

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

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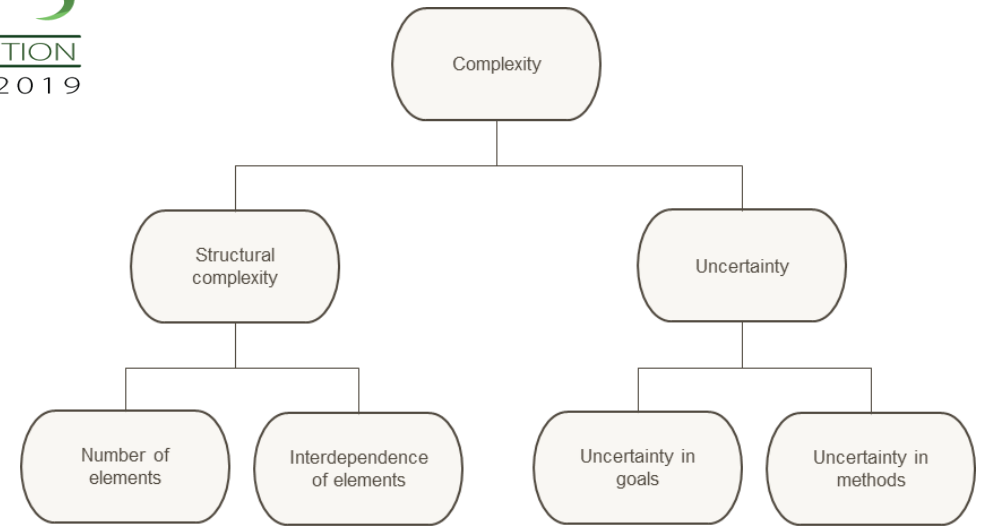
## RESEARCH AIMS

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

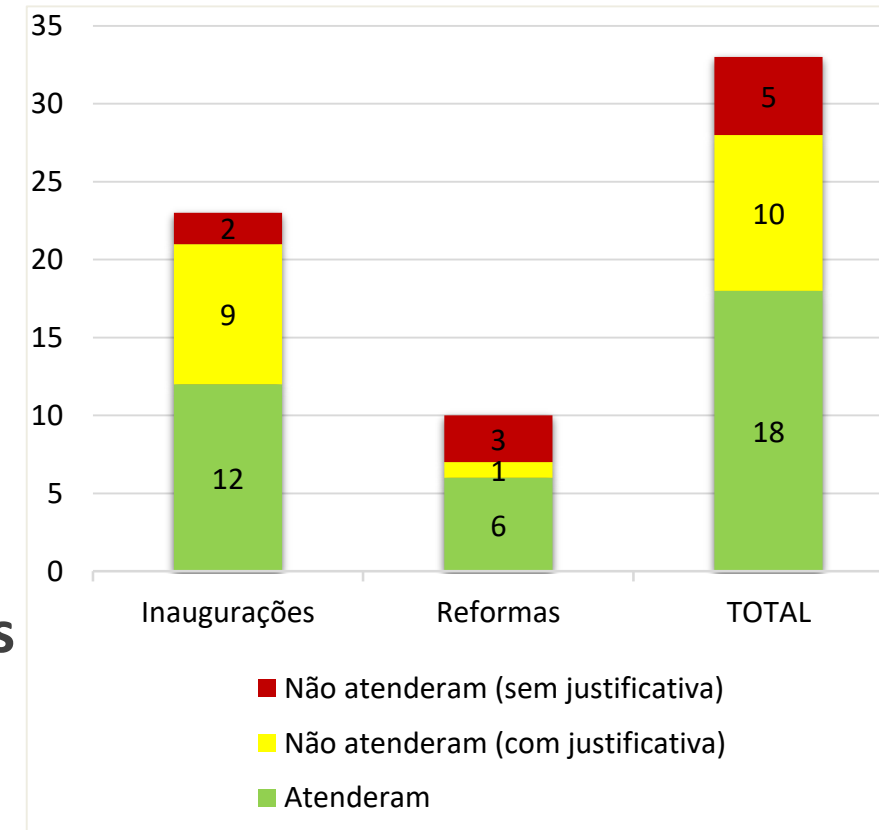


(WILLIAMS, 1999)

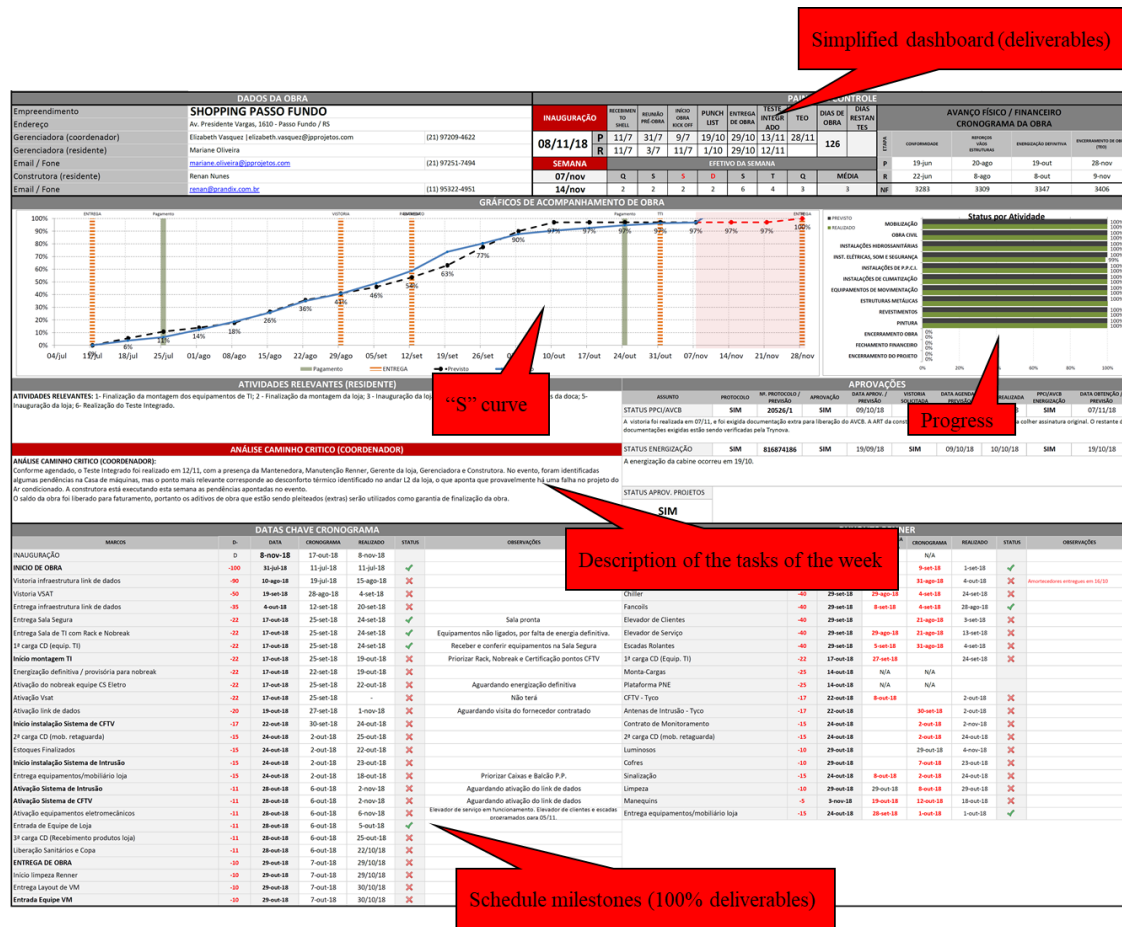
- **Uncertainty:** refurbishment or retrofit projects, broad geographical distribution
- **Interdependence:** shared resources (managerial capacity)
- **Fast projects :** need to overlap stages (increases the degree of interdependence)

# EXISTING PLANNING AND CONTROL SYSTEM

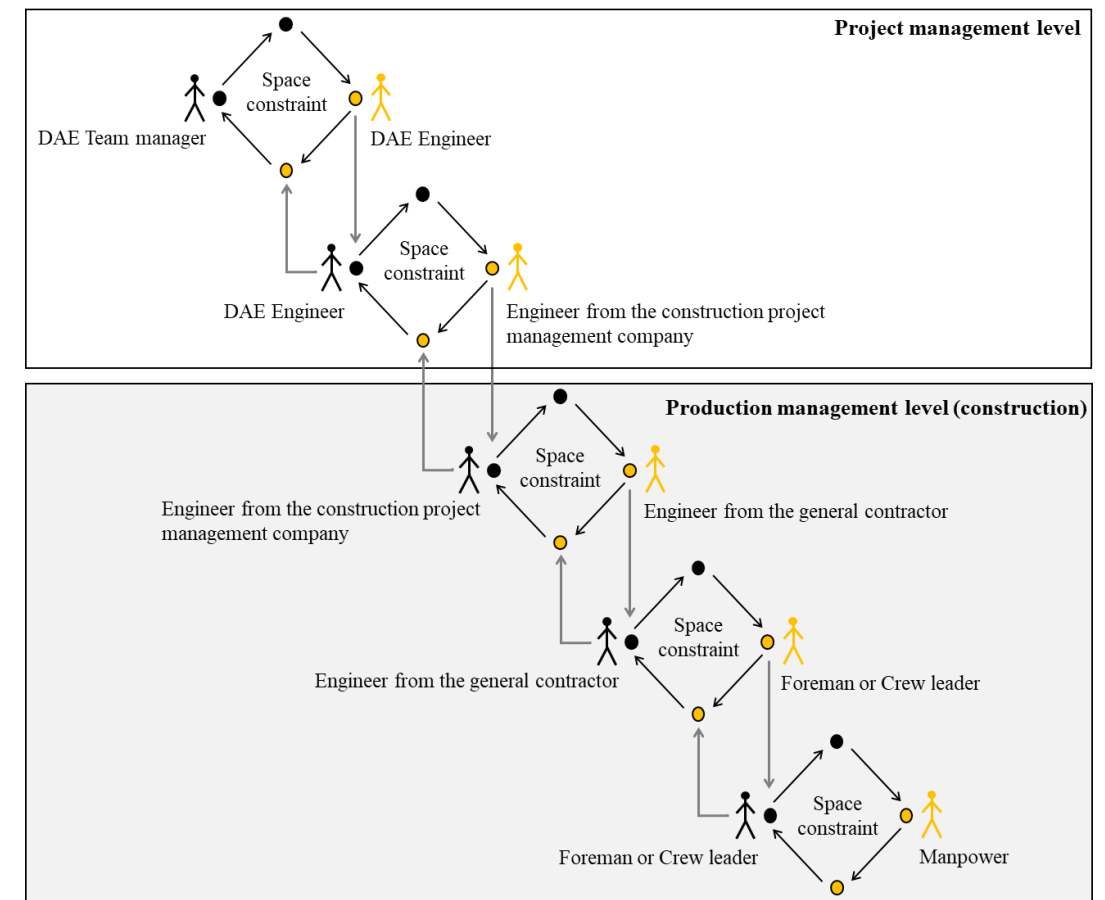
- **Traditional project management approach**
  - CPM as the main planning and control tool
  - Emphasis on the control of deliverables
  - Performance measurement focused on results
- **Poor supply chain integration**
- **Many problems related to delays and quality deviations**
- **Problems are detected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



## Project management standardized weekly report

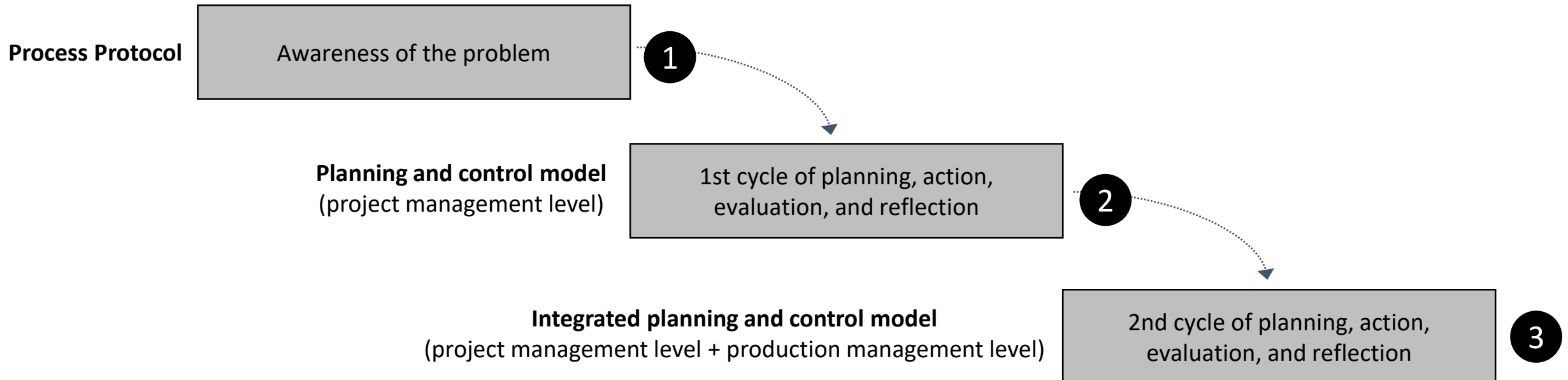


## Long network of commitments (from construction management to operational planning meetings)

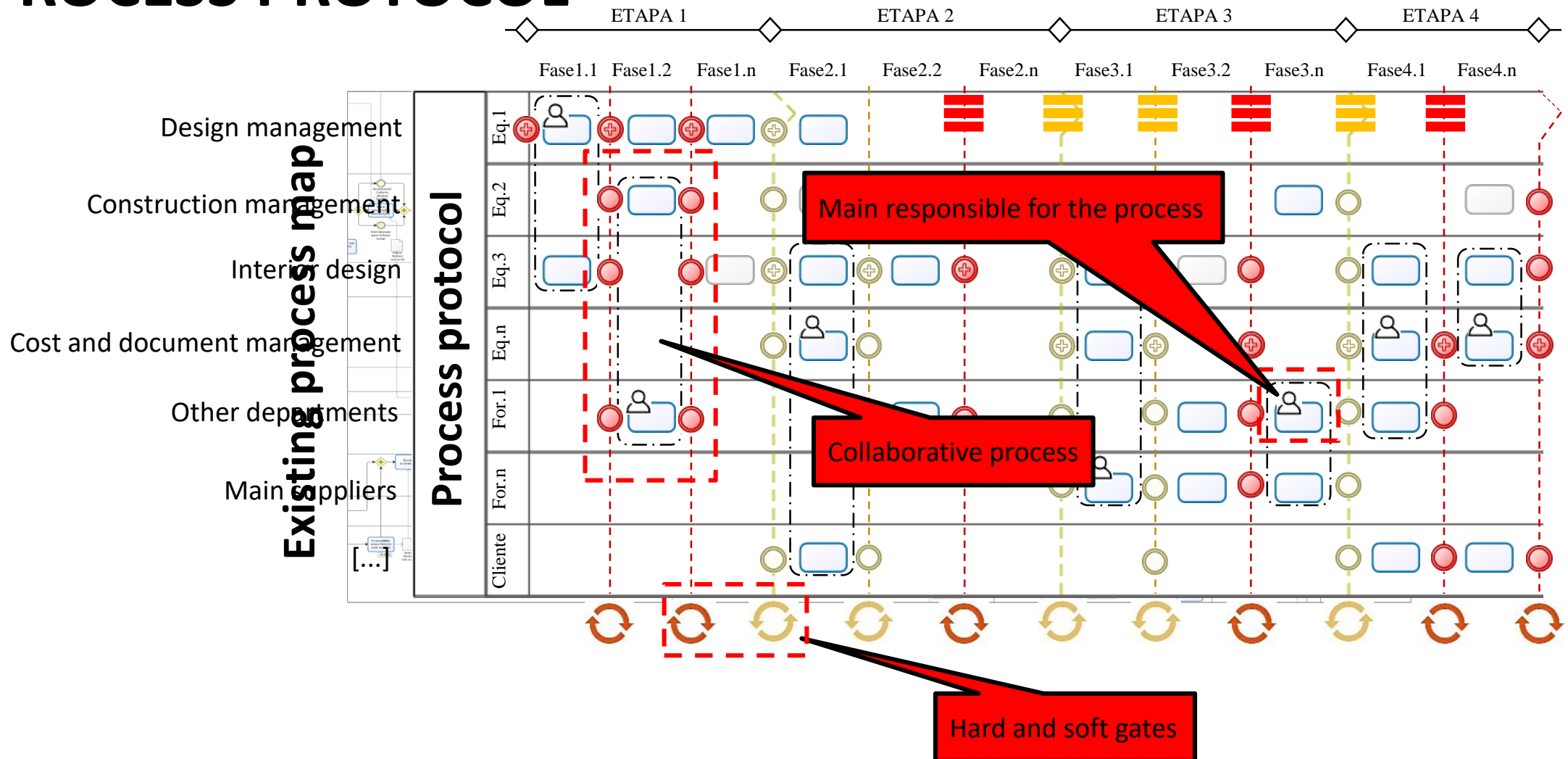


# RESEARCH METHOD

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



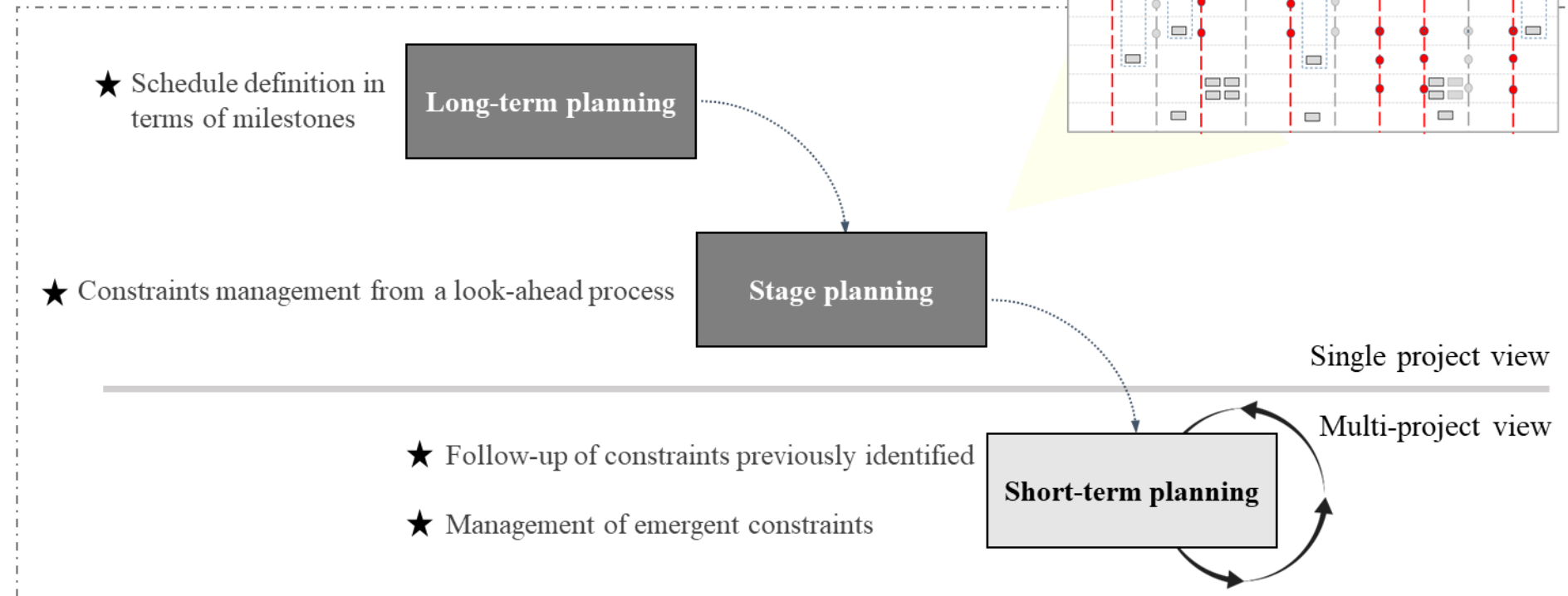
# PROCESS PROTOCOL





# MODEL INITIALLY PROPOSED

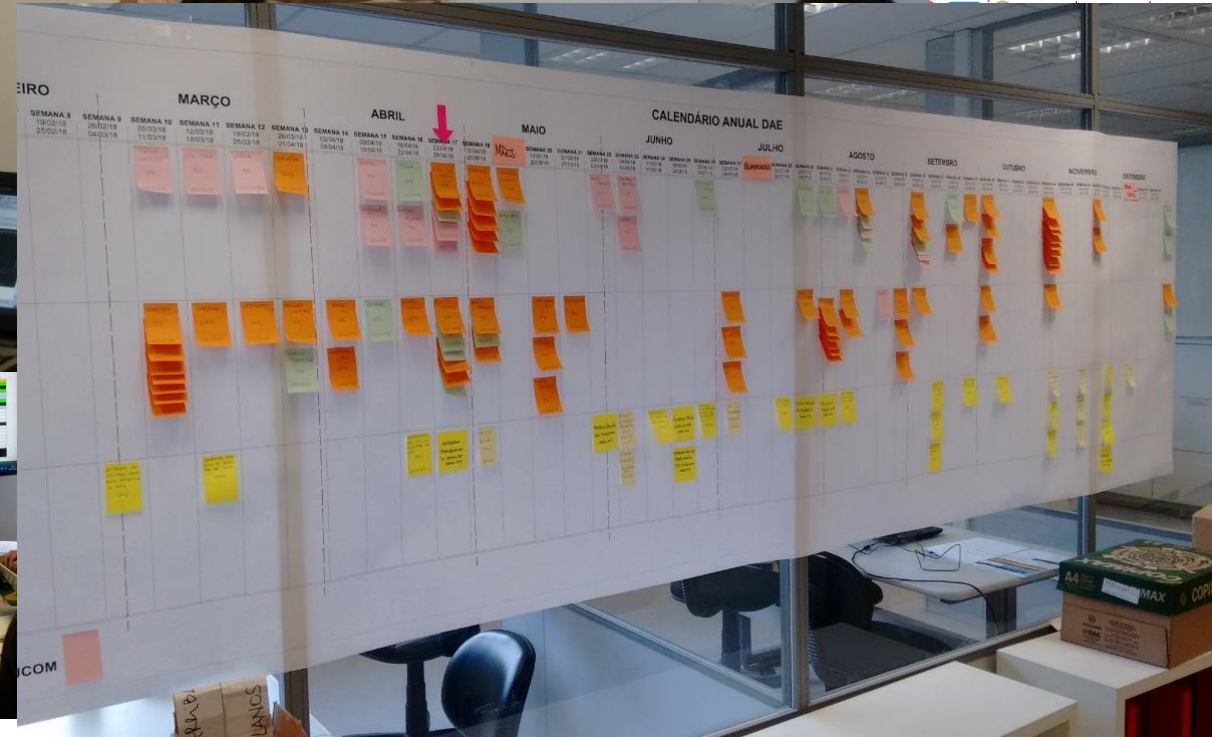
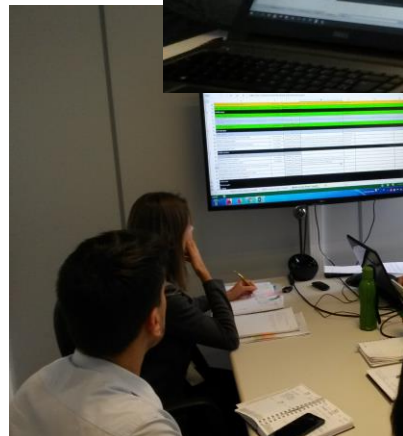
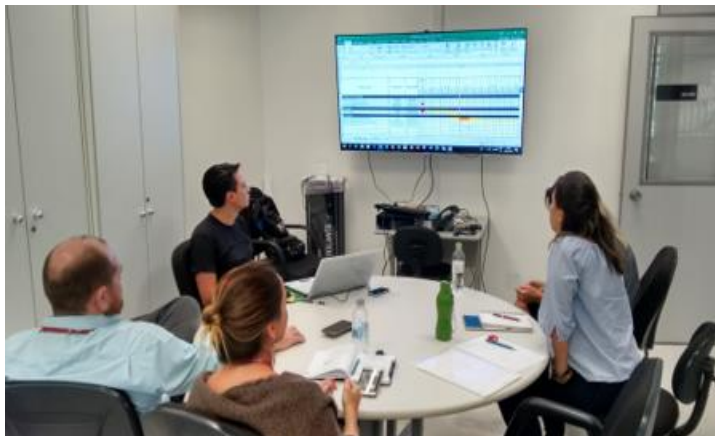
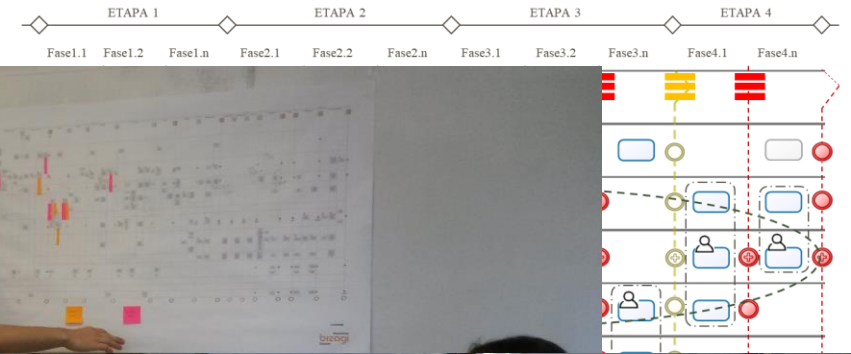
## Model



# PRACTICES IMPLEMENTED

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

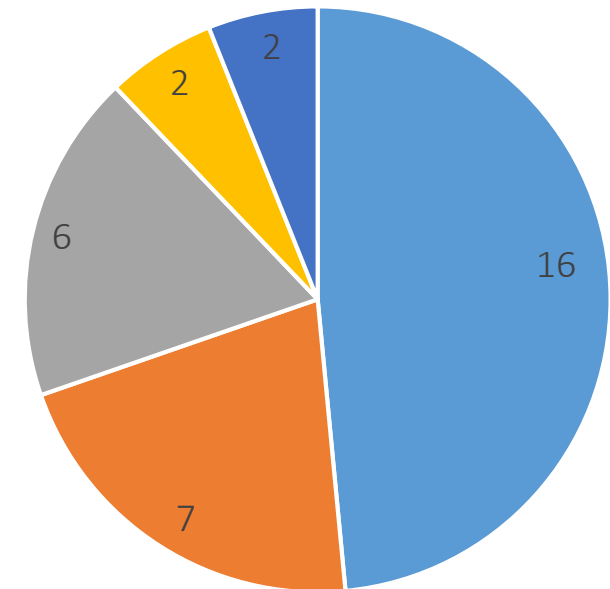
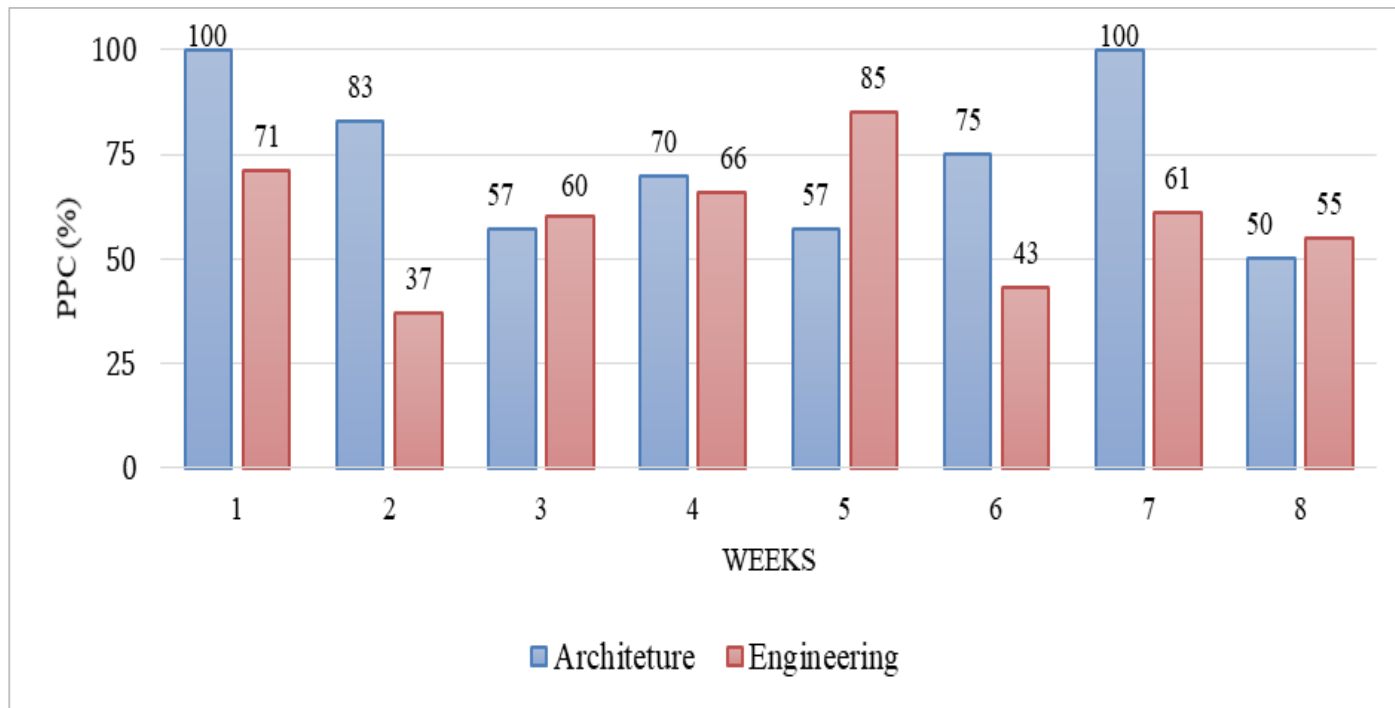
## Process protocol



# RESULTS

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

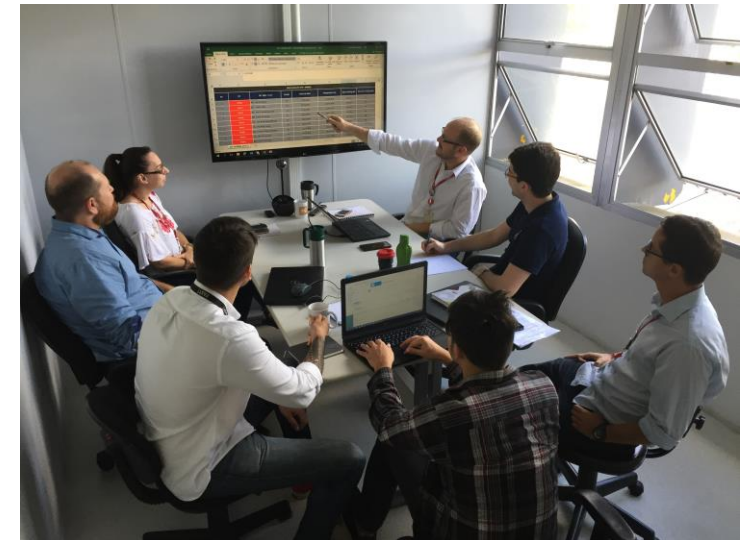
Typical PPC of a construction project



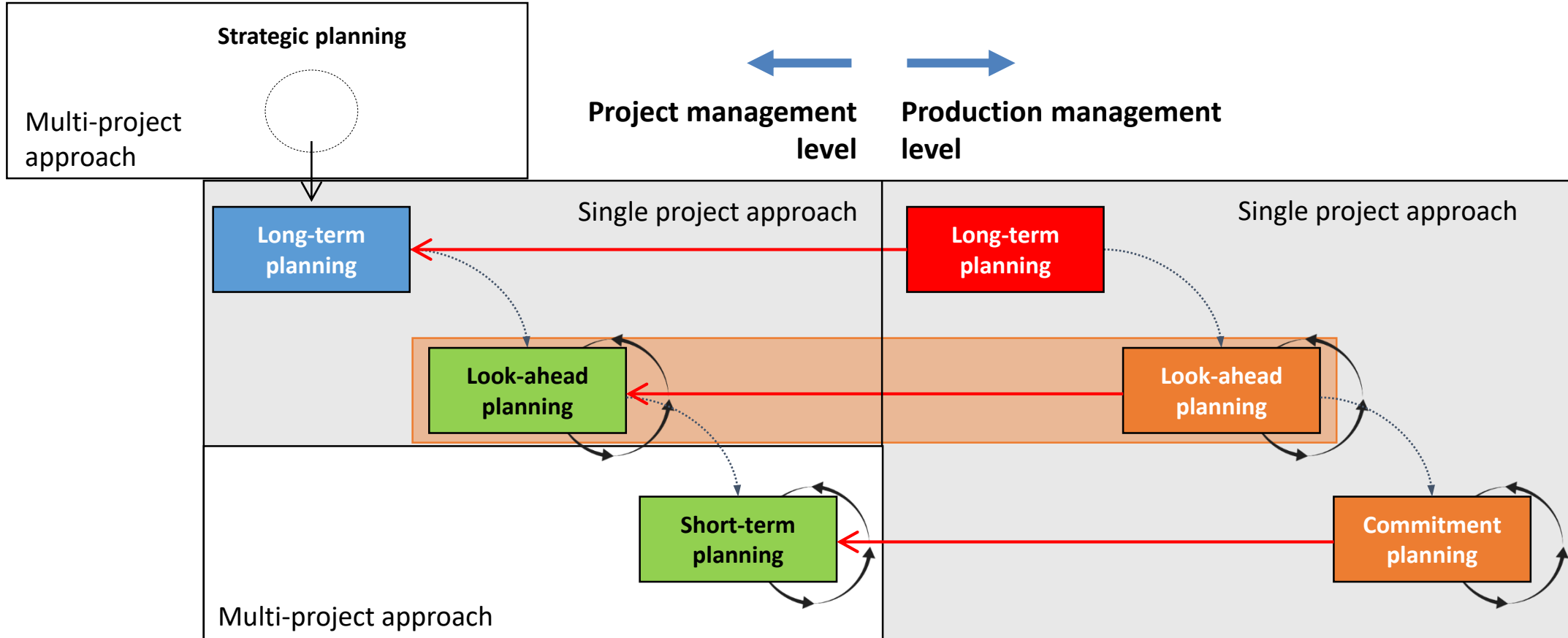
- Long-lead items for construction
- Supply chain contracting
- Design validations
- Legal documents
- Shell availability


# 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)



# REFINED MODEL



 Push planning (goals)

 Predominantly based on Last Planner

 Predominantly based on Scrum

 Production system design

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