Evaluation method and preliminary outcome – 2020_07_03

The study comprises interviews with 5 teams, which all have implemented a software Program (Planview), which substituted Excel in project planning and document organization. The interviews were conducted in the period of July 2017 to December 2017. The implementation of Planview was due on October 1st, 2017.

Each interviewee was surveyed five times, two times before, once in the final implementation stage (end of September 2017) and twice after the implementation.

The interviews are arranged in chronological order and combined in a separate Word Document by participant.

The interviews are evaluated using the text analytical program MAXQDA. Altogether 5 teams are assessed.

All interview sets (word documents for each team participant) for each team are combined into one MAXQDA projected. For each team a separate MAXQDA evaluation file is used which is based on the same main codes. Individual subcodes are admitted.

This method allows to compare the results across the teams and to differentiate results by team.

The evaluation focusses on the IT software project of Planview implementation which has substituted other programs in all of the teams and uses the methodology of visual mapping of a narrative story line a s suggested by Langley (1999)

Contents concerning technical issues of other projects are omitted

Other projects are considered in so far team related general issues are addressed.

Contents concerning individual members curriculum vitae, team participation and team genesis have been elaborated consistently already and are not considered here.

The evaluation assesses team processes in program implementation and includes the evaluation of longitudinal developments.

The text analysis differentiates four main categories.

  a. External moderators impacting team and project implementation
  b. Fundamental team characteristics (valid beyond the IT project)
  c. Individual members attitudes on the IT project

d. Team collaboration in Software Project (Planview)
    e. IT Project outcomes

Concerning the longitudinal aspect comes in as follows: the project related interview results (category b and c) are coded in three stages with regard to Planview implementation:

- before implementation = 1. And 2nd interview,
- during implementation = 3rd interview,
- after implementation = 4th and 5th interview of Planview for each subcategory.

Project outcomes (of Planview) are coded as expectations and factual results.

Drawing on the narrative methodology suggested by Nag & Gioia (2012) the study drafts a cause and effect model, which is based on the retrieved main categories first and detailed using the identified subcategories. The following preliminary code system, which is applicable across all teams, results:

- **Codesystem**
  - **External Moderators**
    - supply chain
    - Impact of organizational factors
    - impact of management
    - **Team Background**
      - TEam identity
      - Team subject competence
      - interaction philosophy strategy
      - team leadership
      - Team innovativeness
      - Team mood
      - Team motivation
      - Basic team work practices
      - Team dynamic
      - across team interactions
      - team collaboration in general
      - Team problem solving time competence
      - team personal conflicts general
      - Basic team conflicts tensions
      - team leader collaboration
      - timing of projects
  - individual members attitudes on IT project
    - characteristics, potentials of teams
    - work practice
      - Work practice_before
      - Work practice_during
      - work practice_after
    - perceived IT tool value
      - tool assessement_before
      - tool assessment_during
      - tool assessment_after
  - Team Collaboration on Software project
    - Collaboration with Management
      - collmanagement_before
      - Collmanagement_during
      - Collmanagement_after
    - Problem Perception
    - Conflict Management
      - conflict_before
      - conflict_during
      - conflict_after
    - across team interactions
      - team interaction_before
      - Team interaction_during
      - team interaction_after
    - Collaboration practices_dynamic
  - Work load
    - work load_before
    - work load_during
    - work load_after
  - Project outcomes
    - Expected outcomes
    - Outcome with customers
    - Outcome on team dynamics
    - Outcome on tool utilization
    - Outcomes on tool practicability

Figure 1: Preliminary code system

The code system is transformed into a causal model which assesses the impact of team constellations, project related team processes in software adaptation, potential moderators on

software implementation outcomes, based on the empirical interviews of the evaluated teams (compare Figure 2).

In essence the analysis finds the following causal relationships which constitute the work model:

External moderators at the level of the organizational framework, managerial general support and the supply chain framework interact and codetermine the environment in which organizational teams work and collaborate.

The work teams, who have to adopt the software, build on underlying team structures and relationships, which are characterized by the identity/ culture the team has developed, the knowledge and innovation resources available in the team, the motivation of the team as a whole, collaboration processes and routines established in the team, conflict management strategies established in the team and underlying personal conflicts and relationships. External relationships of the team are defined by team structures and processes. These are team-management relationships, and cross-team interactions.

All these factors ,constitute the "team background" and impact on how teams receive and adapt new software projects. The software adaptation process evolves from project start to obligatory implementation and team adaptation and utilization patterns may change in that process e.g. due to team dynamics and growing work experience.

Software adaptation in the team is defined by the personal attitudes of the team members, which for instance result from their personal work practice and personal assessment of the tool (technology acceptance).

Software adaptation in the team, however, mainly is a result of dynamic processes in the team during the implementation phase. In the implementation process, team collaboration patterns emerge and change. This impacts cross team interaction and patterns of managerial collaboration and finally the management of the team's work load.

The outcome of the implementation of the new software is determined by teams' adaptation processes. Implementation outcomes are perceived depending on how the software is utilized, perceived practicable and results efficiency gains. Software project success perception in the team and whole corporation is the result of a comparison of pre-implementation expectations and factual IT project outcomes.
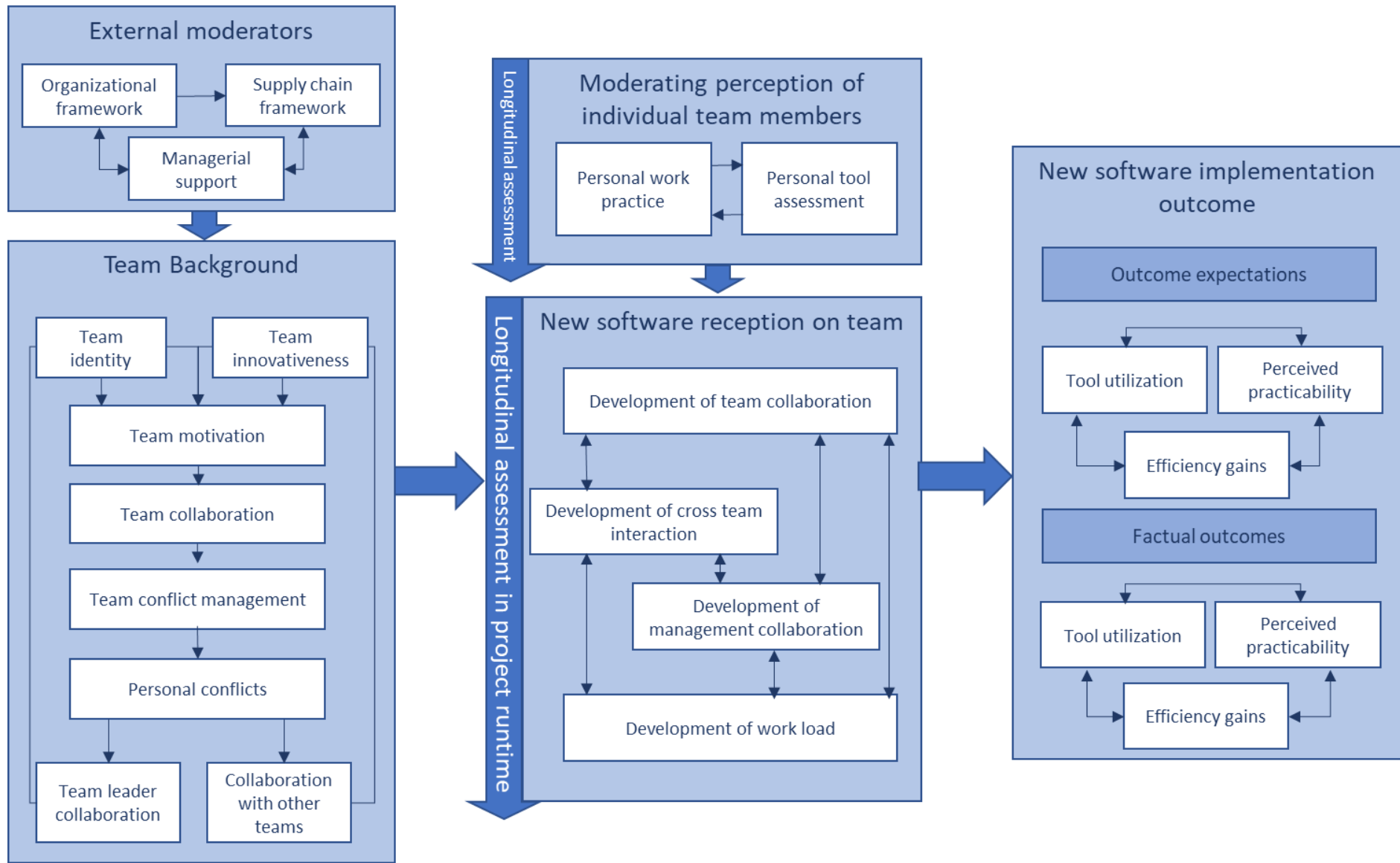
Figure 2: Preliminary causal model

References

Langley, A. (1999). Strategies for theorizing from process data. *Academy of Management review*, *24*(4), 691-710.

Nag, R., & Gioia, D. A. (2012). From common to uncommon knowledge: Foundations of firm-specific use of knowledge as a resource. *Academy of Management Journal*, *55*(2), 421-457.