

English Summaries

1 ICT in the Knowledge and Network Economy

Lambert van der Laan and Jos de Haan

This introductory chapter focuses on general changes in the economy and labour market and the role of ICT in it. This provides the framework for the following chapters in which the role of ICT on the competences of organisations and workers are elaborated upon. First, industrial and occupational changes and the changing content and role of knowledge capital are discussed. Increasingly the role of information and implicit knowledge come to the fore. Critical remarks are made in relation to policies that only stress the importance of high-tech and high levels of education for economic progress. Secondly, the chapter discusses some changes in organisations. By the changing content of knowledge and the facilitating role of ICT, relationships within and between organisations grow in importance. This leads to the network economy. It also becomes clear that the role of ICT in organisations has to be viewed from the perspective of three central aspects: ICT, organisation and knowledge. Thirdly, the chapter focuses on the changing position of (future) workers. Some specific characteristics of knowledge workers are reviewed. In this, the participation in knowledge processes, the changing role of work and financial rewards are crucial. Attention is paid, also, to the skill bias of technological and organisational changes in which an upgrading generally leads to an accumulation of advantages to the already favoured.

2 ICT and Innovative Capacity: International Trends

Kees Breed, Peer Ederer and Ron Meyer

Innovation is a primary condition for the competitive strength of companies and national economies. ICT is a key driver and facilitator for innovation. Therefore, the Dutch Ministry of Economic Affairs has commissioned a research with the aim of generating a strategic overview of the performance of the Dutch innovation system, in particular in the field of ICT. The study was based on country research and company branch research. Based on interviews with 41 international CEOs, three major structural developments have been identified: decreasing threat of hypercompetition, increasing maturity of the ICT sector and advancing globalisation. In response to these trends, companies broadened their portfolio of approaches to innovation. The attitude 'high speed, high output, high risk' that prevailed in the 1990s has been adapted. Essentially, innovation is decreasingly organised as a separate activity, with only a limited number of people involved. Rather, it has become an activity involving various departments, units and company locations and also an activity crossing company borders. Thus, innovation has become less concentrated and more distributed. At the national level, there is a growing recognition that traditional (linear) approaches, which focus on stimulating the development of new knowledge, are too limited. More emphasis has been put on promoting networks and interaction, based on the notion that innovation only rarely happens in isolation. Equally, it has been more generally accepted that national ICT innovation systems are becoming increasingly embedded in the international ICT innovation system, especially at the regional level, placing the Netherlands more firmly within the European innovation system. Innovation requires an integral approach within companies, a network approach at the meso-level and a global perspective for all the participants of any innovation system.

3 ICT Start-Ups and their Social Networks

Wim Hulsink, Tom Elfring and Dick Manuel

The value of networks is widely acknowledged as an integral part of the explanation of entrepreneurial success, also in the thriving ICT industry. It is unclear, however, in what way specific kinds of networks influence the success of start-up companies. The question in this chapter is: In what way does the entrepreneur's network contribute to the success of his new venture? The focus is on improving our understanding of the causal mechanisms between the strong versus weak tie effect on three core entrepreneurial processes affecting performance, i.e. the ability of the entrepreneur to discover opportunities, to get resources, and to gain legitimacy. The network benefits are not uniform and change over time. Therefore, we explore two contingencies, i.e. the degree of innovation and the initial conditions of new firms in the dynamic ICT industry. The networks of 30 ICT start-ups in the Netherlands were reconstructed on the basis of desk research and in-depth interviews with the founders. We draw conclusions about the benefits of a particular mix of strong and weak ties to the ability of the start-up to survive and grow.

4 Social Cohesion and ICT-use in Organisations

Marianne Simons and Jan de Ridder

In 2004 a research project was finished on the eventual effects of computer-mediated communication, and the use of information and communication technology in general, on the social cohesion in organisations. The results, partly presented in this chapter, show that the use of communication technology affects social relations in groups within organisations. Using ICT the organisational world seems to become smaller. With email every member in every far-off corner of the organisation can be reached within a second. However, this width is at the expense of depth. The formerly 'detached' relations within large groups became more 'friendly' and the 'warm' relations within small groups became more 'cold'. This interesting difference in effect between small and large groups is a central topic in the research presented. Organisations should be aware of these effects of ICT-use.

5 Innovation in Human Resource Management through ICT

Huub Ruël, Tanya Bondarouk and Jan Kees Looise

E-HRM implements HR strategies, policies, and practices in organisations with full use of web-technology. To what extent does the management of employee relationships in companies change with the use of web-tools for HRM purposes and how does this change occur? Based on these questions we built a research model that includes four steps: (1) the state of HRM in an organisation, (2) e-HRM goals, (3) types of e-HRM and (4) HRM outcomes. The latter three steps were analysed in five large companies: Dow Chemicals, ABN AMRO, Ford Motor Company, IBM, and Belgacom. First, all of the three types of goals identified were observed: efficiency/cost reduction, improving client service and improving HR's strategic orientation. A new finding is that a main goal for introducing e-HRM is the standardisation and harmonisation of HR policies across all parts of the company. This was felt to be necessary for the strengthening of the company's image as a global entity. Second, there is a 'gap' between e-HRM technical possibilities and the real use made of web-based HRM tools. Third, the overall realised outcomes of e-HRM were primarily in a reduction of costs. Changes in the competences and commitment of the workforce were very limited. E-HRM is often accompanied by a decentralization of HR tasks and by a standardization of HR processes. For the HR department, e-HRM is a 'push-factor' for changing HRM within an organisation: from a bureaucratic towards a market/clan approach. Not all employees are willing, or able, to accept the possibilities of e-HRM and being responsible for their personal career. On-line availability is crucial. As, in contrast to blue-collar workers, office-employees do have access, there is a cyber-division at the organisational level. When

implementing eHRM globally it can be difficult to get the support of the relatively small components of the company. Moreover, employees and line managers need to change their mindset in order to accept the usefulness of web-based HR tools.

6 Knowledge Sharing in Online Groups: The Social Embeddedness of Online Interaction in Offline Networks

Uwe Matzat

Empirical research on knowledge-sharing groups on the internet shows that quite a few of them experience the problem of motivating their members to share their knowledge actively. This problem, that limits the usefulness of online groups, is related to two common problems of group interaction, namely the problem of trust between members and the free-rider problem. Additionally, online interaction is often combined with offline interaction between members. This is called the social embeddedness of online interaction in offline social networks. However, it is unclear how this social embeddedness influences online interaction and the emergence of free-rider problems and problems of trust. The paper gives an overview of different theories that explain how offline interaction affects the online interaction and the outcomes of knowledge-sharing activities. Special attention is paid to the question of how it helps to stimulate the active sharing of knowledge. Moreover, empirical evidence for the theories, when it exists, is briefly presented. The practical implications for the management of knowledge sharing in online groups are made clear.

7 ICT and Reorganisation in Health Care

Roland Bal and Antoinette de Bont

While much is expected from information technologies in health care, many projects fail. One of the main reasons for failure is the neglect of social arrangements, including inter-professional and inter-organisational relations. In this chapter, we present a theoretical framework to analyse the possible roles of information technologies, with a sensitivity to organisational questions and centred on the notion of care programming. Furthermore, we discuss two examples in which information technologies have been used in order to structure inter-professional relations. These examples suggest that regarding the role of IT in healthcare much is to be gained from shifting the focus to the socio-technical arrangements supported by it, while also acknowledging that many problems still need to be addressed.

8 Learning with ICT

Hans van Gennip and Huub Braam

This chapter discusses to what extent schools and teachers use the benefits of ICT, for themselves and their pupils, to facilitate the learning process and the sharing of knowledge? This is analysed by inspecting the results of the Dutch ICT Education Monitor (www.ict-onderwijsmonitor.nl). The results pertain to mainstream primary education, secondary education and the adult/vocational education. In the school year 2003–2004, the seventh edition of the ICT Education Monitor was carried out.

It is shown that the ICT infrastructure is well established in schools and that ICT is on the agenda of most schools. Teacher and pupil competence in ICT basics has grown. ICT is used far more often for the transfer of knowledge and far less often for the acquisition of knowledge by pupils. The majority of teachers is not competent, yet, in the didactic use of ICT in their classroom. Although the teacher's ICT attitude is positive, ICT is not integrated into their daily practice. So, the possibilities of ICT are not fully utilised by schools to create an effective learning and knowledge community. The government can help schools by facilitating small change projects, showing good practices and stimulating the exchange of knowledge by teacher communities on the internet. On the part of the schools a clear vision on their educational goals is desired and a coherent implementation of ICT change.

9 Fear of Computers and the Development of Computer Skills

Bram Steijn and Kea Tijdens

This chapter explores employee's computer anxiety in the workplace. Using a representative sample of 834 employees in the Netherlands, regression analyses are performed to investigate the effects of individual, job, ICT and workplace characteristics. Although on average computer anxiety in the Netherlands seems rather low, women and older people do show more anxiety. Job characteristics do not affect anxiety, but ICT use and workplace characteristics do. Computer anxiety appears primarily to be reduced by a) the intensity of ICT use, b) the implementation of a computerised ICT strategy within the workplace, and c) HRM-policies. Yet, the explanatory power of the model is not high and can probably be increased by the inclusion of socio-psychological factors. Nevertheless, our analysis does suggest several possibilities to reduce the computer anxiety of workers.

10 Schooling of Workers through ICT

Arie Gelderblom and Jaap de Koning

Life-long learning is of crucial importance in a continuously changing social economic environment. Skills and competences have to be updated regularly. To what extent could ICT facilitate this process, by serving as a training tool? We try to answer this question by comparing various training courses, which are offered in a traditional version as well as in an ICT-based version. A first conclusion from our analysis is that ICT-based training will not be a bottleneck for the groups that are traditionally underrepresented in company training. Older workers and women are not systematically underrepresented in ICT-based training. In a few cases the lower educated are somewhat underrepresented in ICT-based training, but the analysis shows that if they do participate, ICT turns out to be an effective medium for them. Another conclusion is that the effects of ICT-based training do not differ strongly from conventional training. So the advantages of using ICT should come from costs savings. Our analysis shows that ICT can shorten training time which is an important cost saving for companies and trainees. However, for the training institute, development costs for ICT-based training are higher and are not always compensated for by other cost savings.