# Embedding the Customer’s Voice

Giving the customer the possibility to participate in the development of a product by providing him transparency regarding the overall progress and implementing its feedback is one of the most important success factors. Especially if the final results of the collaboration are not explicitly clear or if the project is some kind of research work, it is of highest importance to gather the customer’s feedback continuously. The feedback serves as an input in adapting the product or even the process of development.

Especially in the area of software development, the need for constant interaction between a manufacturer and its customer is widely acknowledged. This fact can be demonstrated by the adoption of agile methods (see figure \ref{agileAdoption}). These methods, like XP, Scrum and FDD, offer the possibility of high transparency, short feedback-cycles and increased flexibility regarding – characteristics that proved themselves good and that are strongly wanted by the manufacturers adopting agile methods (see figure \ref{agileFeatures}).

## Determining the Modalities of Collaboration

To embed a process that as well satisfies the customer as it provides the manufacturer the possibility to get as much useful input and feedback as possible, the modalities of collaboration are negotiated as a first step. The salient points in this negotiation are

\begin{itemize}

\item{Who is the customers specialist contact person and how should the communication with him/her take place?}

\item{Who is the customers technical contact person and how should the communication with him/her take place?}}

\item{In which way will the customer contact our company if necessary=}

\item{What are the customers preferences regarding the reports on the project’s progress?}

\end{itemize}

While some of these points like the contact information of a certain person in charge are only of informational kind, other points like the desired way of communication are of high importance. Since there are certain preferences in our company regarding the length of the iterations and the way how the communication should take place, the CORE value of the customer’s answers in respect of our company’s preferences is calculated.

**\subsection**{Results}

The results of the first questionnaire that serves to determine the modalities

of collaboration between our company and our customer are presented in this

section. The analysis of the results can be found in section

**\ref**{sect:q1\_results}. Answers that contain personal data like contact

information are omitted.

**\subsection**{Gained Knowledge and further Steps taken}

The result of the questionnaire is as well important as it is satisfactory to our company since the most answers given by the customer reflect the preferences of our company. This is especially true regarding the questions on the way our company will contact the customer, on the interval that is used for reporting and on the reporting’s level of detail.

While the fact that our customer wants to contact the project manager and not any other team member complies with our company’s preferences, the way of contacting him is suboptimal in our opinion. Nevertheless, our company will attend the customer’s wished in this point.

To be able to gain honest and serious feedback from following questionnaires and not to overstrain our customer’s willingness to collaborate, the last section deals with questionnaires in general. It is determined how long it took to answer the current questionnaire and how much time our customer is willing to spent in answering future questionnaires. For the simple reason that it was estimated that answering the current questionnaire would take 10 minutes, the CORE value retrieved from the answers on these questions is not highest achievable value. However, the result shows that the questionnaire’s length perfectly fit the customer’s preferences. Future questionnaires will therefore be designed in a way that they nearly have the same length. The CORE values for the options on the question how long it took to answer a questionnaire will be adapted.

## Clarification of the Requirements and Assessment of the first Design Prototype

Gathering and writing down requirements for a product requires high prudence. \cite{Young} defines 15 characteristics of good requirements. Even if high effort is expended in the process of requirements engineering, there are mostly requirements that don’t exhibit all of these characteristics. In the most cases, these requirements lack clarity and expressiveness.

The unclear requirements as well as a first mockup are the basis of a second questionnaire. It’s aims are to inform the customer how the vague requirements were interpreted in the first step, to offer the customer the possibility to give a feedback on this interpretation and to provide him a first sense of the product that will be developed.

**\subsection**{Results}

The results that help to clarify the requirements and to get a first feedback on the planned design are depicted below and interpreted in the next section (see section \ref{sect:q2\_results}). Since a mistake has been made on the creation of the questionnaire, the assessment how long it took the customer to answer it had to be done in an additional form. The results of the initial survey and the additional form are assembled together.

**\subsection**{Gained Knowledge and further Steps taken}

**\label**{sect:q2\_results}

As it can be seen in \ref{fig:resultsOverview2}, the results are very satisfying and the interpretation of the requirements fits the customer’s expectations. More detailed feedback could be gathered regarding the design of the system. In the further development, our company will focus its attention to simplify the design e.g. by shortening the presented texts and by trying to scale up the area that presents the sensor information.

Unfortunately, the customer was not able to answer the questionnaire within 5 minutes as preferred, although the open questions on the optional requirements were already omitted. Since this was expected and the clarification of the requirements is a very important point, it is acceptable in the case of the current survey. Nevertheless, there has to be some effort made in the future to keep the questionnaires as short as possible for not deceiving the customer again in this regard.

@INBOOK {Young,

author = "Young, Ralph R.",

title = "The Requirements Engineering Handbook",

chapter = "The Importance of Requirements",

publisher = "Artech House Inc.",

year = "2004"

}