RTS
Building Information Foundation

ARGE Conference 2024 Milan

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Together with our networks, we develop a high-quality and sustainable built environment in which people are doing well.

The Building Information Foundation (RTS sr) is a non-profit, impartial and independent influencer in the Finnish real estate and construction industry. The Foundation promotes a sustainable and high-quality built environment that supports people's well-being. The Foundation, together with its networks, implements research and development projects, promotes innovative approaches in the field and accelerates cooperation between practice and research.

Construction digitalization – EU situation picture

Digitalisation is a tool for competitiveness

- **High-performance computing (HPC)** – a unique advantage to exploit in areas such as AI, and to stimulate private investment.
- **AI opportunities for vertical use-cases:** AI developments are an **opportunity** for EU industrial players to boost their competitiveness **but also a risk** to lose their leadership and profitability if AI is not rapidly **integrated in their offerings**.
- **Semiconductors:** de-risk strategic dependencies
- **Data as a strategic resource**

Built environment strategies, regulation and initiatives

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EU-strategies

EU legislation

EU initiatives

Sector integration

RePower EU

Energy renovations of the building stock

Renovation wave

Green deal

GWP reporting harmonization

Digital building logbook

Circular economy action plan

Digital decade

Renovation passport

Reducing carbon emissions from the life cycle of buildings and infrastructure

Access to information on the entire life cycle of the building

Increase (BIM) in public sector procurement+ permits

AI act

Data act

EPBD

Construction products regulation

EU-taxonomy

BIM in public procurement

Whole life carbon

Digitalisation of energy networks

Transition pathway for construction

A roadmap for the construction industry to implement a green and digital transition

Data spaces

Cyber security

Digital product passports

Figure: Arola T. /RTS 2024

We are not alone – digitalisation happens also around the built environment

Cyber security

Cyber security act

Data spaces

Construction data space

Smart Grids

Energy dataspace

High level use cases

Interoperability

Energy network digitalization

AI

Responsible AI

Standards

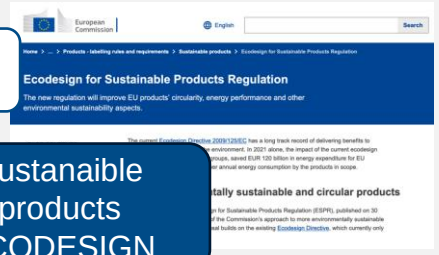
AI act

Data regulation

Data act

Data governance act

Digital product passport



Energy markings

Sustainaible products ECODESIGN

EV charging infrastructure

Alternate fuel infrastructure AFIR

Funding criteria (EU taxonomy, CSRD)

EU taxonomy

Circular economy roadmap

Circular economy

Source: Tommi Arola, Building Information Foundation, Ministry of Environment Finland

We are in the middle of a new system dynamics!

Circular economy: data needs in construction + indicators

Priority list of criteria for classification as final waste

Energy renovation of the building stock

Renovation wave

Circular economy action plan

Climate adaptation strategy

Combines all building information and renovation data in the EU in a coherent packet

New criteria for circular economy and construction projects

EU-taxonomy delegated act

Lifecycle emissions reporting framework

EU Level(s)

Whole life carbon roadmap

Digital buildling logbook

EPBDn harmonized assessment and GWP reporting

Renovation of the building stock

Energy performance directive (EPBD)

Renovation passport

Easy access to building product information

Construction product regulation

Digital product passport

New performance requirements for construction products

AI Act

AI rules and definitions of high-risk AI systems

Data act

Digital decade

RePower EU

Green deal

Information and method for implementing renovation

Transition pathway for construction

BIM in public procurement

New system dynamics requires new digital tools

Digital process management and increased productivity

Digitalised construction product information

Digital product passports and digitalised supply chain

Develop digital building logbook

Mainstream the use of digital design tools to facilitate the performance and enviromental impact

Increase the use of AI, robotics and drone applications

Building data security and cyber resilience

Take away: we need to do two digitalisation parallel

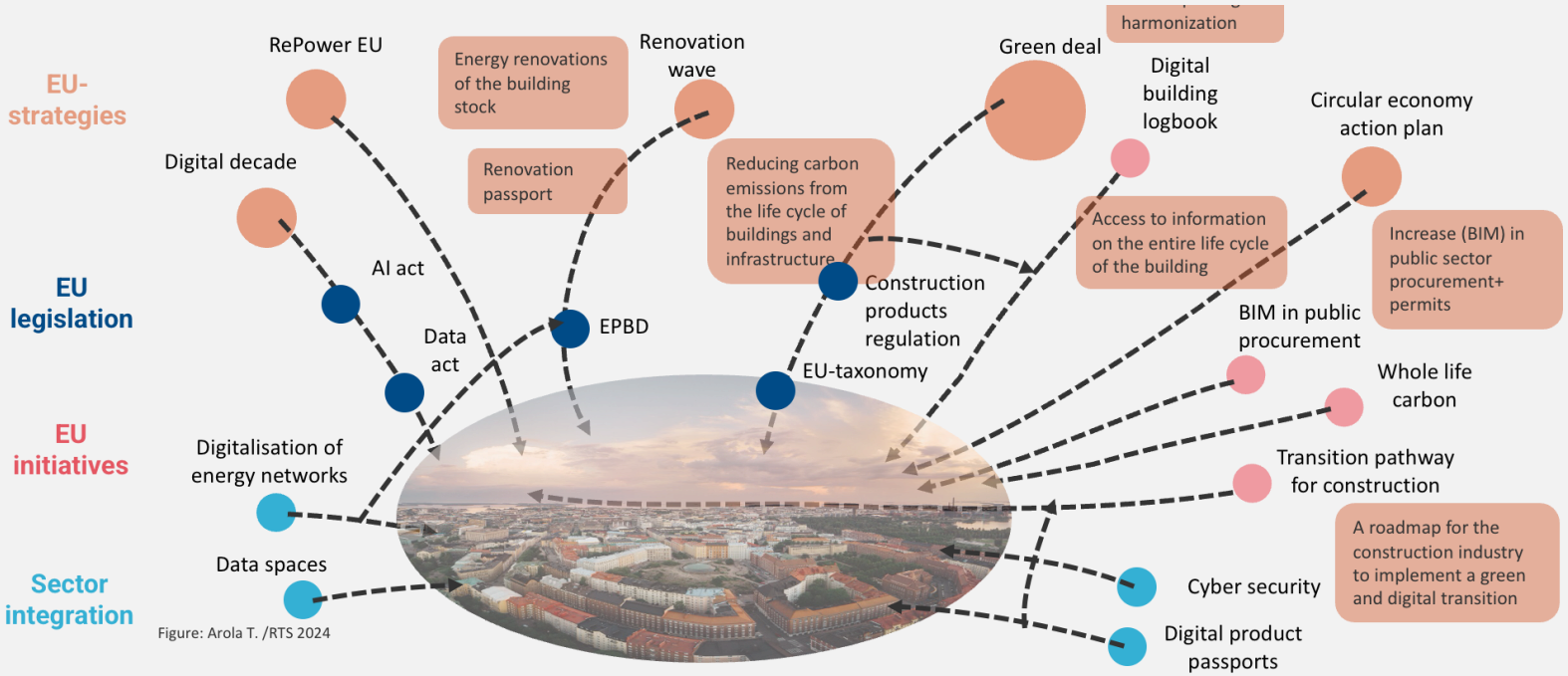


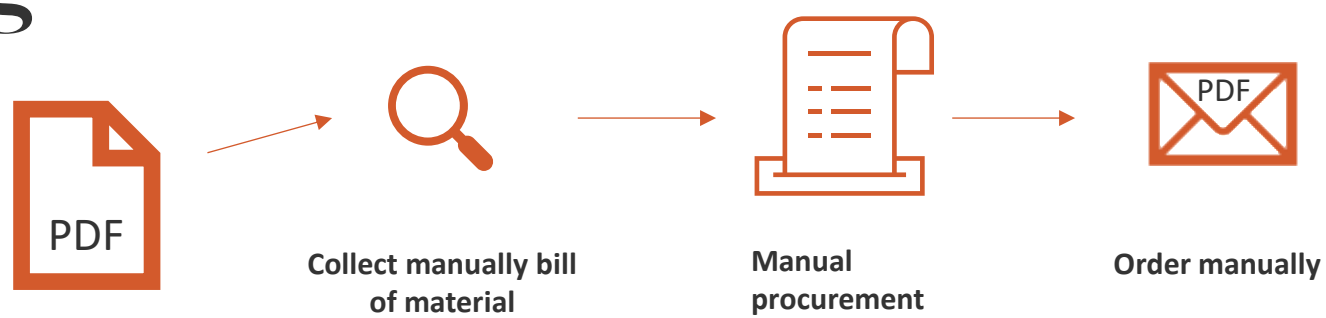
Figure: Arola T. /RTS 2024

Digitalisation 1.0:
Process digitalization

Digitalisation 2.0:
digitalisation of responsible construction and adoption of modern technology

Case-example from Finland: digital supply chain and product tracebility

The obstacle: supply chain is manual data processing



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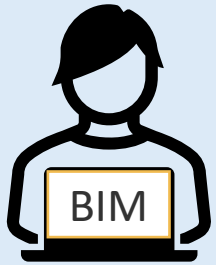
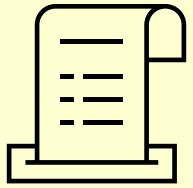


Design

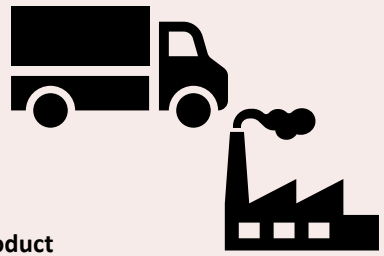


Procurement and supply chain management

Production (construction)

Building operation and maintenance

Transport company



Product manufacturer

Supplier manual input to ERP

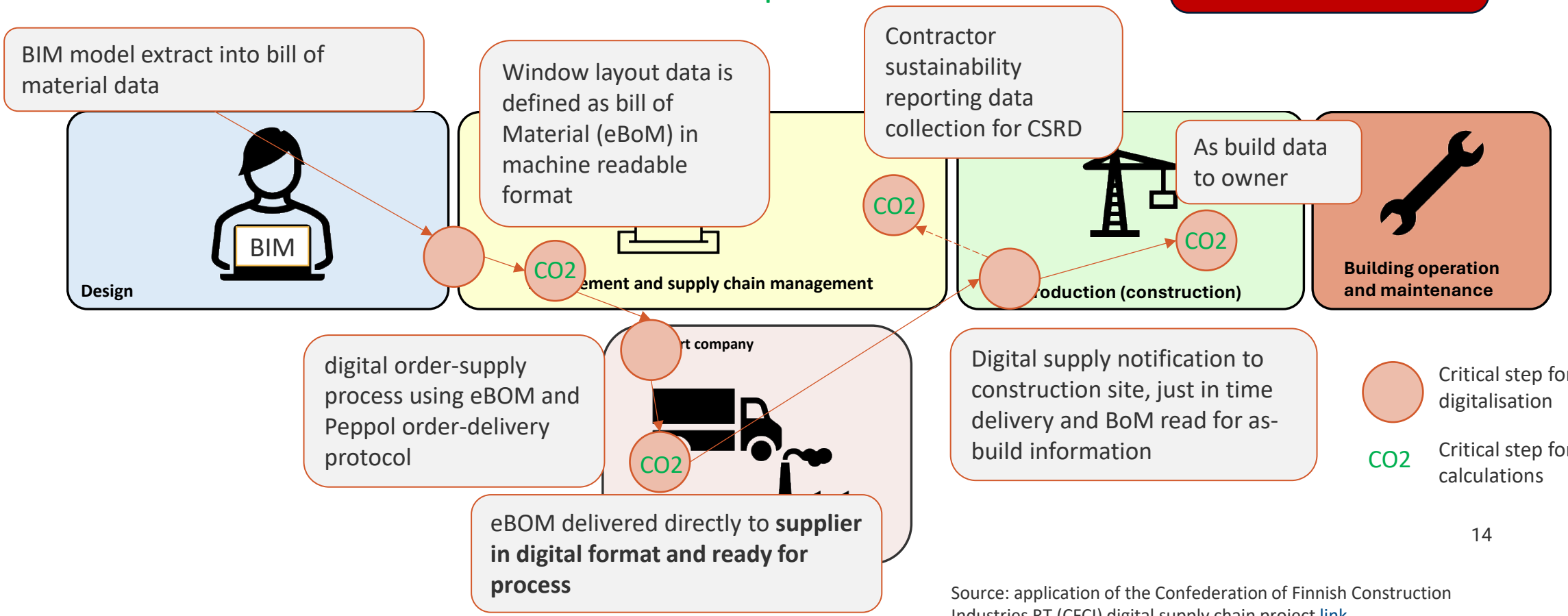
Source: application of the Confederation of Finnish Construction Industries RT (CFCI) digital supply chain project link

...at the same time we are expected to do product level GWP reporting and circularity optimation

Holistic system architecture is needed to maintain real product information

This all unlocks e.g:
- green procurement
- co2 calculations based on real products

GWP and sustainability reporting automatically



Source: application of the Confederation of Finnish Construction Industries RT (CFCI) digital supply chain project link

Take away 1: digital supply chain with real product information is a key to construction competitiveness

Take away 2: end-to-end access to machine readable data is only way to do digitalisation

Main takeaways for ARGE digitalization?

- Adapt to digital supply chains
  - Connection to end-to-end digital information process is required for windows, locks, doors : design <> digital order-delivery <> Logistics <> TAKT site management <> digital as-build delivery
- Digital product information and material tracebility
  - EU-taxonomy: sustainability reporting needs a digital trajectory
  - CPR: product circular economy, sustainable materials
  - Product digital product passport
- New data roles and cyber security
  - Data act: gives users of connected products greater control over the data they generate, while maintaining incentives for those who invest in data technologies

Questions?

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