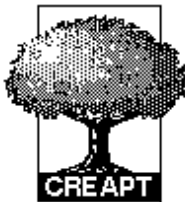


When (technical) innovation does not do at all.

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

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le **cnam**

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Ergonomics Team

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



Simplified manufacturing process

Components
preparation

Molding

Finish



Simplified manufacturing process

Components preparation

Molding

Finish



- 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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Interviews

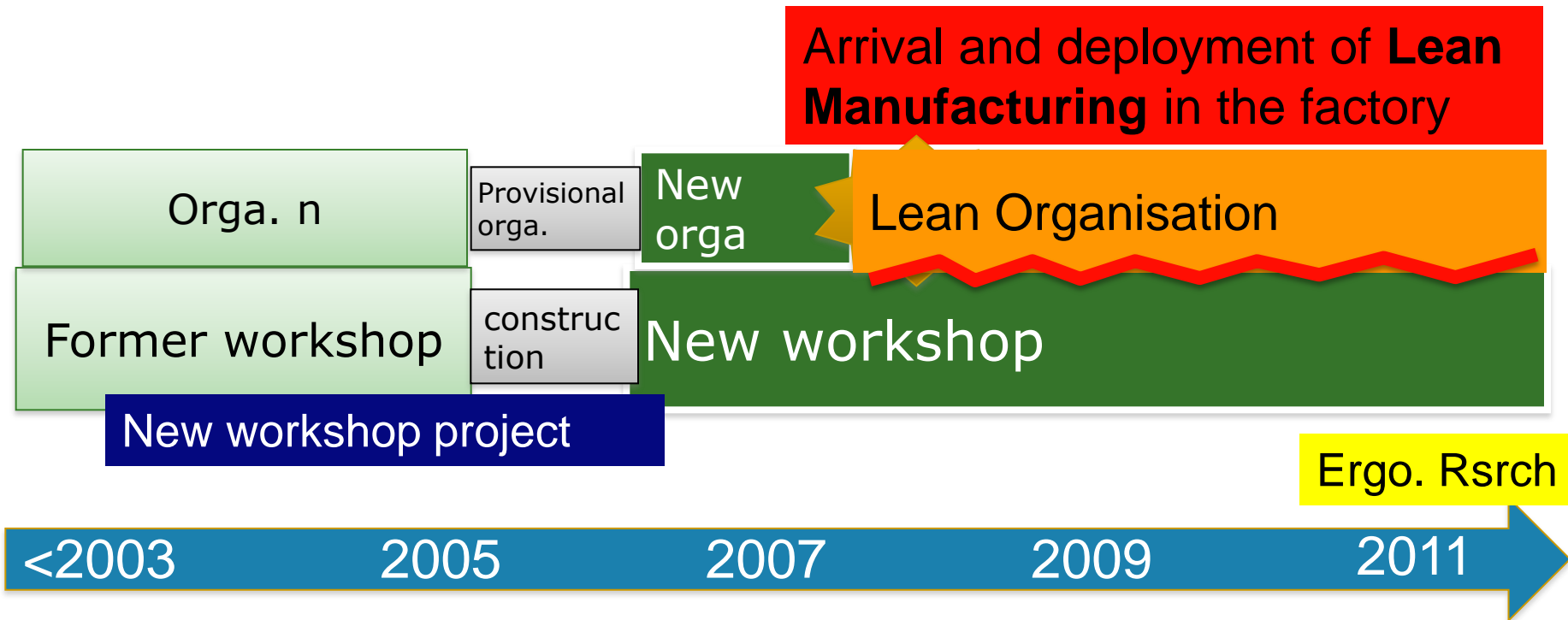
- Occupational physician
- 5 Painters

How did painters feel about the evolutions of the workshop?

	Positives	Negatives	Without info on csq	Total
Changes	16	3	8	27
Persistences	1	4	0	5

- Positives : mostly technical elements
- Negatives : mostly organizational elements :
 - Just-in-time -> buffers stock reduction
 - Responsiveness -> Increase of parts to be painted in emergency

Chronological reconstruction of the workshop evolutions



→ 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 appetite for « innovative turn-key tools » : lean, freedom-form company, holacracy, co-working...

Support the sustainable development of individuals, collectives and organizations?

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- 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?

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 - « *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?

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



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



Thank you