

Sustainable Manufacturing Finland

TWIN TRANSITION DAY
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Organized by

DIMECC

**BUSINESS
FINLAND**



Program Manager
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Business Finland



Toni is the Program Manager of Business Finland's "Sustainable Manufacturing Finland" program that aims to help Finnish manufacturing companies grow and internationalize. Emphasis is placed on machine tool industries, (opto) electronics and photonics, and companies in the industrial digital transformation industry.

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SUSTAINABLE MANUFACTURING FINLAND

Duration: 1.1.2020 – 31.12.2023



SMART MANUFACTURING IS SUSTAINABLE MANUFACTURING

Finland has chosen the Twin Transition – the combination of digital and sustainable transformation – as the guiding industrial growth strategy for the next decade

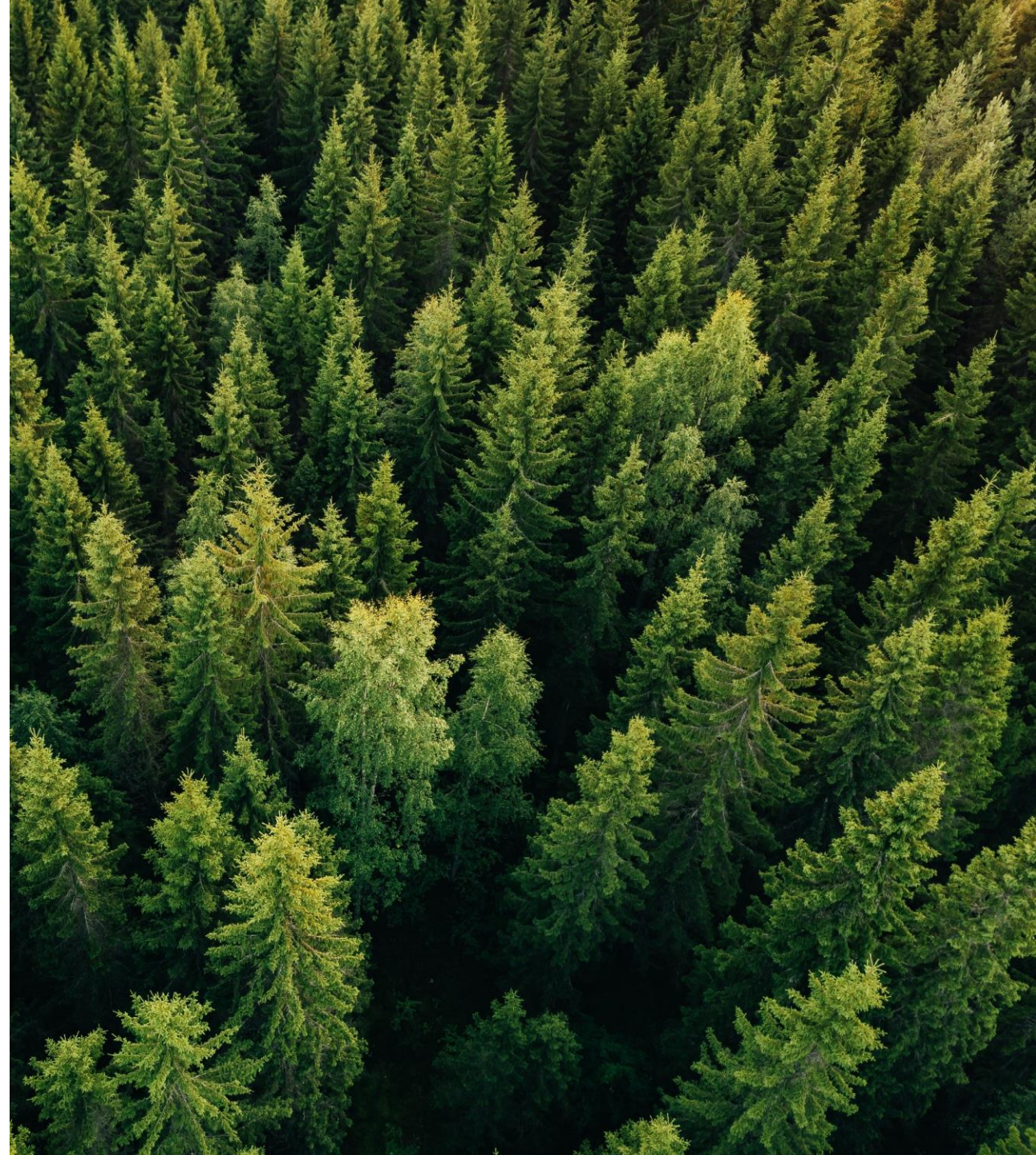
The consequences of climate change tend to be stronger near the poles. Therefore, Finns have raised environmental sustainability high on the national agenda by setting itself a goal of becoming **carbon emission neutral** by 2035 and carbon negative during the following decade. Finns often see themselves as living in an experimental society, which makes it possible for them to achieve a leading position in such environmental, economical and societal development.

In manufacturing industries **sustainability** means investing in the development of energy efficient flexible automation, digitalization and environmentally friendly high-tech products and services. Today **green technologies**, especially electrification and all-encompassing digitalization enabled by ubiquitous connectivity, are seen as growth-drivers in many manufacturing companies. An increasing amount of data and growing computational capacity are driving the wider adoption of artificial intelligence (AI) in many industries. This means, for example, widespread use of automation and collaborative robotics, and the development of networked and data-driven supply chains and new business models.

“Finland is an experimental society – a pioneer in smart, environmentally friendly technologies.”

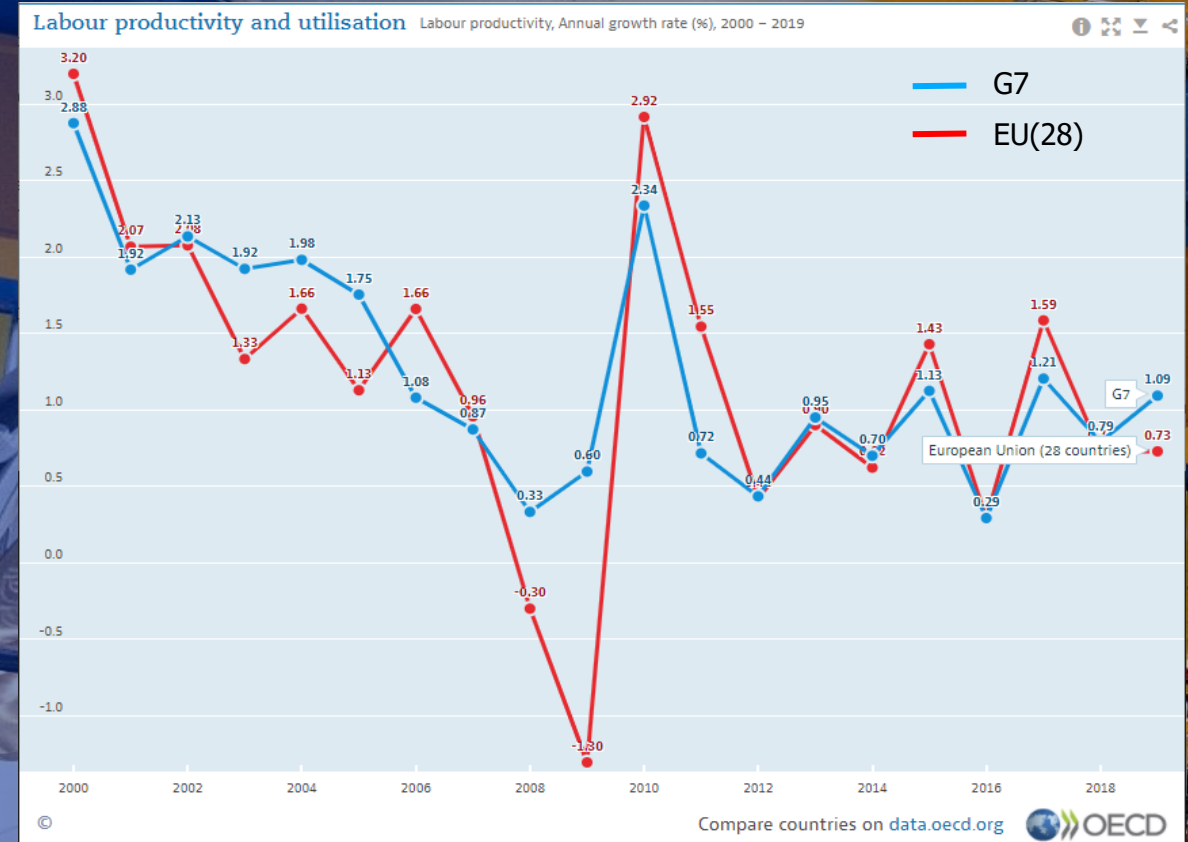
DEVELOPMENT AREAS IN INDUSTRIAL SUSTAINABILITY

1. Reduction of CO₂ emissions
 - Both direct and indirect
2. Energy efficiency
 - “More output with same energy input”
3. Materials efficiency and circulation
 - Minimization of waste
 - Use of circulated raw materials



PRODUCTIVITY DEVELOPMENT

- Labor productivity has decreased over the 21st century
- Companies have **not** been able to benefit from new (digital) technologies
- Lack of investments in R&D and intellectual property is a big contributor
- Industrial Productivity Transition is necessary



FINNISH SOLUTIONS FOR SMART MANUFACTURING

The 4 areas of Finnish competitive advantage that have emerged from the vast experience of high-mix, low-volume production in a high labor-cost environment



DIGITAL TECHNOLOGIES IN MANUFACTURING

- A) INDUSTRIAL INTERNET OF THINGS
- B) VISUALIZATION AND DIGITAL TWINS
- C) PREDICTIVE MAINTENANCE



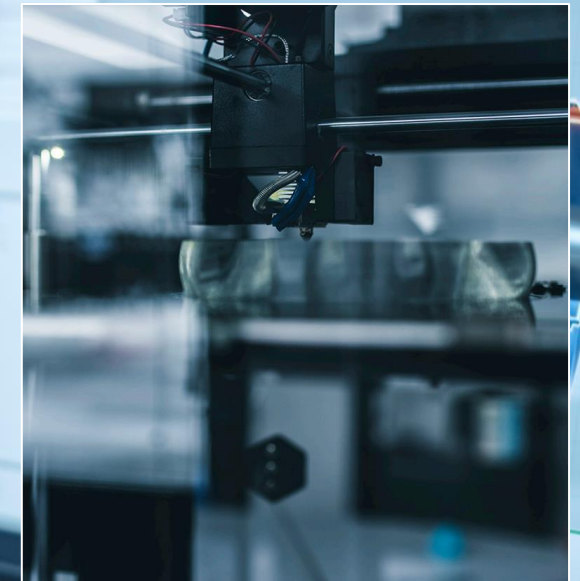
DATA-DRIVEN MANUFACTURING

- A) CONNECTIVITY IS THE
NERVOUS SYSTEM
- B) ARTIFICIAL INTELLIGENCE
IS THE BRAIN



HYPERAUTOMATION

- A) AI/DATA-DRIVEN
FLEXIBLE AUTOMATION
- B) COBOTICS AND
WORKING WITH AI



EMERGING TECHNOLOGIES

- A) ADDITIVE MANUFACTURING
- B) INDUSTRIAL PLATFORMS ECONOMY
- C) ELECTRIFICATION OF MOBILE
WORK MACHINES

WHY SUSTAINABLE MANUFACTURING?

Blend of Ecology and Economy

- To fight climate change, companies shall reinvent their business practices
 - Reduction of carbon **footprint**
 - Increase of carbon **handprint**
- Environmental integrity of a business shall go hand-in-hand with financial profitability
 - Sustainable value creation is an opportunity to develop international **competitive edge**



Resilience Must Be Designed and Built



A sustainable, crisis-prepared company is always one step ahead. A strong company actively monitors the world around it, anticipates and reacts quickly. A sustainable company adapts to change and turns challenges into opportunities. At their best, crises generate new innovations and business that would not have emerged without a challenges.

- **THREE STEPS TO INCREASING RESILIENCE:**
 - **Be Prepared:** creating alternative scenarios and drawing up corresponding plans in advance
 - **Be Ready:** improving the customer base, manufacturing strategy, supply chain, corporate culture and product and service mix flexibility
 - **Build Trust** (before it's too late): building the confidence of key customers, partners, financiers and employees well in advance of the crisis
- Find out more from our recipe book "[Building Resilience for Sustainable Manufacturing - How to Improve Resiliency and Grow Business Sustainably](#)" *

ESSENTIAL SERVICES

Renewal: R&D&I Promotion

Events for networking, partnering, and building consortia both nationally and internationally

Innovation collaboration and funding in Finland and Europe

EU collaboration and funding opportunities

Find out more at:

1. [Services for Ecosystems](#)
2. [BF Funding](#)
3. EU Networks & Funding:
 - [Program website](#)
 - [Horizon2020](#)
 - [EU Programs](#)

New Markets and Export Promotion

Workshops for building joint offerings and preparation of market entry

Business opportunities in foreign markets

Meetings with potential customers

Find out more at:

1. [Advice and Coaching](#)
2. [Business Delegations](#)

Foreign Direct Investments to Strengthen Ecosystems

Service directed to foreign companies but business opportunities developed together with the members of the Finnish ecosystems

Business opportunities for foreign companies in Finland

Find out more at:

[Invest in Finland](#)

Talent Attraction Activities

Skills and expertise through events targeted to work-related migration at focus markets

Find out more at:

[Talent Attraction](#)

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**THANK YOU FOR
YOUR ATTENTION**



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