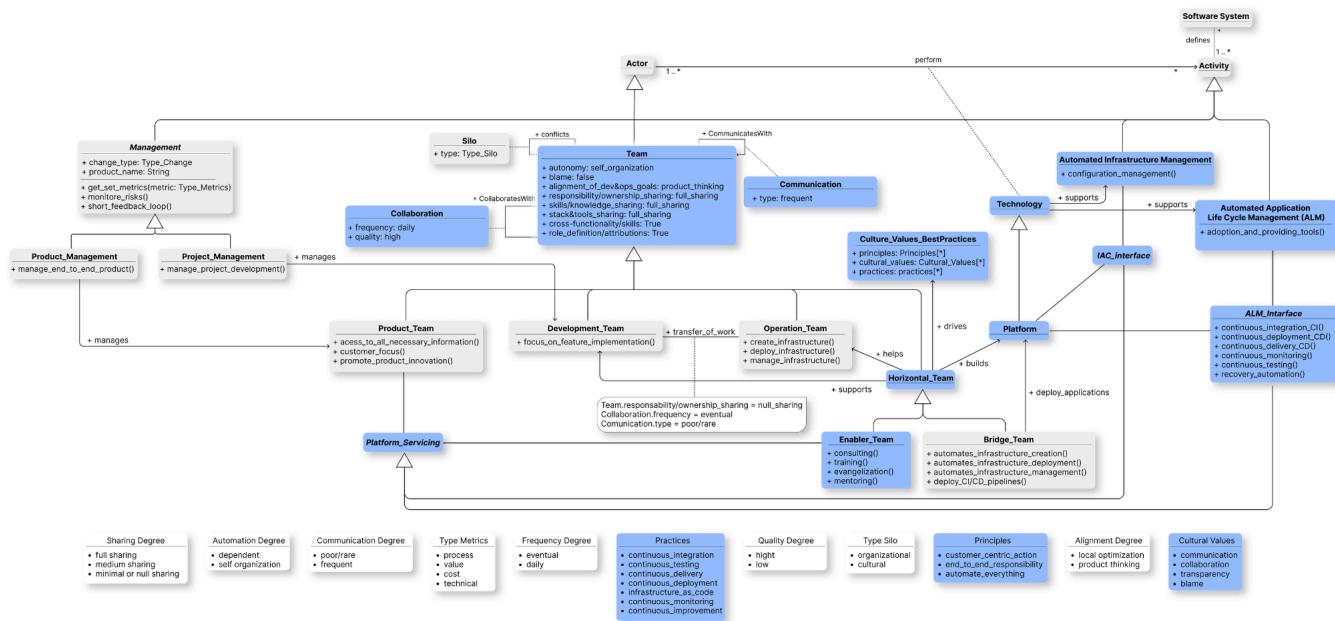


Operationalizing Software Engineering Theories for Practical Validation

Appendix-E. Hypotheses for the Enabler [Platform] Team Structure

This appendix presents the 30 hypotheses related to the Enabler [Platform] team.



P1. A TEAM CULTURE BASED ON RESPONSIBILITY/OWNERSHIP SHARING ENABLES COLLABORATION

| Categoric relationship | | | Team | | |
|------------------------|-----------|----------|----------------------------------|----------------|-------------------------|
| | | | responsibility/ownership sharing | | |
| | | | full sharing | medium sharing | minimal or null sharing |
| Collaboration | frequency | daily | h1.1 | h1.2 | |
| | | eventual | h1.4 | h1.5 | |
| | quality | high | h1.7 | h1.8 | |
| | | low | h1.10 | h1.11 | |

- H1.1 (h1.1 and h1.4): A team culture based on the full sharing of responsibilities makes it possible to move from eventual collaboration between team members to daily collaboration.
- H1.2 (h1.7 and h1.10): A team culture based on the full sharing of responsibilities makes it possible to move from low-quality collaboration between team members to high-quality collaboration.

P3. AUTOMATED APPLICATION LIFE-CYCLE MANAGEMENT IS ASSOCIATED WITH COLLABORATION. COLLABORATION IMPACTS AUTOMATED APPLICATION LIFE-CYCLE MANAGEMENT AND VICE VERSA. AUTOMATION AND COLLABORATION MUTUALLY FACILITATE THE ADOPTION OF THE OTHER, SO THEY ARE COMPLEMENTARY

| Categoric relationship | | | Automation | |
|------------------------|-----------|----------|---|-------------------------------------|
| | | | type | |
| | | | Automated application life-cycle management | Automated infrastructure management |
| Collaboration | frequency | daily | H3.1-H3.1' | |
| | | eventual | H3.2-H3.2' | |
| | quality | high | H3.3-H3.3' | |
| | | low | H3.4-H3.4' | |

- H3.1 Teams using automated application life-cycle management are associated with daily collaboration

- H3.1' Teams with daily collaboration are associated with automated application life-cycle management
- H3.3 Teams using automated application life-cycle management are associated with high collaboration
- H3.3' Teams with high collaboration are associated with automated application life-cycle management.

P4. A TEAM CULTURE BASED ON KNOWLEDGE SHARING ENABLES COLLABORATION

| Categoric relationship | | | Team | | |
|------------------------|-----------|----------|-------------------|----------------|-------------------------|
| | | | knowledge sharing | | |
| | | | full sharing | medium sharing | minimal or null sharing |
| Collaboration | frequency | daily | H4.1 | H4.2 | H4.3 |
| | | eventual | H4.4 | H4.5 | H4.6 |
| | quality | high | H4.7 | H4.8 | H4.9 |
| | | low | H4.10 | H4.11 | H4.12 |

- H4.1: A team culture based on full knowledge sharing is associated with daily collaboration between team members.
- H4.7: A team culture based on full knowledge sharing is associated with high quality collaboration between team members.

P5. IF A TEAM IS CHARACTERIZED BY CROSS-FUNCTIONALITY/SKILLS THIS WILL INCREASE COLLABORATION

| Categoric relationship | | | Team | |
|------------------------|-----------|----------|----------------------------|-------|
| | | | cross-functionality/skills | |
| | | | true | false |
| Collaboration | frequency | daily | H5.1 | |
| | | eventual | H5.2 | |
| | quality | high | H5.3 | |
| | | low | H5.4 | |

- H5.1 Multidisciplinary/poly-skilled teams (i.e., teams with all the necessary skills such as development, infrastructure, etc.) are associated with a daily collaboration with other teams

- H5.3 Multidisciplinary/poly-skilled teams (i.e., teams with all the necessary skills such as development, infrastructure, etc.) are associated with a high collaboration with other teams

P6. COLLABORATION IS A PROPERTY OF TEAMS IN WHICH SKILLS TAKE PRECEDENCE OVER ROLES, I.E., THE ROLE DEFINITION/ATTRIBUTIONS CODE; HENCE, IF THERE ARE ALREADY SEPARATE ROLES, RESPONSIBILITIES ARE VERY CLEAR AND COLLABORATION IS NOT FOSTERED OR PROMOTED

| Categoric relationship | | | Team | |
|------------------------|-----------|----------|-------------------------------|-------|
| | | | role definitions/attributions | |
| | | | true | false |
| Collaboration | frequency | daily | H6.1 | H6.2 |
| | | eventual | H6.3 | H6.4 |
| | quality | high | H6.5 | H6.6 |
| | | low | H6.7 | H6.8 |

- H6.2: Teams where skills take precedence over roles are associated with daily collaboration
- H6.6: Teams where skills take precedence over roles are associated with high-quality collaboration

P7. A COLLABORATION-BASED CULTURE REQUIRES ALIGNMENT OF DEV & OPS GOALS

| Categoric relationship | | | Team | |
|------------------------|-----------|----------|------------------------|------------------|
| | | | alignment of dev & ops | |
| | | | Local optimization | product thinking |
| Collaboration | frequency | daily | H7.1 | H7.2 |
| | | eventual | H7.3 | H7.4 |
| | quality | high | H7.5 | H7.6 |
| | | low | H7.7 | H7.8 |

- H7.2: Teams aligned with product thinking are associated with daily collaboration
- H7.6: Teams aligned with product thinking are associated with high-quality collaboration

P9. RESPONSIBILITY/OWNERSHIP SHARING IS A PROPERTY OF CROSS-FUNCTIONALITY/SKILLS TEAMS

| Categoric relationship | | Team | | |
|------------------------|---|----------------------------|-------|------|
| | | cross functionality/skills | | |
| | | true | false | |
| Team | responsibility/ ownership sharing | full sharing | H9.1 | H9.2 |
| | | medium sharing | H9.3 | H9.4 |
| | | Minimal or null sharing | H9.5 | H9.6 |

- H9.1: Teams characterized by cross-functionality/skills are associated with full responsibility/ownership sharing.

P11. RESPONSIBILITY/OWNERSHIP SHARING IS A PROPERTY OF ORGANIZATIONAL STRUCTURES THAT RELY ON AN ENABLER (PLATFORM) TEAM. THE EXISTENCE OF PLATFORM TEAMS DOES NOT LEAD TO A SEPARATION OF RESPONSIBILITIES BUT RATHER THEY BECOME FACILITATORS AND MAKE OWNERSHIP SHARING POSSIBLE, UNLIKE DEV OPS (BRIDGE) TEAMS THAT BECOME NEW SILOS WITH THEIR OWN RESPONSIBILITIES (E.G., DEPLOYMENT, MONITORING, ETC.).

| categoric | | Team | | |
|-----------|---|----------------------------|-------|--|
| | | Enabler (platform) | | |
| | | true | false | |
| Team | responsibility/ ownership sharing | full sharing | H11.1 | |
| | | medium sharing | H11.2 | |
| | | Minimal or null sharing | H11.3 | |

- H11.1: Full responsibility/ownership sharing are associated with organizational structures that rely on an enabler (platform) team.

P12. RESPONSIBILITY/OWNERSHIP SHARING IS A PROPERTY OF TEAM SELF-ORGANIZATION AUTONOMY

| Categoric relationship | | | Team | |
|------------------------|--------------------------------------|----------------------------|-------------------|-----------|
| | | | Autonomy | |
| | | | self organization | dependent |
| Team | responsibility/ ownership sharing | full sharing | H12.1 | |
| | | medium sharing | H12.2 | |
| | | Minimal or null sharing | H12.3 | |

- H12.1: Teams characterized by self-organization autonomy are associated with full responsibility/ownership sharing.

P13. A TEAM CULTURE BASED ON RESPONSIBILITY/OWNERSHIP SHARING ENABLES COMMUNICATION

| Categoric relationship | | | Communication | |
|------------------------|---|----------------------------|---------------|----------|
| | | | type | |
| | | | poor/ rare | frequent |
| team | responsibility/ ownership sharing | full sharing | H13.1 | H13.2 |
| | | medium sharing | H13.3 | H13.4 |
| | | Minimal or null sharing | H13.5 | H13.6 |

- H13.2: Teams characterized by full responsibility/ownership sharing are associated with frequent communication.

P15. AUTOMATED INFRASTRUCTURE MANAGEMENT ENABLES
RESPONSIBILITY/OWNERSHIP SHARING

| Categoric relationship | | | Automation type | |
|------------------------|--------------------------------------|-------------------------|-------------------------------------|---|
| | | | Automated Infrastructure Management | Automated Application Life Cycle Management |
| Team | responsibility/ ownership sharing | full sharing | H15.1 | |
| | | medium sharing | H15.2 | |
| | | Minimal or null sharing | H15.3 | |

- H15.1: Teams relying on automated infrastructure management are associated with full responsibility/ownership sharing.

P16. AUTOMATED APPLICATION LIFE-CYCLE MANAGEMENT ENABLES
RESPONSIBILITY/OWNERSHIP SHARING

| Categoric relationship | | | Automation type | |
|------------------------|--------------------------------------|-------------------------|-------------------------------------|---|
| | | | Automated Infrastructure Management | Automated Application Life Cycle Management |
| Team | responsibility/ ownership sharing | full sharing | | H16.1 |
| | | medium sharing | | H16.2 |
| | | Minimal or null sharing | | H16.3 |

- H16.1: Teams relying on automated application life-cycle management are associated with full responsibility/ownership sharing.

P17. SKILLS/KNOWLEDGE SHARING IS A PROPERTY OF TEAMS CHARACTERIZED BY CROSS- FUNCTIONALITY/SKILLS

| Categoric relationship | | | Team | |
|------------------------|--------------------------|-------------------------|----------------------------|-------|
| | | | cross-functionality/skills | |
| | | | true | false |
| Team | skills/knowledge sharing | full sharing | H17.1 | |
| | | medium sharing | H17.2 | |
| | | Minimal or null sharing | H17.3 | |

- H17.1: Teams characterized by cross-functionality/skills are associated with full skills/knowledge sharing.

P18. CROSS-FUNCTIONALITY/SKILLS IS A PROPERTY OF ENABLER (PLATFORM) TEAM

| categoric | | | Team | |
|-----------|--------------|-------|----------------------------|-------|
| | | | cross-functionality/skills | |
| | | | true | false |
| Team | Enabler Team | true | H18.1 | H18.2 |
| | | false | H18.3 | H18.4 |

- H18.1: Teams characterized as enabler (platform) teams are associated with being cross-functional.

P20. IF A TEAM IS CHARACTERIZED BY CROSS-FUNCTIONALITY/SKILLS THIS WILL INCREASE AUTOMATED APPLICATION LIFE-CYCLE MANAGEMENT

| Categoric relationship | | | Team | |
|------------------------|------|---|----------------------------|-------|
| | | | cross-functionality/skills | |
| | | | true | false |
| Automation | type | Automated Infrastructure Management | | |
| | | Automated Application Life Cycle Management | H20.1 | H20.2 |

- H20.1: Teams characterized by cross-functionality/skills are associated with the use of automated application life-cycle management.

P23. AUTOMATED APPLICATION LIFE-CYCLE MANAGEMENT ENABLES SKILLS/KNOWLEDGE SHARING

| Categoric relationship | | | Team | | |
|------------------------|------|---|--------------------------|----------------|-------------------------|
| | | | skills/knowledge sharing | | |
| | | | full sharing | medium sharing | minimal or null sharing |
| Automation | type | Automated Infrastructure Management | | | |
| | | Automated Application Life Cycle Management | H23.1 | H23.2 | H23.3 |

- H23.1: Teams relying on automated application life-cycle management are associated with full skills/knowledge sharing.

P24. ENABLER (PLATFORM) TEAM ENABLES TEAM SELF-ORGANIZATION & AUTONOMY

| Categoric relationship | | | Team | |
|------------------------|-----------------------|-------|-------------------|-----------|
| | | | Autonomy | |
| | | | self organization | dependent |
| Team | Horizontal Enabler | true | H24.1 | |
| | | false | | |

- H24.1: Teams supported by an enabler (platform) team are associated with self-organization and autonomy.

P25. ENABLER (PLATFORM) TEAM PROVIDES PLATFORM SERVICING

| Categoric relationship | | | Team | |
|------------------------|--------------------|---|--------------------|-------|
| | | | Horizontal Enabler | |
| | | | true | false |
| Platform | provided interface | IaC | H25.1 | |
| | | ALM Interface | H25.2 | |
| | | Automated Infrastructure Management | H25.3 | |
| | | Automated Application Life Cycle Management | H25.4 | |

- H25.1: Teams characterized as enabler (platform) teams are associated with providing Infrastructure as Code (IaC) platform services.
- H25.2: Teams characterized as enabler (platform) teams are associated with providing Application Life-Cycle Management (ALM) platform services.
- H25.3: Teams characterized as enabler (platform) teams are associated with providing automated infrastructure management platform services.
- H25.4: Teams characterized as enabler (platform) teams are associated with providing automated application life-cycle management platform services.

P28. ENABLER (PLATFORM) TEAMS PROVIDE AUTOMATED APPLICATION LIFE-CYCLE MANAGEMENT

| Categoric relationship | | | Automation | |
|------------------------|--------------------|-------|-------------------------------------|---|
| | | | type | |
| | | | Automated Infrastructure Management | Automated Application Life Cycle Management |
| team | Horizontal Enabler | true | | 28.1 |
| | | false | | |

- H28.1: Teams characterized as enabler (platform) teams are associated with providing automated application life-cycle management platform services.