

ICT Usage in the Public Sector

- a Nordic model questionnaire



Nordic Council of Ministers

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1. Preface

This publication *"ICT usage in the public sector - a Nordic model questionnaire"* is the result of a methodological project in 2002 set up by the statistical institutes in the Nordic countries: Denmark, Finland, Iceland, Norway and Sweden. The object of the project has been to develop indicators and guidelines for the collection of internationally comparable data on the usage of ICT in the public sector.

The project has been co-financed by the Nordic Council of Ministers and has been headed by Statistics Denmark. The model for the project has been a former joint project supported by the Nordic Council of Ministers, namely the methodological work concerning guidelines for use of ICT in enterprises. This work was launched in 1998 and has been a strong motive power for the further development of Nordic and international statistics on enterprises in the years that have followed.

Structural complexity forms a natural barrier for producing ICT statistics on the public sector. However the area is nevertheless of great importance and the demand for such data is growing rapidly. It is the hope that the present model survey also will be an inspiration and catalyst for the future Nordic cooperation in this area.

The project group has held two meetings in February and August 2002, one in Copenhagen and one in Reykjavik. The following persons participated in the project group:

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2. Summary

This publication is the result of a methodological project in 2002 set up by the Nordic countries and co-financed by the Nordic Council of ministers. The object of the project has been to develop indicators and guidelines for the collection of internationally comparable data on the usage of ICT in the public sector.

There is a growing need for information on ICT-usage in the public sector. This is due to the importance of the sector for the information economy. Yet little statistics are produced by the statistical bureaus. The reason for this 'information gap' is that it is difficult to survey the public sector because of structural complexity. This problem forms a natural barrier on a national scale and to an even larger extent internationally.

International activities take place though. They are mentioned in *4. International surveys* - among these two Nordic surveys. Two other countries, Australia and Canada, are surveying ICT-usage in the public sector, however with different scopes concerning contents (ICT-expenditures and e-commerce respectively).

Guidelines and a discussion of methodological aspects of surveying the public sector are provided in *5. Model survey*. The chapter deals with problems concerning the sampling procedure and methods to make results comparable by sector or between different countries.

An overview of the indicators is given in *6. The model questionnaire* and the proposed set of indicators follow in *Annex II, Model questionnaire*.

The Nordic municipalities have been used as a reference group for the project. Background information on the Nordic municipalities is provided in annex I. The conclusion here is that the Nordic municipalities have similarities concerning type and extent of tasks. A future benchmarking should therefore be possible. On the other hand results should be interpreted in the light of the marked differences concerning size of the municipalities.

3. Introduction

3.1 Uncovered need for data on ICT usage in the public sector

The need for official statistics on the information society has grown rapidly in the recent years. As a consequence an increasing number of countries have produced official statistics on ICT-usage in enterprises and households. At the international level, harmonized statistics on ICT-usage has been developed within the framework of OECD, EU, and other international organisations.

The public sector is however important for the information economy and two developments underline a growing political attention on the sector. First, the recent years spread of Internet access among individuals and enterprises has proven a potential for digital services but also a demand from the users. Second, improved ICT-usage in the public sector is supposed to offer a better utilization of resources. The latter will be of greater importance in the coming years as many countries are facing reduced workforce due to the demographic development.

The need for data on ICT-usage in the public sector is also expressed internationally. The e-Europe 2005 action plan gives increased priority to the area under the headline 'e-government' and suggest development of indicators in addition to the already proposed ones.

Yet little official and comparable statistics are produced on the public sector compared to other statistics on the information society. An obvious reason for this 'information gap' is that it is more difficult to survey the public sector than enterprises or individuals. A fundamental problem is to delimit and describe the entities of the public sector. Structural complexity forms thus a natural barrier for producing ICT statistics on the public sector on a national scale and to an even larger extent comparable statistics worldwide.

3.2 A Nordic model survey

The aim with this report has been to construct a model survey and a questionnaire among the Nordic countries. The aim is to suggest indicators for future surveys and to provide inspiration for future benchmarking studies. The project group would like to emphasize that the work should be characterized as a pilot study, as international comparisons based on the indicators, has not been done yet. Any comments on the model survey and the indicators are therefore much welcome.

The Nordic municipalities have been used as a reference group for the project and the associations of local authorities has been involved in the hearing of the model questionnaire. It has however been the ambition to design the questions in a general way, so that much of the contents could be used internationally and independently of structural differences. Background information on the Nordic municipalities is provided in annex I.

Please note that the report uses the expression 'public sector' instead of the terms 'government' / 'governmental'. In most connections the meaning is the same; however public sector seems to be a more neutral term, especially in countries where the local authorities primarily are independent and distinct from the state authorities. The term 'municipalities' is used concerning the local level of authorities.

4. International surveys

In the following the Nordic activities and two other international surveys are mentioned. It should be noticed, that both Norway and Denmark already has implemented contents from the model questionnaire in national surveys. The project group are not aware of European surveys outside the Nordic countries. However it is planned that the Eurostat 2003 surveys of households and enterprises will include questions about e-government in order to comply with the indicators mentioned in the e-Europe 2005 action plan.

4.1 The Nordic countries

Statistics Denmark carried out a survey on the municipalities in 2001 that in 2002 was expanded with a coverage of state and county administration (major units). First results were published in November 2002 (www.dst.dk/it 'Den offentlige sektors brug af it 2002') and final results are expected to be available in the beginning of 2003. The survey was done in cooperation with the Danish government and a follow-up is planned for 2003.

Statistics Iceland has up till now not carried out a survey on ICT usage in municipalities. However there persist a need for this kind of information, and Statistics Iceland plans to react on this need by carrying out a survey based on the questionnaire proposed in this report in the year 2003.

Statistics Norway has launched the first survey of ICT usage in the municipalities in 2002. The survey is an integrated part of KOSTRA, which is a joint electronic system for report of data from the municipalities to the state of Norway. The survey is mandatory and will be published in the first half-year of 2003. The content is close to the model questionnaire.

Statistics Finland and Statistics Sweden have at present no plans for official statistics on ICT usage in the public sector. Several reports from different viewpoints on the use of ICT in the public sector have been done in Finland by the Ministry of Finance and the association of municipalities.

4.2 Other countries

Australian Bureau of Statistics has performed the survey 'Government Use of Information Technology' three times. The scope is expenditure on ICT and ICT employment. Among the findings was that total expenditure on ICT by government organisations during 1999-2000 was 5% of total government operating expenditure. The last survey was released in May 2002 and covers the 1999-2000 financial year. More information in 'Science And Technology Statistics Update' Bulletin number 6, June 2002, ABS 2002. See also www.abs.gov.au (select the theme Information Technology from the menu shown on the left side).

Statistics Canada does not have a survey dedicated to ICT use by the public sector as such. However Canada has a survey of use of ICT and e-commerce survey that goes both to business and the public sector. The survey focus on e-commerce and Internet usage and is now called Survey of Electronic Commerce and Technology (SECT). It was first carried out for the reference year 1999 and is currently in the field for the reference year 2002. As part of the public sector, it covers both federal government departments and provincial governments. See also www.statcan.ca.

5. Model survey

5.1 Data collection method

The model survey is questionnaire based and intended for the ICT manager/ICT responsible in the surveyed unit. Both traditional paper form and web-forms could be applied. A proper system of reminder is recommended in order to minimize non-response. Experiences from surveys of enterprise ICT-usage show that units reluctant to answer are biased towards lower ICT-usage compared to the more disposed respondents.

It should be taken into account, that the respondents of the public sector might need more time to reply compared to enterprises. This is due to the somewhat a larger and more complex organisation, where e.g. addressing the respondent internally takes up extra time.

5.2 Alternative methods of data collection

It is believed that a questionnaire-based survey is the most versatile choice for a more in-depth covering of ICT usage in the public sector. However two alternatives should be mentioned: User surveys (citizens or enterprises) and web-site screening.

The users of public services - households or enterprises - could with advantage contribute with data on the intensity of the usage of services; with possible breakdown by user-groups. Another important aspect of the user surveys is that questions could be entered in already existing surveys.

As regards web-site screening, one of the major advantages is the low respondent burden. For example a list of distinct on-line public services has been used for benchmarking under the e-Europe action plan 2002. This has been done by screening websites of certain public authorities. The action plan for 2005 also include indicators that could be covered by household- or enterprise surveys.

For both these methods applies that the ICT-usage only is measured indirectly - seen from the surroundings of the public sector unit. It means restrictions of what could be covered. Indicators as internal ICT usage, readiness etc. still requires a survey addressed to the ICT managers or similar within the public sector. This applies also measurement of inter-organizational ICT-usage. It is therefore believed that a questionnaire-based survey is the best choice in most connections and that the other methods should be seen as supplementary.

5.3 Time

The model survey could be conducted annually or biennially. Most of the questions ask for a status of ICT-usage and should in principle only need a reference point of time, e.g. the time the survey is conducted. However a time scale is applied on many of the indicators: Available today / Planned for this year / Planned for next year / Not planned for this or next year. It is therefore recommended that the survey is conducted in the first quarter of the calendar year and that the reference year is the past year. It is feasible though, by altering the time scale, to perform the survey at other times of the year.

5.4 Defining the sample

The international differences in the public sector structures, makes it difficult to provide exact guidelines on how to composite the sample. However some elements are discussed in the following.

In many cases a first step would be to delimit the public sector and to choose which part that should be surveyed. A choice could be to focus on administrative entities with citizen contact. In some cases units and background variables could be drawn from official statistical registers. Background information such as number of citizens, budget etc. could be included for stratification or subsequent analytic purposes.

The following characteristics of the units should be considered:

- * Size (number of employees, users, budget, expenses etc.)
- * Tasks (number, scope, user-groups)
- * Organisational structure (division, internal decentralisation)
- * Inter-organisational structure (degree of independence and subordination)

Especially separation between the responding and the surveyed unit should be taken into account. In some cases the ICT management will be outsourced or managed from other units than the surveyed. For example the development of the ICT-strategy might be separated from the acquisition that again is separated from the usage. The more variations in the decentralization of the authorities, the harder it is to collect these data. Similar problems are also known from surveys of ICT-usage in enterprises (e.g. dealing with enterprise groups) but are more frequent in the public sector because of the organizational complexity.

5.5 Making results comparable

Though the model questionnaire has been designed in a general way, the heterogeneity of the surveyed units should be considered when results are analysed and compared nationally or internationally. E.g. it does not make sense to benchmark ICT-usage linked to tasks that are not relevant for the unit in question. A strategy might be to identify homogeneous segments of the public sector (e.g. municipalities) where results could be compared meaningful.

Results could be raised to the total number of units in the survey population (when all units are not covered by the final sample). The raising procedure should preferably compensate for lack of representativity in the sample. Using stratas defined in the sampling procedure could do this and even stratas defined from known correlation between ICT-usage and selected background variables could be used.

In addition to unit-based weighting other weights could be applied. It could be weights linked to volume or intensity of the ICT-usage. An example is to raise prevalence of electronic services to the number of users or potential users (e.g. citizens). Another choice is to raise ICT-usages by number of internal users (e.g. administrative staff), though this possibility should be analysed further.

Volume based weighting could to some degree compensate for structural differences between countries, sectors etc. It should however be noticed that the interpretation of the results will change from figures raised to the population of units. The choice of weight should thus make sense to the contents of the indicators.

It should be noticed that the present project has not explored the possibilities of raising and weighting in depth, as they demand analysis of actual data.

6. The model questionnaire

6.1 Design principles

The model questionnaire has been constructed from three principles, that all has shown their value in the international work of constructing model questionnaires (e.g. OECD's model questionnaire of ICT usage in enterprises).

First, the questionnaire is formulated in a general way. Thus has reference to specific structural circumstances been avoided whenever possible. It means that though the present contents is adjusted to municipalities, much of the indicators could be used with central governmental units as target group.

The questionnaire aims also to be independent of national structural differences. However the questionnaire has not been tested outside the Nordic countries. Under all circumstances it is useful to versionate the questionnaire concerning terms, examples etc. in order to catch the often diverse target groups.

Second, the questionnaire uses qualitative column variables - that is categorized choices of answer. Question asking to number of users, usage in volume etc. has been avoided at this point. In many questions a time-dimension is applied, asking if the respondent is using or planning to use a certain technology (Today / Planned for this year / Planned for next year / Not planned for this or next year). In other questions a valuation-scale is applied, e.g. the impact of barriers to ICT usage (None / Some / Large / Don't know or not relevant).

The value of the latter column value, 'Don't know or not relevant' could possibly be separated in two alternatives. E.g. if the surveyed units are heterogeneous concerning tasks, a distinction between 'Don't know' and 'Not relevant' could be useful.

Third a modular design has been applied on the questionnaire. This gives flexibility to update or use selected areas for surveys without missing coherence.

6.2 Contents

The scope of the questionnaire is ICT intensity and impact more than ICT readiness. Internet access of the organisation and it's employees for instance is not included as the penetration of these technologies in the Nordic countries seems to be almost 100% in administrative units. Homepage, security facilities and a few basic ICT systems are however incorporated. The intensity - meaning the ICT-usage as such - is measured in two dimensions. First, the external relations: Services aimed at citizens, enterprises etc. plus degree of outsourcing. Second, the internal relations: Use of ICT to make workflow effective etc., ICT strategy etc. Finally barriers and impacts are included.

Modules of the questionnaire

A Website

- Contents of website
- Citizens services

B ICT systems

- Various systems
- Case and document handling systems

C ICT expenditure

- Outsourcing

D Strategy and cooperation

- Strategy (yes/no, comprised fields)
- Cooperation between municipalities

E Barriers to ICT usage

- Related to ICT in general
- Related to electronic citizens services

F ICT security

- Use of security facilities
- Experienced security problems

G Impacts

- Work routines, roles and competency, release of resources

A Website

The module begins with a filter question, A1, if the municipality has its own website. It is onerous to cover the contents of websites in organisations with a broad range of tasks, e.g. municipalities. However in A2 the questionnaire provide an example of a content question, in this case a democracy related theme. A3 ask for the contact information on the website.

A4 concerns prevalence of citizens services with a time dimension applied. This question is very central in measuring the maturity of the digital public services. The services should either be available directly on the website or through a direct link to a function on an external site (e.g. a joint public website). This includes indirectly third party websites - a concept that implies some delimitation problems. However this inclusion was seen as necessary in order to catch up the functionality as it works in practice for citizens/enterprises. The 2003 Eurostat enterprise questionnaire has similar indicators, however without this explicit definition.

B Various ICT systems

The indicators in this module include ICT systems that are intended for usage inside or between public sector units: Intranet, EDI and Case and document handling systems. The questions could be supplied by an optional breakdown of comprised institutions - schools, kindergartens etc. in order to specify the readiness.

Please note that in B2, Case and document handling systems, the features of the previous systems are most often included in the subsequent (e.g. 'Electronic case administration' imply electronic document handling and electronic filing).

C ICT expenditure

ICT expenditure is only covered partly, here by a question on the degree of outsourcing with a breakdown by ICT functions, e.g. 'operation of servers'. Questions concerning size and distribution of ICT expenditures/investments are not included. Such questions are considered important though, and the Nordic countries have earlier theoretically and empirically explored

the possibilities¹. The area is generally considered difficult. It was decided that the measurement of expenditures was out of the scope of this project due to the complexity of this issue.

D Strategy and cooperation

This module asks for strategy (D1) with a breakdown of fields covered (D2). Another question of ICT cooperation between municipalities (D3) is regarded as 'non-core', as the importance varies a lot with national needs. Norway and Iceland - both countries with relative small municipalities - consider this question significant.

E Barriers to ICT usage

Barriers questions are divided into barriers related to ICT in general (E1) and barriers related to electronic citizens services (E2). The indicators in E1 are more or less similar to enterprise questions in e.g. OECD's enterprise model questionnaire. E2 could be seen as corresponding to enterprises' barriers concerning e-commerce. Barrier module can be surveyed multi annual - e.g. every second year.

F ICT security

ICT security relates to facility used (e.g. firewalls). The indicators a-f are included in the Eurostat enterprise questionnaire (2003-survey). F2 asks if the respondent has experienced security problems, e.g. unauthorized access to systems, with a scale that evaluates the importance.

G Impacts

Impacts of recent digitisation projects are evaluated in relation to changes in work routines, roles/competency and release of resources. A qualitative scale gives the extent of the effect.

6.3 Possible future indicators

The project group dealt with some indicators that were not included in the present questionnaire or indicators that need further development:

- * Broadband connection
- * E-purchases
- * ICT Impacts/outcome
- * ICT expenditures

Broadband connection of the municipality was not included in the model questionnaire. It is believed that a very large part of the Nordic municipalities already has broadband connection today. It was also believed that measuring of decentral bandwidth in underlying institutions etc. forms a challenge. The indicator should therefore be more developed than merely asking about types of connection. Statistics Norway includes a question in its new municipality survey that asks about the connection's bandwidth size (categorized in intervals) with a breakdown of branches/divisions.

The issue *E-purchases* seem not to have the attention it had a few years ago. The current development of technical and organisational solutions of e-purchases could easily bring the item back on the agenda. For now a qualitative approach is needed for this questions, as the value of e-purchases often is not available e.g. due to decentralized purchases.

ICT Impacts/outcome is touched in module G of the questionnaire.

ICT expenditures: See comments at module C.

¹ See e.g. Anders Hintze: 'The dilemma of quantifying IT expenditures in organisations' (Statistics Sweden). Finland's association of municipalities has included expenditures in their survey on ICT use in municipalities for several years, last time in 1997. Statistics Denmark has been testing an expenditure module in municipality survey 2001.

Annex I: The Nordic municipalities

The Nordic municipalities have been used as a reference group for the project and the associations of local authorities has been involved in the hearing of the model questionnaire. The question is however to what extent Nordic municipalities can be compared meaningfully. In the following a brief comparison of the municipalities of the five countries is made regarding tasks and average population.

The conclusion is that the Nordic municipalities have similarities concerning type and extent of tasks. On the other hand the size of the municipalities varies a lot between the countries. Because of the likeness in tasks and basic structure, it could make sense to compare the municipal ICT-usage of the countries. However diverse results should be expected because of the size differences. A guess would be that small municipalities to a higher degree are dependent on ICT-services received from outside the organisation (private companies, state, municipal associations/firms). Size bands should thus be applied for the analysis of such results, possibly in combination with use of size based weighting (see 5.5 *Making results comparable*).

1. Description of overall structure of the public sector

The Nordic public sectors consist of two or three layers: State and municipalities in all countries, and a well-defined regional level - county - in Norway, Sweden and Denmark². All sectors operate at a local level, but the municipalities take care of the majority of local tasks. The counties have their own array of responsibilities, typically concerning a larger geographical area and/or demographic base. In practice, the parliament and the government regulate the activities of counties and local authorities in various ways; the instruments are legislation, government orders and adjustments of statutory budgets.

2. Municipal tasks

The municipalities of all countries are characterized by having a broad range of task, of which many involves citizen contact (see table 1). The performance of these tasks demands administrative organisations that justify an extensive use of ICT. All countries' municipalities take entirely care of kindergarten and basic school and all municipalities take care - entirely or partly - of such tasks as local libraries, social care and home care services. More specialized or geographical crosscutting tasks - e.g. higher educations - are often carried out by other than the local authorities.

² Denmark has 16 counties, Norway 19 and Sweden 21 (including capitals). Iceland has only two levels of government, state and local authorities. Though Finland has several institutions with a regional administrative base, they do not exist as a whole unity, with direct elections. Hospitals, for instance, are often run by joint municipal authorities. Regional development and planning is the job of joint municipal authorities called Regional Councils.

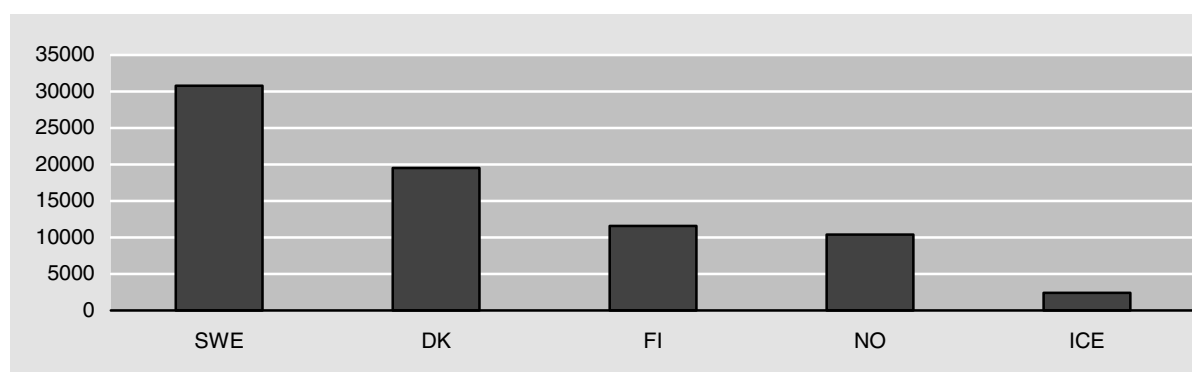
Table 1: Municipal tasks in the Nordic countries

To what degree are tasks carried out in the municipalities?	Basic tasks
Entirely in all countries	Kindergarten, Basic school
Entirely in some countries, partly in others	Libraries, Social care, Care for the elderly and disabled, Social benefits, Cultural institutions, Physical planning (ensuring coherence on a local scale), Roads and streets (construction and maintenance), Water supply, Sewage treatment, Waste disposal, Building control, Fire protection, Mapping/surveying.
Partly in most countries	Mapping/surveying, Protection against acute pollution, Upper secondary schools and schools for Higher Preparatory Examination, Adult Education Centres, Special education for severely handicapped adults and children, Local public transport, Institutions for disabled.
Non-municipal in all countries	Public hospitals, Public health insurance, Universities and other institutions of higher education, Trade inspection, Unemployment insurance (administration of unemployment funds, job placement service), Police and penal institutions, Business subsidies.

The above information is only indicative as variations and overlap can occur at the local national level. The list of task might not be exhaustive in each country. State or regional authorities might regulate the performance of the tasks.

3. Population in the municipalities

The average population in the municipalities varies from 30.800 in Sweden to 2.400 in Iceland. The tendency is that the larger the population of the country, the bigger are the municipalities (see fig. 1).

Figure 1: Average population per municipality, 1/1 2002**Table 2: Population and average population pr. municipality, 1/1 2002**

	SWE	DK	FI	NO	ICE
Population	8.909.000	5.368.000	5.195.000	4.525.000	286.000
Population/municipality	30.800	19.500	11.600	10.400	2.400

A closer look at the distribution of municipalities by size groups, shows that Sweden and Denmark are close concerning both number of municipalities and proportions between large and small municipalities; Sweden however with more concentration on large units (see figure 2). Similar there is a resemblance between Finland and Norway, but with a larger number of municipalities and with much more concentration on small municipalities (below 5.000 citizens) compared to Sweden and Denmark. Iceland has a large number of municipalities compared to the total population and hence a structure where the majority of municipalities has less than 2.000 citizens.

Figure 2: Number of municipalities by size group, 1/1 2002

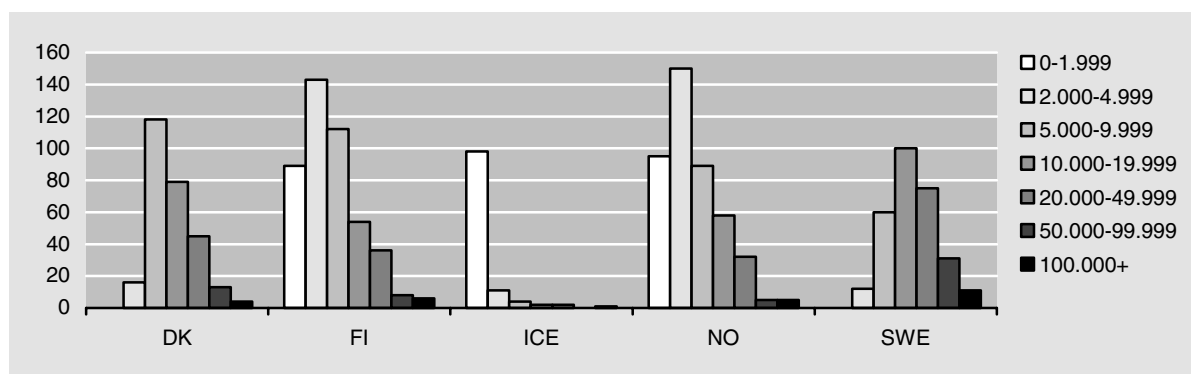


Table 3: Number of municipalities by size group, 1/1 2002

	DK	FI	ICE	NO	SWE	DK	FI	ICE	NO	SWE
	----- Number -----					----- Per cent -----				
0- 1.999	0	89	98	95	0	0	20	83	22	0
2.000- 4.999	16	143	11	150	12	6	32	9	35	4
5.000- 9.999	118	112	4	89	60	43	25	3	21	21
10.000-19.999	79	54	2	58	100	29	12	2	13	35
20.000-49.999	45	36	2	32	75	16	8	2	7	26
50.000-99.999	13	8	0	5	31	5	2	0	1	11
100.000+	4	6	1	5	11	1	1	1	1	4
All	275	448	118	434	289	100	100	100	100	100

Annex II: Model questionnaire

Use of Information Technology (ICT) by Nordic Municipalities

Information technology (ICT) means firstly computers, PCs, terminals or workstations; secondly, the hardware and software used on such machines.

A Website

1. Does the municipality have its own website?

Yes
↓

No → Go to question B1

This means that the municipality itself decides the form and contents of the website (possibly outsourcing practical tasks in connection with design and maintenance).

Contents of website

2. Which of the following contents is available on the website?

Please tick one box per line

Democracy related contents	Available today	Planned for this year	Planned for next year	Not planned for this or next year
a. Information on services and citizens' rights/duties:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Composition of the local council:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Composition of committees, boards, etc.:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Announcement of local council meetings:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Minutes/resolutions from local council meetings:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Information on municipal and local plans:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Which of the following groups are represented with public contact information on the website?

Please tick all that applies to each municipal group

	E-mail	Phone-number	Postal address	Not relevant
a. Lord Mayor:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Local councillors:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Administrative branches/divisions:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Administrative staff (i.e., the majority thereof):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Municipal institutions (i.e., the majority thereof):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Citizens services

4. Are any of the following possibilities available to the citizens on the municipality's website?

Please tick one box per line

	Available today	Planned for for this year	Planned for next year	Not planned for this or next year
Order written material from the municipality (e.g., brochures, local plans, etc.):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Download and print forms*:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. See personal data from adm. systems* (e.g.,... [national examples]):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Submit personal data in web-form for adm. systems* (e.g., ... [national examples]):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Full electronic case handling**:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Online payments through the website (e.g. by credit card):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

* Either through function on the website or through direct link to a function on an external site (e.g., a joint municipal website)

** Full self-service solution with electronic decision (i.e. automatic and released by citizens' enquiries)

B ICT systems

Various systems

1. Does the administration use any of the following systems?

Please tick all that apply

	Available today	Planned for this year	Planned for next year	Not planned for this or next year
a. Intranet (i.e. websites for internal use, comprising the greater part of all municipal employees):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Geographic Information System, GIS (i.e., for displaying theme maps, etc., based on adm. information):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. EDI messages* to/from ICT systems of other authorities or enterprises:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*I.e., transmission of structured data - e.g., invoices - in EDIFACT or XML-EDI format)

Case and document handling systems

2. Does the administration use any of the following systems?

Please tick all that apply

- a. Classic electronic filing (i.e. electronic storage of information on documents and cases, e.g. date of receipt, sender, etc.):
- b. Electronic document handling system? (i.e. electronic recording and storage of documents of a case - scanned or internal documents):
- c. Electronic case administration (i.e. supporting the entire handling of a case and work flow between case officers):

C ICT expenditure

Questions concerning size and distribution of ICT expenditures/investments are to be developed at a later stage.

Outsourcing

1. To what extent are the following ICT functions of the central administration handled by external suppliers and/or own staff?

Please tick one box per line

Function	Who handles the task:					
	Only external suppliers	Mainly external suppliers	Largely equal distribution	Mainly internal staff	Only internal staff	Not relevant
a. Project management at ICT acquisitions:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Development of ICT strategy:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Programming/design of Internet solutions:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Other system development:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Operation of municipal servers:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Operation of PC environments:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. User training:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. User support:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D Strategy and cooperation

1. Does the municipality have an ICT strategy?

Available today

Planned for this year

Planned for next year

Not planned for this or next year

ICT strategy means an official, written plan containing objectives and guidelines for acquisition or usage of ICT by the municipality.



→ Go to question D3

2. Which of the following fields are comprised by the strategy?

Please tick all that apply

- a. ICT infrastructure:
- b. ICT security policy:
- c. Citizens services via the Internet:
- d. Electronic purchasing:
- e. Guidelines for citizens' enquiries received by e-mail:

3. Does the municipality cooperate or plan to cooperate with other municipalities in the following fields?

Except from cooperation that comprises all municipalities at national level.

Please tick one box per line

	Cooperates today	Planned for this year	Planned for next year	Don't know/ not planned for this or next year
a. Joint website/portal:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Purchasing of ICT infrastructure, etc.:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Development or acquisition of applications:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Operation, maintenance and usage of IT:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Purchasing of products and services through the Internet:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E Barriers to ICT usage

1. What impact do the following barriers have on the municipality's usage of ICT in general?

Please tick one box per line

Problems and barriers related to ICT in general	----- Please state impact of barrier -----			
	None	Some	Large	Don't know/not relevant
a. Errors/defects in supplied software:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Lacking flexibility of ICT suppliers:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Lack of integration between applications:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Lack of ICT qualified staff in the municipality:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Difficult to recruit or retain ICT qualified staff (lack of applicants/prohibitive salaries):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Municipality lacks updated ICT strategy:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. ICT expenditure too high:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Premature introduction of new versions of existing software:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. What impact do the following barriers have on development of electronic citizens services via the Internet?

Please tick one box per line

Problems and barriers related to electronic citizens services	----- State importance of barrier -----			
	None	Minor	Major	Don't know/not relevant
a. Difficult to release resources for development:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Difficult to adjust municipal work routines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Risk of hacking, viruses or other unwanted access to municipal data:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Insufficient standards for digital signatures:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Legislation and set of rules need to be adjusted:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Potential benefits of citizens services on the Internet are not commensurate with the costs:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Difficult to integrate existing systems with the Internet:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Lacking joint standards for exchange of data:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Lacking joint public solutions and infrastructure:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F ICT security

1. Does the municipality use any of the following security facilities?

Please tick all that apply

Security facilities used

- | | |
|---|--------------------------|
| a. Secure servers: | <input type="checkbox"/> |
| b. Firewalls: | <input type="checkbox"/> |
| c. Encryption for confidentiality: | <input type="checkbox"/> |
| d. Off-site data backup: | <input type="checkbox"/> |
| e. Digital signatures* from citizens/enterprises: | <input type="checkbox"/> |
| f. Subscription to a security service (e.g. virus protection or intrusion alert): | <input type="checkbox"/> |
| g. Physically restricted access to critical ICT equipment: | <input type="checkbox"/> |
| h. Back-up power unit: | <input type="checkbox"/> |
| i. Storage of backup media on other localities than the operating environment: | <input type="checkbox"/> |
| j. Current ICT security training of employees: | <input type="checkbox"/> |

* A digital signature ensures electronic communication via PKI (Public Key Infrastructure) so that
 1) The sender is verifiable 2) The contents can not be read or changed by unauthorized persons

2. Has the municipality experienced any of the following problems in the recent year?

Please tick one box per line in relation to the worst case experienced by the municipality

- | | No problems | Harmful | Serious | Don't know/
not relevant |
|---|--------------------------|--------------------------|--------------------------|-----------------------------|
| a. Sabotage (e.g. against physical ICT installations): | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. ICT abuse of a financial character (e.g. fraud, manipulation of data, unauthorized sales): | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Blackmail/threats against the municipality's data or software: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Unauthorized access to systems: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Data loss due to lack of backup: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Hardware errors: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Software errors: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Virus attack: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Interrupted connection to Internet or telecommunication supplier: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

G Impacts

1. To what extent have the digitization projects (e.g. citizens services) of the last 2 years resulted in changes in relation to the previous performance of tasks?

State the effect in relation to the areas which were subject to digitization –

- | | To a very small degree/ not at all | To some degree | To a high degree | Don't know/
not relevant |
|--|------------------------------------|--------------------------|--------------------------|-----------------------------|
| a. Adjustments and simplifications of work routines: ... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. New distribution of roles and competency: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Release of resources: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |