Master Thesis in Information Systems

Faculty of Economics and Social Sciences
Agder University College - Spring 2006

e-Government and Municipal Organisational Change

Øyvind Hellang
Erik Fredrik Lindblom

Øyvind Hellang and Erik Lindblom

e-Government and municipal organisational change

Master thesis in Information Systems

Agder University College

Faculty of Economics and Social Sciences

2006

Preface

This thesis is written as the final assessment of our master degree in information systems at Agder University College in the spring of 2006. The research described in this report tries to explain the changes in organisational structures that occur in Norwegian municipalities as a result of collaborative e-government implementations.

We would like to thank our two supervisors, associate professor Carl Erik Moe and professor Maung K. Sein at Agder University College, for their support, guidance and great patience during the development of this thesis.

The thesis would not have been possible without the great help we received from Per Morten Vigtel at Innovasjon Norge, and our four participating municipalities: Randaberg, Sandnes, Sola and Stavanger. We deeply appreciate the time, effort and sincerity you have all shown us.

Finally we would like to thank all our classmates for the great workplace environment you all have created through academic and personal support.

Kristiansand, June 14th 2006

Øyvind Hellang

Erik F. Lindblom

Abstract

Complex challenges faced by Norwegian municipalities come from many sources such as balancing their role as generalist service providers with the increased call for tightening municipal budgets. Today, the municipalities also have to consider public tenders while making sure they retain enough of their core competency to give quality services to the public. When dealing with these issues, the public administration seeks solutions in the form of new organisational structures, work process re-engineering and new information systems to answer ever tougher demands from central authorities and the public.

Research into the use of e-government in the area of public management has had a focus on well functional front-end portals with citizen centric evaluations and benchmarks. Technical issues regarding legacy systems and the implementation of new case processing systems with cross departmental integration is also frequented by information systems scholars. These research foci are important for effective systems, but there has also been a call for more research into the organisational effects on public administrations from e-government initiatives, and which role e-government projects can play in public organisational change. The aim of our study is to examine this angle on e-government in a Norwegian municipal context to discover the role e-government can have on the municipal back-office structure, work processes and employees. Our research questions are answered through a cross-disciplinary literature study and an interpretative case study from the Smartkom project in the North-Jæren region in Norway.

The literature review encompasses both information systems research into the field of e-government and IT/organisational fit. Since this thesis focuses on the organisational aspect of e-government, we have borrowed central theories from the research fields of organisational science and public management. A comparison of the principle elements of the theories gives an overview applied to later analysis of the empirical findings. These empirical findings stem from the analysis of interviews and documents from the inter-municipal project Smartkom. This e-government development case gives insight into a local Norwegian context for the effects of e-government systems, and also shows the possibilities that can be generated in the near future from such co-operations.

Our findings from the case region are discussed in light of the theories from the literature review and current Norwegian state policies. We found many issues regarding the role of e-government on current municipal change, and generated a new model that the case municipalities can implement in the near future. This model gives an alternative to the prevailing models in use today, and may solve a number of issues relating to central state and local policies.

Municipal mergers related to e-government projects are also discussed, showing that e-government is an effective tool which can be a catalyst and simultaneously used for differing interests, but it is the wielder of the tool that decides the directional outcome from the implementation of such projects. The technology in itself has no political motives, nor any inherent ideological preferences for municipal structures.

Our thesis will hopefully give some fresh angles on the role of e-government and inter-municipal co-operations. New ideas for further research focus is given and practical implications for the case municipalities are given to promote the possibilities that lie within their mature co-operative efforts.

Contents

1 INTRODUCTION **1**

1.2 RESEARCH PROBLEM 2
1.3 THESIS STRUCTURE 2

2 THEORETICAL BACKGROUND **5**

2.1 IT AND ORGANISATIONAL FIT: E-GOVERNMENT 5
2.1.1 The concept of IT and organisational fit *5*
2.1.2 e-Government *7*
2.2 PUBLIC ORGANISATION THEORY AND MODELS 11
2.2.1 Ideal-type Bureaucracy *11*
2.2.2 The New Public Management *13*
2.2.3 The Neo-Weberian State *16*
2.2.4 Network organisation *18*
2.2.5 Comparison of models *22*

3 RESEARCH METHOD **25**

3.1 RESEARCH STRATEGY 25
3.1.1 Choice of research method *25*
3.1.2 Choice of research paradigm *26*
3.2 RESEARCH DESIGN 26
3.2.1 Case clarification *27*
3.2.2 Case selection *27*
3.3 DATA COLLECTION 28
3.3.1 Interviews *28*
3.3.2 Documents *30*
3.3.3 Triangulation *30*
3.4 DATA ANALYSIS 31

4 CASE DESCRIPTION **33**

4.1 CASE MUNICIPALITIES 33
4.2 REGIONAL PROJECTS 34
4.2.1 FAR *34*
4.2.2 ARNE *35*
4.2.3 eBygg 2009 ..... *35*
4.3 SMARTKOM 36
4.3.1 Project organisation *37*
4.3.2 Technical content *37*

5 RESULTS **39**

5.1 ANALYSIS OF PRINCIPLE CASE ELEMENTS 39
5.1.1 Structure *39*
5.1.2 Distribution of authority *40*
5.1.3 Citizen, private and third sector influence *41*
5.1.4 Service provision *42*
5.1.5 Process management style *45*
5.1.6 Resource evaluation *46*
5.1.7 Quality of service delivery *47*
5.1.8 Accountability *49*
5.2 E-GOVERNMENT IN THE MUNICIPALITIES 51
5.2.1 Municipal e-government maturity *51*
5.2.2 Collaborative implementation of e-Government *52*
5.2.3 e-Governments effect on the organisation *53*
5.2.4 e-Governments effect on the IT Infrastructure *54*

5.3 POSSIBLE FUTURE EFFECTS 56
5.3.1 Future changes in organisational structure *56*
5.3.2 Possibility of municipal mergers *56*
5.3.3 Recruitment and core competence *57*

6 DISCUSSION 59

6.1 AN EVOLVING MODEL 59
6.1.1 Disaggregated result units and exposure to competition *59*
6.1.2 Authority discharge and cooperation *62*
6.1.3 Decentralisation of authority in a flat structure *65*
6.1.4 Direct society influence *66*
6.2 RESOURCE EVALUATION, QUALITY AND ACCOUNTABILITY 66
6.2.1 Resource evaluation *66*
6.2.2 Quality of service delivery *67*
6.2.3 Accountability *67*
6.3 SUMMARY OF THE CURRENT SITUATION OF THE MUNICIPAL BACK-OFFICE 68

7 CONCLUSION 71

7.1 MAIN FINDINGS 71
7.2 IMPLICATIONS FOR PRACTICE 73
7.3 IMPLICATIONS FOR FUTURE RESEARCH 74
7.4 LIMITATIONS 74

REFERENCES 77

APPENDIX A - INTERVIEW GUIDE 85

APPENDIX B - MUNICIPAL ORGANISATIONAL STRUCTURES 87

Figure list

FIGURE 1: STRATEGIC ALIGNMENT MODEL 6
FIGURE 2: E-GOVERNMENT COVERING BOTH E-SERVICE DELIVERY AND E-GOVERNANCE 8
FIGURE 3: E-GOVERNANCE AS THE RESULT OF EVOLVING USE AND SCOPE OF E-GOVERNMENT, E-REGULATION AND E-DEMOCRACY. 9
FIGURE 4: FOCUS AND CENTRICITY MODEL - E-GOVERNANCE AND E-GOVERNMENT AS SEPERATE DIMENSIONS. 9
FIGURE 5: THE SEPARATE DIMENSIONS OF E-GOVERNMENT AND E-GOVERNANCE 10
FIGURE 6: THEORETICAL ORIGINS OF THE NEW PUBLIC MANAGEMENT 14
FIGURE 7: THE NEW PUBLIC MANAGEMENT DOCTRINES 15
FIGURE 8: THE NEO-WEBERIAN STATE MODEL 17
FIGURE 9: THE NETWORK DIMENSIONS 20
FIGURE 10: TYPOLOGY OF FORMS FOR COLLABORATION 21
FIGURE 11: PHASES IN OUR RESEARCH PROCESS 25
FIGURE 12: CONVERGENCE OF MULTIPLE SOURCES OF EVIDENCE 30
FIGURE 13: DATA ANALYSIS MODEL 31
FIGURE 14: MAP OF THE NORTH-JÆREN REGION 33
FIGURE 15: ORGANISATIONAL STRUCTURE IN A TWO-LAYER MODEL 39
FIGURE 16: ILLUSTRATION OF THE IDEAL EX-POST EVALUATION DYNAMIC 48
FIGURE 17: ILLUSTRATION OF THE CURRENT SITUATION 48
FIGURE 18: E-GOVERNMENT FACILITATES THE USE OF PRIVATE COMPANIES AS SERVICE DELIVERERS 60
FIGURE 19: ILLUSTRATION SHOWING THE DISCUSSION OF THE POSSIBILITIES FOR OPERATIONAL SERVICES. 61
FIGURE 20: SMARTKOM'S COLLABORATIVE CONTINUUM 63
FIGURE 21: ILLUSTRATION OF AN E-GOVERNMENT DRIVEN PRODUCTION NETWORK 64

Table list

TABLE 1: COMPARISON OF PRINCIPLE ELEMENTS BASED ON OUR DESCRIPTIONS 23
TABLE 2: OVERVIEW OF INTERVIEWED PARTICIPANTS 29
TABLE 3: REGIONAL STATISTICS PER 2005 34
TABLE 4: ADDITIONAL TEN MUNICIPALITIES AFTER EXPANSION IN 2005 34
TABLE 5: LYSE OWNERSHIP 43
TABLE 6: SUMMARY OF *CURRENT* PRINCIPLE ELEMENTS IN THE CASE MUNICIPAL ORGANISATIONS. 68

1 Introduction

Norwegian public sector has been under pressure by recent reforms calling for efficiency and more user focus. Structural changes in municipal administrations, new incentives and reporting schemes have come into place to answer the call for reform, and to show the willingness for change.

A recent Norwegian trend in dealing with the pressure in the public sector has been the establishment of inter-municipal collaborations with varying forms and purposes. One of these inter-municipal collaborations is the Smartkom project, which coordinates construction permit case processing from four municipalities in the North-Jæren region. This type of collaboration is argued to potentially improve the cost efficiency and quality of municipal services.

A national information technology infrastructure has provided the possibility to integrate different e-government solutions into the communication between the public sector and society. The vision for these e-government initiatives through the next five years are described on a national level through the Ministry of Modernisation's (2005) strategy document "eNorway 2009 – the digital leap", with the municipal implementation of these visions being described through the Norwegian Association of Local and Regional Authorities (2006) equivalent strategy document "eMunicipality 2009 – the digital leap". These initiatives shows a change in focus from the discussion on web-site effectiveness improvement of the 80's and 90's, to a more organisational wide utilization of e-government. Despite this change, the referred documents still lack a focus on the needed organisational changes of such e-government initiatives.

Municipal information systems and e-government initiatives exist in a context dominated by the evolving organisation and business agenda of the different areas of government. Information technology is a tool, and when introduced into the information system of an organisation it can support the business agenda of that organisation. This is also a symbiotic relationship where new technology leads to new ways of doing business, and hence can influence the organisational structure.

A need for organisational change has been described in several research report. One of these reports is an extensive study of e-governance portals in Europe and America (Thorson and Ragland, 2002), which concluded that most government web sites focus on information delivery. They found however relatively few instances of significant process re-engineering, which demonstrates the deficiencies of the earlier mentioned Norwegian e-government strategy documents. Grönlund (2004, p. 1) further describe that "*a lack of cross-organisational integration has been observed, and as this is seen as one of the main potentials of eGovernment, and indeed the main effectivization opportunity, there is a need to find out why this is still the case after several years of expansion of IT use in government*".

The extensive call for more research into the field of organisational change related to e-government initiatives have directed this research study towards the investigation of the relationship between e-government initiatives and trends in municipal organisational change.

Organisational effects of e-government initiatives do however require an understanding of the common organisational structures in Norwegian municipalities. Such an understanding would give a comparison baseline, making it possible to identify the municipal changes. Our

research will describe this contextual baseline, as well as giving indications of the future direction of the Norwegian structures and work processes in the future; creating a greater understanding of the Norwegian context of e-government based municipal change.

1.2 Research problem

This research study intends to look at the relationship between e-government systems and the workflows and structure of the municipalities. The inspiration for selecting this topic stems from our interests in IT and business fit. Lately the municipalities have been looking into portal solutions to provide the public access to municipal services. We further noted in our pre-study in 2005 that it was common for municipalities to organise much of their e-government initiatives in inter-municipal networks, and wondered if there was any organisational change in workflows and structure due to these new e-government systems. A precursor to answering our research questions is an understanding of the current direction of Norwegian municipal reforms, as well as knowledge on the drivers affecting these reforms.

The research questions we want to answer through this research paper is:

- What role has e-government initiatives on the direction of Norwegian municipal reform?
- What organisational alternatives can e-government initiatives lead to?
- How can e-government based alternatives evolve from inter-municipal co-operations?

1.3 Thesis structure

Any discussion of our described topic needs a solid theoretical background, which is described in chapter two. This section will describe the concept of e-government, showing its relationship to the fit between business strategies and IT infrastructure. In addition we will introduce the concept of organisational structures, demonstrated through four models for public organisation structure. Three of these, hierarchical, market and network based organisational structures are described by several authors (Thompson et al., 1991; Airaksinen and Haveri, 2003) as the three basic organisation structures. We have also chosen to include Neo- Weberian State, which is described as a northern European twist to the New Public Management model.

Chapter three describes the methodological approach we have used in our research. It provides a research model describing our researching choices, from the choice of philosophical stance to the means of data gathering and analysis. This section also depicts the choice of case study as a method, and a justification of our choice of case.

Our research case will be further described in chapter four, providing information about the participating municipalities, their tradition for collaboration and the concrete projects leading up to the Smartkom project. A further examination of the Smartkom project will show its organisational and project related structure, as well as its basis and aims.

Through chapter five and six the gathered data is analysed and discussed. This involves an analysis and discussion of the current organisational structure of the participating municipalities in the Smartkom project, as well as their utilisation of e-government and

collaboration. In addition we will discuss the impact of e-government on the municipal organisational structure. This will serve as the basis for the discussion on the future directions and recommendations for organisational changes related to e-government and network constellations in the delivery of services in Norwegian municipalities.

Finally key conclusions are made in chapter seven, describing our main findings as well as depicting their implications for both the theoretical foundation and Norwegian municipal practice. This section also describes the limitations of our research study and gives some suggestions for further research in the area.

2 Theoretical background

In this chapter we address the need for a *fit* between IT and the organisation through strategic alignment and its critique. Further we define and describe the conceptual term *e-government* and how research into this field focuses on the fit between IT, the public organisation and the society. The scope of e-government within this thesis is defined, showing a focus on organisational effects.

Our focus on the organisational effects from e-government projects requires that we try to have an overview over the main directions identified in the field of public administration and organisational science. This cross-discipline approach is meant to give a different theoretical basis for investigating e-government that is different from a technical/technological and front-end based research. We present a short description and critique of four main organisational models and their principle elements or doctrines. These are compared and a summary table gives a condensed overview of the models.

2.1 IT and organisational fit: e-Government

This section investigates the need for adjustments between organisation and IT to create a fit that can enable better business transactions. The concept of IT and organisational fit is illustrated by views on the benefits of *strategic alignment*, and its critique. Later on we define the conceptual term of *e-government*. Through the description of e-government, our scope within the field is made clear, showing the relationship between IT, organisation and citizens that e-government can create.

2.1.1 The concept of IT and organisational fit

Information technology has had a growing strategic importance for both public and private organisations the last two decades. To gain the full effects of such technology, organisations need a mutual adjustment between their information technology and their business strategy. One answer to this challenge is the concept of *fit* (Aldrich, 1979), which describes the need to fit the organisational form to its business and IT environment to achieve success.

Strategic alignment

The concept of fit has been elaborated on, and adjusted to the IT strategy sphere, through a series of research papers published by IBM in 1993. Thus the concept of *strategic alignment* (Henderson and Venkatraman, 1993; Luftman et al., 1993) was born, which focus on the alignment of an organisations IT strategy and business strategy.

The predominant model within strategic alignment is the *strategic alignment model* (figure 1), which describes a continuous adaptation process of organisational transformation through IT, to leverage its strategic value. The model tries to reflect several strategic choices a manager face regarding IT's role in the organisation.

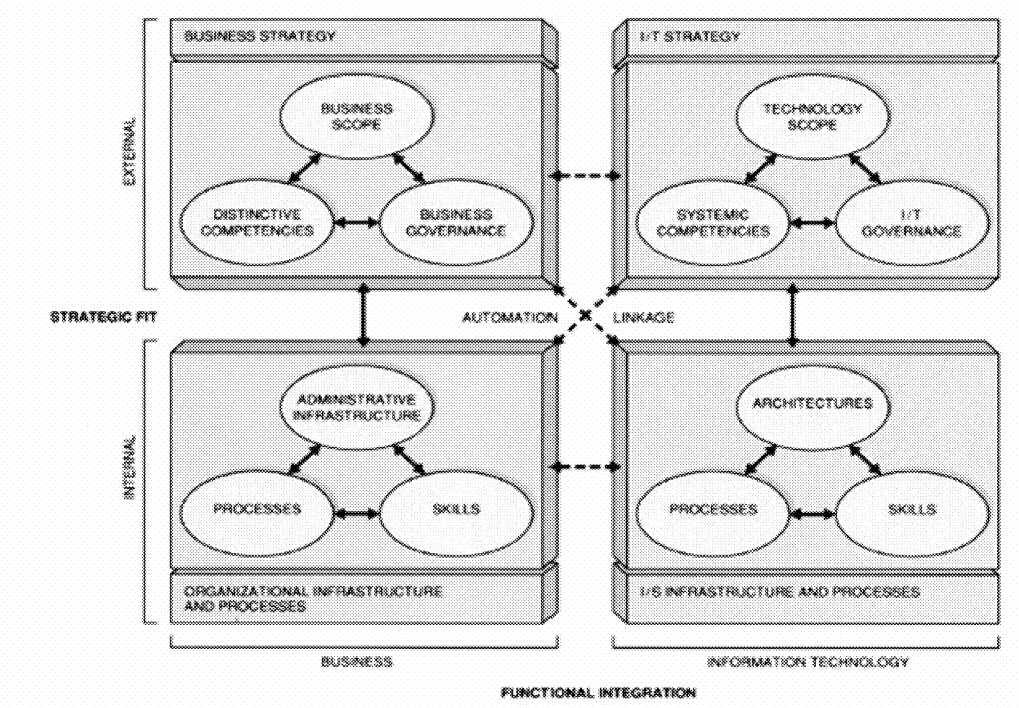


Figure 1: Strategic alignment model (Henderson and Venkatraman, 1993)

Strategic fit

The model is based on two dimensions of fit. On the vertical axis it differentiates between the external and internal domains of the organisation, called *strategic fit*. This dimension stresses the need for adjustments of strategies from both external and internal forces. The external domain describes the business environments of the organisation, while the internal domain pertain its internal structures and processes. This strategic fit is argued to be critical in the business domain to achieve economic success, but the authors also claim that it is equally important to align the IT domain.

To achieve this strategic IT and business fit between the internal and external domains, there is described a set of choices between traditional management techniques (Henderson and Venkatraman, 1993). The organisation is positioned in accordance to the external domain through its IT scope, systemic competencies and IT governance. The internal domain on the other hand is addressed through the organisations IS architecture, IS processes and IS skills. Without this strategic fit it is difficult to realise the benefits of IT investments.

A lack of fit between organisation and IT can give rise to the *productivity paradox* described as the missing increase in productivity compared to the amount of investments in IT. As Robert Solow in the New York Times Book Review (July 12th, 1987) famously put it: "*we see the computer age everywhere except in the productivity statistics*" (cited by Brynjolfsson and Hitt, 1998). The return from IT investments is closely connected to the organisational investments, and therefore a fit between IT and organisation can take some time creating a lag in effects. Combined returns on assets can be significant, in the order of 10 times the initial investment in IT, where 90% of these returns come from "*hidden complementary organisational assets*" (Brynjolfsson and Hitt, 1998, pp. 54-55). Long-term effects from organisational investments to create a fit with IT systems illustrates the need to focus on organisational aspects, such as training, structure and work flows when implementing IT systems.

Critique
The strategic alignment model has been criticized by several authors, the strongest of which being Claudio Ciborra (1997) who have a two folded critique of the model. The first argument is a critique of the article as just a poor revamp of the concept *strategic fit*, which only contribution was to remind managers of the importance of creating a fit between IT and business processes. The fact that the authors never mentioned the concept of strategic alignment after its initial publication, as well as IBM closing down the research program sometime in 1995, is argued to be further proof of the poor quality of the model.

Ciborra's second argument is against the models lack of adjustment to the real world, with an argument that the model is based on a theoretical view of the world, with little empirical proof. Ciborra's view was that the model was more concerned with geometrical lines, than with real life issues. Ciborra also felt that the top-down approach, which the model employs, is not fruitful for business managers, and instead suggests three new concept based on a bottom-up approach; care, hospitality and cultivation (ibid.).

Rik Maes (1999) supports the notion of a highly theoretical model with a poor empirical foundation, and adds that business development is much more complicated than what the model depicts. Additionally it is said that such a structured strategy process is inapt to today's unstable changing world of business. The complexity of business operations, organisation and IT is also apparent in the public sector, with its vast range of services and target groups. Research into the field of IT use in government can give insight into the fit between organisation and IT in public organisations.

2.1.2 e-Government

As the government administrations started using IT tools for case processing and the distribution and storage of information, it became clear that they had to face many of the same challenges that were found in the private business sector. Scholars have identified some of the complex interrelationships found in the public sector, and the field of electronic-government (e-government) has become an evolving and maturing field of research. We will describe some aspects of this field, which focuses on technology, organisation and citizens creating a fit between these elements of the public administration's business.

Definition
We choose to define *e-government* as the provision of routine government information and transactions using electronic means (based on Marche and McNiven, 2003). We believe that e-government may lead to a focus on society needs, structural characteristics of the public organisation and the civil servant's work conditions.

There has been a prolonged debate on the definition of e-government. This debate illustrates the many facets of IT and its effect in the public sector and its use of technology to help put policies into action. Two trails of the general discussion will therefore be described, one being the distinction between e-governance and e-government, and the other the scope of e-government, which will also show our scope of e-government for this thesis.

Description
The first discussion relates to the meaning of the term *governance* versus *government*. Scholars have noticed that sometimes the two terms are ambiguously used, to the point that no distinction is made between them (Marche and McNiven, 2003). Distinguishing the terms can

take many forms, where one term can contain the other and vice versa, or the two terms can be seen as separate and co-existing. A deeper understanding of these terms can give insight into the field of e-government and an angle for understanding our scope and approach to e-government research.

e-Governance as a part of e-government

One way of looking at e-government as a conceptual term is that of an overarching term that encompasses both service delivery and citizen participation in policy making. Barlow et al. (2003) can be seen as an example of this use of the term *e-government*.

The reason for presenting e-government as an overarching concept (figure 2) is that the use of online service delivery (OSD) systems and electronic participation systems (e.g. online polling) affect each other. Systems for OSD can also give indications for the need for services, hence affecting the policy governing the service. e-Government is in this case used as a collective term of all use of IT in the public sector, including service delivery and participation in policy developments because of the influence these systems have on each other.

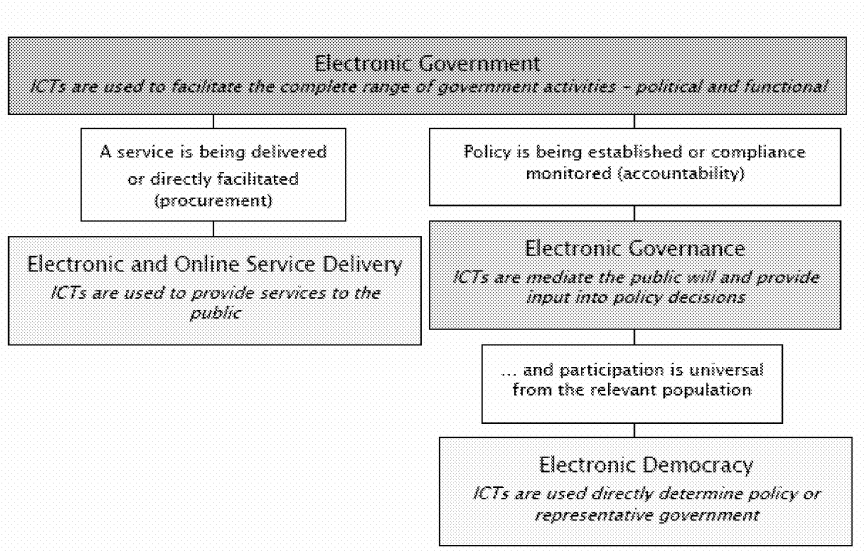


Figure 2: e-Government covering both e-service delivery and e-governance (policy participation) (Barlow et al., 2003, p.10).

e-Government as a part of e-governance

Another way of looking at e-government is viewing it as only a part of the dynamics of public information systems, the total of which is termed by Finger and Pécoud (2003) as *e-governance*. The dynamics of public information systems are described by four forces (figure 3); the evolving use of *New Information and Communication Technologies* (NICTs) by the *actors* when performing the *functions* of government at all *levels* of government.

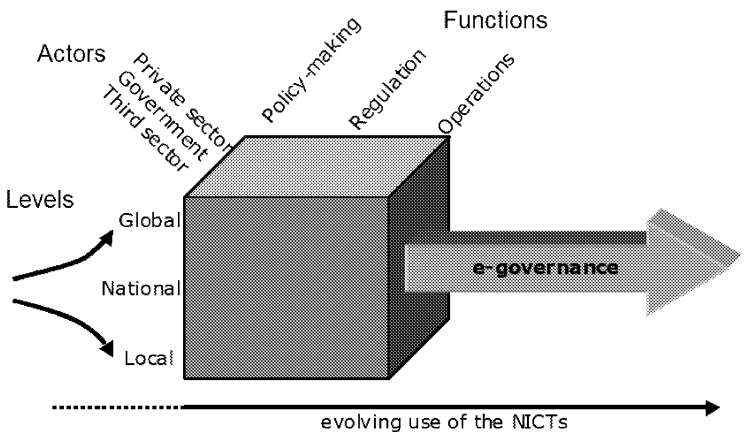


Figure 3: e-Governance as the result of evolving use and scope (actors, funtions and levels) of e-Government, e-Regulation and e-Democracy. From Finger and Pécoud, 2003, p.6 (modified)

In their article Finger and Pécoud describe the main NICTs as e-democracy, e-regulation and *e-government* (ibid., p6) which in turn are part of the emergence of the interaction between the four forces, resulting in *e-governance* (viz. how NICTs fit into the processes of State Transformation).

e-Government and e-governance as separate dimensions

A third identified conceptualisation of e-government is one that implies separate dimensions. Marche and McNiven (2003) stress the value of separating the conceptual terms of e-government and e-governance into separate, but not totally disconnected, dimensions (figure 4).

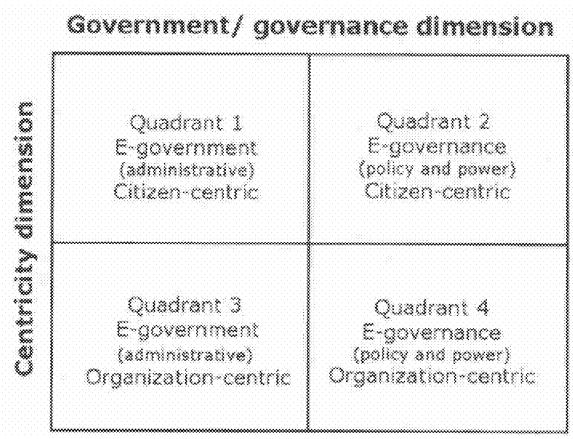


Figure 4: Focus and Centricity Model - e-governance and e-government as seperate dimensions.
From Marche and McNiven, 2003, pp.78

Each dimension on the horizontal axis represents respectively "*different aspects of the relationship between citizens and their political structures*" (ibid., pp.75). The different aspects mean the ways in which decisions are made (governance – policy and power) and the way in which these decisions are carried out (government – administrative).

Centricity on the vertical axis reflects the focus of the two dimensions, where the citizen-centric is a focus on the needs of the citizen, while the organisational-centric is a focus on "*structural characteristics of the organisation and the civil servant*" (ibid., pp.77). This last model leads us to the scope of the e-government and e-governance dimensions. Information systems in the public sector can have a focus on citizen, private sector or third sector needs, such as public service portals which may also include e-governance aspects such as discussion forums, meeting minutes for transparency or polls. Information systems can also have an organisational centric aspect, enabling new ways of processing and administrating services in the back-office, or even new structures through the elimination of distance issues between departments.

Our scoping of e-government

The different actors in the sphere of e-government and e-governance are often depicted as a triangle (Baldersheim et al., 2003, p. 159; Grönlund, 2003; Svensk Kommunförbund/ Landstingsförbundets IT-enhet, 2002, p. 2) showing the different aspects of e-government and e-governance. We have modified this model with the clear distinction between the two dimensions (c.f. Marche and McNiven, 2003) yet showing the common target groups and organisational aspects such as policies, work flows, structure and back-office expert systems (figure 5).

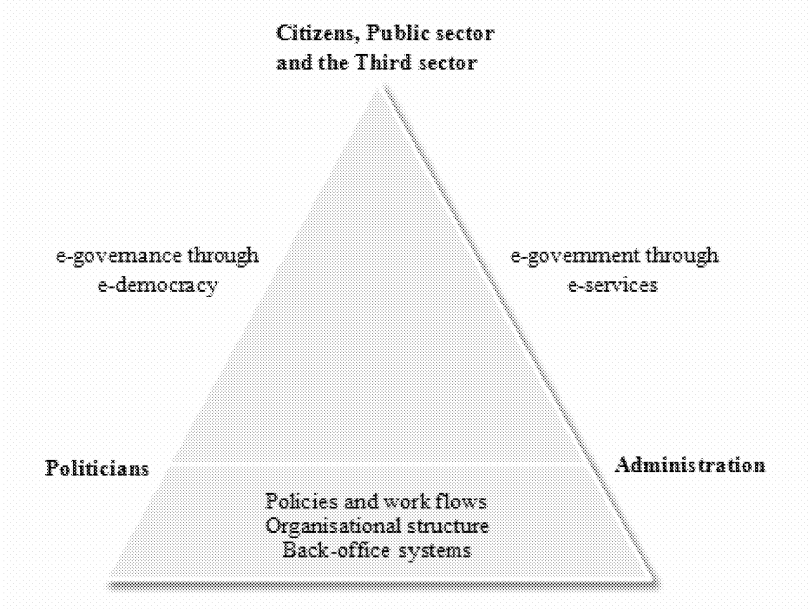


Figure 5: The separate dimensions of e-government and e-governance in relation to their actors, and the dimensions common target groups and common organisational aspects. This model is based on models from Baldersheim et al., 2003, p. 159; Grönlund, 2003, pp. 193; Marche and McNiven, 2003, pp. 78; Svensk Kommunförbund/ Landstingsförbundets IT-enhet, 2002, p. 2

Our version of the *dimensions and actor model* can be used to show our scope in this thesis regarding e-government as the provision of routine government information and transactions, using electronic means that may lead to a focus on society needs, structural characteristics of the organisation and the civil servant's work conditions. This scope does not include a focus on the dimension of e-governance through e-democracy, nor any participatory issues such as the digital divide, accessibility and the direct contact between citizens and politicians. We also use this depiction of e-government to scope our thesis on back-office issues and fit, rather than front-office portals, technical and usability issues.

The use of e-service systems connects the expert systems of the back-office with front-end portals. Information on available public services and transactions, such as applications processes and access to archive material, all make up parts of e-services. e-Government is made operational through e-services, but also connections between unit or department systems internally in the organisation are a part of our scope of e-government. It is the wide array of activities both internally in the public organisation, but also externally in the community, that makes e-government so complex and interesting.

Norwegian municipalities have a wide array of activities sorted into the three main categories of authority discharge, operative services and business activities (Norway, 2003). The latter can be different types of ownerships that results in income such as local cinemas or even stocks in incorporated companies. Operative services are activities that provide basic needs of the citizens such as water and sanitation, but also health, schools and cultural institutions. The first category called authority discharge includes all activities where the municipality makes decisions that are binding for the citizens and businesses. These decisions can be orders, prohibitions and permits, which often include follow-up activities such as supervisions and controls.

Activities that fall under the category of authority discharge have strict restrictions based on law, with regards to whom that can execute the authority (Norway, 2003). Today it is only municipal case processors that are allowed to carry out authority discharges (KRD and KS, 2005; Norway, 2006). Operational services however are allowed to be put on public tenders and to be carried out by other organisations than the responsible municipality.

We will now look closer at the organisational forms that can surround the delivery of these services, and organisation models in which e-government solutions must operate.

2.2 Public organisation theory and models

This section describes the four main state models found in public administration and organisational science literature, Max Weber's Ideal-type Bureaucracy, the New Public Management, the Neo-Weberian State and Network Organisation. These models represent different directions or orientations such as hierarchies, market-orientation and co-operation which is commonly cited in reviews of current public sector reforms. This theoretical background is necessary for our investigation of e-government's role in Norwegian municipal change. These models are principle in nature, and no exact real life examples can be found. Even so they have analytical properties which we can use for our discussions of the municipal change.

2.2.1 Ideal-type Bureaucracy

Public policies has resulted in different operational systems of government over centuries. The predominant system of governance the last century can trace some of its roots in the ideal-type bureaucracy which Max Weber (1947) proposed and analysed. We will look at the main characteristics of the ideal-type bureaucracy and its critique.

Definition

There are many different definitions of bureaucracy, and we choose to look at the term in its analytical meaning and hence avoiding the negative associations of popular use. Weber never gave a clear definition of bureaucracy (Albrow, 1970) but his analysis and description has

given rise to later definitions. A common definition is "*a professional corps of officials organized in a pyramidal hierarchy and functioning under impersonal, uniform rules and procedures*" (Encyclopædia Britannica, 2006).

Origin and description

Bureaucratic systems had been in existence long before the German sociologist Max Weber formulated an analysis of its main elements into a more concrete model. Among the greater theorists on the subject before Weber we find Karl Marx, who described the development of bureaucracy in his theory of historical materialism (Cohen, 2001). Weber's essays are said to be composed as responses to Marx and also to address the debate between Rousseu, Hegel and Marx on the nature of domination (Weiss, 1983).

Weber made the term "bureaucracy" an analytical concept. His work has inspired the system of governance, found in some form, throughout the private and public sectors. Weber's formulation of the ideal-type bureaucratic model was seen as a shift away from the predominant system of hereditary offices and employment based on personal charisma or standing. When looking at the main elements of the ideal-type (Weber 1947), it is easy to see the paradigm shift away from the traditional system of the time:

- Fixed spheres of competence
- A defined hierarchy of offices
- A clear distinction between the public and private roles (and property) of the officials
- Specialization and expertise as the basis of action
- Full-time, career appointments for officials
- Management by the application of a developing set of rules, knowledge of which was the special technical competence of the officials concerned

We see a clear shift from the personal to the impersonal; from tradition to rationality as the basis for governance. A bureaucrat bases decisions on the rules of correct process, as well as his or her own expertise. This impersonal, rational and rule based decision-making is aimed at creating equality when dealing with public officials, ensuring law governed actions and loyalty, rather than action and loyalty based on personal gains.

Ethics play a central role in the ideal-type bureaucratic model, since only equal and due process leads to public trust. The bureaucrat needs to create distance between private and public roles as to ensure impartiality and exclude the mix of private and public property. In return for ethical service, the bureaucrat receives a full-time appointment with career opportunities until retirement.

A bureaucratic work environment is structured within pyramid hierarchies of audit and control, where each sphere or department has specific responsibilities and liability. Work processes follow these divisions of levels and spheres, and rules pertaining to the processes filter down to the individual process managers. This structure can create efficiency through the use of specialised and skilled public servants. Strict divisions of responsibility and rules for process, together with hierarchical audits, are the basis for accountability.

There is an inherent dynamic in the ideal-type bureaucratic model where the rules governing management are to be constantly revised to fit political decisions guiding the business agenda for the public administration. This dynamic exists to ensure flexibility of the system and to

give it the possibility to constantly renew and become more efficient, using new communication technology and adapt to the demands of the society.
The combination of rationality, equality, ethics, loyalty and flexibility has made any system resembling, or containing most of the elements in the ideal-type bureaucratic model, very durable and competitive.

Critique
Weber's bureaucratic ideal-type has received critique from within the organisational sciences (e.g. hierarchical authority versus professional authority (Toren, 1976)). Also the examples of negative sides of the bureaucratic model have renewed criticism by market-oriented (Osborne and Gaebler, 1992) and network oriented scholars (Powell, 1991; Rhodes, 1991).

A fundamental debate has been over the question of participation, here meaning the degree of direct involvement of citizens (or groups of citizens) in public administration. Scholars favouring network organisations find a lack of cooperation, flexibility and participation in state structures based on the ideal-type (Olsen, 2005). Involvement of non-governmental organisations (NGOs) and citizens directly, should open the power house of bureaucracy and result in a more open democracy. Network organisations will be described in more detail later.

Market-oriented criticism has focused on the rigid system that has been inspired by the ideal-type bureaucracy and how wasteful and complex this hierarchical system has become compared to private business management innovations. A major failure, according to these critics, has been the lack of competition over public services. With no market forces, the bureaucracy is said to have expanded without concern, due to its monopoly situation.

The critics see the inequities of the bureaucratic state model in a post modern environment with the global challenges that presents themselves for governments. Even Weber saw some inherent inequities in the ideal-type model, what he called the "Iron Cage" of the future, where individual freedom will be suppressed by a more total bureaucracy. Weber did not see any way of avoiding this scenario, but wondered what would result from it. The proponents of the New Public Management model have also added their voices to this line of criticism.

2.2.2 The New Public Management

The New Public Management has been one of the major focal points of academic debate and political vigour since its emergence in the late 70's. We will try to briefly describe the New Public Management as a public sector structure, its critique and possible legacy.

Definition, origin and description
The New Public Management can be described as a set of managerial and strategic practices adopted from the private business sector (Gruening, 1998). Main elements of these practices are to achieve a focus on output (return on investments), customer orientation, empowerment of managers, contracting (privatisation) and competition (markets). The term "New Public Management" can therefore be described as a handy shorthand or "*a summary description of a way of reorganising public sector bodies to bring their management, reporting, and accounting approaches closer to* […] *business methods*" (Dunleavy and Hood, 1994, p. 9).

To fully understand the New Public Management we need to investigate its roots, which are often placed within New Institutional Economics (ibid.). 'Old' Institutional

Economics (see figure 6) is a school which tries to describe the complex dynamics of economics, contrasting itself from neoclassical economics with its 'narrow' focus on supply/demand and utility/profit.

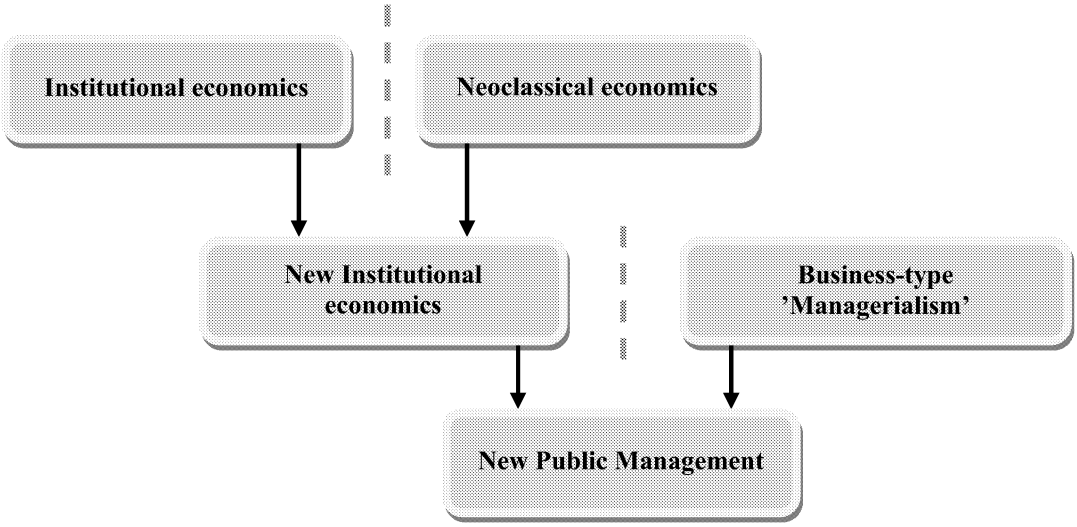


Figure 6: Theoretical origins of the New Public Management

New Institutional Economics can be described as a merger of the two schools of economics, because it includes an appreciation of neoclassical price theory and yet it is willing to relax on core neoclassical assumptions (perfect information and rationalisation) as an accommodation for institutional economics (Doner and Schneider, 2000). This mixture of institutional economics and neo-classical economics might seem a paradox, given the dissension between the schools. None-the-less the call to improve public sector efficiency has mixed them, with the resulting New Institutional Economics.

As the principles of New Institutional Economics relates to the structure and economic dynamics of the organisation, *Busines-type* '*Managerialism*' relates to the public servants themselves, and their way of conducting the business of the public. The ideas of empowered managers using more of their own discretion to focus on managing by results (*ex-post* evaluations) instead of following procedures and rigid policies is termed Business-type 'Managerialism' (Auriacombe, 1999).

In the frame of New Institutional Economics, influences from the private sector's Business-type 'Managerialism' scholars have identified and termed the new trend in the public sector as the New Public Management. The identified doctrines of NPM (figure 7) have implications for strategy, operations and the organisational structure of the public sector.

New Public Management doctrines (Dunleavy and Hood, 1994) seek to establish *market* forces in the public sector and a new *management* style and strategy. To achieve *competition* the public sector needs to create markets for their services. This is a basic component of the market-oriented reform of public sector. Pseudo markets can be created at least to make an internal market between government units. The *disaggregation* of public sector units creates a possibility to expose individual services for market competition, since units providing services are formed around a single service instead of 'monolithic' units covering many services. This division of departments into one unit for each service makes the creation of internal or real markets possible.

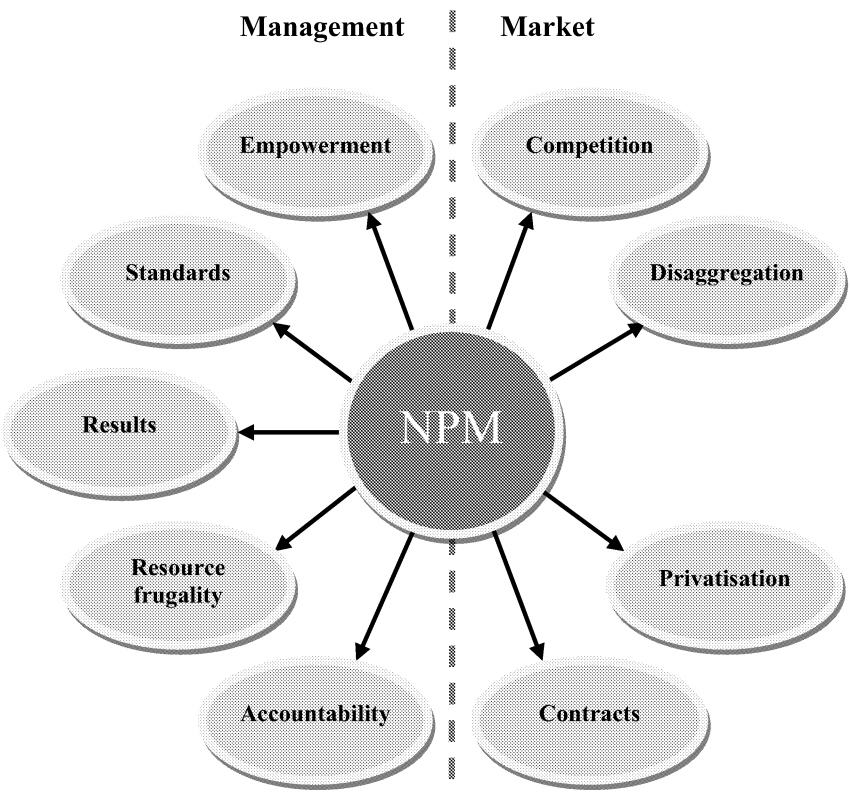


Figure 7: The New Public Management Doctrines (adapted from Hood 1991 and 1995)

Private companies can bid for the delivery of services (*privatisation*) in competition with disaggregated public sector units, thereby creating efficient and low cost services. With an exposure of services to market competition, *contracts* are used to control the delivery of services from the third party provider. These contracts ensure the correct delivery of services with measurable results, and create the possibility to change service providers if new and better competition arises.

The administration of the contracts will be handled by *empowered* public managers with more freedom for hiring and rewards. This empowerment is based on the 'managerialism' of private sector innovations, where managers are given more freedom from procedures. Freedom for the managers to utilize their own discretion requires clear assignment of the manager's responsibility. This will give *accountability* and audits should reinsure the correct use of public funds.

The empowered managers will operate with explicit *standards* and measures for output control based on contractual objectives. The incentive for the management should be rewards and more resources allocated for measured performance (good *results*). Incentives are meant to give a focus on discipline and *resource frugality*. Examples could be bonuses based on budget savings in the fiscal year.

The result of the establishment of market forces and new management practices might be a new structure where public sector units and private companies compete for service delivery contracts, and public managers use their discretion, prompted by the promise of incentives, to choose the most efficient service offered. This end result could result in the municipality becoming a sort of holding company, ordering services from third parties.

Critique
There have been many critics of the New Public Management since its emergence. NPM touches many aspects of public life and this might be the reason for the wide variety of complaints. For an elaborate discussion of four main critiques and replies to these four critiques, see Dunleavy and Hood (1994).

From the definition we see that a common denominator for NPM reform seems to be the aspiration towards private sector practices. Since the New Public Management is just a summary description of reorganisation efforts, there exists not just one, but many forms of public reorganisation efforts all of which are labelled as NPM reforms. Yet the claim has been that globalisation can prompt different governments to implement the same solutions (Lynn, 1998). This *theory of convergence* of reforms (or isomorphism) on NPM doctrines has been contested by those who proclaim the existence of *cultural relativism* (or determinism), meaning that the existing culture of a nation dominates the flavour of its reforms (Olsen, 2005).

Some critics have warned that the introduction of market forces and privatization will take away the state's control over services. The theory of "hollowing out" implies that with the outsourcing and dismantling of the bureaucracy, the chain of command, or the flow of policies from the central government does not reach down to the local administrations (Auriacombe, 1999).

Another major group of critique follows NPM's doctrines of management change. The abolishment of lifetime employment and reduction of union influence as a result of market-oriented managerialism sparks tensions. A prerequisite in reducing costs in the public sector is the possibility to remove positions after contracts have been made with service providers. An issue with the reduction of career security and perks for the public servants is the possible loss of the long term perspectives of the public administration (Olsen, 2005).

There is a worry that the combination of altered securities for public servants and incentives based on (fiscal) performance will degenerate the ethical norm of public services, where corners can be cut after contracts have been signed and that a prioritisation of client groups on the basis of incentives will lead to the dismantling of egalitarian values.

On the basis of the vast impacts that the New Public Management might have, some scholars have opted for a rediscovery of the bureaucracy in a post modern setting through the description of the Neo-Weberian State model (Dreschler, 2005; Olsen, 2005; Pollitt and Bouckaert, 2004).

2.2.3 The Neo-Weberian State

Debating the notion of a global convergence on the New Public Management model, scholars have noted a distinctive differences between 'Anglo-Saxon' NPM reforms and Central and Northern European reforms (Olsen, 2005; Dreschler, 2005). Scholars have found no uniform adoption of NPM reforms; they vary between the two groups of countries. A main difference seems to be the view of the role of the state, i.e. the state as a manager of contracts, versus the state as a custodian of equality of law and values and as a facilitator of solutions.

Definition
No clear definition of the Neo-Weberian State as a term has been given by Pollitt and Bouckaert (2004) who coined the term and describes its contents. We choose to define the Neo-Weberian State as public reform with a reaffirmation of Weber's analysis of the bureaucracy, but also including a post modern focus on citizen's needs and wishes, more participation, *ex-post* controls and service oriented managers.

Description and origin
Central and Northern European reforms have shown some similar patterns. They have not fully embraced the NPM doctrines of market forces and full business type management. Cultural differences, with the view of the state as a custodian rather than a manager, may have lead to a fundamental different approach to reforms in Central and Northern Europe. Trends in these national reforms have prompted the definition of the Neo-Weberian state model (figure 8). The term is based on the reaffirmation of elements in Weber's ideal-type model with identifiable new elements as described by Pollitt and Bouckaert (2004, p. 99-100).

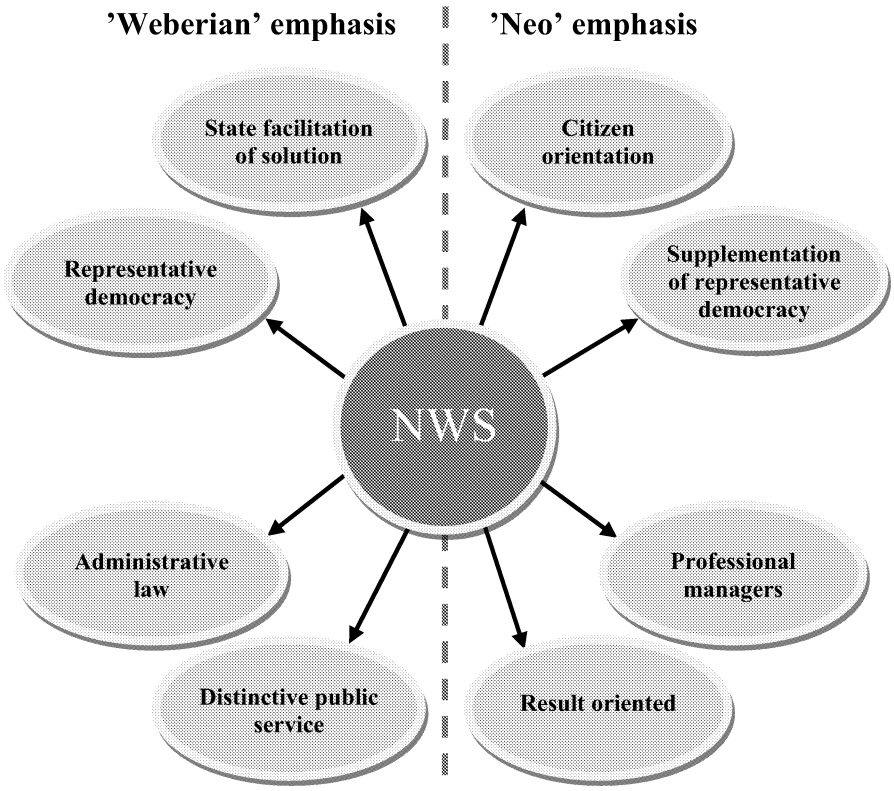


Figure 8: The Neo-Weberian state model (adapted from Pollitt and Bouckaert, 2004)

The Neo-Weberian state model reaffirms some of the elements from Weber's ideal model. A fundamental element is the role of the *state as facilitator of solutions* to problems facing the nation, as opposed the view that competing public service providers should deliver solutions to meet globalisation, technological change and environmental threats. The state apparatus requires the legitimating force of the *representative democracy* (central, regional and local) to facilitate durable solutions, since it is foremost through the representative democracy that the will of the people is facilitated.

Modernised *administrative law* will continue to preserve the principles of the citizen-state relationship, meaning equality of law, legal security and the possibility to scrutinize public case processing. These reaffirmations of elements from Weber's ideal model preserve the idea of a *distinctive public service*, with its own culture, status, terms and conditions. A distinct public service contrary to a diffusion of private business practices.

Aside from the reaffirmation of Weberian ideals, NWS includes identifiable new elements such as a shift towards customer- or *citizen orientation*. This orientation is not achieved through the use of market mechanisms (competition and contracts), but rather through the creation of a professional culture of quality and service. *Professional managers* should be encouraged to be more than merely an expert in the laws pertaining to his or her sphere; they should also excel in meeting the needs of the citizen. Another result of an emphasis on citizen orientation is to *supplement to the representative democracy*. Citizen views can be directly represented or consulted when decisions are made, rather than facing a closed representative democracy. The representative democracy is not replaced but adapted to become more flexible in a new context.

The Neo-Weberian state model shows the shift in the balance between *ex ante* to *ex post* controls i.e. a greater *orientation to the achievement of results* while not abandoning the the use of *ex ante* evaluations. A modernization of relevant laws encourages result orientation rather than just following procedure. This might be seen as contradictory to the emphasis on administrative law described above. The contradiction occurs if a result orientation is used in the pursuit of fiscal goals, compromising the equality provided by the procedural correctness in Weber's Ideal model. Pollitt and Bouckaert (2004) do not give an answer to this possibility, although other scholars have seen a problem of balancing result orientation and equality in services (Olsen 2005).

Critique
The Neo-Weberian State is a fairly new concept with few scholars giving constructive critique. Even so it is in opposition to the view of the New Public Management as a global wave of reform, and also to NPM's basic ideas of competition and privatisation.

2.2.4 Network organisation

The increase in ambition and complexity of public sector responsibilities, have lead to a boost in the popularity of networks (O'Toole, 1997). Furthermore the introduction of information technology has resulted in a potential to rethink the way public sector organisations are structured, as the boundaries of the *distance imperative* no longer apply to the same extent (Baldersheim et al., 2003).

Definition
Networks have a wide range of definitions, from simple definitions of collaboration to complex definitions of collaborative organisational structures. Researchers struggle to give a clear cut definition of the concept. There are nevertheless two major approaches to network definitions; networks as a means of collaboration and networks as a co-governance mode (Kooiman, 2003), essentially meaning an organisational structure to a similar extent as market and hierarchy based organisational structures.

To ensure a broad applicability of networks we have chosen to use Himmelman's (1996) definition of organisational collaboration, which is the "*process in which organisations*

exchange information, alter activities, share resources and enhance each others capacity for mutual benefit and a common purpose by sharing risks, responsibilities and rewards". This can be condensed into a definition of networks as a set of organisations working together towards common goals without creating a new legal body.

Description

Although the definition of networks is not clear, there are several similarities between networks and other organisational models. As we have described earlier, different organisational structures have different defining characteristics and drivers. A network can consist of several organisations that are based on different organisational structures, and even develop minor hierarchical structures itself.

One of the key characteristics of networks is its means of coordination. In contrary to the previously described organisational structures, networks are based on less formal, more egalitarian and cooperation based coordination (Thompson et al., 1991). This can create issues regarding authority, such as different governance problems (Baldersheim et al., 2003), as authority is decentralised horizontally between the network members. Consequently authority might not be the best way of controlling a network, with trust being argued as a more suitable control mechanism (Airaksinen and Haveri, 2003). Such a mechanism will have consequences for the way decisions are made in the network. While decisions within individual organisations are based on authority, one would need to negotiate between the network members to achieve some kind of agreement on decisions that affects the network. The kind of trust needed to effectively coordinate networks needs to be built up over time, and is gained through three different sources; recurrent transactions, social similarities and formal social structures (Zucker, 1986).

Another key characteristic of networks is its flexibility, which is gained through its open structure. This flexibility makes it possible to expand the number of members without great effort, as long as the new members are able to communicate with the existing once. Such communication assumes that the parties share certain defining values within the network.

Classification

Networks occur in a wide spectre of shapes, forms and sizes, creating a need for a classification of the different types. One such classification is made by Rhodes (1991), which described British networks in accordance to five dimensions (figure 9), which are also representative of other networks. The first dimension, *constellation of interest,* refers to the interest of the different members of the network. The balance between the members of the network is described in the *membership* dimension, and can be described though characteristics such as private or public sector. Furthermore Rhodes describes the degree of interdependency within the network; *vertical interdependency*, interdependency towards other networks; *horizontal interdependency*. The last dimension, *distribution of resources,* refers to how resources are distributed between the actors in the network, which will affect the vertical and horizontal interdependency of the network.

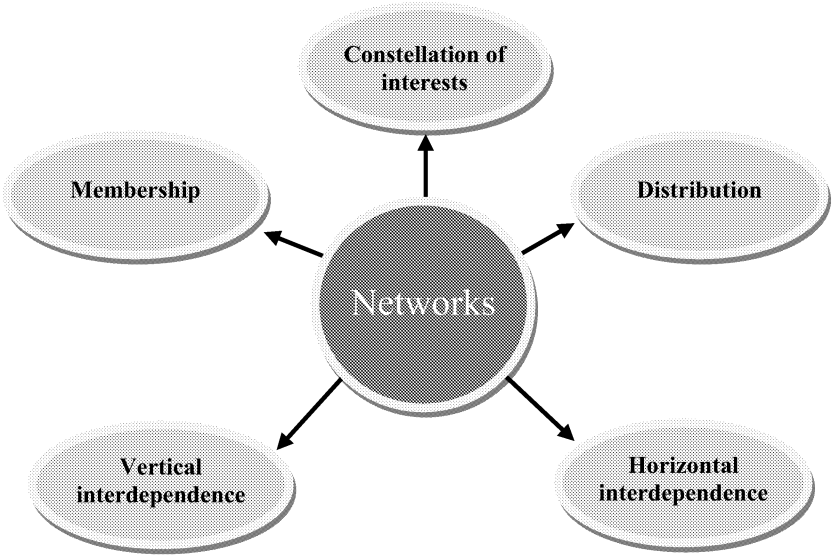


Figure 9: The Network dimensions (adapted from Rhodes, 1991)

Based on Rhodes' five dimensions of networks, one can identify two main groups of networks, and a further categorization of the two into six network types.

The first of the two groups, *policy and territorial communities,* refer to highly integrated networks with stabile relationships, restrictive membership, insulation from other networks and a vertical interdependency based on a shared responsibility of service provision. The difference between a *policy community* and a *territorial community* is their difference in constellation of interest.

- *Policy communities* are based on functional governmental interests such as education and health care.
- *Territorial communities* focus on geographical interests of a region, such as Norway and Rogaland.

The second group, *issue, professionalized, intergovernmental and producer networks* refers to networks with lower structural integration.

- The *issue network* is typically the least integrated of the four, with a large number of members and low interdependency. The organisational composition can be described as stable, without a centralised bargaining position.
- *Professionalized networks* are characterized by the similarity of its members, typically covering one profession like doctors, reflecting the interests of this group. This creates a high degree of vertical interdependence, while it isolates the networks from other networks.
- Networks based on representative organisations of public authority are described as *intergovernmental networks*. These informal networks have an extensive constellation of interest, limited vertical interdependency, wide horizontal interdependency and an ability to penetrate other networks. A typical example of such a network would be The Norwegian Association of Local and Regional Authorities (KS).
- Finally *producer networks* refer to networks of variable membership with a major role of economic interests in policy making. The membership of these networks is

fluctuating, with a limited interdependence of economic interests. Crucial to this type of networks are their dependency on centralized organisation for the delivery of services. A Norwegian public sector example of a producer network can be inter-municipal companies described later in the thesis.

In a Norwegian municipal context Baldersheim et al. (2003) have created a typology of different degrees of collaboration among municipalities (Figure 10). It shows different municipal collaboration forms based on the degrees of collaboration from the individual municipalities to the joint municipalities.

"Citizens tragedy"	Collaboration continuum				"Super-municipality"
Municipality without cooperation	Consultation 1	Coordination 2	Inter-connected 3	Cooperation 4	Joint municipality
No contact or information exchange	Sporadic contact and information exchange	Mutual adjustment of policies in the municipalities	Joint operation of selected services and institutions	Joint politics in one or more area	Joint politics in all areas

Figure 10: Typology of forms for collaboration (translated from Baldersheim et al., 2003)

We will look at a possible connection that can be made between Rhodes' (1991) network categorisation and the typology of collaboration by Baldersheim et al. (2003), allocating different network types to the collaboration continuum, and adding our own updated version of Rhodes' producer networks: *the production network*.

The *professionalized network* does not have an intention of producing service. However, they exchange information and ideas to maintain the interests of the given professional group. One can describe these networks as a (1) *consultation*. These professionalized networks can be both of a sporadic and/or infinite timeframe, but due to the small extent of collaboration they should be described as more of a collaboration than an network organisational structure.

Another network not concerned with the daily delivery of services is the *issue network*. Through a loosely integrated large number of participants, across several organisations, this network type is well suited to the adjustment of policies between organisations. A description of issue networks as (2) *coordination* is thus fitting. Although these networks are somewhat permanent, they do not have a centralised organisation point, which prevent them from being described as an organisational structure.

The two last stages in the collaboration continuum involve the production of services. This implies service production through daily operations. Consequently the network types will need a more structured organisational form. Although *producer networks* have a variable membership, they are organised around the production of a single service, and thus often needs a joint operation through a new legal organisational body (a separate company) to achieve the service production.

There has been a great evolution in the use of the Internet and e-government based systems since Rhodes wrote about producer networks in 1991. We use the described producer network as a template for our description of a *production network*. The difference between the two is that a producer network needs a centralised structure (such as a hierarchical separate legal body) to coordinate production activities, while production networks utilize new information

systems giving participating organisations the possibility of coordinating production (of services) without creating a separate central organisation. As a result of this, producer networks *and* production networks can be described as (3) *inter-connected* in the continuum of Baldersheim et al. (2003).

The cooperative production of services might lead to the next step in the continuum through establishing *policy networks*, which focus on a functional governmental interest. This would be the basis for common politics in one or more areas to uphold the functional interests such as the production of a governmental service. These permanent networks would have a tight integration, selective membership and stabile surroundings, which would mean a characteristic similar to other organisational models.

A further increase in the integration of the participating organisations would include a joint legal body between the participating organisations. This would however change the structure from a tightly coupled network organisation to one single large organisation, most likely with a hierarchical organisational structure.

Critique
The flexibility of networks can also be seen as a weakness. According to Savitch and Vogel (1996), networks have a high degree of uncertainty, are vulnerable for outside penetration and require a lot of maintenance, which reduces the gain of flexibility. The extent of these issues will of course depend on the characteristics of the network.

Because of the decentralised authority, one needs to consider the effects of *partisan mutual adjustment*, which indicate that no part can initiate changes on their own, although all parts can veto a change (Lindblom, 1979). This makes the network decision-making process time consuming, and might cancel out some of the advantages of networks.

Networks are also susceptible for political issues, and have been used to create distance between politicians and controversial issues. Furthermore network actors have been able to shift the emphasis of networks during implementation, and changed the distribution of the results gained by the network (O'Toole and Meier, 2004). Such political issues could affect, and potentially change, the goals the interdependent network members work towards.

2.2.5 Comparison of models

Organisational science models selected for this paper are all connected with the developments in Norwegian public sector the last 30 years and give a background for our case described later. We would like to give a clear picture of the differences and similarities of the theories and state models based on a comparison. This comparison is based on the theories as described in this paper, and is therefore a comparison of ideal, or principle, models not real life examples.

Differing models
It seems that the different state models have somewhat differing ideologies or political foundations at their core. Scholars usually portray bureaucratic-, market- and network organisation as alternatives based respectively on hierarchical authority, competition and cooperation (Airaksinen and Haveri, 2003; Olsen, 2005; Thompson et al., 1991).

The main difference between market-oriented organisation and hierarchical organisations is the introduction of competition. A market is created, e.g. through a public tender, and all service deliverers may compete for a contract. This contract is the basis for accountability and together with the legal power backing the contract it is a substitution for trust. The participants in market transactions are free of any future commitments (Powell, 1991). In a hierarchy, such as the bureaucracy, departments are connected in the structure on a more permanent basis. Departments perform tasks without having to compete for the right to perform the tasks. Employment contracts, company loyalty and control structures secure accountability in the hierarchy.

The third organisational type, network organisation, through a *production network*, is based on "*infinite, sequential transactions within the context of a general pattern of interaction*" (Powell, 1991, pp. 270). The relations are therefore more permanent than a market based relationship, which creates indebtedness and reliance over time. In a network organisation, such as a production network, you do not find the subordinate and supervisor roles between participants as you find in a hierarchical structure. This gives an organisation based on trust where sanctions are normative rather than legal, i.e. a breach of trust leads to distrust rather than legal actions (Powell, 1991). Network organisations are inclusive, but not open enough to create competition. Participants are independent organisations, but with an interdependence in the production of services. They base accountability on trust rather than contracts and control structures, and have infinite collaborative relationships rather than finite contractual relationships.

Principle differences and similarities between the models are summarised in table 1 based on our descriptions of their doctrines. The principles depict some aspects of structural (organisational), cultural and functional (managerial) aspects of the models. These are identified as the key reform features (Pollitt and Bouckaert, 2004).

Table 1: Comparison of principle elements based on our descriptions

	Ideal-type Bureaucracy	**The New Public Management**	**The Neo-Weberian State**	**Network organisation**
Structure:	Hierarchical offices within spheres of competence	Privatised disaggregated services	Hierarchical offices within spheres of competence	Networks of participating organisation
Distribution of authority:	Centralised	More Decentralised	Centralised	Decentralised
Citizen, private and third sector influence:	Representation	More direct democracy	Supplemented Representation	More direct democracy
Service provision:	Service monopoly	Services through competition	The State as the main deliverer of solutions	Collaborative service delivery
Process management style:	Rule based	Empowerment	Professional management	Consensus based
Resource evaluation:	Ex-ante	Only Ex-post	More Ex-post	More Ex-post
Quality of service delivery:	Skilled professionals	Public tenders	Skilled professionals	Spectrum of specialist organisations
Accountability:	Public ethics	Contracts	Public ethics	Trust

Co-existing models
Because of the models differing approaches and structures for organisational activities, there might arise issues from combining the structures for the same activity or service, where "*each approach* […] *devaluates the other*" (Powell, 1991). The participants in a network organisation could be viewed as naive by those that practice market competition, and the competitive market traders might be viewed as untrustworthy in a network (ibid.).

The holistic visions of these models assume that their single set of principles for organisations are superior to the other, and that such superiority will lead to a convergence on one model. This notion of convergence on one model has not been supported by empirical observations (Olsen, 2005). Rather, it is suggested that the models do not exclude each other. The many facets of municipal activities make it unlikely that "*public administration can be organized on the basis of one principle alone*" (Olsen, 2005, p. 23). Diverse and sometimes contradictory demands on public systems can require a balance of diverse organisations that one principle can't provide. Each model is a part of the "*repertoire of overlapping, supplementary and competing forms of co-existing in contemporary democracies*" (ibid., p. 2).

This gives the municipal management the opportunity to guide the organisation of service provision in different directions depending on the legislation, regulations, policies and practical considerations for each individual service. We will later investigate the use of these state models and organisational forms in a Norwegian case context.

3 Research method

The research methodology is the foundation of all social science research, and can be defined as "*the philosophy of the research process*" (Nunamaker et al., 1991, pp. 97). This chapter will depict the major characteristics of our research philosophy, describing the values and assumptions that define the study.

3.1 Research strategy

The choice of research strategy is a choice of both method and paradigm. While the method describes the type of information the researcher uses to describe an event, the paradigm explains how the researcher's view of the world defines the context of the event. Jacobsen (2005, p. 65) describes a research strategy that will serve as the basis for our research design (Figure).

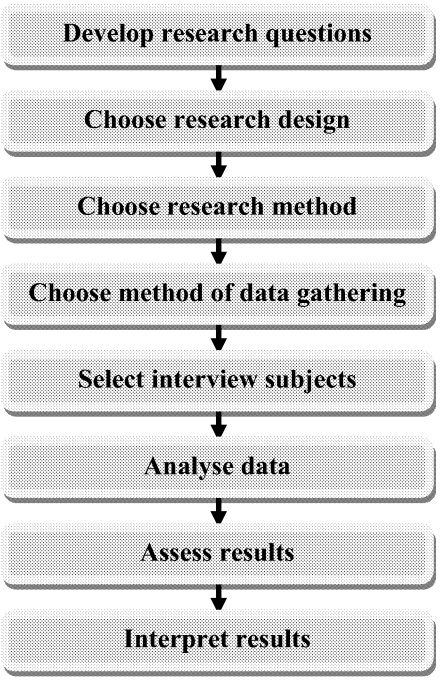


Figure 11: Phases in our research process (Jacobsen, 2005)

3.1.1 Choice of research method

IS research have traditionally been dominated by quantitative research methods (Alavi and Carlson, 1992), however due to the expanded scope of this research area, now including the organisational and behaviour settings of the IS system, the quantitative method have been described as inadequate in many situations. Quantitative research method does not possess the ability to capture all the contextual aspects of a complex research object, because of its assignment of numeral values to each studied aspect (Galliers and Land, 1987). This limitation has increased the popularity and applicability of qualitative methods (Orlikowski and Baroudi, 1991).

The choice of research strategy can however not be described as a dichotomy of choice, but rather a continuous scale, ranging from the pure quantitative approach, using exclusively questionnaires, to the pure qualitative approach, using only non structured conversations.

Due to the complex nature of our research, we opt to use a qualitative research approach, which can be defined as "*the use of qualitative data, such as interviews, documents, and participant observation, to understand and explain social phenomena*" (Myers, 1997). We will nevertheless use some structural elements to control the environment of our research.

3.1.2 Choice of research paradigm

To further define our strategy, it is important to describe our research paradigm. This will give an indication of the implicit and explicit philosophical assumptions we have about the nature of the world. The concept of a research paradigm is defined by Mingers (2001) as "*a construct that specifies a general set of philosophical assumptions covering for example ontology, epistemology, ethics or axiology and methodology*". Orlikowski and Baroudi (1991) describe three such paradigms; positivist, interpretive and critical. The choice of a paradigm has earlier been described as mutually exclusive (Burrell and Morgan as cited in Mingers, 2001), although research suggest that this is somewhat restrictive. Several authors have thus suggested the need for a multi paradigm approach (Mingers, 2001; Orlikowski and Baroudi, 1991; Johnson and Onwuegbuzie, 2004)

A multi paradigm approach is nevertheless resource consuming, and outside the reach of this limited resourced study. Consequently we will define this study within one single paradigm. We assume that the project participants will use their own experiences and meanings to describing the Smartkom project, as well as its effect on the organisation; we have therefore chosen to place our research within the interpretive paradigm.

Orlikowski and Baroudi (1991) further classify the interpretive paradigm into a weak and strong constructionist view, based on the degree of interpretive impact of the researchers. As two fairly inexperienced researchers, it would be difficult for us to prevent our own interpretations of the Smartkom project to shine through. We have thus chosen a strong constructionist view.

The choice of paradigm further effect our beliefs of the world, which can be described through Chua (1986, p. 604) three beliefs about; physical and social reality (ontology), knowledge (epistemology) and relationship between theory and practice. The ontology prevents us from making any assumptions regarding the social context of the participating organisations. We will only be able to see the effects of the Smartkom project on the organisational structures through the interaction of the project participants. Furthermore the epistemology requires us to get into the organisations to gain experience about the projects social processes.

3.2 Research design

The selection of research design depicts the practical implementation of the research strategy. This design has to reflect our choices of a qualitative method using an interpretive paradigm. Consequently a choice of an interpretive case study would fit the requirements of our research strategy. Orlikowski and Baroundi (1991) have described case studies as the most used qualitative design. A case study can be defined as a study that "*examines a phenomenon in its natural settings, employing multiple methods of data collection to gather information from one or a few entities*" (Benbasat et al., 1987).

Our choice of an interpretive case study was further based on the designs ability to explain complex situations and organisations, describing its how's and why's (Eisenhardt, 1989; Fitzgerald and Howcroft, 1998; Tellis, 1997; Walsham, 1995; Yin, 1994). The Smartkom project consists of four municipalities, several other involved parties and a number of related projects. This creates a complex situation that would be hard to examine in any other manor.

Case studies are also appropriate for research in areas where research and theory is in its infancy, consequently making the experience of the participating actors essential, as well as the context of their actions (Benbasat et al., 1987). This argument fits the case of the Smartkom project. Although neither online case processing, nor inter-municipal collaboration are revolutionary to their own research context, the organisational effects these two have combined, is still not investigated in any great depth. This would make the experiences of the participants in the Smartkom project essential to the project.

3.2.1 Case clarification

An important design element in the case study is the choice of the unit that is to be analysed (Benbasat, 1987). This will describe the focus of the study, potentially being; individuals, groups, organisation and so on. Our study will focus on the effects of Smartkom on the organisational structure of the participating municipalities. The choice of unit to analyse will be dependent on our research question, with the alternatives being the Smartkom project or the organisations affected by the project. Our research questions focus on the organisational effects of the project, thus making the organisations the natural unit of analysis.

Another key aspect of the case design is the decision of number of cases, with the choice being between a single-case design and a multiple-case design. Each of the alternatives has their strengths and weaknesses, which will effect the decision. Tellis (1997) argue that while multiple-case designs have to based on replication, the single-case can be based on sampling logic. Consequently, as no replication case is available to sample, our study is limited to single-case designs. Our single-case study could later on be used as the basis for a multiple-case study.

3.2.2 Case selection

Several aspects were considered while reviewing different potential case sites. The final case decision was based on the theoretical justification provided by Yin (1994), in addition to such aspects as case location, location characteristics and the ability to gain access to key actors.

Yin (ibid.) describes three rationales for choosing a single-case design; a critical case in testing a well formulated theory, an extreme or unique case or a revelatory case. As Høykom chose the Smartkom project as one of their ten lighthouse project, we consider the impact of the project, on a national level, to be fairly significant. This reflects on Yin's second rationale for doing single case studies, the study of extreme or unique cases. Furthermore the Smartkom project, as well as other similar inter-municipal projects, describes a new form of inter-municipal service delivery, which is still not described in any great depth. This gives support to Yin's (ibid.) third rationale for doing single case research studies, the emergence of new research possibilities.

The location of the North-Jæren region, within fairly close proximity of our research institution, makes research manageable, despite the strictly limited economic and time

constraints. This was an important condition, giving the Smartkom project an edge on other potential projects such as the Collaboration council for Nedre Romerike, the ORKidé-municipalities and the SÅTE-municipalities (Vigtel, 2006b).

The characteristics of the participating municipalities (Randaberg, Sandnes, Sola and Stavanger) represent widely different municipalities in term of size, population density and so on, which partially reflect regional diversity that is typical for the Norwegian context.

Finally the correspondence between our research topic, and the ones proposed in Forum for Innovasjon's pre-study to eBygg 2009 (Vigtel, 2006a) gave us the possibility to gain access to the most essential actors in the Smartkom project.

3.3 Data collection

The data collection method is dependent on the design of the research project. There are however several methods available that fits case research design, some of which are documentation, archival records, interviews, direct observation, participant observation and physical artefacts (Jacobsen, 2005; Remenyi et al., 1998; Yin, 1994). The typical approach is however to use a combination of different methods, to ensure that most perspectives of the case is described. In our research we have decided on focusing on two main sources of information, interviews and documentation.

3.3.1 Interviews

The interview is described as the main tool for data collection in case studies (Yin, 1994), and can be described through the type of interview (Berg, 2001), and medium of communication.

Interview types describe the degree of control in the interview. The control is implemented through structure, and can be described through three categories; standardized interviews, semi-standardized interviews and un-standardized interviews. Since we still were lacking knowledge on the area of inter-municipal collaboration, and its effect on the municipal organisation, we wanted to use a semi-structured interview type. By not restricting the interview to a given direction, we would be able to unveil unknown aspects of the case, which would not have been discovered through a more structured interview type. Some structure makes the interview easier to control.

The communication media depicts the way the interview is performed. The choice of medium will define the richness of the gathered data. Alternative mediums include; face-to-face interviews, telephone interviews and (e-)mail based interviews. We have chosen to solely rely on face-to-face interviews. This complements our lack of experience for conducting interviews, as it would give us more flexibility during the interview. Furthermore respondents have a higher probability of opening up to difficult issues, during a face-to-face interview, because of the dialogue created through physical contact (Jacobsen, 2005).

Selection of participants

Remienyi et al. (1998) describe a set of guidelines, designed to assist in the interview process. Several of these depict the choice of interviewees, and have been the basis for our choices. We have followed the recommendation of focusing on top management within the case organisations, by only interviewing members of the municipal management. Furthermore it is recommended to involve as many participants as possible, with a minimum of three

interviewees per case. We have achieved this by involving as many important actors in the Smartkom project as possible. We have tried to reflect the municipal size in the amount of interviewed participants from each municipality, as one person might have multiple positions in smaller municipalities. Table 2 describes the interviews we have conducted in this research.

Table 2: Overview of interviewed participants

	Position	Norwegian position name	Location
1	Administrative services executive	Leder for administrative tjenester	Randaberg
2	Construction permits case processing executive	Byggsakssjef	Stavanger
3	Plan and construction executive	Plan og bygningssjef	Sola
4	Municipal executive IT executive	Kommunalsjef IT sjef	Sandnes
5	Construction permits case processing executive	Byggsakssjef	Sandnes
6	IT executive	IT sjef	Stavanger

Each interviewed participant had either a key roles in the municipal development of the Smartkom project, or had important knowledge about the inner workings of the municipalities. We have also interviewed several staff members of different construction departments, as the Smartkom project aimed at improving their daily processes. In addition we have interviewed IT executives to understand the technical implications of the project, as well as a municipal executive with knowledge of the strategic municipal level.

One could argue that an insight into the private sector could be valuable, giving a description of the customers viewpoint. This was omitted because of the analysis unit we study, which is the municipal organisation. Although interviewing this group could have unveiled new aspects, we considered knowledge of the customer as a low priority, and had to omit it due to resource constraints.

Interview procedure

Initial contact towards the participating interviewees was established through our earlier described contact with Forum for Innovasjon. Through them we were able to gain access to two of the most important participants in the Smartkom project. The initial contact was done through an e-mail request where we described our study, as well as our intentions with the interview. This method was also used towards the remaining participants.

After the acceptance of the request we sent an interview guide, confirming the time and place for the interview, as well as uncovering the main themes of the interview. We decided to provide only the theme of the interview, supplemented by some vague questions, to prevent the interview from becoming too structured. This turned out to work well, by not tying up the interviewee and at the same time giving us a checklist of what we wanted to talk about.

During the interview itself, we tried keep the questions as open as possible, making it possible for the interviewees to reflect on their own views of the Smartkom project. We also decided to divide the role of the interviewer in two parts. One person did the interview, while the other made notes, supplementing the questions if necessary. This reduced the chance of confusion as well as ensured that we had a written basis for later analysis. Upon approval from the interviewee the conversation was also recorded, which turned out to be acceptable for all the participants, except one. As recommended by Jacobsen (2005) we also

kept the length of our interviews between an hour and one and a half hour, depending on the availability of the interviewee.

3.3.2 Documents

Even though qualitative methods primarily focus on verbal data gathering, there is still a need to corroborate or contradict information found through verbal means. The use of documents could be a valuable resource in this process. There is however dangers of using documents in this process. As these documents are secondary data, it could be a risk of misjudging the meaning of the documents, through wrong context or intentions.

To ensure a safe use of documents in a qualitative study it is important to consider the credibility of the source of the data (Jacobsen, 2005). We have used several sources of documents to control the content of our interviews.

As all municipal projects need to conform to different Norwegian laws and regulations we have used several of these documents. There are also lots of propositions from the Storting and Odelsting, as well as other governmental plans, which could affect the project in the future.

To confirm or contradict the project related information found during our interviews, we have used information from websites of both participating municipalities, as well as websites from other collaborative organisations. This is however precarious sources of data, as these documents are developed internally, and might have been developed to show biased sides of the project. This also applies to the internal project report we have used. Finally we have investigated similar prior research projects, to utilize the experiences made in these studies.

3.3.3 Triangulation

One of the major strengths of case researching is its use of multiple sources of data, which makes it possible to describe a broader set of issues. Multiple sources should be triangulated to improve the quality and reliability of the gathered data. Consequently information from several sources that confirm each others data would be more convincing than information based on a single source of data (Yin, 1994).

Patton (as cited in Yin, 1994, p. 93) describes four types of triangulation;

- Data triangulation
- Investigator triangulation
- Theory triangulation
- Methodological triangulation

We have primarily used a data triangulation, comparing findings from both interviews and several forms of documents to corroborate our findings (Figure). This triangulation improves the validity of our study, through an extra control mechanism of the used data.

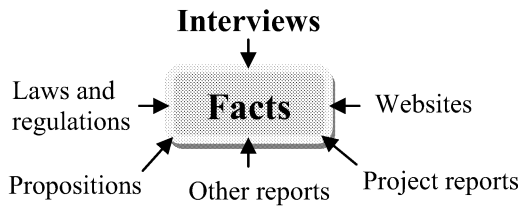


Figure 12: Convergence of multiple sources of evidence. (Based on Yin, 1994, p. 93)

3.4 Data analysis

Data analysis can be described as a continuous iterative process that is hard to separate from the data collection in qualitative research study (Cresswell, 2003). There are however several available methods of data analysis, such as hermeneutic-, semiotics-, narrative and metaphoric methods. Because we have chosen an interpretive philosophical stance, the natural choice of data analysis method would be hermeneutics, as it is described as the philosophical basis for all interpretive research (Bleicher, 1980). The hermeneutic principle is based on the hermeneutic circle, which can be described as the "*understanding of a complex whole from preconceptions about the meanings of its parts and their relationship*" (Klein and Myers, 1999, pp. 71). Such a definition fits our case research design, as we will be investigating the organisational effects of e-government through the complex interrelations of inter-municipal collaboration projects.

Although it is difficult to separate the data gathering phase and data analysis phase, it should be possible to implement a generic model for qualitative data analysis. One such model is described by Cresswell (2003, p. 191-195) as shown in Figure 13. Even though such models are recommended to be adjusted to the research design, this model fits our study, as it has been adjusted to case studies. This model will consequently describe our data analysis design.

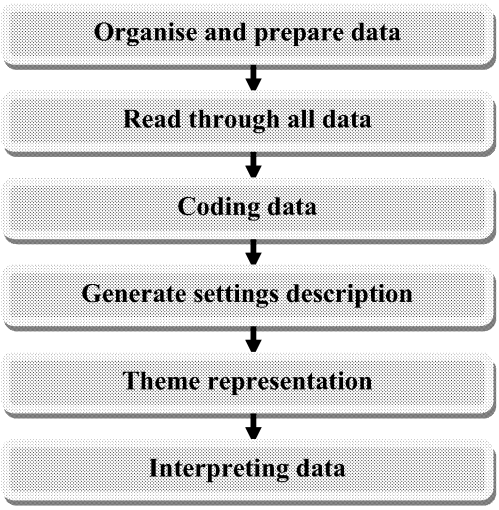


Figure 13: Data analysis model. (Based on Creswell, 2003, p. 191-195)

The first step in analysing qualitative data is to *organise* and *prepare* the data. An important part of the preparation of our audio data was to transcribe it, which is described by Jacobsen (2005) as a useful task in data analysis, making it easier to use. The audio recordings were transcribed as soon as possible after the interviews, to ensure that no additional data through memory was lost. To save time we chose to use pseudo language during the transcribing. Furthermore notes taken during the interviews were compared with the transcripts to add extra dimensions to the data. In addition to processing the audio data, documentation was gathered and categorized in accordance to sources.

By *reading through* all the gathered data, we were able to get a common overview of the collected data. This would give an indication of the general ideas behind the data. We decided to make some comments in the margins of the transcripts to gain a preliminary view of the data categories. These comments could be used in the coding process of the analysis.

The *data coding* process involves organising the data into themes and allocating meaning to them. This meaning can be achieved through assigning each theme a meaningful term that describes its content. By doing this as an iterative process, we were able to improve the accuracy of the themes through each iteration. Computer assisted qualitative data analysis software, such as ATLAS/ti and NUD.IST, can assist in the categorization into themes (Morison and Moir, 1998), although we decided not to use this possibility, as Creswell (2003) suggests to only use this type of tools when the number of transcribed pages exceeds 500, which is well over the amount we had gathered.

By using the coding process from the previous stage it was possible to *generate a description* of the *setting* of our findings. This stage is especially designed for case research, providing a description of the case settings. The use of additional documents was particularly useful at this stage, complimenting the description we found in the interviews, using such data as organisational charts, municipal statistics and so on. The coding process is further iterated at this stage, giving a more concise picture of the data themes.

To be able to use the gathered data in a meaningful way it is important to consider its *representation*. This is a process of fine tuning the data, giving it a readable format. At this stage we developed the analysis chapter that gives the reader evidence of our findings. The data, now categorized into well defined themes, was represented through a mix of correlating quotes and document references.

The final and most important stage of our analysis design is the interpretation of the data. An important aspect of this interpretation is our earlier described philosophical stance. A strong constructionist view of interpretive research means that our own individual understanding will have a considerable impact on the interpretation. Furthermore we have tried to compare our interpretations to earlier research, to ensure that our limited experience as researchers do not decrease the credibility of the study.

4 Case Description

The North-Jæren region has a long tradition for collaboration across municipal boundaries, and it is one of these collaborative projects, the Smartkom project, which is the case for this study. This chapter will characterize the case in form of its participating municipalities, relating projects and project contents.

4.1 Case municipalities

North-Jæren is a region in the county of Rogaland, on the south-western coast of Norway. It consists of four municipalities: Randaberg, Sandnes, Sola and Stavanger, which is municipalities that differ broadly in size and inhabitant density, thus facing widely different challenges. Among the municipalities are two of Norway's ten larges cities, Stavanger and Sandnes, who are somewhat dominant in the region. Figure 14 show the North-Jæren region with its surrounding municipalities.

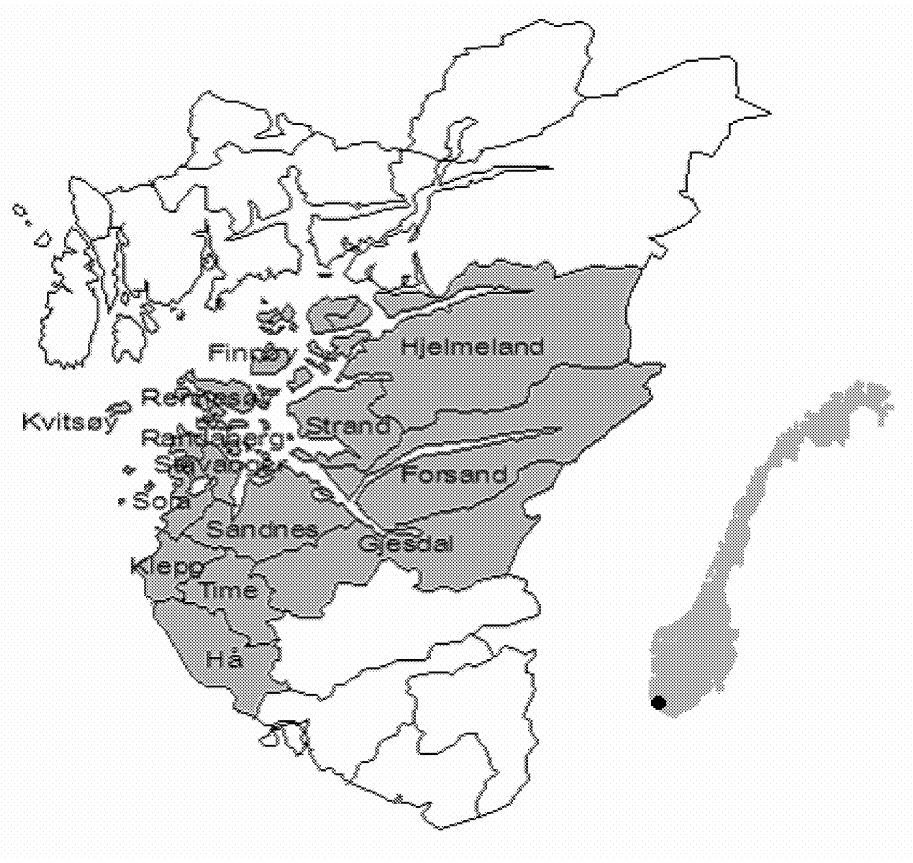


Figure 14: Map of the North-Jæren region

The four municipalities in the North-Jæren region (table 3) are currently experiencing a large growth of approximately 1.5 percent per year, and are constantly rated as the region in the country with the highest growth and value generation (Stavanger regionen næringsutvikling, 2005b).

Table 3: Regional statistics per 2005 (Skjæveland, 2006 and Statistics Norway, 2005)

	Randaberg	Sandnes	Sola	Stavanger	Rogaland	Norway
Population	9 099	57 618	19 832	113 991	393 104	4 577 457
Area (km²)	24,5	302,9	68,9	70	8 553,1	306 807,5
Population density	391	208	294	1734	45	15
Population growth (%)	2,3	2,3	1,5	1	1,1	0,7
Average income (NOK)*	297 400	278 200	313 800	301 900	274 300	262 800
Yearly state contribution*	24,4	13,5	10,3	18,7	21,1	21,5
Free income per citizens*	24 405	20 185	22 150	25 324	23 688	24 771
Administrative cost percentage*	9,6	8,3	9,6	9,1	9,0	9,4

*data from 2002

The *Strategisk næringsplan* (Stavanger regionen næringsutvikling, 2005a), which is a strategic plan for business development in the region, was updated in 2005. This update lead to an increase in the number of participating municipalities; from the original four, and now to also include 10 more municipalities from Rogaland County. This extension was done to reflect the view of the region as one single job-, housing- and service market, as well as making it easier to solve business issues across municipal borders. Table 4 describes the key characteristics of the ten new municipalities. These municipalities will however not have central roles in the case, due to the limited progress of their involvement so far.

Table 4: Additional ten municipalities after expansion in 2005 (Skjæveland, 2006)

	Population	Area (km²)	Density	Growth
Finnøy	2772	106	26	-1,6
Forsand	1102	773	2	-0,9
Gjesdal	9273	609,1	17	1,6
Hjelmeland	2736	1092	3	-0,5
Hå	14784	254,9	60	0,7
Klepp	14536	115,1	141	2
Kvitsøy	511	6	87	2
Rennesøy	3350	65,3	53	1,9
Strand	10441	214,6	55	1,2
Time	14461	181,8	87	2,4

4.2 Regional projects

Collaboration has been an important means of delivering services among the four municipalities, and is a key element of this case. Through a long line of projects the four municipalities in the Stavanger metropolitan area have built up a culture for collaboration, which has been one of the important success factors in the case project. This section will describe the predecessor projects to Smartkom.

4.2.1 FAR

The *Felles Administrative Ressurser* (Joint Administrative Resources, FAR) project was in 1999 the initial regional collaboration project on the delivery of services. The goal was to "*recommend and implement a collaborative plan that stimulates synergy effects in the production of municipal operational- and support services*" (Næsheim, 2001). By implementing collaboration, the region hoped to gain advantages through the increased quantity of services. They also wanted to reduce their competency- and economic

vulnerability, increase their professionalism, become a more attractive employer as well as freeing up resources for other service delivery.

The project was based on the concept of close geographic proximity, with good communication and IT infrastructural conditions. The needs of both the industry and citizens were a major factor in the initiation of the project, and have been an important driving force in its progression.

Financing of the project was achieved though funds from the Ministry of Local Government and Regional Development (KRD), the Norwegian association of local and regional authorities (KS) and the participating municipalities. The funding from KRD however was given on the basis of FAR as an alternative to changes in the regions municipal borders (Norway, 2003).

FAR consists of several inter-municipal projects within such spheres as economy, salary, area, aid central, fire and rescue, ICT, HMS and agriculture (Friestad and Hernes, 2002) Each project discussed the potential for collaboration, as well as their practical implications, such as the degrees of inter-municipal integration.

4.2.2 ARNE

A recession in the regions economic situation in the mid 90's, with a reduced effort in the oil and gas industry, generated a need to find alternative industries for the future. To solve this issue them project *Arena for Regional Næringsutvikling og Entreprenørskap* (Arena for regional economic development and contractor businesses, ARNE) was started in 1999, with a goal of stimulating the business development in the region. ARNE was intended to have a role as a meeting place between the regional businesses and the public sector, creating a continuous dialog between the actors in the region. The project have since the beginning been the regions most important strategic tool for business development (Stavanger regionen næringsutvikling, 2005b).

ARNE is a collaboration between the municipalities North-Jæren and the county of Rogaland. Its main focus of interest is economic development within the area of petroleum and maritime industry, energy and environment, food industry as well as research and development.

In 2005, the projects membership organisation was extended to cover the earlier described 14 municipalities. At that time the name of the project was changed to Greater Stavanger Economic Development, to reflect the new long term strategic era of the project.

The actual implementation of the ARNE project is achieved through two strategic business plans, one applicable to the period between 2001 and 2004, and most importantly for the case, one for the period between 2005 and 2020 (Stavanger regionen næringsutvikling, 2005a). The idea behind the project is reflected in these plans, through a description of a more business friendly public sector.

4.2.3 eBygg 2009

Forum for innovasjon, which is a collaboration between research organisations, private- and public organisations as well as private citizens, aims at improving the innovative abilities in Norway. One of the projects intended to achieving this is eBygg 2009 (Forum for innovasjon,

2005), which tries to improve the quality and effectiveness of the plan and construction permit case processing, as well as testing new suitable organisation solutions.

The project is using four model regions, all with their own collaborative construction permit case processing projects to test their theories and solutions. Among these four model regions is the Smartkom region.

4.3 Smartkom

The Smartkom project, which is the main focus of this research paper, has been a collaboration between the four municipalities in North-Jæren. The FAR project and the ARNE project have a shared ownership of the Smartkom project, which consist of three sub-projects. Furthermore Høykom, which is a governmental organisation that provides funding for projects that utilize and improve the value of the Norwegian broadband infrastructure, has participated through funding of the three sub projects.

The general goal of the project has been to make citizens and businesses in the region more self serviced in their information needs regarding construction permit applications, real-estate changes, digital data needed in planning as well as information regarding the status of case processing.

Sub-project 1: Smartkom – efficient municipal case processing
This project was as a preliminary project, implemented in 2001, with the aim of creating a basis for collaboration on technical services among the four municipalities. By utilizing Internet technology the project intended to give the citizens and businesses in the region a service with a higher quality and speed, as well as reducing the cost of service delivery (Høykom, 2001).

Essentially the project harmonized the case processing procedures in the four municipalities. This was achieved by creating standard toolboxes for application-, documentation-, and information exchange. In addition the project developed a common marketing strategy for online municipal services. Consequently this sub-project laid the foundation for future digital development in the project.

Sub-project 2: Smartkom – joint Internet portal for construction permit, plan and partitioning
This was the main project of the three Smartkom project. Through 2002 and 2003 the project tested out new technologies that could be used to deliver services to the citizens and businesses in the region. The project laid the foundation for a joint technical infrastructure, which made further development into online services across municipal boundaries possible.

The goal of the project was to improve the case processing efficiency for both the customers of the municipalities, and the internal case processors through the development of an Internet portal. The portal was developed through five stages: supervision solutions for situation maps; external supervision of the case processing status; partially automated realtor servicing; ordering and automatic delivery of digital data and finally digital construction permit case processing (Høykom, 2002).

Sub-project 3: Smartkom lighthouse
Høykom fund special projects that demonstrate extraordinary utilization of the Norwegian broadband infrastructure, under the '*lighthouse*' brand. The Smartkom project was chosen as one of only ten lighthouse projects (Høykom, 2004). Through this project further development was made to demonstrate the project as an example of how large municipalities can collaborate on online service delivery.

The further development in the project was intended to bring out the full potential of the Smartkom solution. This meant an integration of the solution into the Byggsøk system, as well as developing the *start-up package* into full operation. Furthermore the intention was to develop a PKI solution for the municipality, making it possible to exchange personalised sensitive information.

Because of the nature of the project it was important to share the experiences made in the project, giving other municipalities important knowledge on how such inter-municipal collaborative projects could be accomplished. It was also desirable to get in contact with other similar HØYKOM projects to exchange experiences.

4.3.1 Project organisation

A steering committee, consisting of representatives from each of the municipal construction permit case processing departments, was established to coordinate the project (Norges forskningsråd, 2003). It was essential that each municipality had one representative to ensure the operational coordination of the project. The committee reported to the management of the ARNE project, consisting of the chief administrative officer of each municipality. In addition the consulting company Asplan Viak was hired inn to help with Høykom's reporting requirements.

The development of the technical solutions was primarily done by the IT department in Stavanger, in collaboration with the remaining three municipalities and some externally hired consultants. Stavanger has also got the responsibility of the daily operations of the system (ibid.).

4.3.2 Technical content

The internet portal is served on one joint Internet server, which is established outside the municipal firewall. Through a high speed broadband infrastructure, covering the entire region, the server is connected to the four municipalities, as well as the web. This server also contains all the data used as a basis for the joint area planning, such as maps, regulation plans, municipal plans, cable data and so on (Høykom, 2002).

The data on the server is updated in different frequencies depending on the modification speed of the data. The portal itself is located on www.smartkommune.no and gives the user the possibility to: search in maps, supervise a construction permit application, apply get realtor packages and buy municipal information.

5 Results

This chapter describes the results from our interpretive case study and gives an analysis of some of the current principle elements of the municipal organisation, their use of e-government and future effects.

5.1 Analysis of principle case elements

To be able to give an analysis of the regions e-government initiatives, one needs an understanding of the context in which the e-government initiatives work, and which dynamics that influences the results from the new systems.

5.1.1 Structure

The municipal structure gives an indication of how the municipalities distribute their authority. The four municipalities all report to have made substantial changes, initiated by the chief administrative officer, to their municipal organisational structure the last few years. Through these changes they flattened out their organisational structure, and now have what they all describe as a two layered hierarchical structure consisting of a strategic and an operational level.

> ”*We have changed pretty dramatically compared to the classical organisational structure. ... We flattened the structure a great deal ... In retrospect we have perhaps withdrawn a part of it because it wasn't as efficient as we foresaw.* “
> - Administrative services executive, Randaberg

> “*The commercial says that we have a two-layer architecture, but in practice we probably have a lot more than that.*” - Construction permits case processing executive, Sandnes

Depending on the point of view, one can argue that the municipalities haven't got a true two layered organisational structure. Although there is a strategic and an operational level, as show in the example in figure 15, the hierarchical line of command from the top to the bottom often involves more layers. The structural charts of the three other municipalities show similar structures, and can be found in appendix B.

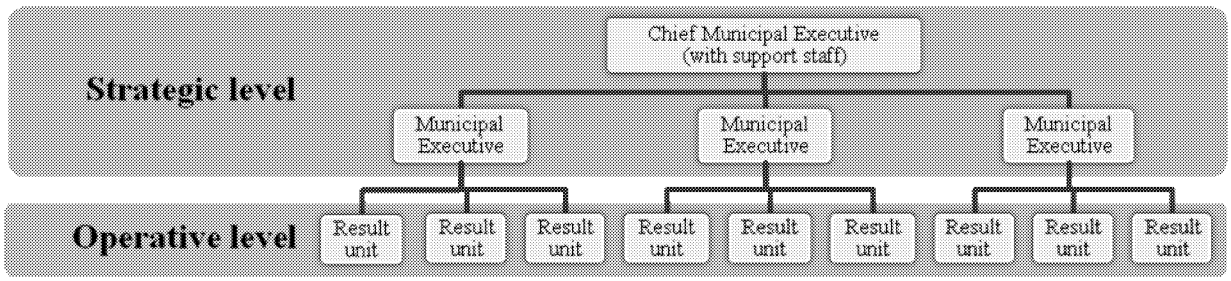


Figure 15: Organisational structure in a two-layer model (based on Sandnes kommune, 2006)

Two of the municipalities did not consider their goals of a more efficient organisational structure to be met through their organisational changes, and opted to readjust their structures. This was achieved through several smaller and less conscious changes in one of the municipalities, while the other had an evaluation of their new structure, followed by more of a structured organisational adjustment.

> "*The new organisational structure came January 1st 2004. ... It started with a reorganisation in 2000. Then we did some evaluation of what we had achieved, and what we could do better. Based on that, we did adjustments.*" - Municipal executive, Sandnes

The two layered structure is implemented in similar ways, with exception of the administrative staff size, throughout the municipalities. On top there's a chief administrative officer, followed by several departments with their own municipal executives and spheres of responsibility, and an operational level of result units at the bottom.

Based on both the organisational structure charts (figure 15; appendix B) and interview findings it seems the municipalities have a focus on separating their units into small results units, so as to get more controllable units, with specialised employees.

> "*We have 82 result units, which is grouped into: childhood/adolescence, living circumstances, culture and city development, and administrative services.*"
> - Municipal executive, Sandnes

To connect the municipal customers (e.g. citizens and industry) to the operative level of the municipality all four municipalities established some sort of service office within the last four years.

5.1.2 Distribution of authority

Within the hierarchies of the public sector there can be degrees of autonomy, where municipalities can have more control over certain services and the policies governing services. The power distribution can be difficult to dissect because of the delegation of authority that saturates the hierarchies. When we inquired about the impact of new IT systems we saw the importance of regulations on the case processors daily job:

> "*No, we haven't noticed it much. Rather, the changes in case processing requirements and systems that have come from the central government, documentation and that sort of thing. I think that this has changed the amount of work.*" - Administrative services executive, Randaberg

So we see that the regulations from central government might overshadow any effects from new system initiatives. The laws governing municipal case processing has a natural tendency to demand priority and assignment of time.

> "*I think that the law requirements, they have a tendency to force themselves through. They will probably lead to a search for ways of increasing efficiency. Statutory maximum case processing time, sanctioned by fees, has really helped that case type.*"
> - Plan and construction executive, Sola

The laws and regulations pertaining to the case processing can directly govern what documentation and policies to be put into force, and combined with incentive schemes such as sanctioning of fees, the ministry creates priorities that can't be ignored. Central government has therefore the possibility to utilize statutory rules and incentives to have direct influence of the case processing in the municipalities.

Still the laws pertaining to the municipalities, such as the Local Government Act (Norway, 1992), does more than prescribe the power of the central government, it also gives the local government a high degree of self governance and power in their respective jurisdictions. Local government is made up of representatives of the local citizens to ensure that local interests are kept within the confines of the law.

5.1.3 Citizen, private and third sector influence

The influence of citizens on the policy and execution of government is regulated through the political process, and public discourse. Citizens in the Norwegian municipalities elect their representatives every four years, and these representatives have the responsibility to create public discourse and policies on behalf of the voters. This process is regulated by the Local Government (L.G.) Act (Norway, 1992) and ensures the rights of citizens and local governments.

Since the municipalities are run through representation, the main channel of citizen influence comes from the law regulated political processes. Even so there exist other channels both law regulated (e.g. chapter 6A, the "Inhabitant initiative" in the L.G. Act) and more unregulated forms of contact with the municipality through town meetings, and more recently through the means of discussion forums on the municipal web pages. The use of these discussion forums can only be described as lacking since Stavanger with its 114,000 citizens only have written 43 threads with 64 replies since February 2005. Other channels such as e-mail addresses can be found to get direct contact with politicians and the administration. These give the citizens the possibility of voicing concerns or give positive feedback to their representatives and the administration of the municipality.

The private sector is of great importance to the growth of the region. Municipal services such as construction permits are an intricate part of the expanding business areas, and therefore the smooth running of this service has an impact on the desirability of the region.

The Smartkom project was originally initiated by the needs of the regional industry, who wanted an easier way of applying for construction permits. They regard the four municipalities as one market, and wanted the case processing to reflect this view, with one single approach to case processing in the region.

> "*The trade and industry regards the whole region as borderless ... They see it as one market and wish a harmony between the municipalities. The trade and industry sees the disadvantage of special requirements from the individual municipalities.*"
> - Plan and construction executive, Sola

The industry has been actively involved in the development of the Smartkom portal. They have been both asked to contribute, as well as informed about the progress of the project. Even though they are positive to the project, their response has been poor, with only one big company currently using the system on a regular basis. The use of the system is expected to gain momentum in the near future with the reach of a critical mass of users.

Apart from citizens and the private sector, other non-governmental organisations (NGOs) such as voluntary organisations and trade unions have some influence of policy and services. These organisations are sometimes used as bodies entitled to comment on green papers, and

the trade unions are usually represented in committees by law (e.g. the Local Government Act) or by the policies created by the local authority.

The governance (i.e. creation or modification of policies) of the municipality is done through the representative political system with some possibilities for citizens, businesses and other organisations to have their say. Policies managed by the elected representatives make the basis for the provision of services in the municipality, and gives guidelines for the execution of the municipal services.

5.1.4 Service provision

The service provision of the municipalities depicts the manor in which the municipalities opt to deliver their services to their citizens. Municipalities have a wide choice of solutions for the delivery of services. They can produce the service themselves, corporate with other municipalities in inter-municipal organisations, create inter-municipal companies, use public tenders, as well as different forms of privatization.

Although most of the municipal services still are arranged within the municipal boundaries, as has been the norm of Norwegian municipal service delivery throughout decades, there seems to be a growing willingness to let external or partially external actors deliver the services for the municipalities.

Services through public tender

By putting services out on a tender, the municipality buys services from external actors. The municipality can still controls the quality of the delivered services, while the external actor delivers the service. Municipalities will thus need to create contracts to ensure the quality of the service (Moland and Bogen, 2001).

There is little variation in the culture for putting services out on public tender in the region. The small difference seems to depend somewhat on the economic pressure of the municipal administration. Such pressure creates a need for creative thinking, which spurs new ways of delivering public services.

Especially Sandnes seems to use public tenders to improve the cost effectiveness of their public services. Sandnes receives less economic support from the state *per capita*, compared to Stavanger. This leads to a business mentality, where it is crucial to get more out of their money.

> "*It's the company mentality that's the basis for the structure we have today*"
> - IT executive, Sandnes.

Such a philosophy has resulted in a lot of public tenders being used. Sandnes creates their own municipal companies based on some of their units, to expose it to competition, and have been able to compete and win a lot of their own tenders. The general rule has been that every newly created service will be put out on public tender, with some exceptions such as cleaning services, which is viewed as more of a vulnerable group of employees.

Such a philosophy does however experience some reluctance due to the transaction costs involved. This includes the amount of time the municipality has to put into the creation of invitations for public tenders, as well as creating their own bids.

> *"The opposition against competition exposure loves it when new statistics gets available describing the costs of such competition exposure, because it's very costly to create a market for competition, a request for tender and a bid for your own tender. ... This price argument is often used by the employee representatives."* - Municipal executive, Sandnes

Although Stavanger has exposed some services for competition, they have a somewhat more cautious attitude towards public tenders. Instead of putting services out on public tender, they have rather opted to reorganize their in-the-field units.

> "*There have been some public tender processes, especially within the technical sector. Despite this there's not been a general culture for putting services out on public tender. It's more about organising the in-the-field units in a different way.*"
> - Construction permits case processing executive, Stavanger

Privatisation

An alternative to putting services out on tender is to use privatisation, where the municipality outsource the whole service to a private actor. Although these two concepts are fairly similar, the difference lies in the control of the service. While the municipality is controlling the service in a tender situation, all control is given to the chosen company in a privatisation situation, even though the municipality still is responsible for the quality of the service (Moland and Bogen, 2001).

This does not seem to be the most popular means of service delivery, although there is some example of such deliveries, with the best example being the energy company Lyse.

The company was established in 1998 through a merger of the municipal energy companies in Stavanger, Sandnes, Sola, Time, as well as Ryfylket energi and Lyse kraft (Lyse, no date b). Lyse does not operate in a monopoly economy because consumers can buy energy on the national market. This might have been one of the main reasons why this was accepted. Based on examples from other similar projects in the region (e.g. IVAR, water pipelines), this privatisation was accepted because it would not create a monopoly situation, as energy can be bought on the national market as well. An effect of the privatisations is that the municipalities in the region own parts of the company (table 5) and receive their share of the stock dividend.

Table 5: Lyse ownership (no date a)

Municipality	Owns
Stavanger	43,68 %
Sandnes	19,53 %
Sola	8,74 %
Time	5,83 %
Klepp	4,23 %
Hå	3,79 %
Randaberg	3,28 %
Eigersund	2,95 %
Strand	2,53 %
Rennesøy	1,15 %
Hjelmeland	0,99 %
Gjesdal	0,93 %
Finnøy	0,91 %
Lund	0,71 %
Bjerkreim	0,51 %
Kvitsøy	0,23 %

> "*The municipalities now demand revenue and a dividend* [from their stocks]. *Stavanger for instance receive 60 million* [NOK] *per year from Lyse.*" - Construction permits case processing executive, Stavanger

Outsourcing the operational part of IT has also been the object of discussion. At one point this was considered as a potential unit for collaboration between the four municipalities. This did not happen because the IT functions were considered too important, and the risk of loosing control was too great.

> "*We feel it's dangerous to outsource IT. By outsourcing it, we would loose some of the control because of the distance that is created between IT and the organisation*"
> - IT executive, Stavanger

Inter-municipal collaboration
An alternative to putting municipal services out on a public tender is for several municipalities to collaborate on the delivery of services. This is done through either a sharing of resources in different forms or through inter-municipal companies. The atmosphere for both these types of inter-municipal collaborations are present in the region, with the municipalities in seemingly constant discussion regarding new collaboration projects.

In certain situations the best way of delivering services is through a collaborative organisation form, with local service delivery. By for instance creating joint services mediums such as the Smartkom building permit portal, the cost efficiency and service quality of local municipal service delivery is improved. Through this type of service delivery, the resources and knowledge in each municipality is utilized for the greater good. Stavanger's effort on delivering IT operations in the Smartkom project can be described as such a resource sharing.

> "*Stavanger got the largest responsibility in the project, since they were the largest municipality, and had the most progress in the project. It's the IT department in Stavanger municipality who is running the Smart portal.*" - IT executive, Stavanger

This type of inter-municipal collaboration have to operate within the boundaries of the plan and building act, section five (Norway, 1992), which describes the requirements of this form of collaboration.

Inter-municipal companies
Taking the concept of municipal collaboration a step further, one can create external inter-municipal companies, exclusively owned by the participating municipalities, and controlled through representative committees. These companies are regulated by the law on inter-municipal companies (Norway, 1999), which describe the regulations for ownership, authority and so on.

This form of service delivery has been used in the region for quite a while, with inter-municipal water, sewage and renovation (IVAR, no date), and the inter-municipal fire protection (Brannvesenet i Sør-Rogaland IKS, no date) being the best examples of such a companies.

Inter-municipal companies can however create authority problems. The extent of the collaboration on renovation in IVAR was somewhat reduced due to the fear among politicians to loose control of the organisation, which could lead to higher prices because of the potential monopoly situation. Instead the municipalities opted for a solution where each municipality do their own renovation, but all the waste is eventually processed by IVAR.

> "*There were talks about doing renovation in collaboration as well. That stopped on the political level … If it goes out of political control, which we fear, it could lead to higher prices.*" - Construction permits case processing executive, Stavanger

The way municipalities deliver their services defines the possibility the municipality have to choose their own style of process management. A high utilization of privatisation reduces the

municipalities' ability to control their processes, while inter-municipal collaborations require consensus among the participating municipalities to make decisions.

5.1.5 Process management style

The current management style is defined by rules and procedure, complementary to this there is a certain professional freedom at every level of the municipal administration.

The municipal administration has a high degree of flexibility in their relations to the political leadership in the municipality. As long as budgets are kept, and rules are abided by, the administration is relatively free to adjust their processes as they see fit. This is done through administrative delegation from the politicians, who most often involved themselves only in larger issues through their approval of proposals from the administration.

> "*We have an extensive delegation regime in the municipality regarding decisions concerning the organisation. Some politicians think too much authority is delegated. But that's not the majority. Everything concerning the municipal organisation and its work processes is within the domain of the chief municipal officer.*"
> - IT executive - Randaberg

Adjustments to organisational processes do however need to be done within the boundaries of Norwegian state laws and regulations. The changes in these laws and regulation have an effect on the municipal processes.

> "*The law is very regulative. We have a governing law in this country* [Norway] *with strict procedures for case processing. If you don't follow these procedures, and get into a conflict, you're in deep trouble.*" - IT executive - Randaberg

> "*I think the laws have a tendency to force their way through. They will most likely lead to a search for efficiency in other places. Maximum legislative case processing times, sanctioned through fees, have helped this type of cases* [construction permits] *a lot.*"
> - Plan and construction executive, Sola

Although the municipal administration is restricted by law, they have received authority from the political leadership to perform the daily operations of the municipality. The delegated authority runs through hierarchy to the case processors, who in turn apply the law while using their expertise to make qualified decisions within their procedural boundaries.

> "*It was once said that we could eliminate all technical construction competence, engineers and architects, and let a normal office worker handle the construction permits case processing. But we still need the aesthetic assessment in many cases. Consequently we most often need construction competent processing of construction cases.*" - Construction permits case processing executive, Sandnes

Historically the region, and in particularly the four core municipalities, have had a fruitful environment for collaboration. Especially within the construction permit case processing there has been a lot of collaboration, with annual formalised meetings between ten municipalities for at least 25 years. Through these meetings different issues related to state rules and regulations have been discussed to get towards a consensus. There has been an informal

relationship, where municipalities contact each other whenever issues arise. In this professionalized network Stavanger, and to some extent Sandnes, have had a prominent role.

> "*We contact each other whenever issues arise. In that aspect, Stavanger is kind of a big brother who gets called up by the smaller municipalities to give advice on new issues and so on.*" - Construction permits case processing executive, Stavanger

The choices in the management of the municipal processes depend on the culture for delegation in the municipality, in a context of the Norwegian law. Collaboration with other municipalities further reduces the freedom of choice. The way the municipality manage their processes will be dependent on their view of resource evaluation.

5.1.6 Resource evaluation

The skills of the staff and their main role in the delivery of services, makes staffing expenses a major post in budget for construction permit case processing in the municipalities. The relationship between the number of staff, case processing efficiency and fees tells us something about priorities for resource evaluation.

As we have seen earlier, the North-Jæren region is in constant growth. The municipalities underlined the importance of the number of staff compared with the number of cases to be processed in this active region. They made it clear that the number of staff a municipality has at its disposal for case processing is paramount to the time used for each case processed.

> "*At least it is important to have enough staff. I think the industry is willing to pay more for a service if it is done quicker. They would probably pay more to save time.*"
> - Administrative services executive, Randaberg

Cases that are processed generate fees for the result unit or department in the municipality. The importance of such incentives, as a form of guidance tool for central authorities for prioritisation, has already been mentioned. One reason why this incentive has such a good impact is that loosing fees would cause difficulties, since most of the office income is generated in this way.

> "*Construction permit case processing has 100% earning, which means that we don't receive any money from the municipality, but rather all income originate from the fees we put on the case processing.*" - Construction permit case processing executive, Stavanger

The relation between fees and number of staff could seem obvious, but as the construction permit case processing executive in Stavanger explains, this is not always the case:

> "*We are 20 in our department. Bergen has over 50, but they do not have over double the number of construction permit cases. We have 3000 and they have about 3500 cases each year. They also have 100% coverage of income from fees.*" - Construction permit case processing executive, Stavanger

How the fees are used, and how many cases that are processed per staff member varies depending on the efficiency of the staff and the procedures and policies of a municipality. The difference in municipal case processing fees often become a part of inter-municipal or

regional benchmarking in the press, as noted by the administrative services executive in Randaberg municipality:

> ”*The newspapers preach about the competitive elements between municipalities. They look at how much you have to pay for construction permit case processing in different municipalities. Then you see that in one municipality you need almost pay nothing, but later it becomes clear that they use five times longer to process the permit. You get what you pay for.*” - Administrative services executive, Randaberg

The municipalities work hard to process as many cases as possible for each given man-labour year that the fees allow, but the number of man-labour years are not always directly related to the amount of fees or income of a result unit.

> ”*There has been an increase in activity, and therefore an increase in income from fees. We have not managed to get acceptance for increasing the number of staff. There has only been an increase of one man-labour year, and that happened in January this year.*” - Plan and construction executive, Sola

We see that the income of the case processing can be related to the number of staff, where more staff could increase the income. The income, in turn, could increase the staff level. Income for construction permit case processing is a result of an evaluation after a process is finished, i.e. whether the application was processed within 12 weeks or not, which can be described as an *ex-post* evaluation.

Sanctions for not processing the application in time are described by regulation (Norway, 2004a), based on law (Norway, 1985) with specifications in a circular letter (Norway, 2004b). There is a sanction of 25% of the fee of an application every week after twelve weeks for four weeks; where upon the entire fee has been lost by the municipality. Before this incentive system was introduced, the case processing office was allotted funds based on predicted yearly activity (an *ex-ante* evaluation). This shift in resource evaluation might have implications for the quality of the service provided.

5.1.7 Quality of service delivery

The *ex-post* evaluation could give the needed resources to hire more staff with increased activity (figure 16). But as we have seen this is not always the case. It seems that *ex-post* evaluation gives the possibility of creating a type of internal economy of scale, where the more cases processed by the same number of staff, equals less expenditure per case processed and thus more profit (figure 17). The same internal economy of scale can also be experience with a slight increase in staff, as long as the staff expenditure does not exceed the income.

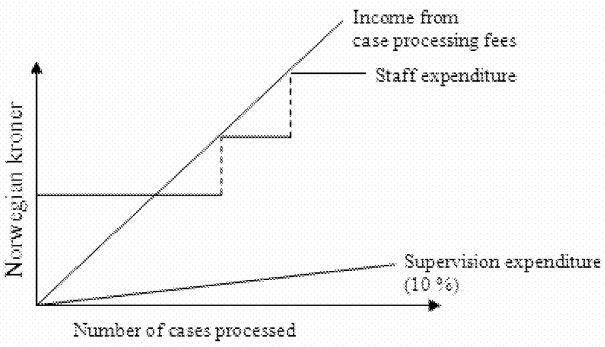


Figure 16: Illustration of the ideal ex-post evaluation dynamic

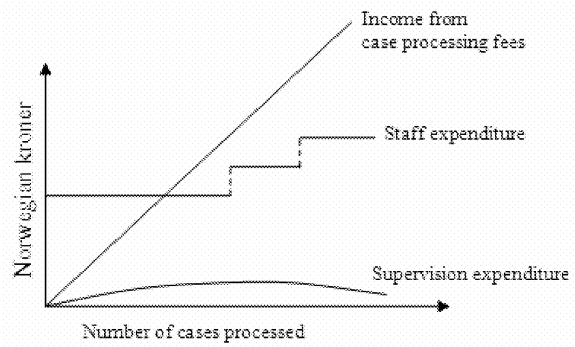


Figure 17: Illustration of the current situation

We have noted in the region, that not all income from the case processing fees is used for increases in staff, and that a lower degree of staff compared to number of cases means less time used for supervision (i.e. less than the recommended ten percent).

Ex-post evaluation makes it essential to prioritize tasks in the municipal administration. The authority delegated by the politicians to the municipal administration, creates the possibility to reduce efforts in certain areas to manage the requirements in others. One such example is the reduction of construction site supervision. A state recommendation suggests that ten percent of all sites should be supervised by the municipality. This is however an expensive task for many municipalities, which is often not prioritised to ensure that construction permits are processed instead. Supervision is an extra cost for the municipality, which does not generate any additional income. Most Norwegian municipalities, especially the smaller ones, consequently down prioritize supervision due to the lack of resources and qualified personnel (Edvardsen et al., 2004).

> "*Regulation requires that 10% of all sites should be supervised, although most Norwegian municipalities do not accommodate this requirement, with Sola being on of them. No one is demanding it, neither politicians nor citizens. ... There are no resources available for it, although there's a growing focus on it.*" - Plan and construction executive, Sola

Other aspects of quality

Another facet of quality seems to be the processing speed as well as predictability of case processing. The municipalities gave different descriptions of what they thought was most important for their citizens and local businesses.

> "*The most important thing for the private sector is case processing predictability. They need to be able to plan ahead, and know that their plans are carried out. A small crisis might occur if we plan to use three weeks to process the case and it really takes three months, but if their informed that the case processing will take three months its manageable.*" - Plan and construction executive, Sola

> "*I think the private sector is willing to pay for such a service, if they can get it quickly. They would probably pay more to save time.*" - Administrative services executive, Randaberg.

The construction business can be described as a dynamic and hectic trade, and entrepreneurs sometimes want the permit processed yesterday, but predictability goes a long way when planning a build site.

A third facet of quality has been the accessibility of the service on a more 24/7 basis. The online systems have sparked the general interest for information, and have also become a new tool available for entrepreneurs. The amount of documentation and information needed demands creativity.

> "*The law makes demands, which create creativity to find new effective solutions, with IT as an important tool.*" - Plan and construction executive, Sola

The organisation of accessible services online also includes a dimension of quality communication. Standardised documentation sent from the applicant will more often than not be better than alternate and personalised applications:

> "*We have experienced people drawing their garage on a napkin ...*" - Plan and construction executive, Sola

Although the quality of service delivery is important it does not matter if the accountability of the service is lacking. Consequently there is a close relation between the management of quality and accountability in municipalities.

5.1.8 Accountability

With a demand for stabile and high quality services, the municipality needs to ensure that mechanisms for accountability are in place. The accountability mechanisms we found can be sorted into three main directions.

Hierarchical checks and balances

The first mechanism for accountability is the checks and balances found within the hierarchical structure of the local administration, and their relationship with the political structure.

These relationships and responsibilities are based on law, as found in the Local Government Act chapters 8 "*Finance plan, annual budget, annual accounts and reporting*", 10 "*State supervision and control*" and 12 "*Internal supervision and control. Audit*." (Norway, 1992). Revision, reporting, written procedures and policies guides public case processing and gives a system of transparency and accountability often found in any larger hierarchical organisations.

Contracts

Commonly the work of the public servants is verified through the hierarchical structure. But when services are somewhat disjointed from this structure, other mechanisms for accountability need to be put in place.

The second category identified is the use of contracts. Contracts secure the legal obligations and responsibilities of the parties involved if disputes arise.

> "*... we have to create legal security in case some information should go astray.*" - Plan and construction executive, Sola

Contracts secure the transfer of information and the responsibilities of the parties as with the inter-municipal collaboration between Sola and Stavanger in this case. Therefore they are also

a natural part of services that are put out on public tender. The delivery of services needs to satisfy the municipal standard for that particular service, and the contract functions as a predefined yardstick for the contractor who wins the public tender. Even with legal security, it is best to avoid issues resulting from misconduct. The Norwegian municipalities have a tradition for special employee rights and ways of solving redundancy.

Employee rights and solving redundancy
The third accountability mechanism relates to what we can call the public ethic, that is, the professional morality of the public servant backed by good career conditions. The public servant is expected to perform the tasks needed for services connected to his or her expertise.

Municipalities have other principles guiding the security of the employees than we find in the private sector. If there were possibilities for savings in man-labour years in a result unit (or department) then there would be an issue of what to do with the individuals whose tasks are redundant.

Man-labour year savings seemed very hypothetical to most of the municipalities in question due to the upsurge in cases to be processed. Even so it is clear that none of the municipalities could sack people, just because their tasks are removed. Such an action would not hold up in court, so people are usually given new tasks.

> ”*Where someone becomes redundant, they will be moved over to vacancies in other departments. This is relatively easy.*” - Construction permits case processing executive, Stavanger

The construction permit case processing executive in Stavanger municipality gives here a general account of what could be considered a normative action, where employees with redundant tasks are usually moved to other tasks or departments. It used to be the case that there was enforced a halt in all new appointments. The executive continues to describe a concern of this earlier line of action:

> ”*The trend was that we enforced a halt in all new appointments, where positions disappear when employees quit. This leads to random effects, e.g. one employee quits in an area where we need someone.*” - Construction permits case processing executive, Stavanger

If someone quit in an area where there was a need for more people, a halt in appointments would stop any attempts at filling the post needed with a new employee. Someone from another department would have to be transferred, sometimes creating a ‘vacuum’ where he or she used to work. Each department may now use their budgets more freely to hire within their budget limits.

Compound tasks
Often an individual has his or her man-labour year spread over many differing tasks and departments. Departments with seasonal variations that can have a high degree of employees with tasks across several departments exemplified the situation in Sandnes:

> ”*Earlier we had more people working on kindergarten applications. The point is that they have more compound tasks, so it’s not so easy to remove man-labour years.*” - Municipal executive, Sandnes

Especially in smaller municipalities with fewer man-labour years per task, the staff is expected to distribute their time to needed tasks at hand, leading to more complex job specifications. There have been some attempts at changing the current way of resolving free capacity:

> "*Some municipalities do not have protection against dismissals. In Sandnes the chief municipal officer did not want this employee protection, but the politicians demanded it.*" - Municipal executive, Sandnes

Here we have the continuation of the account from the municipal executive in Sandnes. We see a case where the wish for more flexibility in employment has surfaced. The construction permit case processing executive in Stavanger states that there is a general trend for more flexibility and that the concept of *life long employment* does not exist any more:

> "*The protection of public posts is disappearing, even if this is not the case on a political level today. You no longer have life long employment. People change jobs more often.*" - Construction permits case processing executive, Stavanger

The notion of a life long career within the same sphere of government, or department in a municipality seems to have been weakened in the attempts to reduce positions and to distribute man-labour years to where it is needed.

5.2 e-Government in the municipalities

From the principle case elements the role of laws, regulations, structure and policies show some sides of the current municipal situation and the dynamics governing the operations of the administration. The role of information systems and e-government initiatives on the dynamics in the municipal back-office will now be investigated in more detail.

5.2.1 Municipal e-government maturity

The region is currently experiencing a substantial growth, which creates a need to think creatively when utilizing IT in the delivery of services. This is clearly realized by the four municipalities, who all se no issues connected with digitalizing as much as possible of the service delivery. Although the willingness is present, the capability to do so is somewhat varying. Especially the smaller municipalities have a difficulty in realizing this potential, much due to their limited resources.

> "*Electronic case processing can be utilized everywhere, but the question is how fast this should be done. ... Regarding IT, we are actually struggling with daily IT operations. That's why we have to be careful so we don't start too many new projects.*" - Administrative services executive, Randaberg

Among the larger municipalities the focus is slightly different. With a higher degree of strategic and economic capabilities they see the necessity for strategic and organisational aspects of IT projects. The IT executive in Stavanger argues that the municipality needs to be of a certain size to see the need for organisational change related to IT projects.

> "*You still have to go to larger municipalities to find a culture for change. ... The municipality isn't that far behind the private sector when it comes to innovation.*" - IT executive, Stavanger

Based on the four municipal information systems, and current system development projects, one can argue that they have a fairly high degree of technical maturity. They have all got, or are acquiring, electronic archive and case processing systems, online kindergarten applications, online job applications as well as several specialized local applications solving specific tasks. In some cases they have even been innovators in the field, as the municipal executive in Sandnes describes, when talking about their online kindergarten application system.

> "*We think we were the first in the country to acquire electronic kindergarten applications. It was reported that Fredrikstad was first, but when we read that Fredrikstad was online, we were already using our system.*" - Municipal executive, Sandnes

Both Sandnes and Stavanger are participating in different innovative national standardization projects for electronic case processing, which show their interest and ambition towards online services. Sandnes is involved with the *KS-Skjema* project (KS, 2006), that aims at creating standardized interactive forms that can be used for online services in Norwegian municipalities. Stavanger on the other hand is involved in the Norwegian departmental project *S@mspill* (Directorate for Health and Social Affairs, 2005), as one of the *Lighthouse municipalities* that are intended to stimulate other municipalities through innovative electronic health solutions.

5.2.2 Collaborative implementation of e-Government

North-Jæren has had a long tradition of cooperation and professional exchange. The Smartkom inter-municipal network is based on this collaboration between four clearly definable participating organisations. But this collaboration encases the differences in each organisation's culture, policy and procedure. However small the differences, there exist frictions and roles that needs defining and resolving, as exemplified by policy issues on security:

> "*One major reason is that we have experienced technical problems with the solution for information extraction, which is in conflict with our IT security policy. ... It's a solution where the external driver* [Stavanger municipality] *initiates the information extraction, with a suction pipe into our systems.*" - Plan and construction executive, Sola

Solutions for overcoming policy issues have so far been to extract needed information with the owner of the information initiating the transaction to a middleware solution, and from there it can be transferred further. Although in this case the issue is being solved with legal agreements in case information leaks out and not with a middleware solution.

Stavanger has with its capabilities in IT development and support been a natural centre. With Stavanger taking a lead role in the project their focus is somewhat different, since there are minimal technical difficulties.

> "*It wasn't the technical aspects that were the main problem. It was rather an organisational issue. Neither were there any problems from the chief administrative officers, but rather problems on the mid-management level.*"
> - IT executive, Stavanger

So we see the focus follows naturally from the roles that the municipalities have in the project i.e. supporting the system and delivering information to the system. There seems to be an agreement that the support from the chief administrative officer in each municipality is crucial when collaborating on an inter-municipal scale. The needed support from the top has been there, but getting visions and decisions into practice seems to have been challenging due to issues with roles, policies and the technical nature of this collaboration.

There is however no given rule that all the four municipalities are involved in every single collaborative project in the region. This is particularly true for the involvement in national projects. The four main municipalities participate in the projects they see fitting individually, but as the IT executive in Sandnes explain, they typically compare experiences with each other at the completion of the projects.

> "*We can't participate in everything. That's why it might be good that Sandnes and Stavanger is participating in different things, so that we can compare our experiences after the project completion.*" - IT executive, Sandnes

Expansion of the collaborative region
In 2005 the Strategisk Næringsplan (iRogaland, 2005) was updated, and ten new municipalities were added to the project. Even though this had a lot of positive effects, there have been some problems with the inclusion of the new group. The ten new municipalities need to get up on the same technical and organisational level as the original four. The strategy to achieve this is to get the original four participants up on the same level, in order to chart out the requirements to get the last ten up on that same level.

> "*The way we intend to do this is to first get the original four municipalities up on the same level. ... Then we can examine what is needed to get the remaining municipalities up on the same level. That would require some extra resources.*"
> – Construction permits case processing executive, Stavanger

Even though the inclusion of the new ten municipalities is described as a very tough task, the aim is to make them full worthy members of Smartkom by 2008.

5.2.3 e-Governments effect on the organisation

The organisational and procedural changes that happened as a direct result of the Smartkom project mostly occurred within the technical part of the municipality, with the construction permit case processing department being the most affected.

The introduction of new case processing systems has created a need to adjust the back-end process, to ensure that the systems are used optimally. During the system implementation a new system for registration into GAB (Grunneiendommer, Adresser og Bygninger), the register of all property, addresses and buildings in Norway (Statens kartverk, 2004), was also implemented in several municipalities. This system controlled the workflow of the case processing, which forced changes in the back-end process. Consequently the interaction

between the construction permit case processing department and the surveying department when it comes to registering new buildings, changed. The sequence of events leading up to a finished case was totally changed because the system dictated the order of events. This sequence was of course somewhat different from the original, and demanded organisational changes

> "*Previously the construction permits case processing department did the registration of buildings into GAB, but since the measurement department had to go into GAB anyway to insert their measurement data, they might as well also put in information about construction permits and areas.*" - Construction permits case processing executive, Sandnes

The new GAB system had effects outside the technical departments as well and is now used throughout Stavanger, changing the way several departments work.

> "*GAB is used all over the municipality, for instance the nursing sector.*" - IT executive, Stavanger

But it is not only the processes that have changed as a result of the introduction of new systems. Because the introduction of GAB changed the way processing was done, the workload of the different departments changed as well. This created an uneven distribution of responsibilities between the two before mentioned departments, and consequently they needed to redistribute the responsibilities to reflect the new way of working.

> "*... the system controls the workflow. That makes it impossible to work in the same manor as before. ... Consequently they get a larger workload, and they get less to do in the measurement department. That creates the need to change the workload between the departments.*" - Construction permits case processing executive, Stavanger

5.2.4 e-Governments effect on the IT Infrastructure

The Smartkom portal described in our case gives the users in the region a common interface towards the four municipalities' construction permit case processing, and includes the ability to see seamless maps of the entire region. Users can thus base their construction permit application on region wide maps and online applications. Because of the lack of a public key infrastructure (PKI) it's thus far only possible so send in applications, while approvals have to be done manually.

The current version of the portal has potential to be extended with new functionality that will improve its quality. Examples of such new functionality can be additional search criteria for the customers, including the possibility to search for real estates based on the availability of qualified workers, culture, nature, housing, education and so on.

> "*It might be just as important to be able to search for properties with a qualified workforce, culture life, nature life, home and education possibilities.*" - Administrative services executive, Randaberg

A common area of concern among the municipalities was security related to the Smartkom portal. Some of the main concerns have been related to the lack of a PKI, and its resulting problems concerning authentication. This has hampered some of the development of the portal. The common solution has been to give open access to information about construction

permit applications, which is not classified, after clearance from the legal apartment. Any classified information has been manually distributed, as described by plan and construction executive in Sola.

> "*We have created a middleware, where we download and give out information to external actors, whenever they need access to it. That's the solution we have chosen, and it seems like the actors have accepted it*." - Plan and construction executive, Sola

In addition to the systems we have encountered related to the Smartkom project; we have seen a lot of other examples of IT systems covering different aspects of the municipality. In the core of the IT infrastructure there's the municipal archive and case processing system, which is predominantly IBM's Kontor 2000 (IBM, 2006), although Sandnes have opted for Software Innovation's DocuLive (Software Innovation, 2006). This has created some issues related to the collaboration on online construction permit case processing.

Otherwise we have observed multiple systems covering such areas as kindergarten applications, roster planning, balance score card systems, applications for the MinSide portal and online service shops. The highest degree of innovation is found in the two largest municipalities, which is natural due to the extra resources at their disposal.

New systems have some impact, and the possibilities are seen as a compliment to the two other factors by creating better ways (standardisation and better access) of gathering documentation from citizens and also helping the staff in their daily work:

> "*... when it comes to the construction permit case processing, where customers can get access information regarding their case, I think there can be a drop in demand.*" - Administrative services executive, Randaberg

Inquiries concerning the progress or details in the construction permit cases can be diverted away from the office and the citizens become more self-reliant. But the effects of the online services can have other dimensions:

> "*The productivity profit might disappear when you start giving customers access to information about their case. That creates a greater need for information. Consequently we get more used to utilizing information, with a greater desire to use this information*." - Plan and construction executive, Sola

An increase in the information consumption of citizens due to the availability of the information can be the result of online systems such as Byggsøk. The average citizen has perhaps limited basic needs for insight into their construction permits folder, or like the plan and construction executive in Sola put it:

> "*People normally live long and happy lives without access to information about their construction permit case processing*." - Plan and construction executive, Sola

Smartkom and other similar e-government initiatives in the region have changed the way the municipalities work. But the government of today might also have effect for tomorrow, changing the way the municipalities work in the future.

5.3 Possible future effects

This section looks at the future organisational plans of the case municipalities, the possibility of municipal mergers and the issue of the core competency in the construction permit case processing.

5.3.1 Future changes in organisational structure

We have described the recent developments in the organisational structure in the four municipalities. We have also looked at some of the reasons that might have contributed to the changes already done. Has the experiences brought any inclinations for more comprehensive changes in the near future?

> "*No, I don't think we are going to do major changes in the near future, or major changes at all. Reorganisation should maybe be a part of the daily operation, making small changes instead of major dramatic ones.*" - Administrative services executive, Randaberg

The words of the IT executive in Randaberg municipality seem to be representative, in the sense that adjustments and gradual adaptations to new contextual situations are preferred.

5.3.2 Possibility of municipal mergers

Municipal mergers are a topic of some delicacy in Norway, but the topic relates itself to the Smartkom case with its special region and the inter-municipal network with developing common IT solutions. Even so, municipal merger does not seem to be on the agenda for public discourse.

> "*The administration of collaboration works fine, but it's not an issue to unite the municipalities. …*" - Construction permits case processing executive, Stavanger

> "*It's diffucult to say what kind barriers you can trigger by starting to work on these things* [municipal mergers]. *It has not been mentioned as a plausible argument.* " - Plan and construction executive, Sola

The idea of a municipal merger is not new, and it seemed like the observation of Stavanger lacking space to grow was common among the interviewees. Giving the Smartkom project a major part in a movement towards a merger would be speculative or just wrong.

> "*I feel it's some strongly expressed and weakly founded opinions. We could surely have put a lot of analysts on this issue.*" - Construction permit case processing executive, Stavanger

> "*Smartkom can't lead to a municipal merger.*" and also "*Smartkom is not a political project.*" - Plan and construction executive, Sola

Even if the notion of the Smartkom project as a door opener for a merger might be wrong, it still poses the question of what effects the dynamics of networks and the coordination of policies and systems have with regard to the possibilities of a future merger.

> ”*The fact that we are becomming similar is an argument both for and against municipal merger. Either you don’t have to merge because it works fine as it is, or you might as well merge since everything already is in place.*” - Construction permits case processing executive, Sandnes

The thought that inter-municipal networks and collaboration may have the directional power of a merger, has been mentioned earlier in the form of the Joint Administrative Resources (FAR) project (Stavanger municipality, no date). FAR aim was to consider the potential for collaboration regarding municipal operations and support services among Rogaland County and the municipalities Stavanger, Sandnes, Sola and Randaberg.

> “*In the FAR collaboration they thought that if we manage this, there will be no municipal merger, while Stavanger thought that if they managed this, the next step would be municipal merger. The citizens of Sandnes do not want to be merged.*”- Municipal executive, Sandnes

The Municipal executive of Sandnes municipality give an account of their view of the FAR project, but it is in accordance with the view from Stavanger, by the IT executive:

> ”*This project was considered by some parts as a ’merger ghost’, and a municipal merger sneak in. This also applied to the FAR project, which was considered as a preliminary project for a merger.*” - IT executive, Stavanger

So even if the sphere of construction permit case handling is not of paramount influence with regard to inter-municipal networks and mergers, the ”ghost” is still there. Municipal coordination and collaboration could lead to efficient and independent municipalities, or the similarities could become so great that the next natural step is a merger. But the likeliness of one compared to the other could not be established.

With a hypothetical merger, the construction permit case processing executive in Stavanger municipality reflected on the consequences for the number of employees:

> “*Even though you merge the municipalities, you would still need all the positions. The needs of the construction permit case processing will be the same before and after a merger*” - Construction permit case processing executive, Stavanger

The need for services does not diminish just because of a merger, and the construction permit case processing executive continues by musing at the idea of merging the political bodies, and save man-labour years that way.

5.3.3 Recruitment and core competence

With or without a municipal merger, the construction case processing and supervision will be needed in the foreseeable future. Earlier we saw that there are issues surrounding service privatisation and the prioritising of getting the paper mill moving. These factors were identified by some interviewees as risks for the loss of core competency.

There exists a competition for engineers, and the public offices have to join the competition. The plan and construction executive in Sola municipality explained that the private sector might be a little more competitive on wages, but:

> "*It's all about making us as attractive as possible on the professional tasks. In that aspect we have something the private sector hasn't got. We are exposed to a much wider professional challenge. We are involved in all kinds of projects.*" - Plan and construction executive, Sola

Amongst the more alluring challenges is the supervision of the construction sites. With a diminishing chance to supervise sites and use the skills of the trade, the recruitment and profession may be at risk.

> "*It the professional aspects of the job disappear, the profession itself might follow on. That's why it is important to keep the professional challenges in the job. Consequently the tasks are varied, even though the focus has lately been on reducing the queue in the case processing. It's a lot of case processing.*" - Construction permits case processing executive, Sandnes

Even though the Smartkom project has had an effect on the participating municipalities, created some discussion, there is no clear view on its future effect. We have found no concrete plans for organisational change in the near future and there seems to be a split view of the Smartkom project in its capability to start a municipal merger in the region. Finally we have seen some potential issues regarding the future recruitment of employees as well as the use of the profession.

6 Discussion

In this chapter we will discuss our findings from analysis of the case interviews and documents. The current directions and source of change in the municipal structure and back-office work processes are seen in light of the theories described in chapter 2, and the role of e-government initiatives in the context of municipal organisational change.

We want to illustrate the role of e-government systems in the context of municipal organisational change by discussing the impact of such systems on the current direction of municipal reform, with a focus on the structure of the back-office and work processes.

6.1 An evolving model

In the last five years we have seen changes in the organisational structure of the Norwegian municipalities, exemplified by the changes registered in the municipalities in the North-Jæren region. The offset situation was a structure based on larger departments covering whole spheres of government operations such as health, technical and education. From our findings we have seen that the municipalities in the Smartkom region have disaggregated their departments into smaller and separated units as a part of the structural reform leading to the two-level model. Arguments for the two layer structure have been (Moland and Bogen, 2001):

- Savings in administration by removing manager layers
- Clarity in responsibilities
- Higher degree of democracy and empowerment of the employees
- Customer orientation
- Better work environment

We argue that the two-level model which has been used as a blueprint for the structural changes these last years has evolved into several layers, and we see an increase in the top management levels after some middle managers have been moved.

The changes done in the structure after the initial flattening (i.e. increasing the top staff and gathering units into larger spheres or departments) seems to resemble a return to a more hierarchical structure. A reason for this could be that the great span of units that the top managers have to keep track of, resulting in the need for more managers or consultants in the top management (Moland and Bogen, 2001).

6.1.1 Disaggregated result units and exposure to competition

A two-level model with separate units could fit a trajectory towards the New Public Management's focus on result units based on the municipal activities, i.e. operational services, authority discharge and business activities, since the establishment of result units can facilitate the competition that this market-oriented model strives for (Dunleavy and Hood, 1994; Hood, 1991).

Municipal e-government initiatives can help to facilitate the principles of the New Public Management through e-government's horizontal focus. NPM does not only look inward on the vertical relationships in the organisation (i.e. flat structures with disaggregated result units), it also includes outsourcing and competition that are relevant to horizontal

relationships (Hill, 2004). e-Government systems can connect private businesses supplying services to the municipality (figure 18).

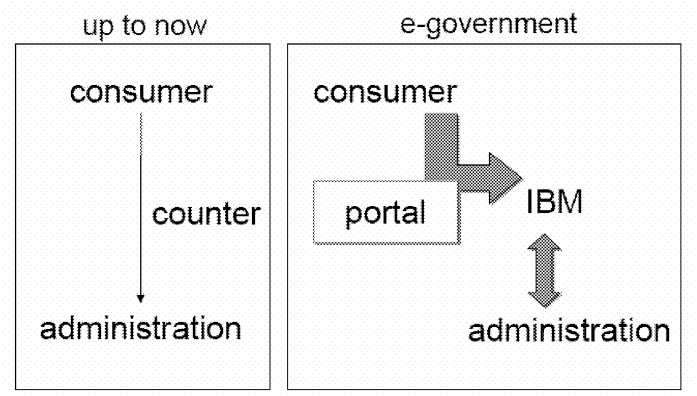


Figure 18: e-Government facilitates the use of private companies as service deliverers (Schedler and Scharf, 2001)

A private company can do parts of a service or an entire outsourcing contract, with e-government solutions facilitating the horizontal relationship (Schedler and Scharf, 2001). The separation of larger departments into result units (disaggregated result units) has made it possible to exchange the services of a result unit with services from private providers.

From our findings we have seen that operational services have been put on public tender to create such a competition, where the municipality's own result unit sometimes becomes a *municipal company* that can compete for the public tender (figure 19, 1). Municipal companies do not have to be exposed to competition, but are usually created to achieve competition.

Another option for organising disaggregated operational services is to extract the compatible result units of two or more municipalities, and create a new organisation (figure 19, 2). An example of an *inter-municipal company* in the North-Jæren region is IVAR. This inter-municipal company does not have to be exposed to competition, even if it is a separate organisation, since the participating municipalities are owners of the company as prescribed by law (Norway, 1999), but could compete if there exists public tenders for regional operational services. This model for operational services has been popular with 45% of inter-municipality service collaborations organised in this way (Brandtzæg and Sanda, 2003; Norway, 2003). Putting services out for public tender can be described as a third option for service delivery since external organisations competes for the possibility for delivering the service in question (figure 19, 3).

A fourth possibility is to extract the resources of an operational service unit from one municipality, and transfer it into a *host municipality* which now performs the service for both municipalities (figure 19, 4). Also this collaboration model is popular, represented by 40% of the inter-municipal collaborations (Brandtzæg and Sanda, 2003; Norway, 2003). This model does not create competition, and the municipality that extracts its unit is still politically responsible for the delivery of the service (Moland and Bogen, 2001).

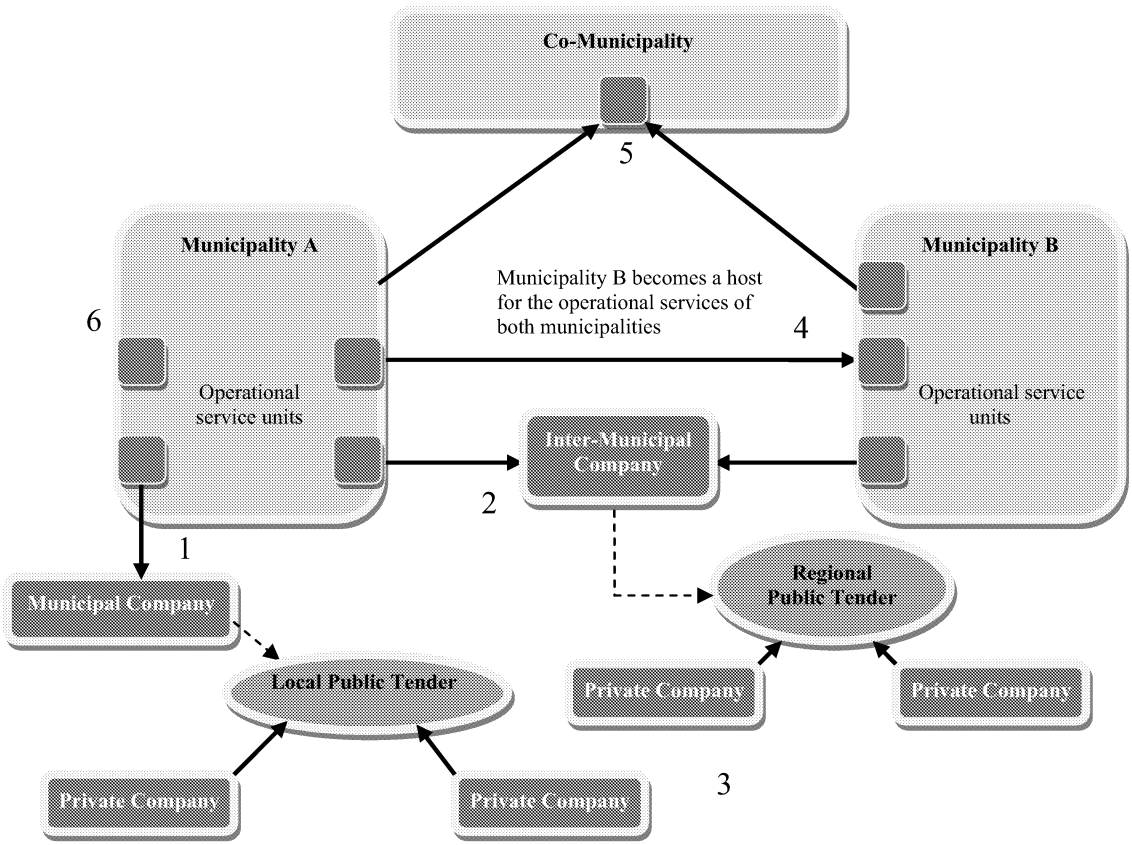


Figure 19: Illustration showing the discussion of the possibilities for operational services. Disaggregated result units can be turned into Municipal Companies (1), or Inter-Municipal Companies (2), which gives possibilities for compatition through public tenders (3). There is also a possibility to extract the unit and merge it within a host municipality (4) or extract result units from both municipalities and create a co-municipality (5). Municipalities can of course keep the result units inside the municipal organisation (6).

There is also a possibility for a fifth structure where each municipality extracts their chosen result unit(s) and some of their politicians to create a new legal body, a *co-municipality* which can execute some services on behalf of the participating municipalities (figure 19, 5). This is different from the inter-municipal company since the organisation embodies political and administrative levels, just like a normal municipality (KRD and KS, 2005; Strand and Moen, 2005). There is no exposure to competition since the co-municipality functions as a normal municipality, and not as a company. This solution is also different from the host municipality model, since *all* participating municipalities extract their result units (and some politicians) into a new organisation.

Of course the disaggregated units can also be kept inside the municipal organisation, producing operational services and executing authority without being exposed to competition (figure 19, 6). This can be considered the normal way of delivering services.

All six choices of organising operational services are possible without applying competition, and this leads to a choice for the municipalities to reaffirm their position as a general deliverer of services. There has been a debate in Norway (KRD and KS, 2005; KS, 2005; Norway, 2006; Strand and Moen, 2005) over the role of the municipalities as general service deliverers (generalist municipalities). An alternative model to today's generalist municipality has been

investigated, but the differentiation of services between municipalities seems distant from the government's agenda (Norway, 2006).

Operational services can be exposed for competition in line with the New Public Management trajectory, but as we have seen they can exist as monopolies (governed by the municipalities) or internally in a municipality (locally, hosted or in a co-municipality). These options give the municipalities the possibility to be the main deliverer of operational services, which they are still politically responsible for. A main difference between a tendency toward the Neo-Weberian State model and the New Public Management is this choice between creating competition for services or not. Today we see that the municipalities use public tenders and internal/external monopolies at the same time for different services, depending on politics or practical issues.

6.1.2 Authority discharge and cooperation

So, what options do the municipalities have for the units occupied with authority discharge? Today these result units have to be kept within the local municipal organisation, and this is the only option for authority discharge activities such as construction permit case processing (KRD and KS, 2005; Norway, 2006). There have been dispensations for municipalities experimenting with new forms of organising authority discharge units, and the state government will propose an amendment (Norway, 2006) to the Local Government Act giving the municipalities the possibility of using the host municipality model (figure 19, 4) to organise authority discharge result units. The use of the co-municipality model is also recommended for further test projects (Norway, 2006, p. 59).

This means that the possibilities of organising authority discharge have increased, perhaps leading the way for further amendments in the future which will allow for more organisational possibilities. There are several potential issues connected with the host municipality model. One has been the issue of value-added tax (VAT), but more critical to the use of this model is the political issue of transferring employees and resources to another organisation (Norway, 2006). Perceived loss of jobs could give political halts in the use of this model.

We argue that the evolving Smartkom project, with its long-term goal of creating a common case processing, could create an alternative model based on e-government initiative. The Smartkom project has gone through several stages of collaboration resulting in a tight *professionalized network*, starting with exchanging views on regulations, to establishing more similar policies and coordinating the information system infrastructure (figure 20).

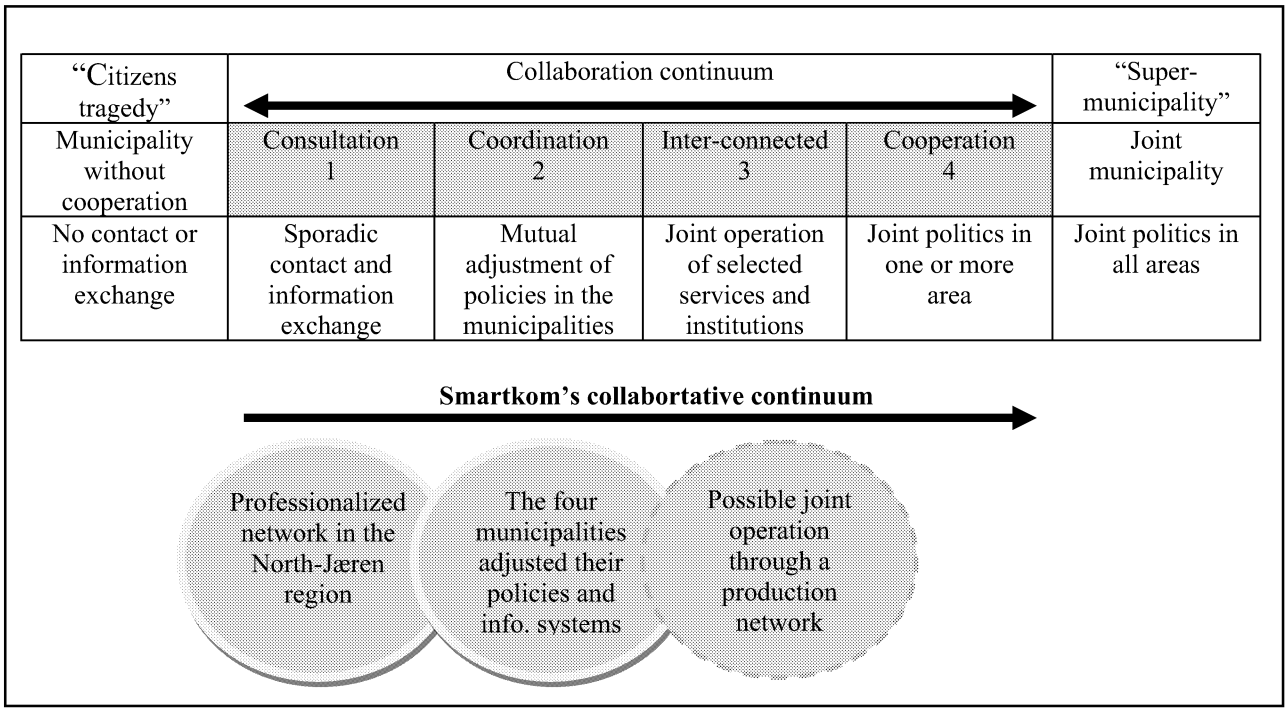


Figure 20: Smartkom's collaborative continuum. The model compares Smartkom's progress with the Collaboration continuum model (from Baldersheim et al., 2003, p73) and Rhodes' (1991) classification of networks. The developing Smartkom collaboration shows the possibility of establishing a *production network* to reach the third stage 'Inter-connected' without creating an inter-municipal company.

The professionalized network has had some successes in adjusting the four municipalities' policies and systems through inter-municipal projects, which has been a goal for the collaboration between the participants. From the case documents we also saw that a long term goal of Smartkom was to use the e-government initiative to promote a *joint case processing* between the involved municipalities (Høykom, 2002). We argue that this professionalized network has the possibility of continuing to develop into a more permanent *production network* (figure 21).

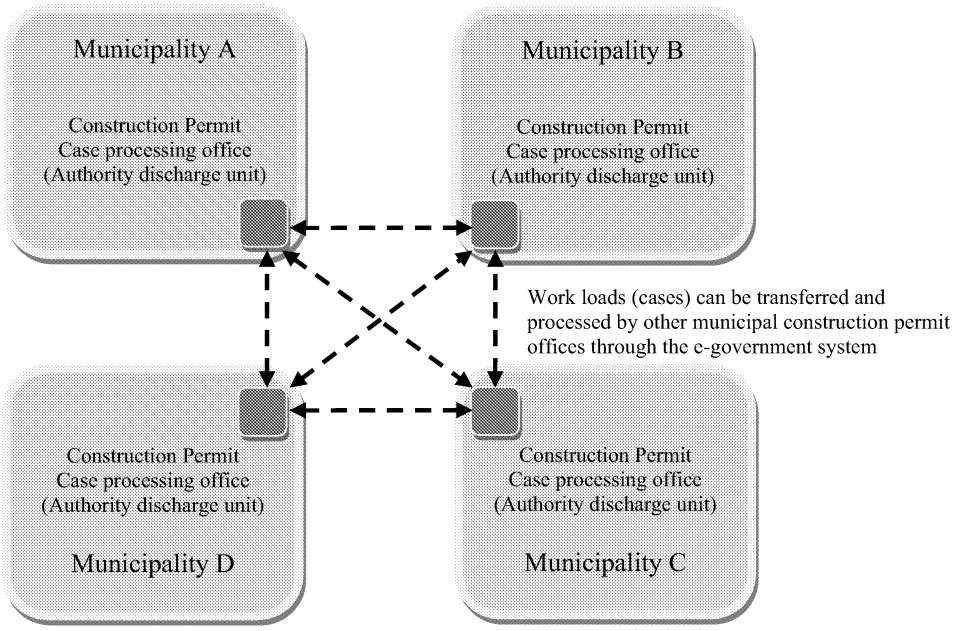


Figure 21: Illustration of an e-government driven production network. With common policies and information systems, the municipalities can exchange capacity for case processing.

The difference between the *professionalized network* of today and the possible future *production network*, we argue, is the daily collaborative operations that provide the needed capacity for the region's case processing needs. This production network is not a project with a finite goal or a temporary life-time, it is rather a permanent structure (Powell, 1991) for delivering services (in this case authority discharge). This production network is different from Rhodes' *producer network* since it does not entail the creation of a separate legal body (inter-municipal company) to coordinate service production. If a municipality is lagging behind on their 12 week processing time limit, they can use the capacity of other municipalities through the integrated e-government system to avoid loosing fees.

An advantage of this model is that the individual municipalities retain their employees in their organisation, thereby avoiding political issues on location of jobs, whereas the host municipality model could cause such issues. A disadvantage to our proposed production network model is that leaders of the result units can not be freed to perform other tasks. In the host municipality model there would be a possibility of using the redundant leaders to do other tasks, still the host model has been criticised as creating too much distance both to citizens and to the local political structures (KRD and KS, 2005). Also, the more municipalities that participate in a host municipality model, the more pressure there will be on the principle of each municipality being a generalist provider of services, since they are transferring the execution of authority discharge to another municipality.

A co-municipality model has been seen as an alternative to the host municipality model for organising authority discharge (KRD and KS, 2005). Co-municipalities entails the creation of a separate legal body, but a production network on the other hand, does not need to be organised in a separate legal body, since e-government system connects the existing offices in each municipality. This removes the need for yet another level of government which a co-municipality could be seen to represent. We argue that the production network model based on e-government systems can be a future third alternative model for authority discharge in addition to the host model, that seems to be on its way into Norwegian law (Norway, 2006),

and the co-municipality model that is also suggested as a hot candidate for cooperating on authority discharge (KRD and KS, 2005).

We have seen that law and regulation plays a major part in the municipal structures, but that technology gives possibilities for organising municipal service production that might be amended in the future. Dispensations from law for test-projects concerning new organisational models have been given (e.g. for host model projects), and might be given for testing an operative production network.

From the structures in the municipalities and the regulations pertaining to services and authority discharge we see the case processor's work influenced by regulated processing requirements, delegated authority and the professional freedom to make decisions. These varying influences give the case processors the possibility to give a costumer focused service within the borders of law and regulation. Their process management style can be seen as similar to the observations made when describing the *professional management* in the Neo-Weberian State (Pollitt and Bouckaert, 2004).

The important role of central management combined with the local professional freedom to handle allotted resources seems to reaffirm the importance of strategic solutions centrally, as well as operational freedom in the individual units. Combined with the continuing reaffirmation of the principle of generalist municipal service delivery shows a continuing trend for the state as the main deliverer of solutions to issues facing the community. This seems to be in line with the Neo-Weberian state model (ibid.).

6.1.3 Decentralisation of authority in a flat structure

We have seen that the flattening of the municipal structure and the separation of the larger departments into result units has given a wide array of possible organisational forms, ranging from hierarchies to market-based tenders to network organisations.

Another aspect of the flattening of the organisation is the possibility of empowerment of employees and more autonomous units. The idea is that less middle management will give a decentralisation of authority. But flattening the operational part of an otherwise very hierarchical structure (i.e. all the way up to the minister) can create the possibility of an opposite direction. A flat structure can lead to more control from central management rather than increased influence from the operational staff (Moland and Bogen, 2001). From our findings we see that the law and regulations from the ministry have a tendency to get priority. Still, the individual units have more budget freedom (e.g. employing within their budget) and the importance of the professional skills of the employees are still paramount to the municipal services.

Professionalized networks between the municipalities have been instrumental in making the laws and regulations from politicians and the ministry operational. Consensus on the implementation of regulations through networks can have direct influence on the services provided in each municipality. In this way there is a decentralisation of authority. But if the practical applications of regulations are too unclear, or do not meet the anticipated actions of the authors of the regulation, a circular letter from the ministry is usually not too far away (Norway, 2004b).

The distribution of authority is therefore not always clear because of the strategic authority placed centrally in the public sector hierarchy, and the operational distributed authority of the skilled professionals in the municipalities. Still, the last instance is the minister and there still exists clear lines of authority based on the spheres of the hierarchies.

6.1.4 Direct society influence

Local political planning and policy creation combined with central incentives and procedural directives through law and regulations, leaves little room for influence outside the frames of the representative democracy. From the case in the North-Jæren region we could see that there is a possibility for influence through closer relationships between the industry of the region and the local administration through projects like Smartkom. Networks are inclusive and could influence the *operational direction* of the service units in the municipality.

Direct influence in policy making is still mostly guided by law (elections and citizen initiatives) and solutions for transactions between the political structure and citizens are in limited use. The reason for the focus on service delivery and internal efficiency could be the administration's central role in the development of alternative solutions, such as discussion forums and online polling, to supplement the law regulated solutions (Flak et al., 2005). In the Smartkom cooperation there was little, if any, involvement of the local politicians. This inter-municipal cooperation has been run on the initiative of the administrations seeking advice from users on the needs of the regional market.

6.2 Resource evaluation, quality and accountability

With evolving use of public tenders and service delivery from outside the municipal organisation, there is an increasing need for resource evaluation, assurance of quality and accountability mechanisms to ensure the proper use of public money.

6.2.1 Resource evaluation

Where there are external actors delivering services for the municipality, there is usually a need to base evaluations of the use of resources on the documented performance of the external actor. Such *ex-post* evaluations are usually regulated in contracts and the key performance indicators in the contract need to be updated regularly to meet the standards set by the municipality.

An *ex-post* evaluation can be closely combined with thresholds for quality of the services, and from our findings we see an example of an *ex-post* evaluation within the municipal organisation. The construction permits case processing needs to keep a high performance in order to keep its income. With an increased focus on performance based evaluations we see a trend away from the more traditional *ex-ante* budget maximization often related to a more ideal-type bureaucracy model. The case municipalities use back-office expert systems to maintain billing information and also e-government initiatives are on their way to let the private sector, third sector and citizens access their billing information online through personal portals.

The degree in which *ex-post* evaluations are used indicates too which extent the municipal back-office is moving towards a market-oriented model. We argue that the municipalities in the Smartkom region today have the opportunity to expand the use of performance based

evaluations based on the use of public tenders and incentives in the form of strategic regulations from the ministry and new e-government systems for improving billing information.

6.2.2 Quality of service delivery

Securing the expected level of quality from services is closely tied to the actors supplying the services. An argument for the use of public tenders has been that a choice between service suppliers can give the municipality the opportunity to choose the highest quality service from the bidders by evaluating their offers throughout the tender process. Contracts are said to ensure the quality and cost of the services, but the transactional costs of creating tenders and managing contracts can be a major issue, as we heard from the Smartkom region. Even so, the transaction costs can also be argued as necessary even if services are not put out for tender (Moland and Bogen, 2001). If the services are performed internally in the municipality, it could be argued that they should perform internal service level agreements, and that these need to be revised just as the contracts with tender contractors. From the interviews we learned that transaction costs connected with public tenders both leading up to the tender process and after. We did not get an impression of any special use of e-government systems for these mostly back-office activities.

Internal delivery of services is needed for authority discharge services as long as they can only be performed by the municipalities. The skilled professionals of the municipalities are still a safeguard for the quality of these services.

Permits for constructions cannot be outsourced today, but from the interviews we have seen a possibility of running these services through inter-municipal production networks. This e-government based organisation would give an opportunity to choose who, among the participating organisations (municipalities), could help with extra case processing capacity to create the best possible service quality in the region. The findings from the case also show however, that such an interconnection of municipal services would probably need all the staff from the different municipalities, since the work load would be just as high.

Since there are issues related to mergers of services and the location of such merged departments (Moland and Bogen, 2001), we found that the case processing offices were satisfied with just having professionalized networks that do not cause political issues. We argue that a possible future production network, spreading the capacity for case processing across the participating municipalities, would be a maturation of the ongoing municipal cooperation and professionalized network. Therefore a production network, as with professionalized networks, would cause less political issues, than moving result units between municipal organisations.

6.2.3 Accountability

As we have seen from the findings from the case, contracts are used for controlling accountability outside the organisation. The resource evaluation and quality of the services out on public tenders are possible through the management of contracts, but the municipalities themselves are still responsible for delivering the services to the public. Even with public tenders the citizens still can hold the municipalities responsible for any issues arising from the delivered services (Moland and Bogen, 2001).

An e-government based production network would like most networks be based on cooperation and trust between participants. The responsibility for the delivery of quality services lies at the political leadership in the original municipality, even if another municipality performs the authority discharge. Therefore the original municipality needs to have a high degree of trust to the competency of the performing municipality's administration. This could be a problem, but the use of contracts might mitigate major issues concerning accountability. Similar issues could also arise when using the host municipality or co-municipality models, and prescribed solutions in the law regulating these models could also be prescribed for issues in a production network to create accountability.

6.3 Summary of the current situation of the municipal back-office

Our results are based on a limited selection of interviewees and documents, yet the principal elements can indicate the direction of the municipal back-office changes. We will summarise the current direction to give an overview of the discussion and an indication of how the elements of back-office change give a general direction for the municipal organisation.

It is difficult to see clear tendencies for the evolving municipal organisations, since they are governed by law, pragmatic solutions and politics. This leads to sometimes contradicting directions, such as public tenders and outsourcing of some services while internal delivery of others needs to be done inside the municipal organisation. Main principle elements are summarised in table 6.

Table 6: Summary of *current* principle elements in the case municipal organisations (based on the analysis of the case and discussion and the comparison table 1). Highlighted elements have been found, but sometimes depend on what type of service is in question. Gray elements are possible, but depend on the evolving legislation, municipal needs and e-government solutions.

	Ideal-type Bureaucracy	**The New Public Management**	**The Neo-Weberian State**	**Network organisation**
Structure:	Hierarchical offices within spheres of competence	Privatised disaggregated services	Hierarchical offices within spheres of competence	Networks of participating organisation
Distribution of authority:	Centralised	More Decentralised	Centralised	Decentralised
Citizen, private and third sector influence:	Representation	More direct democracy	Supplemented Representation	More direct democracy
Service provision:	Service monopoly	Services through competition	The State as the main deliverer of solutions	Collaborative service delivery
Process management style:	Rule based	Only Ex-post	Professional management	Consensus based
Resource evaluation:	Ex-ante	Public tenders	More Ex-post	More Ex-post
Quality of service delivery:	Skilled professionals	Public tenders	Skilled professionals	Spectrum of specialist organisations
Accountability:	Public ethics	Contracts	Public ethics	Trust

From the summary table we see that there are divergent directions in the different elements of the municipal back-office. The directions are somewhat tied to which services that are

considered. Another divide in direction is the management style of the services and the structure of the municipality. From our small sample we can see that the structure and governance (policies) are leaning more towards the hierarchies of Weber. While the operations are pragmatic and collaborative, yet the quality and accountability of the services are connected to the laws and regulations guiding the operations of the municipalities.

The reaffirmation of the accountability of the municipality as the main facilitator of services, and the steps that have been taken away from a pure disaggregated structure, gives an impression of something resembling the Neo-Weberian state model. Indeed the citizen focus and professional freedom of the case processors projects the management style or 'neo' elements of the model (Pollitt and Bouckaert, 2004). A defining element is to which extent public tenders are used. This can be seen as setting the New Public Management apart from the Neo-Weberian State. e-Government systems can be used to support both models and the wielder of this catalyst tool guides the direction. A future production network based on e-government systems is possible and might lead to more elements going in the direction of Network organisations.

Municipal merger

We have seen clear connections between the "municipal merger ghost" and projects such as FAR, and heard the views of the FAR project and Smartkom project as both predecessors for a municipal merger, but also as possible maintainers of a decentralised structure. The new Stortings-proposal (Norway, 2006) from the Ministry of Local and Regional Development clearly removes incentives for municipal merger by no longer giving support for infrastructure projects between municipalities. A line of merger *voluntarism* is stated in the proposal, and yet the municipalities are expected to manage more responsibilities. This issue has been found to be difficult for the very small municipalities, since reports cited in the proposal have found that they might not have the appropriate resources or competency to carry out an increase in responsibilities and authorities.

We argue that a production network would help small municipalities execute their responsibilities and authority through cooperation with larger municipalities, but retain their decentralised structure and local governance. We have described earlier the need for municipalities in a potential production network to have in place a professionalized network, common policies for the services in question, common e-government system solutions or middleware solutions and the legal permissions to arrange case processing in an inter-municipal network. Mutual adjustment between participants is therefore of great importance to the success of such a future possible organisational network structure.

7 Conclusion

This chapter presents the main findings from our study. The implications of these findings for the municipalities in the Smartkom project are discussed, with an emphasis on possibilities for the near future. Our findings are also related to future research and some recommendations are given for the focus for the e-government field.

7.1 Main findings

Several principle elements were identified as influencing the overall direction of the municipal organisational change found in the case region. We have analysed the impact of the Smartkom project in this context and the future possibilities of such e-government initiatives in order to answer our research questions. The focus of this study has been on e-government's connection with organisational structure and work processes in the case municipalities, and not on the technological solutions and benchmarking of front-end portals.

Our analysis has shown that the municipal organisations are complex, with combinations of differing and sometimes conflicting state model elements. The case municipalities all showed the implementation of public tenders along side with the internal production of operational services and authority discharge. An explanation for the complex nature of the municipal organisations is their role as generalist service providers, which results in a range of services that have differing regulations applying to them, such as the main different categories of operational services and authority discharge. This leads to a situation where the municipalities can have an organisation made up of different sub-structures for each activity, with market-oriented solutions for one and internal hierarchical solutions for another. We found it difficult to identify a main trend in the form of a pure marked-oriented (NPM), hierarchical (NWS), cooperative (Network organisation), or ideal-type bureaucracy direction.

What is clear is that the choices done in each municipality regarding how they execute their service provision responsibilities affects the overall direction of the municipal organisation; a kind of incremental reform. We have seen that e-government initiatives play a role in improving work processes within existing organisational forms, such as the processing of construction permits with expert back-office systems giving access to archives and maps, and online portals giving the citizens and businesses self-service possibilities. The Smartkom project has shown signs of these effects, and the interviewed executives see the future increase in experienced effects connected to the imminent increase in the use of the integrated online system.

The use of e-government systems can also create *new* organisational alternatives. Our analysis of the case has shown that a production network, were each municipality keeps their construction permit offices and employees, can transfer workloads (cases) between the participating municipalities. We see a number of possible effects from such a *production network* organisation:

- Municipalities are not exposed to the *political decision* of moving their construction permit resources and employees.
- *Core competency* is retained within the municipality, since the means of delivering services (here construction permit authority discharge) are kept.

- Municipalities are less likely of loosing their *generalist* service provisioning roles, since they retain their service provisioning capabilities.
- The issue of smaller municipalities' capability of delivering equal high-quality services is answered by the production network's possibility of *sharing* case processing capacity between the participating municipalities, which we believe would also work for very small municipalities.
- The issue of distance between the municipal administration and citizens in other models, such as the host municipality model, is avoided because of the *decentralised* organisation of the service provision.

Our analysis of the new possibilities of utilizing integrated e-government systems for coordination instead of creating a separate legal body can be viewed as an update of Rhodes' classification of *producer networks*. The list over possible benefits from a more decentralised *production network* shows the organisational power of e-government.

We have seen that the Smartkom project has the opportunity to mature into such a production network. There are several factors relating to such a move. The main factor is that with all e-government initiatives, you have to operate within laws and regulations. Operating construction permits within the proposed network model would not be legal today, but the recent proposition (Norway, 2006) has outlined an *amendment* opening for other municipal organisations to execute authority discharge (e.g. construction permits) on behalf of another municipality. This loosening of the laws may give an opportunity for new uses of e-government systems as the basis for network structures.

Another main factor is the degree of *trust* that is required between the participants in such a production network. From our analysis of the participants in the Smartkom project and their expressed positive attitudes towards each other, we see a good foundation for a continuing *cooperation* between the four municipalities. Pressure from both the private sector and central government on keeping a more homogenous and high quality service will also drive this cooperation further. The new eBygg 2009 project with Fagforbundet and Forum for Innovasjon could be a crucial boost to the e-government systems that could lead to a new production network.

We see e-government here as a prerequisite for future development of organisational options for service delivery, and also as a generator for new options that comply with central governmental strategies, such as:

- the generalist municipality principle
- decentralisation of authority
- more capable small municipalities
- quality through maintaining core competency
- citizen centric services

Each provided service is under scrutiny from politicians, citizens, the private sector, and third sector organisations, giving the premises for the administration's organisation of the services. Our analysis of the case has shown that influence over the creation of policy does not only come through the direct contact between private sector/third sector/citizens and their politicians. We have found that in some instances the influence through administrative and organisational change could affect policy. A need for altered services might prompt the administration to act within their delegated authority, presenting politicians with new

suggestions for the creation of policy. We agree with reports suggesting that the municipal administration holds a key position in the forming of future e-government systems and therefore the provision of services (Flak et al. 2005).

The distribution of authority, different degrees of public tender use and e-government system's role as a supporter of almost any type of service delivery does not give a clear picture of the direction of municipal organisational change. We have also not found any support for e-government initiatives pushing the organisational change in any particular direction. What is clear is that e-government initiatives can support and act as a catalyst for any of the analysed state models.

Municipal mergers is a topic in any discussion of municipal structure the last years, and we have found that the recent projects have been viewed both as possible precursor for mergers, but also as a counter move to maintain a decentralised structure. The suggested network organisation, if implemented, would help maintain a decentralised structure, while keeping core competency in the municipalities. Sharing the capacity between the participating municipalities would help very small municipalities to cope with the issue of increased municipal responsibilities and authority, and simultaneously help to keep the generalist service delivery principle.

It seems that e-government is a powerful tool for reform, and the wielder of this tool decides the direction of the reform. It also seems as though e-government can become a fundamental prerequisite for new ways of organising municipal service provision and structure. There is a need for more practical experiences regarding e-government and organisational reforms in addition to more research on this topic.

7.2 Implications for practice

In this section we will try to relate the main findings of our study to the Smartkom municipal participants, and perhaps give some pragmatic recommendations for their practice and plans for the future.

Since the context surrounding construction permit case processing is characterized by political issues, law regulation and accepted practice we can only point at possibilities we have experienced through our analysis of the case. Even so, we would urge the participating municipalities from the Smartkom project to look into the possibility of creating a production network between them, and fulfil their long term stated goal of creating joint case processing (Høykom, 2002).

There is a need for a dispensation from the current laws regarding authority discharge, but perhaps with the softening of inter-municipal cooperation on these services there is a good possibility of receiving dispensations for a production network project.

We hope that this study might function as a review of the different structure models and how the municipalities can use e-government as an enabler for change, and that e-government does not have to be connected with just one line of reform, but rather any service reform.

7.3 Implications for future research

This section attempts to show the potential contribution of our study and we will suggest future research possibilities.

Our study has tried to view e-government from and organisational point of view, and we have borrowed theories from the field of public administration and social science to give a setting for our view of e-government initiatives, and their impact. It was our intent to explore the phenomenon of inter-municipal co-operations, e-government initiatives and Norwegian municipal change. The borrowed theories can be used as tools for enriching the field of e-government and opens the way for more focus on back-office issues, change and effects.

We found that the cross discipline approach to e-government study and analysis is demanding, since one has to adapt to unfamiliar system of concepts and research history. The limited attempts in this study might help to point at future research hypothesis' or even spark an interest for viewing e-government, as a field, from other angles.

The proposed network organisation for the case region might be a focus for further investigation and documentation. Sustainable network structures solving daily tasks can be of further interest for scholars in the e-government research field. Questions loom, such as:

- What are the technological barriers of creating e-government based production networks?
- What drivers exist for the use of e-government as a catalyst for municipal organisational change?
- To what extent can private sector, third sector and citizens influence public policy through their participation in administrative reform?

We have found little in the way of operational independent variables for measuring the effects of e-government on the direction of municipal change. This challenge needs more investigations as to ascertain a viable quantitative study of the organisational transformative power of e-government initiatives.

Municipalities in the Smartkom region are expanding their cooperation to include more participants, and they are increasing their effort with the new eBygg 2009 project. Our study may give a preferable condition for others to investigate further the organisational experience that this new project might bring. Hopefully a more comprehensive study can follow this project as it is conducted in four larger regions and is scheduled to grow nationally.

7.4 Limitations

This study has been narrow in the sense that it does not involve the perhaps typical technological and front-end points of view, nor has it properly addressed issues such as the digital divide, accessibility, e-democracy and citizen reflexivity.

The findings from this study are based on a limited case study of four of the Nord-Jæren municipalities. Generalisation of our findings would have needed a much larger empirical investigation and more rigid method triangulation. As such, the findings and implications can only be related to the four municipalities in the case region.

Absolute objectivity is not a critical issue in a qualitative case research, although findings should be presented without too much manipulation that could distort the data. By using tested methods for qualitative research, we should have managed to avoid most of the potential pitfalls of case research. However our interpretive philosophical stance has created room for personal interpretations that could lead to mistakes.

An important aspect of research is the validity of the findings. Although this is not a key issue in qualitative research, it is still worth considering. Cresswell (2003) describes eight methods to check the accuracy of qualitative findings, which we have tried to follow. Among these methods is the clarification of the researcher's bias. This might not have been described adequately, although it is carefully noted through our choice of philosophical stance. We were also not able to get back to the participant to clarify our understanding of each interview. This might potentially create misinterpretations.

There is always a discussion about the number of interviewed participants in qualitative research. It seems like there is always room for some more interviews to reflect new aspects of the case. This also applies to our study. We could have involved more participants, but had to limit the number due to resource constraints.

Our use of a cross-disciplinary focus is limited by our shallow understanding of the research field public administration and organisational science. Although we learned much and enjoyed this angle on e-government, it requires more time and experience to give full justice to these great fields.

References

Airaksinen, J. & Haveri, A. (2003). Networks and hierarchies in inter-municipal co-operation: Are networks really light and flexible and hierarchies sticky and rigid? *Conference of European Group of Public Administration*, September 2003, Lisbon.

Alavi, M. & Carlson, P. (1992). A review of MIS research and disciplinary development. *Journal of management information systems*, Vol. 8, No. 4, 45-62.

Albrow, M. (1970). *Bureaucracy.* Pall Mall Press, London.

Aldrich, H.E. (1979). *Organization and environments.* Prentice-Hall, Englewood Cliffs, New Jersey.

Auriacombe, C.J. (1999). Reflections on the New Public Management, *Saipa (Journal of Public Administration)*, Vol. 2, No. 34, 124-136.

Baldersheim, H., Pettersen, P.A., Rose, L. and Øgård, M. (2003). *Er smått godt? Er stort så flott? - Analyse av kommunestrukturens betydning*. Department of PoliticalScience, University of Oslo, Oslo.

Barlow, S., Chen, P., Chimonyo, J., Lyon, A. and O'Loughlin B. (2003). eGovernance practice and potential in the local government sector. *Australasian Political Studies Association Conference*, 1-46, University of Tasmania, Hobart.

Benbasat, I., Goldstein, D.K. & Mead, M. (1987). The case research strategy in studies of information systems. *MIS quarterly*, Vol. 11, No. 3, 369-386.

Berg, B.L. (2001). *Qualitative research methods for the social sciences*. Allyn and Bacon, London.

Bleicher, J. (1980). *Contemporary hermeneutics: hermeneutics as method, philosophy and critique*. Routledge & Kegan Paul, London.

Brandtzæg, B.A. and Sanda, K.G. (2003). *Vellykkede interkommunale tjenestesamarbeid. Resultater fra en kartlegging høsten 2002*. Report no. 204, Telemarksforsking - Bø.

Brannvesenet i Sør-Rogaland IKS (no date). *Organisering*, [Online]. Available: http://www.brannsr.no/Default.aspx?tabid=1069 [13.06.06]

Brynjolfsson, E. and Hitt, L.M. (1998). Beyond the productivity paradox. *Communications of the ACM*, Vol. 41, No. 8, 49-55.

Ciborra, C.U. (1997) De profundis? Deconstructing the concept of strategic alignment. *Scandinavian Journal of Information Systems*. Vol. 9, No. 1, 67-82.

Cohen, G.A. (2001). *Karl Marx's theory of history.* Princeton University Press, New Jersey.

Chua, W.F. (1986). Radical developments in accounting thought. *The accounting review*, Vol. 61, No. 4, 601-632.

Cresswell, J.W. (2003). *Research design – Qualitative, quantitative and mixed methods approaches, 2nd ed.* SAGE Publications, London.

Directorate for Health and Social Affairs (2005). S@mspill 2007 - *Elektronisk samarbeid i helse- og sosialsektoren*. Statens Forvaltningstjeneste, Oslo.

Doner, R.F. and Schneider, B. (2000). *The New Institutional Economics, Business Associations and Development*. Discussion Paper No. 110, ILO, Geneva.

Drechsler W. (2005). The rise and demise of the New Public Management. *Post-autistic economics review*, Issue. 33, September, 17-28.

Dunleavy, P. and Hood C. (1994). From Old Public Administration to New Public Management. *Public Money & Management,* July-September, 9-16.

Edvardsen, H.M., Guttu, J. and Kann, F. (2004). Byggesaksreformen – Kvalitet gjennom papirflommen. *NIBR-rapport*, No. 21.

Eisenhardt, K.M. (1989). Building theories from case study research. *Academy of management review*, Vol. 14, No. 4, 532-550.

Encyclopædia Britannica (2006). *Bureaucracy*, [online]. Available: http://www.britannica.com/ebc/article-9358313?query=bureaucracy&ct= [13.06.06]

Finger, M. and Pécoud, G. (2003). From e-Government to e-Governance? Towards a model of e-Governenace. *Electronic Journal of e-Government*, Vol. 1, Issue 1, 1-10.

Fitzgerald, B. & Howcroft, D. (1998). Towards dissolution of the IS research debate: from polarization to polarity. *Journal of information technology*, Vol. 13, No. 4, 313-326.

Flak, L.S., Olsen, D.H. and Wolcott, P. (2005). Local e-Government in Norway. *Scandinavian Journal of Information Systems*, Vol. 17, Issue 2, 41-84.

Forum for innovasjon (2005). *eBygg 2009 prosjektbeskrivelse,* [Online]. Available: http://www.innovaforum.no/ebygg/Prosjektplan%201.1.doc [13.06.06]

Friestad, L.B.H and Hernes, H. (2002). *Jo mer vi er sammen? Mulige samarbeidsområder for Knutepunkt Sørlandet*, Agderforskning, Kristiansand.

Galliers, R.D. and Land, F.F. (1987). Choosing appropriate information systems research methodologies. *Communications of the ACM*, Vol. 30, No. 11, 900-902.

Gruening, G. (1998). Origin and theoretical basis of the New Public Management (NPM). *International Public Management Journal*, Vol. 4, No. 1. 1-25.

Grönlund, Å. (2003). Framing E-Gov: e=mc3. In *R.* Traunmüller (Ed.) *EGOV 2003*, LNCS 2739, 191-198

Grönlund, Å. (2004). *What's in a field – Exploring the eGovernment field,* [Online]. Available: http://www.oru.se/oru-upload/Institutioner/Ekonomi%20statistik%20och %20informatik/Dokument/Informatik/Gronlund_HICSS38.pdf [13.06.2006]

Henderson, J.C. and Venkatraman, N. (1993). Strategic alignment: Leveraging information technology for transforming organizations. *IBM Systems Journal*, Vol. 32, No. 1, 4-16.

Hill, H. (2004). Transformation of the administration by e-government. *German Journal of Urban Studies (DfK)*, Vol. 43, Issue 2.

Himmelman, A. T. (1996). On the theory and practise of transformational collaboration: From social service to social justice. In C. Huxham (Ed.), *Creating collaborative advantages*. SAGE Publications, London.

Hood, C. (1991). A public management for all seasons? *Public Administration*, Vol. 69, 3-19.

Hood, C. (1995). The "New Public Managemtent" in the 1980s : Variations on a theme. *Accounting, Organizations and Society*, Vol. 20, No. 2/3, 93-109.

Høykom (2001). *Smartkom - effektiv kommunal saksbehandling*, [Online]. Available: http://www.hoykom.no/hoykom/HOYKOM_Prosjekter_ny.nsf/WebAlle2/837DBB18 61BB8FF341256A08005FB8FA [13.06.06]

Høykom (2002). *Smartkom – Felles internettportal for byggsak, plan og deling*, [Online]. Available: http://www.hoykom.no/hoykom/HOYKOM_Prosjekter_ny.nsf/ WebAlle2/27792B028BF400DF41256B03003D634F [13.06.06]

Høykom (2004). *Smartkom Fyrtårn*, [Online]. Available: http://www.hoykom.no/hoykom/ HOYKOM_Prosjekter_ny.nsf/WebAlle2/9549B3BD90CDA505C1256DE900468503 [13.06.06]

IBM (2006). *Kontor 2000 for offentlig arkivering og saksbehandling,* [Online]. Available: http://www-5.ibm.com/no/products/kontor2000/ [13.06.06]

iRogaland (2005). *Strategisk næringsplan for Stavanger regionen 2005-2020*, [Online]. Available: http://www.irogaland.no/ir/public/getFileData/Strategisk+N%E6 ringsplan+2005-2020.pdf?FILE_ID=1113215087871&filename=Strategisk+ N%E6ringsplan+2005-2020.pdf [13.06.06]

IVAR (no date). *Organisation,* [Online]. Available: http://www.ivar.rl.no/hoved.cfm?id=3660 [13.06.06]

Jacobsen, D.I. (2005). *Hvordan gjennomføre undersøkelser? Innføring I samfunnsvitenskapelig metoder 2. utgave*. Norwegian academic press, Kristiansand, Norway.

Johnson, R.B. and Onwuegbuzie, A.J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, Vol. 33, No. 7, 14-26.

Klein, H.K. and Myers, M.D. (1999). A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*, Vol. 23, No. 1, 67-93.

Kooiman, J. (2003). *Governing as Governance.* SAGE Publications, London.

KRD (Ministry of Local Government and Regional Development) and KS (2005). *Sluttrapport fra den sentrale koordineringsgruppa for prosjektet "Framtidens kommunestruktur – kommuner med ansvar for egen utvikling"*, [Online]. Available: http://odin.dep.no/filarkiv/259037/sluttrapport.pdf [13.06.06]

KS (2005). *Kommunestrukturen i Rogaland – i går, i dag, i morgen?* [Online]. Available: http://www.klepp.kommune.no/rogaland/klepp/kleppk/k2pub.nsf/viewAttachments/C1256C3200369B24C1256FF20040708F/$FILE/05012173.pdf [13.06.06]

KS (2006). *KS Skjema*, [Online]. Available: http://www.ks-skjema.no/ [13.06.06]

Lindblom, C. (1979). Still muddling, not yet through, *Public Administration Review*, Vol. 39, No. 6, 517-526.

Luftman, J.N., Lewis, P.R. and Oldach, S.H. (1993). Transforming the enterprise: The alignment of business and information technology strategies. *IBM Systems Journal*, Vol. 32, No. 1, 198-221.

Lynn, L.E. (1998). The New Public Management: How to transform a theme into a legacy. *Public Administration Review*, Vol. 58, No. 3, 231-237.

Lyse. (no date a). *Eierkommuner,* [Online]. Available: https://www.lyse.no/omlyse/?489 [13.06.06]

Lyse. (no date b). *Historikk,* [Online]. Available: https://www.lyse.no/omlyse/historikk/ [13.06.06]

Maes, R. (1999). A generic framework for information management. PrimaVera working paper, Vol. 3, [Online] Available: http://imwww.fee.uva.nl/~pv/html /working_paper_details.cfm?Id=47 [11.05.06]

Marche, S. and McNiven, J.D. (2003). E-Government and e-Governance: The future isn't what it used to be. *Canadian Journal of Administrative Sciences*, Vol. 20, Issue 1, 74-86.

Mingers, J. (2001). Combining IS research methods: towards a pluralist methodology. *Information systems research*, Vol. 12, No. 3, 240-259.

Ministry of Modernisation (2005). *eNorway 2009 – the digital leap*. Gan Grafisk, Oslo.

Moland, L.E. and Bogen, H. (2001). Konkurranseutsetting og nye organisasjonsformer i norske kommuner: muligheter og begrensninger. *Fafo-rapport*, Vol. 351.

Morison, M. and Moir, J. (1998). The role of computer software in the analysis of qualitative data: efficient clerk, research assistant or Trojan horse? *Journal of advanced nursing*, Vol. 28, No. 1, 106-116.

Myers, M. D. (1997). Qualitative research in information systems. *MIS Quarterly*, Vol. 21, No. 2, 241-242.

Norges forskningsråd (2003). Sluttrapport Smartkom nr. 1217/240, [Online]. Available: http://www.hoykom.no/hoykom/HOYKOM_Prosjekter_ny.nsf/ec31d7b4e8a8a9c7c1256d51004994b0/27792b028bf400df41256b03003d634f/$FILE/P1217%20Smartkom.pdf [13.06.06]

Norway (1985*). Planning and Building Act, No 77 of 1985*, [Law]. Ministry of the Environment, Oslo.

Norway (1992). *Local Government Act, No 107 of 1992*, [Law]. Ministry of Local Government and Regional Development, Oslo.

Norway (1999). Om interkommunale selskap. No. 1 of 1999, [Law]. Ministry of Local Government and Regional Development, Oslo.

Norway (2003). *Om lokaldemokrati, velferd og økonomi i kommunesektoren 2004, No 66 of 2002-2003,* [Storting proposition]. Ministry of Local Government and Regional Development, Oslo.

Norway (2004a). *om tidsfrister, og sanksjoner ved overskridelse av fristene, for private planforslag etter § 30 i plan- og bygningsloven*, [Regulation]. Ministry of the Environment, Oslo.

Norway (2004b). *Tilbakebetaling av gebyr ved kommunens oversittelse av fristen for behandling av byggesaker*, [Circular letter]. Ministry of Local Government and Regional Development, Oslo.

Norway (2006). *Om lokaldemokrati, velferd og økonomi i kommunesektoren 2007, No 61 of 2005-2006,* [Storting proposition]. Ministry of Local Government and Regional Development, Oslo.

Norwegian Association of Local and Regional Authorities (2006). *eMunicipality 2009 – the digital leap*. Kommuneforlaget, Oslo.

Nunamaker, J.F., Chen, M. & Purdin, T.D.M (1991). Systems development in information systems research. *Journal of management information systems*, Vol. 7, No. 3, 89-106.

Næsheim, A. (2001). *FAR Felles Administrative Ressurser – Et interkommunalt samarbeidsprogram,* [Online]. Available: http://www.odin.no/filarkiv/170052/FAR_Kom_sammen_280103.ppt [13.06.06]

O'Toole, L. and Meier, K. (2004). Desperately seeking selznick: Cooptation and the dark side of public management in networks. *Public Administration Review*, Vol. 64, Issue 4, 681-693.

O'Toole, L. J. (1997). Treating networks seriously: Practical and research-based agendas in public administration. *Public Administration Review*, Vol. 57, Issue 1, 45-52.

Olsen J.P. (2005). *Maybe it is time to rediscover bureaucracy?* Arena – Centre for European Studies, University of Oslo, Oslo

Orlikowski, W.J. and Baroudi, J.J. (1991). Studying information technology in organizations: research approaches and assumptions. *Information systems research*, Vol. 2, Issue 1, 1-28.

Osborne, D. and Gaebler, T. (1992). *Reinventing government: How the entrepreneurial spirit is transforming the public sector*. Addison-Wesley, Reading.

Pollitt, C. and Bouckaert, G. (2004). *Public management reform 2nd ed.* Oxford University Press, Oxford.

Powell, W.W. (1991). Neither market nor hierarchy: network forms of organization. In G. Thompson et al. (Eds.), *Markets, hierarchies & networks: The coordination of social life.* SAGE Publication, London.

Randaberg kommune. (2006). *Organisasjonen,* [Online]. Available: http://www.randaberg.kommune.no/rogaland/randaberg/randabergk.nsf//E8B6444A07CB2D7FC12571550044C28C/$FILE/org.kart.pdf [13.06.06]

Remenyi, D., Williams, B., Money, A. and Swartz, E. (1998). *Doing research in business and management – an introduction to process and method.* SAGE Publications, London.

Rhodes, R. A. W. (1991). Policy networks and sub-central government. In G. Thompson et al. (Eds.), *Markets, hierarchies & networks: The coordination of social life*. London: SAGE Publication

Sandnes kommune. (2006). *Organisasjonskart,* [Online]. Available: http://www.sandnes.kommune.no/index.asp?startID=&topExpand=1000097&subExpand=&menuid=1000528&strUrl=1004701i&context=0 [13.06.06]

Savitch, H.V. and Vogel, R.K. (1996). Regional politics: America in a post-city age. *Urban affairs annual reviews*, Vol. *45*, SAGE Publications, Thousand Oaks, California.

Schedler, K. and Scharf, M.C. (2001). Exploring the interrelations between electronic gorvernment and the New Public Management. *I3E Conference*, October 2001, Zurich.

Skjæveland, E. (2006). *Statestikk for Stavanger-regionen,* [Online]. Available: http://regionstatistikk.stavanger.kommune.no/ [13.06.06]

Software Innovation (2006). *DocuLive - Saksbehandling, dokumenthåndtering, arbeidsflyt,* [Online]. Available: http://www.software-innovation.no/_bin/66FB27CB-4BA8-40D8-A02A-EC97E79A042E.pdf

Sola kommune (no date). *Organisasjonsplan*, [Online]. Available: http://www.sola.kommune.no/orgplan/ [13.06.06]

Statens Kartverk (2004). *GAB (Grunneiendommer, Adresser og Bygninger)*, [Online]. Available: http://www.statkart.no/IPS/IPS?module=Articles;action=ArticleFolder.publicOpenFolder;ID=1385 [13.06.06]

Statistics Norway (2005). *KommuneFakta – Rogaland,* [Online]. Available: http://www.ssb.no/kommuner/region.cgi?nr=11 [13.06.06]

Stavanger kommune (2006). *Organisasjonskart – Administrativ organisering,* [Online]. Available: http://www.stavanger.kommune.no/publikum/personalhbook.nsf/c60c025c221c2c45c1256b18004a2abc/42a452f0e4255356c12571680029f43d/$FILE/Orgkart_adm.ppt [13.06.06]

Stavanger municipality (no date). *FAR-nytt,* [Online]. Available: http://www.stavanger.kommune.no/publikum/news.nsf/SVGsokNyheter/CEC432DD5AD76232C1256B4A003588EC?OpenDocument&id=CEC432DD5AD76232C1256B4A003588EC&referer=0 [13.06.06]

Stavanger regionen næringsutvikling (2005a). *Strategisk næringsplan 2005-2020,* [Online]. Available: http://www.irogaland.no/ir/public/getFileData/Strategisk+N%E6ringsplan +2005-2020.pdf?FILE_ID=1113215087871&filename=Strategisk+N%E6ringsplan +2005-2020.pdf [13.06.06]

Stavanger regionen næringsutvikling (2005b). *Årsrapport 2004 ARNE-prosjektet,* [Online]. Available: http://www.greaterstavanger.com/rogaland/stavanger/srn.nsf//9D5C291F7B69F547C12570E7003948FF/$FILE/Årsrapport+ARNE+2004.pdf [13.06.06]

Strand, A. and Moen, B. (2005). *Kommunestrukturen i Rogaland – i går, i dag, i morgen? Underlagsmateriale og dokumentasjon til KS Rogaland.* Norsk institutt for by- og regionforskning, NIBR-notat, No. 112.

Svensk Kommunförbund/ Landstingsförbundets IT-enhet (2002). Omvärldsbeskrivning och nuläge. *Introduktion till kommunal e-service*, No. 1.

Tellis, W. (1997). Introduction to case study. *The Qualitative Report*, Vol. 3, No. 2

Thompson, G., Frances, J., Levacic, R. and Mitchell, J.C. (1991). *Markets, hierarchies & networks: The coordination of social life*. SAGE Publication, London.

Thorson, S. and Ragland, J. (2002). *E-governance in the Americas and Europe,* [Online]. Available: http://www.maxwell.syr.edu/ict/research/files/tech-reports/ICTTRS3egri.pdf [07.06.2006]

Toren, N. (1976). Bureaucracy and professionalism: A reconsideration of Weber's thesis. *Academy of Management Review*, Vol. 1, No. 3, 36-46.

Vigtel, P.M. (2006a). *Skisse til forprosjekt – en alternativ modell til New Public Management"*, [Online]. Available: http://www.innovaforum.no/ebygg/PMV002930.doc [13.06.06]

Vigtel, P.M. (2006b). *Valg av modellregioner for "Prosjekt eBygg 2009"*, [Online]. Available: http://www.innovaforum.no/ebygg/PMV002977c.DOC [13.06.06]

Walsham, G. (1995). Interpretive case studies in IS research: nature and method. *European journal of information systems*, Vol. 4, 74-81.

Weber, M. (1946). *From Max Weber* (trans. H. Gerth & C.W. Mills). Oxford, New York.

Weber, M. (1947). *The theory of social and economic organisation* (trans. A.M. Henderson and T. Parsons). The Free Press, Glencoe.

Weiss, R.M. (1983). Weber on bureaucracy: Management consultant or political theorist? *Academy of Management Review*, Vol. 8, No. 2, 242-248.

Yin, R.K. (1994). *Case study research – Design and methods*. SAGE publications, London.

Zucker, L. (1986). Production of trust: Institutional sources of economic structures, 1840-1920. *Researching Organizational Behaviour*, Vol 8, 53-111.

Appendix A - Interview guide

This is the guide used during the interviews at the different locations in the North-Jæren region. The interview is distributed in Norwegian.

Intervjuguide

[Kommune navn] kommune *[Intervju dato]* klokken *[klokkeslett]*

Generell informasjon

Tid og sted
Vi takker for at du ønsker å bidra til vår masteroppgave med et intervju *[intervju tidspunkt]*. Intervjuet vil bli holdt på *[intervju sted]* og vil vare ca. en time, men kan kortes ned ved behov.

Hovedtema
Norske forhold som påvirker retningen av kommunale organisatoriske reformer.

Bruk
Intervjuet vil bli brukt som en del av masteroppgaven "Municipal organisational change - Aligning e-government and back-office" som er under faglig ledelse av Maung K. Sein og Carl Erik Moe ved Høgskolen i Agder. All informasjon fra intervjuet vil bli håndtert med diskresjon, og vil kun brukes i masteroppgaven. Ved ønske kan en kopi av oppgaven gis til Stavanger kommune etter at den er evaluert.

Spesielle hensyn
Under intervjuet vil det bli skrevet notater og vi ønsker også å bruke en båndopptaker for å gjøre etterarbeidet så nøyaktig som mulig. Skulle bruk av båndopptaker være problematisk, så ber vi om en melding om dette.

Temaoversikt

Dette er en oversikt over hvilke tema som vil bli tatt opp under samtalen.

1. *[Intervjukommune]* tanker rundt prosjektet eBygg 2009.
2. Erfaring fra SMART samarbeidet.
3. Tanker om kommunens valg av nåværende organisatorisk struktur.
4. Tidligere erfaringer med endring av organisasjons struktur og arbeidsprosesser.
5. Nåværende største utfordringer for Randaberg kommune.
6. Fremtidige planer for elektronisk saksbehandling.

På forhånd takk,

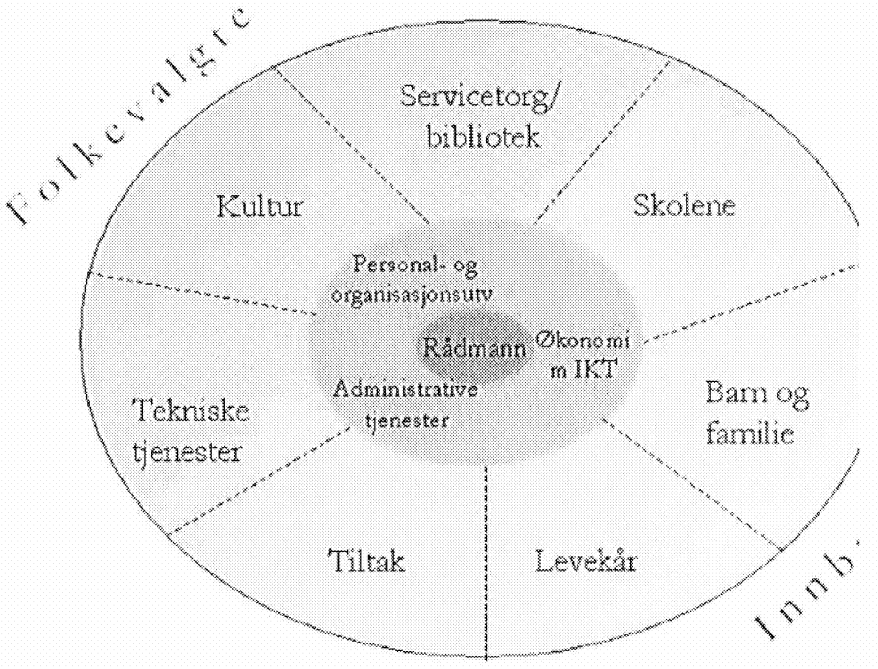
Erik Lindblom og Øyvind Hellang

Appendix B - Municipal organisational structures

This is the municipal organisational charts for the four participating municipalities in the Smartkom project. They are the municipalities of: Randaberg, Sola, Stavanger and Sandnes.

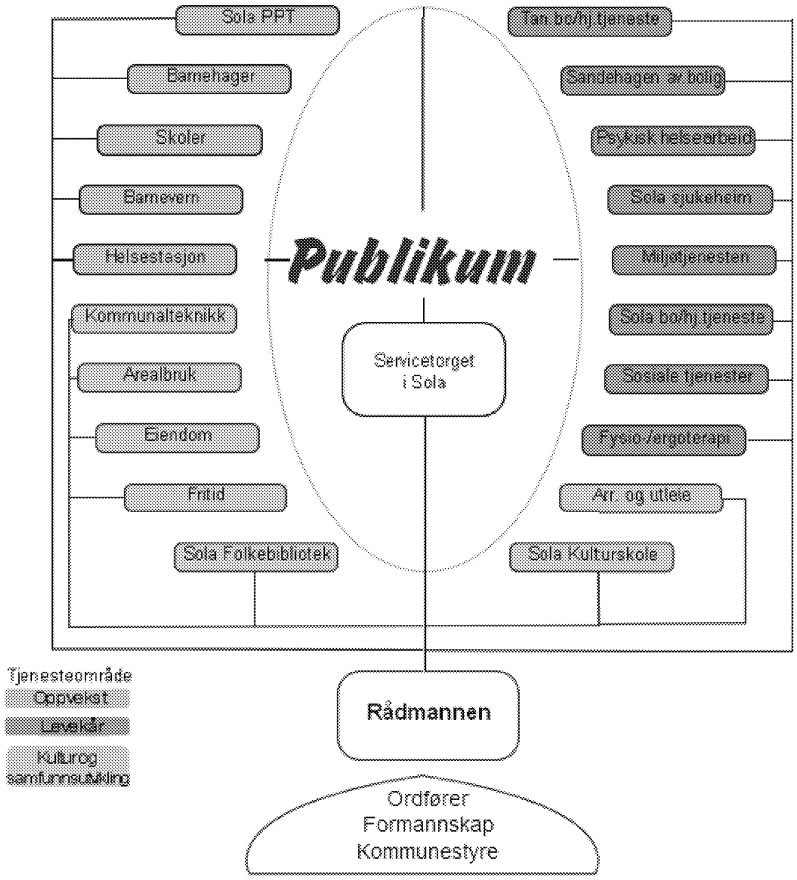
Organisational chart – Randaberg municipality

(Randaberg kommune, 2006)



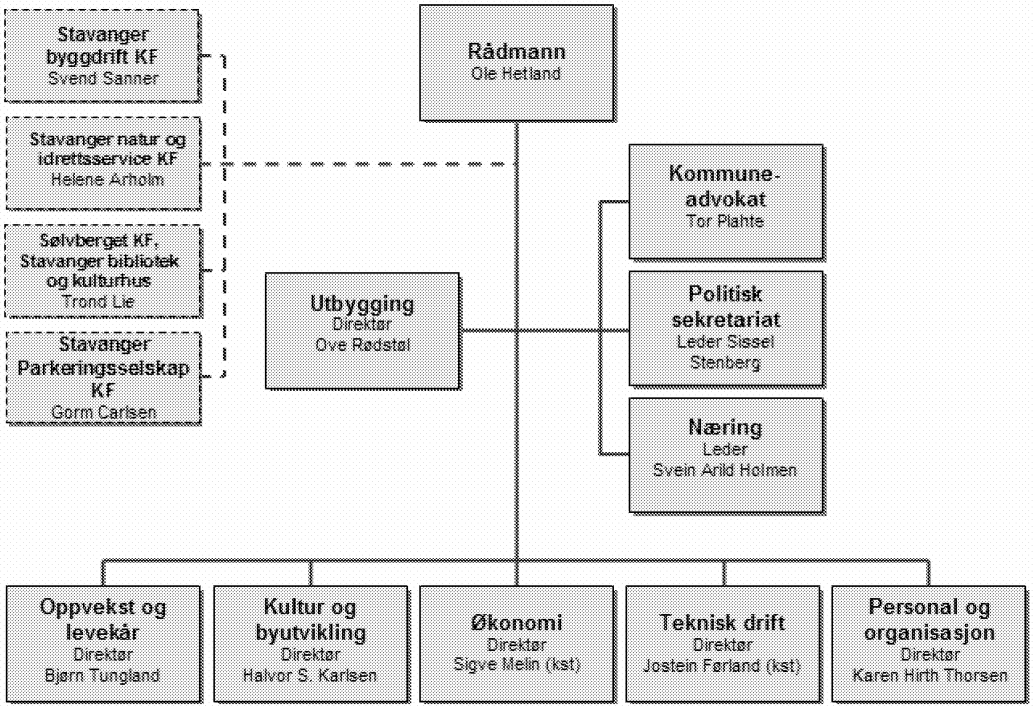
Organisational chart – Sola municipality

(Sola kommune, no date)



Organisational chart – Stavanger municipality

(Stavanger kommune, 2006)



Organisational chart – Sandnes municipality

(Sandnes kommune, no date)