ARENA:

WHO DRIVES THE GREEN INNOVATION?

Case study on Wood Construction in Sweden and Finland

Launch case study report \rightarrow

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Relevance

Construction Sector's share of emissions: ~39%

 \rightarrow 1/3 building materials

 Why wood? – less energy intensive processes (compared to concrete & steel), captures carbon, available, re-usable, re-cyclable

***Disclaimer:** Sustainability question considers only emissions, assuming sustainably sourced wood.

 Why 'green innovation'? Renaissance - policy shift - from blanket ban (1800's) to various support schemes, programs





What innovations?

Technology

- Material science, products, structures, fire-safety, vibrations, acoustics, energy efficiency, etc..
- e.g. Engineered wood products = Mass Timber
 - Cross-Laminated Timber (CLT)
 Glued Laminated Timber (Glulam)
 Laminated Veneer Lumber (LVL)
- **Related:** glue, resource efficiency







Building Systems & Industrialisation

- 'Conventional' onsite + pre-fab mass timber components
- Pre-fab elements (offsite) + onsite
- Prefab volumes 'Modular' (offsite) + onsite assembly
- Hybrid







Systems innovation

- Regulation, planning systems,
- Business and finance models
- Organisation of work
- Business ecosystems, supply-chains, skills, education, etc..
- Market / sector
- Society





Who's behind any major breakthrough?

or







Who's behind any major breakthrough?









Lived happily ever after...

Market

State

... except it's not Hollywood!

Cross-fertilisation & Re-organisation

"You just need to shake the ketchup bottle for some time and then it all comes out at once"

Pilot projects

New actor

Then who should shake the bottle?

- The sum of actions from multiple actors leads to systemic change
- The 'magic' happens at the intersection between actors rather than by single "enlightened actors"
- Support those interactions!
- Actors are not static change roles

Thanks!

Findings (change agents, drivers, barriers)

Roles

Set rules of the game: EU, National gov.

Leaders: new and old businesses; local authorities

Facilitators: Research, associations, local authorities

Detractors: Conservative constructors, banks, insurance c., clients (inc. society)

Other:

* Transforming roles (crossing sectoral boundaries)

* Networks (collaboration)

* **Society** (changing values)

Systemic issues

Path dependency (knowledge, skills, supply-chains, networks) – "structural inertia"

Planning systems (zoning regulations)

Practices: New business models, finance structure, risk assessment, relations

Cultural change: (values, perceptions) - "Won't it burn?"

