Governing the Digital Transition in the Nordic Regions

The Nordic countries are often positioned as digital front-runners in the European and global contexts. Digitalisation is changing the nature of business, jobs and provision of public services. Rapid digitalisation and technological change require governments and organisations to introduce proactive measures to embrace new digitalisation opportunities. How to create an enabling environment for digital transformation at the local, regional, national and Nordic levels?

This policy brief explores the local and regional dimension of digital transformation. It examines the opportunities and challenges that Nordic regions are facing related to digitalisation, and highlights some lessons learned from five Nordic regions implementing digitalisation agendas.

It also sets out key recommendations for creating an enabling environment for digitalisation work at different governance levels. This research is part of the work of the Nordic Thematic Group on Innovative and Resilient Regions established by the Nordic Council of Ministers.

BACKGROUND

While the Nordic regions are generally well-positioned to maximise the benefits of digitalisation due to their good access to digital infrastructure, they are at different stages in terms of digitalisation implementation.

Analysing how Nordic front-runner regions work with digitalisation – identifying their focus areas and approaches, and revealing the challenges and opportunities – was one of the objectives of the study, *Governing the digital transition in Nordic regions: The human element.* This study was conducted by Nordregio on behalf of the Nordic Thematic Group on Innovative and Resilient Regions established by the Nordic Council of Ministers. Five Nordic regions and local authorities were chosen for in-depth analysis: Southern Denmark (Vejle); Tampere Region; the municipality of Reykjavík; Finnmark (Vardø); and Skåne (Helsingborg). This policy brief is based on what has been learned from this study.

> In this study, **digitalisation** is defined as the transformation of all sectors of our economy, government and society, based on the large-scale adoption of existing and emerging digital technologies.
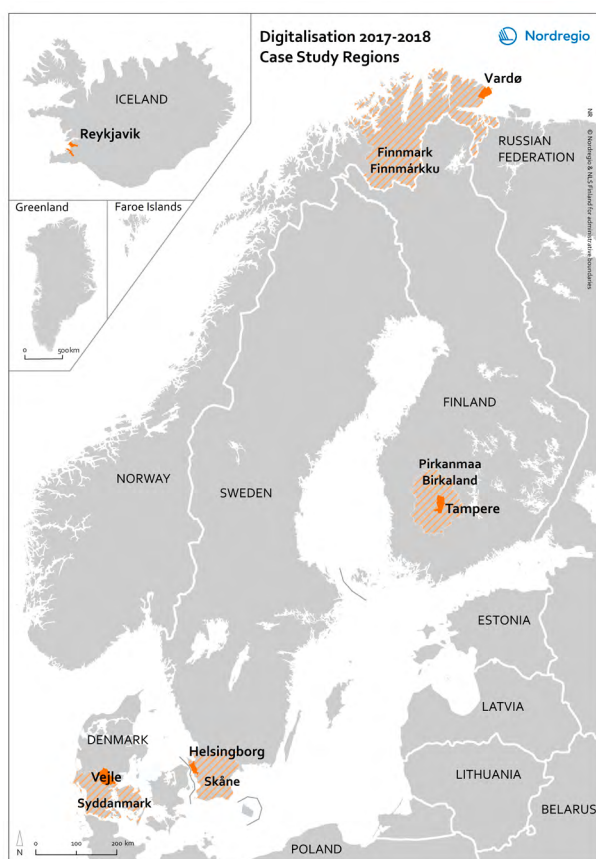
Map: Case-study regions selected for field research.

CASE STUDIES - PROFILES

Southern Denmark (Vejle). A region with a strong innovation environment (sustainable energy, health, robotics) and cluster collaboration. A focus on digitalisation in health care, including the use of telemedicine.

Tampere Region. A high concentration of high-tech, skilled workers due to the legacy of Nokia and Microsoft. A comprehensive approach to digitalisation incorporated into the region's smart specialisation strategy and the Smart Tampere programme.

Reykjavík. Focus on developing digital services, with the Digital Service Centre and its three units (the smart city unit, the digital service team and the service-disruption team) driving the work.

Finnmark (Vardø). A remote rural region on the Barents Sea where digital technologies are used as tools to combat outward migration from the region and improve quality of life. Vardø's digitalisation work is most pronounced in the field of education.

Skåne Region (Helsingborg). Focus on improving services and dialogue with local people, as well as organisational change. The local authority management embraces creativity, engagement, risk-taking and piloting at small scale as the key principles of their digitalisation approach.

DIGITALISATION FROM A REGIONAL DEVELOPMENT PERSPECTIVE - KEY OPPORTUNITY AND CHALLENGES

When thinking about digitalisation as a tool for sustainable regional development, it is useful to consider the economic, social and environmental aspects.

■ From an **economic perspective**, digitalisation has important implications for the **labour market** (e.g. through automation and facilitating remote work) and can result in **skills shortages**. Skills shortages appear to be particularly pronounced in emerging industries associated with digitalisation, such as artificial intelligence (AI) and machine learning, but they can also be a problem in other parts of the labour market. Geography also plays an important role, with remote and rural areas struggling more than larger cities to attract skills and talent.

- In the Nordic regions and municipalities involved in this study, it appears that employees who work well at the intersection of people and technology are already in particular demand. The jobs that require such skills are often more appealing to women than traditional ICT industry jobs. This can help to close the digital gender gap and enhance the inclusiveness of the ICT industry.

■ From a **business perspective,** digitalisation might change the way companies operate, change the core of their business models or support the development of new business models facilitated by access to new technologies and big data. In the Nordic regions, businesses are embracing opportunities for new business models that encourage more diverse regional economies.

- The most obvious example of new business models was found in Tampere, a region once heavily reliant on two large international companies (Nokia and Microsoft) as providers of high-skilled jobs. Tampere now hosts a diverse array of different sized companies that focus on both the domestic and international markets.
- Digital health-care and health-tech innovations are among the fastest developing industries worldwide, and are strongly supported in the Skåne and Southern Denmark regions.

■ From a **social perspective**, digitalisation has the potential to improve the quality and efficiency of public services provision by adding digital functions to existing municipal services, resulting in greater access to information, transparency and openness, higher service levels and more public participation.

- For the Southern Denmark and Skåne regions, digitalisation is seen as a key tool to increase productivity in the health-care sector, while Vardø is an outstanding example of a small, remote municipality that has improved the standard of its education through the introduction of iPads as a teaching tool.

■ At the same time, considerable **disparities** remain, not only when it comes to different groups in society accessing digital technologies (by socio-economic status, age, gender and health) but also when comparing rural and urban areas in terms of access to digital infrastructure and the uptake of digital technologies and innovations.

- The case studies demonstrate different approaches to measures to enhance digital inclusiveness for different groups in society. In Helsingborg municipality, a physical platform called Digidel has been created to raise digital awareness and competence. It allows local people to try out, borrow and become acquainted with the latest technologies.
- Tampere addresses the urban-rural digital divide through its 'smart city region' approach that envisages removing fixed spatial boundaries in the context of digitalisation. Tampere's approach to digitalisation extends beyond the urban geography and encompasses the regional economy as a whole.

■ From an **environmental perspective**, digital technologies have the potential to make cities, regions and villages 'smarter' and greener by reducing consumption and lowering carbon emissions. Smart city solutions generally involve the adoption of technologies such as automation, machine learning and the Internet of Things (IoT) to support city functions such as public transport, traffic, lighting, energy systems and waste and water management. Smart city solutions are also being used to provide data to support decision-making and to monitor progress towards environmental goals.

- The smart city unit in Reykjavík implements digital solutions in the city. A concrete example of this is the 'smart bins project, which called for collaboration between the smart city team and the waste disposal team. It has resulted in a considerable reduction in the frequency with which bins need to be emptied, which has freed up municipal staff to take on other roles.

WHAT IS IN FOCUS ON THE DIGITALISATION AGENDA AT REGIONAL AND LOCAL LEVELS?

At local and regional levels, digital technologies are primarily seen as tools to **fulfil existing responsibilities and realise local and regional goals.** Specific priorities vary, based on the issues that are most pressing in the individual region or municipality and mirror the tasks and responsibilities of the authority in question.

E-health (health tech and telemedicine), developing **local business and start-up culture** and ensuring equal access to **digital infrastructure** are among the key issues being addressed at regional level.

At local level, the digitalisation initiatives have mainly focused on increasing **quality of life for residents** and solving local challenges through, for example, digitising government services and the use of digital tools to increase the quality of **education**, encourage **public participation and dialogue** and **create 'smart' cities.**

LESSONS LEARNED from five Nordic case study areas regarding the implementation of digitalisation agendas

■ Digitalisation in the public sector is a change management process that requires a long-term commitment, strong political and institutional support and a change of culture and mindset in the long run. Thus, working with digitalisation has as much to do with people as technology.

■ Small and medium-sized cities have an agility that bigger cities might not have. They may be better positioned to make use of digitalisation opportunities by being quick to adopt new practices and changes.

■ Despite the relevance of national steering and support for digitalisation, this study revealed the importance of digitalisation being embedded at a local level. It appears that the most effective attempts to harness digital opportunities take a bottom-up approach, embracing technology when appropriate to respond to local challenges, needs and priorities.

■ Co-operation in digitalisation between municipalities in the regions is not pronounced, primarily because different areas have reached different degrees of development and progress in their work with digitalisation and have different focus areas. Regions could play a stronger coordinating role in identifying collaboration opportunities and encouraging the development of joint standardised solutions.

■ Digitalisation is not the responsibility of a single department or unit in the municipalities or regions but is embedded in the work of all departments and transcends policy areas. Hence, digitalisation calls for the engagement of key people from all levels of the organisation in the process.

■ Strategies and long-term plans are useful only to a limited degree in working with digital transition at the local level due to the agile, fast-paced nature of the process. Instead, there are clear benefits in using a more flexible approach, which means allowing for experimentation, risk-taking and failure. In practice it means more testing and small-scale piloting rather than putting energy into long-term plans.

POLICY RECOMMENDATIONS

How to create an enabling environment for digital transformation at the local, regional, national and Nordic levels?

These recommendations are based on what has been learned from the study *Governing the digital transition in Nordic regions: The human element*. The target group for the recommendations consists mainly of public sector workers involved with digitalisation at different levels of governance.

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RECOMMENDATIONS FOR MUNICIPAL AND REGIONAL ACTORS:

■ **Embrace and commit to organisational change.** This includes introducing new processes and encouraging new ways of working that challenge existing structures. A few tips on how to get this process started and running:

• **Leadership.** There is a need for strong **leadership** to get everyone on board to work with digitalisation and support the process.

• **Dedicate resources** to digitalisation, including time, money and expertise (e.g. have a dedicated team to facilitate the change management process; employ 'change managers' to overcome inertia and bring co-workers on board). Dedicate resources to building the capacity of future leaders and attracting the right digital skills and talent. It is important to note that the expertise required is not primarily technical but in the fields of change management, behaviour and social relations.

• Make it a **team effort** and encourage **co-operation** (i.e. include key people from all levels of the organisation in the process to ensure that it is sustainable, and make sure time is allocated for them to participate). Also, include local people early in the process, as well as other actors from business, academia and NGOs.

• Initiate **dialogue** with and draw up a **plan to reskill workers** to overcome resistance and the insecurity associated with a fear of losing their jobs, and to help to build trust and engagement.

• Celebrate achievements and build a sense of **pride** and **ownership** of the process.

■ **Align digitalisation work with existing policy priorities.** Put local needs first – i.e. use what you want to achieve as the starting point and figure out how digital tools can best support the work. Digitalisation is never an end in itself.

■ **Avoid developing digital solutions from scratch,** especially in small towns and municipalities. Instead, use tried and tested (standard) solutions that are already available to save resources and time.

■ **Establish a good dialogue with other municipalities and learn from them.**

■ **Create an enabling environment** for fostering creativity, e.g. meeting places, smart talks and other forums that promote the exchange of ideas between different actors.

■ **Bridge the urban-rural digital divide.** Introduce digitalisation initiatives without fixed spatial boundaries, which encompass the regional economy as a whole.

RECOMMENDATIONS FOR NATIONAL LEVEL ACTORS:

■ Create **clear common standards** to ensure electronic systems developed/used at other levels are compatible and secure.

■ **Prepare for future needs in the labour market:**
- **Foster agility in education.** New ways of thinking about education and training are needed. This includes competence-based learning, flexible degree programmes that allow students to take unique, multidisciplinary combinations of courses within a single degree programme, and lifelong learning. It allows transferable skills (e.g. critical thinking and creativity) to be developed.
- Encourage **greater interaction between industry and education** at all stages of life, offering more time in industry for young people and more opportunities to learn and increase knowledge for those with established careers.
- Mechanisms to **support those affected by job losses** should allow flexibility to explore new career options.

■ **Facilitate collaboration** within and across the different levels of governance in order to avoid duplication of efforts and promote learning, exchange and uptake of good practices.

■ Make room for **different funding mechanisms and instruments,** in order to accommodate the fast-paced nature of digital transformation and encourage the development of 'thinking outside the box' solutions.

■ **Bridge the urban-rural digital divide** by creating an enabling environment for local people and businesses in rural areas. For instance, facilitate the uptake of digital technologies and innovations by businesses in rural areas.

RECOMMENDATIONS FOR NORDIC LEVEL ACTORS:

■ Foster **collaboration** across cities, regions and rural areas in the Nordic countries that face similar challenges. There is great potential for subnational knowledge transfer, collaboration and promotion of success stories, particularly in the case of small and medium-sized cities.

■ Ensure that national **standards** are compatible between countries, as well as within them.

■ **Encourage Nordic exchange programmes and peer learning.**

ABOUT THIS POLICY BRIEF

This policy brief is based on the study titled "Governing the digital transition in Nordic Regions: The human element" (Nordregio, 2019) and is part of the work of the Nordic Thematic Group on Innovative and Resilient Regions within the Nordic Council of Ministers.

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