PAVING THE WAY TO THE FRUGAL PLANT

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Factory of the future
Helene Teulon – Gentiane Gastaldi
The factory of the future will be frugal
Strategies for a frugal plant

- Ecodesign of industrial equipment
- Radical ambition on SME
- Product / process innovation
- Integration to an industrial ecosystem
- Factory as a forest
CentriSpray, washing and drying machine for engine parts in automotive mechanical plants

Pump is stopped when machine is not washing:
33% in energy savings (energy, heat)

Efficient pump
Minimal energy consumption when machine is starved for parts
Heat loss minimized
Pump, Exhaust

32% less energy for exhaust

Exhaust volume is reduced by 65%
energy, heat, water, tempered plant air

32% less energy for fluid heating

Air drying volume reduced 84%

Noise level is guaranteed to be below 77 dB

Easy & safe maintenance

Servo controlled – more effective cleaning & drying with increased precision

32% less energy for exhaust

Energy savings: cost reduction

Les energy, less releases: lower environmental impact

More accurate washing and drying, easier maintenance, more compact equipment: higher perceived value

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Bel : vers des usines Zero-eau

-37,9%
REDUCTION IN GREENHOUSE GAS EMISSIONS IN KILOGRAM-EQUIVALENT CO₂*

-32,6%
CUT IN WATER CONSUMPTION*

-41,3%
DECLINE IN OIL AND GAS ENERGY USAGE

60%
OF BEL SITES CERTIFIED ISO 14001 IN 2016

* Per metric ton of cheese produced
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Creating shares value

Higher perceived value

An eco-designed product/service

Controlled costs

More responsible
Product/process innovation at Nike: the Flyknit running shoe

Environmental analysis identified trimming of the sole and glue as main environmental hot spots.

Breakthrough innovation: shoe and sole are knitted at once

- Creating customer value by increasing comfort and running performance
- Creating business value by cutting production time and costs, and addressing mainstream customer needs with significant market potential
- Creating system-wide environmental and social value by reducing landfill waste and reducing the need for labor-intensive, low wage work

« Sustainability Oriented Innovation »
Promoted by MIT and the Sloan Management Review
Dépasser la contradiction par l’innovation

http://sloanreview.mit.edu/article/sustainability-oriented-innovation-a-bridge-to-breakthroughs/
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Industrial symbiosis
The Kalundborg example
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Factory as a forest: Interface

- Ecosystems produce free services
  - water storage, nutrient recycling, pollination, clean air and water, etc.
  - How much per acre?
- Can a factory meet or exceed this to perform like a forest?
  - Pilot launched by Interface in 2015, with Janine Benyus
- « from measuring reduction of negative impact to measuring the growing positive impact »
Benefits for the company

- Triggers innovation
- Motivates employees
- Prevents shortages
- Prevents regulatory costs
- Attracts capital
- Saves money - in the mid-term

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Questions ?
Please ask us!

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