UTILITY COORDINATION AS BOTH LOOSE AND VERY TIGHTLY COUPLED PROCESSES

CONSTRUCTION MANAGEMENT & ENGINEERING DEPT. | VISICO UNIT

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1. Organizational context of utility reconstructions
2. The utility coordinator
3. Research goal & method: ethnographic interviews
4. Findings: two coordination styles
5. Discussion
Multi-Client, Multi-Contractor Networks
Shared workspace

Construction planning: negotiations instead of unilateral decision making

Too loose alignment of stakeholders’ construction plans → conflicts troubleshooting onsite
• Construction as *loosely coupled system* (Dubois Gadde 2002)
• Couplings occur between: individuals, organizations, and activities (Weick 1979)
• Loose coupling: mutual relations are weak, slow, or infrequent.
• Systems have a *zero sum equilibrium*: tight couplings balance out loose couplings, and vice versa:

<table>
<thead>
<tr>
<th>Planning stage tightness</th>
<th>Execution stage tightness</th>
<th>∑</th>
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<tbody>
<tr>
<td>+/-</td>
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### Existing the Couplings

<table>
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<tr>
<th>Existing situation</th>
<th>Consequences</th>
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<tr>
<td>Planning stage couplings</td>
<td>- Limited alignment,</td>
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<td></td>
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<td>Execution stage couplings</td>
<td>++ Large focus on troubleshooting</td>
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<td>and improvisation</td>
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**Possible causes** for loose upfront integration
1. No perceived need to tightly couple planning stage
2. No classical hierarchical mechanisms to enforce tight integration

$$\sum \approx 0$$
### Balancing the Couplings

<table>
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<th>Consequences</th>
<th>Balanced, ideal-type situation</th>
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"∑ ≈ 0"  

Upfront integration loosens tight couplings during execution
• **Mediator** performs coordination activities to balance the ‘tightness’ of inter-organizational couplings
• Without formal or hierarchical coordination mechanism

• *RQ: How to characterize coordination actions?*
• Identified 7 mediators: 'utility coordinators'
• Conducted ethnographic interviews (Spradley 1979)
• Tape-recorded
• Qualitative analysis in ATLAS.ti
  o Identified actions, behaviors and attitudes
  o Categorized based on inductively derived dimensions:
    o Level of involvement and moment of involvement
We identified 14 ‘daily coordination actions’:

- Initiate interdisciplinary meetings
- Collect and distribute contact details
- Support timely issuing of permits and project documentation
- Being aware of existing plans and decisions made
- Visit and monitor on-site work
- Ensure constructability
- Verify accuracy and completeness of location information
- Control feasibility of contractor’s schedules
- ...
- ...
- ...
Being aware of all current plans and decisions:

“I find it important to be mobilized by all involved stakeholders. I want to be recognizable. I want to be sure that people know that they can reach me in case they have questions. And I want to be able to answer these questions. In fact, I am a key figure in the whole process.”
Visiting and monitoring on-site work:

“Well, I always inspect the construction site at the outset of the project. Just as soon as I get an assignment, I will go there to get a grip of how the street, neighborhood or intersection will look like. Because, when one is in a meeting, you need to know where the trees or culverts are.”
Categorization of coord. actions

Moment of Involvement

Level of Involvement

Reactive (following formal procedures)

Pro-active (shape processes and actively intervene)

1. 9.

2.

4.

6.

8.

10.

7.

5.

12.

11.

3. 13.

Execution stage onward

Planning stage onward
**Conclusion**

- **Mediators** balance the tightness of couplings between stakeholders in utility reconstruction processes.
- Fourteen **coordination activities** identified.
- To characterize couplings: *level of involvement* and *moment of involvement*.
- Two **coordination concepts** seem dominant:
  1. Pro-active involvement in early planning stages.
  2. Reactive approaches during execution stages.
• First conceptual description of coordination in utility reconstruction processes

• Intersubjective verification
• Validate findings on greater sample
• Differentiate between coordination contexts

• Explicated coordination styles, help practitioners to
  o Reflect on their own work practice
  o Explore how new (VDC) tools support existing practices
Avez vous questions?