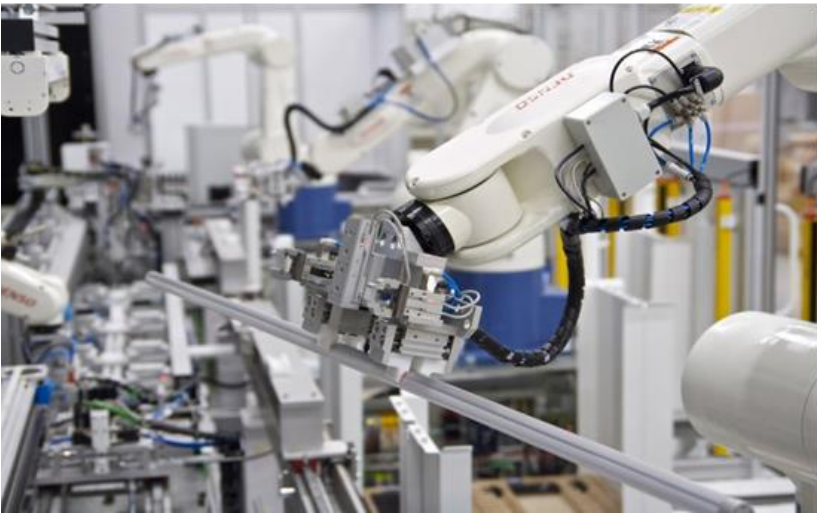




DANISH BUSINESS AUTHORITY



Automation and digitization in Nordic manufacturing companies

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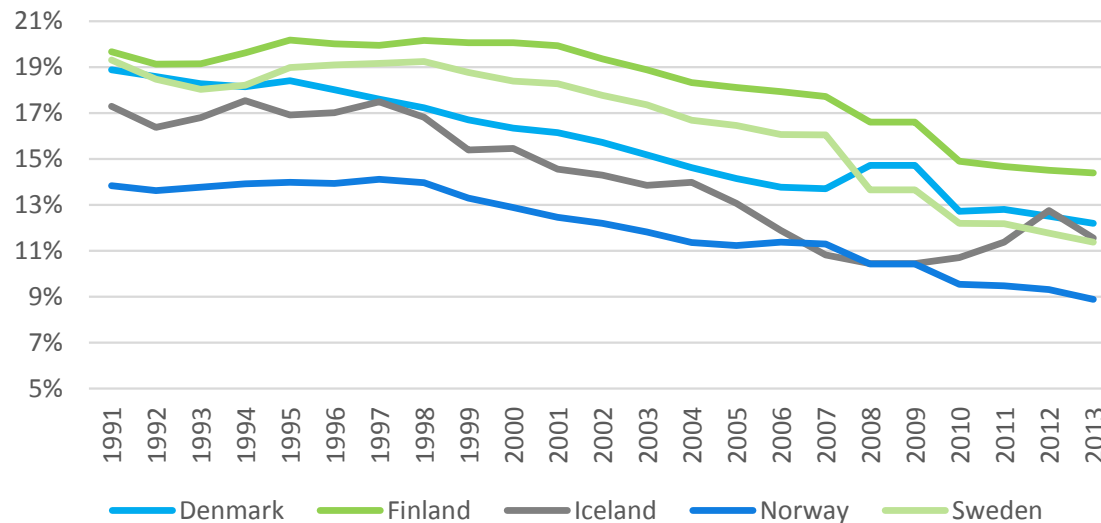
Why manufacturing?

- Manufacturing represents more than half of Nordic exports
- Between 33 and 77 pct. of private R&D takes place in manufacturing companies
- Manufacturing creates jobs in associated sectors (transport, logistics, inventory etc.)
- Manufacturing companies are primarily located outside major cities → create jobs in rural areas

Challenges

500.000 jobs lost in manufacturing companies

Pct. beskæftigede i produktionsvirksomheder som del af total beskæftigelse i de fem nordiske lande, 1991-2013



Automation and digitization

Window of opportunity for manufacturing companies?

- Opportunity for increased productivity growth and new value adding business models
 - **Digital skills and readiness.** The Nordic people are world leaders when it comes to the use of digital technologies.
 - **Research and development.** The Nordic countries are among the nations that spend most on research and development (compared to GDP) – an important prerequisite for developing new digital technologies.
 - **Culture and work place development.** Optimal use of digital technologies is closely linked to intra-organizational cooperation and customized production. The informal work place culture and low power distance in the Nordics represent an important competitive advantage in this regard.
 - **Strong ICT-sectors.** The ICT sector is an important driver, and the sector's share of total private employment and value added are high in Nordic countries.



Nordic barriers for automation/digitization

Diffusion and development of technology

Barriers for technology based diffusion and innovation

Barriers for enhanced digitalisation and automation in the Nordic countries

Key barriers for diffusion of existing technical solutions

- Low awareness on digitalisation and automation
- Difficult to valorise investments
- Low access to customised solutions (tailored flexible production in small series)
- Insufficient competency level
- Limited access to capital

Key barriers for innovation of products and services based on new technologies

- Lack of a convincing business case
 - Lack of access to innovation partners
 - Lack of access to prototyping facilities
 - Lack of access to ICT specialists
 - Lack of access to risk capital
- Lack of R&D within new technologies
 - Lack of communication standards
 - Issues concerning data sharing and security

Cross-Nordic policy focus

Areas for cooperation

- General diffusion of knowledge
- Exchange of best practice og training of regional business service providers
- **Improved access to Nordic test and demonstration facilities**
- Future skills requirement in the Nordic manufacturing sector

Nordic added value

To achieve economies of scale

- Nordic initiatives must:
 - Address barriers that are present in all Nordic countries
 - Add extra value on top of already implemented national initiatives
 - Organization of initiatives must be more effective on a Nordic level compared to national level

- Furthermore
 - Short time of implementation
 - Has to affect a great number of manufacturing companies

Initiative

Enhanced collaboration among Nordic test and demonstrations facilities

- Nordic test and demonstration facilities share the same mission → potential for exchange of best practices and mutual learning
- Enhanced collaboration and exchange of best practice will lead to specialization and improve the service to companies
- **Mapping of test and demonstration facilities in the Nordic countries including equipment, competences and services**

Thank you for your time

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- www.manufacturing-nordics.org
- Share and use

Mapping of test and demonstration facilities in the Nordic region

Purpose

- Enhance collaboration
- Improve the overall service level
- Make it easier for companies to locate relevant facilities (including services, know-how etc.)

Scope of assignment

1. Mapping of facilities (including specialization, know-how, equipment and services)
2. 10 cases about best practice test and demonstrations facilities in the Nordic region
3. Identification of new and relevant policy initiatives aimed towards securing SMEs better access to test and demonstration facilities

Approach

- Desk-research, interviews and e-surveys
- Engage and collaborate with local partners
- Verify approach and results with industry experts

Final outcome of mapping

- An in-depth mapping (including best practice cases and new policy initiatives)
- Large dataset
- Next step: create a useful, interactive tool that companies can use to identify relevant test and demonstration facilities