

# Digital Fiber Initiative

THTH ry Kevätseminaari 2018

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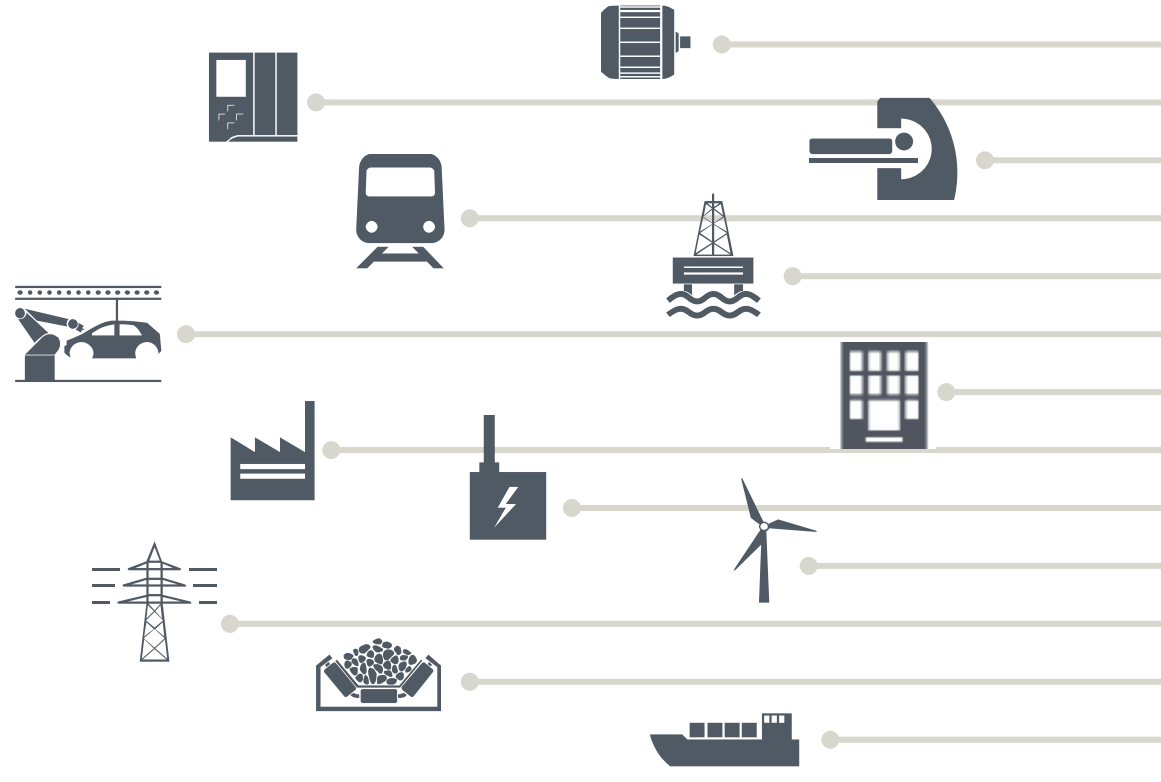
- Siemens ja digitalisaatio metsäteollisuudessa
- Digital Fiber Initiative
- Ekosysteemin tiekartta

# Merging virtual and physical worlds



## Physical world

Siemens installed base –  
300,000 safely connected systems



## Virtual world

More than 17 TB operations data per month

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Autonomous fault recovery

Traffic management

CAx

MES

Analytics

Smart grids

Digital factory

Meter data management

Cloud services

PLM

Software

Efficient buildings

Decision support

Neural networks

# Digitalization in the fiber industry




## Technology is ready

- Data Analytics
- Computing Power
- Connectivity
- Sensors



**Digitalization**



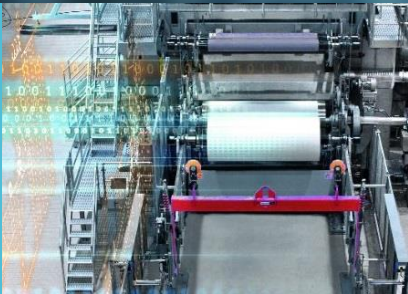
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Next level of productivity



**Automation**



Siemens as experienced partner for Automation and Electrification

**Electrification**



Pioneer for Electrification in industry

Time →

# Confederation of European Paper Industries (CEPI): Paper Industry 4.0 – What digitalization can do for the paper industry?

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*Ingenuity for life*



WHAT DIGITAL CAN DO  
FOR THE PAPER INDUSTRY

## Five elements of Digitalization

Investment in each of these pillars will give companies an increase in efficiency and flexibility as well as a better strategic position than their competitors:



Smart  
equipment



Networking  
& connectivity



Value chain  
integration



Smart  
products



Data  
analytics

## Opportunities of Digitalization

- Improved offerings & new offerings creating new markets
- Improved performance of offerings
- Synergy offering across industries

# Use case

## Continuous improvements in plant performance and maintenance

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### Challenge

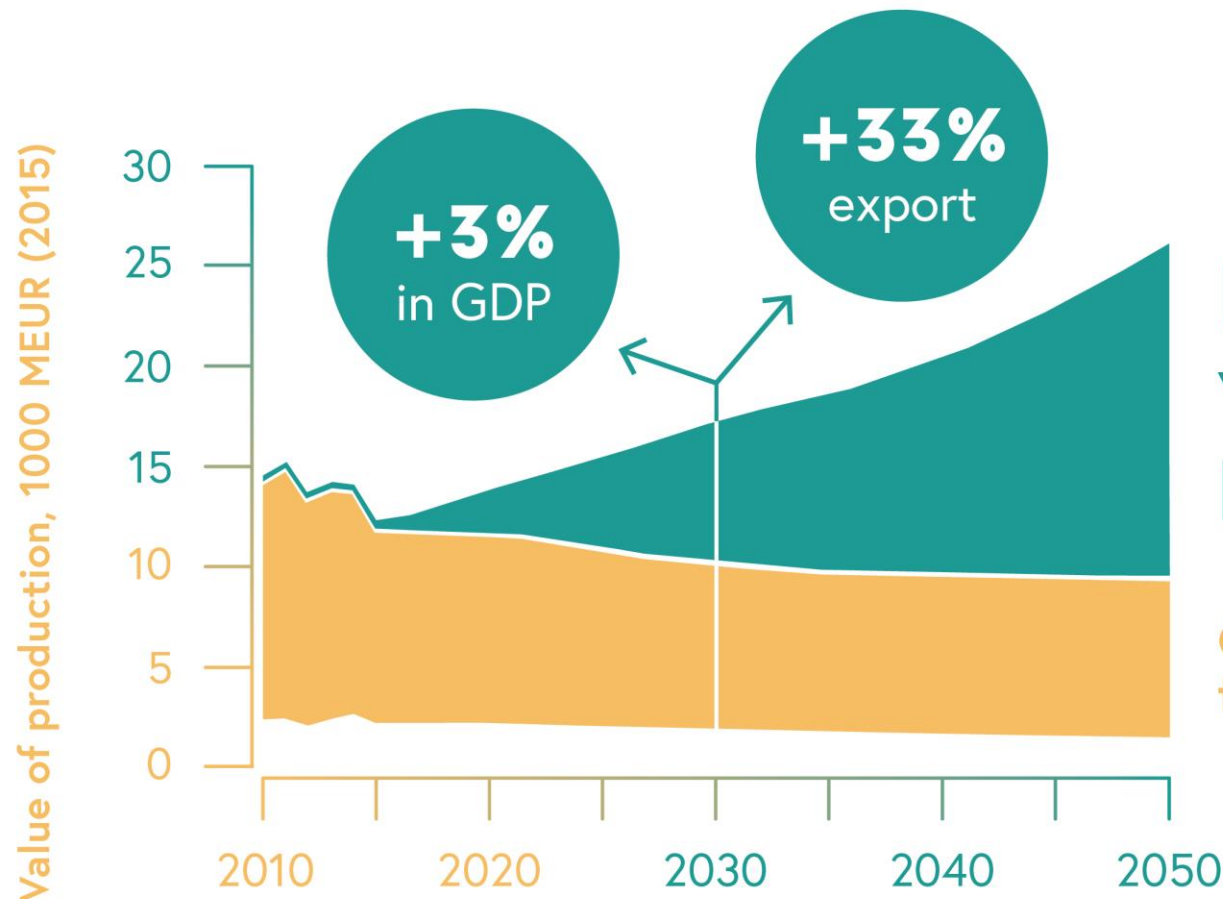
- “Only **50 % control loops are optimized**” (Source: Control Engineering)
- Assessment of real P&P plants – percentage of optimized control loops at ...
  - ... Pulp Mill in Sweden **39%**, in Finland **23%**
  - ... Paper Mill in Sweden **17%**, in Germany **14%**
- “The performance of process control systems will decline if the system is not optimized on a regular basis. In most plants, this **decline** will result in a performance decrease of **50% every 6 months** if no effort is made”

(Source: Instrument Engineers' Handbook, Volume 3)

### Solution

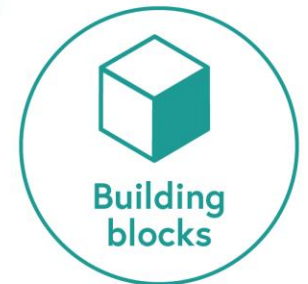
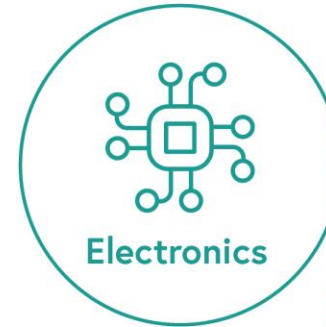
- Integrated SIPAPER E&A solution plus data historian
- SIPAPER Control Loops Optimization by Control Performance Analytics

# Added value of forest sector can be doubled by 2030's



## New value-added products

Current forest products



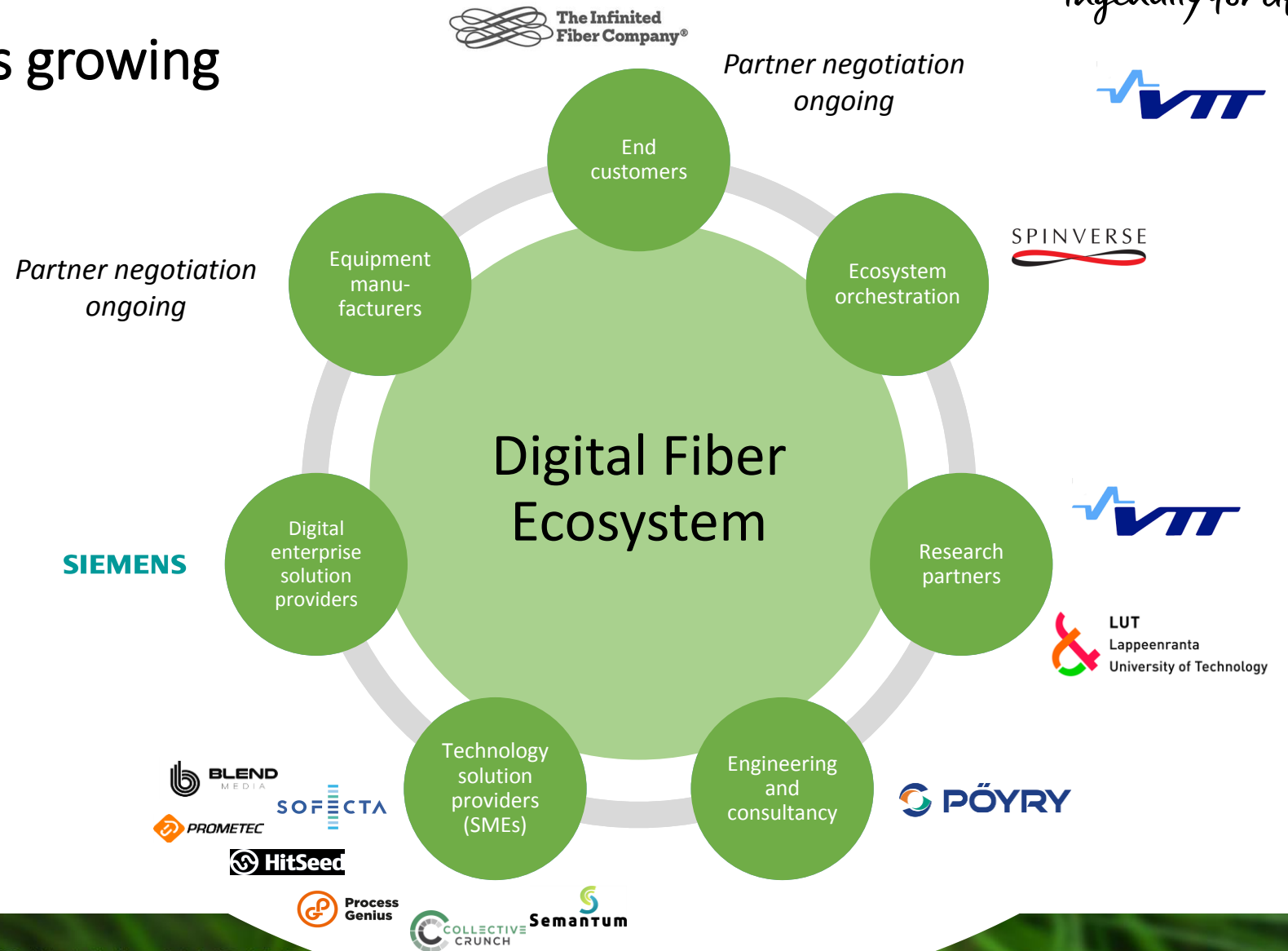
# Digital Fiber ecosystem is growing

DFI – values:

**OPENNESS**

**FAIRNESS**

**CO-CREATION**

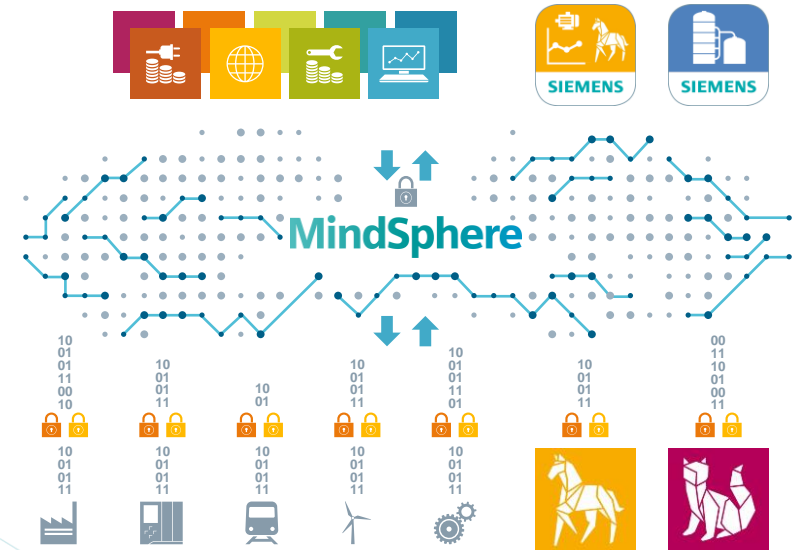
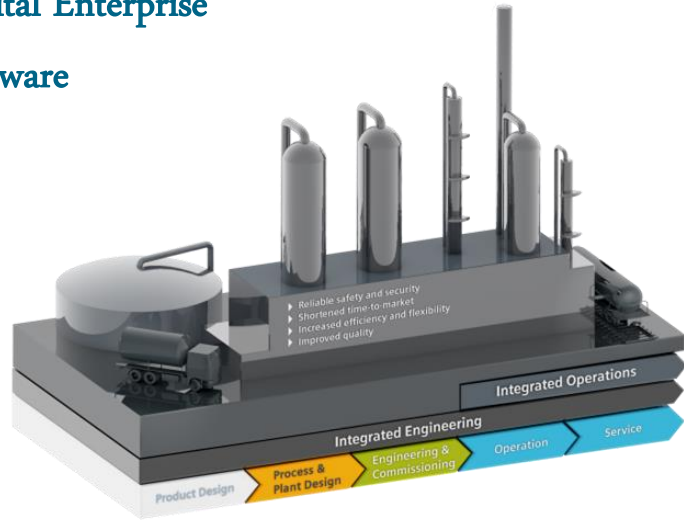




# Digital Fiber Ecosystem – Discover the value of digitalization



Digital Enterprise  
Software



## From Integrated Engineering

- New fiber applications
- Process Simulation
- Virtual commissioning
- Operator training



## to Integrated Operations

- Process Automation
- Remote Monitoring
- Process Analytics
- Process Optimization

# Extending from Pilot to Industrial Scales

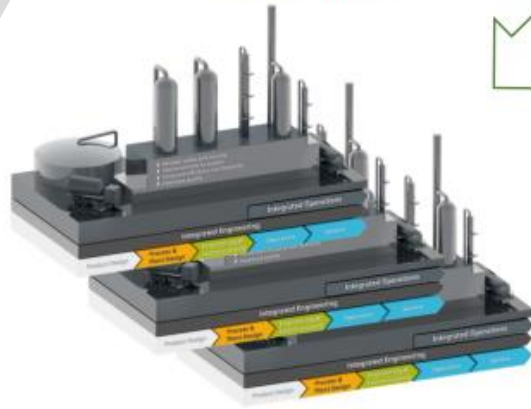
## – Expansion to new technologies and processes



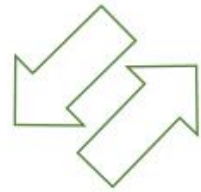
Raw-material market



New analytics applications



Dissolving, carbamate, recycling processes

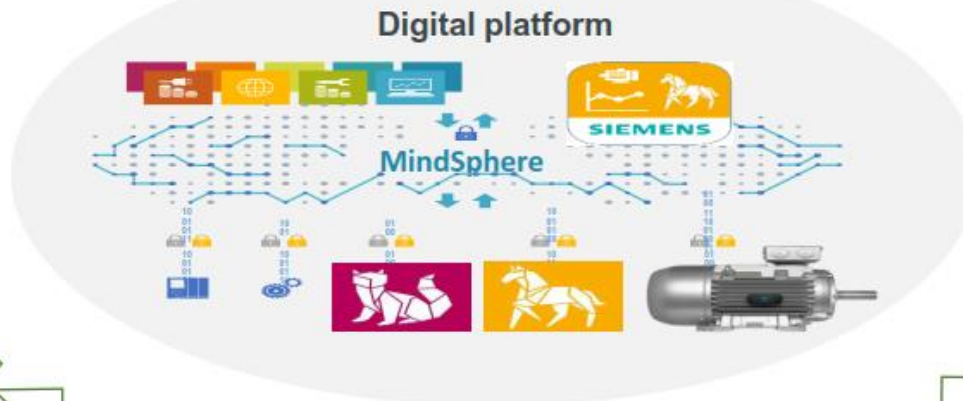


New sensing technologies

New analysing technologies



Wet-spinning process



New AI applications



New business models



Customer textile processes

End-use market



New simulation models

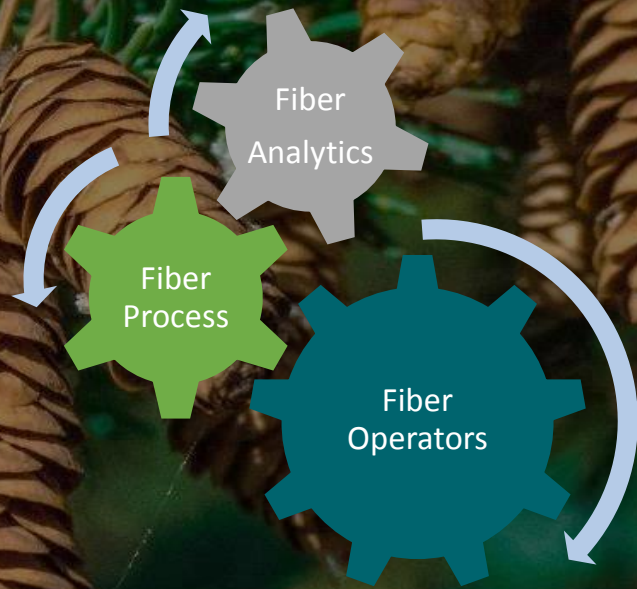
New control technologies

New plant lifecycle data models

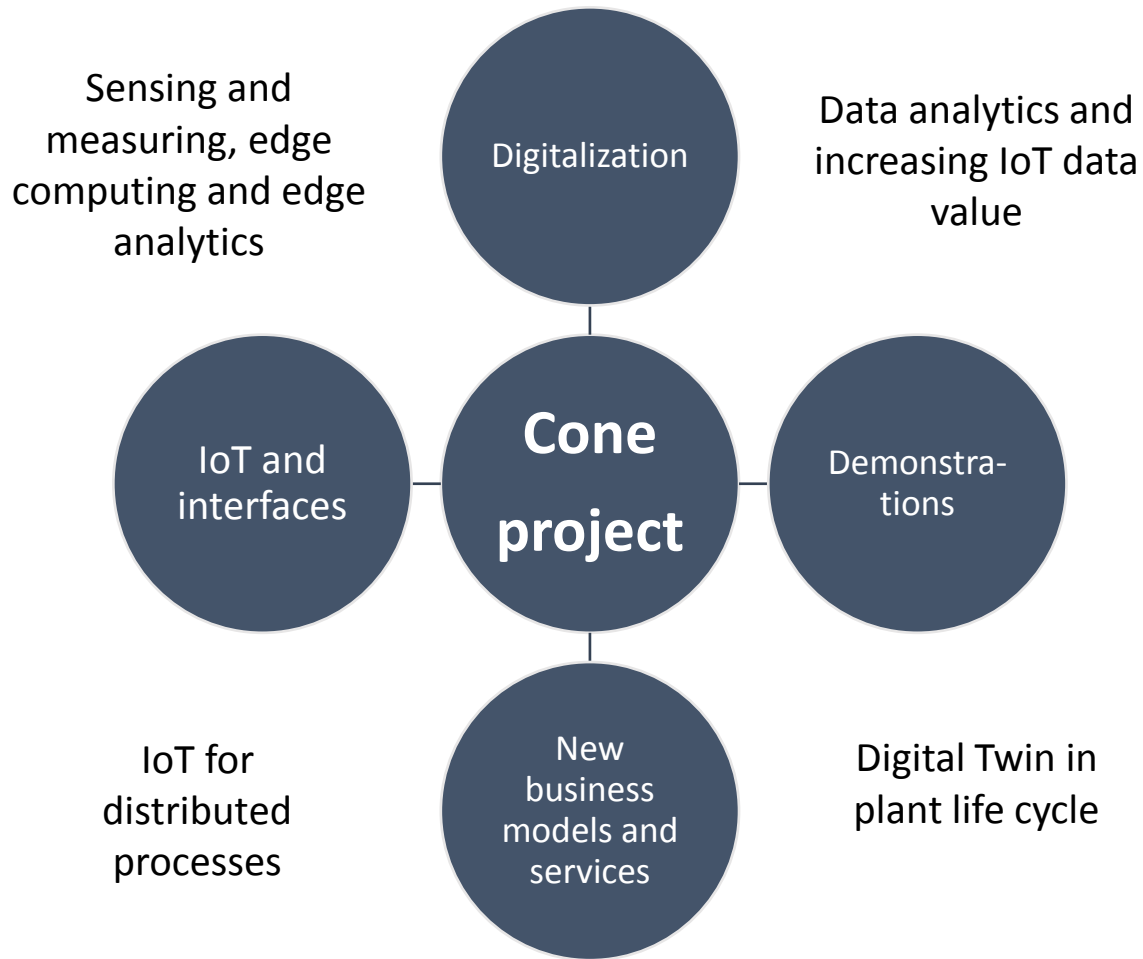
# DIGITAL FIBER INITIATIVE

# Digital Fiber Cone – The first joint development project

The Cone project aims to create a digital testbed environment for new fiber processes, process engineering and IoT development, utilising Siemens' Digital Enterprise platform solutions and VTT's Bioruukki Pilot Centre to innovate across the entire forest industry value chain.



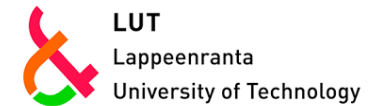
# Digital Fiber Cone



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10 project partners:

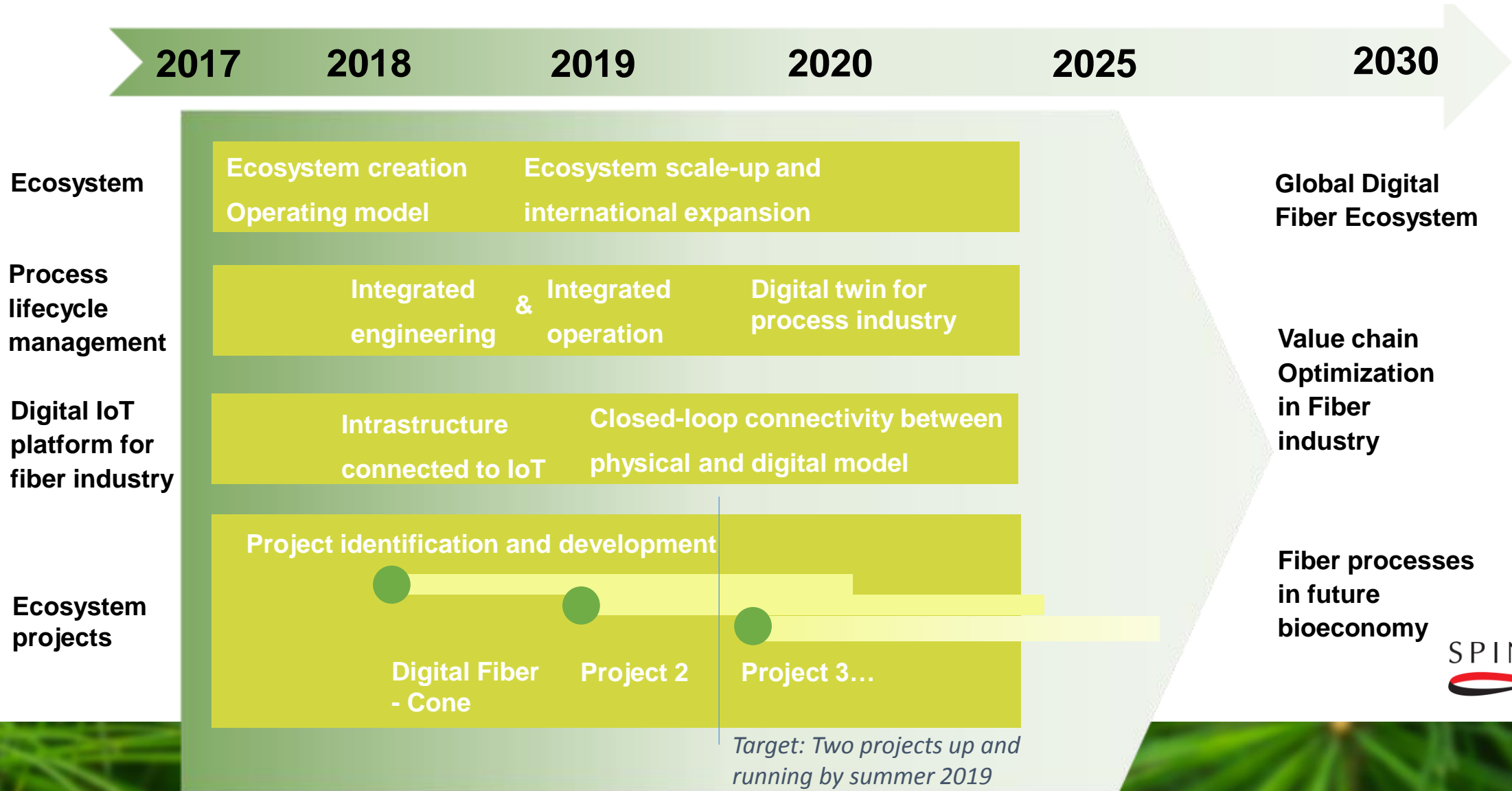


**DIGITAL FIBER INITIATIVE**

DIGITALIZING FOREST INDUSTRY



# Roadmap for the Digital Fiber Ecosystem



<https://digitalfiberinitiative.com>

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**Thank you.**

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