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How Might We? From Design Challenges to Business Innovation

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Abstract
The successful application of innovation methods for multidisciplinary and decentralized team work is a decisive success factor for organizations. One approach that pursues this goal is Design Thinking, where the "How Might We" method is often used to create a Design Challenge, which serves the development of an initial problem for Design Thinking, User-centered Design or even Design Science Research. In this article we present a digital implementation of this method and an evaluation in a laboratory experiment with a total of 40 participants in terms of effectiveness, usefulness, user-friendliness and intention for further use. Our results show that the digital implementation achieves significantly better results in all areas than a comparable analogue implementation. The decisive criteria for the stronger evaluation of the prototype are a reduced workload due to the implemented algorithm, a better integration of all participants in the process and an almost halved process duration.

Keywords: design thinking, how might we, natural language processing, collaboration.

Introduction and Motivation

The progressive digitization opens up revolutionary possibilities for companies to create innovations. An essential focus lies within the effective involvement of teams in appropriate methods of collaborative work (Drach-Zahavy & Somech, 2001). In this context, the use of new methods is essential for the development of products and services with the aid of decentralized, goal-oriented teams (Carlgren, Rauth, & Elmquist, 2016; Raghuram, Tuertscher, & Garud, 2010). One approach that combines these aspects is Design Thinking (DT). With the help of multidisciplinary teams, innovative solutions are developed for existing problems that are tailored to customer needs (Beyhl & Giese, 2016; Brown, 2008). For the DT process to be carried out effectively, a suitable initial question, also called a design challenge, is essential (Bjögvinsson, Ehn, & Hillgren, 2012; Redlich, Becker, Siemon, Robra-Bissantz, & Lattemann, 2018). Previous approaches for developing an optimal Design Challenge often require direct interaction within the team. However, new open forms of work require the creation of a decentralized method for the development of an initial problem definition. One approach for the development of an optimal Design Challenge is the “How Might We” (HMW) method.

The HMW method helps within the formulation of an initial problem definition into a suitable Design Challenge by repeatedly writing questions. This method is

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also applied in other user-centered approaches such as Lean UX, System Thinking, Service Design or Agile UX (Bjögvinsson et al., 2012). Even in the Design Science Research Methodology (DSRM), the creation of a Design Challenge can be helpful. The objectives derived from the problems and theories can be formulated into a Design Challenge during the "Define Objectives of a Solutions" phase, as defined by (Peffers, Tuunanen, Rothenberger, & Chatterjee, 2007). The HMW method is a popular method, that many DT coaches, agencies and institutes use (Redlich, Becker, et al., 2018; Redlich, Rechtien, & Schaub, 2018). However, to the best of our knowledge, there are only analogue or partially digital templates that support the HMW method. Our comprehensive research for HMW software, tools and systems revealed a lack of software reasonably supporting this method.

The aim of this paper is to implement and evaluate a software prototype to support the HMW method. The central element is the optimization of user support through the development of an algorithm for the analysis and interpretation of text inputs. Furthermore, the extent to which the prototype is suitable for supporting the HMW method should be evaluated, as well as to whether it can be used within geographically dispersed teams. In the first section of this paper the theoretical foundations of the HMW method are presented. Subsequently, the implementation of the prototype and separately the algorithm for processing natural language are presented. The evaluation of the prototype through a laboratory experiment and a conducted Design Thinking workshop are explained and the results are presented. The advantages of a digital implementation of the HMW method are shown and future potentials and further developments are discussed.

"How Might We" Method

Design Thinking can be described as an innovation method characterized by being simultaneously a systematic and a creative process. The DT process consists of tried-and-tested, sequential, logical process steps that have proven useful in solving problems. Multidisciplinary teams work collaboratively in an iterative process on novel results and solutions to meet the needs of customers, users or consumers (Bjögvinsson et al., 2012; Carlgren et al., 2016; Porcini, 2009). One proven approach in the DT process is the "How Might We" method. The HMW method describes an innovative technique that generates novel approaches by formulating questions. Questions with the identical beginning "How might we ..." ensure a unified version of a Design Challenge. The aim of the approach is to explore further aspects of a given problem, so that there is an appropriate problem for the subsequent DT process (Holderfield, 2017).

The difficulty when formulating a question is neither to be too general nor to be too detailed. A possible implementation of the method is the three-phase creation of questions that differ in their specificity. In a first phase a broad

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question is asked, which has few restrictions and allows for a broad interpretation scope. In the second phase, the HMW question is narrowed down. It is formulated based on the previous question, but now leaves no scope and is rich in detail. Finally, in the third phase, an optimal HMW question is sought, which finds a balanced amount of detail and spectrum. This question ideally lies between the questions of the previous rounds.

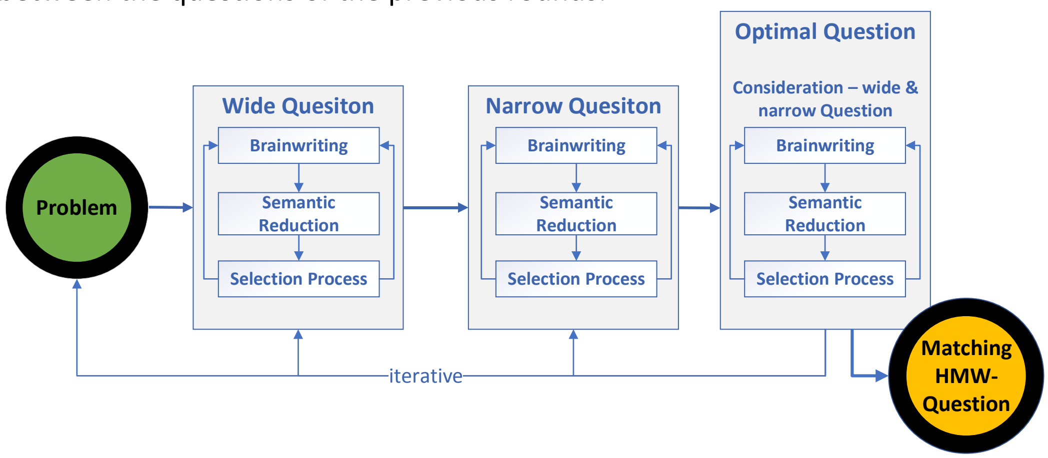

Figure 1. “How might We” method

This three-phase process ensures that the formulated questions are developed into a single final HMW question. Each phase has three more steps. The first step in each phase of the HMW method is Brainwriting, which is the written formulation of questions. Brainwriting is a creative method, in which individuals create ideas to a given topic in written form (VanGundy, 1984). A major advantage is the lack of verbal expression of ideas, so that the ideas of the participants do not interfere with or influence one other. Due to the lack of communication and feedback between the participants during Brainwriting, the probability for the emergence of similar or identical ideas increases, especially with a high number of participants or a narrow problem definition. This can lead to the process becoming ineffective due to less important entries. In order to avoid this problem, a semantic reduction of the questions is carried out after the question formulation. As a part of the reduction, questions are sorted out or summarized logically. This processing step has two positive effects. By reducing the number of questions, participants have to absorb fewer ideas and process them cognitively, which speeds up the process (Leutner, Leopold, & Sumfleth, 2009). Furthermore, the quality of the emerging ideas is improved by the reduction process. The last process step in the phases of Brainwriting represents a vote of the written questions. In a majority decision, a single question is selected as the best option. Figure 1 shows the process of the HMW method and its specific algorithms and steps.

The upstream filtering process ensures that the selection options are reduced. This condition, when there are too many equivalent choices, has been described as “Overchoice” (Iyengar & Lepper, 2000), which causes the loss of satisfaction

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and confusion (Diehl & Poynor, 2010). A single vote by the user may lead to a stalemate situation, where several questions with the highest rating emerge. In this case, an evaluation is made on a scale from 1 to 10, which reflect the quality of a question. The phase is completed by a consensus decision in which the participants decide in favor or against the acceptance of a question.

Digital Prototype

To evaluate the HMW method in terms of its digitization potentials, a web-based prototype has been developed, which implements all the necessary functions of the method. Following the phases of DSRM as proposed by Peffers et al. 2007, the "Design and demonstrate" step requires to develop an artifact (Peffers et al., 2007). The prototype consists of several software components that are arranged in a server-client architecture. The user interacts with the platform through a website that is implemented using the common programming languages HTML5, CSS3 and JavaScript. To fully attain the benefits of digitization, a number of innovative functionalities and algorithms have been implemented. The following section explains the innovative approaches, which have proven to be most beneficial as compared to the analogue method.

Semantic Reduction through Natural Language Processing

In the previous section, the benefits of a semantic reduction have been demonstrated. In the context of our research, an algorithm was developed to implement this method by means of Natural Language Processing (NLP). NLP deals with the processing of natural language by a computer to understand, interpret and manipulate textual and linguistic elements in a human-like manner (Chowdhury, 2003; Liddy, 2001). The inputs to be examined represent isolated questions or general sentences, which are compared semantically with others, i.e. in relation to their content. Such a comparison is possible only by analyzing the dedicated words of both opposed sentences. The isolated words give the sentence a semantic meaning in combination with grammatical and syntactic rules.

Preparation of the Inputs

The process of semantic reduction begins after the selection of two relevant questions with the removal of punctuation marks that do not contribute to the meaningfulness of the question. The algorithm is to be executed after the formulation of any questions, where those marked as duplicates are ignored. For their analysis, words are isolated by a tokenization from the sentence structure. Tokenization describes the segmentation of an input into smaller linguistic units according to predetermined or learned rules (Webster & Kit, 1992). In our case, the spaces between words were used as a guide to split up the sentence into a list of single words (Habert et al., 1998).

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At this point, the questions are checked for possible negation, and the algorithms aborts if they do not match. This step prevents futile computational operations and makes the algorithm more efficient. As a basis, the questions are tested for 15 expressions that express a clear negation. The process continues as soon as the number of negations in the two sentences match, or as in the case of a double negation, an allowable number is present. To further reduce the computational effort, all semantically meaningless words that do not affect the sentence's content are removed. Altogether, the sentences are checked for 602 stopwords that are highly frequented in the language. From a semantic point of view, these words have little relevance to the question (Runeson, Alexandersson, & Nyholm, 2007). The problem with the calculation of the semantic proximity is that not all words are known to the application or that they are only available in their basic form. Therefore, the individual words are converted to their original word stem. For this purpose, a database with 440,000 entries containing a word's respective initial form (word stem) was created.

The data is extracted from a dataset and converted into a tabular form. In addition, the word categories are determined to facilitate the classification of the word. At the end of the preparation, a part-of-speech tagging assigns each word to one of eleven categories (Indurkhya, 2015; Schmid, 1994). The number of categories is sufficient to avoid ambiguities and to allow the algorithm to run (Marcus, Marcinkiewicz, & Santorini, 1993).

Comparison

After these preparations, two identically tagged words from the different questions are examined for their semantic proximity. The comparison of two words from different categories is not computed which reduces the computational effort significantly and prevents falsified results. The comparison of the words is carried out by the DISCO application (www.linguatools.de), which calculates the semantic proximity of two words using a stochastic approach. This comparison can be carried out by applying statistical similarity methods, which study semantic proximity using word distributions in large data collections (Kilgarriff, 2003). These data collections, also known as corpora, consist of comprehensive text collections, which are stored digitally and thereby made readable to machines. The DISCO corpus consists of Wikipedia articles, writings of the Gutenberg project and some other texts. The basic idea behind statistical similarity procedures is that words of equal importance occur more often in the same context and thus relations between them can be built up (Harris, 1954; Pantel, 2005; Turney & Pantel, 2010). This circumstance is termed the 'distributional hypothesis' and forms the cornerstone of statistical semantics (Bruni, Tram, Baroni, & others, 2014). The found distribution patterns of the searched word are used to derive vectors from the text corpus, which allow the calculation of word similarity (Budanitsky & Hirst, 2006). As soon as two words occur more often in the same context, this is expressed by a higher similarity

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factor.

Based on the assumption that the different word categories have different relevancies for the content assessment of a question, a weighting of all words considered is performed. The weights are determined by test cases and range from a 5-fold weighting for proper names to a 0.1-fold for items, adverbs and injections. This results in formula 1, which in each case multiplies the weighting (w_k) by the similarity factor (s_k). This is summed up for all words and divided by the sum of the weighting factors (w_k). This procedure normalizes the collected values and measures the result on a scale from 0 (no similarity) to 2 (full match). Finally, all questions are marked for which the similarity factor is above a threshold value of

$$x = \frac{\sum_{k=0}^{n} s_k * w_k}{\sum_{k=0}^{n} w_k} \qquad (1)$$

Methodology

The previously described theoretical background of the HMW method reveals a novel approach for the definition of a Design Challenge, which is to be evaluated within the paradigm of the DSRM for its effectiveness and its potential (Peffers et al., 2007). Through the description of the prototype and the algorithm specially developed for the analysis of the entered questions, the object of investigation is presented. The evaluation phase intents to reveal whether a digitally supported HMW method is better perceived by users than an analogue implementation. For the evaluation of the research question, an experiment was designed that allows the test of the two types of implementations in conditions that are as similar as possible. In addition, a qualitative evaluation was conduct, within a Design Thinking workshop. Besides the laboratory experiment, where measurable constructs will be tested, the qualitative evaluation of the workshop will provide insights about the applicability and practicability of the digital HMW method. In the next sections, the hypotheses are derived and the structure of the experiment and the workshop are described. Finally, the results are presented and conclusions for further research are drawn.

Proposition

A central condition for the suitability of the prototype is the acceptance by the user. Technology acceptance, as defined by Davis et al. (1989), provides information as to whether and why users are working with a technology or refraining from to do so (Davis, Bagozzi, & Warshaw, 1989). A further criterion to be considered is the perceived ease of use, which describes the effort a person needs to make in order to learn and use a given technology (Davis, 1989). Therefore, for the evaluation of the digital prototype, the perceived ease of use is queried, so that the following assumption is made:

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Hypothesis 1: The digital prototype is perceived by users as more user friendly than the analogue implementation of the method.

In addition to user-friendliness, Davis et al. (1989) show that a higher perceived usefulness leads to a stronger intention for later use (Davis et al., 1989; Khosrowpour, 1998). It represents the subjective likelihood of a person that a specific application system increases his or her work performance (Davis, 1985). The added value, which the user draws both objectively and subjectively from the use of the prototype, provides information about the later value of the respective implementation.

Hypothesis 2: The digital prototype is perceived by the users as more useful than the analogue implementation of the method.

Based on the model by Davis et. al (1989), a direct correlation between the intention to use and the actual use of the technology can be assumed (Davis et al., 1989). Accordingly, a high usage intention is crucial for the developed application to be regarded as being meaningfully supportive of the HMW method.

Hypothesis 3: The digital prototype generates a higher intention to use than the analogue implementation of the method.

Finally, the desired effectiveness represents an additional factor for the suitability of the prototype and its quality. A good collaboration process should involve the users in the process effectively and thus strengthen the team's goal achievement. Therefore, it can be assumed that the resulting effectiveness is a central factor in the evaluation of the tool (Venkatesh & Davis, 2000).

Hypothesis 4: The digital prototype has a higher perceived effectiveness than the analogue implementation of the method.

Based on these hypotheses, the advantages of the digital prototype compared to an analogue HMW method are examined.

Experiment Structure

The derived hypotheses were tested to evaluate the prototype in a laboratory experiment with volunteers. Through a laboratory experiment and the associated temporal and local proximity, a direct comparability of the two method implementations could be ensured. A total of 40 participants took part in the experiment with a majority of undergraduate and graduate students (male=30, female=10, average age=24 years). Due to the spontaneous cancellation of one participant, the moderator of the experiment helped out, so that overall 39 evaluations were considered. The group size was limited to four

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participants in order to avoid exceeding the process time, especially with regard to the paper-based implementation. All groups received both an identical introduction and assignment from the moderator. The assignment was to create a suitable HMW question with the respective method for the initial situation of the decreasing attractiveness of the retail trade. Ruled paper was provided for the analogue method to allow for the formulation of questions. Conversely, the implementation of the digital method is done entirely on the computer. After the experiment, the following questionnaire was completed by each participant.

Questionnaire

To evaluate the experiment and verify the hypotheses, a questionnaire was developed. It was processed in digital form and consisted of a total of 27 questions, which were selected on the basis of validated constructs from past research. Both groups received the same questionnaire, which was designed for a purely quantitative evaluation. The first Ease of Use construct included a total of eight questions based on Davis (1989) and Lund (2001) (Davis, 1989; Lund, 2001). Davis (1989) created a questionnaire related to the proprietary Technology Acceptance Model, which reflects the ease of use for this experiment (Davis, 1989). The USE-questionnaire presented by Lund (2001) consists of the categories 'Usefulness', 'Ease of Use', 'Ease of Learning' and 'Satisfaction'. Relevant for the questionnaire are questions of the construct 'Ease of Use' and 'Ease of Learning', which were adapted and included. To assess usability, all questions asked by participants during the experiment were additionally evaluated and qualitatively analyzed.

In a second step, the construct Perceived Usefulness was created based on the USE-questionnaire (Lund, 2001). Five relevant questions were selected for this with minor adjustments. An additional indicator of utility was the duration of the individual phases, which gave information about the perceived added value of the two method implementations. The construct of the intended use (Behavioral Intention to Use) was constructed based on Gao and Bai (Gao & Bai, 2014). Their underlying model examines individual user characteristics for technology acceptance. The presented model was directly transferable for this investigation, so that three relevant questions could be taken. In contrast to the others, this construct used a 5-point Likert scale instead of a 7-point Likert scale. In both scales, a high score showed strong agreement.

The last construct examined to the effectiveness (Perceived Effectiveness) of the prototype. This provided a measure of the quality of the resulting questions. In doing so, less consideration was given to the process rather than to the outcome of the method. This construct consisted of six questions based on research by Green and Taber (Green & Taber, 1980). A reliability test was used to examine all values for measuring the identical construct. The Cronbach alpha value (a_c) provided information about the suitability of the indicators forming the

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construct (Tavakol & Dennick, 2011). The reliability of the measurement specification was assumed to have a level of $a_c > 0.7$ (Schmitt, 1996).

Results

After conducting the experiment and providing the collected data, it was necessary to verify the established hypotheses. For this purpose, a Welch-T test was carried out due to strong variance differences between the two groups. Table 1 shows the evaluated mean values of the control group M^c (analogous method) and the experimental group M^e (digital method) and the associated Cronbach's alpha values a_c. A significance level of $p < 0.05$ was assumed for all calculations.

Table 1. Results of the experiment

Values / Constructs	Analogue Method		Digital Method		Welch T-Test		Cronbach's alpha
	M^c	SD^c	M^e	SD^e	t	p	a_c
Perceived Ease of Use	5.092	0.841	6.094	0.459	4.653	.000	.772
Perceived Usefulness	4.347	0.993	5.480	0.682	4.132	.000	.785
Behavioral Intention to Use*	2.895	1.117	4.050	0.660	3.906	.001	.930
Perceived Effectiveness	4.518	0.949	5.592	0.893	3.642	.001	.880
	N = 20		N = 19				

Table 2 shows the time taken for each phase and method implementation. The separate value shows the time for the specific phase, while the combined value sums all previous times to see the overall time taken for all three phases.

Table 2. Time taken for each phase

Time* / Phase	Analogue Method		Digital Method	
	Separate	*Combined*	*Separate*	*Combined*
1	17.8	-	8.8	-
2	11.4	29.2	6.8	15.6
3	16.8	46.0	8.8	24.4

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Overall, our results show a substantial advantage of the digital implementation compared to the analogue process. The hypotheses will be further discussed in detail.

The digital prototype is perceived by users as more user-friendly than the analogue implementation of the method. The evaluation shows that the mean in the experimental groups (M^e = 6.094) was higher compared to the control groups (M^c = 5.092). In particular, this trend was reflected in the perceived cost of using the respective method, which was lower for the digital group (M^e = 5.500, M^c = 4.160). This leads to the conclusion that users found the digital method to be more user-friendly, and thus the first hypothesis can be confirmed. However, the evaluation of the participant questions during the process showed that above all, the formulation of the questions was unclear.

The digital prototype was perceived to be more useful by the users than the analogue implementation of the method. This is due to the fact that the Perceived Usefulness was rated higher for the digital implementation (M^e = 5.480; M^c = 4.347). Table 2 also shows how on average the procedure of the digital method was 21 minutes shorter, with a total duration of approximately 25 minutes. The results show that participants see a subjective and an objective advantage in the digital method implementation, thus confirming hypothesis 2.
The digital prototype generates a higher intention to use than the analogue implementation of the method. This is deduced from the construct Behavioral Intention to Use, which provided better values for the digital method (M^e = 4.050; M^c = 2.895). The results show that subjects are more likely to consider future use. The third hypothesis can therefore be considered as confirmed.
The digital prototype has a higher perceived effectiveness than the analogue implementation. In accordance to the satisfaction of the participants with the group solution and the assessment of the solution quality, a mean difference in favor of the digital prototype (M^e = 5.592, M^c = 4.518) was observed. Hence, hypothesis 4 can be considered as confirmed.

Conducted Workshop

In addition to the laboratory experiment, a DT workshop was conducted, where the digital HMW method was applied to create a Design Challenge. The twelve workshop participants were DT experts with at least two years of DT experience. The participants were professors (3), PhD students (4) and employees of two different companies. The participants received an initial problem, which was identical to the problem the participants had in the laboratory experiment. The overall method took around 40 minutes, followed by a discussion. In this discussion, the experts mentioned various positive aspects of the prototype. There was consensus on the high usefulness of the prototype within DT workshops. Especially in workshops that are conducted virtually with team members that work geographically dispersed. The benefits of the prototype in

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such scenarios were visible to all experts. However, many suggestions for further improvements were given, like the possibility to mark specific words as important for a "How might we question". Marked words should be treated differently and shouldn't be considered by the algorithm while checking for duplicates, because of their importance. Additionally, some of the experts did not fully agree on the benefits of the algorithm. One suggestion was that the user should still be able to manually confirm the duplications. One expert also mentioned that within this method a component analysis for the generated questions would be helpful to further examine and develop the questions. Overall the prototype was perceived as very useful and especially as a tool that helps to generate a Design Challenge in a short time. Every expert was satisfied with the finale HMW question and mentioned that his or her individual input formed the final HMW question. The prototype can therefore be considered as a valuable tool for the Design Thinking process, especially when conducted virtually.

Discussion

The advantages of the developed prototype were evaluated with the help of an experiment and a workshop. When compared to the analogue implementation of the HMW method, the prototype performed significantly better in all areas of the study and therefore all four hypotheses could be confirmed.

In terms of ease of use, the workload for the participants was significantly reduced. This factor can be attributed to the support provided by the digital tool, as there is no need for a manual semantic evaluation of the questions. The semantic reduction algorithm can be regarded as a positive component of the digital HMW method. The prototype was evaluated favorably, among other things, due to the time saved by the participants. These results are also reflected in the differences in the time consumed of the two groups. The complete run time of the analogue method was almost twice as long as that of the digital version. In addition, the differences in the times of the first and second phases show that the training time of the analogue method is significantly longer than that of the prototype. In terms of effectiveness, the subjects showed higher satisfaction with the quality and correctness of the resulting solution in the digital implementation. The integration into the group and the influence of each subject on the process was also rated better. The implementation within a DT workshop, additionally showed the applicability and benefits of the prototype and generated valuable information for further development.

Conclusion and Outlook

Starting with an analogue approach of the HMW method, this paper has developed a prototype that can be used as a helpful tool for the DT process, or any other method or approach where a Design Challenge is useful. For this purpose, the HMW method with its advantages for the development of an optimal Design Challenge, was used. We presented the development of a

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prototype that depicts the basic HMW process with all the necessary steps. Furthermore, an algorithm was presented, which allows the processing of natural language and is suitable for the reduction of HMW questions. An experiment demonstrated the benefits of the digital implementation in terms of ease of use, perceived usefulness, intention to use, and perceived effectiveness. In particular, the temporal aspect, the lower workload, the higher usefulness and the higher effectiveness turned out to be the central advantages of the developed prototype. DT experts further confirmed the usefulness of the prototype and gave valuable feedback for improvements. However, the paper has limitations with respect to the scope of the experiment. To allow comparability of the two groups of volunteers, the experiment was carried out in a laboratory environment. The advantage of such tools is the decentralized and temporarily independent application of the method. We propose further investigation in a decentralized environment. In addition, the number of experiment participants was limited and only from a university-related framework. With a broader and larger group of participants, a more meaningful result could be presented. Finally, the actual impact of the tool on the quality of the emerging problem should be further evaluated by integrating the HMW method into more complete DT processes. Overall it can be said, that the developed prototype presents a beneficial, but yet preliminary tool to support the generation of a Design Challenge for various problem statements.

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Appendix

Table 3. Results of the Experiment

Perceived Usefulness (7 Point Likert Scale)	M^e	SD^e	M^c	SD^c	p
The Method helps me be more effective.	5.50	0.688	4.32	1.293	0.002
The Method helps me be more productive.	5.30	1.081	4.95	1.311	0.364
The Method is useful.	5.95	0.887	5.05	1.026	0.006
The Method saves me time when I use it.	5.25	1.585	3.26	1.558	0.000
The Method does everything I would expect it to do.	5.40	1.095	4.16	1.608	0.007
Effectivity (7 Point Likert Scale)	M^e	SD^e	M^c	SD^c	p
How satisfied are you with the quality of your group's solution?	5.75	1.293	4.58	1.387	0.010
How satisfied are you with the results of today's process?	6.00	1.076	5.26	1.098	0.040
To what extent does the final solution reflect your inputs?	5.50	1.192	4.37	1.257	0.006
To what extent do you feel committed to the group solution?	5.15	1.226	4.21	1.398	0.320
To what extent are you confident that the group solution is correct?	5.75	1.164	4.21	1.437	0.010

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Perceived Ease of Use (7 Point Likert Scale)	**M^e**	**SD^e**	**M^c**	**SD^c**	**p**
The Method is easy to use.	6.60	0.598	5.79	1.228	0.012
The Method is user friendly.	6.60	0.598	5.05	1.747	0.001
The usage of the method is laborious.	4.85	1.785	3.06	1.615	0.002
It is easy to learn to use it.	6.35	0.489	6.16	0.688	0.32
The Method is flexible.	5.35	1.461	4.68	1.376	0.152
The usage is effortless.	5.50	1.277	4.16	2.035	0.180
The Method is easy to learn.	6.80	0.41	6.32	0.671	0.010
It would be easy for me to use the system.	6.70	0.47	5.53	1.467	0.002
Behavioral Intention to Use (5 Point Likert Scale)	**M^e**	**SD^e**	**M^c**	**SD^c**	**p**
Given the chance, I intend to use the method.	4.10	0.718	2.95	1.177	0.000
I am willing to use the method in the near future.	4.15	0.813	2.95	1.177	0.001
I will recommend the method to others.	3.90	0.852	2.79	1.228	0.003

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