

# Agile Transformation: A Case Study on Early Stage of Agile Adoption

**Peter Helmlinger**

PhD Student at the University of Applied Sciences Burgenland, Campus 1, 7000 Eisenstadt, Austria  
2019001105@fh-burgenland.at

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## Abstract

Agile transformation is identified as a facilitator to keep pace with frequent changes within product development. Although initial research exists, the empirical literature on the implementation process of the agile approach, specifically using pilot projects as a change strategy, is scarce. The purpose of this article is to contribute to closing this gap by investigating into effects of piloting agile change projects. To shed light on agile pilots a project within the context of mechatronic system development in the high-tech industry was accompanied over six months. After the initiation of the members and a period of practicing agile a survey was performed. The interviewed team members are bringing up interesting findings, as although they had a different understanding of agile at the beginning of the pilot, they recognized agile values, principles and methods as supportive to the products cycle and specifically development time. Further findings are indicating that professional third-party support is a key success factor. Also piloting, as a change strategy for agile adoption, is proven to be supportive. Although piloting is proven a supportive strategy, the downsides, such as limited scalability caused by extraordinary setups, are identified and analyzed. The limiting factor of this single-case study is the small sample size of data due to the intention of the pilot project to limit impact and risk on the organization.

## Introduction

Businesses face a wide range of issues in an increasingly digital world. Including erratic client expectations, changing market dynamics, and the ongoing appearance of fresh information technology advancements (Porter & Heppelmann, 2015, p. 4-6). A possible answer to enable organizations to be more adoptive in times of permanent change may be found in implementing and scaling agile methodologies (Paasivaara, 2017, p. 36).

According to a recent systematic evaluation of the literature by Dikert et al. (2010), pilot projects were identified as one of the frequent strategies in

the transformation of businesses towards agile. Within their detailed reflection of publications related to scaling agile, they found that 26% of the cases included piloting. Within the analysis, they found that available case studies are dealing primarily with the topic in a way of experience reports. In detail it is identified that after a rough clearance of 1875 unique papers 170 were remaining, further consolidation, such as but not limited to duplicates in terms of organizations and perspective, brought the number down to 42 unique papers. That sample was broken further into detail showing 36 papers reflecting the topic from the perspective of industry experience reports, only six papers were applying a specific method and generated quantitative data (Dikert, Paasivaara, & Lasenius, 2016, p. 100).

This paper contributes to further insights by presenting and analyzing small sample survey data. This insight focuses on the early phase of the start of an agile transformation.

Latest publications showed that established original equipment manufacturer such as VOLVO decrease their planned lead time for product development from 60 months in 1991 to a target of 20 months in 2020 (Asnafi, Shams, Aspenberg, & Öberg, 2019, p. 92). Trickle down effects were speeding up life cycle development even further for suppliers such as the case study's organization. Time pressure is creating frequently the desire to find ways to be as reactive to changes as possible. Specifically, during the product development phase, it was inevitable to adopt fast and still maintain quality and cost.

The presented case study is dealing with a change initiative that was launched within a high-tech automotive company fully focusing on electro-mobility. The target of the initiative was to explore possibilities to implement agile working methods within the organization utilizing a pilot project.

Within this article, the case itself is analyzed and a survey-based investigation, which was carried out four months after the project was launched, is performed. Special attention is given to aspects of organization development and organizational change, by enabling transitions using the pilot project strategy. The main questions arising are dealing with the benefits and risks of the pilot strategy, the acceptance of change initiatives within the team, and success drivers which may become a risk during change transfer to a full organization.

## Theoretical Background and Hypothesis

As the context-giving organization is part of a company with more than thirty years of mechatronic system

development experience within this chapter a reflection of influencing vectors of the past is done as well as the background of the chosen change strategy is pointed out. As the case is embedded in an ecosystem that is used to perform structured organizational development based on the action research model the piloting strategy was chosen. The target of the transformation was not a full implementation of a dedicated model. Instead, a set of values practices and methods based on Large Scale Scrum should be implemented.

## Organizational development

Organizational development deals with a wide array of behavioral science theories and methods to assist businesses in strengthening their capacity for change and achieving higher effectiveness, including improved financial results, customer satisfaction, and employee engagement (Cummings & Worley, 2009, p. 2). Transformation in the context of organizations describes the process of changing, frequently it refers to a strategic approach to identify the needs of the organization's future, define the towards this ideal scenario and execute changes to reach out (Rothwell, Stavros, & Sullivan, 2016, p. 62). The increasing need of organizations to adopt continuously is also shown by recent studies presenting data indicating that 45% of all asked organizations in a study localized in Australia are starting projects with the target of business improvement and transformation (Sexton & Foley, 2019, p. 6) within the pilot project organization this approach was followed for a period of over ten years. For implementing the adoption or drafting of new processes an action research model-based mode was maintained.

## Action research model

The traditional action research paradigm emphasizes planned change as a cyclical process in which preliminary analysis of the organization yields knowledge that directs further action. The action's outcomes are then evaluated to offer new information that will impact future decisions, and so forth. Organizational members and organization development practitioners work closely together in this recurrent cycle of study and action. Before action planning and implementation, it lays a strong emphasis on data gathering and diagnosis, as well as meticulous results evaluation (Cummings & Worley, Organization Development & Change, 2008, p. 25). Practicing action research model oriented therefore means permanently work within cycles and loops of feedback and improvement. Pilot projects are a possible tool to be used in bringing in the feedback of the peer groups, the new factors brought in are directly processed and can be

analyzed without a long-lasting implementation time (Stout, 2018, p. 224). If changes have a broader or deeper scope sometimes additional strategies need to be implemented to cover the complexity which is coming along with bigger changes.

### The pilot project as a strategy

In interlinkage with the action research model, piloting change initiatives is a method that allows a step-wise change to reduce the risk of a big bang implementation. This stepwise approach is specifically valuable when starting an agile transformation and it allows teams and organizations to subsequently scale into larger settings (Fuchs & Hess, 2018, p. 2). Breaking down risk reduction, by using piloting as a strategy, four different aspects can be identified, such as (Rodney, 2005, p. 5):

- learning during the pilot project how to mitigate risk brought up by change
- learn to identify and how to reduce the uncertainty of the change process
- learning by testing within a not critical environment
- and proofing efficacy directly.

Beside mentioned risk-reducing and enhancing learning aspects, pilot projects are also a tool to bridge between the phases of change, which can be defined as unfreezing, and permanent implementation and stabilization, also defined as freezing (Boscherini, Chiaroni, Chiesa, & Frattini, 2010, p. 1072). As knowledge is gained by action and checking improvements and measures may directly be derived either feeding back directly into the pilot project or ensuring better quality within the transfer of knowledge between the pilot project and the rest of an organization.

Besides a pilot project itself, the necessary focus on the correct attitude and mindset within an organization under change is shown as a key success factor. So beyond detailed knowledge and understanding of the change content, specifically when it comes to acceptance of new methods, the management buy-in and team attitude plays a key role (Lan, Kannan, Peng, & Balasubramaniam, 2009, p. 339). Other perspectives can be found in interviews that have been carried out in companies dealing with mechatronic system development. Successfully pilots with a long-lasting positive effect on organizations have been gained by finding highly motivated coworkers who are interested in agile development and letting them work together on a pilot project. After accomplishing success, they can report they are positive findings, generate

attention and desire within the organization (Goevert, Heimicke, Lindemann, & Albers, 2019, p. 2293).

Criticism of the pilot project strategy is also discussed within the literature; possible downsides are that a pilot project is not reflecting the rest of an organization. Team members may be chosen specifically based on their outstanding skills or openness to change. So, although a pilot may be successful, a successful full scaled roll-out to the rest of an organization may fail, as the setup is different from the pilot project. Constraints and resistance to adopt to new working styles within the outer organization may work against a change.

A possible solution to counter this risk could be to let the organization adopt the results of a pilot step by step. Alternatively, it also shows that the extraction of solution methods and transfer of the methods and patterns seems to be more likely to be successful than harsh copies of successful pilot projects (Asheknas & Matta, 2021, p. 4). Further observations are showing that several significant aerospace, manufacturing, and information technology businesses have reportedly started experimenting with agile approaches. Most project sponsors have employed enthused agile early adopters, using projects with limited risk low degree of innovation, and likeliness to fail without a huge impact on the full organization. Although almost all these pilots were successful, most organizations only have been able to extend that success on a minimal level (Boehm & Turner, 2005, p. 31).

### Agility as a philosophy and basis for scaled cooperation models

Agile refers to a set of principles and methodologies for software development that prioritizes flexibility, collaboration, and rapid iteration. The Agile Manifesto, created in 2001 by a group of software developers, outlines four key values (Beck, Beedle, & van Bennekum, 2001):

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

Agile development typically involves cross-functional teams working closely together to develop software in short, iterative cycles called sprints. The goal is to quickly develop and deliver working software that meets the needs of the customer or end-user, while also being adaptable to changing requirements and feedback (Barke & Prechelt, 2018).

Agile methodologies such as Scrum, Kanban, and Lean are popular approaches to implementing agile principles in software development. These methodologies provide frameworks for organizing and managing work, tracking progress, and facilitating collaboration and communication among team members. Within the scope of the analysis pilot project an adoption of Large-Scale Scrum was chosen as a leading framework.

### Large Scale Scrum

The Large Scale Scrum (LeSS) Method is a scaling scrum model. The model's goal is to coordinate the work of several scrum teams. These scrum teams might be dispersed across various plants and the world. The model's major goal is to deliver products in a lean manner, independent of the number of teams managed. Some key criteria are that there is a single product owner, a single product backlog, one definition of done for all teams, one potentially shippable product increment at the end of each sprint, cross-functional teams, and one Sprint (The LeSS Company B.V., 2020).

Interlinking organizational development, the pilot as a change strategy and the agile context, a working hypothesis can be condensed. The major supposition of this study is that piloting is an effective change strategy for organizations, as it allows for the testing and refinement of new ideas before implementing them on a larger scale, leading to greater success in implementing change.

This working hypothesis comes along with two attached ideas such that professional support during an agile pilot project is beneficial for the successful implementation of the project, as it provides expert guidance and assistance in navigating complex and dynamic project environments, leading to improved project outcomes and increased team effectiveness. A planned pilot approach for organization development increases the likelihood of acceptance and successful implementation of change initiatives, as it allows for stakeholder involvement and feedback, provides a clear roadmap for implementation, and helps to identify and mitigate potential barriers to change.

### Research Method

This study project's objective is to conclude the benefits and risks of maintaining changes with the usage of pilot projects in the context of the action research model. A single-case study is carried out to prove or disprove piloting as a beneficial change strategy. In addition to a reflection of

documentation, created during project execution, a survey within the pilot team has been carried out. The change initiative was accompanied over six months by a senior Scrum consultant and process development. The team and program were selected based on the commercial and logistical independence of other parallel-running projects. A program manager with experience within agile working methods internally recruited a team primarily based on their field of expertise.

This survey is specifically focusing on the aspects of bringing in external knowledge in the early stage of adoption, the experiences of project team members before the project and four months after the start. Within the survey, a response rate of 91 % was achieved.

The approach of a one-case study was applied to find a deeper insight into piloting agile projects with seemingly comparable units. In this case the method of the one-case study is to generate data that can be compared to already existing research (Glaser & Strauss, 2006, p. 25).

The research design is conducted in an explorative way first and secondly underlaid with quantitative analysis based on interview questions. The research design was structured according to Yin (2018, p. 60):

1. Definition of Case study research questions
2. Creation of propositions in the context of the research questions
3. Case Analysis and analysis of interview questions
4. Logic linking of data and propositions.

Due to the pilot project design, quantitative analysis may indicate a direction, but the limited sample size always needs to be taken into credit as a limiting factor.

The following research questions have been formulated in the context to investigate the relationship between structured organization development, agile values, and pilot projects:

1. Is running a pilot project a beneficial tool to enhance agile transformation within a project team?
2. What might be the benefit of professional support during an agile pilot project?
3. Does a planned pilot approach for organization development pave the way for acceptance?

During the runtime of the agile pilot project several propositions were defined and were the basis for the interview questionnaire:

1. When organizations decide to transform towards agile, expert knowledge is likely to be missing within the pilot team and the total organization.
2. Implementing pilot projects also goes along with certain risks, as they are different in several aspects such as commitment, team setup and organizational support.
3. The more systematical knowledge input can be provided in the early stage, the better a potential output might be.
4. To gain acceptance a well-defined planned approach includes offering knowledge and support.

In Table 1 all interview questions are summarized. The questions themselves were formulated out of pre-defined propositions. Data derived from the survey was used in the context of the study as well as feedback between management and the team of the agile pilot project. Due to limitations in connection with information security and anonymity generic person-related questions, such as gender, age, experience etc., were not allowed to be taken

into credit. Only knowledge and agile-related questions were approved to be processed within publications.

## Results

The product developed within the presented case study can be defined as a new version of an electronic circuit unit as a subsystem of a complicated mechatronic system. A development team, which is the main investigated group, was interdisciplinarily established. The team size was between nine and eleven experienced technicians, a senior technical leader, and a senior project leader. General responsibilities were established in a traditional project management way, such as there was one project leader and a core team consisting of persons in charge of a certain technical discipline, so-called core team members. Each core team member possibly was in charge to manage sub-teams within the specific technical area. In addition, one internal process specialist has been assigned to support and supervise the organizational development perspective.

**Table 1**

### Interview questions

ID	Question	Answer possibilities
1	Did you understand "agile" in the same way before professional third-party training?	Yes / No
2	Did you work in an "agile" team before?	Yes / No
3	Implementing an "agile" approach, adopted to our products/industry needs, will improve our working environment?	Multiple <sup>1</sup>
4	Do you think "agile" may make it easier to adopt to changing requirements or environments?	Multiple <sup>1</sup>
5	Do you think by adopting agile requirement management we can optimize the requirements management of our products and applications?	Multiple <sup>1</sup>
6	Do you think "agile" may support faster time-to-market and a greater focus on our products?	Multiple <sup>1</sup>
7	Do you think following our step-by-step approach with professional third party will improve the project result?	Yes / No
8	Do you see any obstacles to working in this new way in our organization?	Individual
9	Is our pilot project positively influencing the pilot project team members?	Multiple <sup>1</sup>
10	Do you think following the four agile values will support our project result? (Individuals and interactions over processes and tools Working software over comprehensive documentation...)	Yes / No
11	In your point of view, shall we continue with the cooperation with professional third party for the pilot project?	Yes / No
12	Do you think what you learned by now is or will be useful in your daily work?	Multiple <sup>2</sup>
13	Are processes and tools set up in a supportive way today?	Yes / No

Source: Results from the window DEA model

<sup>1</sup> Strongly agree / Somewhat agree / Neutral / Somewhat disagree / Strongly disagree

<sup>2</sup> It is already useful for me / It is not useful for me / It may will be useful for me / It will never be useful for me / I don't know



Although the team members were not specifically selected to support the piloting of agile, the seniority level specifically of leading roles were above the organization's average.

To ensure strategical alignment, management support and target oriented approach, all pilot supportive activities were operated within an organizational improvement project. Major stakeholders were supporting the approach of piloting a change towards more agile methods. As only a limited number of team members were related to the agile topic, third-party support by an agile professional coaching and training team was included.

The case study is covering an observation period of six months from the decision of kicking off the pilot project until a time-fixed milestone. The chosen period of six months was selected to pin down a reflection timing on achievements and risks independently of the progress of the project in terms of scope.

After the general buy-in of the responsible management a set of detailed boundaries was defined. To maintain anonymity and information security a rephrasing is necessary, but the main constraints can be expressed without loss in meaning:

- The scope of the pilot project was the development of a new version of an existing mechatronic system.
- The pilot project was not an organizational project, it is a real product development project supported by an organizational improvement project.
- The team selection was not affected by the pilot, no specific team members were chosen to fit to the agile background.
- After an introduction period a survey was held to have detailed insight into the acceptance of the team and derive improvements.
- General success factors have been established such as sufficient budget, agile professional external training support, and specific project space was provided.
- Project members are assigned to only the specific product development project.

Over the observation period all, besides one, constraints could be maintained. Due to the non-business critical characterization of the development project, a single project assignment of core team members could not be maintained, resulting in core team members who were assigned to two or three projects in parallel.

### Team development over time

After a detailed market screening and comparison of potential suppliers a partner to provide knowledge, training and permanent support was selected.

Within a predefined training course team members were introduced to agile according to the four values and twelve principles of the agile manifesto (Beck, Beedle, & van Bennekum, 2001). As well detailed information on the basic practices of SCRUM according to the framework of LeSS was shared in several workshops. The main purpose was direct education within the running product development and the possibility to apply the knowledge directly. All these approaches were reflecting the basic principles of the action research model. Bringing in external professional opinion and support was targeting strongly a fast increase in knowledge and leverage effects on acceptance.

Feedback provided by the team showed that at the beginning skepticism and at the same time excitement played a major role. Within the team a pain point was identified; agile and SCRUM was mainly understood as software-only relevant development method and the link to an electronic circuit unit development was unclear. With the Kick-Off and implementation of the first pieces of training, confidence was settling within the team that also benefits for development in terms of hardware can be derived.

Although the method was not self-carrying at that time, first practices were established. Parallel hands-on training, provided by the third-party trainer, took place and provided even more confidence. Two months after the kick-off the team acknowledged the first positive results. Better communication and an improved cooperation mindset were frequently pointed out.

Also, criticism was raised. The main pain points mentioned were missing interfaces to the rest of the organization and missing developed tools to support the new working methodology. As the scope of the pilot project was defined as the core team of a vaster organization, such as sub-teams within departments, the gap between the different working styles; pilot scope and non-pilot scope could be identified even harsher. This gap created room for criticism but at the same time a kind of positive curiosity was observed within the interfaced organization.

Four months after the project kick-off the survey, reflecting the questions mentioned above, was carried out. Based on the main positive results of the feedback the pilot project

was prolonged. At the time of the publication of this article a transfer to other teams or the full organization was not targeted.

**Survey results**

The interview was exclusively addressed to the participants of the pilot project. Out of 12 requested feedbacks 11 full responses were received, equaling a response rate of 91 %. One feedback was only delivered partly, as the questions raised were formulated independently the data were included. By the start of the pilot project 18% of the participants had a professional picture of agile overall. One participant worked in an agile team before. In parallel 64% had a different understanding at the start of the project compared to four months later. 75% of the participants agreed that agile working will have a positive influence on the working environment, none of the participants disagreed. Also 100% agreed that adopting agile requirements management would improve the product-oriented focus.

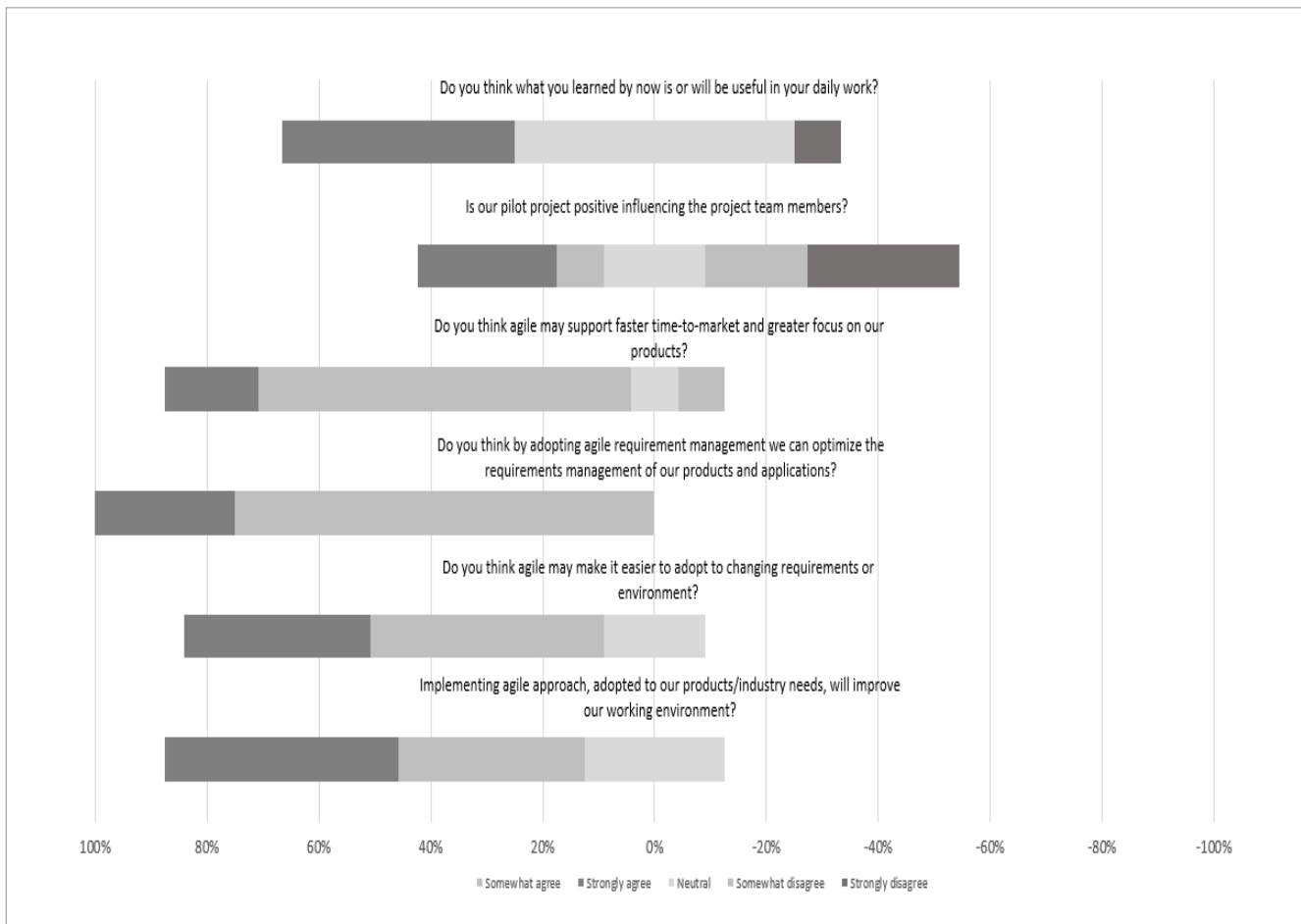
Reflecting time to market 83 % agreed that an improvement can be generated if the change process would be followed. 9% disagreed slightly. In terms of the basic setup of the pilot project, specifically pointing out to prolong the cooperation with third-party training and coaching support 100 % agreed.

In terms of supportive tools and processes 82% pointed out, that tools are not ready and not yet supportive for the agile approach. The survey participants' opinions differed when it came to the point of direct influence on the team members there a thin majority of 45% over 36% disagreed.

Further analysis of gathered data within Table 2 provides a different perspective. To gain related data the Likert scale was underplayed with values in a linear order from lowest; strongly disagree equaling 1, until highest; strongly agree – equaling 5.

**Figure 1**

*Likert scale analysis*



Source: Authors' research

It is shown that at this early stage the project team members were not fully convinced that inputs brought up will be fully useful in their daily work and if those changes will positively influence the project team members. As the standard deviation is within a wide range a heterogeneous opinion within the team can be found.

In regards to improvement of time to market, requirements management and working environment there is a strong leaning on the agreeing side. The average of related questions is around 4.2 with a narrower standard deviation below 0.8.

Summarizing a possible interpretation, in a combination of direct experience during the pilot phase, the project team members consented to the positive aspects which following the agile approach will bring to the product-related aspects, but they did far less agree on a positive impact on their personal daily work experience.

Reviewing the results of binary formulated questions a strong positive influence of third-party training and coaching can be found, as all questions dealing with a third-party approach gain a 100% agreement.

In the qualitative feedback of the survey, it is revealed that the highest likeliness of being an obstacle within the pilot project. out of the team's perspective, could be:

- insufficient management support
- being an organizational alien within the rest of the organization

- context of normative requirements specifically within a related industry
- resource sharing with other projects
- unclear interfaces to non-agile parts of the organization

Bringing these findings in contrast to the above-mentioned aspects of the pilot strategy new facets such as being an organizational alien have been identified. Also, a potential conflict with normative requirements is an additional perspective that could have been brought up within this survey. Within the early stage of the change initiative the team members identified the positive impact of the change on the product and engineering overall but at that time there was no fully agreeing mindset on the impact on each engineer's personal work experience settled.

### Reflecting on the pilot strategy

The main aspects of risk reduction which are mentioned in the literature, enabling of learning, unfreeze organizational structures need to be considered. Reflecting the present case study, the risk reduction was achieved, as only one of the parallel-running projects was taken at risk and no negative impact on the organization was brought up.

In terms of organizational development, using active research methods, different facets need to be taken into credit. Focusing on the main questions, which were brought up, answers can be given within the limitations of the small-scale sample size. The proof is given that piloting the agile transformation was a beneficial tool. Due to the small

**Table 2**

#### Quantitative analysis

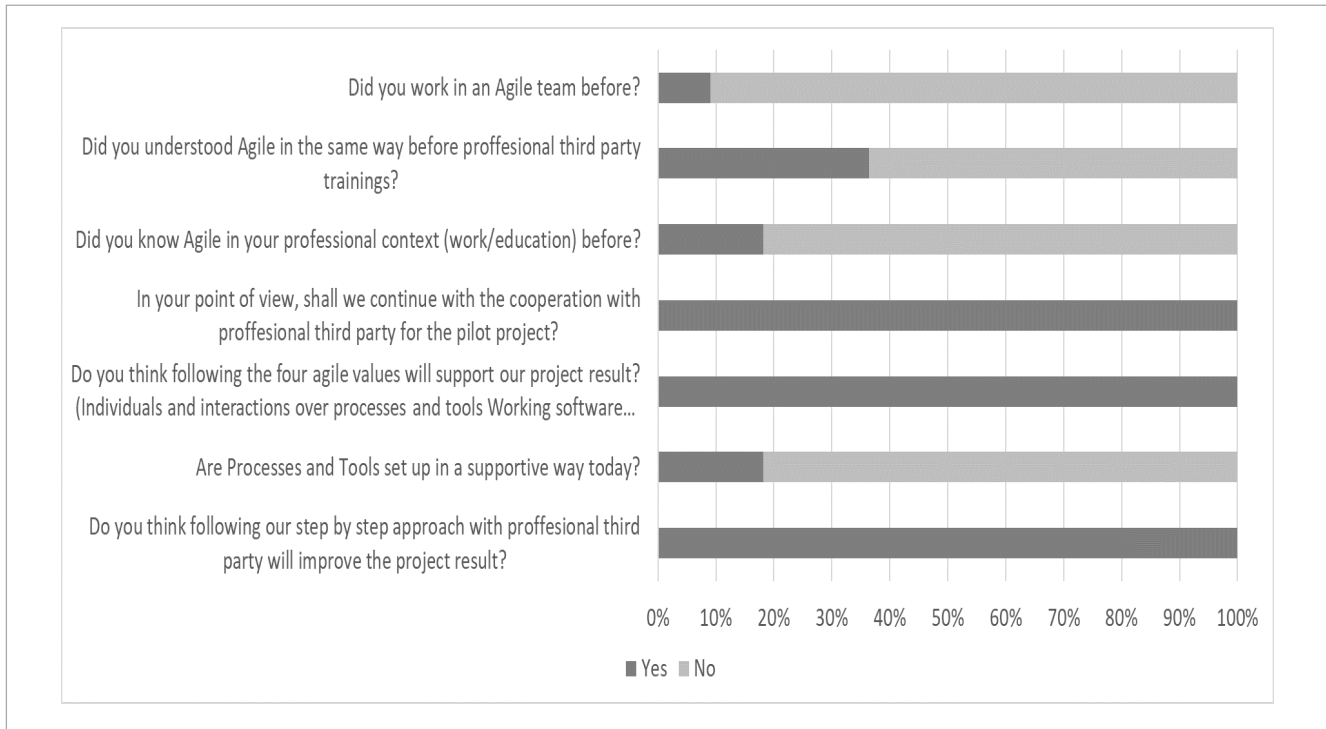
Question	Average*	SD***	Minimum	Maximum
Do you think what you learned by now is or will be useful in your daily work?	3.55	1.29	Strongly disagree	Strongly agree
Is our pilot project positively influencing the project team members?	2.91	1.64	Strongly disagree	Strongly agree
Do you think agile may support faster time-to-market and a greater focus on our products?	4.09	0.54	Somewhat agree	Strongly agree
Do you think by adopting agile requirement management we can optimize the requirements management of our products and applications?	4.27	0.47	Somewhat agree	Strongly agree
Do you think agile may make it easier to adopt to changing requirements or environments?	4.18	0.75	Neutral	Strongly agree
Implementing an agile approach, adopted to our products/industry needs, will improve our working environment?	4.27	0.79	Neutral	Strongly agree

Notes: \*Strongly agree=5; Somewhat agree=4; Neutral=3; Somewhat disagree=2; Strongly disagree=1 \*\*Standard Deviation

Source: Authors' research



**Figure 2**  
Binary question analysis



Source: Authors' research

scale of the related project team, the risk was reduced and direct feedback loops between the team, the trainer and supporting process specialists were possible.

Providing third-party support was rated very positively by the project team and in reflection of the steep learning curve within four months it can also be noticed that knowledge shall be established before going live with practices. Acceptance within the team and the organization was gained within the first months of the project. The feedback that was given during the runtime of the pilot project was tending to get far more positive over time. Based on the survey and individual feedback learning was enabled but limited to the project team. There was no learning within the broader organization, but agile within hardware-related products was understood far more positively.

### Conclusion

The paper provides an insight into the reality of piloting agile within an electromobility tech company that is developing products in the scope of mechatronic systems. It has been found that utilizing pilot projects as leverage to scale up and expand the basic action research model can

serve as a stable and effective backbone for implementing organizational development initiatives. This approach has a significant impact on the working style and approaches toward teamwork within the organization.

Furthermore, the pilot project approach allows for the experimentation and testing of new ideas in a controlled environment, which can lead to increased buy-in from stakeholders and more successful implementation of change. It also enables the identification of potential challenges and barriers to change early on, allowing for proactive mitigation strategies to be put in place. As a result, utilizing pilot projects as leverage for organizational development can lead to long-term benefits for the organization, including increased innovation, improved performance, and a more positive organizational culture.

As limiting factors for the results, it can be identified that due to very specific boundary conditions within pilot projects, a direct transfer to other organizations can hardly be done. Within the scope of the analyzed case study the main special conditions were related to strong support by the management and organization development team, external support by specialists for Large Scale Scrum and the non-business critical project type. In concern to the generated data the small sample size of data used in this

single-case study, which was intended to reduce risk and impact on the business, is a limiting factor. Summarizing on the one hand side the limitation of a single project team as context and related to this the limited number of survey participants, and on the other hand side the very specific set-up which is not a typical agile environment, needs to be considered.

Nevertheless, gained learnings within the specific case and comparison to interpretations within existing literature can be identified and bring some additional insight to the community; pilot projects are a valuable tool to bring change to organizations. They can be established in a way that risks for the overall organization are reduced. Pilot projects can support a stepwise approach to learning and improving. The potential of a direct change success out of these factors is higher than it would be with a wider spread approach.

On the other hand, side, pilot projects are likely to not be a realistic representation of the complete organization. Due to the specific focus, support, and motivation of the team and related management a unique situation is created. Although within the observed case study no negative effects out of these boundary conditions were generated, the positive effects were artificially enlarged.

Based on current literature, it has been found that piloting is an effective strategy for learning how to mitigate risks associated with change, identifying and reducing uncertainty during the change process, and testing efficacy within a non-critical environment. Additionally, it allows for direct proof of effectiveness.

Reflecting these contradictions of piloting agile adoptions or organization development in general the transfer of knowledge and information handover, between a pilot project and the regular organization, seems to be a hidden crucial pain point of a sustainable change.

Reflecting on the pilot project team within the scope of the case study, the performed survey and the analysis of the

literature the hypothesis that pilot projects are enabling tools for agile transformation is also supported. Within the pilot project the very positive up-speeding and streamlining effect of professional third-party support was underlined by most team members. Within the pilot team an understanding of agile itself was formed. This new understanding was for over more than 60% of the team a completely new way to look at the intention, values, principles and methods within working agile. Although the team members are experienced engineers, within the high-tech system development industry, providing knowledge to them by agile change professionals seems indispensable.

Reflecting a transformation of an organization, piloting seems to be path paving. If piloting includes a planned approach for organizational development, such as a plan action model, bringing knowledge, support and attention to a change, acceptance seems to be supported. Although piloting is an attractive way to get a first glance at a new topic, within a full-scale organizational transformation, it must be taken into credit, that the transition to a wider group may bring a different set of obstacles.

An up following research question might be what is changing in detail within electromobility when it comes to the product development phase and which potential further possibilities to speed up development are available. Another major question, which was brought up, is how increasing needs to be adoptive and fast within the development are influencing organizations teams and people. Reducing time for development and up speeding life cycles are already in place in other industries, such as semiconductors since a long period. Investigations could be done to find similarities and maybe derive improvements that are not yet utilized within automotive industries. In terms of organization development, the question is raised of how to ensure transfer changes out of a pilot project into a broader organization, mitigating identified risks. A potential risk is identified, providing dim evidence that the more support is provided to pilot projects, the bigger the gap to the rest of an organization might be.

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# Agilna preobrazba: študija primera o zgodnji fazi sprejetja agilnega pristopa

## Izvleček

Agilna preobrazba je opredeljena kot možen spodbujevalec, ki omogoča sledenje pogostim spremembam pri razvoju izdelkov. Čeprav obstajajo začetne raziskave, je empirična literatura o procesu uvajanja agilnega pristopa, zlasti o uporabi pilotnih projektov kot strategije sprememb, redka. Namen tega članka je prispevati k zapolnitvi te vrzeli s preučevanjem učinkov pilotnih projektov agilnih sprememb. Za osvetlitev pilotnih projektov je bil šest mesecev spremljan projekt v okviru razvoja mehatriškega sistema v visokotehnološki industriji. Po uvedbi članov projekta in obdobju agilnega preizkušanja je bilo izveden intervju. Intervjuvani člani ekipe prinašajo zanimive ugotovitve, saj kljub temu, da so na začetku pilotnega projekta različno razumeli agilnost, prepoznavajo agilne vrednote, načela in metode kot podporne za cikel izdelkov in še posebej za čas razvoja. Nadaljnje ugotovitve kažejo, da je strokovna podpora tretjih oseb ključni dejavnik, ki omogoča sprejetje sprememb. Prav tako se je izkazalo, da je pilotiranje kot strategija sprememb za sprejetje agilnosti podporno. Čeprav se je izkazalo, da je pilotiranje podporna strategija, so opredeljene in analizirane tudi slabosti, kot je omejena razširljivost zaradi izrednih nastavitvev. Omejitveni dejavnik te študije enega primera je majhen vzorec podatkov zaradi namena pilotnega projekta, da bi omejil vpliv in tveganje za organizacijo.

*Ključne besede:* agilni razvoj izdelkov, organizacijska preobrazba, sprejetje agilnih rešitev, pilotni projekt, študija primera