



The Agile Research Team: An Adaption of Scrum to Academic Research



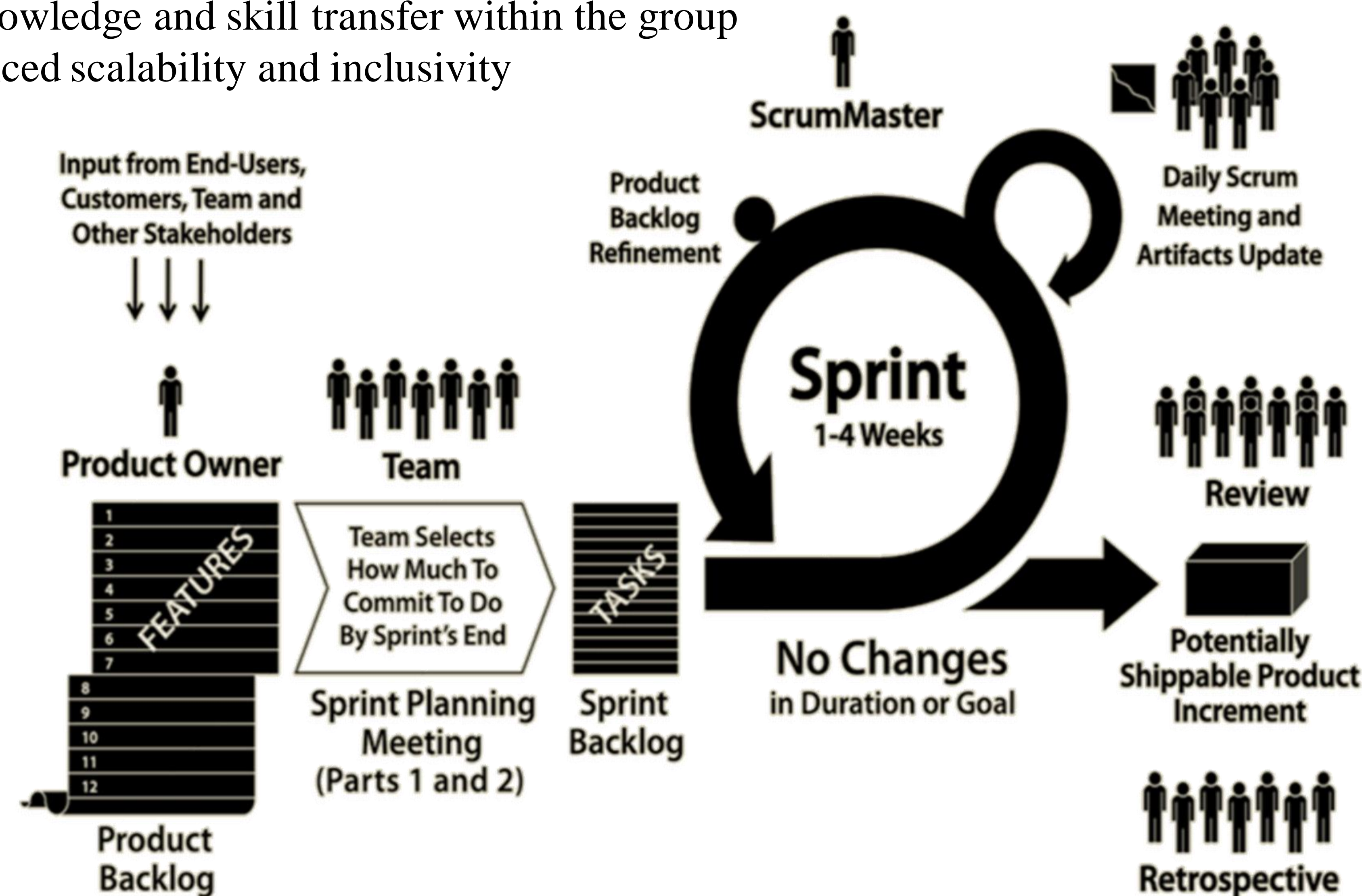
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Project Goals

Through the use of Scrum in an academic research team, this project seeks to:

- Increase motivation of individuals
- Enhance knowledge and skill transfer within the group
- Have enhanced scalability and inclusivity

Scrum Process Overview



Scrum

Agile Research Team

Sprints are 1-4 weeks long <ul style="list-style-type: none"> • Depends on the company/project 	Sprints are 1 week long <ul style="list-style-type: none"> • Fits the university schedule
Product Owner <ul style="list-style-type: none"> • Controls scope of project 	Research Lead <ul style="list-style-type: none"> • Leads individual projects
Scrum Master <ul style="list-style-type: none"> • Stewards the process; removes obstacles so the group can perform well 	Research Mentor <ul style="list-style-type: none"> • Provides a research path, secures funding, provides guidance
Developer <ul style="list-style-type: none"> • The rest of the group self-assigns tasks from the sprint backlog 	Researcher <ul style="list-style-type: none"> • Encompasses the rest of the group, can self assign projects or become research leads
Structured Deliverables <ul style="list-style-type: none"> • Burndown charts, backlogs, etc. are all strictly regulated 	Lightweight Artifacts <ul style="list-style-type: none"> • Meetings, emails, presentations on an as-needed basis

Experiment Structure

- An Agile Research Team and a traditional, top-down research team were surveyed.
- 13 members of the Agile Research Team and 8 members of the control group participated
- A second, smaller experiment involved a research mentor guiding a team through the Agile Research process for one semester.

Rewards

- Students are encouraged to work on projects that excite them
- Researchers can pitch ideas to the team and become research leads

- Projects are able to outlast the cycle of students
- Students are able to gain research related and domain related knowledge and skills

- The hierarchal limitations of traditional research are removed, increasing group size
- Increased size allows more students to be exposed to academic research

Research Findings

Increased Motivation

Enhanced Knowledge and Skill Transfer

Scalability and Inclusivity

Challenges

- Motivation lies with individuals who may have different guidance needs
- Motivation does not always correlate to measurable results, such as publications

- Certain projects do not lend themselves to knowledge sharing.
- Knowledge transfer has limitations based on the group's knowledge level

- It is difficult to measure inclusivity
- Limitations can be imposed based on the structure of the university itself (ex. gender ratios)

Conclusions

- All goals of the Agile Research Team were supported by the experimental results
- The Agile Research Team met or exceeded the abilities of the control group centered around the three main goals
- The study showed no negative effects of adapting an Agile Research Team
- The future of this project includes adaptation in other research groups, across universities, to have a larger pool of results to examine

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