Resource efficiency in business – experiences from Finland

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COMPANIES • CONSUMERS • PUBLIC SECTOR

ENERGY EFFICIENCY
MATERIAL EFFICIENCY
RENEWABLE ENERGY

- solutions & methods
- information & communications
- networks & cooperation
- advice & training

Motiva

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The National Material Efficiency Programme

- The 2014 launched programme proposed eight measures for the advancement of material efficiency
- Goal of the programme:
  - ”Sustainable growth through material efficiency”, aiming simultaneously at economic growth, the sensible use of natural resources, and decoupling from harmful environmental effects
- Examples of proposed measures:
  - Material efficiency audit programme for 5 years
  - A national programme for promoting industrial symbiosis
  - Trial implementation of a material efficiency voluntary committment between the administration and companies
  - Developing a model for promoting resource wise cities

Examples of Motiva's activities related to resource efficiency of companies

Macro level
- national or wider scale

Regional level
- industrial symbiosis
- resource efficient regions

Micro level, companies
- efficient production sites

Products and services
- resource efficient products
- applying life cycle thinking

Implementing the national material efficiency program

Developing indicators for resource efficiency

Developing voluntary committments regarding material efficiency

Promoting industrial symbiosis, FISS

Promoting material efficiency in SME's

Energy efficiency agreements

Energy efficiency advicing

Energy efficiency audits

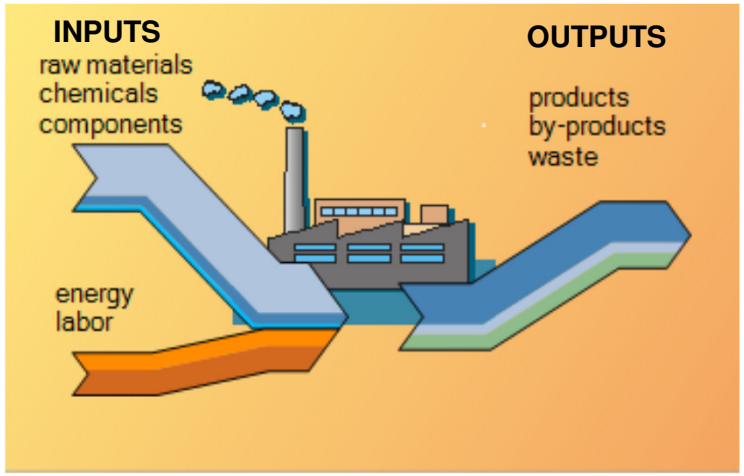
Material efficiency audits

Promoting knowledge transfer related to product oriented environmental management

Material Efficiency Audit

- Systematic way to detect *a general view* of material flows (visual presentation)
- Reveals *direct and indirect costs* related to material flows (MFCA, ISO 14051)
- Provides means of identifying financial and environmental *improvement opportunities*
- Starts the process of *continuous improvement* in the company
- Provides valuable information for *development* in the company (e.g. product development, industrial symbiosis, environmental communication)

- Material audits are performed in companies by approved consultants
- Savings potentials of EUR 0,3 – 1 million per year, of which 20-50 % realised during first year



Concrete measures for improvement

SAVINGS
-costs
-material resources
-environmental impacts

Case Lumon

- Company produces balcony facade products and glazed terraces
- Project goal: halving production waste ja development of follow-up system for waste
- 68 proposals for action
- Savings potential 800 000 € per year
- Savings after 1 year 400 000 €
- No investments needed (changing ways of action, training, check-lists, waste monitoring system)

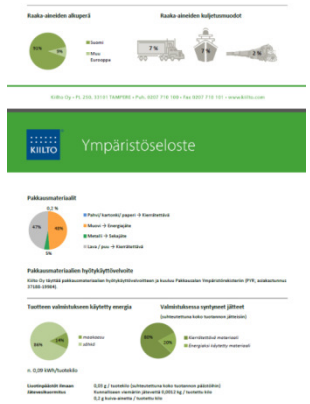
Additional information:
http://www.motiva.fi/files/8456/Case_Lumon_Material_Audit_Improves_Production.pdf

Case Kiilto

'FRESH RESULTS 2014'

- *Building chemistry* products for consumers and industry
- *Project target was* to minimize the raw material usage and production waste, utilize the workshop-method extensively and create product specific environmental data for further usage

- 5 separate idea workshops arranged – 47 ideas evaluated
- Main process improvements achieved:
  - Decreasing the amount of used packaging pouches
  - Gained efficiency in working procedures
- Generated data was succesfully utilized in specific environmental product declarations (EPD)

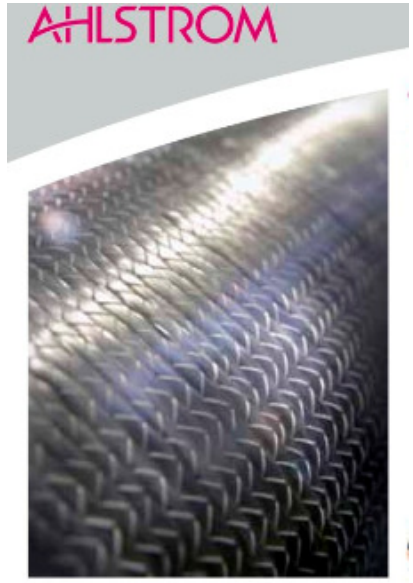


Case Ahlstrom

'FRESH RESULTS 2014'

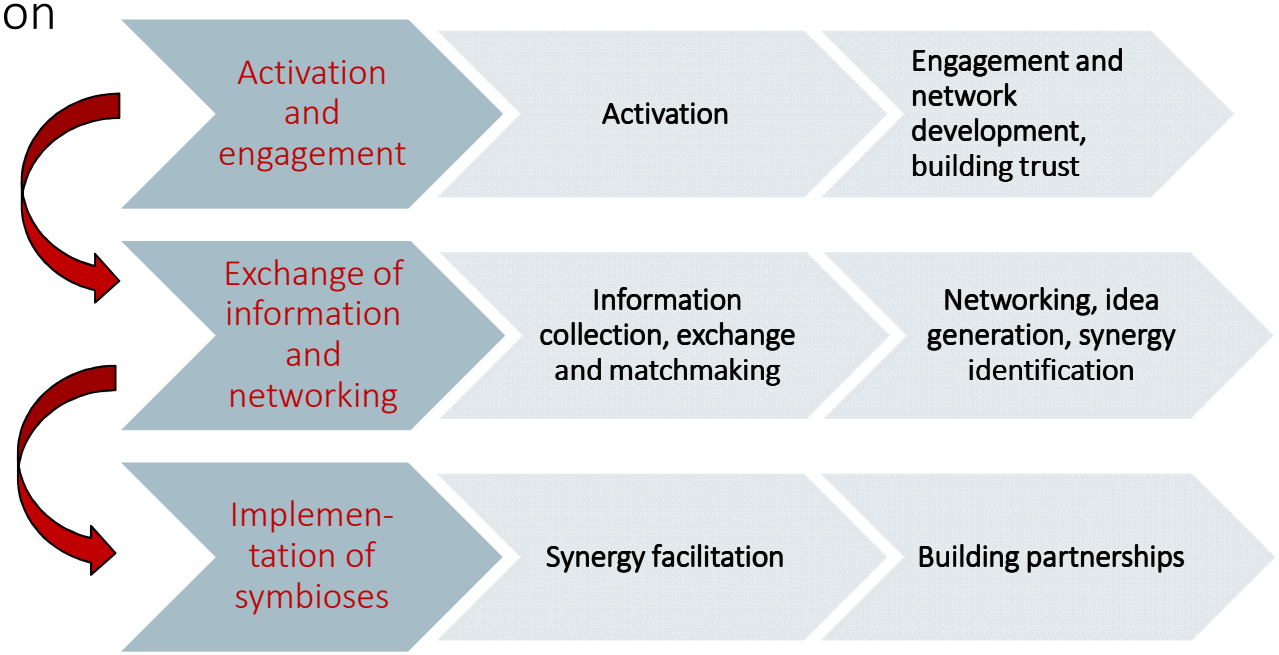
- Glassfibre reinforcements for the composite industry
- Main targets were to decrease the production waste and focus on new utilization and processing methods for the glassfibre *sidestream*

- Achieved savings potential 500 000 € per year
  - Production- , products- and internal logistics improvements
- New potentials for industrial symbiosis operation were discovered
  - Woven glassfibre can be further processed/utilized '*as it is*', chopped, milled or melted

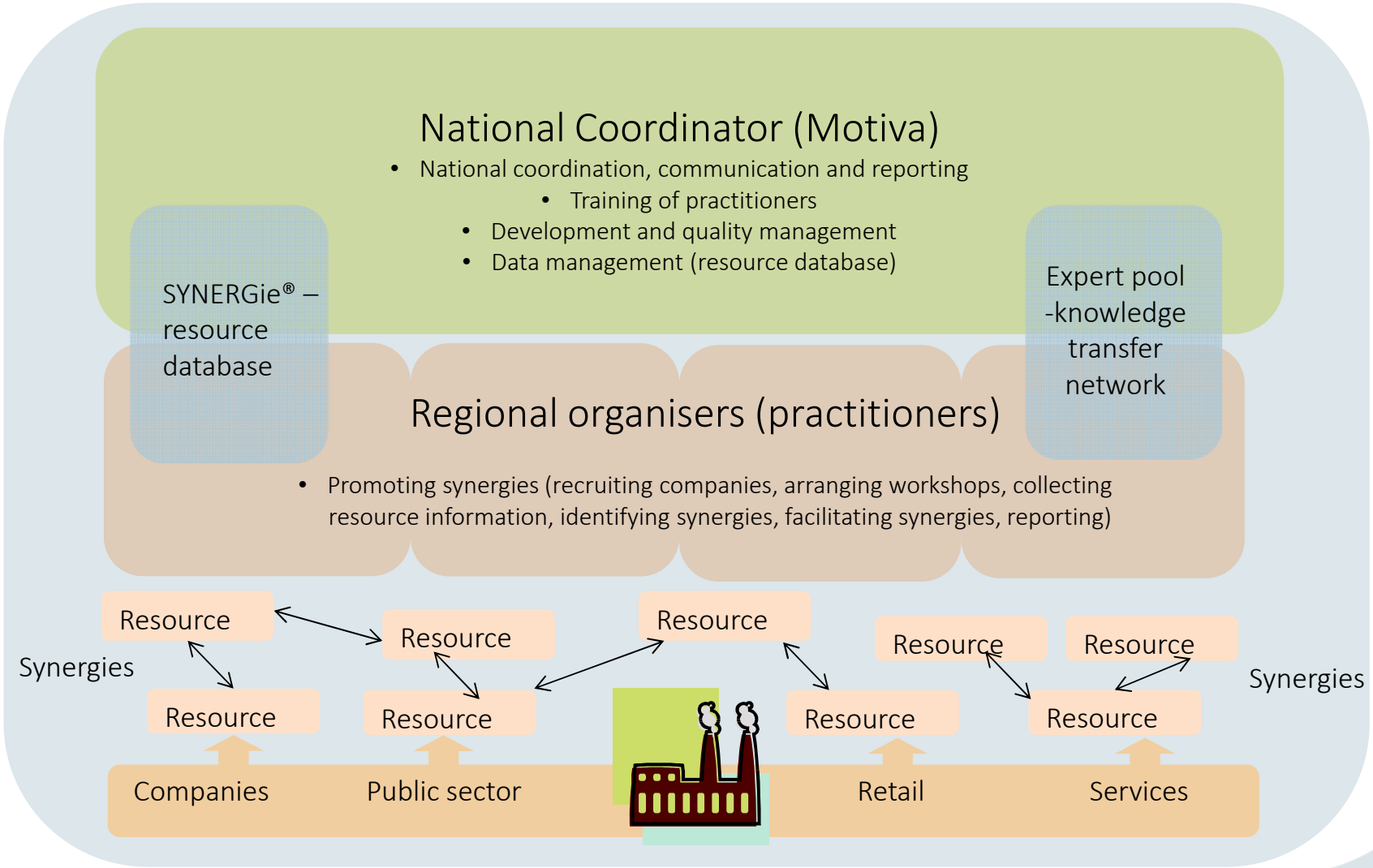


FISS – Finnish Industrial Symbiosis System

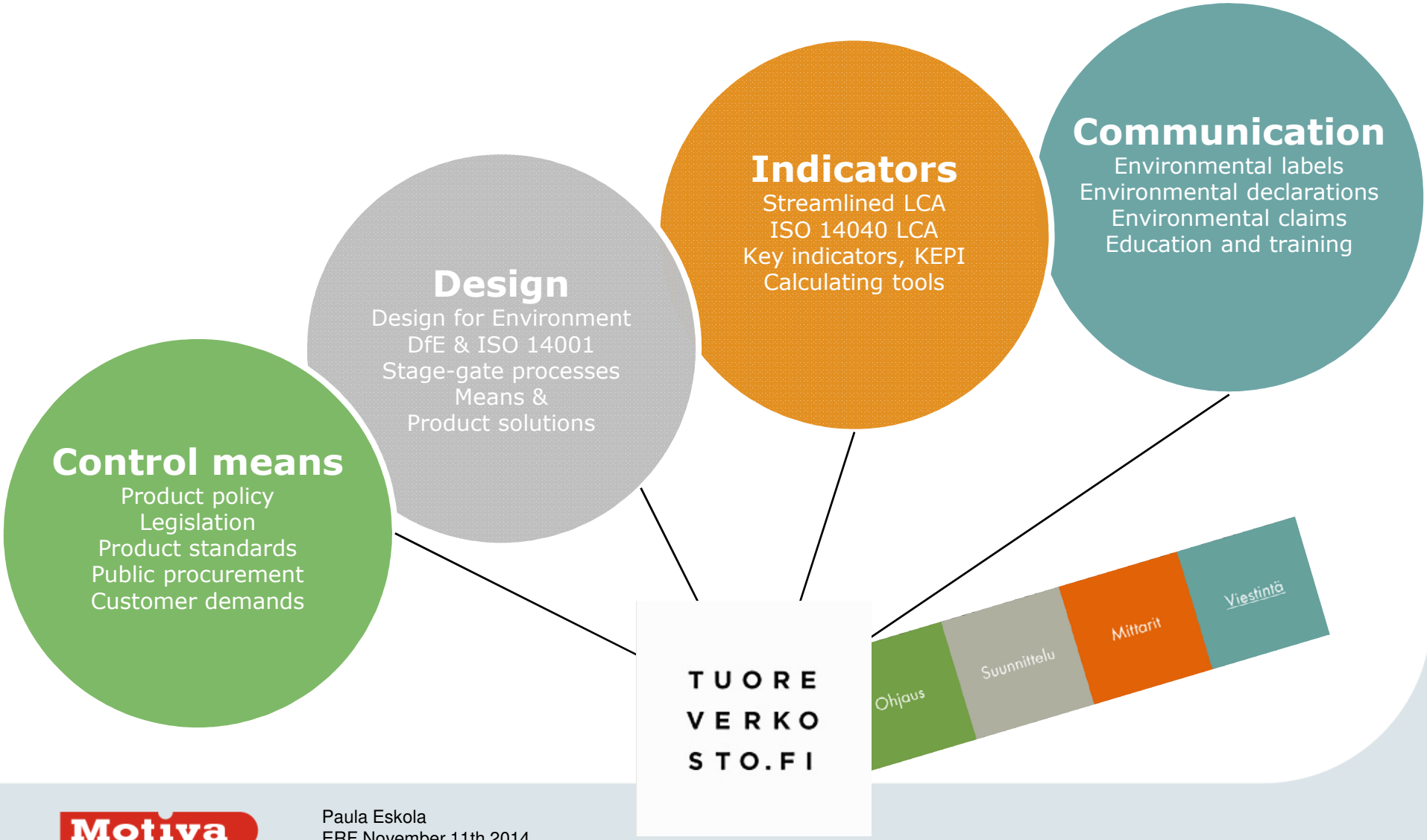
- Systematic way to help companies and other organisations to create partnerships and new business opportunities through more efficient use of raw materials, technology, services and energy.
- FISS is based on collection of resource information, matchmaking and active facilitation



Finnish Industrial Symbiosis System (FISS)



Knowledge transfer network for product oriented environmental management



Conclusions

- Systematic tools/ operation models can be utilised in all levels of operation
- Sharing knowledge about such tools is very beneficial
- Marketing of existing tools and helping companies use them is more important than developing new tools
- Barriers for companies to start RE improvement projects:
  - Limited time of staff
  - Not realising the potential, looking at single processes, not the whole system
  - Lack of discussion between design and production
- Drivers:
  - Cost benefits most important
  - Customer needs
  - Environmental benefits, resource scarcity
  - Image

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More information

www.motiva.fi/en