COMBINING LEAN AND AGILE PROJECT MANAGEMENT IN A MULTI-PROJECT ENVIRONMENT: CASE STUDY IN A RETAIL COMPANY

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RESEARCH AIMS

Propose a planning and control model for managing construction projects in a multi-project environment, which combines theoretical elements from Lean Production and Agile Project Management.
CONTEXT

- Fashion retailer company from Brazil

- **Portfolio of 40-60 projects a year**: several parts of Brazil and other Latin American countries

- **Different types of projects**: new buildings, retrofit, refurbishment (internal shops)

- **Thirty engineers and architects**: mostly design managers and construction project managers

- **Coordination of different types of suppliers** (designers, construction management companies, general contractors, and furniture suppliers)
COMPLEXITY ATTRIBUTES

- **Uncertainty**: refurbishment or retrofit projects, broad geographical distribution
- **Interdependence**: shared resources (managerial capacity)
- **Fast projects**: need to overlap stages (increases the degree of interdependence)

(WILLIAMS, 1999)
EXISTING PLANNING AND CONTROL SYSTEM

- Traditional project management approach
  - CPM as the main planning and control tool
  - Emphasis on the control of deliverables
  - Performance measurement focused on results
- Poor supply chain integration
- Many problems related to delays and quality deviations
- Problems are detected too late
Project management standardized weekly report

Long network of commitments (from construction management to operational planning meetings)
RESEARCH METHOD

- Design Science Research (DSR) conducted through a research strategy similar to Action Research
**PROCESS PROTOCOL**

**ETAPA 1**
- **Fase1.1**
- **Fase1.2**
- **Fase1.n**

**ETAPA 2**
- **Fase2.1**
- **Fase2.2**
- **Fase2.n**

**ETAPA 3**
- **Fase3.1**
- **Fase3.2**
- **Fase3.n**

**ETAPA 4**
- **Fase4.1**
- **Fase4.n**

**Process protocol**
- **Hard and soft gates**
- **Main responsible for the process**
- **Collaborative process**

**Existing process map**
- **Design management**
- **Construction management**
- **Interior design**
- **Cost and document management**
- **Other departments**
- **Main suppliers**
MODEL INITIALLY PROPOSED

Model

★ Schedule definition in terms of milestones
★ Constraints management from a look-ahead process

Long-term planning

Stage planning

★ Follow-up of constraints previously identified
★ Management of emergent constraints

Short-term planning

Process protocol

Single project view

Multi-project view
PRACTICES IMPLEMENTED

- Multidisciplinary teams
- Early participation of stakeholders in project decisions
- Collaboration
- Visual management
RESULTS

Constraints from look-ahead planning during the design stage (total of 4 meetings)

Typical PPC of a construction project
Conclusions (partial)

- **Nature of planning and control:**
  - Large number of *short, diverse and fragmented activities*
  - Typical assignments: check, call, confirm, communicate, align, request, etc.
  - Need to manage *emerging constraints*

- **Combination of Agile and Lean:**
  - Need to deal with *complexity*
  - **Colocation** (if possible) and frequent *informal contacts*
  - Meetings have a *different role* (mostly focused on critical problems)
  - **Visual management** must be used to support collaboration
  - More emphasis on two *Resilience Potentials* (Holangell, 2011): anticipate and learn (rather than monitor and control)
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