NORDIC CENTER FOR WELFARE AND SOCIAL ISSUES

Future Challenges and the Role of Welfare Technology

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Nordic Centre for Welfare and Social Issues

Contents

Future Challenges and the Role of Welfare Technology in the Nordic Countries

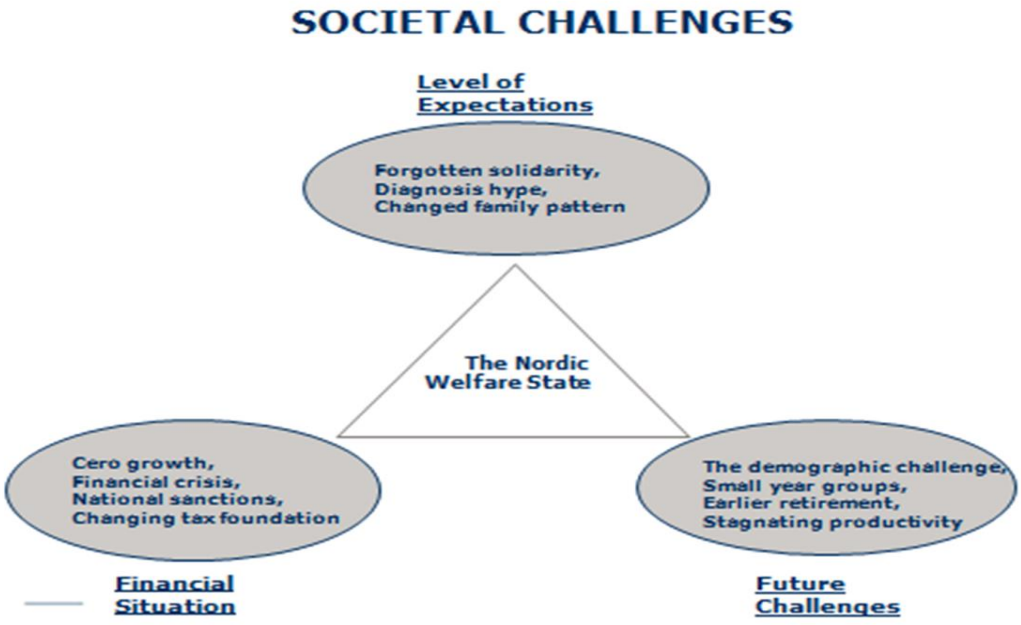
Welfare technology has seen a rapid development during the last three years in the Nordic region. It has moved away from being little more than a relatively undefined innovative vision, and has grown into a tangible tool in the toolbox of Nordic public authorities.

As necessity is the mother of all innovation, it comes as little surprise that underlying societal challenges is facilitating this change. At the heart of all these challenges are varying economic difficulties driving the Nordic public authorities in their motivation for working with welfare technology.

This article will take a closer look at these societal challenges and drivers in the Nordic countries, and look at which role welfare technology can play in the future of the Nordic welfare state. The article will also look at the unique possibilities that lie in the close Nordic cooperation as a facilitator of the wider use of welfare technology.

Local authorities under pressure:

As a general rule across the five Nordic countries, the similar Nordic societal structure has a high degree of decentralized power, meaning that the Nordic local authorities, in the form of municipalities, are the primary healthcare providers and essential players in providing citizens with welfare services. In recent years however, these local authorities have come under increasing economic pressure. This pressure can be divided into three main categories: “Level of expectations”, “Current financial situation” and “Future challenges”, as illustrated in the table below.



Level of Expectation

The Nordic countries are renowned for delivering a high quality public service, a service which is ensured by and financed through a relatively high taxation level. The high level of taxation does,

however, mean that citizens in general feel entitled to more and more services of higher and higher quality.

This increasing pressure seemingly derives from a difference in mentality between the generation of elderly who are currently receiving public services and the coming generation of elderly who are next in line for these services. The generation who is currently receiving welfare services has experienced a time with fewer resources and in general has been slightly less accustomed to the present wealth and lifestyle. This makes them more accepting and less argumentative with regards to public welfare service. The coming generation of elderly, however, has lived a life of relative wealth and in a time of continued progress for the Nordic economy. They have grown accustomed to a certain standard of living and are unwilling to compromise simply because they receive public services – they have after all paid their taxes all their lives. This means that the coming generation of elderly quite simply has a higher expectation of what public services should look like.

The increasing expectation of high quality services also has a different angle. Although there seems to be no scientific basis yet, more and more public authorities across the Nordic region are reporting a larger degree of self-diagnosing among citizens. This, combined with an increasing need to be diagnosed by healthcare professionals and thereby have any physical or cognitive shortcoming labelled, is increasing the demand for the more public services adding to the economic pressure on the local authorities. There are several possible reasons for this trend and again it seems to derive from a growing difference between generations. The current generation is in general less troubled by physical or cognitive shortcoming and accepts it as a natural part of aging. The coming generation of elderly is much more knowledgeable on personal healthcare issues, due to easy access health databases and an increased public debate. As the general society becomes ever more enlightened and developed, so does the needs and demands of the population.

The third and final aspect of the increasing level of expectation with regards to public services originates from fading family cohesion. As with many western countries family behavior and family cohesion is changing. Although the Nordic countries have never been world famous for taking care of our elderly generation within the family, there still seems to be a significant change underway. A stronger focus on career and self-realization is driving more and more families to the conclusion that taking care of the elderly is very much a public responsibility.

The combination of these three perspectives is putting the public sector under increased pressure to deliver more and better services.

The Current Financial Situation

Although the financial crisis has hit the Nordic countries in different ways and with different results, the current global financial crisis has taken its toll on the local authorities across the Nordic Region. Finland and Iceland were hit the hardest by the financial crisis with Iceland experiencing an outright bank collapse (in 2008). Denmark was hit relatively hard especially due to an inflated real estate marked and has been taking a long time to reach pre-crisis levels of GDP. Sweden was not hit quite as hard and has relatively quickly returned to previous levels of GDP while Norway was barely affected on a national level due to the high level of natural resources.

However, on a local level all countries have been affected. Many local authorities are or have been experiencing negative growth or zero growth at best. During the crisis, some countries also put in

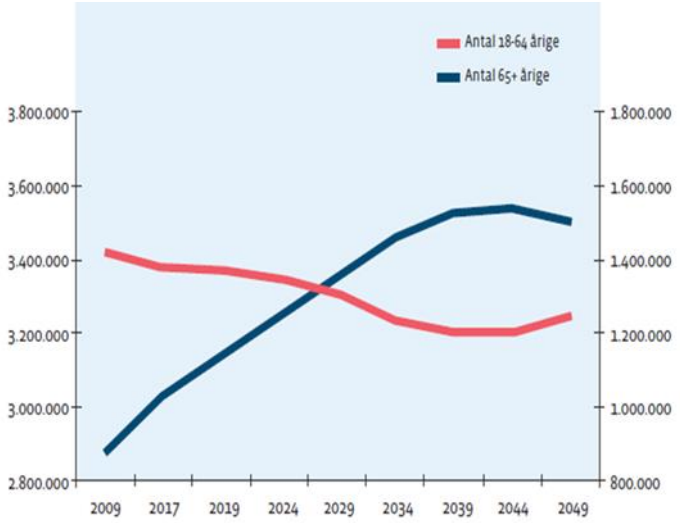
place national sanction systems to combat the financial crisis, influencing the economic latitude of local authorities. Overall the global financial crisis has reinforced the economic challenges many local authorities were facing and has provoked some difficult political prioritizations.

Future Challenges

The demographic challenges facing most of the western world has been widely discussed and is generally accepted as one of the primary future economic challenges in many countries, including those in the Nordic region.

All the Nordic countries face the challenge of an aging population[1]. This challenge infers pressure on welfare services as more elderly tend to equal need for more welfare services. Simultaneously with the aging population, the Nordic countries also face a fall of people within working age. This means fewer people receiving income which in turn leads to a negative change in the tax foundation for local authorities, as well as on a national level. This double demographic challenge will result in the local authorities having to deliver more public services with fewer resources than today. A part from changing the tax foundation in a negative manner a smaller workforce will also challenge the public sectors ability to recruit. Increased competition for workforce will potentially drive up wages making public services more expensive.

The graph below illustrates the double demographic challenge. This graph is done by the Danish Association for Engineers[2], but the other four Nordic countries face similar projections.



Other demographic projections have contradictory potentials. On one hand, the aging population in the Nordic countries can look forward to a longer life expectancy in the future. This is unfortunately not a positive thing for the economy in the local authorities, as this will lead to more elderly people receiving more public services over a longer period of time. On the other hand, another projection forecast that elderly people of the coming generations will stay healthy for longer, postponing their need for welfares services. The combined effects of these two projections are difficult to ascertain,

[1] See http://norden.diva-portal.org/smash/record.jsf?pid=diva2%3A715939&dswid=-9184 (The Nordic Welfare Model, Challenged but capable of reform)
[2] For more information see www.ida.dk

longer life expectancy implying increased need for services, but on the other hand more healthy years implying less need for services.

One projection which does have a potentially significant impact is the number of people with chronic illnesses. This is a particular expensive group of patients within the Danish healthcare system and it is unfortunately growing rapidly[3]. As an example, during the coming 25-30 years the number of people suffering from dementia will double[4], and other chronic illness like diabetes or OCPD have similar gloomy predictions. If left unchecked, these increases will have a potentially devastating effect on the healthcare cost on both national and local level.

All the above mentioned factors imply a financially dangerous future for the local authorities, motivating them to increase current efforts to innovate their current welfare services to meet these future challenges - welfare technology is one of the tools used to achieve this goal.

Other Factors Driving the Motivation for Working with Welfare Technology

As mentioned above, increased financial motivation within the public sector to work with welfare technology has been the primary driver for change. But the rapid progress and increased focus on welfare technology we have seen over the last couple of years can also be attributed to complimentary non-financial developments.

Firstly, the general technological development has reached a level of maturity that facilitates more successful application of technology within the welfare sector. Traditionally, welfare services have been a low-tech work area. Although many assistive technologies have been around for a long time within this area, up until the recent years these have been fairly low tech. Applying high-tech solutions to welfare services is a complex task. The human factor and the human interaction create a complex environment that places high demands on the technology aspect of new solutions. Additionally, many of the technology suppliers transitioned into the welfare area from other service areas, such as general industry or agriculture, and it took time to adapt their technologies and / or knowledge to the welfare area. In recent years, however, more and more high tech services have been successfully implemented and it seems a better understanding between demand and supply has been established.

Secondly, general acceptance of technology is rapidly changing. As our societies become more and more technologically advanced, we become more and more familiar with different forms of technology. This helps move our inhibitions and change our perception towards introducing technology within welfare services – an area generally associated with personal relations. The Nordic societies in general seem more willing to accept technology as assistance or as tools toward independence than just a few years ago.

Both of the above mentioned factors are enhanced by an increased awareness from public authorities on welfare technology. The noticeable increase from the demand side (public authorities)

[3] See IDA paper: ”Sundhedsteknologi 2020” www.ida.dk
[4] See http://www.alzheimer.dk/viden/fakta-om-demens

has helped facilitate the growth of the supply side ensuring a faster development with regards to new and improved technologies.

Similarly, an increased emphasis on welfare technology has increased awareness among the general population. Although not all stories within this area have been positive, awareness breads discussion and understanding – aiding the overall acceptance of using new technology.

The Nordic Countries, Alike but with Different Approaches

The Nordic countries share many commonalities; the general societal structure is similar meaning we share the Nordic welfare model with comparable healthcare systems. Nevertheless, the approach toward welfare technology has been different. Although all Nordic countries have accepted welfare technology as an innovative tool to combat present and coming economic and societal challenges, the level of economic pressure and thus motivation for immediate change has caused the Nordic countries to adapt different approaches. A look at the three Scandinavian countries will illustrate this point.

Denmark

Of the Nordic countries Denmark has experienced the fastest growing interest and development within welfare technology. The fast growing interest in Denmark is to a large degree due to a successful national strategy, focusing on approaches that were designed to stimulate and encourage the Danish public sector to start embracing welfare technology. This strategy was effective and since 2008 more and more local authorities has started working with welfare technology and today there is only a few left who has yet to get started. For this reason the Danish government has implemented a new national strategy "Digital Strategy 2013-2020" which hopes to ensure that all 98 Danish local authorities get started implementing new technologies in the coming years. The marked has naturally benefitted from the increase in demand, and the supply side is growing to such a degree that it is receiving special interest nationally as a new potential export commodity.

The Danish term for welfare technology is recognized by most, if not all, people and has been politically prioritized for some time. The definition for welfare technology in Denmark is broader than in Sweden and Norway and will generally include technology applied to assist or deliver any welfare service. The understanding of welfare technology is easier if thought of as an umbrella term, including many different forms of technology such as assistive technology, telemedicine, robotics and eHealth – just to mention the most common groups of technology. During the last five years, the primary focus on welfare technology in Denmark has been within the group of elderly and disabled, although both the social sector and the education sector is starting to adapt welfare technology as well.

Like in the other Nordic countries welfare technology takes its vantage point from the perspective of the user. Welfare technology very often focusses on "empowerment" and regaining lost abilities. As an example there is a strong preference among elderly and people with disabilities toward staying at home independently for as long as possible. This is something local authorities have the opportunity to facilitate by introducing welfare technology.

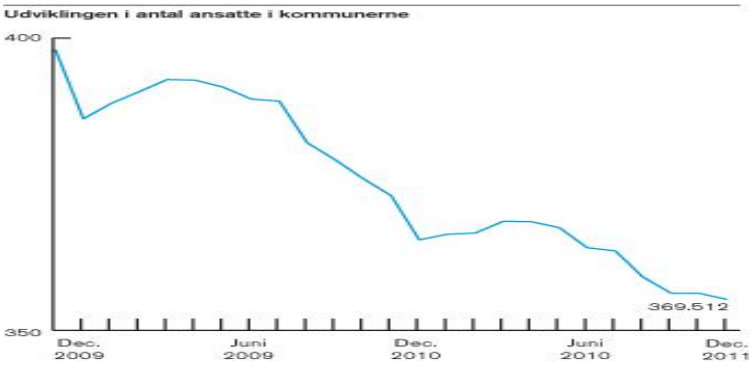
There is also a very strong focus on work environment in Denmark. Introducing technology to ease the physical or monotonous tasks for the healthcare and nursing staff is also very appealing in a country with very high emphasis on a positive and inclusive work environment.

Although quality is of the essence, what has put Denmark aside from the other Nordic countries has been a very strong emphasis on cost effectiveness. Welfare technology in Denmark almost always has a very clear economical aspect.

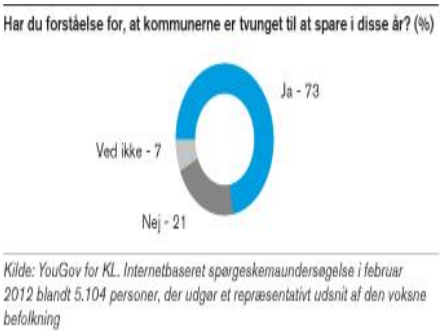
There are two main reasons behind this strong economic emphasis.

Firstly, Denmark was hit harder by the financial crisis than neighbors Norway and Sweden. As a result Danish local authorities have been under severe financial pressure over the last five years. This pressure has undoubtedly accelerated the financial incentive to work with welfare technology as an economical tool. Welfare technology has become a way to innovate existing welfare services in a way that can preserve the high quality level but do so at a more cost effective price.

The graph below underlines the economic pressure the local authorities in Denmark have been under during the past five years. The first graph shows the total number of employees in Danish local authorities, visualizing that cut backs and reorganizations have been a normal part of everyday life in most municipalities. This reality has also been communicated to the general public. There is a general acceptance that times are though and that budget cut backs are necessary. This realization helps justify introduction of welfare technology and it justifies that welfare technology is not only a tool to improve the quality of the service, but also a tool to ensure the municipality can make ends meet. The second graph below depicting a pie chart illustrates the level of understanding in the Danish public towards continued public budgetary reductions.



Note: Antal ansatte indbefatter tjenestemænd, overenskomstansatte og timelønnede i kommunerne omregnet til årsværk.
Kilde: FLD - Det fælleskommunale Landatakontor



Kilde: YouGov for KL. Internetbaseret spørgeskemaundersøgelse i februar 2012 blandt 5.104 personer, der udgør et repræsentativt udsnit af den voksne befolkning

In this debate it is very important, however, to stress that welfare technology should not be viewed solely as an exercise to save money, but rather it should be seen as an investment. The reality of Danish municipalities has been, and in many cases still are, the fact that budgetary reductions are reality that everyone has to deal with – with or without the introduction of welfare technology. But using welfare technology to reach that inevitable reduction means the reduction can be met without influencing the quality of the provided service.

The second reason why cost effectiveness has become an integral part of working with welfare technology in Denmark is down to national strategy. At the time of the beginning of the financial crisis (2008), Denmark introduced a new large national foundation – The Foundation for Welfare

Technology[5]. This foundation funded many local welfare technology projects, sparking interest in welfare technology in Danish municipalities throughout the country and these projects showed local authorities the potential benefits of introducing such technology, both in terms of quality but also economically. The projects funded by the foundation all required strict cost effectiveness analysis and this taught Danish local authorities both the importance of proper evaluation with regards to decision making, but also the practical methodology of making these analysis.

Sweden

Welfare technology is slightly newer in Sweden and the term as such is not as widely recognized as in Denmark. Over the last five years Sweden has had a stronger focus on eHeath and especially the digital link between health sectors. Up until recently this was not considered welfare technology but now more and more people see this discipline as part of the welfare technology umbrella. This coincides with the fact that during the last year the definition of welfare technology has become more inclusive and interest has increased significantly, both among local authorities and national politicians.

Welfare technology in Sweden is still limited to elderly and disabled. This perception originates from the more traditional assistive technology thinking, but is also due to the simple fact that most successful technology available is targeted to this particular target group.

One of the main characteristics about the work that is being done within welfare technology in Sweden is the way local authorities communicate this effort. It is very important for Swedish local authorities to emphasize the fact that working with or introducing new welfare technology is solely done for the purpose of improving the quality of the given service. Welfare technology is simply a tool for innovating public services with a view to improving the quality of said services. This emphasis also highlights that working with welfare technology is absolutely not to save money on the budget, as this is very much a point for political contention in Sweden at least when communicating publically.

This clearly illustrates a difference between approaches in Denmark and Sweden. The economic motivation seems significantly smaller in Sweden, at least on the surface. There are several indicators supporting this.

Firstly, the Swedish local authorities were and are not under as much economic pressure as the Danish local authorities, simply because the financial crisis did not hit Sweden as hard as it hit Denmark. This means that the immediate need for budgetary cut backs that instantaneously became apparent in Denmark were less urgent in Sweden – and were dealt with in a different way, such as for instance a slight raise in taxation.

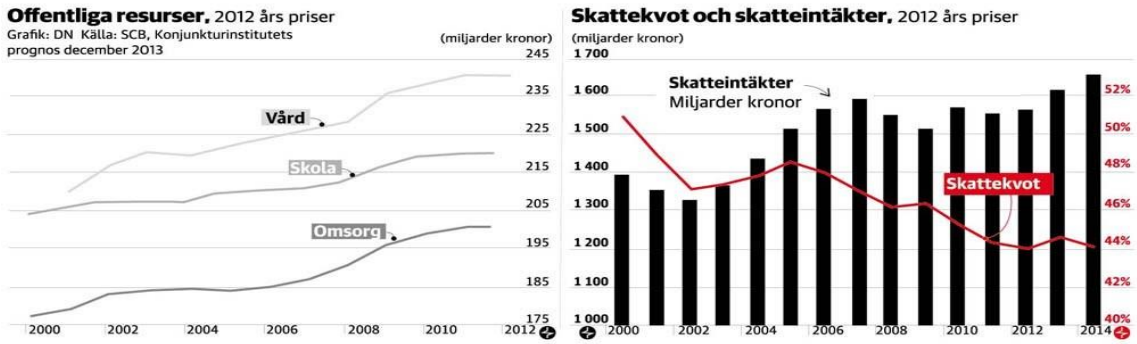
Secondly, another indicator illustrating the difference in economic motivation for working with welfare technology is the form of funding. In Denmark today, most projects within welfare technology is funded by the local authorities themselves. The economic potential has been proven, so they are willing to spend money to make money. In Sweden, most, if not all, projects are funded externally, meaning by other actors than the municipalities themselves. This indicates insecurity with

[5] For more information see: http://www.digst.dk/Digital-velfaerd/Fonden-for-Velfaerdsteknologi

regards to the profitability of welfare technology and a less genuine motivation for working with welfare technology as it is today.

It could also simply indicate the different stages of maturity and development the two countries are on with regards to welfare technology. As described earlier Denmark has been through this phase of external funding already, with The Foundation for Welfare Technology so this would indicate that Sweden may be on a similar course as Denmark, but has had a slower development curve, due to less pressing economic motivation.

That economic incentives will play a bigger part in their work with welfare technology is starting to show. Firstly more and more local authorities are taking an interest in welfare technology, not only as an innovative tool, but also as an instrument to counter coming challenges. Sweden obviously faces the same future demographic challenges discussed earlier in this article, but they also face more immediate difficulties in the coming years. According to the Statistics Sweden[6] the Swedish society uses more and more money on primary healthcare, as shown on the displayed graphs.



If this pattern continues it will place the 290 local authorities in Sweden under increased economic pressure increasing their motivation for looking at welfare technology as a cost effective tool as well as a way to improve or preserve the quality of public services.

Norway

The interest and work within welfare technology is rapidly growing in Norway. The term welfare technology is already very well known throughout the country and this is an area receiving considerable political interest as well as national financial backing.

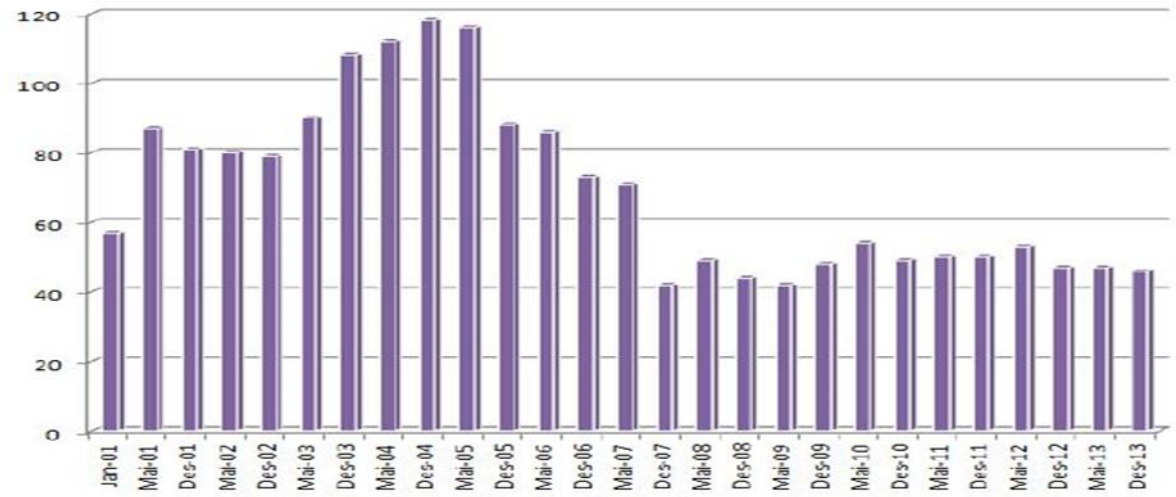
The term welfare technology has a slightly different focus area in Norway compared to Sweden and Denmark. In Norway, welfare technology is tightly connected to services delivered by local authorities, and in Norway local authorities do not cover traditional assistive technology, such as for

[6] http://www.scb.se/

instance shimmer frames or canes – which is a central part of welfare technology in Sweden and Denmark. The reason why assistive technology is not a municipal service can be found in the very high number of local authorities. Norway has a staggering 428 local authorities while the total population is only around 5 million inhabitants. So, to insure equality through-out the country with regards to assistive technology this has been deemed a national task. This also means local authorities have very little incentive to innovate within assistive technology, as this is paid for by the state – an area of innovation very much driving the welfare technology industry in Denmark and Sweden.

For now, welfare technology has been centered on healthcare issues, telemedicine, monitoring and digital solution but more and more people are open to broadening the term further to match the more common Nordic understanding.

Norway is the richest of the Nordic countries primarily due to the large oil deposits in the North Sea. This has also influenced the motivation for working with new technology in the past, at least from a national perspective. But Norway is more complex than that and a closer inspection reveals large differences on the local level. Looking at the economy in the 428 municipalities will reveal huge financial inequality. Some municipalities own local power plants (for instance hydroelectricity) generating great local wealth while others have no significant industry. A look at the Norwegian government[7] website reveals that since 2001 between 40 and 120 municipalities have continuously been under national administration due to economical imbalance. The graph below shows the number of Norwegian municipalities placed under national administration over time.



This local inequality has led to an understanding that welfare technology can be a tool for more than solely innovation and improved quality, it can also represent cost effective public services. For this reason the Norwegian Association of Local and Regional Authorities (KS) together with the Norwegian Directorate of Health has initiated a large scale national project for promoting welfare technology. The program which presently includes 32 local authorities aims to increase local competences and has cost effectiveness analysis as one of the most important steps.

[7] http://www.regjeringen.no/nb/dep/kmd/tema/databaser-og-registre/robek-2/robek-2001-2006.html?id=415536

As showed in this article the Nordic region has similar motivation for working with welfare technology, most of which has an economic driver. Future demographic challenges are important especially when welfare technology is discussed on a national level, while present societal issues seems to be the more pressing issues among the local authorities.

The Nordic region has taken slightly different approaches in their work with welfare technology, which has resulted in the countries being on slightly different stages of development when it comes to actual implementation and bringing the technology into the daily lives of the users. Where Denmark has chosen a more rational and economic approach, Norway and Sweden have chosen a more cautious and quality minded approach. Which approach that will end up more successful in the end is still to be seen?

Welfare technology, however, is starting to play an ever more important role in servicing the Nordic public with new innovative public services. New innovations within the area of assistive technology, including robotics or sensor technology have already proven to be successful. Another fast growing part of welfare technology is the increased use of IT and touchpad solutions designed for both citizens and staff alike. Especially platform solutions combining and simplifying multiple existing tasks are increasing across the Nordic countries.

So far welfare technology is most commonly found within the area of elderly and disabled, and most commonly associated with the delivery of public services. But the broad range of possibilities for application found in many technologies opens up an increasing range of possibilities in other sectors within public sphere.

It seems self-evident that welfare technology will play an important part in the future of public services in all Nordic countries. It may not be the sole solution for all the demographic and societal challenge the Nordic countries face, but it is a logical development of the more traditional oriented public sector and will insure a sharper eye for cost effectiveness. Furthermore, it seems important for the public sector to stay updated as the rest of society embraces modern technology.

The Unique Possibilities Offered in the Nordic Cooperation

As demonstrated, welfare technology is highly prioritized politically in all the Nordic countries as a way to innovate our public services and counter some of the serious future challenge facing our Nordic welfare model. With comparable societal structures, comparable intentions and goals as well as comparable challenges, it seems only logical that the field of welfare technology can benefit from stronger Nordic corporation.

For this reason The Nordic Center for Welfare and Social Issues, an institution under The Nordic Council of Ministers, has placed welfare technology as one of their five key working areas. The goal of working with welfare technology on a Nordic level is to increase the competence level in all countries, and strengthen the successful implementation and use of welfare technology.

Together we also have a better chance of strengthening the common Nordic marked for welfare technology, benefitting both the public demand side, as well as the private supply side. A common Nordic marked is considerable more attractive for suppliers venturing into this new business area, as the potential of servicing 26 million people in the Nordic region, over for instance 5 million in Norway

or 5.5 million in Denmark, is obviously more appealing. Similarly with a strong common Nordic marked the public demand side would be able to attract more tenderers when doing public procurement, securing better prices and quality.

The CONNECT Project

Normally the Nordic cooperation works on behalf of governments, strengthening national strategies or discussing common Nordic issues. But within welfare technology, as mentioned in this article, the main public drivers are the local authorities. So to strengthen these drivers, The Nordic Center for Welfare and Social Issues has initiated a new large Nordic project, CONNECT (Collecting Nordic Best Practice Within Welfare Technology).

The Nordic local authorities generally run in to similar problems when working with welfare technology:

- Too many projects with too little end product
- A tendency toward having too much focus on simply participating in projects rather than ensuring that the knowledge obtained is actually embedded within the organization.
- A continuous reinvention of the wheel due to a profound lack of knowledge sharing, leading to inefficient use of public resources.
- A weak common Nordic marked for welfare technology.

Let me elaborate a little on these problems.

With regards to the first two bullet points: In the Nordic region as a whole, there has been a tendency towards “project hype” meaning participating in too many projects, either in an effort to show that welfare technology is taken serious, or simply because they are externally funded, making this the cheapest way to work with welfare technology. Either way, solely having a project focus means that you do not have the complete picture with regards to the entire process of working with welfare technology - you only tend to focus on the work packages in the project. If you forget the complete picture competences are not developed and rooted throughout the organization, and the knowledge obtained through participation is not properly embedded. This means that in reality the local authority gains very little from the participation – which is also backed by the fact that local authorities with a high focus on project participation tend to implement very little end product.

The third bullet point concerns a general lack of knowledge sharing between local authorities. There are several reasons behind this. The first one is political. Since welfare technology is politically prioritized, many local authorities have ambitions about being the leading local authority within welfare technology. This ambition can lead to an unconstructive “arms race” like competition among local authorities, in which you cannot share your results because that would benefit the competition. Luckily this has diminished during the last few years due to the severity of the financial crisis, making cooperation easier as it saves resources. The second reason is organizational / cultural. Within the Nordic region public authorities tend to think of themselves as unique entities, which creates a “not invented here” way of thinking. This combined with a general distrust of any evaluation which has not been done by one´s own organization makes knowledge sharing more complex.

The third bullet point has already been explained, but for public authorities a weak and fragmented common Nordic marked limit the supply and in general Danish companies mostly sell to Danish local authorities and the same goes for the other countries. This limits competition and marked size.

Luckily CONNECT has a plan to counter all these problems.

Based on best practice, CONNECT will create a complete process for how best to work with welfare technology. This optimal process will include nine steps and for each of these nine steps, CONNECT will create a best practice tool.

The "optimal" process will include the following nine steps:

Vision-Strategy-Communication Plan-Needs Analysis-Technology Screening (Marked Analysis)-Evaluation Model-Procurement Model-Implementation Model-Effect Monitoring Model.

The best practice tools for doing each step will be compiled by The Nordic Center for Welfare and Social Issues based on input from ten of the leading local authorities within the Nordic region in cooperation with specifically chosen national authorities to ensure complete Nordic validity in the created tools.

The hope is, that giving local authorities a complete picture of what is required when working with welfare technology, will counter some of the problems which is experienced when jumping from project to project. Knowing all the steps required to insure a successful implementation will help organizations include the right competences, create a coherent strategy and communication plan – insuring the knowledge obtained is embedded through-out the local authority and not only with the project manager.

Furthermore, these best practice tools for each of the nine steps will help those local authorities who have only just started working with welfare technology, as they now have access to best practice throughout the process. It should also raise the competence level at local authorities who does not have the resources to gain this knowledge and experience them-selves.

The CONNECT project will also help counter the distrust and "not invented here" thinking. Giving all local authorities the same evaluation methodology and tools, should make it easier to accept, that an evaluation done by the neighboring municipality, with the same methodology, will be comparable. Hopefully this will counter the unfortunate tendency experienced many places in the Nordic region, in which several local authorities knowingly conducted similar evaluations.

Finally, should the CONNECT project be successful in creating and disseminating the nine step process, it will also benefit the idea of a common Nordic marked. If the demand side (the public sector) is looking at the same parameters when assessing and procuring new product across the entire region, it will make it easier for the supply side (private sector) to sell their products in all countries.

The CONNECT project is well underway and will present the finished process including all nine steps no later than December 31st 2016.