Development of a Shared UX Vision Based on UX Factors Ascertained Through Attribution

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Abstract

User experience (UX) is an important quality in differentiating products. For a product team, it is a challenge to develop a good positive user experience. A common UX vision for the product team supports the team in making goal-oriented decisions regarding the user experience. This paper presents an approach to developing a shared UX vision. This UX vision is developed by the product team while a collaborative session. To validate our approach, we conducted a first validation study. In this study, we conducted a collaborative session with two groups and a total of 37 participants. The group of participants comprised product managers, UX designers and comparable professional profiles. At the end of the collaborative session, participants had to fill out a questionnaire. Through questions and observations, we identified ten good practices and four bad practices in the application of our approach to developing a UX vision. The top 3 good practices mentioned by the participants include the definition of decision-making procedures (G1), determining the UX vision with the team (G2), and using general factors of the UX as a basis (G3). The top 3 bad practices are: providing too little time for the development of the UX vision (B1), not providing clear cluster designations (B2) and working without user data (B3). The results show that the present approach for developing a UX vision helps to promote a shared understanding of the intended UX in a quickly and simply way.

Keywords

I. Introduction

As part of the human-centred design process [1], user requirements must be specified prior to embarking on creating a design. User experience (UX) is an important non-functional requirement that can be decisive in the acceptance and success of a product [2]. In other words, users can decide to accept or reject a product depending on its UX. As such, organisations are encouraged to consider UX as a design aspect during product development.

UX can be defined as 'a person's perceptions and responses resulting from the use and/or anticipated use of a product, system or service' [1]. However, the concept of UX is multi-layered and can comprise various factors [3]. These various factors create the possibility that the individuals involved in product development may generate different understandings of the product's intended UX, with each person having their own interpretation of what UX should be. These various interpretations create the risk of divergent design decisions for different product components, such that choices are not coordinated to serve a shared goal. For example, investing in a visually clear user interface during design has a positive impact on both usability and aesthetic ratings [4].

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To develop a shared understanding of what the outcome of product development should be, the product team must have a shared vision of the intended UX. A shared vision is generated through the process of developing the vision together, as joint decisions are reached through discussions on individual aspects. During the process of creating a shared vision, the product developers' shared pretence — or shared mental model — shapes the UX vision, which can be consciously reiterated in an explicit form (e.g., formulated as a statement). In this explicit form, the UX vision can guide those involved in product development to make or justify design decisions [5]. It can thus also serve as a basis for the design of other artefacts, such as storyboards [6], scenarios [7] or pastiche scenarios [8], and it reduces the scope of possible experiences to the agreed-upon aspects. Thus, with the UX vision, designers envision the experience a user should have when engaging with a product [5],[9].

In this paper, we present an approach for developing a UX vision. Product teams clarify which terms users ideally use to describe the UX. The terms are then clustered to identify the underlying UX factors. We reviewed the use of our approach as a tool to generate a shared understanding via a study on teams developing fictitious products versus teams developing real products. To this end, we pose the following research question:

RQ1: How does the development of a UX vision support an understanding of the intended UX?

To answer this research question, we applied our approach with 37 participants (product managers, UX designers, etc.). At the end of the exercise, we distributed a questionnaire to participants to discover how the development of the UX vision promoted shared understanding from their perspective.

We also wanted to uncover practices supporting the application of the presented approach. This goal led us to the second research question:

RQ2: What are the good and bad practices in the application of the approach?

To answer the second research question, we asked the participants in the same questionnaire as for RQ1 to describe which practices helped in the development of the UX vision and which should be avoided. In addition, the authors observed the behaviour of the participants during the exercise.

This paper is structured as follows. Section II reviews relevant research on the development of a UX vision. Section III presents our approach to developing a UX vision. The results of the evaluation are presented in Section IV and discussed in Section V. In Section VI, we draw conclusions in summary.

II. Background and Related Work

Visions are powerful tools that can orient and structure actions and behaviours [10]. A widely used form of vision in product development is the product vision. Product visions can be expressed through techniques applying, for example, a positioning statement [11] or a product box [12]. Structuring tools such as the product vision board [13] aggregate different artefacts such as personas [14] into a more comprehensive vision. A product vision does not have specific details or features; instead, it focuses on qualities important to users [15] and conceives the intended image of the product, its performance and its fit with the company's competencies and customers [16]. A good product vision keeps product teams focused on the customer, serves a common understanding of what they want to accomplish, inspires people, provides meaningful work, and gives clarity [17]. Even without a uniform definition of a product vision [18], visions help to improve the performance of teams [19]. Performance is enhanced by the possibility of making better decisions more quickly and filtering the noise, data, questions, and assumptions [20].

The concept of product vision can be valuable in understanding UX, which should be implemented by the design efforts of a team. Holtzblatt, Wendell, and Wood [21] define a vision in the context of experience-driven product development as a graphic representation describing an overarching story of the client's usage of a new product. The vision describes both the environment and how the interaction with the new product will work from the user's perspective. Szóstek [22] describes the UX vision as primarily an idea or a conception of future results, as something that experienced UX professionals use to help others follow a shared agenda.

According to Weichert, Quint and Bartel [23], a UX vision can be viewed from the perspectives of the product, the company and the user. Whereas the company perspective pictures the ideal image of the organisation (so that products can be developed in an experience-oriented way), the product perspective centres on how a product should be developed. The user perspective focuses on how users should feel or behave after or while using the product. In addition, a UX vision can also be seen as a vision for UX teams [22],[24]. This vision describes the impact of UX professionals and their integration into the organisation rather than the intended UX of a product. In this paper, we focus on the user perspective of the UX vision.

In addition to the formulation of a UX vision, there is also the

practice of defining the UX goals on which the intentional product design should focus. UX goals describe individual objectives for interaction design, formalise the expected UX, and identify metrics that can be used as indicators for the achievement of UX goals [26]. Product-specific experience goals are ideally derived from company goals [27]. A UX vision can thus be seen as the totality of the UX goals because it summarises individual sub-goals. Defining goals can help product people to form a team and decide whether they share a vision and want to join the team [22], committing themselves to these goals.

In contrast to the product vision, there are no widely used structuring tools for the UX vision. The UX vision and its importance are mentioned, but specific methods for its representation or structured development are often lacking (e.g. [5],[9],[22],[28]). However, Weichert, Quint and Bartel [23] get more specific and present empathy maps or future journey maps as a picture of the users' intended interaction journey. The extent to which these methods generate a shared understanding in the product team remains open, however, as no review was performed. Specific metrics for evaluating important UX factors are not offered by previous approaches to developing a UX vision.

Developing a shared UX vision can increase the UX competence of an organisation involved in product development [28]. In a product team, the absence of a UX vision can diminish the understanding of the big picture and of the UX they are trying to achieve. It can also lead to poor integration of UX professionals into the product development process [29].

III. Research Approach

To determine how the development of a UX vision supports shared understanding of the desired UX (RQ1) and which practices support or hinder this process (RQ2), we conducted an evaluation study with 37 participants (product managers, UX designers, etc.). All Participants had to be professionally involved in the development of interactive products and making design decisions on a regular basis. It is assumed that the participants' statements on the practical use of the approach are more accurate if they can relate to real work experiences. Participants were divided into two groups (Group A and Group B). The first group (Group A) applied the approach to a fictitious product within different training sessions, while the second group (Group B) applied the approach to their actual products.

Group A consisted of 27 participants. This group applied the approach to developing a UX vision during training sessions with a fictitious product. A training exercise was developed and carried out with voluntary participants. This training concept was implemented in two German-language sessions (Group A.1 and Group A.2) using a fictitious product example (an app for analysing till receipts). The first session (Group A.1) involved 12 participants and occurred in January 2021 as part of a commercial product owner training session with a focus on UX. The training was promoted via LinkedIn, Xing and Twitter. The participants registered separately for the training and came from different companies. The training was held online. In real life, 10 participants worked as product owners and two worked as UX professionals. The second session (Group A.2) was held as a free online training event in February 2021 and was attended by 15 people. The event was promoted via LinkedIn and Twitter. The participants described themselves as product owners, product managers or UX professionals.

Group B applied the approach to a real product that participants were currently developing. This group consisted of 10 participants from three different German companies (Group B.1, Group B.2 and Group B.3). All three sessions were held in January 2021. Group B.1

consisted of a product owner and a UX professional who carried out the development of the UX vision in person. The underlying product was an online application for data management. Group B.2 consisted of four UX professionals and their team leader, who were in the process of developing a digital consultancy service. The UX vision was developed online. Group B.3 consisted of a managing director, a product manager and a UX professional. They were developing a platform for online communities in the field of sports. This application of the approach to develop the UX vision was done online.

All participants from Group A (27 participants) and Group B (10 participants) were asked about the development of the UX vision using a questionnaire. The questionnaire was sent to all participants by email shortly after their session and was answered online.

A. Procedure for the Development of a UX Vision

The general approach to developing a UX vision is divided into clarifying or recalling a product idea, collecting positive attributions, forming of clusters from the collected attributions, determining the relevant UX factors and integrating the selected UX factors into the existing product vision (see Fig. 1). These five steps were used with Group A (training sessions) and Group B (in-house product teams).
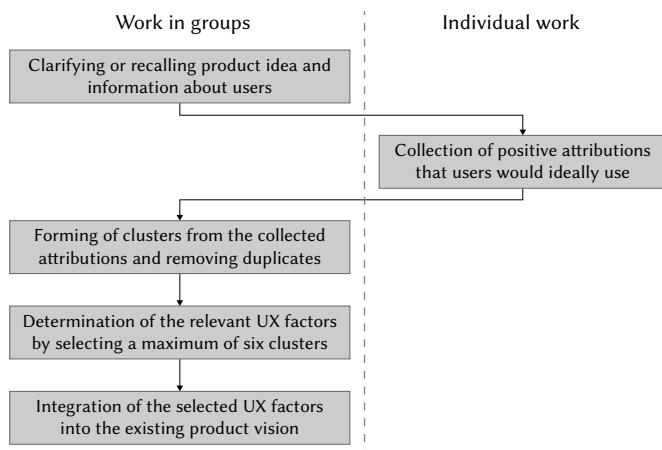

Fig. 1. Approach to developing a UX vision.

Before developing the UX vision, it was ensured that all participants understood the nature of the product they wanted to develop. For participants in an established product team, previous ideas about users and their experiences (e.g., through experience reports) were recalled. For training session participants, the idea of the product was presented in the form of a position statement (see Fig. 2; [11]). This statement was supplemented by the persona of a fictitious and realistic user [14]. These components aimed to provide the participants with the necessary contextual information to be able to develop a UX-related vision [9].
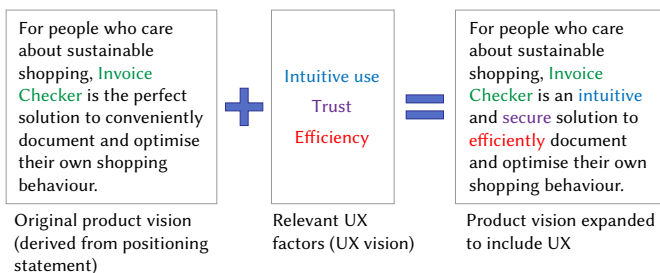

Fig. 2. Example of a product vision (derived from [11]) and its UX enrichment.

At the beginning of UX vision development, participants were introduced to how the overall approach worked. They then worked individually to identify attributions (especially adjectives) that intended users would ideally use to describe the UX. In UX vision development, the user's perspective must be considered, along with how users feel when using the product [30]. The attributions were written on individual cards with one attribution noted on each card. Participants were advised that only positive attributions should be used, as it can be assumed that UX should be positive (see Fig. 3).
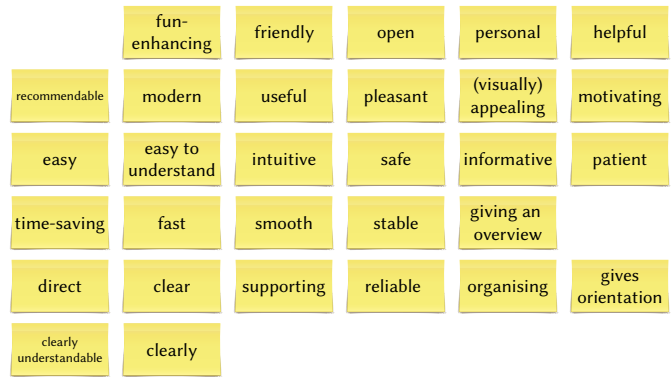

Fig. 3. Collected attributions of Group B.1.

After the participants had written their individual attributions, these attributions were further elaborated in groups. Training group participants (Group A) were divided into smaller groups with a maximum of five participants. Participants in Group B continued to work in their product teams.

The subgroups then clustered the individual cards (see Fig. 4). Duplicates were removed and unclear attributions were clarified within the group. The clusters were to be chosen such that they described a characteristic of the UX (e.g., perceived attractiveness, usefulness or controllability). Participants were asked to name the clusters themselves to check whether the added descriptions still fit the content of the cluster.
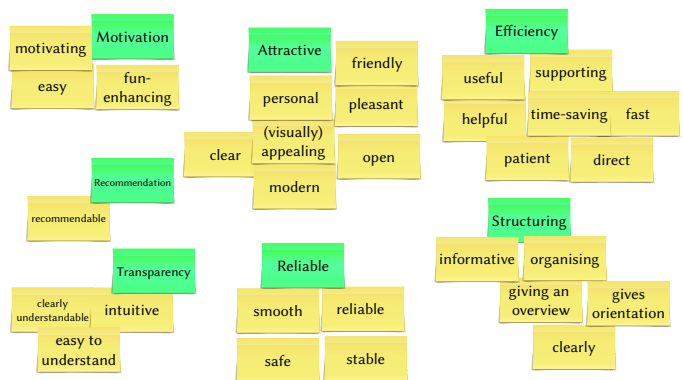

Fig. 4. Clustering of the attributions by Group B.1.

These attribution clusters represented the relevant factors of UX according to the participants' assessment. After all factors were compiled and named, the participants were asked to prioritise the identified factors. The aim was to reduce the number of possible factors to a manageable level for the product development process. Participants were asked to reduce the list of relevant factors to a maximum of six factors to be given special consideration. Up to six factors were then incorporated by the training participants (Group A) into the positioning statement presented earlier (see Fig. 2) and by the product teams (Group B) into their product vision.

B. Evaluation

After the development of the UX vision, the training participants (Group A) and the product teams (Group B) were sent an email inviting them to participate in a survey of their experience of applying the approach. We derived the questions from the research questions and structured them accordingly. As other approaches to developing a UX vision (or product vision) have not, to our knowledge, been reviewed in a structured way so far, no comparative questions could be used. The questions derived from the research questions were tested in advance with UX professionals. They were asked to verbalise what they understood by the wording. The questions were then reworked and tested again. After two iterations, the questions were finalised in their current form.

The questions were grouped into three sections: 'usefulness of the approach' (RQ1), 'good and bad practices' (RQ2) and 'personal feedback' (see Table I).

TABLE I. Item Overview

Nr	Short	Item	Type
		Section 1	
1	Better understanding (individual)	The development of the UX vision helped me to better understand the intended UX.	Likert
2	Better understanding (group)	The development of the UX vision helped us as a group to better understand the intended UX.	Likert
3	Easy procedure	The approach for developing the UX vision was easy for me to understand.	Likert
4	Produces results quickly	The approach for developing the UX vision enabled us to achieve results quickly.	Likert
5	Helpfulness for decisions	The developed UX vision will help us to make design decisions for the product.	Likert
		Section 2	
6	Good practices	What worked well in developing the experience goals?	Open question
7	Bad practices	What did not work well when developing the experience goals?	Open question
8	Helpful advice	If you were to recommend the development of experiential goals to others, what advice would you give?	Open question
		Section 3	
9	Other	What else would you like to share with us?	Open question

In the first section of the questionnaire, we asked the participants about how the presented approach supported the development of a UX vision (RQ1). Participants were asked to assess improvement in their understanding of the intended UX as a result of the approach. They were asked to state the extent to which the development of the UX vision supported them personally and the group as a whole in understanding the intended UX. In addition, the participants were asked to rate how comprehensible they found the approach for developing a UX vision and how efficient they felt it was. In a final

question of the first section, they were asked to rate how much the developed UX vision would help them further develop the product. The items of the first section of the questionnaire were rated using a 5-point Likert scale [31] ranging from 'disagree' to 'agree' (see Fig. 5).

The second section of the questionnaire regarded good and bad practices in the application of the presented approach (RQ2), about which participants were asked to describe what worked well and what did not work. Participants were then asked to state what advice they would give to others who were using the approach to develop a UX vision. The second section posed open questions.

The third section of the questionnaire allowed participants to give further feedback. They were asked to indicate (via an open question) what additional information they would like to share on any aspect of the study.

IV. Results

In the following section, we present the results of the survey according to the research questions and offer additional observations regarding the development of the UX vision in the study.

A. RQ1: How Does the Development of a UX Vision Support a shared Understanding of the Intended UX?

Participants in the training sessions (Group A, N = 27) indicated that developing the UX vision helped them to understand the intended UX (Item 1, mean of 4.296, standard deviation of 0.597, confidence interval [95%] of ±0.225; see Fig. 6). Product team participants (Group B, N = 10) who developed a UX vision for their own products agreed with this statement (Item 1, mean 4.300, standard deviation of 0.640, confidence interval [95%] of ±0.397; see Fig. 6).

The approach to developing the UX vision was rated easy for the training participants (Group A) to understand (Item 2, mean 4.481, standard deviation of 0.630, confidence interval [95%] of ±0.238; see Fig. 6). This rating was also confirmed by participants in Group B in the context of applying the approach to the development of their own products (Item 2, mean 4.300, standard deviation of 0.781, confidence interval [95%] of ±0.484; see Fig. 6).

Training participants (Group A) agreed on the usefulness of the approach to support a shared understanding of the UX vision (Item 3, mean value 4.259, standard deviation of 0.745, confidence interval [95%] of ±0.283; see Fig. 6). This was confirmed by the participants in Group B (mean value 4.400, standard deviation of 0.800, confidence interval [95%] of ±0.496; see Fig. 6).

The training participants (Group A) agreed that the approach for developing the UX vision quickly yielded results (Item 4, mean value 4.333, standard deviation of 0.816, confidence interval [95%] of ±0.308; see Fig. 6). Applied to their own products, Group B respondents also agreed (to a lesser extent) that the approach quickly yielded results (mean 3.900, standard deviation of 0.831, confidence interval [95%] of ±0.515; see Fig. 6).

Regarding to how far the developed UX vision aided design decisions (Item 5), Group A participants expressed high levels of agreement (Item 5, mean 4.259, standard deviation of 0.699, confidence interval [95%] of ±0.264; see Fig. 6), while Group B expressed slightly lower levels of agreement (mean 4.000, standard deviation of 0.632, confidence interval [95%] of ±0.392; see Fig. 6).

	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree
The development of the UX vision helped me to better understand the intended UX.	☐	☐	☐	☐	☐

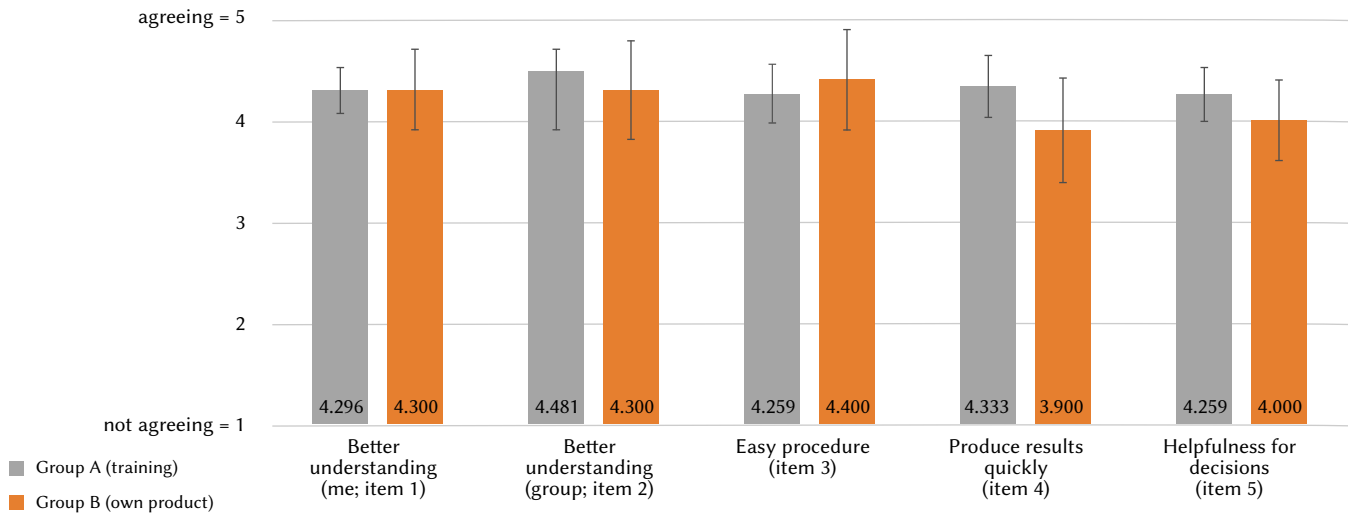Fig. 5. Example of one item of the questionnaire using a Likert scale.

Fig. 6. Results of quantitative items (mean values [range 1–5] and confidence intervals).

B. RQ2: What Are the Good and Bad Practices in the Application of the Approach?

The evaluation of the open-text questions (Items 6–9) based on the answers given by Group A and Group B revealed seven good practices (G1–G7) and four bad practices (B1–B4) to develop a shared UX vision with the proposed approach (see Table II). The open-text questions were independently evaluated by two of the authors. In addition, three other good practices (G8–G10) were identified through observations made by one of the authors and another facilitator.

TABLE II. Good and Bad Practices Identified by Participants (the Number of Individual Participants Who Mentioned Each Concept Appears in Brackets)

Good Practices	Bad Practices
G1: Definition of decision-making procedures (12)	B1: Providing too little time for development of the UX vision (8)
G2: Determining the UX vision with the product team (12)	B2: Not providing clear cluster designation (3)
G3: Using general factors of the UX as a basis (6)	B3: Working without user data (2)
G4: Explicitly allowing different perspectives (5)	B4: Not making the development approach transparent in advance (1)
G5: Naming the purpose of the UX vision beforehand (3)	
G6: Use of an external moderator (3)	
G7: Reflecting on customer feedback and behaviour in advance (3)	
Discovered by Observation	
G8: Repeatedly referring to the user perspective	
G9: Explaining the approach beforehand	
G10: Providing an example of a UX vision	

1. Good Practices

Good practices mentioned by the participants include the *definition of decision-making procedures (G1), determining the UX vision with the product team (G2), using general factors of the UX as a basis (G3), explicitly allowing different perspectives (G4), naming the purpose of the UX vision beforehand (G5),* the *use of an external moderator (G6),* and *reflecting on customer feedback and behaviour in advance (G7).* In addition, several other good practices were noted through observation, including *repeatedly referring to the user perspective (G8), explaining the approach beforehand (G9)* and *providing an example of a UX vision (G10).*

To ensure the development of a UX vision progresses quickly, it is advisable to use given *decision-making procedures (G1).* In the observed constructions of the UX vision, the participants used dot-voting for this purpose so that relevant UX factors could be efficiently determined. If factors are put in an absolute order and discussed individually, the time required increases. However, relevant factors must be reduced to a manageable number, which can be achieved by simplifying voting procedures.

For *determining the UX vision with the product team (G2),* it is advisable to involve several members of the product team in the development of the UX vision; this involvement can increase the acceptance of the developed UX vision among team members. In addition, different perspectives allow for a more comprehensive view of users' needs, which can lead to a more appropriate UX vision.

Using general factors of the UX as a basis (G3) means using a predefined list of possible factors (e.g., [3], [32]) to form clusters as concrete as possible from the individual attributions. However, care must be taken to ensure that other factors are also perceived as possible, beyond the predefined list.

Explicitly allowing different perspectives (G4) supports the adequate description of the UX vision for the intended UX because participants can bring their different professional perspectives to the discussion. Therefore, an open atmosphere can lead to a broader discussion. The UX vision can be discussed more comprehensively through different professional perspectives.

Naming the purpose of the UX vision beforehand (G5) helps all participants by allowing them to prepare for development and to reflect on important information in advance. Furthermore, they can align their decisions with the intended goal during the design.

Although members of product teams can also moderate the construction of the UX vision, the *use of an external moderator (G6)* is recommended. This moderator can focus exclusively on the approach. Due to their external standing, they can also critique the group discussions and contribute to solutions as mediators.

To focus discussions and decisions on user needs during the construction of the UX vision, it is advisable to *reflect on customer feedback and observations in advance (G7).* This reflection allows participants to refer back to information they have already gathered and to keep users at the centre of the discussion.

Repeatedly referring to the user perspective (G8) helps vision developers to keep sight of the user perspective. During the exercise, it was observed that—contrary to the instructions—participants

often adopted the perspective of product designers and did not use the language of users. The facilitator then had to point out that they should formulate positive attributions from the user perspective; this was difficult for some participants but could be solved through the collaboration with other participants.

It helps product teams to *explain the approach beforehand (G9)*. Participants know what is expected of them at each step, thereby reducing uncertainty.

When elaborating the UX vision, *providing an example of a UX vision (G10)* helps product teams. In this study, product teams used an example of a UX vision as an initial point of orientation for their discussions. This example supported their discussion and was repeatedly used as a guide in the formation of clusters.

2. Bad Practices

Bad practices include *providing too little time for the development of the UX vision* (B1), *not providing clear cluster designations* (B2), *working without user data* (B3) and *not making the development approach transparent in advance* (B4).

Providing too little time for the development of the UX vision (B1) can lead to the results being perceived as being too generic or as being unhelpful. Development of a UX vision usually occurs within the framework of structured and time-limited activities (e.g., as a workshop). For this reason, product teams should allow sufficient time for development. If necessary, they should set a follow-up date.

Not providing clear cluster designations (B2) means that groups cannot agree on the desired characteristics and, thus, that further discussions cannot be conducted effectively. This issue may become apparent only when the UX vision is further applied (e.g., when prioritising requirements); it may then lead to conflicts because the participants have different ideas. Each cluster must, therefore, be labelled with a unique term accepted by the whole group. A facilitator can provide support here.

Working without user data (B3) while creating the UX vision limits the developed content to assumptions about users and their UX. If user data (e.g., survey results, personas or user ratings) are available, product teams should use as much of this data as possible to develop the UX vision. These data allow product teams to develop a comprehensive picture of the users and to use this as a basis for selection decisions.

By a product team *not making the approach of development transparent in advance (B4)*, participants may become insecure and may be prevented from understanding the results of the individual steps. If participants understand how positive attributions are processed after collection, they can more deliberately formulate these attributions. For this reason, the entire procedure should be presented at the beginning of developing a UX vision.

V. Discussion and Limitations

Based on the results of our study, it can be assumed that the development of a UX vision according to the presented approach promotes both individual and shared understanding of the UX (from the perspective of the participants). On this approach, participants structure their thoughts around the intended UX. Very similar results were found in the context of the training teams (Group A) and the teams with real products (Group B). Therefore, the presented approach seems to work both in a constructed scenario (Group A) and in practice (Group B).

Although all participants stated that the approach was easy to understand and led quickly to results, the introduction to the approach likely influenced participants' understanding substantially. It can also be assumed that the way the approach was introduced and explained influenced its success. We did not investigate how significant this influence was. We therefore recommend that the person introducing the approach should have both methodological and didactic experience.

Although the participants stated that the developed UX vision was helpful for design decisions in further product development, we did not check whether this was the case during actual product development. However, it can be assumed that consensus-building within the product team simplifies and promotes later design decisions because the developed UX vision can be referenced.

Some of the good and bad practices identified can be transferred to other ways of working. For example, limiting the available time can also create problems in other approaches, while considering different professional perspectives in the discussions of other workshops can have generally positive effect.

The repeated assumption of the user perspective may also be applicable to other group-based approaches (e.g., prioritising requirements). The reference to lack of user data and user feedback can also be generalised to other decision-making.

Bad practices should be avoided; they can be transformed into good practices by taking the opposite actions. For example, the bad practice of working without user data can be reversed and made positive by working with user data.

UX factors were selected by participants. Therefore, the factors are based on individual assessments and not on factors pertinent to real users. For this reason, the relevance of the factors must be validated in the course of product development. At the beginning of the product development process, no tangible product versions are available. Initial ideas also have to be implemented for prototypes.

In addition to the bad practices mentioned, it is to be expected that typical biases of group work can also come into effect in the presented approach. Dominant personalities could prevail more strongly in the selection of the UX factors to be considered further [33]. Compromises made in group work do not necessarily lead to better results. It is therefore important to compare the selected UX factors once again with the perception of users, even if the approach presented does not include this.

For the first product versions to be developed and validated, product teams must make initial design decisions that are aligned with a targeted type of experience through a UX vision. A review of the selected factors should be validated with real users in the later stages of product development.

Except for one implementation, all steps of the study occurred online. There is no indication that the development of a UX vision according to the presented approach would not also work in an in-person workshop. It is possible that different time investments must be made due to other group dynamic effects.

Since, to our knowledge, validations of other approaches to developing a shared UX vision are not available, our results cannot be compared. Our results show that the approach presented is perceived as effective. However, as of today, it is not possible to say whether another approach would be better or worse. Compared to empathy maps or future journey maps as a picture of the users' intended interaction journey [23], the approach presented allows a direct transfer into UX management, as UX factors are determined.

VI. Conclusion and Future Research

This paper describes an approach to developing a UX vision based on UX factors as a product team and presents the results of a study with 37 participants. In this study, training participants (Group A, N = 27) and real product teams (Group B, N = 10) were asked to develop a

UX vision. The study investigated how the development of a UX vision supports an understanding of the intended UX (RQ1) and establishes the good and bad practices involved in developing a UX vision using the presented approach (RQ2).

The first research question addressed how the development of a UX vision supports a shared understanding of the intended UX. We have shown that the examined approach promotes, from the perspective of the participants, both individual and collaborative understanding of the intended UX and the relevant UX factors, mainly by structuring discussions and related design decisions. Furthermore, the approach was perceived as accessible and efficient. The UX vision resulting from the approach was judged to be conducive to further decision-making, so it can be assumed that design decisions during product development are promoted by this vision.

The second research question aimed to identify helpful and detrimental practices in developing a UX vision. Good practices in developing a UX vision include definition of decision-making procedures, the use of an external moderator, the application of general factors of the UX as a basis, the naming of the purpose of the UX vision beforehand, the determination of the UX vision with the product team, explicitly allowances for varying perspectives, reflection on customer feedback and behaviour in advance, repeated reference to the user perspective, explaining the approach beforehand, and providing an example of a UX vision. Product teams should work with user data, make the development approach transparent in advance, and provide clear cluster designations and sufficient time for development of the UX vision.

In summary, this approach to developing a UX vision seems to help a product team to develop a shared idea of the intended UX quickly and simply. The developed UX vision can be the basis for many design decisions during product development, such as helping to prioritise the desired features by UX factors. By adopting the language of users, the desired UX can also be communicated comprehensibly within the organisation. A structured approach to developing the vision also allows the justification of the selection of relevant UX factors. Thus, the presented procedure represents a suitable basis on which to initiate product development and supports, for example, collaborative estimation methods such as UX Poker [34].

Further research should be completed to study the practical use of the developed UX vision in an actual product development process over a longer development period. While it can be assumed that a UX vision generates value when used and communicated, it remains to be proven what kind of communication and what kind of embedding in other product development artefacts is particularly conducive to achieving an intended UX.

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