MEASURING
NEW NORDIC SOLUTIONS

INNOVATION BAROMETER

FOR THE PUBLIC SECTOR

MEASURING NEW NORDIC SOLUTIONS
Innovation Barometer for the public sector

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Introduction

Demographic changes. Climate crisis. Cybercrime. Budget deficits. Diminishing political legitimacy. From a global perspective there is no shortage of complex problems facing the public sector. The need for innovative solutions is evident, but a systematic knowledge base for necessary public sector innovations is hard to come by.

Private sector companies have been the subject of internationally comparable statistics on innovation for nearly three decades, giving private companies, scholars and public sector decision-makers essential guidance for business development, research and policymaking.

For the public sector, however, anecdotes and opinions have been substitutes for statistical data on innovation. That is why, in 2015, the Danish National Centre for Public Sector Innovation, in association with Statistics Denmark, began separating myth from reality. The result was the Innovation Barometer, the world's first official statistics on public sector innovation.

While the findings were both surprising and useful, additional insight from national comparisons was missing. But not for long. By 2018 Norway, Sweden, Iceland and Finland had all conducted one or more national surveys, utilising similar methodologies and definitions, though adapted somewhat to better serve national agendas. Their ongoing efforts have also contributed to methodological adjustments, improving the original survey design.

Currently a large variety of people and organisations use Nordic Innovation Barometer data, applying them for their own purposes, e.g. inspiration, policymaking, strategizing, HR development, teaching, research and consultancy services. Or for legitimising certain decisions and criticising others. In short, the Nordic Innovation Barometers are being put to use as the public good they were intended to be, also in ways the developers and adaptors did not foresee.

On behalf of the remarkably innovative Nordic public sectors we are pleased to present the first publication containing cross-Nordic comparisons. Although the report does not tell us everything that we would like to know about public sector innovation, it does provide a sorely needed systematic foundation for developing new solutions.

We hope this publication will inspire other countries to conduct similar surveys and look forward to learning from your experiences. As the figures in the following pages will demonstrate, collaboration and applying one another's solutions are key drivers for public sector innovation. In this spirit we would like to invite you to please join us at innovationbarometer.org.

Sincerely

The Nordic Public Sector Innovation Hub

Compare with caution: Nordic public sectors are not identical

For a non-Nordic observer, similarities between the Nordic countries, Denmark, Finland, Iceland, Norway and Sweden, are perhaps the dominant features – of small populations, cold climate, low economic inequality, high incomes and high levels of public service. Still, there are significant differences that must be considered when comparing the Nordic countries.

The structure, governance and task distribution of the public sector vary across the Nordic countries. For instance, Iceland does not have a regional level, while Finland's regional level comprises joint municipal authorities, some of them statutory. In Denmark, Norway and Sweden regional levels are led by directly elected representatives but their task portfolios are not identical.

In addition public entities must provide services to very different population sizes and geographical areas. The population of Stockholm, the capital of Sweden, is nearly three times that of all of Iceland, and the population density in Denmark is 44 times higher than in Iceland. Obviously, there are also differences when it comes to, e.g. legislation, tax financing and local income levels.

This means that any differences to be found in innovation activity, measured in national averages, may not be due to differences in innovation practices alone, but perhaps also due to numerous other variables, some of them listed above. However, these reservations are universal and apply to all transnational comparisons. In a global context, the Nordic countries have very strong similarities on a wide range of parameters. Indeed, it could be argued that cross-Nordic comparisons are subject to the least uncertainty that can be found anywhere in the world when comparing five countries.

This report openly presents the unfiltered differences for the sake of comparison, without scientifically controlling for every possible factor or testing for significant differences, which means the results must be interpreted with caution.

Cross-country differences also exist in terms of data collection. Most importantly, the Finnish Innovation Barometer only covers municipalities and joint municipal authorities, but the other four Nordic countries include all existing administrative levels, as described in Table 1. For a more detailed account of data collection in each country see: innovationbarometer.org.

TABLE 1

Administrative level, sample sizes, number of respondents and response rates for Nordic Innovation Barometer surveys

	DENMARK	FINLAND	ICELAND	NORWAY	SWEDEN
Administrative levels included	State, regional, municipal	Municipal	State, municipal	State, regional, municipal	State, regional, municipal
Sample	4,766	ca. 1,200	764	7,368	5,305
Responses	2,362	145	272	2,548	1,608
Response rate	50%	ca. 12%	36%	35%	32%

As Table 1 shows, the sample sizes, number of respondents and response rates vary. Since a smaller number of respondents and a lower response rate results in higher statistical uncertainty, keep in mind that some statistical uncertainty is present in the following.

In sum, we cannot know for certain that differences in the percentages shown in the figures reflect real differences of the same size. The opportunity to learn from each other, albeit with some uncertainty, nevertheless far outweighs the methodological reservations. Reassuringly, the overall Innovation Barometer findings in each country are astonishingly similar, and we can use the differences identified between the countries as a starting point for further discussion and exploration.

What is Nordic public sector innovation?

Most OECD countries have provided statistics on private sector innovation, based on survey data, since the early 1990s. This has made it possible for scholars and decision-makers alike to learn from an ever-growing source of data that can be compared over time and across countries. The Nordic Innovation Barometers are designed to offer public sector innovators a similar source of knowledge.

One cannot fully understand public sector innovation if seen through the same lens as private sector innovation. When we compare well-known insights from statistics on private sector innovation with our Innovation Barometer findings, we observe fundamental differences between private and public sector innovation. For instance, the most important framework for private sector innovation is market competition but political decision-making for public sector innovation. Innovators in the two sectors can nevertheless learn a great deal from each other, especially if available data allow for a mutual understanding of sector-specific differences.

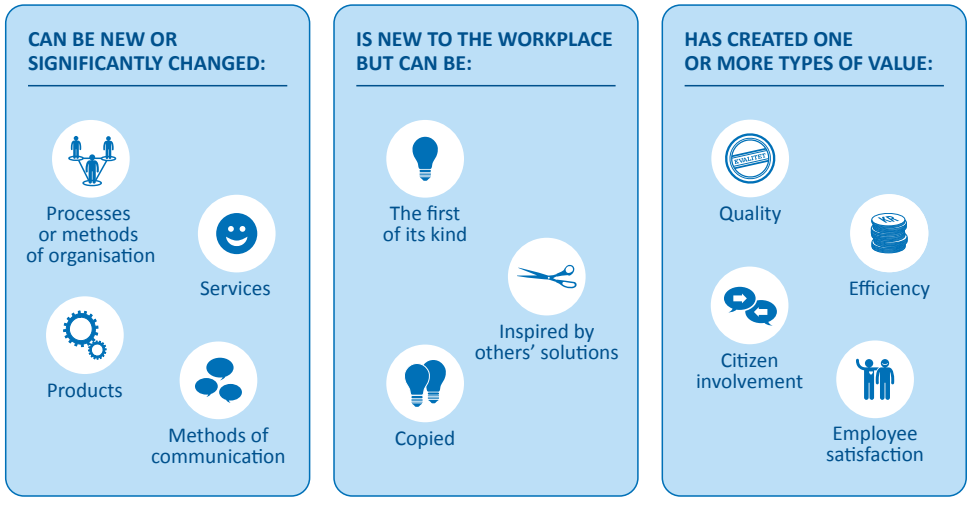
When development of the Innovation Barometer for the public sector began, in line with the desire to benefit from private sector experience, we looked for guidance in the OECD's Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data, 3rd Edition, 2005. The Oslo Manual, which focuses on innovation in the private sector, recommends measuring innovation at the level of the smallest legal units with some authority. In the context of the public sector this means individual workplaces like kindergartens, nursing homes and schools.

Public sector workplaces were asked whether they had introduced an innovation over a two-year period. We applied an adapted version of the definition of innovation used in the Oslo Manual, replacing, for instance private sector marketing innovation with public sector innovation in communication.

In this report public sector innovation is defined as new or significantly changed processes or methods of organisation, services, products or communication. The innovation must be new to the workplace, but the workplace does not have to be the original inventor. The innovation can also be copied from others or inspired by others' solutions. The innovation must have created one or more types of value, such as quality, efficiency, citizen involvement or employee satisfaction. See figure 1. The Norwegian Innovation Barometer also includes value for businesses as a successful outcome of innovation.

FIGURE 1

What is public sector innovation?



Highly innovative Nordic public sectors

As shown in figure 2, large majorities of Nordic public workplaces are innovative, i.e. they have introduced one or more innovations over a two-year period. In Denmark, Iceland, Norway and Sweden approximately four out of five public sector workplaces are innovative, while 95% of Finnish municipal workplaces are. One possible reason for this high level of public innovation is that the Nordic countries have relatively large public sectors.

Like most countries, the Nordic countries are experiencing pressure in their public sectors. This is, for example due to demographic changes and rising expectations from citizens. Yet, by international standards, the public sectors in the Nordic countries are quite resourceful. Nordic public sectors employ many well-educated people and have excellent opportunities for collaboration with strong research environments, highly innovative private companies and a vibrant third sector.

So, one may well expect a high capacity for innovation. And perhaps also a particularly great need for innovation. As public spending accounts for a large share of gross domestic product, the need for the public sector to be innovative and efficient is high if the Nordic countries are to maintain their strong international competitiveness. In sum, when the public sector is resourceful and large, innovation is both expected and needed.

While we have reason to suspect that the share of innovative public sector workplaces is relatively high in the Nordic countries compared to other countries, it is impossible to know this with certainty until countries that do not look like the Nordic countries conduct similar surveys.

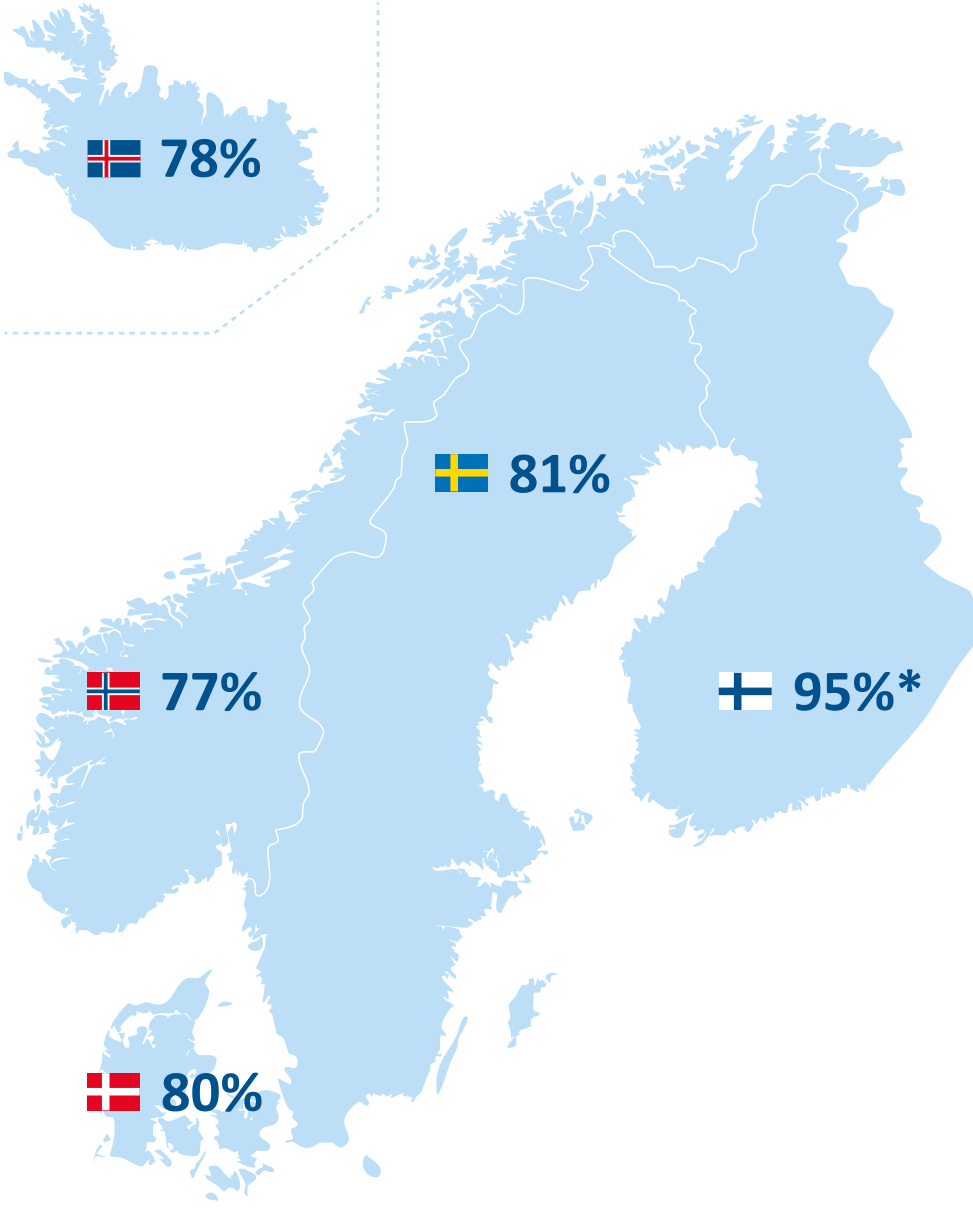
At this stage we can offer no clear explanation as to why the Finnish survey results show a higher frequency of public sector innovation, but one possible reason is that Finland has a strong national agenda to promote experimentation, called Experimental Finland, which may help increase innovation activity in public sector workplaces. However, we need to interpret the differences between Finland and the other Nordic countries with caution, as the Finnish sample is relatively small and only includes municipal workplaces.

The Finnish and Norwegian cases on pages 12 and 13 are both examples of public sector innovation improving quality of services without an increase in expenditure. The Norwegian case also illustrates how adapting solutions developed elsewhere can be a shortcut to innovation, a theme we will delve into further below.

FIGURE 2

Innovative Nordic public sector workplaces

Share of public sector workplaces that have introduced one or more innovations during a two-year period



* Municipal level only

Denmark Finland Iceland Norway Sweden

CASE **FINLAND**

Emergency medical services brought into people's homes

Mobile emergency medical care, which was introduced in Finland some years ago, has a variety of advantages: patients can avoid unnecessary visits to hospital emergency rooms; various care needs can be addressed in advance; and acute care can be provided even if an emergency care unit is not available. The outcomes and user feedback have been positive. Finland's emergency medical care model, which costs about 30% less to operate than previous ones, promotes a leaner organisation and supports information management, development of skills and care.

BEFORE In acute situations patients went to a hospital emergency room or called the emergency response centre for transport to the hospital.

AFTER Situations requiring acute care are mainly dealt with in the patient's home, with patients subsequently referred to the right service. The emergency response centre or a health professional in home care, a nursing home or service home now call the mobile emergency medical care service on the patient's behalf.

Launched in 2016 by Eksote, the South Karelia Social and Health Care District, the model provides mobile emergency medical care as part of the joint emergency services of member municipalities. It is not a regular ambulance but a unit consisting of a single paramedic who can assess the patient's need for care and administer many of the treatments in the patient's home that nurses typically provide in a hospital emergency room, e.g. blood tests, intravenous medicine, assessment of patient's condition and stitching minor wounds. The paramedic has access to the same medical records as other Eksote units.

The paramedic can consult a physician via a video link, just as further treatment is also ensured because the paramedic can make appointments directly with a physician or make other arrangements for maintaining the patient's functional capacity.

This new coordinated and digitally supported model brings emergency hospital services, emergency care and home nursing into a patient's home, making it possible for people to remain in their own homes, leading to higher standards and more cost-effective care and services.

CASE **NORWAY**

Adapting developmental learning

The Norwegian municipality of Skien improved the academic results of secondary school students in mathematics considerably by introducing a new teaching methodology. Faced with substandard results, Skien looked for innovative solutions in municipalities with similar difficulties and adapted a solution developed in the municipality of Sandnes. The introduction of the new teaching methodology was facilitated by collaborating with Sandnes, by pursuing long-term strategic efforts in the local school system and by focusing on specific goals in Skien.

BEFORE In recent years math grades declined in Skien, with half of all secondary school students scoring 1 or 2 in 2013 on a scale where 6 rates the highest. Chief administrators in the municipality looked for successful solutions in other municipalities that had experienced similar issues. They found what they were looking for in Sandnes, where a Russian teaching methodology called developmental learning is used. Russian native Natasha Blank, a lecturer at the University of Stavanger, introduced the methodology in Sandnes and helped translate relevant Russian textbooks into Norwegian.

Developmental learning teaches math entirely differently from how it is traditionally taught in Norway. The tasks are more varied and more progressive, allowing pupils to match their own level more easily. Schools in Sandnes using this methodology score far above the Norwegian average.

AFTER When Skien introduced developmental learning in math, it drew on experiences and work already done in Sandnes, for example, by reusing textbooks. After initially testing the methodology in a few classes and achieving promising results, Skien expanded the methodology to other classes and schools. Positive evaluations by teachers and improved math scores in the test classes helped in spreading the methodology widely to other schools. At present, academic results in math have generally improved, with some schools in Skien performing among the region's best in math. Inspired by the results so far, Skien has set a goal for 90% of students to complete high school within the prescribed amount of time by 2023.

Steal with pride! The circular economy of public sector innovation

While the details of private sector innovation are often kept confidential to prevent competitors from copying an innovation, the public sector usually has no real reason to keep its innovations secret. When great solutions are developed in the public sector, there is no reason for others not to use them. What works well in one workplace will probably also work well in a similar workplace, though some tailoring might be required.

When talking about innovation, we tend to focus on brand new solutions, developed from scratch, but the Nordic Innovation Barometers all show that only a minority of public sector innovations are considered first of their kind. In Iceland, where the share of new solutions is the highest, 24% of public sector innovations are the first of their kind. The share in Norway, at just 12%, is the lowest.

In all five Nordic countries innovations are more likely to be new to the workplace but based on another innovation – most often inspired by others' solutions and adapted to fit the new workplace, and less often an exact replica. Others' solutions are the underlying basis for 49% (Norway) to 67% (Sweden) of innovations, while around 15% of innovations are copied from others, with Norway standing out at 32%. See figure 3. We have no clear answer as to why Norwegian workplaces are more likely to simply copy good solutions, but perhaps copying is seen as a smarter move and not spurned as a low-effort solution.

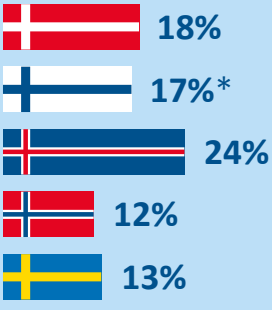
Although original innovations might seem more impressive at first glance, there is nothing inherently better in developing new innovations compared to reusing existing ones. The public sector can benefit from minimising unintended parallel development of novel solutions to the same problem, although some competition between multiple potential solutions can serve to take public sector innovation a step further. For a single workplace, reusing others' solutions can be a shortcut to reaping the benefits of the innovation without expending too many resources to develop the idea. The risk of an innovation failing is also smaller if it has already been successfully implemented elsewhere. The benefits of recycling innovation point to a clear conclusion: Do not be ashamed to reuse an innovation – steal the innovations of others with pride!

FIGURE 3

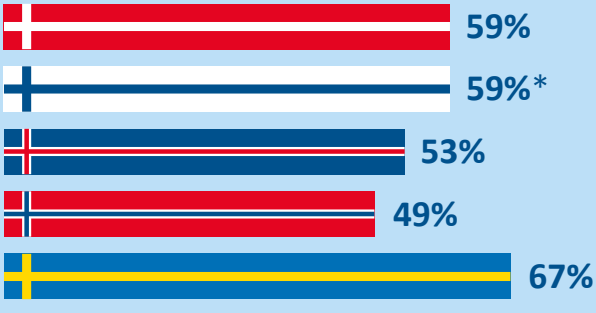
Recycling innovation is widespread

Share of innovations that are first of their kind, inspired by others' solutions or copied

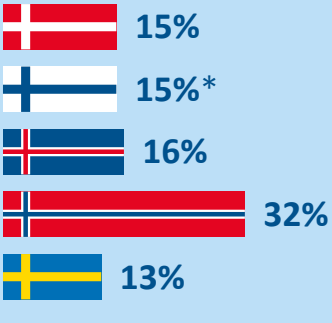
First of its kind



Inspired by others' solutions, but adapted



Copied from others



* Municipal level only

Denmark Finland Iceland Norway Sweden

How to accelerate recycling: Spread innovation actively

One of the challenges in recycling innovation is matching an existing innovation with someone in need of that innovation. A workplace looking for an innovative solution to a specific problem might not know if someone already has the solution. That is why recycling innovation becomes easier when workplaces actively seek to spread their innovations, for instance by making information about them easily available to others.

The Nordic Innovation Barometers show that about half the workplaces surveyed have made an effort to spread their most recent innovation. Finland has done it most often (66%) and Norway the least (42%). See figure 4. We know that workplaces are less likely to spread innovations that they have copied, which may explain why the percentage in Norway is comparatively low.

Innovations can be spread in multiple ways, for instance through publications such as newsletters, websites and journals, not to mention on social media. Face-to-face interactions, such as conference presentations and informal encounters at network meetings can also serve to disseminate innovations. Our experience shows that when workplaces reuse innovations, physical meetings are more likely to provide inspiration than publications. Consequently workplaces should keep in mind that meeting in person is perhaps the most powerful tool to share their innovation with other interested workplaces.

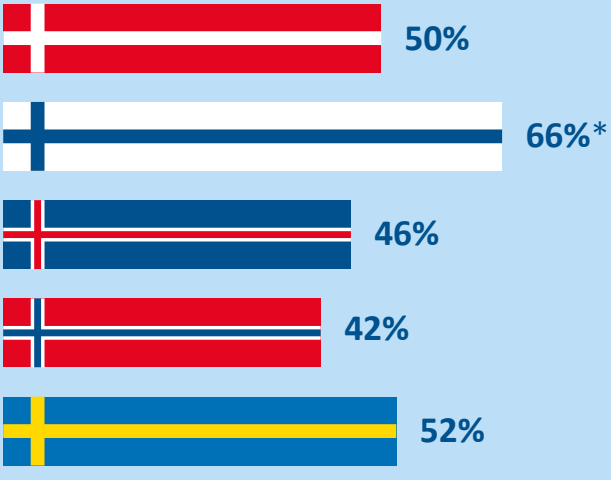
Other workplaces obviously benefit when workplaces make an effort to spread their innovations, but this process can also be mutually beneficial. Workplaces copying or adapting the innovation see the innovation with fresh eyes, possibly leading to further development of the innovation to the advantage of the innovation's originator. More workplaces using the same innovation is also valuable in terms of evaluating or formalising an innovation, as multiple workplaces can share direct expenses and other resources.

In addition novel solutions can sometimes add value by helping to brand public sector workplaces fortunate enough to have their innovation reused by others. As an example, Danes often talk about the Swedish model when referring to a now widely used method initially developed in the Swedish municipality of Borås on the early prevention of problems faced by children who are socially vulnerable. This type of incentive differs greatly from those in the private sector, where copying is a business risk and sometimes restricted by patents.

FIGURE 4

Taking action to spread innovation

Share of innovations where active measures have been taken to spread use of the innovation



* Municipal level only

Denmark Finland Iceland Norway Sweden

Collaboration on innovation is the Nordic norm

An important feature of public sector innovation is that it often happens in collaboration, for instance with other public sector workplaces, private companies, citizens or knowledge institutions.

The collaborative innovation potential lies in the meeting of actors with different experiences, ideas and skills. The innovation power of such encounters is greater than the sum of each participant's opportunities separately.

Cooperating to find new solutions can also arise from the realisation that the public sector faces a variety of complex problems, also known as wicked problems, characterised by unclear causal relationships, conflicting objectives and often the presence of multiple stakeholders with overlapping decision-making spheres. Hence, wicked problems are difficult for a single public sector workplace to solve on their own.

As the public sector has the good fortunate of being trusted with multiple complex problems of all kinds, many different potential partners are often available and both able and willing to engage in finding novel solutions. Collaborative innovation in the public sector is, in short, value-adding, necessary and possible. Fortunately, according to the Nordic Innovation Barometer, collaboration is also widespread.

As figure 5 shows, about four in five public sector innovations in the Nordic countries occur collaboratively and at a strikingly similar level, ranging from 78% in Sweden to 83% in Finland.

While collaborative innovation has many advantages, there is nothing inherently wrong with introducing an innovation without collaborating. If the innovation is simple and easily implemented, collaboration may not be necessary.

The Danish case on page 20 presents an innovation introducing a new type of road interchange that would not have been possible without collaboration.

FIGURE 5

Collaborative innovation is the Nordic norm

Share of innovations carried out in collaboration with one or more partners

* Municipal level only

Denmark Finland Iceland Norway Sweden

CASE **DENMARK**

Safe roads with diverging diamond interchange

A completely new type of road design has ensured better capacity and reduced traffic congestion at an interchange and stretch of motorway south of Denmark's third largest city, Odense. The Danish Road Directorate developed and adapted the design jointly with U.S. road authorities. As a result, motorists can now enter the motorway safer and quicker than before.

BEFORE The increasing number of motorists in recent years is causing greater congestion and traffic jams on certain parts of the motorway, making exiting and entering the motorway risky and time-consuming. One example is interchange 52 in Odense, where tailbacks have been a problem and the source of dangerous situations, prompting the Danish Road Directorate to think innovatively and search for inspiration abroad.

AFTER Jointly with the U.S. Department of Transportation in the state of Missouri, the Danish Road Directorate developed and adapted a new road design called a diverging diamond interchange, which has been successfully used for many years for motorway ramps in the United States. This type of interchange allows traffic to change lanes above the motorway, with a brief drive on the opposite side of the road from what is customary. This allows motorists exiting and entering the motorway to turn left without having to wait for a gap in the oncoming traffic. The first of its kind in Denmark the interchange not only saves time but provides greater road safety and better future proofing of capacity.

The diverging diamond interchange in Odense has made a significant impact since opening in September 2017. What is more, the solution is cheaper than traditional methods requiring expensive new structures above the motorway. Motorists have learned to adapt to the new way of driving on the opposite side of the road without resulting in road safety issues.

Collaboration with a multitude of partners

In the Innovation Barometer surveys, the questions on collaboration also explore who the collaborators are. As previously mentioned, we should generally be careful about drawing strong conclusions when comparing the Nordic countries. This holds especially true when comparing collaborators because the various national surveys differ greatly in terms of their answer categories concerning collaborators. The Finnish survey, for example does not mention partners inside of the same organisation, while the Swedish one does not include international partners as a category. Figure 6 on the next page merges some of the original survey categories into one to make collaborators more comparable between countries.

Figure 6 shows how often each of the eight different types of partners collaborates, stated as a percentage of all public sector innovations. Because a public sector workplace sometimes collaborates with two or more external partners on the same innovation, the sum of the percentages for the eight types of partners exceeds 100%.

Overall, the most common partner in collaborative innovations in the public sector is other public workplaces within the same organisation or from an outside public workplace. By same organisation, we mean the municipality, region or ministerial area where the workplace is located. An example of the same organisation is a school working together with a day care centre in the same municipality, while a municipal nursing home that collaborates with a regional hospital is an example of a partner outside the same organisation. Note that the inside/outside distinction relies on the specific structure of a country's public sector.

Collaborating with other public sector workplaces can be a necessity. The public sector consists of many highly specialised entities, often with different legal foundations and political goals. To create value, however, public innovation must put the needs and perspectives of citizens first. That implies we need to address the complex way we have chosen to organise the public sector as a back-office problem, a problem often solved through collaboration.

In Denmark, Norway and Sweden more than half of the innovations covered in the two-year period were done in collaboration with another workplace within the same organisation, while in Iceland the share was just under half. The Finnish survey did not include this category. In Sweden an additional 33% of innovations were done in collaboration with a central unit within the organisation, such as units specifically focusing on developing novel solutions. Figure 6 does not contain this category because it was only part of the Swedish survey.

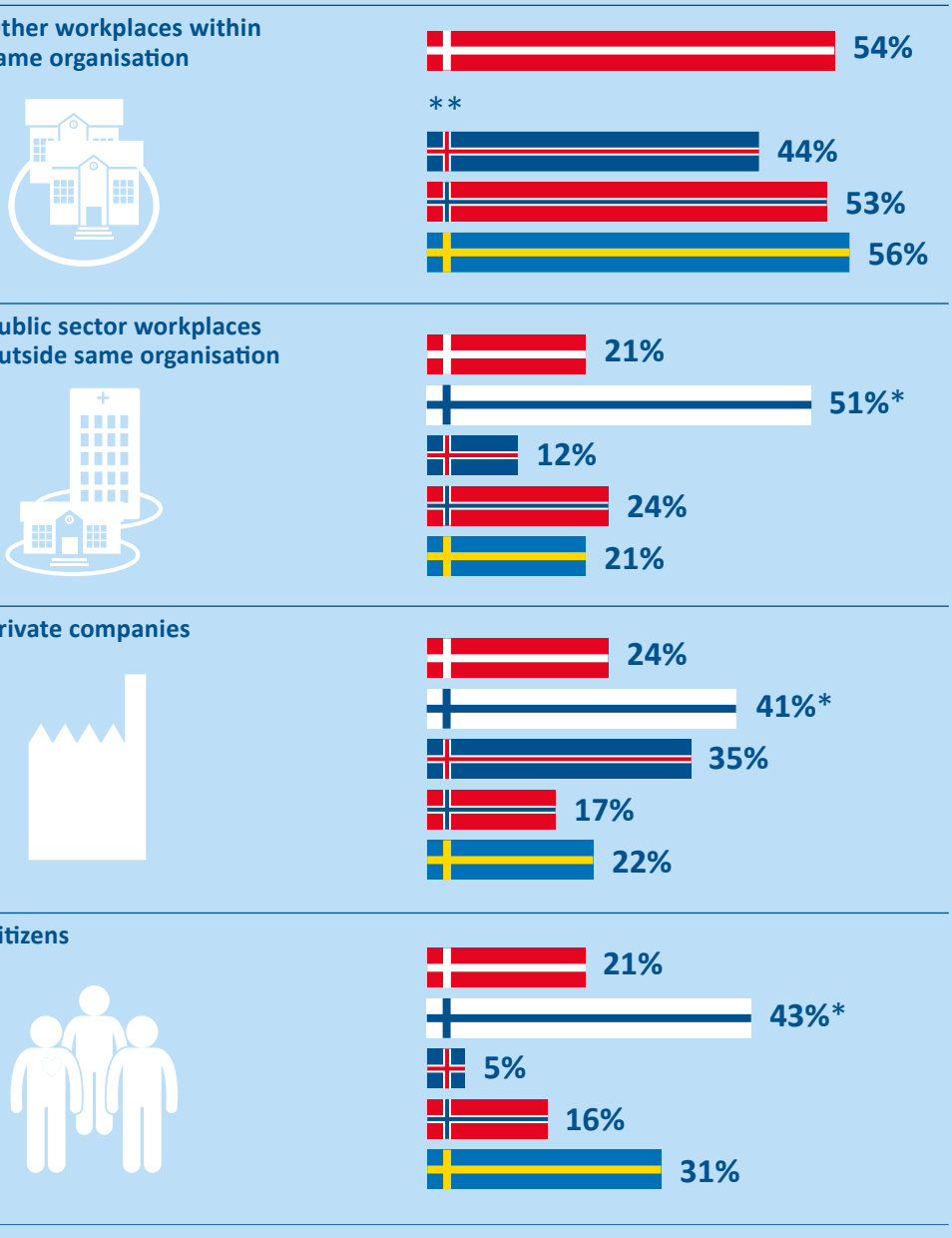
The share of innovative collaboration in public sector workplaces done outside the organisation varies greatly. In Iceland it was only 12%, but more than 50% in Finland.

Private companies, such as consultants and suppliers are also a common type of partner, just as private companies can contribute skills and resources sometimes unavailable in a public sector workplace, e.g. in the development of new technologies. The private company gains insights into the needs and processes of a public sector workplace and has a chance to, for instance, test products in an actual workplace. Collaboration with private companies is most common in Finland (41%) and least common in Norway (17%).

FIGURE 6

Many types of innovation collaborators

Share of innovations carried out in collaboration with:



* Municipal level only
** Not asked
*** Knowledge institutions and foundations included in same question

Denmark Finland Iceland Norway Sweden

Voluntary organisations

10%
18%*
6%
3%
5%

Knowledge institutions

13%
12%*
11%
13%
7%***

Foundations

3%
4%*
10%
19%
***

International partners

3%
4%*
19%
2%
**

* Municipal level only
** Not asked
*** Knowledge institutions and foundations included in same question

Denmark Finland Iceland Norway Sweden

Another partner is citizens, who are often the recipients or users of public sector innovation. Collaborating with them can produce valuable insight into how existing services are perceived and how they can be changed, for example. How common collaboration with citizens is varies greatly between the Nordic countries. In Finland and Sweden, collaboration with citizens is relatively common, at 43% and 31%, respectively, while on the other end of the spectrum is Iceland at only 5%.

Knowledge institutions such as universities and university colleges serve as partners in just over one in 10 innovations in each country, except for Sweden, where it is 7% and also includes collaboration with foundations. One possible role of knowledge institutions in public sector innovations is to provide frontier knowledge and to give support that is otherwise unavailable in public sector workplaces.

Voluntary organisations represent another possible partner in public sector innovation due to their dedication to and comprehensive knowledge about a specific cause. Based on that drive and knowledge, volunteers sometimes find creative solutions to a problem that professional workplaces might not develop. Voluntary organisations are most commonly partners in Finland (18%) and least commonly in Norway (3%).

Foundations traditionally provide financial support to public sector innovations and take steps to ensure that the money is well spent. Sometimes they play a more active role in innovations, e.g. by providing specialised knowledge or supervision. Collaboration with foundations is not common in Denmark (3%) or in Finland (4%), but Iceland (10%) has its fair share and Norway can boast with a share of nearly one in five innovations but this also includes public support schemes. In Sweden, foundations were grouped with knowledge institutions and not as a separate category.

The last category shown in figure 6 is international partners, which was not a category in the Swedish survey. This type of partner is rare in Denmark (3%), Finland (4%) and Norway (2%) but, at almost one in five, is quite common in Iceland, perhaps due to the country's small population. With around only 350,000 inhabitants, it is not surprising that Icelandic workplaces often look beyond their national borders to find the right partners. The case on the next page is from Iceland and presents an example of international collaboration between the University of Akureyri and Michigan State University (US) involving the use of telepresence robots.

In addition to the above-mentioned partners, Norway's survey included unions and union representatives, which are part of 18% of innovations. Figure 6 does not show this category.

CASE **ICELAND**

Telepresence robots enhance learning community

The University of Akureyri in northern Iceland provides both students and teachers with access to telepresence robots to attend classes and meetings or to teach. The university has a long history of offering distance education in Iceland. Today, with about 70% of students located outside the city of Akureyri, weather no longer hampers participation because students and teachers can still meet using a robot, called *fjærvera*, or telepresence. This digital technology has been essential in promoting a learning community within the university.

BEFORE When students and teachers were unable to attend lessons and meetings in Akureyri, online meetings were sometimes made available using, e.g. Zoom or Skype for Business, allowing users to connect to the location via a computer or smart device. One of the disadvantages is that users have no control on site, which means they cannot move around to see fellow students, co-workers or objects better. Users take up less physical space compared to being present in person and teachers/co-workers have to ensure that a connection can be established and the sound adjusted.

AFTER In collaboration with Michigan State University (US), the University of Akureyri introduced telepresence robots that are controlled by users via a computer or smart device. Users can move around campus, attend lessons, hold meetings, participate in conversations and teach on campus. What is more, users can move around to better see fellow students and co-workers, allowing them to take up more physical space, comparable to those present. For example, when people are seated at a table, the telepresence robot also has a seat.

One of the advantages is that the user is in control and can move around, improving communications within the university for students and teachers who do not live in or are outside Akureyri. Users report that having a presence on location is one of the major advantages of using telepresence robots, not to mention the ability to be on campus even when the weather is poor or other factors interfere. The project, which saves users time and money, is environmentally friendly and reduces the carbon footprint because traveling to campus is not always necessary.

Employee-driven innovation is a key Nordic ingredient

For more than a decade employee-driven innovation, which involves employees actively and systematically contributing to the innovation process, has been central to the debate on public sector development in the Nordic region. That is why, to an experienced observer, it may not come as a surprise when our results show that employees play a key role in innovation in the public sector.

It is worth remembering that in the not too distant past before the turn of the millennium, innovation was the prerogative of experts and top executives alone. Today assigning so few individuals the license to innovate seems illogical and limiting in terms of the capacity to innovate. The creativity of ordinary public sector employees and their knowledge about citizens' needs are now recognised as essential for successful innovation.

The Innovation Barometer, interested in learning more about the role of employees, asked managers to anonymously reply whether employees contributed to (or deterred) the latest innovation. More than eight in 10 workplaces in Denmark, Finland, Iceland and Norway reported that employees contributed to some extent or to a high extent. This means that employees are one of the most frequent drivers of innovation

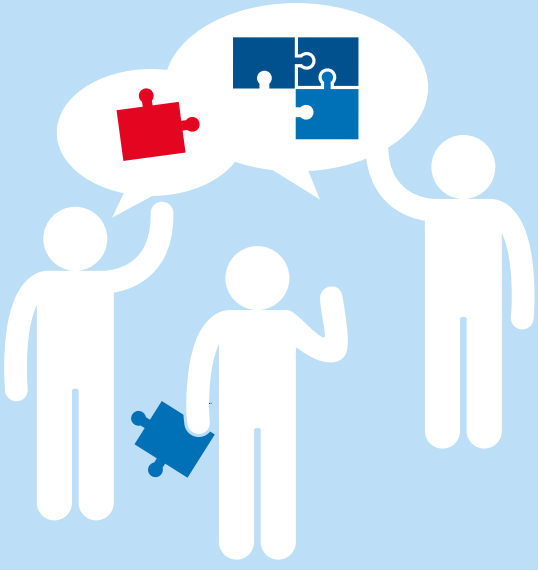
Our systematically measured results produce an image that is in stark contrast to popular myths containing anecdotes about employees being resistant to change. The reality is that employee contributions are remarkably high. How should we interpret this?

Perhaps social trust plays a role. Actively contributing to an innovation process as an employee requires confidence in both oneself and in others, not to mention one’s belief in the capacity to contribute to change for the benefit of others. At the same time, one must be convinced that management and co-workers will be receptive to one's initiative and efforts, even if the innovation process fails. Without social trust, little or no risk-taking occurs. Social trust happens to be known as Nordic gold because the Nordic countries have the highest levels of social trust in the world. Multiple studies show that social trust benefits both the economy and individuals. And, as this report now demonstrates, public sector innovation.

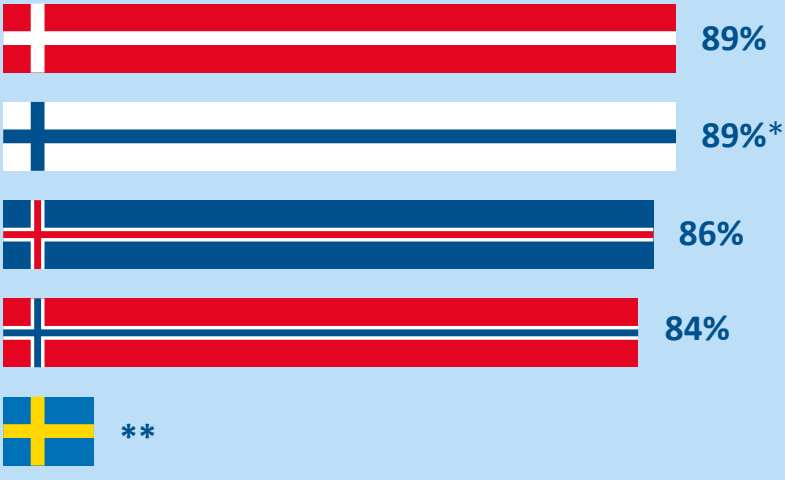
Although the Swedish survey did not specifically cover employee-driven innovation, Swedish employees clearly play a role. Employees and managers are part of the reason why four in ten innovations in Sweden were introduced in the first place. The Swedish case presented on page 28 on SMS Lifeguards describes a good example of an innovation suggested by a professor at the Heart Stop Center.

FIGURE 7

Employee-driven innovation



Share of innovations in which employee contributions were a driving factor



* Municipal level only
** Not asked

Denmark Finland Iceland Norway Sweden

CASE **SWEDEN**

SMS Lifeguards saves lives

Every year around 10,000 Swedes die as a result of cardiac arrest, but the individual survial rate doubles or triples when immeidate cardio pulminary resusciation (CPR) is administered.

With the support of digital technology, faster assistance is now available in the event of a sudden cardiac arrest outside a hospital. SMS Lifeguards has innovated the warning system by using CPR-trained volunteers to gain time before professional healthcare workers arrive. Through mobile positioning technology, people trained in CPR – SMS Lifeguards – are alerted on their mobile phones when a suspected cardiac arrest occurs within 500 metres.

BEFORE Studies in the early 2000s in Stockholm showed that only three percent of those who experienced cardiac arrest survived. One day while sitting on a bus that had temporarily stopped, a professor at the Heart Stop Center came up with an idea to improve the survival rate after discovering, as the bus pulled away, that a woman was lying on the street and an ambulance had arrived. If this had happened today the professor would have received a text message directly from SOS Alarm and been able to help before the ambulance arrived.

AFTER Today around 18,000 people are registered as SMS Lifeguards, and with over three million Swedes trained in CPR, the potential to recruit even more is great.

SMS Lifeguards represents a combination of medicine, social sciences, IT and volunteering that improves otherwise very low survival rates in the most acute conditions. More fundamentally, a key feature of SMS Lifeguards is that it is conditioned by social trust, which is at a high level in the Nordic countries, according to all available research.

A research project involving Karolinska Institutet and Södersjukhuset, in collaboration with SOS Alarm and the Swedish Heart-Lung Foundation, developed SMS Lifeguards. Now run by a commercial enterprise, the system is currently in operation in various regions throughout Sweden.

Ongoing research on the system and its impact on survival rates shows that SMS Lifeguards arrived before the ambulance more than 50% of the time. More research is needed, however, to establish how many lives have been saved thanks to SMS Lifeguards.

Innovation Barometer contacts

To learn more about the Innovation Barometers please visit **innovationbarometer.org**, the national Innovation Barometer websites or reach out to the national contact persons listed below.

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The Nordic Public Sector Innovation Hub

The Nordic Public Sector Innovation Hub is an informal collaboration between public sector innovation actors at the national level in Denmark, Finland, Iceland, Norway and Sweden.

The collaboration enhances work on public sector innovation in the five Nordic countries. Recognising our similarities in terms of mandates, interests and activities, we collaborate to efficiently deliver high-quality results to our national stakeholders. Activities in the hub are closely linked to our respective national missions and tasks and need not involve all countries. When there is a shared interest, the relevant actors join forces to take action, regardless of differences in nationality and general focus.

The Nordic Public Sector Innovation Hub collaborators for this publication are:

National Centre for Public Sector Innovation (DK)

Statistics Denmark (DK)

Association of Finnish Local and Regional Authorities (FI)

Icelandic Association of Local Authorities (IS)

Ministry of Finance and Economic Affairs (IS)

Norwegian Association of Local and Regional Authorities (NO)

Agency for Public Management and eGovernment (NO)

Swedish Association of Local Authorities and Regions (SE)

Vinnova (SE)

What does public sector innovation look like in the context of public schools, libraries and hospitals? How innovative is the public sector, who collaborates with public workplaces and how often do new solutions spread across the public sector?

The Nordic Innovation Barometer addresses these questions and more using a yardstick new to the public sector based on nationwide survey data collected at the level of the individual public sector workplace. This publication presents the first-ever comparison of key results from Denmark, Finland, Iceland, Norway and Sweden in the hope of inspiring other countries to conduct similar surveys.

The Nordic Innovation Barometer is a joint venture of the Nordic Public Sector Innovation Hub, an informal collaboration between the following organisations:

NATIONAL CENTRE FOR PUBLIC SECTOR INNOVATION

STATISTICS DENMARK

SAMBAND ÍSLENSKRA SVEITARFÉLAGA

Government of Iceland
Ministry of Finance and Economic Affairs

Local and Regional Government Finland

KS

Difi
Agency for Public Management and eGovernment

Swedish Association of Local Authorities and Regions

VINNOVA
Sweden's Innovation Agency