

Perspective for the implementation of Lean Construction in Germany

International Case Studies from America and Australia

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Agenda

Background

Objectives

Case Studies

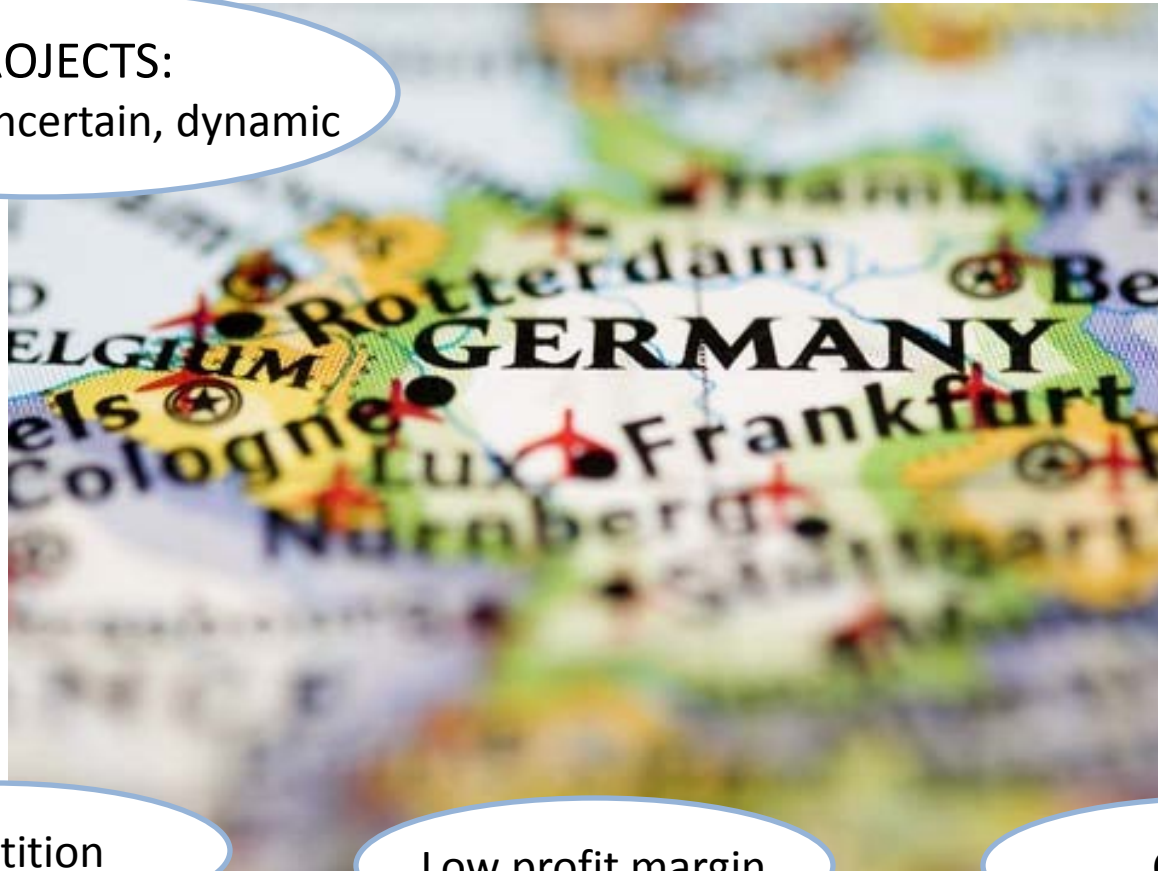
Results

Conclusion



Background

PROJECTS:
complex, uncertain, dynamic



Competition

Low profit margin

Claims



Objectives



Cooperative Project Delivery System

- Lean principles and tools
- Relational contract
- German construction contract procedures



CHH – Project



Lean Project Delivery

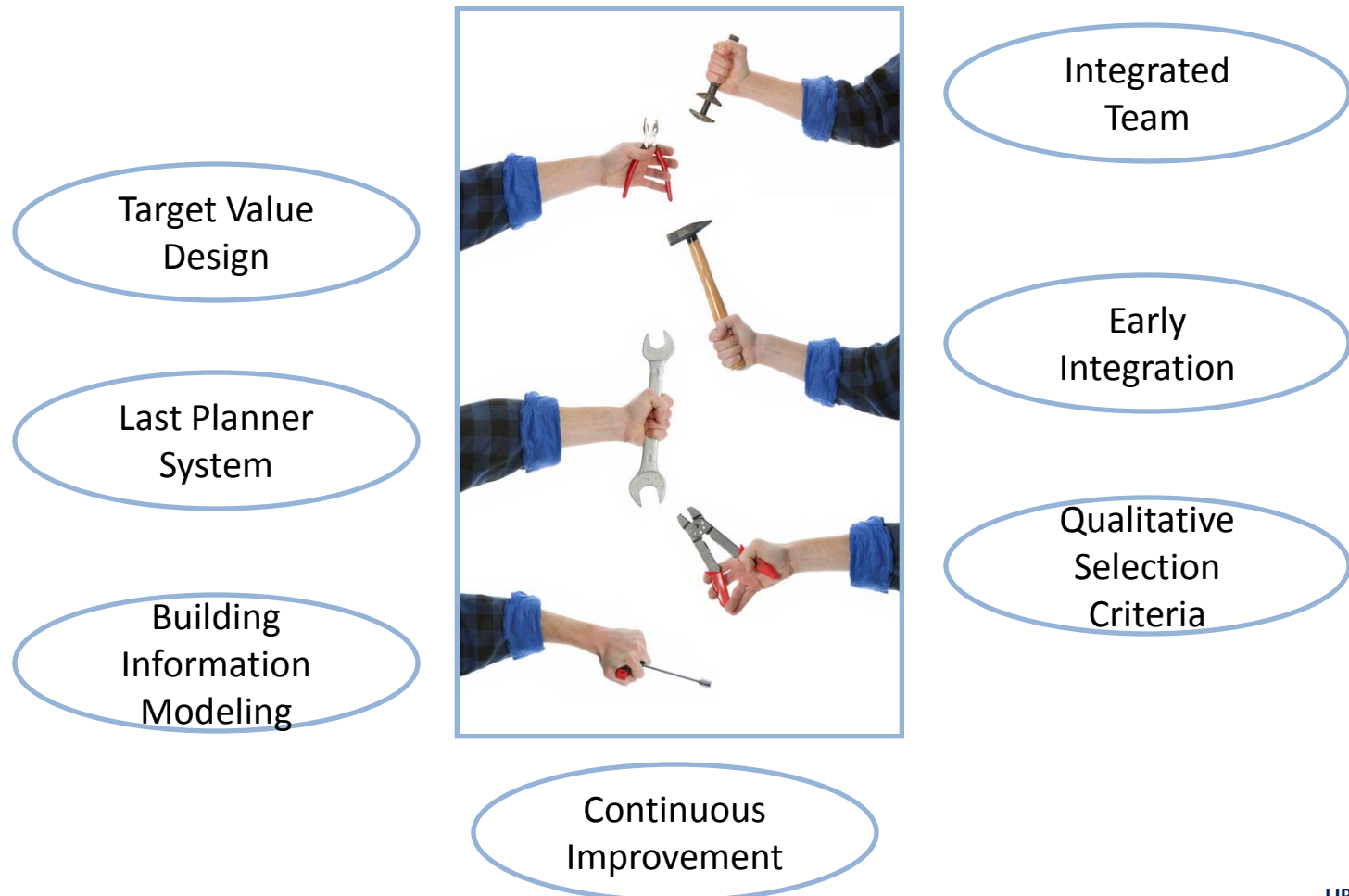
- Identification of important tools
- Integrated project team
- Selection of trade partners

Integrated Form of Agreement (IFOA)

- Underlying philosophy
- Support of lean tools
- Affect on the cooperation within the team



Results – Lean Project Delivery



Results – IFOA

Behavioural Strategy

- Defines behaviour by the „Five Big Ideas“
- Defines Lean Project Delivery
- Team approach to sharing responsibilities
- Decision made by the Core Group with consensus

Commercial Strategy

- Cost plus fee
- Fixed fee
- Risk is limited
- Shared risks and rewards
 - Financial risks shared via „at risk pool“
 - Financial savings shared via rewards
- Incentives



Performance: Lean Project Delivery & IFOA



- Time
- Cost
- Innovation
- Life Cycle



Alliancing



General

- Different types of alliances
- Alliance agreement
- Selection and procurement

West Gate Freeway Alliance

- Integrated team
- Factors of success
- Challenges



Results – Alliancing

Value for Money

Integrated Team

Independent Auditor

Selection Process

Key Result Areas

Lessons Learned

Sub-Alliances



Results – Alliancing

Behavioural Strategy

- Alliance principles
- „One-team“ approach
- „No-blame“ culture
- Decision made unanimously
- Legal resource limited to wilful default

Commercial Strategy

- Cost plus fee
- Fixed fee
- Risk is capped
- Shared risks and rewards
- Incentives
 - Monetary criteria
 - Non-monetary criteria
- Value-for-Money through independent review



Performance - Alliancing

- Cost



- Time



- Innovation



- Key Result Areas



(Safety, Sustainability and Environment, Quality, Functionality, Stakeholder management, ...)



German Construction Contract Procedures (VOB)

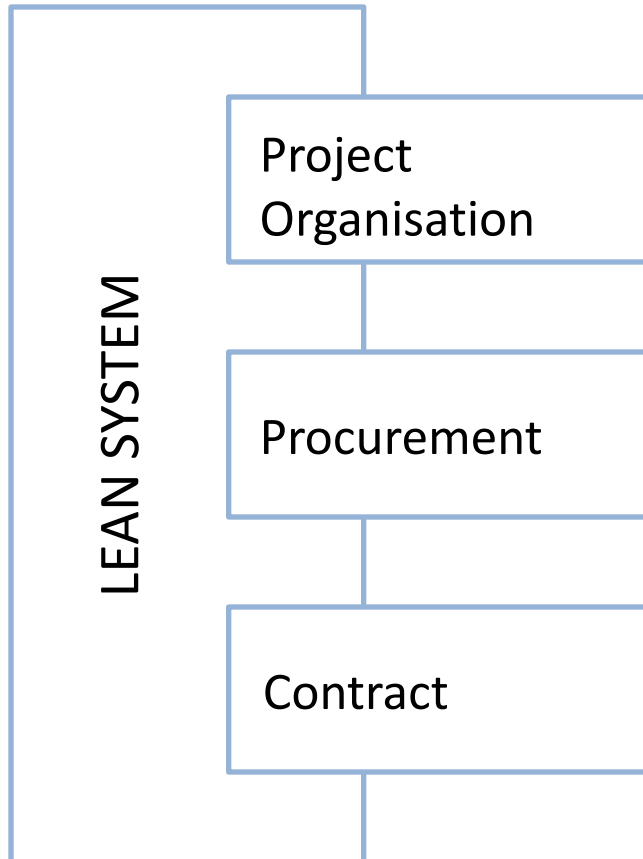


- Separation between design and construction
- Lump-sum or unit-price contract
- Tendering - public invitation to tender, exceptionally:
 - Limited invitation to tender
 - Single tender action
 - Competitive dialogue
- Selection based on:
 - Technical qualification
 - Capacity
 - Reliability



Lean System

Factors of success



- Early integration of team members
- Cross-functional team
- Use of lean-principles
- Qualitative selection criteria based on:
 - Experience
 - Capability
- Commercial Strategy
- Behavioural Strategy
- Incentives



Internal Organisation



- Strategy for implementation
 - Company approach or project basis
 - Holistic approach with regard to life cycle cost
 - Information of future proponents
- Profil of requirements
 - Owner
 - Decision making

Conclusion

The implementation of **Lean tools** affects the project results with regard to **cost, time and quality**. It also supports the **collaboration** between the team members.

Relational contracts support the project delivery by defining contractual conditions which enhance a **safe framework** for the involved parties and therefore support the **cooperation** within the team.

German public clients are **limited** by the existing procurement rules with regard to the early integration of team members as well as the choice of **selection criteria**.

