



HAL
open science

Knowledge Management as a driver for prevention and performance trade offs.

Guilherme Alcantara Pinto, Isabelle Nicolai, Christian Michelot

► To cite this version:

Guilherme Alcantara Pinto, Isabelle Nicolai, Christian Michelot. Knowledge Management as a driver for prevention and performance trade offs.. XXXI International Symposium of the ISSA Construction Sector, Jun 2022, Berlin, Germany. hal-03734849

HAL Id: hal-03734849

<https://hal.science/hal-03734849v1>

Submitted on 21 Jul 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Knowledge Management as driver for prevention and performance trade-offs

Guilherme Alcântara Pinto^{1,2}, Isabelle Nicolai¹, Christian Michelot^{2,3}

1 Laboratoire Génie Industriel – École CentraleSupélec, Université Paris-Saclay
 2 Chaire Prévention et Performance – École CentraleSupélec, Université Paris-Saclay
 3 Département de Sciences Humaines et Sociales – École CentraleSupélec, Université Paris-Saclay



Research presented and published at



held at



International Conference on Information Management, 2022



How to achieve safety and production goals together?

(OSHA, 2020; Pagell et al., 2014, 2015, 2020; Hu et al., 2020; Jeschke, 2022; Pinto, et al., 2021, 2022)

Practitioners' difficulties: How to place safety as a strategical concern? Safety is still a "sidecar" to workers that proposes extra tasks.

Literature gap: Safety and operations are two distinct worlds: how to achieve safety and production goals?

Research objective: Propose a management approach that bridges safety and production goals, placing safety as a strategic concern.

A paradigmatic approach on safety management literature

(Hollnagel 2015, 2017; Baker & Nelson, 2005)

Resilience Based-Safety: The work-as-done (what we do) only exists because we adapted work-as-imagined (planning). Safety studies should investigate how workers adapt themselves, create knowledge.

Bricolage: Adaptations done convey workers' safety and productions notions. Project conception should incorporate adaptations that improve both together.

Methods employed

(Chevalier & Buckles, 2013)

Field query: involving around 30 professionals from shopfloor to strategic levels

Research diary: Summing up to 20-000 words (around 52 pages) done closer to the visit-as possible, and the researcher's voice notes

Key tool: Time-line from Participatory Action Research approach

Towards performance: creating the prevention effect

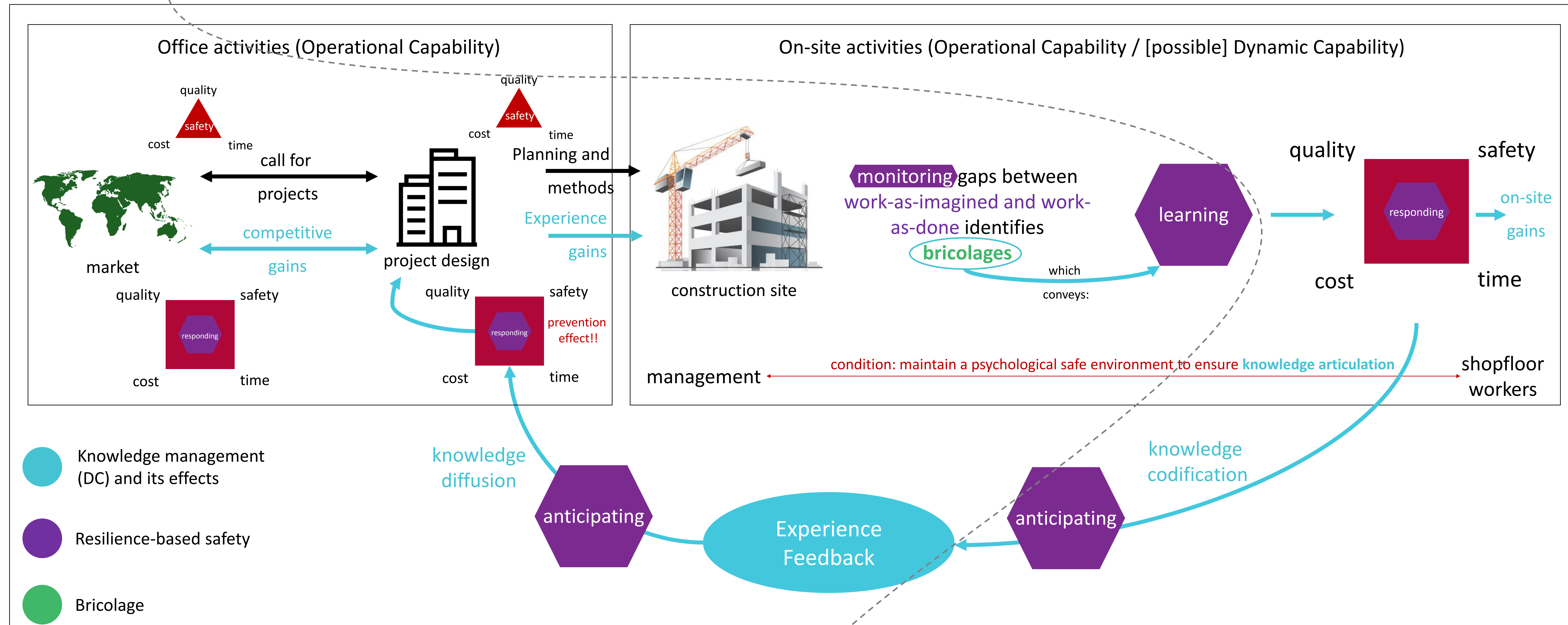
(Zollo & Winter, 1999; Felin, 2005, 2012, 2020)

Creating a knowledge management structure over the bricolages enables both prevention effect and performance gains.

The strategic management literature that suggests this is **Dynamic Capabilities (DC):**

Dynamic Capabilities: Organization is a box with knowledge; when we apply it, we produce merchandise; if we discover it, we gain market or adapt to pressures.

Micro-foundations of DC: The discovery of new knowledge comes from applying knowledge; the persons who are part of the organization are key.



Final considerations and future research

The achievement of production and safety goals together is done bricolage (a big value leak in the organization).

We identified different types of gains: one related to the construction site and the other to the construction company.

Micro-foundations of Dynamic Capabilities and bricolages can provide a proper "theoretical nest" to place Resilience-based safety literature in strategic management.

Knowledge management is key to obtain performance from safety activities because it enables prevention effects.

Further investigation: how to conceive the knowledge management in this scheme? How should it work? Which indicators should we use to manage it?



PhD Candidate: Guilherme Alcântara Pinto, Msc., Eng.
 Thesis Advisor: Isabelle Nicolai, Prof
 Prevention and Performance Research Committee

Want to know more?



