When (technical) innovation does not do at all.

An ergonomic reconstruction of evolutions in a production workshop to understand the links between work and MSD.

Willy BUCHMANN
Associate professor
Context

- 700 employees, including 300 operators
- Production: composite fibers, aeronautical parts
- Vital parts -> High quality requirements
- Operators with high level of qualification; low turn over

⇒ Industrial production, but artisanal expertise
Context

Request

In the paint workshop of the parts, despite several hundred thousand euros invested 4 years ago, joints pain of painters do not decrease. Why?

Research question

Under which conditions a new production tool can be accompanied (or not) by better working conditions and health?
Simplified manufacturing process

Components preparation → Molding → Finish

Context

Method

Results

Conclusions
Simplified manufacturing process

Components preparation → Molding → Finish
Simplified manufacturing process

Components preparation

Molding

Finish

- Sanding
- Apply Mastic
- Painting

- 2 teams; 4 and 5 operators
- Day planning
- 14 parts to paint a day
Data collection: evolutions of the workshop

Observations
- 5 painters
- Total: 10 days
Data collection: evolutions of the workshop

Observations
- 5 painters
- Total: 10 days

Documentary analysis
- Production data
- Painters career path
- Workshop Project
Data collection: evolutions of the workshop

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How did painters feel about the evolutions of the workshop?

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- **Positives**: mostly technical elements
- **Negatives**: mostly organizational elements:
  - Just-in-time -> buffers stock reduction
  - Responsiveness -> Increase of parts to be painted in emergency
Painters difficulties may be related to the gap between the means available for organization planned in 2005 and the organizational Lean principles set up in 2007.
Support the sustainable development of individuals, collectives and organizations?

- This case is frequent
- An alarming dual finding
  - The managers' competence for « innovative turn-key tools »: lean, freedom-form company, holacracy, co-working...
Support the sustainable development of individuals, collectives and organizations?

- This case is frequent
- An alarming dual finding
  - The managers' appetite for «innovative turn-key tools»: lean, freedom-form company, holacracy, co-working...
  - The managers' turnover disperses the company's memory and experience
Support the sustainable development of individuals, collectives and organizations?

- Is it possible to design a sustainable future without relying on past and present?
  
  « Our memory is essential, not only to know our history, but also to prepare our future; this way, memory is linked to intelligence » (Eustache, 2016)

  « Notre mémoire est indispensable, pas simplement pour connaître notre passé, mais également pour préparer notre avenir; en ce sens la mémoire est liée à l’intelligence » (Eustache, 2016)
Support the sustainable development of individuals, collectives and organizations?

- Is it possible to design a sustainable future without relying on past and present?
  
  « Our memory is essential, not only to know our history, but also to prepare our future; this way, memory is linked to intelligence » (Eustache, 2016)

  « Experience is the product of a set of lived events, and on which we were able to learn » (CREAPT)

  « L’expérience est le produit d’un ensemble d’éléments que l’on a vécus, et sur lesquels on a pu tirer des enseignements » (CREAPT)
Support the sustainable development of individuals, collectives and organizations?

Context

Method

Results

Support... the reconstitution and mobilization of the company's experience

Support... the articulation (balance ?) between experience and innovation
Thank you