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The Issue of Competence in Transforming the Norwegian Welfare Sector: Some implications for future e-government initiatives

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Abstract: *In this paper we argue that e-government initiatives need to take the competence involved in producing high-quality services for citizens into account. We draw on insights from a Pilot project in a Norwegian municipal aiming at radically re-structuring the Norwegian welfare sector and show how the competence to provide high-quality services rely on the collective achievement of individuals' knowing-in-practice when dealing with particular cases and situations. Furthermore, we show how competence in terms of 'processes of knowing' is intrinsically related to organization structure and existing information systems (IS). Transforming the Norwegian Welfare Sector then, involves transforming a socio-technical network of heterogeneous elements, where existing processes of knowing plays an important role. Based on this, we then discuss some implications for implementing e-government in local municipals, and in particular e-government initiatives that aim at introducing all-embracing integrated IT-solutions across organizational and geographical borders. The paper concludes by sketching some implications for future research on e-government.*

Keywords: *E-Government, Practice-based theories of knowing, IS integration.*

1 THE IMPORTANTANCE OF UNDERSTANDING COMPETENCE IN RELATION TO E-GOVERNMENT INITIATIVES

In recent information systems and management literatures much has been written on the socio-technical challenges involved in introducing e-government solutions in different countries and contexts (e.g. Homburg 2004, Irani et al. 2005, Jones and Hughes 2001, Moon 2002, Robey and Holmström 2001, Wastell et al. 2004). A recurring finding from many of these studies indicate that many e-government initiatives do not have the expected outcomes. These multifaceted outcomes can hardly be traced back to a few easily isolated factors, but needs to be understood in a broader context of interaction between different institutions, actors, and technologies (Myers 1994, Robey and Holmström 2001).

An important part of this context – and rarely emphasized in the current discourses on e-government, is the issue of the *competence* involved in providing high-quality services for citizens. As e-government aims at transforming the way front-end services for citizens are delivered, this typically has important implications for individuals' existing competencies. For example, this can imply both practical and more in-depth knowledge about the consequences for reporting particular cases when using an IT-system compared to a more manual routine. Furthermore, introduction of e-government also typically implies new ways of distributing work and new ways of coordination among different units and disciplines, knowing what others know and directing particularly complex cases to relevant individuals becomes key competence. In contrast to industry that can emphasize on a specific niche of customers, the welfare sector cannot choose not to handle a huge variety of a-typical cases. In this regard, the public welfare sector is a particularly interesting example of so-called 'knowledge-

intensive work'; since it has to take into account the full complexity of a huge variety in cases and local situations (Alvesson 2004).

A relevant analytical perspective in this regard is to conceptualize learning and organizational knowledge as inherently related to practice and context. In contrast to a perspective that views knowledge as objective resource that can easily be codified, represented, and transferred by information technologies, this lens views knowledge in organizations as continuously in the making (Blackler 1995), distributed across individuals and organizational units (Hutchins 1995, Tsoukas 1996, Tsoukas 2005), deeply entrenched in practices and communities (Brown and Duguid 1991, Lave and Wenger 1991, Orlikowski 2002), and thus inseparable from its broader context (Thompson and Walsham 2004). On the conceptual level of the individual, a clear-cut distinction between tacit knowledge and explicit knowledge becomes highly artificial. As Tsoukas (1996, p. 14) reminds us, "[Tacit] knowledge is the necessary component of all knowledge; it is not made up of discrete beans which may be ground, lost, or reconstituted ... [...]... The two are inseparably related". This way of conceptualizing knowledge in organization is especially helpful for recognizing the reflexive nature of knowledge – or more appropriate processes of knowing, in terms of how knowing is produced and reproduced through individuals' actions. Rather than simply new facts, knowledge is – as Lave argues, a process: "knowledge is not primarily a factual commodity or compendium of facts, nor is an expert knower an encyclopedia. Instead knowledge takes on the character of a process of knowing" (cited in Orlikowski 2002, p. 252). Accordingly, competence or gaining competence can be perceived as "a process of developing people's capacity to enact what we may term 'useful practices' – with usefulness seen to be a necessary contextual and provisional aspect of situated organizational activity" (Orlikowski 2002, p. 253).

In this perspective, the competence for providing high-quality services hinges on the ability of the welfare service to provide processes of knowing that enact a wide range of different knowledge resources distributed across different local communities' practices and IS. Providing welfare services for individual citizens, whether in terms of digital services on the net – or through face-to-face interactions in offices in local municipals, does not simply amount to 'feeding' people with standardized information and informing them about their rights and possibilities. Our point is not that relevant information *per se*; as for example information on government web portals is of no use, but that such information always needs to be *enacted* in the particular situation and case at hand. Precisely, in the case of knowledge-intensive work, knowing is a performed achievement that typically involve a heterogeneous collection of knowledge representations comprising everything from personal networks, paper documents, and different digital representations in IT-systems. Particular mechanisms, or ways of organizing and systems of trust need to be in place for such information to become 'working knowledge' (Ellingsen and Monteiro 2003).

By analysing e-government in this perspective, our intention is here to contribute to insights that run counter to a perspective that tends to overemphasize the blessings of large-scale integration efforts in public sector. E-government initiatives merely attempting to integrate existing typically heterogeneous collections of knowledge, can turn out to be counter-productive since integration inherently means curbing potentially rich knowledge representations into pre-defined categories and thereby limiting useful sources for cultivating useful processes of knowing. As e-government initiatives typically aim at integrating heterogeneous collections of different IS across different government levels, local agencies, and municipals, existing mechanism for enacting are transformed in both intentional and unintentional ways, risking local breakdowns and a reduction in the quality of the services. Thus, central to our argument is that the existing 'hybrid collective' of knowing and IS together tends to influence the implementation of e-government initiatives.

Empirically, this paper draws on a case study of the local implementation of a national-wide pilot aimed at re-organizing the entire Norwegian welfare sector. In Norway there has lately been numerous

initiatives for ‘modernizing’ the welfare sector in order to transform it to a more effective and efficient organization. We studied one of these – “the Pilot” project (in Norwegian: Samordningsforsøket) which aimed at re-organizing the three¹ departments comprising the welfare sector into one department having common work processes, IS, and local offices. This was tried out in 18 different local municipals, and our case was Saupstad, a relatively large local office in a suburb of Trondheim, Norway’s third largest city. In relation to e-government initiatives our findings from Saupstad suggests that the current organization of front-end services as well as back office IS were tightly connected to the processes of knowing in terms of interactive service work of the first-line, problem solving strategies, and the general vocabulary used in discussions.

This is highly important for design of e-government as it underscores that neither re-organizing nor implementing new IS are not sufficient for providing high-quality services alone. A transformation through e-government initiatives must also take into account a change of existing processes of knowing which in many cases imply a certain degree of inertia or path-dependency for such change to take place.

The rest of the paper is structured as follows. In the following section we outline the basic structures and institutions that make up the Norwegian welfare sector. Next, we take a closer look at the experiences from the pilot project at the local office at Saupstad and show how re-organization is intrinsically related to processes of knowing and existing IS. Then, we discuss and theorize upon the implications for changing the existing processes of knowing and IS in the welfare sector in Norway.

2 THE NORWEGIAN WELFARE SECTOR

The Norwegian welfare sector is comprised of three core institutions. In a major reform, these institutions will change the way they are working in order to improve a seamless service to the citizens. These departments are the Public employment service (Aetat), the Social security service (Sosialtjenesten) and the National insurance service (Trygdeetaten). We briefly describe each of these institutions, and continue by describing the motivation for and foreseen process for reform.

The national insurance service has three aims²:

- Provide safety and ensure welfare for people who lack income from work.
- Contribute to levelling income and living standards throughout the life of individuals and between groups.
- Contribute to self-help in order to give individuals the ability to support themselves.

The service has about 9000 employees and was responsible for transferring 220 billion NOK in 2004 to recipients of national insurance benefits such as people who have retired. 1.3 million Norwegians have national insurance benefit as their main income, and the service provides support to around 2 million users.

The main aim of the public employment service is to provide information about vacant positions to persons seeking employment, guide persons seeking employment, qualify persons who are unable to enter the job market by themselves, and provide economic support for unemployed. The service has about 3800 employees, and a budget of about 29 billion NOK in 2004. During 2004, more than 450.000 people were registered as users of the public employment service.

The social security service aims at advancing economical and social security, to better living conditions for disadvantaged groups, contribute to increased equivalence and equal opportunities and prevent social problems. They are further responsible for contributing to that every individual has a

¹ The Public employment service (Aetat), the Social security service (Sosialtjenesten), and the National insurance service (Trygdeetaten)

² Proposal to the Norwegian Parliament: “New Work and Welfare Management”, 2004.

possibility to live by themselves and have an active and meaningful existence. The service had 4.100 employees in 2004, and had 7.2 billion NOK in expenses in 2003. In 2003, around 135.000 persons received economic support from the social security service.

2.1 The reform

In the past, users of these public services often had to interact with all three departments. A survey from 2002³ showed that 56% of the users of the Social security service also use services from one of the others units. Quite often the services have offices at different locations. A report⁴ from the Social security service at the district of Saupstad in Trondheim describes the case of “Berit” – a person with intoxication problems - who from 1977 to 2000 gets 94 decisions and interacts with 20 executive officers from all three units. According to the report this is not untypical.

The Norwegian government believes integration of these departments will give the users better service and focus resources on getting more people back to work, and less on communication between the units. This work is part of a large reform process to “modernize” the whole public sector in Norway. Integrating these departments will mean integrating much of their knowledge, knowledge management practises and information technology systems. In the near future, it also means to give the users an integrated initial contact point.

The integrated initial contact point will provide services from all three departments, and will be responsible for all internal coordination in the former departments as well as to other relevant sectors of the welfare state. The main responsibility will be to:

- Provide information and counselling, assistance on job searching, reception and registration of simple forms, and come to decisions on simple administrative matters.
- Clarify working capacity, and more complex benefit needs, make action plans for persons with social problems.

In particular, there are five requirements for the new integrated contact points.

- All users shall have one contact points easily available, which takes care of all relevant services.
- More users than today shall receive participatory processes to get back into work as soon as possible.
- Users shall get a fast and overall clarification on needs and co-ordinated service.
- Users shall have an equivalent service independent of residence, resources, competence and services located in the local contact point.
- Users shall meet a practically shaped office, technological solutions and a professional methodology which invites for participation.

2.2 Consequences for IT infrastructure

Today, the three departments have very different IT infrastructures. The Public employment service has a “modern” workflow-oriented business system, which covers all present services that the department is responsible for. The National insurance service uses a range of systems, including a legacy system which requires a user to prompt for information in many different ways to get a total

³ Cited in *Report to the Norwegian Parliament number 14: Integration of the Public employment service, the Social security service, and the National insurance service*, Norwegian Department of Social Security 2002-2003 (In Norwegian).

⁴ Six stories from real life, Saupstad social security service 2001 (In Norwegian).

overview of the benefits given to a person. Efficient executive work requires good knowledge of the system. The social security service does not have a national standard system, but several solutions are in use in the different municipalities. The largest municipalities use a commercial business system tailored for the social security where clients are registered, decisions logged and action plans are registered.

This reform is expected to lead to substantial changes in the IS applied. A strategy for short-term integration of IS has been developed⁵. A goal is to establish an integrated infrastructure as depicted in Figure 1, with a common public user portal, a common intranet and a common front-end to existing business systems to be used in the integrated initial contact points.

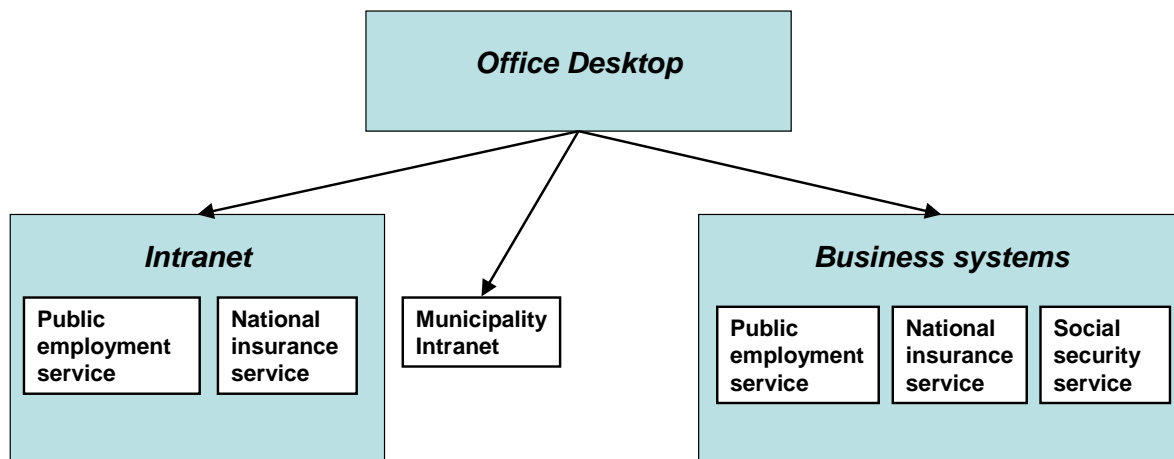


Figure 1: Integrated infrastructure.

However, the government seeks a long-term solution in a more “fullgrown and integrated ICT-solution in the form of a business system for the whole or main parts of the welfare administration”¹.

But as we shall see in the next section, it is possible to define workarounds that make it possible to work in an integrated manner with the old IT-infrastructure, with a cost of extra administration.

3 EXPERIENCE FROM RE-ORGANIZING IN A LOCAL MUNICIPAL

3.1 The ‘Pilot project’ at Saupstad, Trondheim

Saupstad is a suburb located in the southern part of Trondheim, Norway’s third largest city with 157 000 inhabitants. Saupstad is a relatively large community with a more heterogeneous population in terms of a larger amount of people on the dole compared to the rest of Trondheim. In this context, a smooth functioning and accessibility of the social welfare system services is considered particularly acute.

The local Pilot project at Saupstad in the municipal of Trondheim was initiated in February 2003 by managers from all three welfare departments (Public employment service, the Social security service, and the National insurance service). The main argument for participating on this project along with 17 other local welfare offices was to ensure a “more efficient workflow and better follow-up of citizens using the welfare services”⁶. Before the Pilot project, the different departments had their own front-end service for users and although they had frequent meetings and phone calls across departments,

⁵ Norwegian Department of Social Security (2004) Strategy and plan for establishing a short-term integrated solution for the Public employment Service, National Insurance Service and the Social Security Service, SATS IKT 02 Report (In Norwegian)

⁶ Statement from the Manager for the Pilot project at the local office at Saupstad

they were largely separated physically, culturally, organizationally, as well as disciplinary. The consequence of this was poor coordination and collaboration between departments, and bewilderment among already frustrated users, as they were often sent from door-to-door, office-to-office. Hence, a primary aim for the Pilot project was to re-structure in order to implement one common physical front-end office for users. After several common workshops the three departments moved into a new building and implemented a common front-end for consultations (see picture below) in August 2003.



Figure 1: Common front-end for citizens at Saupstad

This was referred to as “one door policy”, and according to an initial survey among its users welcomed as a positive change⁷. In addition, a common “back office” was established where individuals originally employed in different departments were put together in multidisciplinary teams for workflow management and solving particularly complex cases involving more than one department.

3.2 A note on methodology

The case study took place between 2003 and 2005 and involved two master students in addition to one of the authors. The case of Saupstad was selected because both the previous conservative Government and the local media had presented it as a successful showcase of how the welfare sector should be organized.

The primary object of the study was to uncover the implications of the current IS and work practices for providing first-line service to citizens. We were particularly interested in seeing how individuals

⁷ We did not have access to this survey, but based on the managers’ we talked with argued that the survey showed that users were happier with the services of the three departments after the change.

used or failed to use other departments' IS as the three departments did not have one integrated system.

We regard our research as an 'interpretive case study' (Klein and Myers 1999, Walsham 1995) involving various forms of data collection. A primary source was observing the first-line consultations and the multidisciplinary teams in the back office. This gave us first hand insights into how used information and collaborated in order to provide high quality services. In addition to observations, three interviews of management were conducted regarding the work of the different departments and the implementation of the Pilot project. We also attended meetings and more informal lunch breaks. In addition, we have consulted a number of official documents from the Norwegian Government covering all aspects of the Pilot projects as well as plans for a new IT infrastructure in the welfare sector.

3.3 Re-organizing leading to incompetence?

However, perceived as relatively successful, the "one door policy" also had multiple unintended consequences. Whereas the Pilot project introduced a 'back office' where different departments' local processes of knowing were integrated in multidisciplinary teams, the processes of knowing in the back office became more disintegrated with the front-end consultations.

As expressed by one of the managers: "the HR department perceives it as a big problem that it tends to be a gap between those who are working in the front-end and those who are working in the back office". The physical and organizational re-organization had generated a lack of possible ways of communicating between the back office and the front-end resulting in not only lack of coordination, but also lack of experience and knowledge sharing. This was considered particularly important since generic rules and policies within for example the social security service cannot simply be 'applied' to specific cases. In contrast, rules and policies need to be made sense of through enacting accumulated experience when giving advice and informing citizens during a consultation. Thus, although the teams in the back office had access to the relevant information through IS and paper files, the re-organization implied a detachment from practice making their work even more difficult.

This illustrates that just having access to relevant information does not necessarily mean that individuals become competent or that high quality in welfare services to citizens are ensured. As often argued in practice-based theories of knowing, participation and access to a community is actually a prerequisite to learning (Lave and Wenger 1991). Indeed, re-organizing can in the worst-case mean incompetence.

3.4 The role of IS in current processes of knowing

An interesting finding from our study of Saupstad office was that the Pilot project revealed how the processes of knowing in the different departments were shaped by use of IS. The existing IS inscribed different ways of sense-making, possible problem solving strategies, and points of focus.

The information system used by the National insurance service "InfoTrygd", includes a number of specific acronyms which represents specific functionality or status. For example in one case it was accidentally discovered that a person had moved out of the Saupstad area, which meant that the person had to be registered at a different local office. The process for doing this only partly involved the "InfoTrygd" information system, and was described through different acronyms referring to the menus and options that had to be traversed in order to accomplish the task. In this way, these acronyms are frequently used in discussions among employees in the department in order to pass on their experience or to discuss issues of ambiguity or more complex cases. In this way, the acronyms make up a community-based resource for making sense of specific cases and 'transferring' knowledge from individual to individual within the National insurance service.

Similarly, in the Public employment office where they used a more modern information system “Arena” which inscribed a specific structure for the process for how to follow up unemployed citizens, an important mechanism for understanding and generating meaning among individuals was the notion of a “folder”. In short, a folder is an abstract entity that describes the status of an unemployed person, which then implies certain trajectories for further work. Thus, the information system inscribes the possible ways of dealing with unemployed persons, and thus implicitly underscores a certain point of focus and a problem solving strategy.

What turned out to be a delicate issue here, was that the Public Employment Service considered it too risky for individuals not being familiar with the departments work practices to have access to their information system. Consequently, without access to the Arena information system individuals from the departments found it difficult to understand the work flow in the Public Employment Service, since it was so embedded in the information system.

These examples underscore that it is difficult to learn the practice of a particular community just by gaining access to its information resources. Thus as noted by Brown and Duguid (1991, p. 48), “The central issue in learning is *becoming* a practitioner not learning *about* practice”. In order to become a practitioner then, mundane practices and narratives such as the abbreviations in the National insurance service are crucial entry points. What our study adds to this is that in cases where work practices are increasingly intertwined with specific uses of a technology, the technology in itself becomes an essential part of communities’ processes of knowing. In this way, the Arena information system becomes an ‘obligatory passage point’ (Latour 1987) for becoming a practitioner in the Public Employment Office.

3.5 Sharing experience through awareness and knowing-in-practice

A generally positive consequence of the re-organization was that workers from different departments became more aware of each other’s cases and ways of dealing with specific users’ problems. The workers developed informal practices for sharing experience regarding specific cases and also more disciplinary specific knowing-in-practice. For example, post-it notes were used in order to give small messages and to coordinate tasks. This sharing and exchange of post-it notes was often done on the basis of overhearing a discussion between a colleague and a user, and a legitimate awareness through eavesdropping developed as a common practice.

This highlights that practices for ‘knowing-the-citizen’ in terms of his or her ‘story’ with the different departments were crucial for deciding upon further actions and guiding users to other relevant people whose expertise was more relevant. On the other hand, since the back office was located in a different building, this also illustrates that a more informal communication and collaboration support is needed rather than access to different traditional IS and pre determined workflows.

4 SOME IMPLICATIONS FOR E-GOVERNMENT INITIATIVES

4.1 A complex hybrid of processes of knowing and IS: an obstacle for e-government implementation?

Our study has important implications for introducing e-government solutions in local municipalities. First, radical new ways of organizing merely based on improved access to information through IS is a strategy that is likely to have unfortunate consequences since existing work practices and coordinating mechanisms are an intrinsic part of the competence to produce high quality services. In the context of implementing e-government with a larger amount of digitalized services on the net and possibly an even greater geographical and organizational distance from practical consultations and decision-

making and case handling, we argue that there is a risk that the quality of service would go down. A most important lesson here is thus that one should not assume full flexibility in re-organizing ways of working just because an e-government solution enables information to be accessible across time and space. As encoded knowledge (or information) in IS would always rely on being enacted in concrete practices and contexts by competent individuals and communities (Lave and Wenger 1991, Orlikowski 2002, Thompson and Walsham, Tsoukas 1996), e-government 'solutions' should not solely be focused on 'improved access to information'. Rather, future e-government initiatives should focus their attention to how information technologies can facilitate individuals' ability to *enact* knowledge in order to produce better services for citizens. For example, in our study of the practices at Saupstad, we recognized how awareness and physical layout of the offices were important for individuals' enactment of the encoded knowledge in IS. What we argue here is not that the sharing of information across context through IS are impossible, but that it takes a lot of extra work for both the 'producers' and especially the 'consumers' of the information (Berg and Goorman 1999). The frequent use of 'post-it' notes by the workers on the front-end illustrates this point.

Second, existing IS do not only represent 'path-dependency' in technical terms (Ciborra et al. 2000), but also in terms of processes of knowing. Existing IS are *intrinsically embedded in the different departments' processes of knowing*, and hence a particular piece of information only makes sense in specific situations and on the basis of a wider historical and contextual experience. As seen in the case, long-term use of various IS in different departments seem to have influenced processes of knowing in the sense that IS constitute an important component in the different communities-of-practice in the municipal. IS can in this sense be perceived as a material structure for what is perceived as valid and relevant knowledge. Because of this strong alignment between the IS and the processes of knowing the existing IS seem to strengthen the existing processes of knowing. Thus, the technologies are an important component of the existing 'knowledge paradigm' or 'epistemic culture' (Knorr-Cetina 1999). Processes of knowing and the related IS make up a 'complex hybrid' that cannot easily be split up and decomposed as self-contained components. Consequently, e-government initiatives should focus on both new IS and KM solutions in tandem as proposed by Newel et al. (Newel et al. 2003). However, how this should be undertaken in practice remains an important issue for future IS research.

4.2 Increased integration of IS: a solution or a problem?

The integration of existing IS suggested in the welfare sector in Norway will obviously make it easier for employees to gather information from various existing systems. By establishing new components on top of the existing IS new services can be provided. On the other hand, there are good reasons for also expecting new kinds of problems due to the increasing socio-technical complexity of e-government solutions.

First, in order to provide an efficient seamless service for the integrated initial contact point, integrating IS is not sufficient. Providing good counselling and quick administrative decisions, clarifying working capacity, benefit needs and making action plans for people with social problems requires a broad overview of laws, regulations, similar situations and an overview of competencies in all three former departments. This becomes increasingly complicated when dealing with situations that require judgements, like most of the work performed by the social security service. In order to increase the judgement and awareness of competence in local municipalities, the sector should draw on research performed in the knowledge management field. A variety of supporting activities should be tried out, from initiatives without a technology element, such as multidisciplinary work teams, information brokers and collaborative processes (Bryson and Anderson 2000) to systems such as collaboration technology, competence overviews (Dingsøy et al. 2005).

Second, informed by recent empirical as well as more theoretical literature, integrated IS tend to have inherent complexities producing and re-producing unintended side effects and fragmentation (Kallinikos 2004, Rolland and Monteiro 2006). As argued by Kallinikos (2004, p. 13) in the case of ERP-systems, a comprehensive e-government solution would be subject to double-bind effects in that

it “both enables and undermines purposeful actions”. Furthermore, it is likely that e-government solutions in the attempt to increase integration also would produce increasing risk and fragmentation as an unintended side effect (Rolland and Monteiro 2006). In order to be implemented integrated IS typically need, in various ways, to connect to and integrate with existing IS and practices that there not anticipated from the outset. Consequently, as argued by Rolland and Monteiro (2006), this increases the socio-technical complexity and risks, because systems that were never meant to be integrated are tightly coupled together. Similarly, in one way or another, existing IS in the public sector are planned to be more or less integrated by a new common system. This will, we predict, increase the socio-technical complexity and risk in the use and management of the system itself, and possibly also in the services for citizens. The question then becomes: who takes the responsibility for these risks? And who has to deal with the consequences?

5 CONCLUSION: SOME IMPLICATIONS FOR RESEARCH ON E-GOVERNEMENT

Many governments are working to realize benefits offered by information technology in e-government initiatives. We have argued that competence involved in producing high-quality services for the citizens must be better addressed in the research literature. Knowledge management in the public sector is a field which has not been sufficiently addressed in the research literature, but it is a field of growing interest. In a survey on knowledge management in the public sector in OECD countries⁹, Norway was ranked “on average” on “efforts made at improving knowledge management”, and “perception of level and quality of knowledge management practises, organisational and cultural change”. The OECD-report “Knowledge management in government”⁸, states that “governments cannot afford to overlook a ground swell that is currently transforming companies, and more especially big companies.”

Knowledge management is one of three prioritised areas in the strategy for information and communication technology in the public sector in Norway⁹, which states: “to support the governments goal for the modernisation work, it is important to support development and management of the knowledge capital through a system and a function that maintains the need to identify critical knowledge areas, knowledge development, knowledge directing and spreading of knowledge”. They further emphasise that “the value of knowledge management relates directly to efficiency in the sense that direction and spreading of knowledge makes the departments more able to manage today’s situation and future challenges”.

We believe knowledge management should be a core element of the reform of the welfare sector in Norway, and argue that it is important to reach research-based understanding of how competence influences e-government strategies. In the future, we would particularly like to focus on active experimentation with techniques and tools in the integrated contact points to foster broad competence and increase judgement through action research (Davison et al., 2004) programs. We will specifically address the following research questions:

- How can local municipals implement flexible collaboration technologies in order to cultivate communities-of-practice that cut across different disciplines?
- What mechanisms can be employed in order to develop a necessary competence in relation to e-government implementation?
- How can the socio-technical complexity in e-government solutions be reduced?

⁸ *Knowledge Management in Government: An Idea whose time has come*, Human Resources Management Working Party, OECD, prepared by Jean-Michel Saussois, 2003.

⁹ Strategy for ICT in the public sector 2003-2005: Central focus areas to promote user-focused services, efficiency and simplification at the local level, Department of Labour and Administration.

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