

# Best practices of ICT workforce management – a comparable research initiative in Finland

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Human resource management, Information technology, Communications, Finland

## Abstract

This paper describes a project which investigates the human resource management practices that are being used in managing information professionals in ICT companies or ICT departments. The effectiveness of the practices is evaluated from individual and management perspectives. It is assumed that the nature of the contract between the IS professional and the organization influences the effectiveness of different practices. Thus, the notion of "best practice" is seen as context dependent. When writing the paper, the research was still in progress and no results can yet be given. After completing the study, practitioners can use the results to compare their own practices with those that were found to be effective in the nine case organizations. For researchers, the results will provide hypotheses about the relationship between HRM practices and job satisfaction of the IS professionals.

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## Introduction

Finland, as the majority of the rest of the world too, is undergoing a major upward economic trend. Reasons for this are many, but the progress of the modern information and communication technology (ICT) is certainly one key ingredient in the process. However, availability of a knowledgeable workforce has become a major problem in the area. In Finland, government has created a specific program with an aim to educate more people for information professions, due to concerns from the companies in the area, such as Nokia, Sonera, ICL and F-Secure.

Increase in the headcount of the workforce no doubt is the only feasible solution in the long term. In the short run, due to shortage of competent workforce the capabilities of the current staff have to be exploited to a maximum. This is extremely difficult in the current situation, where the ICT staff of many companies is already suffering stress and dissatisfaction with working conditions, and where many new occupational health issues not present in the traditional industrial society are becoming crucial.

As the ICT field is undergoing major upheavals and fast changes, new knowledge on motivations and commitment of the professionals working in this field is therefore is needed. The objective of the HR-MIPS project presented in this paper is to generate new knowledge about the commitment and job expectations of ICT professionals. The project describes HRM practices employed by nine case organizations to manage their information professionals. Special emphasis is placed on evaluating the effectiveness of these

practices, both from the managerial and individual perspectives. As Finland has a relatively advanced ICT industry and high penetration of new technologies, it offers a good ground for research on the HRM of this particular group.

The study design reflects the contemporary view that the goal of modern HRM is a win-win situation. Employee and employer satisfaction should be improved simultaneously, and this should not happen at the expense of the customer. Keeping themselves credible and trustworthy is a major concern for ICT professionals as well as IT companies/departments. With the help of this study we hope to find ways for organizations and individuals to support this endeavour.

## The concept of best HRM practice

In the HRM research, the search for HRM practices is originally inspired by the works of Pfeffer (1994; 1998) who strongly argued for the existence of "best HRM practices" that can increase company profits (Marchington and Grugulis, 2000). Ever since "best HRM practices", "high involvement work practices", "high commitment management" and "high performance practices" have been looked for by several researchers (Wood, 1995; Wood and Albanese, 1995; Huselid, 1995; Pil and MacDuffie, 1996).

The underlying idea of all these models is the existence of a best practice effect suggesting that some HR actions are better than others, and that they have additive positive effects on firm performance. Therefore applying as many "best HR practices" as possible should maximise HRM effectiveness (e.g. Becker and Gerhart, 1996; Martell and Carroll, 1995a; Delaney and

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Huselid, 1996; Guest, 1997; Wood, 1995).

Another key point, that has also proven to be the most tricky one, is the assumption of the universal applicability these practices (Wood, 1995; Guest, 1997; Thompson, 1998). Because of this assumption high expectations are placed on benchmarking HRM models and practices from other companies, e.g. successful competitors in the same industry (Pil and MacDuffie, 1996).

However, not all researchers have been willing to bet on these models as such (see Martell and Carroll, 1995a, b; Guest, 1997; Huselid *et al.*, 1997; Purcell, 1999; Marchington and Grugulis, 2000). A further development, “the HRM bundle approach”, denies universal applicability of the best HRM practices and takes instead the context (environmental, company-bound and group factors) much more into consideration when defining the HRM bundle. This approach is applied also in this study. The underlying idea of this approach is that sustainable competitive advantage is gained only via resources or capabilities that are valuable, rare, difficult to imitate and non-substitutable – an issue more than well known in the ICT companies (see Barney, 1991; Wright and Snell, 1998, p. 769).

The effect of HR practices is expected to be multiplicative in nature: it is not just any, but only an internally consistent and complementary set of HR practices that gives the best results (Becker and Gerhart, 1996). Therefore, it is of utmost importance to understand all the individual factors (e.g. career expectations, alternative career possibilities, family situation, age, etc.), company factors (e.g. life cycle, market situation, location, history as an employer) and external circumstances (e.g. economic fluctuation; labour market situation and supply of needed personnel) that affect the applicability and effectiveness of certain HR practices (Purcell, 1999; Lähteenmäki, 2000).

Thus, in order to be unique, fit and effective the HRM bundle needs to be tied to the company’s history as an employer as much as it needs to be vertically integrated to the strategy and has to take into account the psychological agreement with the employees (see Rousseau, 1995). Therefore one can say that although HRM bundle builds on best HR practices in the industry or concerning the profession, at the company level it formulates a unique architecture of the HRM system rather than consists of a selection of best practices (Becker and Gerhart, 1996).

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## Managerial and individual views on HRM practices

There are several alternative approaches to study best HRM practices, depending on how the effectiveness of HRM is defined and what are the expected outcomes of the best HRM bundle (see Boselie *et al.*, 2000). We can take either a management point of view and tackle the issue from the business strategy process point of view. From this point of view, the following type of questions for building the HRM bundle need to be asked (McDuffie, 1995; Becker and Gerhart, 1996):

- How is HRM strategy linked to business strategy; is it reactive or proactive in nature?
- What are the special competence and other personnel needs placed by the business strategy?
- What are the present core competencies of the company and how do they support the business strategy?
- What is the psychological agreement with the employees?
- What is the inner logic of actions and management culture into which HRM needs to fit?
- Is the business strategy realisable concerning the labour market situation, etc.?

If we take the individual point of view we need to understand how people identify and commit with groups and companies. In the new world of work and boundaryless careers we also need to understand how individual’s career behaviour and turnover intentions reflect his/her inner motivations, age, personality, role expectations, career prospects and family situation (e.g. Mirvis and Hall, 1994; Waterman *et al.*, 1994; London and Stumpf, 1986; Lähteenmäki, 1995; Lähteenmäki and Paalumäki, 1993). The term career-resilient workforce can be used as an illustrative example of the individual point of view. The concept has been introduced by Waterman *et al.* (1994, p. 88):

By a career-resilient workforce, we mean a group of employees who not only are dedicated to the idea of continuous learning but also stand ready to reinvent themselves to keep pace with change; who take responsibility for their own career management, and last but not least, who are committed to the company’s success.

Rousseau’s (1995) model of psychological contracts provides a unifying framework for simultaneous analysis of both managerial and individual views. The psychological contract and organizational commitment, as a part of the latter, are both key concepts when struggling against high staff turnover.

Two basic terms of psychological contracts, and also the ends of a contractual continuum, are transactional and relational.

Transactional contract is based on close-ended time frame and mutual profitability. Relational contract on the contrary is based on confidence, stability and high commitment. In addition to time frame, which refers to the duration of the employment relationship, Rousseau's (1995) 2 × 2 model of the different types of psychological contracts contains the performance requirement dimension. Well-specified performance demands can be combined with temporary employment and long lasting employment is associated with loosely specified job requirements. Furthermore, the model includes also transitional contract, which usually occurs in an unstable situation, and the blend of transactional and relational terms, which is called balanced contract (see Figure 1).

Organizational commitment is one key element, which makes the difference between transactional and relational contracts. Commitment can be defined as follows:

- 1) strong belief in and acceptance of the organization's goals and values;
- 2) a willingness to exert considerable effort on behalf of the organization;
- 3) a definite desire to maintain organizational membership (Porter *et al.*, 1974).

The concept of organizational commitment has been divided into different dimensions by several researchers. One example is the classification into utilitarian (exchange) and moral-psychological commitment. Utilitarian commitment occurs when an employee gets more utility from current employment relationship than is offered elsewhere, the

person is thereby committed. The moral-psychological commitment on the contrary is based on deeper identification with the company (Gaertner and Nollen, 1989).

A three dimensional model of commitment is an another way to approach the concept (Allen and Meyer, 1990). Three components of the model are:

- 1 *affective commitment*, which represents a person's emotional attachment to the organization;
- 2 *normative commitment*, which is based on a person's obligation to the employer organization; and
- 3 *continuance commitment*, which refers to transactional costs when leaving the organization.

According to the reported research results, organizational commitment and absenteeism are negatively related and a linkage between commitment and turnover intentions is equally negative (see Gellatly, 1995; Meyer *et al.*, 1993). Relation between commitment and job satisfaction and also between commitment and job performance in turn is positive (see Mathieu, 1991; Meyer *et al.*, 1993; 1989; Gaertner and Nollen, 1989).

It seems likely that the bundle of best HRM practices depends on the nature of contracts. Practices that are effective in managing transactional contracts can be highly dysfunctional if used in a context where professionals expect relational contracts. In general, a win-win situation can only be achieved if both the organization and the individual have shared views about the nature of contracts and the objectives of HRM in general.

**Figure 1**  
 Types of psychological contracts

		PERFORMANCE TERMS	
		Specified	Not Specified
DURATION	Short Term	<b>Transactional</b> <ul style="list-style-type: none"> <li>■ Low ambiguity</li> <li>■ Easy exit/high turnover</li> <li>■ Low member commitment</li> <li>■ Freedom to enter new contracts</li> <li>■ Little learning</li> <li>■ Weak integration/identification</li> </ul>	<b>Transitional</b> <ul style="list-style-type: none"> <li>■ Ambiguity/uncertainty</li> <li>■ High turnover/termination</li> <li>■ Instability</li> </ul>
	Long Term	<b>Balanced</b> <ul style="list-style-type: none"> <li>■ High member commitment</li> <li>■ High integration/identification</li> <li>■ Ongoing development</li> <li>■ Mutual support</li> <li>■ Dynamic</li> </ul>	<b>Relational</b> <ul style="list-style-type: none"> <li>■ High member commitment</li> <li>■ High affective commitment</li> <li>■ High integration/identification</li> <li>■ Stability</li> </ul>

Source: Rousseau (1995)

### Best practices in managing the IS professionals

Despite the fact that modern HRM thinking highlights tailor-made HRM, no research has been carried out for finding universally applicable "best HRM practices" for a unique group of professionals such as information professionals. And yet, the ICT sector and the information profession have several features that suggest a tailored HRM for information professionals:

- Information professionals are rapidly increasing not only in numbers, but also in respect in modern companies, which places new demands on compensation and career development policies.
- Companies are still facing a clearly exceptional labour market situation where there is continuous shortage of competent information professionals. The attractive labour market and biased

compensation structure risks the commitment of professionals and leading to high turnover rates. As a result of this, not only company attractiveness and working climate need to be developed but also exceptional recruitment methods need to be introduced.

- Due to the pace of technical advancement, the developmental needs of IPs are of a scale of their own. With the aging workforce this challenges the HRD and career planning of the company. Because of scarce human resources, hard workload and developmental need, work exhaustion prevails, which in turn calls for application of new and flexible working practices.

Information professionals usually are a unique and separate subgroup within the company and therefore their own organizational culture can have a deep impact on the success of human resource management. In information system professions, work is often done in teams which have their clearly distinguishable professional “slang” that separates them as a group from other employees. The research focus should thus be turned into the functioning of the teams in addition to expectations of individuals (Finnegan-Murray, 1999). The fact that systems development work is largely done in virtual teams (Jackson, 1999) emphasises the role of teams in studying human resource practices in the ICT field.

In a recent study (Claver *et al.*, 2000) HRM was found to be a key topic in 4.2 per cent of management information systems (MIS) articles in the period 1981-1997. According to the analysis most articles on this topic were published in the period 1990-1995. If things were to proceed in cycles of seven years, the human resource issues would just now become popular again.

One reason for lack of research may be that the information systems field has not perceived HRM as the most critical issue. In the surveys about critical issues, HRM has always been one of the topics mentioned, but always behind the key issues concerning different applications of information technology. In 1996 Brancheau *et al.* reported HRM to be ranked ninth in importance for IS managers (Brancheau *et al.*, 1996). After three rounds of delphi-survey, the issue finally gained eighth place. This reflects not only the research but also the awareness of the importance of HRM in ICT companies and departments.

The productivity of system development (Verner *et al.*, 1999) and productivity of

information industries in general (Willcocks and Lester, 1999) is, however, a constant issue of discussion. Moore (2000a b), for instance, suggests that perceived excess workload, role ambiguity, role conflict, lack of autonomy and unfairness of rewards as factors leading to work exhaustion. Smits *et al.* (1993), on the other hand, have shown that productivity differences between individuals can be huge, and that a multitude of intertwined factors affect the level of productivity and job satisfaction. It seems likely that organization-specific HRM solutions can considerably explain part of the productivity in the ICT sector.

### The HR-MIPS study

This paper outlines the research setting (background, research questions, methods and output and expected results) of a Finnish benchmarking project “Human resource management in information professions” (HR-MIPS)[1] to be performed in Finland 2000-2001, and led by a research group at Turku School of Economics and Business Administration, Department of Management. The department has its roots in human and information resource management, and this research effort takes advantage of these core competencies.

### Research objectives

The general aim of this study is to describe the current state of HRM in the ICT industry. The objective is also to provide new knowledge on ICT professionals’ motivations, commitment and effective HRM practices. The objective is to distinguish between effective and ineffective HRM practices in the ICT industry. The research agenda contains aspects of at least the following questions:

- 1 *What is the general state of art of HRM in the ICT industry?:*
  - Does HRM in the ICT industry have some specific characteristics absent in other industries?
  - Which kind of practical rules and measurements do human resource managers in the ICT industry apply?
  - Is there some kind of hidden knowledge about HRM in the industry, and can it be extracted?
  - What is the extent and the role of virtual working arrangements in the industry?
- 2 *What are the main features of successful HRM in the ICT industry?:*

- How can the key information system professionals be retained and at the same time new professionals be attracted?
  - In the fast-changing environment, how can the outside mobility be controlled? Can we improve employee retention and at the same time keep the staff career-resilient?
  - According to Rousseau's model, what types of psychological contracts can be found from among IPs?
  - What kind of influence does the type of psychological contract as well as the nature of work in information professions have on employee commitment to organization, on career, on working attitudes, on working motivation?
  - How can we maintain and renew the competencies let alone increase the productivity of IPs?
  - Are there particular ways to avoid burnout and work exhaustion amongst IPs?
- 3 *What are the practices that should not be included in the HRM bundle in the ICT industry? Are there general trends and policies in the overall HRM that do not hold in the industry in question?*

When setting the HRM outcome factors to be used in this project, four types of HRM outcomes as sources of better firm performance were put forward (see Boselie *et al.*, 2000; Lähteenmäki *et al.*, 1998; Hiltrop, 1996):

- 1 Better organizational commitment of information professionals (better employee retention, work motivation, loyalty, job satisfaction and identification with company goals).
- 2 Better group climate (better team spirit, social and professional support, co-operation, trust, relations between workers and management).
- 3 Better use of human resources (employee presence instead of absenteeism, control of work exhaustion, challenging tasks, fluent workflow).
- 4 Maintenance and renewal of professional competencies of information professionals (improved willingness to invest in skill development, meaningful careers, better methods for learning and knowledge transfer, positive attitude toward collective learning).

One of the objectives is to capture the organizational and team cultures and the nature of contracts as perceived by managers and professionals within the organizations to be studied.

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## Study design

The study design relies mainly on action research approach (or constructive approach). The objective is to participate in the client companies' HRM development processes and at the same time learn about effective HRM practices in the IS field.

The empirical data is collected in nine companies and public sector organizations. The organizations work together on the research question sharing insights and data on the issue. Not only are different industries involved, but also companies with different sizes and histories in order to enable comparisons.

In order to get a true picture of the psychological contract, base of commitment, the context of HRM and operational logic of the case organizations, manifold data gathering methods are applied. Partly these methods are used for involving the most important actors and collecting data for different purposes, partly it is a question of triangulation.

Our project is mainly based on qualitative data (interviews, self-evaluation reports), but where possible quantitative data (questionnaires concerning facts and figures of the personnel) is also gathered. Different ratios (turnover, educational backgrounds, career length, salary levels, etc.) are a natural quantitative element. On top of this a work satisfaction survey is made amongst information professionals.

The intensive working period with each company lasts some six to ten days. The project starts with personal discussions with the contact people as well as with a joint seminar, which both serve the purpose of tracking the project. Actual data collection happens through interviews, formal questionnaires and though self-assessment techniques.

Six to 12 interviews will be conducted with key decision-makers on HRM in each organization. Heads of information system departments and human resource management are key interviewees, but also representatives from different worker groups and union representatives need to be met in order to see the whole picture.

Formal questionnaires come out at least in two forms. One contains key data about the organization and its human resource management practices, especially facts and figures on HRM practices and their effectiveness – these do not allow subjective interpretation. This data is gathered from the HRM department. The second questionnaire (administered as a WWW-version) is targeted to all the IPs in the company and measures their working conditions and job satisfaction.

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An obvious challenge in any project that investigates IS professionals is to define who are information professionals. Nowadays practically everyone is a knowledge worker, but as ICT professionals in this study we only count people that conceptualize, design, implement, operate and maintain ICT systems for others. So, for example, workers involved with end-user computing are not included.

Our approach in drawing the line and selecting the target group has been rather pragmatic. In big companies, only the classical edp-department will be studied, whereas in the small and medium-sized companies, which in this study represent the information industry, such as teleoperators and telecommunication solutions providers, the focus will be on the whole staff of the company.

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### **Current status of the project**

At the timepoint of writing this (February 2001), the following actions with the participating organizations have been undertaken:

- A kick-out seminar was held in November 2000.

- The organizations have delivered their self-assessments and basic questionnaires.
- Starting negotiations on the research coverage and goals have been undertaken with each organization.
- A database with browser interface is ready to take in employee opinions.
- First intensive interview rounds have started in several organizations.

Detailed findings about the current state of human resource management in the organizations are not yet available. Table I briefly summarises the initial situation in the case companies and the reasons for the companies to join in the research project. The descriptions are based on self-evaluation reports and initial discussions that were conducted within the case organizations. To summarise, the major motivations for the organizations to participate in the project are:

- To show own personnel activities in the long neglected area of personnel management.
- To examine the well-being of staff in the middle and after major turnaround in the organization structures and markets.

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**Table I**

Initial situation in the case companies

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- A** The organization is entering a decisive turmoil situation, with strategic management that is known to be sensitive to human management issues. Middle management is dedicated to give its own input to this new gravity point of enterprise management in order to take advantage of this new opportunity to sort out personnel management issues, that have stayed more or less at the background for quite some time
  - B** The organization considers itself to be a market-leader in the human resource management issues for information system professionals. They want to continue on this strong track, and search for some academic attention to their selected line of actions
  - C** The organization is a relatively big family-owned company, with strong centralized management. Such environments are harder and harder to find, and the company wants to see whether the current model is a competitive advantage or disadvantage in the information system professionals market
  - D** The organization turned to a new wage system a few years ago. Payment for information system professionals was improved considerably. Now the organization wants to assess the feasibility and long-term result of this action, and map a way for further developments, as the positive effects gained by this salary upgrading are vanishing little by little
  - E** The organization has a long track of stabile environment and little attention to human resource management. Now the industry is however in the middle of major turmoils, and staff is getting old. Participation in this first project is a kind of manifestation that the human resource issues are to become more important in the future
  - F** The organization, a small company, has run through several major changes in the last years. Its major capital is in the heads of its edp-planners. The organization wants to see how well the staff has survived in this line of changes
  - G** The organization G is a big public organization, with information system activities however remaining at a secondary role amongst other professions. The organization has run major new investments into information systems, and the effects of these situational factors now need attention from the information system professionals' working conditions and motivation point of view
  - H** The organization H is a public organization, with very fragmented responsibilities both as it comes to task content and geographic coverage. The small information system staff force has to maintain a plethora of systems with scarce resources. Motivation factors for the staff are to be studied
  - I** The organization I is a subsidiary of a major Finnish software company. To be considered a market leader, the company wants to benchmark its activities with other players in the field. The subsidiary selected is of suitable size, and runs in a complicated environment with strong ties to public management with different personnel and their salary structures
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- To find solutions to the problem of aging and not up-to-date capable staff.
- To benchmark and gain academic acceptance to the selected lines of action.

### Expected contributions for research

The objective in this research is to explain the effectiveness of different HRM practices in the ICT field. The theoretical model is based on the concepts of HRM bundles and the transactional and relational contracts. In other words, we expect to see a wide variety of HRM practices. Some companies, aiming at relational contracts with their IS professionals, will benefit from their long term investments in people (those applying “soft HRM”) and thus will have low staff turnover. Other companies, aiming at more transactional contracts, are likely to use a different set of HRM practices. In these companies, low turnover and high commitment may not be the primary HRM objectives. Thus, the model assumes that there are many factors within the reach of HRM that explain job satisfaction and job performance and the relationship between HRM practices and effectiveness of work is far from straightforward.

### Expected contributions for practice

Many information and human resource managers are quite alone in their personnel management decisions, and have a genuine need to find negotiation partners for the field. The study is expected to provide information about the best HRM practices for information professionals and also warn managers of practices that appear to be dysfunctional and/or contradict with the HRM approach that the company is using. By revealing the implicit and hidden knowledge of experienced ICT and human resource managers, the study can contribute to making the implicit knowledge explicit and thus support knowledge transfer between participating organizations.

### Summary

The role of the ICT sector for the national economies is constantly increasing. It is also likely, that this sector is becoming a major employer in the society as a whole. Thus, perhaps most importantly, this paper highlights the significance of carefully selecting the HRM practices that are used in

managing the growing population of information professionals. The HR-MIPS project introduced in this paper is one step towards improved understanding of information professionals’ expectations and how they want themselves to be managed.

### Note

- 1 In the ICT field, the abbreviation MIPS refers to “millions of instructions per second”, used by information professionals to measure efficiency of computers. In our metaphor, the performance of humans (HR – human resources) is more important than that of computers.

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