On Agile Leadership and Project Sustainability

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Abstract: Sustainability is the predominant topic right now and will remain so in the coming decades, which adds another layer to the already existing complexity accompanying digitalization. At the same time, many organizations embrace agile leadership on project or organizational level, to better deal with complexity and constant changes. The objective of this paper is to investigate potential impacts of agile leadership on project sustainability. This is done by mapping categories of agile leadership to the three sustainability dimensions “people, profit, and planet” (triple bottom line). While certain sustainability aspects can be addressed primarily by top level decision making and the mindset of leaders, other aspects are directly influenced by an agile environment and way of working. Overall, the results highlight natural synergies between agile leadership and sustainability and provide an impulse for further research.

Keywords: Agile, Agile Leadership, Project Management, Sustainability, Triple Bottom Line

1 Introduction

Digital Transformation, climate crisis, pandemics and global challenges occur more frequently and demand new ways in project management to address the complexity and create sustainable solutions. Sustainability with all its facets has become the central topic dominating all areas. The most well-known sustainability goal is certainly the reduction of CO2 emissions. The European Commission and the German government in Berlin have defined many goals for climate protection. These goals include the supply chain law and the electrification of mobility, which equal the end of the age of combustion engines, as well as the energy and heat turnaround. All these goals and targets have an enormous impact on the economy and industry, which must be rethought as a result.

There are several challenges and benefits when sustainability goals become part of project management. There are new requirements for project managers and more aspects that must be considered. There might be long-term consequences which also influence stakeholders and customers. The increasing number of goals, relationships and overall complexity re-inforce the demand for good project management. Benefits of integrating sustainability are reduced costs through efficient processes and less risks for companies, which can result in advantages in competition. Furthermore, sustainable behavior can lead to more attractiveness for investors and qualified employees. Also, there is more potential to find new sources of income as well as new innovative business models [HE23].

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One way to constantly adapt to changing (market) environments, handle complexity and improve relationships with stakeholders can be found agile approaches. Agile methods like Scrum or Kanban are increasingly used in projects even outside software development. There are also many different agile scaling frameworks to be able to use agile in large projects or even throughout the organization as a whole [TH19]. Independent of the method or framework used, there is a need for leaders to become agile themselves to support projects [KR18]. The question now is whether agile leadership influences the sustainability of projects, and how.

The goal of this paper is to investigate how agile leadership might improve aspects of sustainability in projects. For that, a mapping of sustainability [CA12] [CG14] and agile leadership [KR22] is conducted. Section 2 presents the background and related work. The mapping itself is presented in Section 3 and discussed in Section 4, followed by a conclusion and suggestions for future work (Section 5).

2 Background & Related Work

Projects can be sustainable by targeting a sustainability goal, such as reducing the internal CO2 emissions by 40% through new concepts for employee mobility. Another example would be the goal to increase the lifetime of machinery by 60% through predictive maintenance and therefore create a positive effect on organizational sustainability. On the other hand, projects can be operated sustainably through the way of working, even without targeting a concrete sustainability goal.

2.1 Sustainability

The origins of sustainable development can be found in forestry, where Carl von Carlowitz [CA13] stated that “only as many trees should be cut down as can grow back in the foreseeable future”. His ideas can be seen as the origin of sustainable development, thinking about the ongoing use of resources. In general, sustainable development means a better quality of life for all, both now and in the future.

In the Brundtland report [BU87] of the World Commission on Environment and Development, the vision for sustainable development was redefined and specified as the ability to make development sustainable for the needs of the present and future generations. In 2015, with the introduction of the 17 sustainable development goals (SDGs) in the United Nations Agenda, sustainable development was accelerated [UN15]. Governments and stakeholders were even more convinced of the need for sustainable development for people, profit, and planet. Guided by the SDGs, the goals and targets for sustainable transformation shall be reached within the next 15 years, for humanity and the planet. The report of the UN presented sustainability as three pillars: equitable social progress (people), responsible economic growth (profit) and effective environmental protection (planet) [CA12]. The terms “people, profit and planet” were especially popularized by the Brundtland report, Agenda 21 and the UNO-conference in 1992.
Environmental sustainability means the conservation of natural resources and the protection of the global natural environment to maintain human wellbeing for now and the future. A condition of balance, resilience and interconnectedness should be maintained, while human needs are still satisfied [MO11]. Economic sustainability supports long-term economic growth without negative effects on the other dimensions. It is a set of decision-making principles and practices to achieve the goal of economic growth for a better quality of life [DO01]. Social sustainability means that individuals, communities, and societies achieve a fair degree of social homogeneity, equitable income and access to resources and services etc. A fair distribution, human rights, and the security of basic needs of humans is a goal of social sustainability [MC20]. It’s a proactive way of managing business and its impact on people. These three pillars are influencing each other and therefore all of them need to be sustainable to achieve sustainable development. They were characterized and set in relation by several people creating different models, for example a Venn diagram visualizing the so-called triple bottom line [CA12], where circles describe the three pillars, with sustainability being the point where they overlap. While the environmental pillar was always considered first, since the 2000s-2010s all three pillars are seen as equally important [SE07].

Figure 1: Triple Bottom Line (Venn Diagram)
2.2 Agile Project Management & Leadership

Traditional approaches to project management have so far focused on reducing complexity and dividing systems into smaller and more controllable components [HE23]. The project plan should be adhered to and implemented efficiently. In contrast, agile methods are characterized by the ability to adapt to change and to subdivide work iteratively. Adaptive planning, evolutionary development, early incremental delivery, and continuous improvement are further aspects of agile methods [HE23]. Close stakeholder collaboration and participation as well as new methods of planning and management also lead to new tasks from project managers. Krieg [KR17] specifies the tasks of agile project managers based on practical experience and best practices. The differences in approach between traditional and agile projects are highlighted and clarify the deviations in areas such as processes, documentation, reporting, management, and leadership, etc. According to the author, the project manager serves as a linking element (as facilitator and moderator) in hybrid project environments. It is also important that the project manager has training and experience as Scrum Master and Product Owner as well as a lot of experience related to leading, planning and organizing in agile project management. These tasks are further specified and explained in detail by the author [KR17].

Successful implementation of agile on project level requires a suitable organizational environment [KR18]. In addition, organizations want to benefit from agile not only on project level, but throughout the organization. Agile leadership is a key aspect to enable an agile organization. After eliciting the state of the art on agile leadership on organizational level with the help of a systematic literature review [TH20], the study of Krieg et al. [KR22] characterized agile leadership and set a scientific baseline for it. Based on practical knowledge and experience with agile leadership, a scientific approach was applied to aggregate the information into the following seven categories: continuous improvement, framework & condition, customers & delivery, right characteristics of leaders, vision & goals, commitment of top management and self-organized teams. For each category, guiding principles were identified and explained. Generally, more self-organization and the right setup for framework and conditions will enable effective and efficient work, motivating people as communication is better and development faster. So far, traditional leadership has not included self-organized teams and controlling and planning was the task of the manager/leader, not the team. Still, it’s necessary that top management and leaders commit to and demonstrate the right characteristics, like emphasizing diversity and self-organization. Finally, agile leadership includes customers and puts the focus on them as well as value delivery, which is improved continuously.

Making projects more effective/efficient and beneficial was always the goal of project management, but with major future challenges arising, sustainability is becoming another aspect to consider. There are several studies related to sustainable project management [SI22] [SI14] [GPM22]. One of those introduced the P5 standard, which highlights potential sustainability impacts in projects structured along the three pillars people, profit, and planet, supporting organizations in generating portfolios, programs, and projects for a sustainable strategy [CG14]. Silva et al. [SI22] investigated and correlated sustainability and agile project management by evaluating the effects on sustainability from the triple bottom line perspective (three pillars). The study directly indicated how agile leadership connects
to this. The authors stated that there are already a lot of studies related to agile project management and sustainability aspects, but no work that is identifying the relation between them. The study shall help to identify areas where companies and project management as well as employees and customers can help to increase sustainability. The authors indicated that the study pointed out some relevant aspects based on a literature review, while a practical view is still missing.

3 Mapping of Sustainability & Agile Leadership

This chapter aims to visualize and explain the natural relatedness of sustainability and agile leadership in projects, which becomes more apparent when connecting sustainability impacts and agile practices. It also highlights that project sustainability can be influenced by both the way of working (process frameworks or leadership styles) and decision making (commitment of and goals set by top management). The mapping is based on papers and concepts from [CA12] and [KR22] (see Section 2 “Background & Related Work”). The matrix used for this can be seen below and comprises the following elements:

- **Horizontal Axis:** Three pillars of sustainability as defined by the triple bottom line [CA12], namely “People/Social”, “Profit/Economic” and “Planet/Environmental” (see Section 2.1 “Sustainability”).
- **Vertical Axis:** Seven categories of agile leadership [KR22] that cover all relevant aspects of projects and approaches to managing them effectively (see Section 2.2 “Agile Project Management & Leadership”).
- **Shaded Areas:** Major themes linked to the dark grey, light grey and white areas as well as specific sustainability impacts [CG14] achieved through agile practices [KR17] (see below).

The descriptions in this chapter will be structured along these elements, focusing on each shaded area with its key message and (where applicable) examples for the corresponding combinations of sustainability and agile leadership in projects. The fact that “Way of Working” is described in more detail is linked to the author’s perspective and does not reflect the overall importance of the three areas in relation to each other. While the former may indicate the most explicit and obvious connection of sustainability and agile leadership, “Decision Making” and “General Mindset” play an important role in raising awareness for and motivating sustainability in organizations.

Further, this mapping is of course not final or immutable (and doesn’t intend to be) but in need of evaluation and up for interpretation. It was created through the study of related work, followed by a discussion among the authors about their perspective on how the topics might relate and finally visualized for easier understanding. The mapping should therefore be seen primarily as a suggestion made by the authors to underline their central thoughts and ultimately spark a discussion on the subject. The initial idea for this was based on the author’s expertise and interest in as well as former research on agile (leadership), combined with the general topicality and relevance of sustainability.
### 3.1 Way of Working (Dark Grey Area)

This area describes the most distinct relation of sustainability and agile leadership. The examples for impacts and practices in these fields show that sustainability in projects can be achieved implicitly by (or as a side effect of) working in an agile way, emphasizing the similarity of both concepts. For a quick overview (followed by a more detailed analysis), the sustainability impacts below generally relate to agile practices:

![Diagram of Leadership Categories and Sustainability Pillars]

- **Commitment of Top Management**
- **Vision & Goals**
- **Right Characteristics of Leaders**
- **Customers & Delivery**
- **Framework & Conditions**
- **Self-Organized Teams**
- **Continuous Improvement**

#### Figure 2: Mapping of Sustainability & Agile Leadership
• **People/Social:** Labor & Management Relations, Diversity & Equal Opportunity, Training & Education, Organizational Learning, Project Health & Safety, Employment & Staffing, Customer Health & Safety, Customer Privacy, Market Communication & Advertising

• **Profit/Economic:** Benefit-Cost Ratio, Business Flexibility, Present Value, Return on Investment

**People/Social - Right Characteristics of Leaders**

Sustainability impacts achieved here refer for example to “Labor & Management Relations”, “Diversity & Equal Opportunity”, “Training & Education” and “Organizational Learning”. They manifest through agile leaders who meet others at eye level, are great communicators and understand the importance of psychological safety. They bring together a diverse range of people with different skills/strengths (cross functional) that complement each other, enabling them to grow both individually and as a team. Further, they make responsible decisions in the face of uncertainty while accepting and learning from mistakes.

**Profit/Economic - Right Characteristics of Leaders**

Potential sustainability impacts in this field can be “Benefit-Cost Ratio” and “Business Flexibility”. Leaders with an agile mindset therefore focus on experiments or MVPs and prefer to fail fast, instead of wasting resources by aiming for a perfect outcome first try (no big design up front). They foster the ability to react and adapt to changes in order to navigate complex environments.

**People/Social - Customers & Delivery**

Sustainability impacts that may be placed here are “Customer Health & Safety”, “Customer Privacy” and “Market Communication & Advertising”. From an agile point of view that entails involving customers early and often, striving to create the best possible experience for them and making their needs the baseline for decisions.

**Profit/Economic - Customers & Delivery**

From this perspective, sustainability impacts are mainly related to “Present Value” and potentially “Return on Investment”. When working agile, the major goal is to create value for customers continuously (by producing outcomes that address their needs) in an effective/efficient way. This in turn can lead to better financial results (if this is of relevance).

**People/Social - Framework & Conditions**

Sustainability impacts in this field could be “Project Health & Safety”, “Employment & Staffing” and “Organizational Learning”. Agile environments contribute to this through emphasizing safety as a baseline for growth and engagement while striving for a way of working that enables employees to achieve their full potential. People are seen not as resources to be exploited but individuals to be valued and the principle of inspection and adaptation guides the way of working.
Profit/Economic - Framework & Conditions

Looking at this, potential sustainability impacts are “Present Value”, “Business Flexibility” and “Benefit-Cost Ratio”. Working in an agile way focuses on effectively and efficiently achieving the right results while being able to adapt to change of circumstances or requirements. It further aims to avoid the cost that comes with creating what is not needed and extensive planning in the face of uncertainty (rather than incremental discovery).

People/Social - Self-Organized Teams

Sustainability impacts related to this are for example “Employment & Staffing” and “Training & Education”. An agile approach relies on empowerment of the teams who do the work, making sure they are enabled to be at their best and equipped to make good (informed) decisions. This entails having (or gaining) the right skills/knowledge and fostering a healthy culture in order to be successful as an autonomous unit.

Profit/Economic - Self-Organized Teams

Here, sustainability impacts mostly relate to “Business Flexibility”. In an agile environment, trusting teams to make the right decisions based on their expertise instead of (micro-) managing them is key. Such delegation of decision making enables teams to change direction and adapt quickly, which is needed to deal with complexity on a greater scale.

3.2 Decision Making (Light Grey Area)

This area displays a less specific link between sustainability and agile leadership and focuses more on an “optional” perspective, based on the categories “Commitment of Top Management” as well as “Vision & Goals”. Sustainability would here be an explicit consequence of strategic decision making and goal setting towards SDGs, while not necessarily relating to the actual (agile) way of working in a project. In such a case, more “traditional” aspects of sustainability, such as human rights, economic empowerment or climate and resources, can be addressed (as compared to the above). Examples for such decisions or goals could be prioritizing a fully local setting over a distributed one to support the local community and economy while reducing CO2 emission caused by travelling.

3.3 General Mindset (White Area)

This area does not entail any clear or obvious connection between sustainability and agile leadership. More specifically, the environmental aspect of sustainability is not directly related to using agile approaches in projects and not a result of the latter. The only potential link here might be the overarching theme of successfully maintaining and continuously improving a system over time (long term perspective).
4 Discussion

The high relevance of sustainability in project management and projects is mentioned by several studies [FI21] [HA23] [KR17] [KR22] [HE23] and highlights the importance of addressing this topic. Silvius et al. [SI14] presented a review on project management and sustainability. The authors identified categories similar to the results of our study and concluded that there must be a scope shift from management to manage impacts related to the three sustainability pillars. This shift leads to additional complexity in project management and requires a new management approach. A shift of paradigm and mindset is needed to enable flexible work, new opportunities, and a change of the project manager role. Here, our study added agile leadership as improvement to traditional management and a more practical view, as agile leadership focuses on this shift from traditional to agile project management. Agile leadership is strongly related to sustainability according to our results, so it automatically adds the needs described by Silvius et al. [SI14].

There are several guidelines on how to make project management more sustainable. [CG14] identified projects and project management as directly and indirectly impacting sustainability, with a focus on products, projects, and processes. Frieke [FI21] in comparison focused on the objectives of companies, their processes and strategy to implement sustainability in projects. Similar to the previously discussed results, Haseleu [HA23] used the three pillars of sustainability to discuss projects and project management. All three authors offered a broad overview, relevant insights and aspects of project management and sustainability, but missed practical examples and methods. Agile methods were considered neither by Carboni and Gonzalez [CG14] nor Frieke [FI21], while our work implies that sustainability is naturally related to agile leadership. Haseleu [HA23] also indicated that the goal of a project itself must be sustainable to have sustainable project management. Our results related to the categories “Commitment of Top Management” and “Visions & Goals” confirmed that a strategic decision towards sustainability has to be made, but agile leadership is not necessarily needed. However, basic approaches mentioned by Haseleu [HA23] such as stakeholder engagement, project organization or the right mindset were clear indicators that agile leadership is highly relevant for sustainability. With our results based on practical experiences, we can add that the “Right Characteristics of Leaders” in agile leadership directly influence sustainability, e.g., with communication on eye-level or business flexibility. Even though the explanations in [HA23] focused on practical aspects, agile methods were only mentioned once and not further reflected in the discussion.

Silva et al [SI22] specifically analyzed case studies where agile project management was applied in companies. The authors connected the three pillars of sustainability to different characteristics of agile project management. Silva et al. [SI22] stated that small teams enable flexibility, creativity, and therefore sustainable project management. In the end it was stated that practical examples that explain the relationship between agile leadership and sustainability are missing. Our work contributes to closing this gap.

Even though previous studies already analyzed sustainability and project management and identified several relevant insights, practical experiences were missing and most of the studies did not include agile leadership in their discussions. The key findings that can be...
extracted from our results: (1) Sustainability and agile leadership are naturally related according to our mapping. (2) We provided practical insights and suggestions related to sustainable/agile leadership that extend previous studies. (3) There are aspects which are strongly influenced by the way a project is organized and (4) others which are purely attributable to decision making and the mindset of top management.

5 Conclusion & Future Work

Sustainability is an important topic that has gained attention and urgency in recent years. Nonetheless, there is no common understanding of how sustainability can be considered in the context of projects or project management. Agile approaches to development are widely used nowadays and used to cope with an increasingly dynamic market environment and complex products. Organizations now start to become more agile on an organizational level, with a central factor to achieve this being the transition to a more agile leadership culture. The goal of this paper was to investigate how sustainability is impacted by agile leadership through a mapping of the agile leadership categories from our previous study to established aspects of sustainability.

As a result, we presented an initial mapping that can support practitioners when considering sustainability in their projects and serve researchers as a starting point for further investigation, e.g., by extending or refining our results. A possibility for future work could be to conduct a systematic literature review on existing knowledge or to collaborate with experts to come up with a more complete model for the relation between sustainability and agile leadership in projects.

References


