute to processes of domination, because it presents the types of influence moves to be used with IT; this may privilege some users or approaches over others.

Another central aspect of the AST is appropriation. By studying appropriation, insights can be provided about how a given rule or resource within a system is brought into action for example. Groups will make judgments about whether a certain structure will be used directly or not, blends with another structure, or how to interpret its meaning. A structure will become stabilized when the users or group appropriates the structures in a consistent way and reproduces them in a similar way over time. DeSanctis and Poole (1994) distinguish four dimensions of appropriation: appropriation moves, faithfulness of appropriation, instrumental uses, and attitudes.

Appropriation moves is concerned with how groups choose to appropriate a given structure. Groups can choose to: directly use the structures, blend the structure to other structures, constrain or interpret the structures as they are used, or make judgments about the structures. *Faithfulness* is about whether groups appropriate the structure faithfully, consistent with the spirit and structural design, or unfaithfully, not in line with the spirit of the technology. For *instrumental uses*, groups might choose to appropriate the features of the technology for different instrumental uses or purposes. The final dimension, *attitudes*, is concerned with what

the attitude of groups is if structures are appropriated. Groups can be confident in using the technology, perceive added value of technology, and be willing to be superior at using the system.

As mentioned earlier, the rapid and radical changes in technologies and organizations are responsible for new concepts, like improvisation and emergence, for studying the use of technology in practice. With similar intentions, Orlikowski (2000) extended the structuration theory on technology by building a practice lens (see figure 6). She did this by going beyond the views developed by researchers like Barley (1986), Orlikowski and Robey (1991), and Orlikowski (1992), who see technology as embodying structures. This means that the structures of the technology are built in by the designers during the development stage of the technology and then she analyzed how those structures are used, misused, or not used by people in various contexts (DeSanctis and Poole, 1994). However, with today's easily reconfigurable technologies. In the extended view she sees technology as an emergent structure, a process of enactment (to constitute/ perform). The view is focused on how humans enact structures which shape their emergent and situated use of the technology during the interaction with that technology in their daily life. This means that structures are not embedded in technology but enacted by users.

The practice lens is built by drawing on social constructivism, which focuses on the interdependence of social and individual processes in the co-construction of knowledge (Palincsar, 1998). However, she differed on two aspects of the concepts of constructivism: that technology embodied structures, as already discussed, and that technologies become stabilized after development. Technology may become routinized because of repeated use, but it cannot become stabilized. Technology is built with the intention of modifying in time. Software is

Figure 6 - Enactment of technologies-in-practice, Orlikowski (2000 p.410)

continuously updated to improve its stability or to fulfill user needs. The practice lens does not make any assumption about the completeness of the technology or its stability.

Technology can be perceived in two ways: the technological artifact, "a set of features bundled together into an identifiable package" (Orlikowski, 1995, p. 2), and the structure of the way humans use the artifact (interaction), the so-called technology-in-practice. The technologies-in-practice are subject to change. This takes place when there is a change in awareness, knowledge, power, motivation, time, circumstances, and the technology. This can take place on purpose, for instance when users download add-ons so they can use new features of their internet browser.
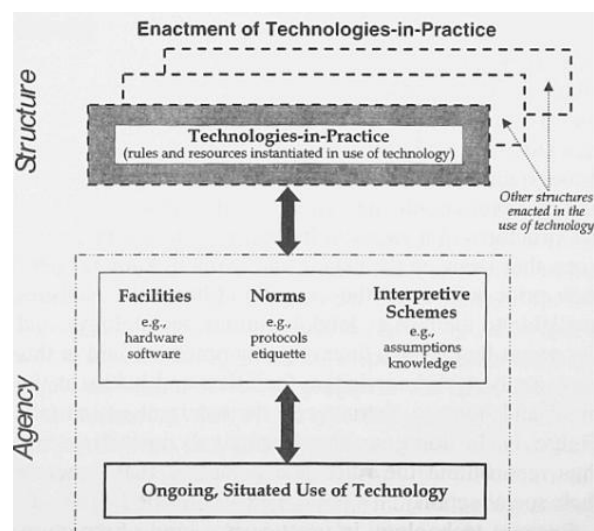
The practice lens, which is based on Giddens's enactment of structures in practice, shows the recurrent interaction between structure and agency. In the context of technology, the three modalities of Giddens are used as: facilities, which are resources like buildings, hardware, and software to accomplish the work; norms, which are rules that define the approved way to accomplish the work; interpretive schemes, which are the tacit and explicit knowledge of the work that is automated (Orlikowski, 2000). The way users enact with the technology is strongly influenced by the users' understanding of the properties and functionality of a technology and by the images, descriptions, rhetoric, ideologies, and demonstrations presented by intermediaries such as vendors, journalists, consultants, champions, trainers, managers, and "power" users (Orlikowski et al., 1995).

The use of technology can lead to 3 types of enactment: *Inertia* – technology used to maintain the status quo; *application* – technology used to modify and improve (work) processes; and *change* – technology used to change the status quo considerably. By using this view, a better understanding of the recursive interaction between people, technologies and social action becomes possible (Orlikowski, 2000, p. 404).

Summarizing, the articles discussed above are based on the structuration theory of Giddens. The essence of the structuration theory is whether the social reality is shaped by subjective human actors or by institutional properties. It recognizes that structures are not separate from the human agents who enact and interpret it. Therefore, technology should not be seen as an external structural device but as a set of rules and resources which are only relevant when people interact with certain elements of the technology. The structuration theory can be useful to explain, for example, how the implementation of the same technology can lead to different results.

The AST (DeSanctis and Poole, 1994) is a proper method to study advanced information technologies in organizations. Based upon the spirit of technology, it argues that AITs are social in nature. The spirit can be identified by treating technology as a text and analyzing sources like the features which are incorporated and the nature of the user interface. This is based on the concept of appropriation, uncovering exactly how technology structures within a specific context are brought into action.

When comparing the structuration model of technology (Orlikowski, 1992) to the view of Orlikowski (2000), an important difference is noticeable. Orlikowski (1992) argues that structures are embedded within technology, and based on this, they analyze how these structures are used in the different contexts. Orlikowski (2000) argues that structures are emergent, humans enact structures during their daily use of the technology which shape their emergent and situated use of that technology. Are users using the software in the way it is designed? Or are they finding new ways to use the technology, circumvent certain structures, or even ignore some structures? Orlikowski (2000) also argues that technology does not become stabilized. Looking at the present technologies in organizations, which are often complex programs used to "control" the organization, like the ERP system, viewing technology as embedded structures seems to be outdated.

2.5 Towards a preliminary research model

Based upon the discussion above, a research model will be built to answer the research question:

How does the deployment of IT for HRM purposes impact the convergence, divergence or crossvergence of HRM policies and practices in Middle Eastern companies?

With deployment is meant: the entire process of designing, implementing, and using IT for HRM purposes in an organization (i.e. technologies like HRIS and e-HRM). This research will use the definition of e-HRM given by Bondarouk and Ruël (2009): "an umbrella term covering all possible integration mechanisms and contents between HRM and Information Technologies aiming at creating value within and across organizations for targeted employees and management" (Bondarouk and Ruël, 2009, p. 507) if ITs are discussed. The terms convergence, divergence, and crossvergence will be discussed in the following sections.

As the foundation of the preliminary research model, the framework of Ruël et al. (2004) will be adopted (see figure 7). This framework is used in his research to study "to what extent the management of employee relationships in companies changes with the planned use of web-tools for HRM purposes and how this change occurred" (Ruël et al., 2004, p. 366). The framework was evaluated based on the findings from five large organizations that had had several years of experience with e-HRM. The framework of Ruël et al. distinguishes four "phases" in the process of using e-HRM. Each phase will be described and viewed through the perspective of structuration. This perspective is useful for information system (IS) research because it is able to connect two important aspects that play a role in the e-HRM context: firstly, how ISs are developed and physically shaped by the actions of the users, and secondly, how the organization is influenced by the implementation of an IS (Schuessler, 2006).

In the middle of the model are situated the *internal agents* who determine and influence the four phases. Orlikowski (1992, 2000) states that technology only comes into existence through human action. Ongoing maintenance by human action sustains the technology, and it is constituted through use. On its own, technology plays no role. Therefore, it seems legitimate to place internal agents in the middle of the model.

The internal agents and the four phases are influenced by the environment. The model distinguishes 6 factors that play a role: competition, technological development, HRM state of the art, labor market, societal developments, and government regulation. Orlikowski (1992) argued that institutional properties (IP) influence human agents in their interaction with technology. She described the following IP: business strategy, ideology, culture, operating procedures, communication patterns, control mechanisms, expertise but also external forces like government regulation, competitive environment, vendor strategies, socio-economic conditions, and knowledge about technology (p.409).

The first phase of the model, *initial HRM strategy and policy*, describes the state of HRM in an organization. When companies start with e-HRM, there will be certain implicit or explicit HRM policy assumptions and practices already in use. There are three types of policies distinguished: bureaucratic policies, found in organizations that operate in a stable environment; market policies, found in organizations that have to respond rapidly to changes in the environment; and clan policies, found in organizations that rely heavily on delivering quality and innovation. This phase can be useful to
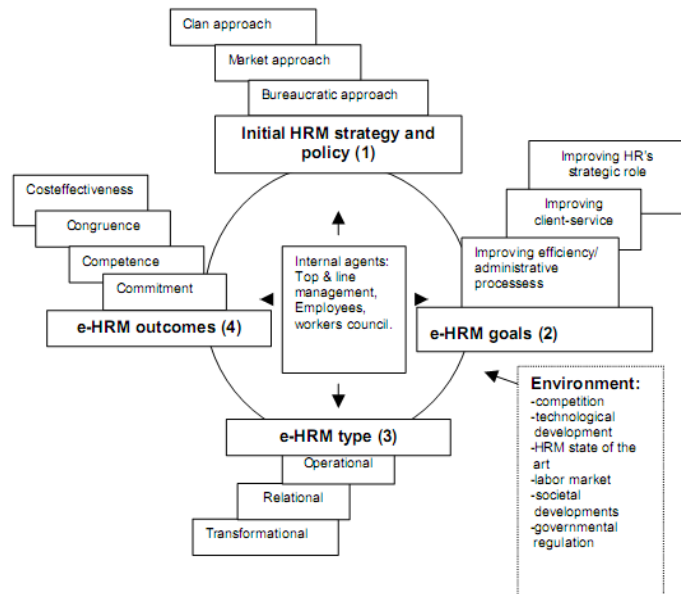

Figure 7 - The e-HRM model, Ruël et al. (2004 p.370)

gain insights into the role of technology within the overall HRM strategy of the company. Are policies and practices transformed or standardized in order to fit e-HRM, or is the technology adjusted to the policies and practices?

The second phase clarifies the *goals of e-HRM*, why are organizations moving to e-HRM? The first goal is to improve the strategic orientation of HRM. Second, the use of e-HRM should lead to a reduction of costs and/or more efficiency. Third, it should lead to an improved service for clients and facilitate the tasks of management and employees. These goals are in line with the benefits/advantages of e-HRM found by Bell et al. (2006) and Lukaszewski et al. (2008) discussed earlier in this chapter. They state that e-HRM is used for improved decision-making and cost reduction, and the service to clients can be improved by offering employees the possibility to easily modify and update their records and enroll in benefit programs.

These goals of the technology can be linked to what DeSanctis and Poole (1994) calls the spirit of technology. The spirit can be used to gain a deeper understanding of the e-HRM goals. The spirit is concerned with questions like, "what kind of goals are being promoted by this technology?" and "what kind of values are being supported?" (DeSanctis and Poole, 1994, p. 127). The spirit of technology provides what Giddens calls legitimation, signification, and domination. For example, technology for HRM purposes can contain the spirit "improving client services". To analyze this spirit with the three modalities of Giddens, the structure of legitimation can provide norms about how to interact professionally with clients and sanctions if these norms are not applied. The structure of signification provides users with interpretive schemes about professional communication to clients and indicates that the use of this technology is aimed at improving client satisfaction. The structure of domination can provide structures that grant persons lower in the organization access to new HRM facilities which not were available before e-HRM was implemented.

The third phase, *e-HRM type*, provides insights about the levels at which the HR delivery takes place. Operational e-HRM is focused on the more traditional administrative services like salary administration and record-keeping. Relational E-HRM supports the basic business process, like recruitment, compensation, and training. Transformational e-HRM has a strategic character, such as knowledge management, strategic redirection, and renewal and cultural change. This phase is closely related to the spirit of technology, described in the previous phase. The goals of e-HRM should be consistent with the e-HRM type. If the spirit is to improve HR's strategic role, the e-HRM type should support this with a transformational e-HRM type.

The final phase, which closes the circle, describes the *e-HRM outcomes*. This should not be confused with the e-HRM goals described in phase two. Ruël et al. (2004) states that e-HRM is a way of carrying out HRM, it is a way of thinking about and implementing HRM strategies, policies, and practices aimed at achieving certain goals: improving the strategic role of HR, improving the client services, and improving efficiency/administrative processes. Besides these goals, there are a number of overall organizational goals to which all e-HRM activities will be directed implicitly or explicitly: (1) commitment – a high level trust between management and employees; (2) competence – the ability of employees to learn and perform new tasks; (3) cost effectiveness – financial competiveness; and (4) congruence – structuring the internal organization, the reward system, and the input-output of personnel in the interests of stakeholders.

Besides the outcomes described in the model, Orlikowski (1992, 2000) mentions that the use of technology through human action can lead to other outcomes, namely intended and unintended consequences. For instance, in order to gain competitive advantage, companies can decide to implement e-HRM (intended consequence). However, by doing this the organization is much more dependent on technology and stability. An interruption or breakdown of the system will disrupt the workflow, it will lead to extra costs, and the service to clients will be disrupted (unintended consequences).

Appropriation (DeSanctis and Poole, 1994) could also be used to find and explain outcomes. By appropriation is meant that AIT is being realized by its use, it is not an artifact which determines the behavior of its users. This means that not all appropriations are determined during the design of a technology. Groups or users make deliberate choices (or not) about how technologies or structures are used in their deliberation. Based on the group's internal system, the relationships and nature of the members inside it, a structure can be appropriated in different ways. Structures can become stabilized if the group appropriates them in the same way and reproduces them in a similar form over time. They can be blended or related to other structures or changed intentionally or otherwise. Structures can be appropriated faithfully or unfaithfully by a group, meaning that they are appropriated in way that is consistent or not with the spirit of the technology. Factors that could influence the appropriation of structures are: the knowledge and experience with the structures, the style of interacting (management styles, etc.), the perception of the knowledge of other members, and finally the agreement on which structure should be appropriated.

The use of the same technology can lead to different outcomes since people will use it differently Orlikowski (2000). Factors that influence the use of a technology are conditions and consequences. Conditions can be subdivided into: *interpretive conditions* (the way that members of a community share meanings and understandings to make sense about their world including the technology they use), *technological conditions* (tools and data available), and *institutional conditions* (social structures that form part of the larger social system within which users work). Consequences can be subdivided into: *process consequences* (execution and outcomes of users' work practices), *technology consequences* (technological prosperity available to users), and *structure consequences* (structures that users enact as part of the larger social system in which they are participating) (Orlikowski, 2000, p. 421). Based on a comparison of conditions and consequences with technology in practice, three types of enactment are distinguished: firstly, *inertia*, there are no evident changes in the process, technology, or structure. People will use new applications occasionally with almost no interest in integrating the application in their daily work processes. One of the characteristics of inertia is a low interest in technology and limited technological knowledge within the organization. The second type of consequence is *application*, there are one or more changes in the process, technology, or structure. People will use the application to improve their daily work processes. There are noticeable changes made to the application and work processes which should result, for example, in increased efficiency in communication or effectiveness in problem solving. Characteristics include a moderate to high interest in technology and a moderate to high level of technological knowledge. The last type is *change*, there is a significant change in one or more processes, technology, or structure. People will substantially change their work processes.

2.5.1. Building a preliminary research model

After having discussed all the phases of the model of Ruël et al. (2004) in combination with the perspective of structuration, a preliminary research model could be developed. The internal agents and the four phases described in the model remain unchanged in the preliminary research model. The model of Ruël et al. (2004) was developed with Western parameters, so therefore it is more interesting to see if these parameters will hold in the Middle Eastern context.

The only aspect of the model that will be changed are the environmental factors. The literature makes a clear distinction between convergence, divergence, and crossvergence (Ralston, 1997) as well as standardization-localization. Considering that both debates are focused on the same outcome, making a clear a distinction between them does not seem necessary. Therefore, if the term convergence-divergence is mentioned, standardization-localization is included. Convergence takes place when the business ideology influence is the driving force for the value system. Business ideology influences, closely related to business activities of a society, refer to economic, political and technological influences. For divergence, the socio-cultural influence is the driving force for the value system. Socio-cultural influences are related to the core social values of a society. Crossvergence is a combination of both influences. Using the terminology of convergence-divergence seems more applicable than the list of factors described in the model because these factors can be divided into

convergence and divergence factors. The IPs of Orlikowski (1992) that influence the human agents in their ongoing action with technology can be used to extend the list of environmental factors.

The model will be extended with appropriation. This will function as a central mechanism between each of the phases. As DeSanctis and Poole (1994) describe, AIT like e-HRM is realized by its use. Therefore, internal agents have to make decisions, based on the group's internal system, between every phase. This is influenced by environmental factors, but also by the experience of the group, their knowledge, etc. Between the first and last phase of the model, it is likely that the knowledge of the group or users will change. For example, the knowledge about IT can increase, which will influence the group's internal system.

The appropriation between the first and second phase will determine the goals that e-HRM should try to accomplish. Between the second and third phase, this process will also take place. Between the next two phases, e-HRM will be used in the daily work processes of the group. During the appropriation with structures, groups or users will make choices (deliberately or not) about how technologies or structures are used. It is possible that some structures will be ignored or circumvented. Structures will become stabilized when the group appropriates them in the same way and reproduces them in similar form over time. Appropriation will not stop after the fourth phase, it is a continuous process. The outcomes will be used as input for the HRM strategy and policies and will continue to develop.

The use of technology is influenced by conditions and consequences and can lead to three types of enactment: inertia, application, and change. The consequences (process, technological, and structural) can be intended or unintended. It is most likely that they take place during the use of the technology. This means that they can be found in the appropriation between the third and fourth phase and lead to different outcomes (intended/unintended). The conditions that influence the use of technology
can be identified within the fourth phase of the model. The use of technology can lead to intended or unintended outcomes.

By using this view of Orlikowski (2000) as a lens to study technology in an organization, a deeper understanding of the role of technology can be achieved. The view describes conditions and consequences that influence the use of a technology. The technological conditions can be identified in the second and third phase of the model. Agents will determine the goals of the technology and the type of e-HRM which eventually provides tools and data for the users. The institutional conditions can be identified in the first and fourth phase of the model. The e-HRM system is part of a larger social system that users work in. The social structures of the social system will influence the technology. For example, the type of HRM policies will be influenced by the environment of the organization.

The interpretive conditions, the way that members of a community share meanings and understandings to make sense of their world including the technology they use, can be identified within every phase. For instance, the e-HRM goals and type will be influenced by the community. It is likely that when a community has minimal knowledge about technology and does not recognize the advantages, the e-HRM type will be less advanced.

Otherwise the technology will influence the members of a community. The interpretive conditions are similar to appropriation and will therefore not be included in the model.

Based on this brief discussion, the model can be "split" into two parts. One side represents the technological conditions, and the other side represents the institutional conditions. The combination of the conditions and consequences can lead to three different types of enactments (inertia, application, and change). These enactments can also be seen as an outcome and are therefore added to the fourth phase of the model. Based on this discussion, the following preliminary research model was developed:
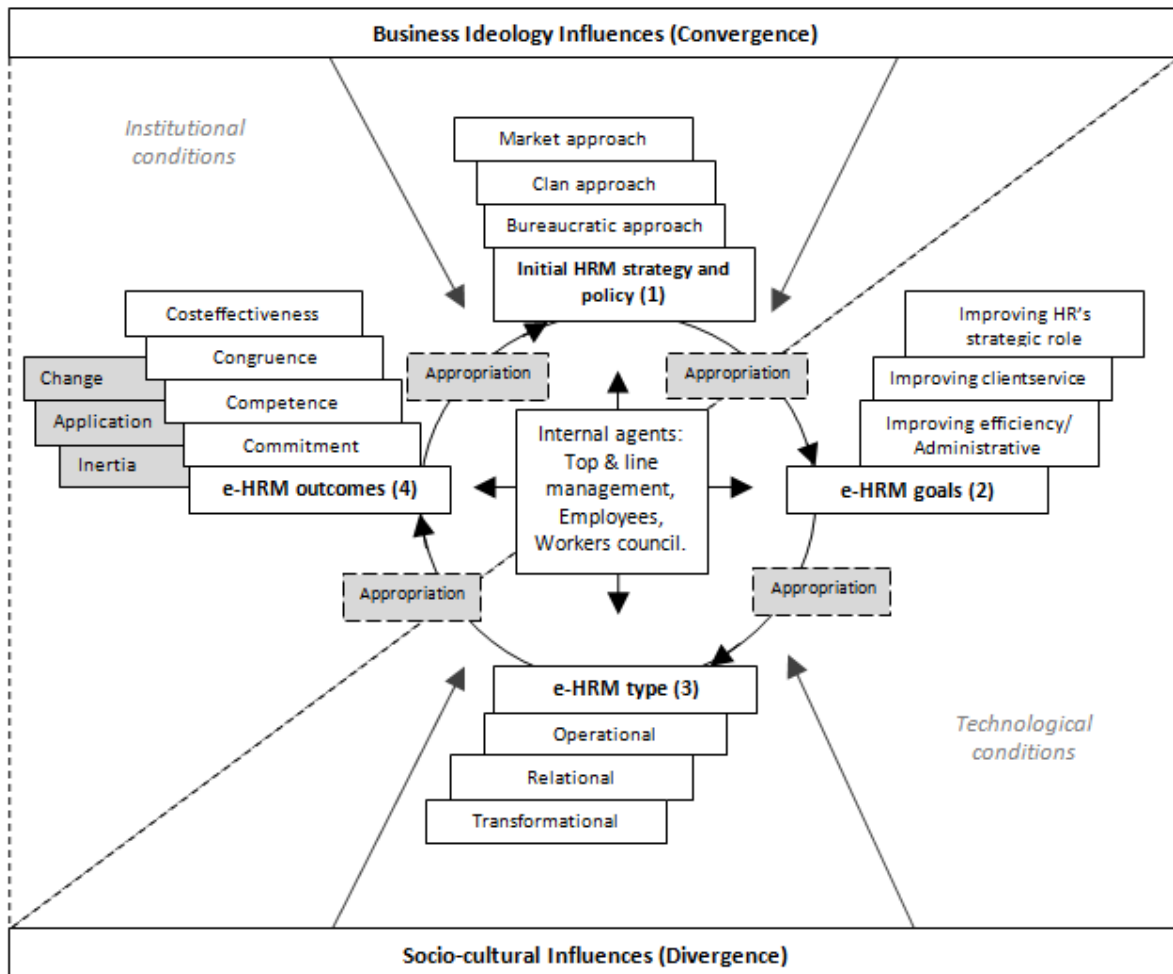

Figure 8 - Preliminary research model

3. Research methodology

The aim of this chapter is to describe how the research was conducted and what research methodology was used. The chapter will start with the problem statement, the research objective, and the research design and end with the data collection method and analysis.

3.1 Problem statement

The increasing globalization since the beginning of the 1980s has resulted in an integration of economies and organizations. But what is the influence of the increasing globalization on the area of organization and management practices? The debate of convergence-divergence has been trying to answer this question for over two decades. However, there is still no final answer, on the contrary, after all these years new directions are still being explored. A relatively new field is that of IT and HRM. The role of IT became noticeable in the early 1980s. Since that time, almost all processes within an organization have been influenced by IT. For HRM this led to the development of HRIS. The rise of the internet in the late 1990s led to new applications and possibilities of communication for HRM service delivery, like e-HRM.

Today's research on IT and HRM is largely focused on the question of whether convergence-divergence takes place and not on how this process takes place. By focusing on how this process takes place, a deeper understanding of the convergence-divergence process should be gained. The challenge is to explore this relatively new topic in a region which is often left unexplored, the Middle East.

3.2 Research objective

The goal of this research is to gain insights into the process of how the deployment of IT takes place in Middle Eastern organizations and what the impact of IT is on HRM policies and practices. By developing a theoretical preliminary research model which will be tested in practice, a model will be developed which can be used for further research in the Middle East.

3.3 Research design

The aim of the research is to build a model, based on theory and evaluated with practical findings. Therefore, the link with design research can be made. What is design exactly? According to Friedman (2003) most definitions of design share three attributes: "first, the word design refers to a process. Second, the process is goal-oriented. Third, The goal of design is solving problems, meeting needs, improving situations, or creating something new or useful" (Friedman, 2003, pp.507-508). Edelson (2000) states that a design procedure should address the following needs: planning and preparation, development, implementation and evaluation, and revision and refinement. A frequently used method in design research to develop a model is the iterative design process. The process distinguishes three phases: design, test, and analyze (see figure 9). The process should be repeated several times before the research design becomes mature. Based on the iterative design process combined with the needs described by Edelson (2000), the following 4 phases are completed when building and testing the research model:

Phase 1: In this phase, based on the planning and preparation needs of Edelson (2000), a literature study was conducted. The first objective was to confirm that the present literature does not explore the influence of convergence-divergence on IT for HRM purposes. The second objective was to collect all the "ingredients" needed for the development of the research model. For example, to understand how technology functions in an organization, theories of Orlikowski (1992, 2000) and DeSanctis and Poole (1994) were explored.
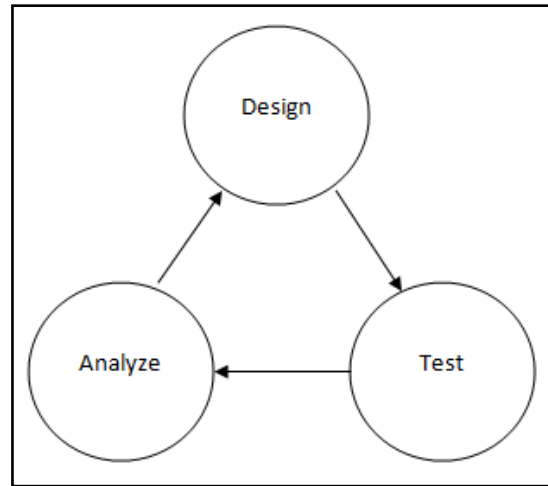

Figure 9 - Iterative design process, Zimmerman (2003)

Phase 2: After having divined the problem and analyzed the theory, this phase started with developing the preliminary research model. This is in line with the design phase of the iterative design process and development need of Edelson (2000). The foundation of the model is based on the research model of Ruël et al. (2004). The goal of this research is to understand how convergence-divergence influences IT for HRM purposes. Therefore, using a model that has already been evaluated in practice and describes the involved actors, external influences, and four phases that play a role in the development of e-HRM seems appropriate. The external influences are changed in order to make a clear distinction between the convergence and divergence influences.

The model is extended with the perspective of structuration (Orlikowski 1992, 2000; DeSanctis and Poole, 1994). The structuration view will be used to provide insight about how technology functions within an organization. By using this perspective within the four phases of the model, more insight should be provided about how the technology functions within the organization and what the influence of convergence-divergence pressures is.

Phase 3: This phase is based on the implementation need of Edelson (2000) and the test phase of the iterative design process. This phase is used to qualitatively measure the usefulness and applicability of the model. Qualitative methods are based on meanings expressed through words and are therefore useful to provide insights into e-HRM development process. The most suitable method would be a case study because a case study is the most appropriate research type to answer the so-called "how" questions: "how does the deployment of IT…" (Yin, 2003). A case study is defined as: "a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources for its evidence" (Robson, 2002, p.178). Yin (2003) added to this that between the phenomenon and the context, the boundaries are not clearly evident.

In a case study design it is very common to use a multiple-case study. A main advantage of having multiple cases is that the findings can be compared which each other, and this leads to reliable results, also called triangulation. The case study has five components that are important for a research design (Yin, 2003):

1. The research question;
2. Its propositions;
3. The units of analysis;
4. The logic linking the data to the propositions;
5. The criteria for interpreting the findings.

The literature also mentions some limitations of the case study (Yin 2003 p.10). It is for example hard to generalize from one or a few case studies. Another problem which is often seen as one of the greatest concerns is the researcher who is not following procedures systematically. A frequent complaint is that case studies take too long and lead to massive documents. Also, case studies are criticized for the lack of scientific rigor. Despite its applicability, there are some limitations which should be mentioned which influenced the design of this study. The Lebanese companies were reluctant to participate in research, and those who were willing to cooperate were cautious in providing company-specific information. This obstructed the conduction of an accurate case study. A possible solution could be found in the multiple mini-case study strategy described by Van Aken (1994): the depth and magnitude of sources within one case is limited, but the number of different cases should be relatively large. This should be combined with a full case study with a larger number of sources with more depth (Van Drongelen, 2001). However, this study failed to provide a case with a larger number of sources, and therefore the mini-case strategy is not fully applicable. The cases used in the research can be viewed as mini-cases.

Phase 4: This phase is based on the evaluation, revision, and refinement needs described by Edelson (2000) and the analysis phase of the iterative design process. The first step was to evaluate the interviews of the first case company with the research model. The findings were compared with each phase of the model, the internal agents, and the external influences. The outcome of this evaluation was used as the input for the second case company. The outcomes of that evaluation were used as the input for the third case company, and so on. For example, an outcome of the interviews with the first case company was that the system was customized to their own preferences. This outcome was used as the input for the second case company, by questioning to what extent the recruitment process could be customized. After completing all the interviews, an overall view could be provided and could be used for refinement of the model.

3.4 Data collection and analysis

This section will start with some background information of the host country, followed by the techniques and methods used.

3.4.1 Background of the host country: Lebanon

Lebanon is situated between Syria and Israel, bordering on the Mediterranean Sea. The size of Lebanon is about one-third of Belgium, and it has a population of almost 4 million people. Some 95% of the population is Arab in origin (EIU country profile, 2008). The culture is strongly influenced by the dominance of the French, which granted Lebanon independence in 1943, after 23 years of mandate over the country. Since that time the government has adopted a more democratic form which stimulated a more open society (Dirani, 2006). In terms of Geert Hofstede's cultural dimensions (1993), the culture of Lebanon is characterized by a collectivist society in which family and loyalty play an important role. Leaders have virtually total power and authority and aim at developing rules and laws in order to strengthen their leadership instead of democratic leadership. The society has a low level of tolerance of uncertainty and does not willingly accept change. For an Arabic country, Lebanon has a very large population of Christians (39%). While 60% of the population are Muslim, in other Arab countries this percentage is around 95%. The internet usage in Lebanon is around 40%, which lies above the average in the Middle East (23.3%)[1]. The country has with a literacy rate of 90% and with 14% of population educated to university level, one of the most skilled and well-educated labor forces in the region. The turmoil in its recent history has led to an emigration of young skilled workers and created a shortage on the domestic labor market (EIU country profile, 2008).

Lebanon has a turbulent history of violence. Between 1975 and 1990 the country faced a civil war with devastating effects on the economy and its infrastructure. The defeat of the Christians marked the end of the war and started the hegemony of Syria. In the late 1990s the government launched a plan called "Horizon 2000" to rebuild badly damaged infrastructure and restore Lebanon as a regional financial center. Politically, 2005 was an important year with the assassination of Prime Minister Hariri. The assassination was blamed on pro-Syrian forces and led to two new political cleavages: the pro-Syrian ("March 8th") and anti-Syrian ("March 14th") alliances (EIU country profile, 2008). The 34 days of war between Lebanon and Israel in 2006 had major effects on the country. Most of the rebuilt infrastructure was destroyed, and according to a study by the UNDP, the total damage was estimated at 15 billion dollars (Harvy and Saleh, 2008; Fattouh and Kolb, 2006).

The economy can be marked as an open economy. The services sector is by far the most important sector and is responsible for over 75% of the gross domestic product (GDP) in 2006. The main contributors are the financial services, with over 130 licensed banks, and the tourist industry. The tourist sector is regaining its glory of earlier days. With over 1.3 million tourist arrivals, 2008 was the best year for the tourist industry ever. The agriculture sector is an important source for employment, but because of the many small, inefficient companies, it only contributes 5% to the GDP (EIU country profile, 2008). In order to take advantage of globalization, the Lebanese government is trying to reform its economy. They applied in 1999 for membership of the World Trade Organization (WTO). In 2002 the government signed an agreement with the European Union to stimulate trade (Dirani, 2006).

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[1] According to http://www.internetworldstats.com/stats.htm visited on June 1 2009

3.4.2 Techniques and method

The technique used for selecting case companies is called snowball sampling. The rationale behind this choice is my unfamiliarity with the Lebanese business environment. The connections with the AUB already existed, and from there on possible case companies were found and so on. There were some criteria that limited the selection of case companies. The first condition was that the interviewees of the case companies should be fluent in English. There were no funds for a translator. The second condition was that the size of the company should be reasonable. Ball (2001) states that smaller organizations are less likely to adopt HRIS.

The data collection process was conducted through semi-structured interviews (Saunders et al., 2007). By using this technique, the important themes of this research are covered, although the order of questions may vary. Because of the explorative nature of this study, the use of semi-structured interviews seems suitable since additional questions may be required to explore the research question and objectives. The questions formulated in the interview protocol used during the interviews were not always phrased in the same way, and some questions were left out if they were deemed redundant based on the response of the interviewees. Most of the interviewee were HR managers or vice-presidents. The interviews started with the explanation of the terms HRIS and e-HRM in order to rule out any vagueness. With the remark that the interview should not be seen as an assessment in terms of right or wrong, the risk that the respondents would provided socially desirable answers or would be careful in providing answers should be reduced. Despite this, the chance of socially desirable answers is still present since some interviews were held with several persons at the same time. It is recommended to record or audio-tape the interviews and transcribe tem later (Saunders et al., 2007). However, the business culture of Lebanon is not used to cooperating in scientific studies. To encourage the respondents to speak out freely, the interviews were not recorded. Instead, the interviewer and a secretary took notes. The notes were immediately worked out afterwards to prevent important outcomes being overlooked.

The data were analyzed with a narrative analysis. This method is applicable for studies that use interviews. The technique is useful for studying individuals, groups, cultures, or historical periods. The technique analyses narrative accounts in their original form rather than seeking to fragment them through a process of coding and categorization. Narrative is defined as: "one method of recapitulating past experience by matching a verbal sequence of clauses to the sequence of events which (it is inferred) actually occurred" (Labov, 1972, pp. 359-360). Smith (2000) defined it as: "narrative is an oral, written, or filmed account of events told to others or to oneself, but it is not verbal material that is purely descriptive, disconnected, or abstract". Accounts is defined as: "story like constructions containing description, interpretation, emotion, expectations, and related material" (Smith, 2000, p. 328). Coffey and Atkinson (1999) outlined the structural elements that are often present in narratives: What is the story about? What happened, to whom, whereabouts, and why? What consequences arose from it? What is the significance of these events? What is the final outcome?

4. Findings

The aim of this chapter is to analyze and discuss the findings arising during the interviews. Each case will start with a short description followed by the findings and an analysis of them using the preliminary research model. Finally, the overall outcomes are discussed, and based on this the preliminary research model will be adjusted and refined into a final research model.

4.1 Case 1: The American University of Beirut (AUB)

The American University of Beirut (AUB), located at one of the best spots in Beirut, is a private university that was founded in 1866. The university started with only 16 students and has grown to over more than 7,500 students in 2009. It offers a diverse range of study programs, like engineering, philanthropy and medicine. Medicine is one of the showpieces of the university because it has its own medical center (AUBMC). AUB employs over 3,600 staff, of which 1,800 are active in the medical center. With an endowment of $ 317 million, the university could easily take a place among the top 20 universities of America.

After more than 140 years, the university still has strong roots in the United States. In New York there is an office which fulfills administrative tasks for the university because there are quite a number of US passport holders at AUB, which means that AUB has to deal with different tax codes, the US payroll income tax and the local payroll income tax. The American influence is also seen in the top level of the university, where several managers have American origins.

The HR mission is as follows: "We deliver increased value to AUB by ensuring that the HR resources, knowledge, support and infrastructure are at the level necessary for the faculty and staff to achieve their institutional objectives", and the objective is: "We aim to continuously develop the professional skills, competencies, and potential of the AUB workforce; to channel its work energy and improve its performance with respect to institutional development and the provision of more effective service to present and future stakeholders of AUB"[2].

In 1999, the university started using technology in their HRM process. A legacy system based on VOX pro was built in-house, and after 10 years of continuously updating and maintaining the system, it is still being used. But with a budget which is 50% payroll, shouldn't the university migrate to a more robust system? According to the vice-president of HRM, the answer is no, for now at least. AUB is a product of its time, it was recovering from the civil war, there was no money, things were driven by necessity. After 9/11 people were afraid to come to Beirut for consultancy/support. When it comes to programs like Oracle, until recently these companies were not located in Lebanon, and their programs did not have Arabic translations, which made things more complicated. Even today one could say that the Lebanese civil war is still not over, though there is no shooting. So when it comes to the use of IT, as long as AUB's legacy system meets its needs, which means that it meets the needs of the NY office, it will stay.

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[2] Duplicated from the website of the AUB: http://staff.aub.edu.lb/~webhr/ , visited on June 10 2009

HRM at the university is based on the US benchmark. There are some things that may not be fully applicable at AUB, such as affirmative action, which is not supported by the Lebanese government, and AUB is not a federal employer. Another example is the "Employees Equality Act", meaning that the composition of employees in the company must be a reflection of the society. This act is also not applicable in Lebanon, where the rights for women are just slowly changing. There are also some restrictions of the Lebanese legal context for its HR, like a maximum of 10% of the payroll can be non-Lebanese. The negotiations with unions start on a "different level" than in the West because in Lebanon, half of the union representatives are supporters of Hezbollah.

The introduction of e-HRM (called my-HR) started around the time when the legacy system was built. It is not an advanced system where employees can fulfill all their HR tasks online; e-HRM at AUB means that HR forms can only be downloaded from my-HR, and information like salary payments and vacation days can be viewed online. About 90% of the employees use these two online applications. However, there is no information about the use of other applications. According to the HR VP, employees also use the "personal way" to gain information. Personnel information can be changed online by the employees themselves, but it will not automatically change in the legacy system. This means that the data still has to be entered by hand. At this moment there is no need to have an online Employee Kiosk as there is no cafetaria plan. A problem with the introduction of my-HR was that there are about 400 employees at AUB(MC) who don't have a PC and/or don't speak English. For these employees the middle managers still play a large role in the delivery of HR services.

To develop the skills of their employees, AUB is working on a competence management system for the non-academic employees. To develop this system, AUB employed a manager with sufficient experience to design the content architecture for competence management (job family architecture and a competence architecture): definition, listing competences, selecting competences relevant to AUB. The building process is still in an early stage. The list of competences is based on other national and international universities and companies. A team of internal managers from different departments selected about 100 general competencies and brought it back to a list of 15 competencies (as general as possible) which they thought were most suited to AUB.

The main reason to build in-house was that AUB could not find a system on the market that fit its needs and requirements. For instance, it is important to AUB's HR that the competence management system be able to connect job codes with job descriptions. According to AUB, an off-the-shelf system will not be able to do this. A welcome advantage of in-house construction is that the adoption process requires less time than a ready-made system. Another advantage of building a system in-house, which also applies to the legacy system, is that work processes don't have to be changed, and changes can be made easily. Recently, a special field for life insurance needed to be implemented in the legacy system. Within two hours the field was ready and visible for all employees. According to the IT manager, this could take up to a few days with an off-the-shelf system.

In order to implement competence management successfully, it will take quite an effort, and the HRM VP is fully aware of that. The first step is to train the board of directors, to get an acceptance of a definition of competence management. The competence profiles themselves may be too abstract for many employees. This might mean that the competence profiles need to be explained in simple language, related to the tasks to be carried out. It will take a few years before the competence management system is fully running.

Five years from now, IT-wise, the IT manager expects that AUB may buy Oracle/PeopleSoft and that AUB may be at the beginning of a transformation stage of implementation of Oracle.

AUB analysis

The internal agents that play a role at AUB are mainly the top and line management. The role of the employees can be considered minimal. There are no workers' councils.

Based on the first phase of the model, the initial HRM strategy and policy, the following can be concluded:

The HRM strategy does not include a plan or view about the use of IT or internet in the delivery of HR services. Investments in technological improvements are seen as unnecessary and costly and have a low priority therefore. The in-house constructed system which is continuously updated is a good example. The state of HRM within the organization is strongly influenced by the US roots of the organization, the history of Lebanon, the legal context, and the unions. However, the influence of the last factor seems minimal because unions are rare in Lebanon. The HRM policies are mainly bureaucratic but also partly clan because of the academic-level employees.

The list of competencies for the competence system that is being developed in-house is largely based on competencies that are used by other universities and organizations. Therefore, it could be argued that business ideology influences are the driver for the system because the local culture does not seem to play a role.

For the second and third phases, the e-HRM goals and type, the following can be concluded:

The goals of e-HRM at AUB are hard to notice. The system provides online HR services for the employees. Therefore, it can be argued that the system improves the client-services. However, the online services are very limited, and employees still have to use traditional methods (paper forms, etc.) to complete most of their HR tasks. Furthermore, there is a clear distinction in the delivery of HR services between academic and non-academic staff. HR services for the lower employed staff members are delivered by line managers, while the academic staff uses e-HRM (partly). The e-HRM goal to improve HR's strategic role is not evident. The system is only used for fulfilling operational activities and not for relational activities, like recruiting, and transformational activities. The goal of improving efficiency and/or the administrative processes is also not present. It can be argued that the use of online HR facilities leads to greater efficiency, but the online services are not integrated with the legacy system, so there is no improvement of efficiency. Furthermore, the legacy

system was continuously updated and extended during the last ten years, therefore the stability and the functionalities of the system are questionable.

For the final phase, the e-HRM outcomes, the following can be concluded:
The overall organizational goals described in the model are hard to recognize at AUB. There are no indications that technology for HRM purposes is leading to commitment, competence, cost effectiveness, or congruence at AUB.

During the appropriation, how groups or users use technology or structures, it is interesting to see that the structures of the technology are adjusted to the work processes. Because of the in-house constructed system, changes can be made easily, and instead of the users circumventing the structures or ignoring them, the structures are adjusted. However, this does not mean that all the structures are adjusted. The e-HRM system of AUB offers the opportunity to download all the necessary forms and information. But employees choose to ignore this and use the "personal way" to gain information.

The overall outcomes of e-HRM at AUB are in line with the enactment type inertia (Orlikowski, 2000). There is a low interest in technology (unwilling to invest in a more advanced system), and also the knowledge about technology is limited. The use of technology does not lead to changes in the daily work processes, employees still have to use paper forms, etc. Furthermore, e-HRM is used occasionally or at least there are no indications that e-HRM is used frequently in the daily work processes of the employees.

4.2 Case 2: MTC Touch

MTC Touch has been active in Lebanon since 2004 after the company was offered a 4-year agreement to manage one of the two existing mobile networks. In collaboration with the Lebanese government, it continues to enhance network capacity. MTC Touch is part of the ZAIN Group, with over 16,000 employees and more than 63 million customers, making it one of the largest mobile operators in the Middle East (7 countries) and Africa (15 countries).

ZAIN plays a large role in the delivery of HR services for MTC Touch. The headquarters determines the operating system and the policies and practices. The only authority MTC has is to make minor adjustments in order to fit the local context, like the legal context. For example, paying incentives for employees is based on a general guideline from the headquarters, like specifying the percentages to apply, but MTC customized this to their operating business and added some additional rewards. For the payroll the company is using an Oracle-based, in-house customised system (called Logos). On the corporate level the intention is to use Oracle, but because of the co-operation with the Lebanese government, this is not currently possible. Besides Logos, the company is using a self-service center (HR portal) to offer all the HR services online to their employees.

In the HR portal there are some local functionalities along with standardized HR functions (e.g. check leave balance, business car requests, and benefits online), like blogs and forums where employees can post all kinds of content. Not all employees have access to the self-services system, for example drivers and messengers (the lower level jobs) are excluded. The middle manager plays a large role in providing HR services to these employees. According the HRM manager, the overall level of IT knowledge is high compared with other companies in Lebanon. An important factor in this is the type of company. When it comes to monitoring the HR contribution to the overall business strategy, there is a HR dashboard with functionalities to obtain insights into how HR contributes and how to optimize costs. The dashboard is being continuously developed and updated. For benchmarking, MTC is using GSME's services, which compares telecom companies worldwide.

In order to achieve a worldwide recruitment system for the ZAIN Group, the technological part of the recruitment process is outsourced to the company Hire-solutions. Therefore, MTC is using the readymade application called Sniper Hire. Sniper Hire was implemented at the beginning of 2006. The application is linked to the website of ZAIN/MTC. A project team was installed at the corporate level to select the best application for ZAIN. The project team consisted of internal IT experts, local HR managers, and members from headquarters. All the needs were collected, different countries defined parameters and sent them to the project team. If any of them was not possible, the project team would inform the local context. The employees of the HR department in Lebanon received 5 days of training to understand the program.

In the future MTC would like to have a system that can do everything: access it from home, provide e-learning, integrate the separate applications in one system for all countries. E-learning: the HR department at the corporate level says that this is not a priority.

The opinion of the HR manager in the standardization versus localization debate is that HR science is more Western; for the soft side you can implement the Western model, but you will have to customize it for the local context. For example, in this region relationship is a very important aspect.
In the 1980s-1990s it was just copy the Western practices as quickly as possible; nowadays companies in this region look at them but are more careful in selecting them. Just the ones that fit the company and their view/strategy are implemented. But the HR strategies of the West are still applicable, for example Ulrich and his view of HR roles. The general thinking of Western human research management is good. The Lebanese just change the details.
A popular saying goes like this: one has two options, to learn either at somebody else's expenses or at your own expense. A lot of things are similar for HR issues: you can learn from somebody else's experience, and why not see how it goes? Lebanon does not have a background of researchers, but a background of businessmen.

On the question of whether management practices are converging all over the world, he answers that the systems are the same, the language may differ, but the users are different (their style, how they learn and leadership). According to the HR manager, companies will eventually need to have a HR system. The pressure

of (global) competition and time will force you to use it. Not using such HR systems will make your company slow (information process) and expensive, and you will be left behind. Business will force your hand!

MTC Touch analysis
The internal agents that play a role are mainly the top management (headquarters) and the line management. There is a continuous communication between the headquarters and the local office in Lebanon in order to develop a system which is the best fit for all. The role of the employees can be considered minimal. There are no workers' councils.

Based on the first phase of the model, the initial HRM strategy and policy, the following can be concluded:
Technology plays an important role in the HRM strategy of MTC. The HRM policies and practices are determined by the headquarters. The HRM policies and practices are strongly influenced by business ideology. They are based on a global benchmark. Socio-cultural influences are not found except for the government's influence on the choice of the system. But as the set-up of the system is not influenced by the government, it seems more like a business deal than a local influence. The organization of MTC contains several levels (hierarchical), and the organization must be able to react fast to changes in the environment. Therefore, the HRM policies in use are most likely a combination of market policies and bureaucratic polices.

For the second and third phases, the e-HRM goals and type, the following can be concluded:
The e-HRM goal to improve HR's strategic role and improving efficiency is evident. The output of the system is used as the input for the HR dashboard (a sort of balanced scorecard). The dashboard is used to measure the performance and optimize the costs. However, it should be noticed that there are no examples mentioned or evidence of how the improvement in efficiency is obtained. The e-HRM goal to improve the client services is evident or accomplished with the self-service center. The self-service center offers a single place where all the services can be found and are easily accessible. The service is also improved with local forums.

For the final phase, the e-HRM outcomes, the following can be concluded:
The findings provide no hard evidence that the use of e-HRM results in the overall organizational goals. However, the use of the policies and practices throughout the region should result in cost effectiveness. Furthermore, congruence is likely since e-HRM or the self-service center helps to structure the internal organization. The use of applications like Sniper Hire should result in new ways of performing tasks. The outcome that e-HRM leads to commitment is not found.

Based on the findings, there is no hard evidence that the use of e-HRM supports the overall organizational goals: commitment, competence, cost effectiveness, and congruence. However, the main reason to integrate the two different HRM systems into one is likely cost effectiveness. The policies and practices used are highly standardized, and paper forms are digitalized where possible, which also results in cost effectiveness. Furthermore, congruence is likely since e-HRM or the self-service center helps to structure the internal

organization. The work processes, policies, and practices are the same for all employees in order to serve internal and external stakeholders. The outcome competence, the ability of employees to learn and perform new tasks, is arguable. There is no evidence that support this goal. The system was used from the start in Lebanon and therefore does not provide new tasks because they were already present. However, it is reasonable to assume that the use of e-HRM leads to competence, especially because the system is continuously updated, improved, and extended with new functionalities. None of the findings support the outcome that the use of technology for HRM purposes leads to commitment.

In the appropriation of the technology or structures, the local branch is involved in determining the structures. Based on their findings, managers can suggest improvements, but these suggestions can be ignored by the headquarters. The group's internal system has almost no space to circumvent or ignore structures, and they are most likely appropriated faithfully. However, this does not mean that avoidance or circumvention does not takes place. It is more likely that the findings are too limited.

The overall outcomes of e-HRM at MTC Touch are in line with the enactment change (Orlikowski, 2000). There is a high interest in technology. All the HR policies and practices are available online. The knowledge of technology can also be considered high. e-HRM was used from start in Lebanon, therefore it is hard to argue that the use of e-HRM changed the work processes or the structure. Furthermore, e-HRM is used frequently by the employees in their daily work processes .

4.3 Case 3: Nokia Siemens

Both Nokia and Siemens were individually active for a long time in Lebanon. In 2007 the companies agreed to bundle forces, which led to the creation of Nokia Siemens Networks, one of the world's largest players in the communications industry with over 60,000 employees. The new company has a goal to create a worldwide organization with the same policies and practices for all countries.

Since the merger, the company has been working on the integration of the cultures, work values, and restructuring of the company to create synergy advantages. In the last year the company started on integrating the values into business processes, like performance measurement, leadership programs and new health and safety policies. For this year the organization aims at creating a global culture for the new company. Therefore, 10,000 employees were invited to join an online discussion about the culture and what values it should contain.

Technology is the driver for HR when it comes to e-HR progress. The company is using SAP. All e-HR applications are accessible through the HR intranet, and everything regarding HR can be found there: HR strategy, policies, practices. It is the point of reference for every employee. Basically, everybody has access to the HR system, only cleaners and drivers do not have an account. Some things are online as well as paper-based as the company is 'Sarbanes-Oxley compliant' and thus it is necessary to have some things duplicated.

The migration of the two HRM systems SAP (Siemens) and Datamaster (Nokia) to one system did not always run smoothly. For example, in the beginning Nokia did not have access to the performance management tool used in SAP. Therefore, files had to be managed by Excel for a while and were not stored in the performance management tool. Today Nokia Siemens is still suffering from migration problems as it is hard to get Nokia employees to use the current SAP-based system.

On the local level the influence of the headquarters is significant. All the policies and practices are adopted from the headquarters without any adjustment. For example, for the reward system the grade levels and type of system are similar everywhere within a region (Middle East – Africa), even in Syria, a country not that exposed to globalization pressures so far. However, salary ranges and labor law regulations may result in differences in the applications in use per country. Nokia Siemens Lebanon cannot change anything in its HR procedures that is not initiated and approved by the headquarters. The local branch is not involved as such in new application design and development, but when such an initiative is started by the headquarters, branches in all regions and countries are consulted. They are asked about the necessary requirements or specific wishes of a proposed application or system. The basic assumption is the best fit for all.

The recruitment system is taken as example of implementation without any adjustment. The system was different before the merger. However, the current practice of using the same procedures everywhere is a legacy from Nokia. In case of a job vacancy, the following procedural steps are undertaken: the HR department raises a recruitment request which is sent to the board. Once it is approved, the vacancy is advertised internally first for two weeks, and then externally. For one request four approvals are needed. Applicants are invited for an interview, and the preferred candidate is selected.

When it comes to differences between the pre-e-HR era and the current situation, it is interesting to observe that sometimes the use of a digital system results in inefficiencies and delays that would not necessarily occur if the performance management was done on paper. For example: in case of an extra remuneration incentive requested by an employee, a digital form needs to be filled in and sent to the manager. But if the manager is on holiday, this form gets stuck in his inbox. The result of this procedure could be that the date from which the incentive would become effective will be later than when it is done in the paper-based way. However, there is an HR delivery team at Nokia-Siemens which can be contacted to reroute the form.

Nokia Siemens analysis
The internal agent top management (headquarters) plays a large role in determining the policies, practices, system, etc. The line management, the local branch, is also involved but plays more the role of advisor. There is a continuous communication between the headquarters and the local office in Lebanon in order to develop a system which is the best fit for all. However, best fit for all means in this case the region Middle East – Africa. In the end the headquarters has the final say. The employees are also involved in determining the needs. The workers' councils are not present.

Based on the first phase of the model, the initial HRM strategy and policy, the following can be concluded:

The HRM strategy is strongly focused on providing HR services through the use of IT or internet. All the HR services are available online. The HRM policies and practices are determined by the headquarters and are strongly influenced by business ideology. Socio-cultural or local influences are not found except for the adjustment to the legal context. The organization of Nokia Siemens contains several levels (hierarchical), and the organization must be able to react quickly to changes in the environment, therefore the HRM policies in use are most likely a combination of market policies and bureaucratic policies.

For the second and third phases, the e-HRM goals and type, the following can be concluded:

The first goal, to improve the strategic orientation of HRM, seems applicable. The data from the HRM systems is used to make decisions and to support the organizational process. This is supported by the type of e-HRM. It is not only focused on the operational and relational level, but also on the transformational level. However, there is no information about what the contribution of the systems to the strategic orientation is exactly. This is the same for the goal of cost reduction and/or more efficiency. There are no data or figures which show that cost reductions have been achieved, only some presumptions that standardization and digitalization lead to these benefits. The efficiency of work processes is improved by digitalizing most of its forms and procedures. The technology used for HRM purposes improved the facilities for management and the employees, although not all employees have access to the online HRM facilities.

For the final phase, the e-HRM outcomes, the following can be concluded:

Based on the findings, there is no hard evidence that the use of e-HRM results in the overall organizational goals: commitment, competence, cost effectiveness, and congruence. However, the main reason to integrate the two different HRM systems into one is likely cost effectiveness. The policies and practices used are highly standardized, and paper forms are digitalized where possible, which also results in cost effectiveness. Furthermore, congruence is likely since e-HRM or the self-service center helps to structure the internal organization. The work processes, policies, and practices are the same for all employees in order to serve internal and external stakeholders. The outcome competence, the ability of employees to learn and perform new tasks, is arguable. There is no evidence that supports this goal. The system was used from the start in Lebanon and therefore does not provide new tasks because they were already present. However, it is reasonable to assume that the use of e-HRM leads to competence, especially because the system is continuously updated, improved, and extended with new functionalities. None of the findings support the outcome that the use of technology for HRM purposes leads to commitment.

Besides the outcomes described above, the use of technology leads to intended and unintended consequences. The digitalized work processes sometimes lead to delays in comparison with the old fashion, paper-based way. This can be seen as an unintended consequence. Employees try to circumvent the structures of the system by using, in this case, the HR delivery team.

The overall outcomes of the use of e-HRM are in line with the enactment type change (Orlikowski, 2000). The interest in technology at Nokia Siemens can be considered as high. The organizations uses for the delivery of HR services online channels. e-HRM was used from the start in Lebanon, therefore it is hard to argue that the use of e-HRM changed the work processes or structure. Furthermore, e-HRM is used frequently by the employees in their daily work processes.

4.4 Case 4: Citigroup

Citigroup, present in Lebanon since the 1950s, is one of the largest foreign banks in the country. The sole office, located in Beirut, employs about 50 people and offers a wide range of financial services.

For their HRM activities the company is using PeopleSoft globally. Not all the modules in the system are off the shelf; some were developed in house, while others, like learning and performance management, were developed by third-party sources. The HRM process is strongly influenced by technology. All the HR services are available online through the self-service center and are the same worldwide for all employees of Citigroup. All the web-based applications are connected to PeopleSoft; for example, in the recruitment process, the CVs have to be posted online, through PeopleSoft the manager can select the best CV on the basis of several criteria. HRIS/e-HRM are seen as tools to get things done (faster), they are used to review employees and make decisions. The only real local adjustments to the system are made because of the legal context.

Despite the use of a global system, this does not mean that everybody is working in exactly the same way and that everything is directed by the headquarters. The local offices, like Lebanon, have the authority to make adjustments to the local situation in order to fulfill their needs and requirements. Most of these requirements are found in the legal context. But they also make other adjustments, for
example: in order to improve the user friendliness of the talent management module, it would be better to display useful information like a person's history and strengths and weaknesses on a single page instead of divided over several pages. To make the adjustments to the system, the local office can submit a request to the support desk, and they will determine if the adjustment is applicable is and if it will be implemented. The response time of answering the request depends on how important it is. If there are several countries that request more or less the same adjustment, it will be carried out faster. When an adjustment is carried out, the local office may be charged for it. The request for an adjustment can be placed by a manager or by an employee with the manager's approval. Within the office in Lebanon there are frequently meetings to discuss the system and its functionalities.

The payroll system for the local office in Lebanon is outsourced to a third party. This is because the department and revenues are too small to support a self-supporting administration which is fully adjusted to the local situation and government requirements.

The difference between the West and Lebanon is the culture/people, for example, the family plays a large role in the lives of employees. In order to understand each other's culture, there are diversity weeks when employees can introduce their culture and habits. An example of the influence of the local culture involves salary increases. The Citigroup way of doing this is to send an email with the information to the employee. In Lebanon they have chosen for a more traditional way that fits the culture better. They provide a paper with the wage increase, signed by the officials including stamps, to the employee; this is possible because Lebanon's office is quite small.

Citigroup analysis

Also at this organization the top management or headquarters plays a large role in determining the HRM policies and practices. The line management plays an advisory role. The employees are involved in this process through frequent meetings where the functionalities of the system are discussed. The workers' councils are not present.

Based on the first phase of the model, the initial HRM strategy and policy, the following can be concluded:

IT and internet play a large role in the HRM strategy. All the policies and practices are available online. The HRM policies and practices are determined by the headquarters and are strongly influenced by the business ideology. The only local adjustment concerns the legal context. Other socio-cultural influences are not found. The organization of Citigroup contains several levels (hierarchical), and the organization must be able to react rapidly to changes in the environment, and therefore the HRM policies in use are most likely a combination of market policies and bureaucratic policies.

For the second and third phases, the e-HRM goals and type, the following can be concluded:

The three e-HRM goals described in the model are found at Citigroup. HR's strategic role is improved because the output of the system is used to make decisions and manage the organization. Therefore, the system is not only used at the operational or relational level, but also at the transformational level. The client service seems to be improved because all the services are available online, and there is no need to use other channels to complete HR tasks. The efficiency is improved by digitalizing forms and procedures. However, there are no figures that support this finding.

For the final phase, the e-HRM outcomes, the following can be concluded:

The overall outcomes are the same as with MTC Touch and Nokia Siemens. There is no hard evidence that the use of e-HRM results in the overall organizational goals, but it can be argued that the outcomes cost effectiveness, congruence, and competence are achieved at Citigroup. Also at Citigroup, the outcome commitment is not evident.

In the appropriation of technology or structures, the management of Citigroup deliberately ignores and circumvents structures in order to offer wage increases to employees. The group's internal system decided to ignore the standard procedure and instead use a traditional way of communicating the wage increase.

The overall outcomes of e-HRM at Citigroup are in line with the enactment change (Orlikowski, 2000). There is a high interest in technology. All the HR policies and practices are available online. The knowledge of technology can also be considered high. e-HRM was used from start in Lebanon, and therefore it is hard to argue that the use of e-HRM changed the work processes or structure. Furthermore, e-HRM is used by the employees frequently in their daily work processes.

4.5 Towards a new research model: the implications for the model based on the findings

What conclusions can be drawn from the findings and analysis? The research model starts with the internal agents: top management, line management, employees, and workers' council. It is obvious that the top management, line management, and the employees play a role. The headquarters or the top management plays a large role in determining HRM. The line management or the local branch management provides the top management with advice. The employees supply the line management with information. At AUB the employees' role is marginal. According to the findings, the last group, workers' council, do not exist in the Lebanese context. The literature about HRM in the Middle East also gives no indication that workers' councils play a role. This is in line with Geert Hofstede (1993) who states that leaders have virtually total power and authority. Unions exist, but they have a limited say.

When the outcomes of the analyses of the first phase of the model are compared, it is obvious that there is a difference in the role of IT or internet in the HRM strategy. At AUB technology plays a minor role despite 50% of the budget being spent on payroll. The results of the three other cases show that technology does play an important role in the HRM strategy and the delivery of HR services. A possible explanation for this difference is that AUB is a non-profit organization while the other three are for-profit organizations. This is in line with Hiltrop (1999) who states that high-performing, resource-rich organizations are more likely to invest in HRM while low-performing organizations are more focused on cutting costs. Another explanation could be that the three multinational organizations are more technology-intensive. According to Ramirez and Fornerino (2007), technology-intensive companies are expected to have more sophisticated HRM policies and practices.

Another outcome of the first phase is that in all cases HRM is based on a Western (EU/US) benchmark. Only at MTC is HRM based on a global benchmark. The HR manager of MTC states that the time of simply implementing Western practices is over; instead, today's companies are carefully selecting policies and practices that "fit" them. This is in line with Pudelko and Harzing (2008). They state that standardization not only takes place towards the headquarters, but it can also take place towards global best practices. The only real local influence recognized is that of the legal context. All the organizations adjusted their systems to meet

the local standards. However, the influence of the local culture is marginal. The only example that suggests that this plays a role is Citigroup, where there are special methods for announcing a salary increase.

A contradictory finding is that AUB tried to implement a competence system. The system determines whether an employee is working properly and what skills he should develop in order to make progress in his career. The system is aimed at an individual career development path. However, the culture of Lebanon could be marked as a collectivist society where loyalty plays a large role (Geert Hofstede 1993). Implementing a rational system in a society which could be seen as irrational seems therefore contradictory. Besides Geert Hofstede (1993), the findings of Citigroup and MTC support this with statements that the relations play an important role in Lebanon. The findings support the distinction between policies used in organizations. The three types: bureaucratic, market, and clan approach are applicable.

In consensus with the findings of the first phase, the outcomes of the second and third phases show that the e-HRM type of AUB differs from the three other organizations. The e-HRM type of AUB is operational while the other three have a transformational e-HRM type. Likewise, the e-HRM goals are hardly present at AUB while the outcomes of the multinationals show that most of the goals are present. Nevertheless, the evidence is thin. Lengnick-Hall and Moritz (2003) states that IT for HRM purposes increases the efficiency and effectiveness of the HRM department by standardizing and streamlining HRM processes and by relieving HRM personnel of administrative burdens.

The outcomes of the final phase show that the overall organizational outcomes are hard to recognize. The only case where the findings are slightly different is at AUB. This case shows no indications that the overall outcomes are accomplished or that the organization is trying to achieve them with the use of technology in their HRM processes. The findings of the other organizations show thin evidence that the overall organizational outcomes are accomplished.

Based on the discussion above, what are the implications for the research model? In order to fit the Middle East context, the internal agents should be adjusted. The typical Western workers' council should be excluded from the model. The other internal agents are maintained. It should be noticed that the top management (headquarters) plays the largest role in determining HRM systems, policies, and practices. The three different types of HRM policies are applicable in the Middle Eastern context.

There is a difference between the three multinationals and AUB. Therefore, it seems applicable that a distinction between bureaucratic, market, and clan approach is useful since the environment in which the company operates matters. The e-HRM goals described in the second phase were present at most of the organizations. The findings did not show that other goals are being accomplished. Therefore, this phase does not need any adjustment. The same applies to the e-HRM types. The distinction between operational, relational, and transformational is useful in the Lebanese context. The e-HRM outcomes were not clearly

present. However, no findings suggest other outcomes, and therefore it is reasonable to maintain the outcomes described in the model.

The convergence influences are mainly present in the first and second phases of the model. The business environment influences the type of policies, but also other factors like competition and globalization influence the HRM system, policies, and practices. The findings show that organizations in a competitive environment are more likely to have a HRM strategy that is aimed at delivering HR services through the use of internet or IT, and e-HRM is aimed at improving HR's strategic role, client services, and efficiency. Divergence influences are hardly found in the Lebanese context. The system is not adopted to the local situation, except for the legal context. However, this does not mean that there are no divergence influences. It is likely that during the appropriation of users or groups, convergence-divergence pressures will influence the choice to appropriate, ignore or circumvent structures. For example, it is likely that the behavior of the group's internal system or users is influenced by local habits.

The basic assumption that the institutional conditions are found in phases one and four and that technological conditions are found in phases two and three is arguable. The technological conditions are ascertained in phase three. This determines the functionalities of the system. During the ongoing action with the technology, users determine whether or not to use it. This is likely to be influenced by divergence pressures. The institutional conditions are more likely to be found in the first and second phases. These two phases determine the functionalities of the system and the structures of e-HRM based on the social system. In this study this is mostly influenced by the headquarters and convergence pressures. Therefore, changing the "split" between institutional and technological conditions seems appropriate. Based on this discussion, the following research model was developed:
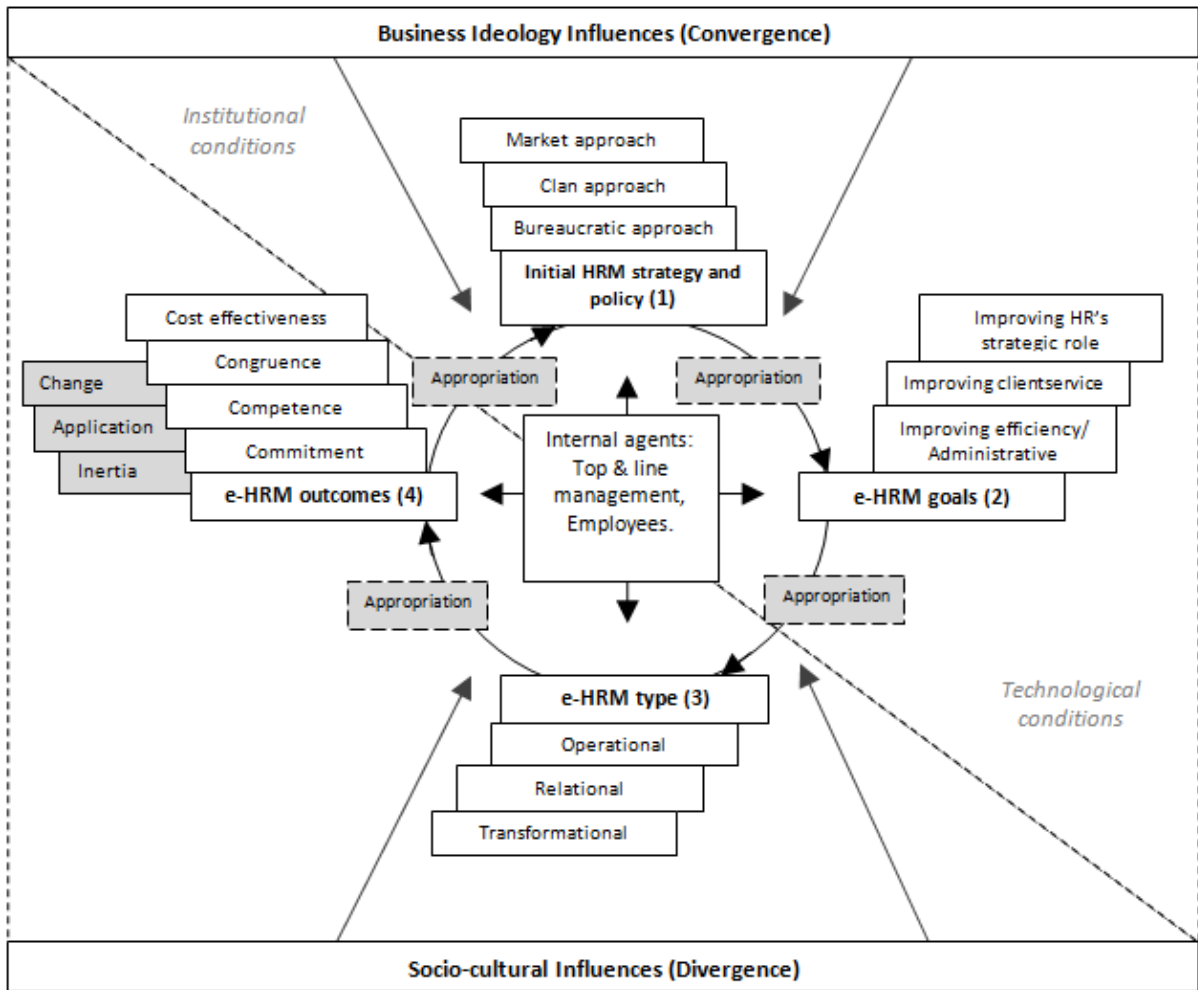
Figure 10 - Final research model

5 Conclusion

The convergence-divergence debate has been going on for over two decades. This study tried to explore a relatively new direction by focusing on IT and HRM. The challenge was to conduct this research in the Middle East by trying to answer the question of how the deployment of mainly Western HRM systems impact the HRM policies and practices. The assumption was that IT-based applications should impact convergence, divergence, or crossvergence regarding HRM policies and practices.

The main contribution of this study is that the research model developed, which is based on the work of Ruël et al. (2004), is applicable in the Middle Eastern context. There are no significant differences between the deployment of IT for HRM purposes in Middle Eastern and Western contexts, for which the model originally was built. The state of HRM in organizations, the goals stimulating organizations to move to e-HRM, the different type of e-HRMs, and the overall organizational outcomes the e-HRM activities will be directed to are recognized in the Middle Eastern context. By using the view of structuration, more insights into the process of how technology functions in an organization can be achieved.

The main conclusion of this research is that the use of IT for HRM purposes leads to convergence. Three of the four cases show that the HRM systems, policies, and practices in use are highly standardized. The headquarters play a significant role in determining this. The systems, policies, and practices are globally deployed in the same way. Does this mean that the local branches simply have to adapt their working processes to procedures from the headquarters? Yes, but the local branches are involved in determining the HRM policies and practices. The three cases show that there is an ongoing interaction with the headquarters in order to develop a system that meets the needs of the local branches. This does not mean that when a local branch suggests an improvement or a certain procedure that this will be implemented. The local needs are combined with the other needs of the region, for the Middle East this is often the Middle East and Africa. Ultimately, this leads to a system which supports the thought "best fit for all".

The only local factor found that influences the configuration of the technology is the legal context. Surprisingly, that is where Islam plays a significant role in the development of HRM policies and practices in various Arab countries; in Lebanon, this influence is not found. An explanation for this might be the French influence at the beginning of the previous century and the fact that Lebanon has a large Christian population.

The outcome of this study also shows that there is a significant difference between the state of IT for HRM purposes in for-profit and non-profit organizations. Despite all four cases having a HRM system that is based on a Western (EU/US) benchmark, the e-HRM system of the non-profit organization was less advanced than that of for-profit organizations. At the three for-profit organizations the systems are used for transformational activities, and for HRM service delivery, they are using a self-service center where all the information for the employees can be found. It is even called "the point of reference for every employee".

5.1 Future research

The Middle East region contains a huge number of unexplored (HRM) topics. Despite the challenges to doing research, like restricted funding and limited data, the region will need further research since most countries are opening their borders in order to benefit from globalization. Thus, the role of the Middle East will increase in the coming years. The developed model is useful for further exploration of HRM in the Middle East.

The model developed here should be tested on a larger scale to confirm the outcomes of this study. It would be interesting to see if the outcomes will hold if typical Lebanese organizations (without a foreign headquarters) are used. Are these companies using IT for HRM purposes in order to achieve goals like cost effectiveness so they can compete in a globalizing environment? Are systems like competence management considered or does this conflict with the Lebanese culture?

I would recommend the use of structuration theories (e.g. Orlikowski, 1992, 2000; DeSanctis and Poole, 1994) for future research in the field of IT and HRM. These theories provide valuable insight into how technology functions within an organization. By applying these theories to the area of organization and management practices, the convergence-divergence debate can be enriched by providing more insight into how the use of IT for HRM purposes impacts convergence, divergence, and crossvergence of HRM policies and practices. What is the influence of the technology on the structures of the organization when it is shaped by the users?

5.2 Limitations

This paper has several limitations:

- Because of the limited number of cooperating organizations and interviews, the external validity of this research is low. Therefore, conclusions should be interpreted with great caution when attempting to generalize.
- The role of the researcher as interviewer could lead to interviewer bias as the interviewer's comments, tone or non-verbal behavior can bias the way the interviewee responds. To reduce the risk of this bias, the interviewer tried to gain the interviewee's trust and mentioned at the beginning of the interviews that the interview is not an assessment to judge in terms of right or wrong.
- The response bias could be a limitation of this study. Because of the "closed" business culture, there is a possibility that interviewees provided socially desirable answers in order not to provide a negative image of the organization.
- Construct confounding could also be a limitation considering that mainly HRM managers were interviewed and not other users of the system or the system developers.
- The findings from the interviews were not presented to the interviewees for comments or approval.

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