

Consumer, client or citizen? How Norwegian local governments domesticate website technology and configure their users

Lucía Liste Muñoz and Knut H. Sørensen

Department of Interdisciplinary Studies of Culture

Norwegian University of Science and Technology, Trondheim, Norway

Corresponding author:

Knut H. Sørensen

Department of Interdisciplinary Studies of Culture

Norwegian University of Science and Technology, Dragvoll

7491 Trondheim, Norway

Email: knut.sorensen@ntnu.no

Short biographical information:

Lucía Liste Muñoz is a postdoctoral fellow at Department of Interdisciplinary Studies of Culture, Norwegian University of Science and Technology, working on a study of environmental knowledge management in Norwegian local governments. Her PhD was about the digitalisation of Norwegian local governments.

Knut H. Sørensen is Professor of Science and Technology Studies at Department of Interdisciplinary Studies of Culture, Norwegian University of Science and Technology. His research interests include domestication theory, social studies of climate and energy, and interdisciplinarity. His latest book is *Technologies of Inclusion. Gender in the Information Society*, Trondheim: Tapir Academic Press (with Wendy Faulkner and Els Rommes).

Acknowledgements: The study has been supported by Research Council of Norway. We thank Eirik Swensen for assistance in collecting information about websites, and two anonymous reviewers for very useful comments and suggestions.

The paper has been published in: *Information, Communication and Society*, 18 (7): 733-746, 2015. DOI: <http://dx.doi.org/10.1080/1369118X.2014.993678>.

Abstract

Local governments' websites are important gateways for residents wishing to interact with public institutions online, and the establishment and development of such websites stand out among governmental initiatives to improve their performance. Drawing on domestication theory to apply a change-oriented perspective, the paper analyses how Norwegian local governments domesticate website technology to make websites and configure their users, based upon three empirical sources: a survey among ICT managers in local governments, a quantitative mapping of the content of the websites of all 430 Norwegian local governments, and a qualitative in-depth content analysis of 10 websites. The findings show that domestication efforts vary a lot across local governments. However, all local governments engage in domestication. Further, we identify as potential domestication outcomes three ideal types of website assemblages: *information*, *client*, and *citizen assemblages*. They point towards three respective user configurations: *information consumers*, *clients*, and *citizens*. The information assemblage is the only one found in all websites. Finally, linking qualitative and quantitative methods is suggested as a way of advancing domestication studies.

Keywords: e-government, e-democracy, local governments, websites, domestication

Introduction

Increasingly, people expect to be able to interact with public institutions through the Internet. Websites are an important gateway to such interaction and the quality of such services may be important to the conduct of everyday life activities. On the other hand, today, governments are supposed to make use of Information and Communication Technologies (ICT) as tools to improve performance. These expectations are usually related to the generic label of e-government. Websites are a centrepiece of e-government efforts and stand out among the initiatives to achieve goals like improved quality of services (Gallego-Alvarez, Rodriguez-Dominguez, & Garcia-Sanchez, 2010). This raises issues regarding the achievements of such websites.

The paper analyses the websites of Norwegian local governments and the implied construction of the users of these websites, with an emphasis on website content and underlying aims of the local governments. Norway provides an interesting context to study such issues. The government and The Norwegian Association of Local & Regional Authorities (KS) have pushed local governments to implement ICT in many areas, and the public has good access to computers and broadband connections. Norway has about 5 million inhabitants living in 430 municipalities. These local governments have independent decision-making responsibility in the e-government area and may carry out projects within the framework of their competences (Norwegian Ministry of Local Government and Regional Development, 2008). Local governments in Norway are responsible for providing the majority of services for the citizens (primary and lower secondary school, nurseries/kindergartens, medical care, care for the elderly and disabled, social services, local planning, etc.) Given their autonomy, one might expect considerable variations with respect to content and quality of the local governments'

websites – in line with findings from international studies (e.g., Pina, Torres, & Royo, 2009; Norris & Reddick, 2012).

Local government websites as sociotechnical achievements

E-government is an umbrella term covering many applications of ICTs to public sector operations. Comprehensive efforts have been made to study the efforts, looking into such issues as e-government policies, the participative and democratic potential of ICT, and how e-government applications have been implemented and used (Muñoz, 2010). Literature reviews, for example Andersen & Henriksen (2005), Grönlund & Andersson (2006), Heeks & Bailur (2007), Norris & Lloyd (2006) and Titah & Barki (2006) have shown that technological determinism still prevail in many studies, which tends to produce over-optimism when considering the impact of e-government. Overall, the reviews are quite critical about the theoretical and methodological status of the field of research. A common conclusion is that e-government research is immature. This suggests the need for novel theoretical approaches.

Jane Fountain (2001) proposes the use of enactment theory to study the digitalisation of governments. This approach conceives digitalisation as shaped – and limited – by existing institutional features of, e.g., local governments. This may mean that such initiatives are influenced, even hampered, by local organisational politics (Chadwick, 2011; Goodwin, 2007). Enactment theory could also be interpreted to mean that e-government actions at best result in incremental changes (Norris & Reddick, 2012),

This paper uses domestication theory (Berker, Hartmann, Punie & Ward., 2006), in particular the version developed to integrate perspective from science and technology studies (e.g., Sørensen, 2006). The advantage of this approach is in its emphasis on

actions with respect to the use of technology that may produce practical and symbolic changes with respect to e-government initiatives. As Brosveet & Sørensen (2000) have pointed out, national introduction and uptake of a new technology like e-government should not be understood as a linear process of diffusion where the main concern is the speed and scope of implementation. Domestication theory understands such processes as involving a lot of effort, and outcomes cannot be standardised and predicted in any detail. From this perspective, new technologies need to become situated, practically and symbolically, and actors need to develop routines and institutions to support and regulate it. Users also need to construct practices as well as meanings with respect to the artefact. Thus, in most circumstances, variation in outcomes should be expected (Sørensen, 2006; 2013). This does not preclude that outcomes are shaped or formatted by existing institutional features, but the focus is on change, be it incremental or more radical.

This paper explores local governments' domestication of website technology through an assessment of outcomes – the website – in combination with survey data about the aims underlying the construction of municipal websites. Originally, domestication theory was developed as a tool to understand how information and communication technologies (ICT) were put to use in households, considering the stream of meaning involved – the moral economy (Silverstone, Hirsch & Morley, 1991). As a critique of technological determinism, the theory focuses on action and practice, including symbolic interpretation of artifacts (Silverstone, 2006). It has since been used to analyse processes of appropriation of technology, in particular ICT, also at other places than the home. A relevant example is Harwood's (2011) study of domestication of online technologies in small business. It should also be noted that in our paper, it is institutions – local governments – that are seen as the main actors

domesticating website technology. We are not considering the strategies of individual employees.

Our use of domestication theory is somewhat unorthodox because of the focus on motives and outcomes rather than analysing processes where technologies become appropriated. We have still chosen to use this theory because it allows for variation, which we expect to find, based assumed differences in the strategies and motives underlying the construction of local government websites. When individual websites are considered to be outcomes of domestication efforts, they provide important indications about the underlying practices. For example, their content expresses priorities in terms of what information and services are made digitally accessible as well as how the public is expected to approach them.

Moreover, when local governments domesticate website technology as part of their e-government efforts, they produce images of the intended users as well as of the intended use. To study this, we draw on the concept of configuration of users. According to Woolgar (1991, p. 59) 'configuring includes defining the identity of putative users, and setting constraints upon their likely future actions'. Consequently, configuration of users of the website of a local government is an act of domestication. We are interested in analysing what the content of websites say about the underlying views of users, which make the concept of configuring the user a helpful tool..

Sørensen (2006) presents domestication by extending it to include concepts from actor-network theory (ANT). He argues that 'domestication may be seen as the process through which an artefact becomes associated with practices, meanings and other artefacts in the construction of intersecting large and small networks' (p. 47). The work of making associations result in what Latour (2005) calls sociotechnical assemblages. When local governments domesticate website technology, this will result in websites

that may be studied as a set of socio-technical assemblages made up of text, activities, references, software, etc., meant to cater for particular user needs. Thus, in the analysis, we try to re-assemble (Latour, 2005) the main types of activities that are supplied to users through the websites to identify distinct socio-technical assemblages. Such assemblages are the outcome of the domestication work, and the kind of assemblages that may be observed we expect to illuminate main features of the individual website.

Analytically, socio-technical assemblages are to be identified by comparing websites of different local governments. Arguably, such differences constitute a set of controversies with respect to the understanding of what websites should achieve, the kind of resources mobilized for the purpose, and the translation of user configurations – ascribed identity – into particular types of actions that the socio-technical website assemblages facilitates. The paper tries to identify such ideal types.

Domestication may be contested and encounter disagreement about goals, use of resources, etc. (Sørensen, 2006). We analyse reports by people responsible for e-government efforts in the local government about hindrances regarding website development to see if such disagreements were present, and how they were evaluated. Furthermore, domestication is an enactment of technology taking place in circumstances that shape or format the process. We analyse some efforts of formatting by examining political documents outlining the visions and aims for the digitization of the Norwegian municipalities, to observe expected results and to compare this with real outcomes.

Of course, one may say that local governments design webpages rather than domesticating website technologies. However, it is a central tenet of domestication theory that users of technology are at the same time designing practices that may involve tinkering, for example with computers (Sørensen, 2006). When we use domestication rather than design as the main concept, it is to emphasise that local

governments, when they produce websites, they basically use the same technology but with potentially quite different outcomes. Thus, we think the concept of domestication is more fruitful than the concept of design to analyse the websites of local governments.

Methodology

The paper is based on three sets of data: a survey, a quantitative content analysis, and a qualitative content analysis. We are aware that the main bulk of domestication studies have been based on qualitative data, like interviews or ethnography. However, there is nothing that in principle precludes the use of quantitative data, the advantage of which are that they provide information about many more cases and thus provide more information about diversity and variation. Moreover, the quantitative data have been supplemented with qualitative data in the third data set. This combination has been used previously in domestication studies, for example by Pierson (2006). When we in this paper link qualitative and quantitative data, this provides better possibilities of generalising findings.

The survey data stems from an electronic questionnaire sent by email during the autumn of 2010 to the main ICT manager of all Norwegian municipalities (430) using the online survey system SurveyXact. The survey comprised a total of 14 questions, including queries about the local government website. We received responses regarding the web-related questions from a total of 218 local governments. Thus, the response rate was 51 %, which is similar to comparable studies (Moon, 2002).

The second data set consists of a mapping of the main applications offered on the websites of all 430 Norwegian local governments, conducted by manually accessing and mapping each website during the summer of 2009. The following information was collected:

- (1) Did the website allow for electronic contact with the local administration, and what channels were available?
- (2) Did the website offer contact with local politicians?
- (3) Did the website contain any online forums or any kind of application that enable online political discussions?
- (4) Did the website offer information services?
- (5) Did the website offer interactive services, and if so, what kind?

These items were decided, based on a preliminary analysis of what was offered through local websites as well as by studying relevant policy documents (see below). The data was registered in an Excel file where the main dimensions noted above were classified by municipality. We also included the population of the municipality as well as whether it had the formal status of being a town (a simple measure of urbanization). Data was analysed by counting.

The third data set consists on an in-depth qualitative analysis of a total of 10 Norwegian local governments' websites: Bærum, Etne, Hamarøy, Leka, Marker, Modalen, Skien, Trondheim, Steinkjer and Vågå. These municipalities were selected to provide variation in terms of quality and richness of their websites. Some offered a lot, some were fairly simple. We also wanted diversification in terms of size of population, urbanization and location. Bærum and Trondheim are, from a Norwegian point of view, mid-sized cities, Skien and Steinkjer are smaller towns, while Etne, Leka, Marker, Modalen and Vågå are quite small rural municipalities.

The content of each website was analysed to see how information, services, consultation and political participation was presented – if at all. The analysis was conducted during the summer and fall of 2010. First, we registered the same information about each of the websites as we did in the quantitative content analysis but

made additional notes about information services in terms of topics, scope and format of presentation. Second, we followed all main links that the websites offered to get better insight into what users could achieve through the website in terms of information, services and communication with the local government. Third, we made notes about the visual tools and images used by the websites. In the analysis, we made use of an abductive, grounded theory approach (Reichertz 2007) and used the main theoretical concepts outlined previously as the basis of coding pertinent features of the websites.

In addition, we also analysed public documents outlining the visions and aims for the digitization of the Norwegian municipalities, especially ‘e-Kommune 2012’, in English e-Municipality 2012, issued by The Norwegian Association of Local & Regional Authorities (KS, 2008). We briefly present findings from this analysis since they clarify some aspects of formatting efforts to make local governments domesticate ICT to reach certain goals. We continue by comparing these observations with data from the quantitative mapping and the survey to provide an overview of how local governments have domesticated website technology in the context of local e-government efforts. Then, we go on to present a qualitative analysis of the selected websites in dataset three with a particular focus on user configurations and sociotechnical assemblages as may be observed through the analysis.

It is a widespread belief that ICTs change fairly quickly. The websites of Norwegian governments could be expected to have changed substantially since 2010. Therefore, in October 2014, we revisited the 10 websites we analysed in detail in 2010 to study how they had changed. Of course, there had been alterations. There were new visual designs and some added content and functionality, in particular with respect to integration with new social media, but the changes were not of such nature that the previous observations with respect to the main features of the domestication process,

like user configurations and sociotechnical assemblages, as well as differences across the local governments, no longer were valid.

Domestication of e-government by Norwegian local governments

Norway has actively used ICT in its public sector for a long time and is presently considered to be at the forefront in implementing e-government programmes (European Union [EU], 2010). The most recent White Paper addressing the topic (St. meld. nr. 17 [2006–2007]) emphasises that the government's overall objective is to offer an open, accessible and coherent public sector and to free resources and foster efficiency. The above-mentioned strategy report *eKommune 2012* outlines what is called a local digital agenda – the visions and programs of actions – to be pursued by Norwegian local governments. The document was produced to guide local governments to develop their own visions, targets and plans. It describes the opportunities and potential threats that ICT could represent to the municipalities, as well as the aims for the modernization of local governments by means of ICT. The report sets high ambitions: Norway should be among the world leaders in local e-government.

The digitalization of Norwegian local governments is supposed to be organized around several prioritized areas: local democracy and participation in the Information Society; online services, ICT in healthcare, etc. The emphasis is on the modernization of public services and administrative procedures, described in terms of cost-effectiveness, customer orientation, and rationalization of processes. Furthermore, much attention is given to the democratic potential of the technology. ICT was expected to increase transparency and accountability of politicians and administrative staff and enable new forms of interaction to strengthen local democracy.

Two institutions have taken a particular responsibility to influence the way local governments use e-government technologies. The Agency for Public Management and e-Government (Difi) was set up to be responsible for the development of policy for and the monitoring of implementation of ICT in the public sector. The agency is intended to assist the public sector in achieving efficiency, improving user-orientation and ensuring transparency. In addition, The Norwegian Association of Local and Regional Authorities (KS) contributes to the development of standards and requirement specifications for the exchange of information and integration of ICT solutions across local governments. It also supports the development of e-government through proposals, recommendations, benchmarking, guidelines and experience exchange networks. Still, the formatting is fairly general. In the end, it is the local governments that decide how e-government technology will be used and for what purposes. .

The resulting domestication of website technology has been quite uneven and in some municipalities rather slow (Flak, Olsen & Wolcott, (2005), a finding which was confirmed by our quantitative content analysis of the websites of all 430 local governments in Norway. Clearly, there was a substantial gap between national aims and local outcomes. However, it is still worth noting that all local governments had established their own website and was in the process of domesticating website technology.

The analysis of the outcomes of the domestication efforts of the local governments focused on four main areas: (1) electronic contact with the local administration, (2) electronic contact with local politicians, (3) online political discussions, (4) information services, and (5) interactive services. The findings may be stated briefly. With respect to electronic contact with the local administration, all websites offered a simple form of digital communication to its inhabitant, namely a

single email contact address. Only a very small group of municipalities – 9 % – offered more advanced forms of communications via instant messaging or SMS.

Most websites provided contact with local politicians. Only 9% of the websites offered no such provision. However, in 43 % of the municipalities, the mayor was the only one who could be contacted in this manner (see also Saglie & Vabø, 2008). Two websites offered possibilities of chatting with the mayor and in one case, the mayor blogged. Thus, what the websites offered in terms of digital interaction with local politicians was not particularly impressive. Only 14 % of the websites offered digital political interaction with residents, and in six cases the forum did not work or was down at the time when the website was visited. This fits with other studies. There are few digital forums for local political debate, and the level of activity in the existing forums is low (Saglie & Vabø, 2008; Skogerbø & Winsvold, 2008). The domestication of website technology by local governments has not resulted in a digitalisation of local democracy in Norway.

All websites offered information services. The information could be about the local community, local government services, the local administration, local industry and tourism. The variations in scope as well as the depth of the information available were huge. Some communities offered only very limited amounts of information, while others gave access to very comprehensive information resources. With respect to expectations of e-government to improve digital access to services, we found that only a relatively small minority of the websites – 18% – offered access to many municipal services. Still, in quite a few cases (42%) residents had access to at least one or a few interactive services via the website. In the rest – 40% – inhabitants were at best offered the possibility of downloading forms to be sent through regular mail service afterwards. Also provision of services through websites varied a lot. Perhaps surprising to a non-

Norwegian audience, the most commonly offered interactive service was on-line application for a place in a kindergarten. 55% of the websites offered such e-service.

Thus, the domestication of website technology by Norwegian local governments produced substantial diversity, most prominently with respect to digital access to services but also with regard to information. In addition, we found that e-democracy features were given little priority, in fact so little that there is not much diversity here. Is this situation a reflection of different priorities among local governments? Table 1 suggest that the answer is ambiguous.

TABLE 1 ABOUT HERE

Table 1 shows that the people responsible for local governments' websites in general agreed that they gave high priority to providing information about and access to municipal services. They also saw it as important to use the website to improve efficiency and quality of these services. Thus, the diversity with respect to domestication cannot be explained by the priorities of actors responsible for the development of the websites. However, the lack of interest in e-democracy concerns that we observed from the analysis of the websites was reflected in the relatively low priority given to this issue by survey respondents.

In the survey, we also asked about barriers with respect to further development of the local government websites. 69% considered lack of resources to be a very important or important barrier. Lack of available ICT competence was considered less important (26% responded very important or important). 33% said lack of political priority was a very important or important barrier, compared to 42% mentioning administrative top management. Interestingly, 31% mentioned lack of knowledge about the needs of the inhabitants and 46% unclear municipal goals as a very important or

important barrier. These results show that the diverse outcome of the local governments' domestication of website technology may owe to many circumstances.

It seems obvious to believe that diversity in domestication outcomes is influenced by factors like population size and degree of urbanization, which are indicators of the level of resources available, possibly also the need for comprehensive website. Schleife (2010) in a study of Germany found that a substantial part of regional differences in the use of ICT was a result of differences between urban and rural areas with regard to demographic features, including age and level of education. Some other studies argue that population characteristics like city size influence the level of sophistication of local governments' websites (Moon, 2002; Moon and Norris, 2005), while Laswad, Fisher, & Oyelere (2005) did not find such effects.

Table 2, which summarises findings from the quantitative content analysis, shows that large municipalities offered more interactive services on their websites than small. A similar trend was found with respect to possibilities of electronic contact with politicians, but less pronounced. Digital forums provided an interesting paradox, because it was actually the smallest municipalities who most frequently offered that application (but it was still a relatively rare occurrence). Overall, the diversity of outcomes with respect to local governments' domestication of website technology seems to reflect differences with respect to resources, available competence, and political and professional support but not in a straightforward way. For example, the domestication efforts of local governments in some small communities results in fairly sophisticated websites.

(TABLE 2 here)

E-democracy features appear particularly interesting compared to other services, not the least because expectations have been so high. What we have seen is that such features were much less frequently brought forward through the domestication of website technology than other information and interactive services, and they were given much less priority by the people managing local e-government efforts. Further, we found such features more frequently – if still infrequent – in municipalities with few inhabitants. This calls for further scrutiny of why e-democracy issues are given so little consideration in the domestication of website technology.

So far, we have observed that local governments' domestication of website technology as an e-government project has produced very different outcomes, in particular with respect to access to information and interactive services. On a general level, this was expected, given the autonomy of local governments in Norway (see also Chadwick, 2011; Goodwin, 2007). However, the differences were extensive and raise questions about the potential consequences of these inequalities. To discuss this, we need to look more closely at the domestication outcomes – the websites. In the next section, we use the qualitative study of 10 websites to explore issues related to user configurations and to see how we may characterise the socio-technical assemblages produced by the domestication efforts of the local governments.

Assemblages and configurations: Consumer, client and citizen

In this section, we analyse outcomes of the domestication of website technology with an emphasis on the making of meaning (symbolic issues), and on practice, examining the configuration of users and the production of the main types of sociotechnical assemblages at the websites. The analysis started by studying the visualisation strategies used at the 10 websites, comparing and looking for differences. An immediately striking

feature was the pervasive use of pictures, which usually were efforts to visualise some particular feature of the municipality like its surrounding nature or some local buildings. Thus, website technology was pervasively domesticated to provide the local governments' websites with local meaning and foundation.

Of greater practical importance were the displays on the front page of buttons and menus and how they were named, another meaning-making feature. For example, Skien's website offered four main menus: self-service, news, local politics and dialogue, while Trondheim offered seven: self-service, contact, news, politics, the local government, services and the city, and Modalen six: politics, services, inspection (of local government's mail records), tourism, contact and website map. In this manner, and with some differences in terms of emphasis, the local governments domesticated website technology to signify that they give users *access*. The analysed websites provided users with opportunities to acquire information about a wide range of activities of the local government and the local community, and – to varying degrees – to be in dialogue with service providers, the administration and the local politicians.

The visualization of access, which we consider a main outcome of the domestication effort to provide meaning of the website, is at the same time a provision of *transparency*. By making information, services, etc. accessible, the local governments rendered themselves as easier to overview. Instead of having to make sense of the local government by phoning, visiting or reading documents, the inhabitants could fairly easily explore the website and observe services, the structure of the local government and political activities. In this manner, the local websites provided a new, potentially better way of understanding what is involved in the administration and running of a municipality. However, such domestication efforts varied considerably. Inhabitants in some municipalities could more easily get a good overview

of the local administration and its services than those living in municipalities where less was put into such domestication efforts.

To proceed to analyse what was made transparent and accessible, we need to consider the practice aspect of local governments' domestication of website technology. To begin with, websites of local governments are digital gateways between the inhabitants and the local administration, including politicians. Thus, websites should offer users distinct interactive strategies based on perceived user roles. How may we characterise these and what do they tell us about the underlying domestication processes?

The findings from the qualitative content analysis show that website technology was domesticated by the local governments, to provide for at most three main ideal type roles for residents using the websites. First, they may be consumers of information. Second, they may be clients with respect to local government services. Third, they may be citizens participating in political activities in the local community. While there is some overlap between the roles because some information usually is needed to enact the client as well as the citizen role, they nevertheless represent three distinct forms.

These three ideal type roles – consumer, client, and citizen – span the space within which the configuration of users (Woolgar, 1991) of local government websites takes place. Local governments may domesticate website technology to make their website able to cater for one or more of the three roles, and in distinctly different ways. How may we characterise these differences, and what do they tell about the processes of configuration as part of the domestication efforts?

To begin with, the qualitative content analysis suggests three possible main ideal types of website sociotechnical assemblages (Latour 2005) as potential outcomes of domestication, linked to each of the three user roles mentioned above. The first ideal

type we call *information assemblages*, the second *client assemblages*, and the third *citizen assemblages*.

Information assemblages may be described as collections of links to information items. The observed assemblages displayed considerable diversity in the number of links and the level of detail of the information items included as well as how the links were presented. Usually, they were shaped by the way the local government had organized its services, thus contributing to transparency. In this manner, the information assemblages provided one-way electronic information directed at one or more actors. The content could be seen as a reflection of local conceptualizations of e-government as a tool to foster the disclosure of local government-related information, but usually, other kinds of information were added as well. This could be about local cultural events or local business.

The variation in the richness of information results in several varieties of information assemblages. We identified three main information assembly strategies underlying the practice feature of the domestication efforts. The first we call *the newsletter*, found in the case of Leka. Leka had the simplest website of all the 10 sites analysed. It displayed only very basic information about the municipality and the activities of the local government, in addition to a more developed set of pages directed at tourists. Instead, they had chosen to assemble information in a newsletter published twice a month, downloadable from the website. The newsletter provided a mixed bag of news from the local government, local industry and commerce and voluntary organizations, in addition to stuff like birthdays and a column about the local dialect. In this manner, the newsletter strategy produced a fairly informal information assemblage that linked together many activities of a very small local community (593 inhabitants).

The second information assembly strategy was *the bulletin board*. Exemplified by the municipalities of Etne, Marker, Modalen and Vågå, the strategy guided local governments' domestication to make websites that were focused on a running provision of local community news. The websites also contained information about local government services, local industry, local politics and tourism, but local community news dominated visually as well as in terms of content. However, compared to Leka and the fairly informal newsletter strategy, the news provided through the bulletin board strategy was mainly based about the management of local government affairs, presented in a more formal manner.

The third information assemblage strategy we name *comprehensive provision*. This shaped the domestication of website technology by the local governments of Bærum, Hamarøy, Skien, Steinkjer and Trondheim. While all these websites also contained a kind of bulletin board, the bulletin board feature was much less prominent – visually as well as in terms of content – because so much additional information was offered. The comprehensive provision strategy guided domestication to bring about quite rich and sophisticated information assemblages in terms of scope and detail of the information items made available, but with a main focus on local government services and local politics. This included information about many kinds of permits and authorizations issued by the local government. Also this strategy contributed to transparency, which was an important achievement considering what in most cases were fairly complex local government systems. This resulted from the way that the domestication of the website technology provided residents with good possibilities to navigate the system at their own discretion.

It is important to note that also the small local community of Hamarøy, with 1753 inhabitants, used the comprehensive provision strategy. Thus, the strategy was not

only used by large, urban municipalities. Actually, Hamarøy appeared to have domesticated website technology in a way more similar to the four city local governments whose websites we examined, than to the other small municipalities. However, as noted in the discussion of Table 2, there is a number of small local communities where the local government offers relatively sophisticated websites.

Arguably, compared to the newsletter and the bulletin board strategies, the comprehensive provision strategy guides more effectively the domestication of website technology to empower local inhabitants. This is not only due to the transparency effect. As pointed out by Øgård and Berglund (2008), the information provided by local governments' websites includes clarification of the kind of rights residents have with respect to local government services. Thus, they are also empowered as consumers or clients.

The second ideal type of sociotechnical assemblage was client assemblages. They may be understood as collections of links to digital, interactive services as well as the information assemblage. Information about services is needed to make use of the interactive options. Client assemblages have an interactive and transactional orientation that seeks to establish electronic processes for the fulfilment of orders or services through the website. Probably, this reflects a conceptualization of e-government as an effort to reduce costs and to improve efficiency and efficacy in accordance with a managerial perspective. However, the provision of client assemblages may also be seen to make it easier for inhabitants to access and require services.

The websites of Etne, Modalen and Vågå only provided information about local government services. Thus, they had not constructed a client assemblage. At the websites of other two small local communities, Hamarøy and Marker, we observed client assemblages but they were fairly simple, with links to only a few services, in

addition to the information assemblage. The client assemblages at the websites of the five larger municipalities were much more comprehensive. Basically, these assemblages were constructed through links to online forms that offered possibilities to apply for or order services, provide information required by local government, and for local business to apply for various kinds of permits. The amount of forms available could be quite large. For example, the website of Bærum offered access to 121 forms, related to a wide spectrum of services and covering all main welfare state offerings of the local government.

As noted, the client assemblages were in general linked to the information assemblages. This meant that there would be a long list of services available for online viewing, and for each service there would be information as well as links to online forms. Given that online forms were the preferred way of interactive communication, one could perhaps claim that the client assemblages were relatively primitive, technologically speaking.

The third ideal type of sociotechnical assemblages we called citizen assemblages. These assemblages should be collections of applications that seek to make feasible and foster the participation of citizens in local politics. Further, citizen assemblages should have a relational orientation based on a two-way information exchange, which is basic to most forms of e-democracy.

However, well-developed citizen assemblages seemed rare if they existed at all at the analysed websites. Like we observed in the previous section, it seems like providing for e-citizenship was not a priority for the local governments when they domesticated website technology. Usually, e-democracy concerns were catered for only by providing links to information about local politics in the information assemblages. For example, the website of Trondheim offered fairly massive access to information

about local politics, including case documents and minutes. However, under the heading of channels for dialogue we were informed that “The best way to reach politicians in Trondheim city council is to send an email”. Among our ten cases, only Skien offered something reminiscent of a citizen assemblage with a link that provided for occasional chats with the mayor and deputy mayor. There was also a link to web cam transmissions from city council meetings. The main stuff found under the heading ‘Local politics’ was fairly comprehensive information made available from the information assemblage, like about the local political system, contact information, meeting schedules, protocols, etc. In this manner, even in Skien, the citizen assemblage was mainly a set of links to relevant parts of the information assemblage.

Of the three ideal types of sociotechnical assemblages, only information assemblages were found in all ten cases and the findings in the previous section show that such assemblages was the backbone of all local governments’ website. Some form of information assemblages was the least a website had to offer. This also follows from the above observation that both the two other assemblages required links to information. In line with the findings from the quantitative content analysis, client assemblages were less frequent and found in seven cases, while only one citizen assemblage was observed (Skien).

Conclusion: Local governments domesticating website technology for information and transparency

The paper departs from the assumption that domestication theory would be a fruitful point of departure for making sense of the diversity of local governments’ websites, thus applying an action-oriented approach rather than an institutional perspective. The findings merit our choice. Rather than being disappointed by slow implementation or trying to build stage models, we have observed widespread if variable efforts to

domesticate website technology to provide local governments with web presence. The survey results in Table 1 also suggest a fairly strong interest in making further domestication efforts and thus a willingness to improve the websites.

The qualitative content analysis of local government websites led to the identification of three ideal types of sociotechnical e-government assemblages as possible outcomes of the domestication of website technology: (1) the information assemblage, (2) the client assemblage, and (3) the citizen assemblage. Each of these ideal types of assemblages had its corresponding ideal type of configuration of users. The information assemblage reflects a configuration of users as information consumers; with the client assemblage, users are configured as e-clients; and with the citizen assemblage, users are configured as e-citizens. The dominant configuration of users was, as we have seen, as information consumers.

Given the diversity of information assemblages in terms of scope and quality, this configuration was quite flexible. Flexibility was also present in the less frequent client configurations, while the citizen configuration was poorly developed. Citizen assemblages were mainly linked to information about local political work, with small opportunities for interaction and participation. This meant that the citizen configuration was mainly subsumed in the information configuration, to the extent that it at all was a visible outcome of the domestication efforts. In most cases, the enactment of the role of citizen was configured to be an interest in information about but not participating in local politics. Table 1 shows that e-democracy is low on the list of prioritised website applications.

The analysis of the three sociotechnical assemblages produced by the domestication efforts seemingly support a stage model since both the client and the citizen assemblages required links to appropriate items in an information assemblage.

However, the observed diversity with respect to the construction of the information and client assemblages makes a stage model appear a less fruitful representation of main features of the domestication processes. There are many options for incremental change, including domestication efforts to make simple client assemblages (see also Norris & Reddick, 2012). This suggests further small-step progress, in line with the results in Table 1.

A striking finding from our study was the large variations between Norwegian local governments with respect to what they offer through their websites. While all of them have domesticated website technology, this has been done with quite different outcomes. As we have seen, in some cases, domestication efforts resulted in a website presenting only very basic information about the municipality and local government services. Other local governments produced websites that supplied comprehensive information and substantial on-line provision of services. The domestication efforts of most of the local governments led to outcomes somewhere in between.

These disparities in domestication efforts cause a substantially different supply of digital options to access information about local affairs, to interact with the local government, and benefitting from transparency benefits of a well-made website. Arguably, this situation represents a geographical inequality in the access to digital opportunities, different from digital divides that are reflecting social and economic inequalities. These geographical differences are not much discussed, which suggests that they are not considered a major problem.

To conclude, we believe that the paper makes three contributions. First, it demonstrates the fruitfulness of using domestication theory to analyse the production of artefacts like website, when using fairly standard technology to do so. Second, it contributes to domestication theory by showing how outcomes may be analysed

productively through the concepts of user configurations and socio-technical assemblages. Finally, it shows how a combination of qualitative and quantitative data may make domestication analysis more robust by observing both the dynamics of domestication processes and the relative distribution of processes and their outcome.

References

- Berker, T, Hartmann, M, Punie, Y. & Ward, K. J. (Eds.) (2006). *Domestication of Media and Technology*. Maidenhead, Birkshire: Open University Press.
- Brosveet, J. & Sørensen, K. H. (2000). Fishing for fun and profit? Norway domesticates multimedia. *Information society*, 16(4), 263–276.
- Chadwick, A. (2011). Explaining the Failure of an Online Citizen Engagement Initiative: The Role of Internal Institutional Variables. *Journal of Information Technology*, 8: 21-40. Doi: 10.1080/19331681.2010.507999
- European Union (2010). *E-government factsheets: E-government in Norway*. Retrieved from <http://www.epractice.eu/files/eGovernment%20in%20NO%20-%20May%202010-%208%200.pdf>
- Flak, L.S., Olsen, D.H., & Wolcott, P. (2005). Local e-Government in Norway: Current status and emerging issues. *Scandinavian Journal of Information Systems*, 17(2), 41–84.
- Fountain, J. (2001). *Building the Virtual State. Information Technology and Institutional Change*. Washington D.C.: Brookings Institution Press
- Gallego-Alvarez, I., Rodriguez-Dominguez, L., & Garcia-Sanchez, I. M. (2010). Are determining factors of municipal E-government common to a worldwide municipal view? An intra-country comparison. *Government Information Quarterly*, 27(4), 423–430. Doi: 10.1016/j.giq.2009.12.011
- Goodwin, I. (2007). Community Informatics and the Local State in the UK. Facilitating or assimilating an agenda for change? *Information, Communication and Society*, 10 (2): 194-218. Doi: 10.1080/13691180701307446
- Grönlund, A., & Andersson, A. (2006). e-gov research quality improvements since 2003: More rigor, but research (perhaps) redefined. *Electronic Government, Proceedings*, 4084, 1–12.

- Heeks, R., & Bailur, S. (2007). Analyzing e-government research: Perspective, philosophies, theories, methods, and practice. *Government Information Quarterly*, 24(2), 243–265. doi: 10.1016/j.giq.2006.06.005
- KS. (2008). *eKommune 2012 – en lokal digital agenda* [eMunicipality 2012 – a local digital agenda]. Retrieved from http://ksiktforum.no//portal/filearchive/ekommune_2012_revidert_des_2010.pdf
- Laswad, F., Fisher, R. & Oyelere, P. (2005) Determinants of voluntary Internet financial reporting by local government authorities. *Journal of Accounting and Public Policy*, 24(2), 101–121. Doi: 10.1108/09675421211281353
- Latour, B. (2005). *Reassembling the social: an introduction to actor-network-theory*. Oxford: Oxford University Press.
- Moon, M. J. (2002). The evolution of e-government among municipalities: Rhetoric or reality? *Public Administration Review*, 62(4), 424–433. doi:10.1111/0033-3352.00196
- Moon, M. J., & Norris, D. F. (2005). Does managerial orientation matter? The adoption of reinventing government and e-government at the municipal level. *Information Systems Journal*, 15(1), 43–60. doi: 10.1111/j.1365-2575.2005.00185.x
- Muñoz, L. L. (2010). *Exploring E-Government*. Unpublished manuscript.
- Norris, D. F., & Lloyd, B. A. (2006). The Scholarly Literature on E-Government: Characterizing a Nascent Field. *International Journal of Electronic Government Research*, 2(4), 40–56. Doi:10.4018/jegr.2006100103
- Norris, D. F. & Reddick, C. G. (2012). Local E-Government in the United States: Transformation or Incremental Change? *Public Administration Review*, 73 (1): 165-175. Doi: 10.1111/j.1540-6210.2012.02647.x
- Norwegian Ministry of Local Government and Regional Development. (2008). *Local Government in Norway*. Retrieved from <http://www.regjeringen.no/upload/KRD/Vedlegg/KOMM/internasjonalt/H-2224.pdf>
- Øgård, M. & Berglund, E. (2008). Internett som kanal for forbrukerdemokrati: Mer makt til brukeren? [Internet as a channel for consumer democracy?] In H. Baldersheim, A. V. Haug, & M. Øgård, M. (Eds.), *Mot den virtuelle kommunen. Studier i e-demokrati og e-forvaltning* [Towards the virtual municipality: studies in e-democracy and e-administration (pp. 120–143). Bergen: Fagbokforlaget

- Pierson, J. (2006). Domestication at work in small businesses. In T. Berker, M. Hartmann, Y. Punie, & K. J. Ward (Eds.), *Domestication revisited* (pp. 205 – 226). Maidenhead, Birkshire: Open University Press.
- Pina, V., Torres, L. & Royo, S. (2007). Are ICTs improving transparency and accountability in the EU regional and local governments? An empirical study. *Public Administration*, 85, 449–472. doi: 10.1111/j.1467-9299.2007.00654.x
- Reichertz, J. (2007). Abduction : The Logic of Discovery of Grounded Theory. In Bryant, A. & Charmaz, K. (Eds.) *The SAGE Handbook of Grounded Theory* (pp. 214-228). Los Angeles: Sage.
- Saglie, J., & Vabø, S. I. (2009). Size and e-Democracy: Online Participation in Norwegian Local Politics. *Scandinavian Political Studies*, 32(4), 382–401. doi: 10.1111/j.1467-9477.2009.00235.x
- Schleife, K. (2010). What really matters: Regional versus individual determinants of the digital divide in Germany. *Research Policy*, 39(1), 173–185. doi: 10.1016/j.respol.2009.11.003
- Silvestone, R. (2006). Domesticating domestication. Reflections on the life of a concept. In T. Berker, M. Hartmann, Y. Punie, & K. J. Ward (Eds.), *Domestication revisited* (pp. 229–248). Maidenhead, Birkshire: Open University Press.
- Silverstone, R, Hirsch, E., & Morley, D. (1992). Information and Communication Technologies and the Moral Economy of the Household. In K. H. Sørensen & A. J. Berg (Eds.), *Technology and Everyday Life: Trajectories and Transformations* (pp. 13-46). Oslo: Norwegian Research Council for the Sciences and the Humanities
- Skogerbø, E. & Winsvold, M. (2008). Nettet som debattarena [The net as arena for debate]. In G. Enli & E. Skogerbø (Eds.), *Digitale dilemmaer. Nye medieformer, nye utfordringer* [Digital dilemmas. New forms of media, new challenges] (pp. 39–60). Oslo: Gyldendal akademisk.
- St.meld. nr. 17 (2006-2007) Eit informasjonssamfunn for alle* [An information society for all]. Oslo: Norwegian Ministry of Government Administration and Reform.
- Sørensen, K. H. (2006). Domestication: The enactment of technology. In T. Berker, M. Hartmann, Y. Punie, & K. J. Ward (Eds.), *Domestication revisited* (pp. 40–61). Maidenhead, Birkshire: Open University Press.

- Sørensen, K. H. (2013). Beyond innovation. Towards an extended framework for analysing technology policy. *Nordic Journal of Science and Technology Studies*, 1 (1): 12-23
- Titah, R., & Barki, H. (2006). E-Government Adoption and Acceptance: A Literature Review *International Journal of Electronic Government Research*, 2(3), 23-57. doi:10.4018/jegr.2006070102
- Woolgar, S. (1991). Configuring the user: the case of usability trials. In J. Law (Ed.), *A Sociology of Monsters: Essays on Power, Technology and Domination* (pp. 57–102). London: Routledge.