Technology industries’ new normal – from COVID crisis to growth

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Technology industry in Finland

• **50 % of total Finnish exports**
• **70 %** of private-sector R&D investment.
• **320,000** employed directly, **675,000** in total

• Mechanical engineering (e.g. Kone), Electrotechnical (Nokia), Metals (Outokumpu), IT (TietoEVRY), Consulting engineering (AFRY)
• **1600 member companies, >90% SME’s**
Where are we now?
State of the Tech Industries before crisis
State of the Tech Industries before crisis

- Cost competitiveness getting worse again
State of the Tech Industries before crisis

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- Decent productivity development
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- Long decrease in RDI investments
- Flat trend in fixed investments
State of the Tech Industries before crisis

- Cost competitiveness getting worse again
- Decent productivity development
- Long decrease in RDI investments
- Flat trend in fixed investments
- Finland 7th most innovative economy (but moving down)

Source: Bloomberg
Impact of COVID-19 on Finnish Tech Industry

- Demand collapsed across Europe and the globe
- 1/2 say worst is yet to come
- 1/3 laying off, losing 10k jobs
- Bankruptcies expected
What options do we have?
Finland and Technology Industries in “new normal” scenarios

7.8.2020
A holistic Framework for analysing the COVID impact

COVID illness cases, safety measures and restrictions

Global trade and economy
- Protectionism
- State stability
- Exchange rates
- Export support and subsidies
- Consumer taxation

Demand and trust in economy
- China, USA, Russia, other
- EU
- Finland

Business environment
- Labour market competitiveness
- Inflation and deflation
- Trust in banks
- Stock market

Tech Company

Taxes, funding, financing
- Corporate taxation
- Public funding
- Financing

Renewal
- Digitalisation
- Sustainable development

Activities to manage COVID impact
- Company response
- Public / political decision making (lobbying)
- Risk mitigation
Drivers of renewal: digitalization and sustainable development

• COVID has already strengthened the **digitalisation** trend
• **Climate** change mitigation will stay high on the agenda despite lower short term focus due to the COVID crisis
• Both drivers strongly **supported by EU**
  • Green Deal
  • EU 7-year budget MFF
  • Next Generation EU (NGEU) resilience and recovery package (RRF)
Drivers of renewal: digitalization and sustainable development

- Do we have a competitive edge?

- Finland again EU leader in DESI index – what does it mean for businesses? And SME’s?

- Forerunners in 5G/6G – can we leverage it? Combining it with industrial digitalisation?

- Digital B2C game lost to global giants, but how about B2B, G2C, M2M…?

- Industry commitment to carbon neutrality by 2035

- Low carbon roadmaps of industries – an EU best practice?
Business digitalisation index indicates strong development in Finland before COVID, and acceleration during the pandemic

Liiketoiminnan digitalisaatioindeksi rakennettiin kuudesta Euroopan Unionin DESI-indeksin muuttujasta. Sekä EU:n että Suomen data on indeksointi ilman painotuksia EU:n perusvuotta vasten (ensimmäinen vuosi jolloin data saatavissa)
The new normal scenarios introduce alternative futures for Finland

**Multi-dimensional crisis**
- Prolonged COVID leads to parallel crises such as demand collapse, deflation, financial crisis, stock market shocks etc.

**Localization**
- COVID, increasing protectionism, state instabilities and exchange rate fluctuation strengthen localisation across our export markets.

**Stagnation**
- Cost competitiveness lost due to salary increases, leading to labour market crisis. Tax, funding and financing not competitive in Finland. Negative spiral locally.

**Slow recovery**
- COVID calms down during 2021, but economic recovery takes another 2-4 years

**DigiGreen acceleration**
- COVID boosts digitalisation, and low carbon technologies demand rises, leading to positive structural changes and massive investments.

**Fast recovery**
- COVID calms down by beginning of 2021, and the economy and businesses return to fast growth. Stabilising the economy after 2020 financial shock will take a long time though.

**Recession**
Local choices by public and private actors have an impact on our direction

Currently most probable scenario

Global recession

Local recession

LOCALIZATION

MULTIDIMENSIONAL CRISIS

DIGI GREEN ACCELERATION

FAST RECOVERY

GLOBAL RECESSION

GLOBAL GROWTH

SLOW RECOVERY

STAGNATION

Lähde: Accenture 2020
So what is #digigreen (#digivihreä)?
“Digital” leverages “green” in many ways

More value through digitalizing business processes across the value chain

Digitalization, AI and smart use of data enable sustainable business

Environmentally and socially sustainable business across the value chain
“Digital” leverages “green” in many ways

**More value through digitalizing business processes across the value chain**

- Process automation, robotics, autonomous systems
- Analytics, algorithms and AI for optimization and forecasting
- Digital twins
- Remote work, VR/AR
- Etc.

**Digitalization, AI and smart use of data enable sustainable business**

- Smart energy solutions
- Smart materials management / circular economy
- Smart mobility
- Digital business models (sharing platforms, product as a service)
- Digital processes (public and private)
- Etc.

**Environmentally and socially sustainable business across the value chain**

- Renewable energy solutions
- Energy efficiency
- Electrification
- Circular economy
- Material efficiency and reuse
- CCS / CCU
- Etc.

Digital enables green
Boosting industrial digitalization (Industry X.0)

- Smart industry initiatives (TIF, DIMECC, BF, VTT, universities etc.)
- Techy stuff, smart automated manufacturing with IIoT, AM, 5G, AI...
- New services and business models on top of product manufacturing business
- Ecosystems play!

- Note: national industrial strategy required.
Minimizing the CO2 footprint

• Committed to Carbon neutral Finland 2035 target
• Low carbon roadmap published in June 2020
• Technology already exists / is under development
• Level playing field required
• Predictable cost of CO2

CO2 emissions cut 80% by 2050
Maximizing the handprint is the real opportunity

- Handprint of current export products and technologies > 20 MtCO2e/a
- Products under development > 50 MtCO2e/a
- Massive technology export opportunity
- EU budget (MFF) and Recovery and Resilience Facility – ensure focus on digital and climate, and fair access to development programs

Handprint growing from 20 to 70 Mt by 2050
Some existing / future handprint technologies

- Vahterus heat transmitters
- Cargotec electric cranes
- SSAB CO2 neutral steel
- ABB drives
- Valmet automotive e-mobility and batteries
- Outotec metals processing solutions

Technology Industries of Finland
Finally: what do we need to succeed?
What do we need to succeed?

Global trade and economy
- Level playing field
- WTO free trade agreements

Demand and trust in economy
- Consistent predictable EU policy and regulation
- EU single market
- Level playing field

Business environment
- Flexible local agreement on cost of work
- Predictable regulation
- Level playing field
- National industry strategy

Taxes, funding, financing
- Investments
- Ecosystem approach
- Employee trust

Tech company
- No new tax increase
- RDI funding >= 4% of GDP
- EU funds allocation right
- Electricity at competitive price

Renewal
- Skills, education
- Immigration

COVID
- Managed

9/22/2020 Technology Industries of Finland
PS. Where to invest for sustainable growth of a welfare state?

\[ \text{Standard of living (GDP / capita)} = \frac{\text{Productivity (GDP / hours)}}{\text{Work amount (hours / capita)}} \]

- Socially, economically and ecologically sustainable society
- Public services of a welfare state

Productivity:
- New knowledge and skills
- Research
- Innovation
- Digitalisation
- New technologies and business models

Growth potential

Work amount:
- Employment rate
- Personnel count
- Working hours
- Workforce mobility

Growth potential

= unlimited

= percents
Thank you!

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