

Industrie 4.0. på norsk?

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Industrien er viktig for norsk økonomi

- Knappe 9 prosent av sysselsettingen
- 25 prosent av eksporten
- 2,5 prosent produktivitetsvekst
- 33 prosent av alle private FoU-investeringer
- Setter rammene for inntektsdannelsen

Industriproduksjon

(Norge: Indeks 2005=100, Sverige: Indeks 2010 = 100)



Tyskland – mot strømmen

- Industriens andel av verdiskapningen synker i Norge og Europa
- Ett unntak er Tyskland
- Skyldes det Industire 4.0?

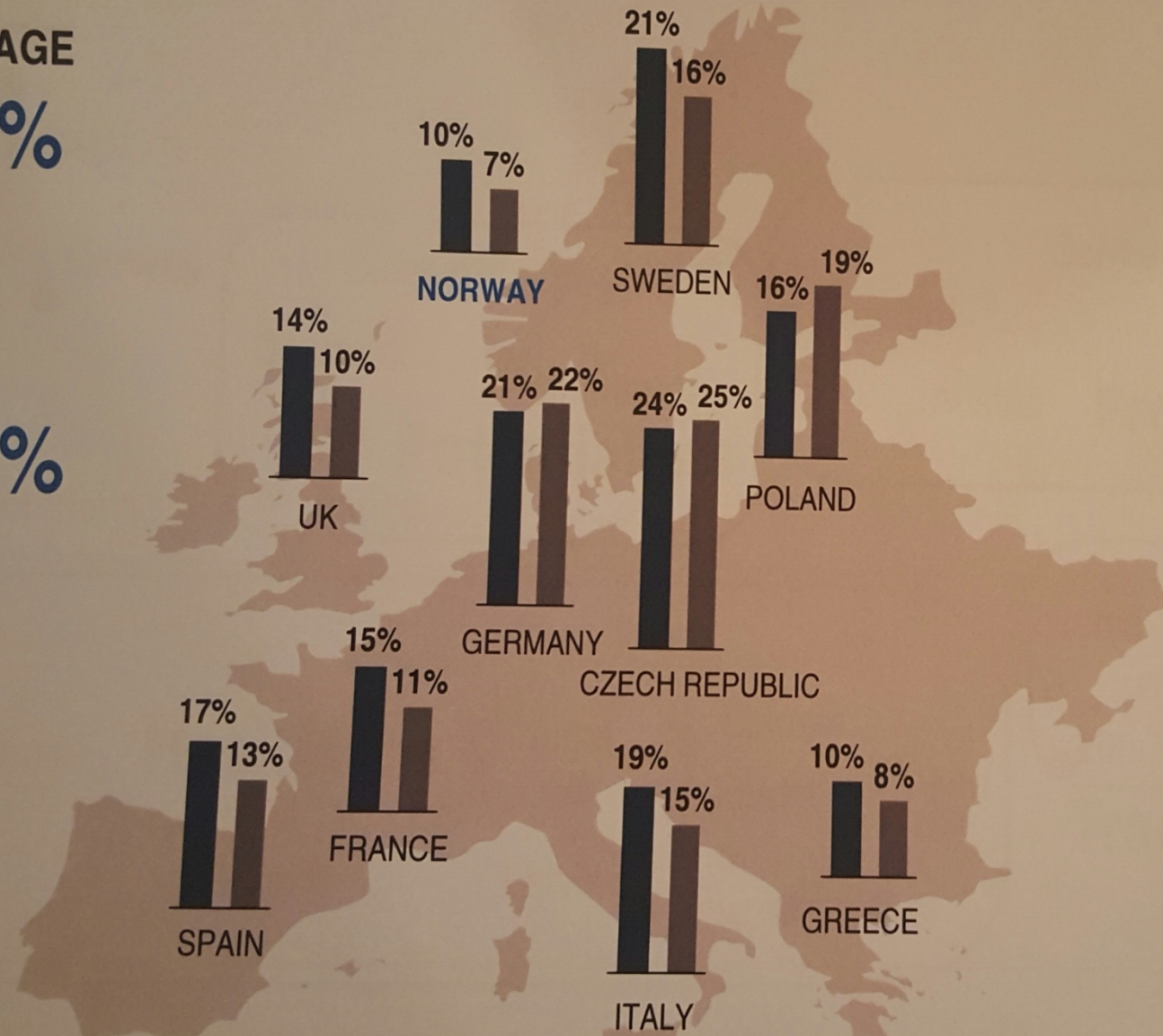
EU²⁾ AVERAGE

2002 **17%**



2013 **15%**

Industrial share of value added¹⁾ in selected countries [%]

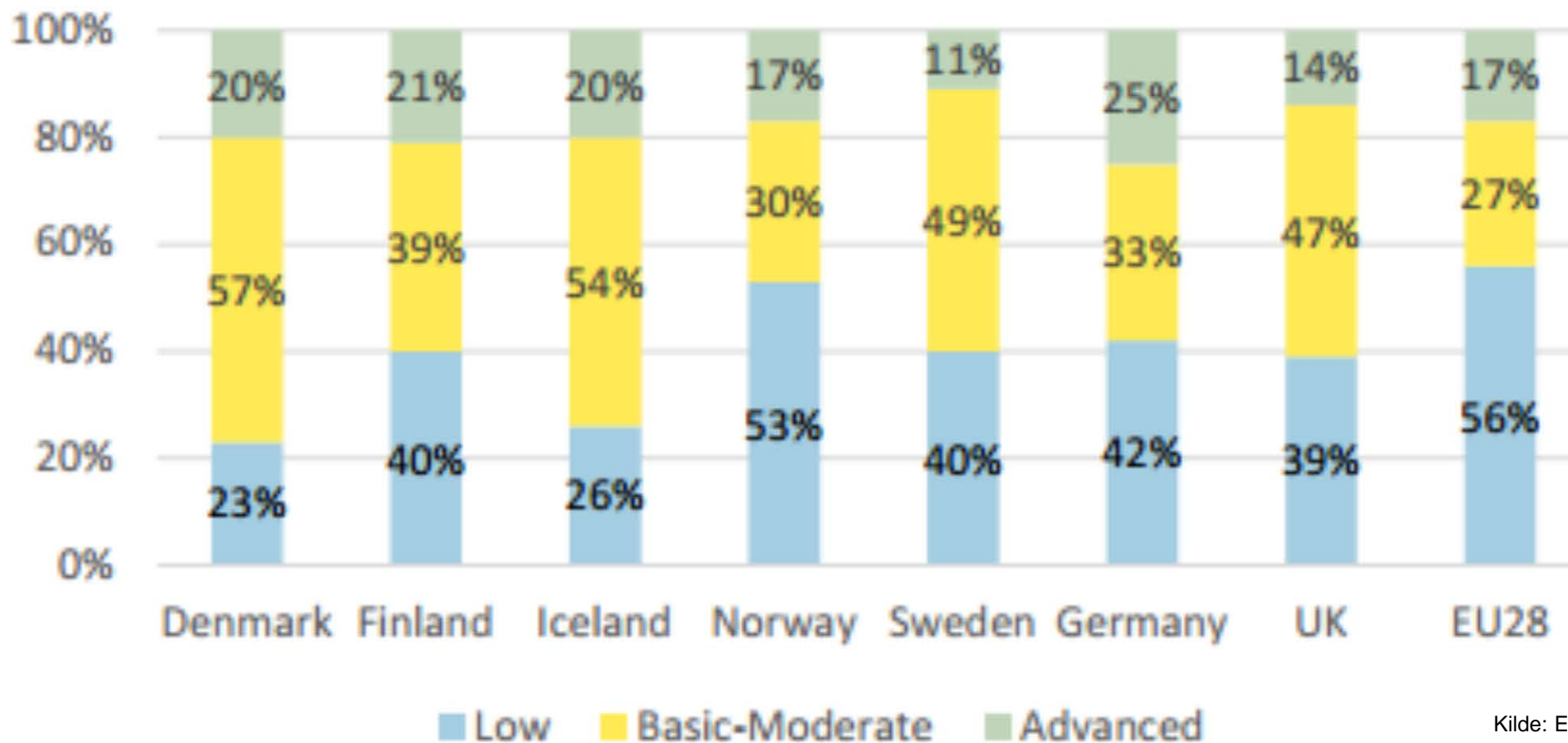


1) Excluding electricity, mining and quarrying

2) EU 27

Norge har lite avansert industri

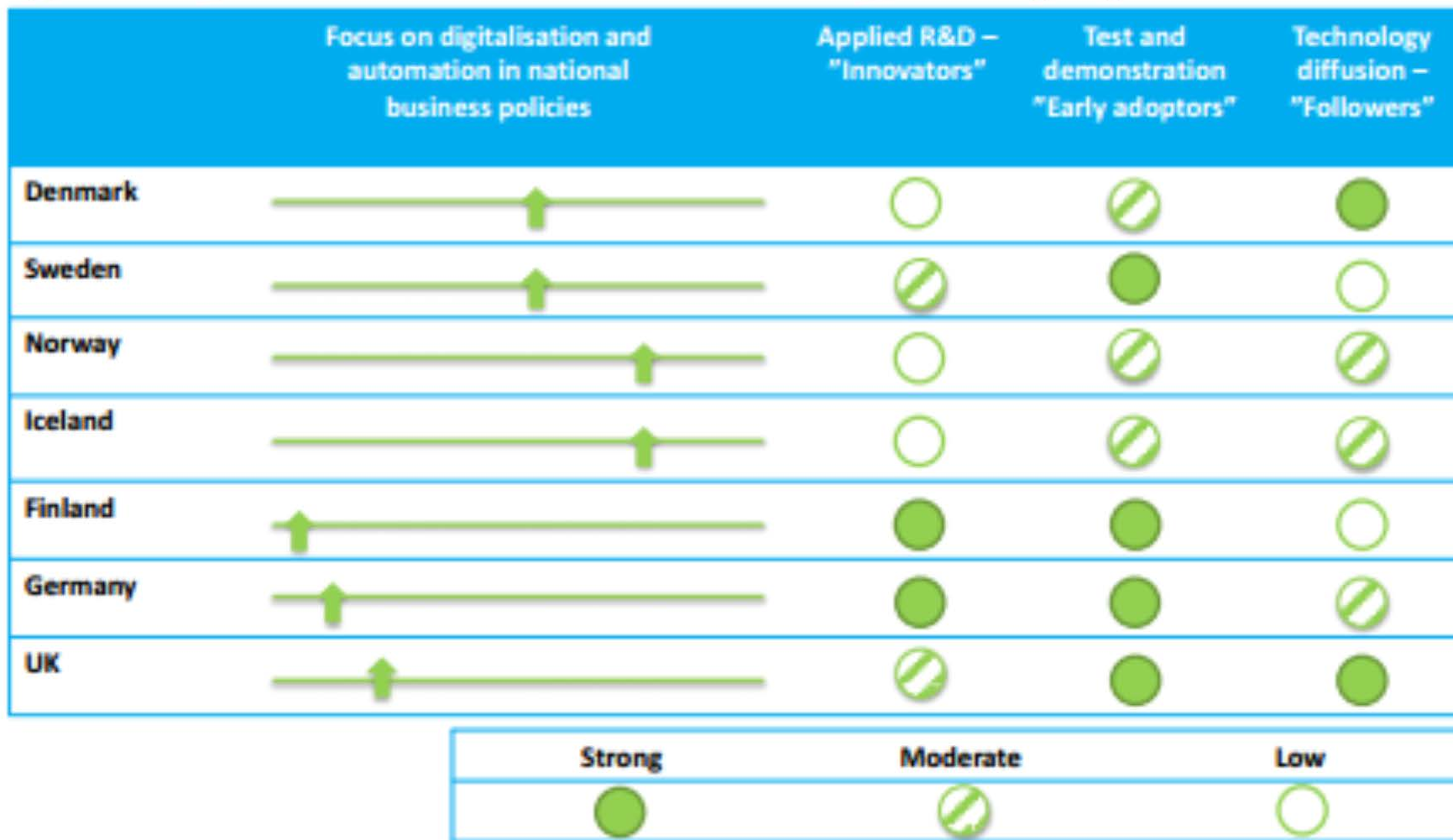
Figure 1.2: Level of digitalisation and automation in manufacturing companies in the Nordic countries, Germany, UK and EU



Kilde: Eurostat, Iris Group

Henger sammen med lite politikk?

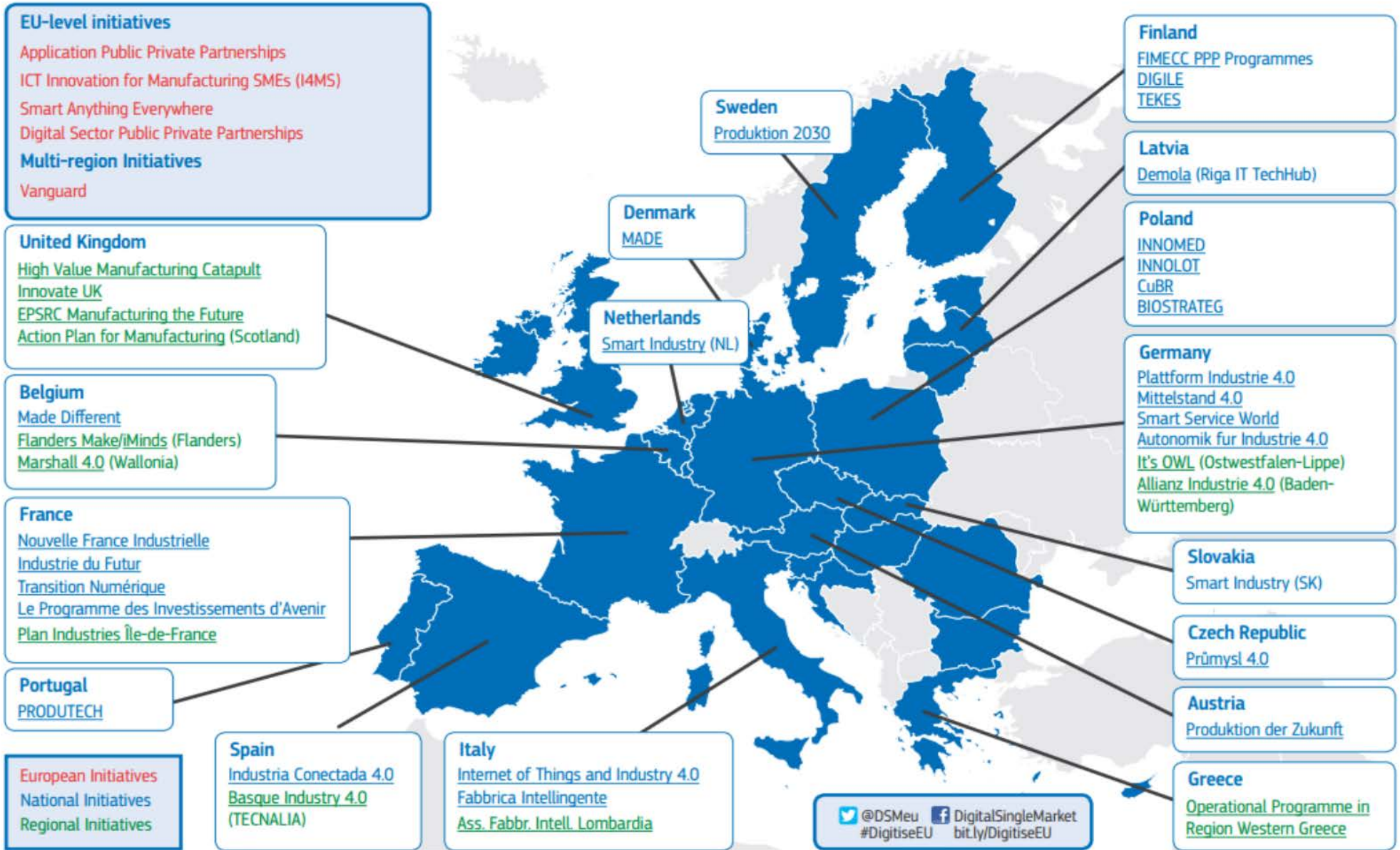
Figure 1.3: Digitalisation and automation in manufacturing – current policy focus



Source: IRIS Group.



Overview of European Initiatives on Digitising Industry



Digitalisering av industrien må bli hovedsak i industrimeldingen





Företag i svensk industri ska vara ledande inom den digitala utvecklingen och i att utnyttja digitaliseringens möjligheter. Därför behöver genomförandet inriktas mot följande:

- Stimulera utvecklingen, spridningen och användningen av den digitala teknik som har högst potential att leda industrins omvandling.
- Utnyttja digitaliseringens möjligheter brett oavsett bransch, företagsstorlek och geografisk lokalisering.
 - Uppmuntra nya affärs- och organisationsmodeller för att tillgodogöra potentialen i den nya tekniken.
 - Möta nya kunskapsbehov som den digitala utvecklingen medför.
 - Anpassa ramvillkor och infrastruktur för den digitala eran.

Hindringer for videre digitalisering og automatisering



- Ulikhet i *standarder*
- Mangel på *IT-spesialister*
- Koble sammen felles *FoU-prosjekt*
- Tilgang på *finansiering* av avansert/anvendt forskning
- Mangel på kompetanse på *forretningsmodeller*
- Mangel på tilgang til rimelige muligheter til *testing og demonstrasjon*
- Troverdige *datasikkerhet* og tilgang til eksterne data
- Utilstrekkelige *lederressurser* for utvikling av nye forretningsmodeller, teknologiimplementering og omorganisering
- Utilstrekkelig *bevissthet* om de teknologiske mulighetene

Handlingspunkter for Industri 4.0 på norsk:

- Sikre at vi beholder den *industrielle basen* vi har igjen
- Koordiner alle relevante aktører og sett opp *et veikart* med *visjoner*, *virkemidler*, fremme *samarbeid* bedrifter/institusjoner, *bevisstgjøring* av industrien innad og *markedsføringsstøtte* utad
- Kartlegge *kompetansebehov* og heve kompetansen i utdanningssystem og hos arbeidstakerne – og styr *utdanningsproduksjonen* mer
- Kartlegge *barrierer for investeringer* i ny teknologi i bedriftene – og gjør noe med disse
- Økt *FOU-innsats*: Innovasjonssenter for testing av Industri 4.0 teknologi
- Troverdige og konkurransedyktige regler for *informasjonssikkerhet*
- Raskere internasjonal *standardisering*



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#DigitalSingleMarket

DIGITISING EU INDUSTRY

Why do we need this?

For a smooth transition to a smart economy

To prepare the next generation of products & services

To boost innovation capacity across industry

To increase EU GDP by €110bn/year

European Industrial Strengths

EU companies are world leaders in



Manufacturing



Electronics for automotive & aerospace



Electronics for security & energy



Robotics



Telecom equipment



Business & professional software



Laser & sensor technologies

They can all benefit from Digital opportunities

World-class Research & Technology institutions



Traditional sectors & SMEs



Construction



Food & beverage



Textiles



Publishing & printing



Craft industries

Digitising European Industry

To facilitate coordination of European, national & regional initiatives such as Industrie 4.0 (DE), Smart Industry (NL) (SK), Industrie du Futur (FR)

Mainstreaming digital innovation across all sectors:

Setting up a pan-European network of Digital Innovation Hubs

Strengthening leadership in digital technologies

- Public-Private Partnerships
- Industrial platforms
- Large scale pilots & test beds

Preparing People for the digital age: Skills & Training

Regulatory framework:

- Free flow of data & data ownership
- Safety & liability of autonomous systems & Internet of Things

Challenges & opportunities of the Internet of Things

CLOUD

European Cloud Initiative in a data-driven economy:

- European Open Science Cloud
- European Data Infrastructure
- Widening access & building trust

High Performance Computing

Quantum

STANDARDS

Fast development in 5 priority areas:

- 5G
- Cloud Computing
- Internet of Things
- Data Technologies
- Cybersecurity

DIGITAL PUBLIC SERVICES

eGovernment Action Plan:

- New Digital Single Gateway
- eJustice Portal
- "Once-only" principle in Administrations
- Cross-border Health services
- eProcurement & "Once-only" in public procurement

To focus investments

(Horizon 2020, EU Investment Plan, EU Structural & Investment Funds, national & regional funds, private sector)

MOBILISING €50 bn of public & private investments

#DigitiseEU @DSMeu

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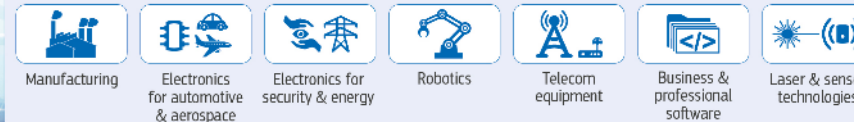
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Formidlingsøkonomien – hva må gjøres?

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