Methodology for selecting agile methods in transdisciplinary sustainability projects

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OBJECTIVES OF THE PAPER

In many cases, the implementation of sustainability goals requires the co-operation of scientists from different disciplines and citizens with the aim of developing and implementing new and sustainable solutions. Agile methods of project management can support all participant in working efficiently. The multitude of different agile methods poses a challenge, especially for non-experts, to decide on suitable tools for a project.

The paper aims to present a methodology for the selection of agile methods for the processing of transdisciplinary projects. This is based on an analysis of agile methods, in which tools are summarised and evaluated in clusters. The developed methodology is tested on a sustainability project and conclusions are derived regarding the further application.

APPROACH USED

- Literature review regarding appropriate agile project management methods

- Create Cluster: Tools that pursue a similar goal in terms of content or are similar in process are grouped together

- Methodology for selecting agile methods in transdisciplinary sustainable projects based on a scoring model

- Application and Evaluation in a transdisciplinary and sustainable case study
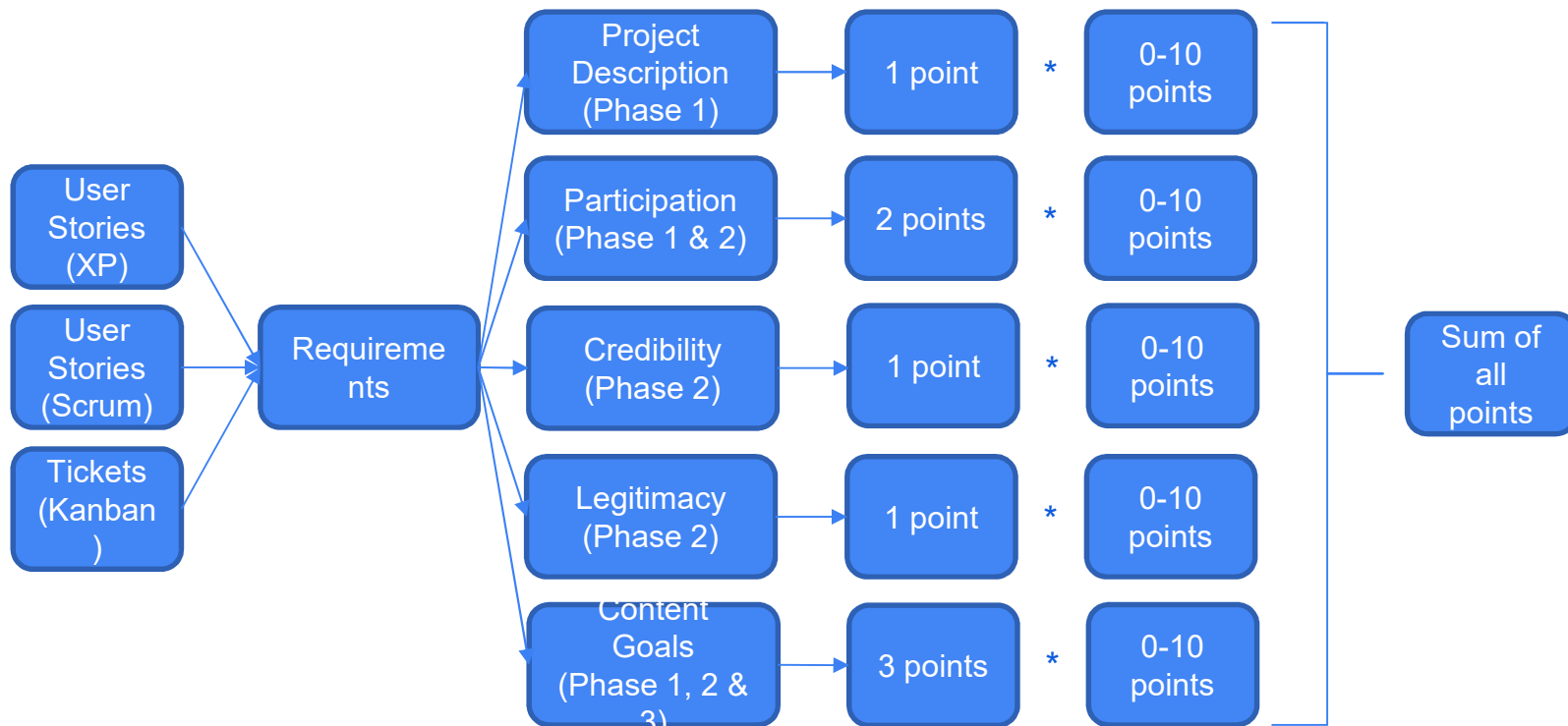
- Derivation of improvements

Key Results – Cluster of Agile Methods
Formed Cluster

Cluster	Agile Tools
Requirements	User Stories (Extreme Programming and Scrum), Tickets (Kanban)
Iteration	Iteration (Extreme Programming), Sprint (Scrum)
Planning	Planning Game / Iteration Planning / Release Planning (Extreme Programming), Sprint Planning (Scrum)
Task-Board	Sprint Backlog / Task-Board (Scrum), Kanbanboard (Kanban)
Review	Test of Acceptance (Extreme Programming), Sprint Review (Scrum)
Dailies	Stand-Up Meeting (Extreme Programming), Daily Scrum (Scrum)
Customer Analysis	Empathy Board / Interview / Persona (Design Thinking)
Stakeholder Analysis	Stakeholder analysis (Lean Management), Interview (Design Thinking)
Organization overview	SIPOC-Method / RACI-Method / Swimlane-Diagram (Lean Management)
Process Overview	Shopfloor Management (Lean Management), Burn-Down-Chart (Scrum)
Cause Identification	5W-Method (Lean Management / Design Thinking / Lean Startup), Fishbone Diagram (Lean Management)
Idea Generation	Brainstorming / Idea-Profile (Design Thinking)
Continuous Improvement Process	PDCA-Cycle (Lean Management), Build-Measure-Learn-Cycle (Lean Startup)

Tools without Cluster: Product Backlog, Product Increment, Move people Around, Canvas Board. MVP, Sprint Retropers., A3 Report

Key Results — Scoring Execution

KEY RESULTS – Case Study - Application of the Methodology
Selection of Cluster und Tools

Cluster	Agile Tools
Requirements	User Stories (Extreme Programming and Scrum), Tickets (Kanban)
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MAIN CONCLUSIONS

- TDR is an appropriate way to deal with complex problems and to make the collaboration of scientists, practitioners, stakeholders and possibly citizens more effective

- Agile Methods can support all participants to work efficiently

- In order to select appropriate project management methods and tools a methodology is developed and successful applied

- The methodology is based on Pre-Criteria for preventing misuses and a scoring process

- The application of the methodology within a sustainable case study led to a significant reduction of cluster or tools

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