

Customer Acceptance Management in Strategic Product Development

A Case Study with www.clever-tanken.de

Jens Wehrmann, Steffen Bock

1 Author details

Dr. Jens Wehrmann is managing partner of the Safari Institute in Mannheim, Germany. He studied electrical engineering and economics (RWTH Aachen) and made his PhD in information systems (FAU Erlangen-Nürnberg). In the field of mobile business, he is member of international scientific program committees and works as lecturer. In the outlined business case, he was responsible for the project management.

(Safari GmbH, Goethestr. 18, 68161 Mannheim, Email: wehrmann@safari-institute.com)

Steffen Bock, Dipl.-Kfm. is the managing director of infoRoad GmbH in Nürnberg, Germany. infoRoad is the provider of *clever-tanken.de*, the leading content provider for fuel station real time information in Germany. infoRoad does also participate as a project member in the mobile media initiative of the German ministry of economics and labour via the funded projects HyNet and Servingo.

(infoRoad GmbH, Bärenbühlgraben 3, 90475 Nürnberg, Email: bock@clever-tanken.de)

2 Outline of the case study

Germany is struck by high rising petrol prices over the last years. Due to shifting prices and strong regional distinctions, there is a need for an independent price and service comparison. *clever-tanken.de* is german market leader in providing independent real time fuel price data and value added information for petrol stations in Germany. The service portfolio contains:

- **Mobile services:** *clever-tanken.de* can be accessed as a location based pull service over i-mode or WAP. Alternatively, users can send a SMS push to a service number, and get a reply that contains the cheapest fuel station in nearby locations. The mobile service portfolio is provided over all German mobile network operators.
- **Internet portal:** Considering the power of a web browser interface, the service is provided with the most extensive functionality over the *clever-tanken.de* internet portal. Due to technical reasons, the internet service can not be provided automatically location based but centered around a position entered by the user. Nevertheless, it represents the major usage of *clever-tanken.de*. The service is additionally marketed to leading internet portals in Germany (e.g. Yahoo!, Lycos, Spiegel.de, T-Online.de).
- **HyNet service:** The hybrid service provisioning over mobile networks combined with DVB-H (Digital Video Broadcasting for Handhelds) is a new approach to create an intelligent service bouquet which offers a unprecedented location and situation depended offer of information via point to multipoint broadcasting services in combination with highspeed point to point datatransfer via UMTS. HyNet is

developed in the context of a research project called “HyNet Mobilmedia” that is supported by the German federal ministry of economy and labour (BMWA).

The *clever-tanken.de* service has to face the threat of fast changing technologies, requirements and general conditions of the market. To ensure a durable **customer acceptance** of the *clever-tanken.de* service portfolio, innovative enhancements and service alternatives are frequently evaluated and developed in close interaction with the (potential) customers. In this context, infoRoad assigned the **Safari Institute** to support the strategic service development from the scientific and methodical side concerning the customer acceptance.

Safari consults enterprises within the product or service development and the associated organisational changes. The measurement of customer acceptance in different stages of the product life cycle is an approach to derive significant implications for a further service development and the service portfolio management. The proceeding chosen in this business case is called **customer acceptance management** and is explained in the following sections.

3 Expected benefits and potential pitfalls

Altogether, the project aims to provide transparency over all relevant aspects of the **customer acceptance** for the entire service portfolio and all stages of service development. Regarding the three different service types of *clever-tanken.de*, the project delivers a satisfactory result, if it enables the derivation of tangible decisions and explicit priorities for the further strategic service portfolio management. In detail, the following benefits are seen as important:

- Identification of general **strength and weaknesses** concerning the customer acceptance (from the subjective and non technical customer’s point of view).
- Identification of specific problems or **possibilities for improvement** that can be approached with tangible actions.
- Comprehension of the **target groups** with concrete generation of a characterisation of the typical customer.

From past projects, we see three important pitfalls archiving these aims:

- **Pitfall 1: Insufficient customer experience**
Especially for services which are in an early stage of the product lifecycle, a common mistake is an insufficient customer experience before analyzing the acceptance. The customers must have the possibility to experience the details that effect the acceptance of the service. Alternatively, it can be challenged if, for example, the design of the user interface is a relevant factor in the regarded stage of evaluation. Furthermore, the contextual information that is not directly associated to the service (e.g. network coverage, handset design) has to be considered for the analysis of customer acceptance (Herrmann et al. 1999).
- **Pitfall 2: Wrong expectations**
Other typical pitfalls in this context are wrong expectations regarding the results. Acceptance can be subdivided into different stages. In a first stage, the customer must have a positive attitude to the service. In a second step, the customer must use of the service or product for the first time. The third and last stage is the usage of the service which is the most important stage for gaining revenues for pay per use services. Especially in the early stage of service development, it has to be considered which acceptance can be measured reliably. As future services will be regarded in this business case, this point is important to prevent a misinterpretation of the results.

- **Pitfall 3: The “We know what our customers want” myth**

A common phenomenon is that product managers who are closely associated to a service, think they understand the customer requirements or they have to. The pitfall is that such an “estimation” can be accurate, but the customer cognition may differ significantly. To avoid this pitfall, it is important to use the measurement of the acceptance as an objective and comprehensible tool, monitoring the customer requirements and possible acceptance problems. To meet the demands of the involved project team, it is important to organise the identification of relevant acceptance criteria in co-operation and agreement with all involved product managers and decision makers.

4 Cornerstones of project organisation

The project can be subdivided into three subprojects according to the three different types of service provisioning: 1st mobile service portfolio, 2nd internet portal and 3rd HyNet service. These subprojects were realised almost autonomously in different project groups with direct involvement of the infoRoad senior management. Each subproject was accomplished by a Safari consultant and student groups from a size up to five persons. Table 1 shows the different stages of development, the strategic scope of the project and the project proceeding of the three *clever-tanken.de* subprojects in an overview:

Table 1 - Conditions and requirements of the three clever-tanken.de subprojects

| | Mobile service portfolio | Internet portal | HyNet service |
|---------------------------------------|--|---|---|
| Stage of development | The service portfolio is provided from all German mobile network operators ¹ . | The service is available on the web portal with a service fee. | This subproject is in an early stage of development. It focuses on the usage of clickable prototypes. |
| Strategic scope of the project | <ul style="list-style-type: none"> • General state of the art acceptance analysis • Comparison between pull and push services • Provider comparison | <ul style="list-style-type: none"> • Portal re-design • New menu navigation • Advertisement • Giving up service fee | <ul style="list-style-type: none"> • Target groups • Pricing model • Choice of devices • Usability issues |
| Project proceeding | State of the art acceptance analysis. One single customer acceptance analysis for each service without further iterations. | State of the art acceptance analysis followed by an idea and design competition. The customer acceptance of the best three design blueprints is being analysed. The blueprint with the best results will be used as template for the re-launch. | Iterative proceeding with acceptance evaluation and re-evaluating in two steps. The proceeding is combined with prototyping. |

The project proceeding can be divided into two phases. Preliminary processes that are executed once to prepare the acceptance evaluation and the acceptance management processes that can be executed in several iterative steps. In the first step the acceptance construct has to be designed. This contains the definition of dimensions, indicators and questions that are relevant. The next steps are the enabling of an adequate customer experience (e.g. pre-versions, prototypes, clickable dummies) and the pre-test analysis of the acceptance

¹ E-Plus provides clever-tanken.de as i-mode service instead of WAP.

evaluation. The experiences can be used to adopt or adjust the customer experience and the acceptance-construct. In the next steps, the acceptance is evaluated and analysed. Finally, the consolidated findings can be used for enhancing or adjusting the service or product and marketing mix. Figure 1 shows the major processes of the project organisation.

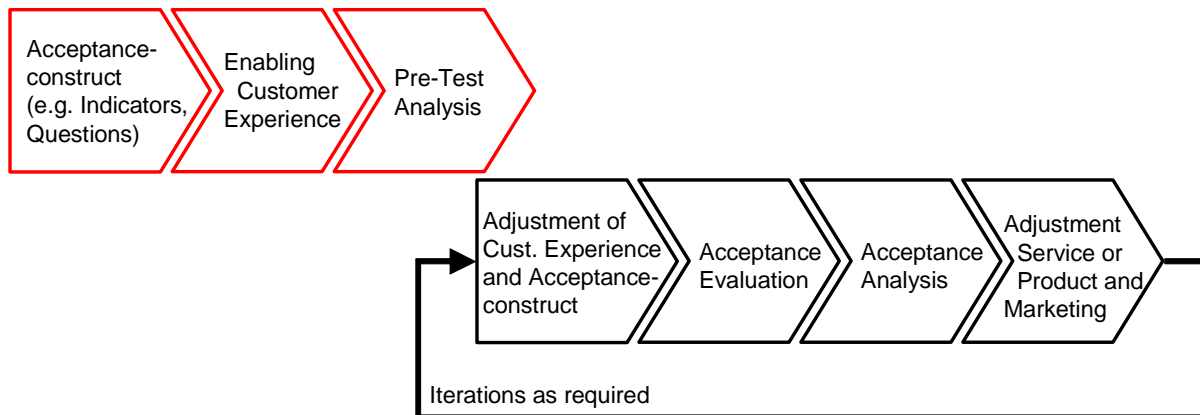


Figure 1 - Major processes of the project organisation

5 Solutions architecture

The solutions architecture chosen in this project is based on a consulting approach developed by the Safari Institute. It is called customer acceptance management and is based on **three fundamental columns**. The first is to enable an adequate customer experience. The second is to evaluate the customer acceptance. The third and last column is to integrate the processes into the decision chains. In the following the three columns are explained in more detail.

5.1 Enabling an adequate customer experience

One of the basic principles for measuring customer acceptance is to take the subjective perception of the users into account (Davis 1989, Hermann et al., 1999). For building up his opinion, the customer must be able to practice the relevant aspects under realistic conditions. Therefore, the services must be brought or transferred to a state, which can be experienced. For existing products like the *clever-tanken.de* **mobile service portfolio**, this is not a constraint. Nevertheless, the procedure of explication, illustration and testing must be designed and adjusted. A widely used Sony Ericsson handset was chosen as a typical device for the testing of the SMS and the WAP service. The E-Plus i-mode service was tested with a NEC device. The *clever-tanken.de* service was explained personally before the test persons could experience the service autonomously.

The customer experience of the existing **internet portal** (established 1999) was sufficient for a state of the art analysis. Evaluating the design blueprints contains the challenge that they are not usable. For the evaluation of the acceptance, the expectation was narrowed to an analysis of the attitude acceptance. For achieving this aim, a presentation of the internet portal start page without functionality was regarded as reasonable.

The **HyNet service** is - due to the fact being a promotional funded project - in an early conceptual stage of development. As the analysis of the acceptance of pricing models is a indispensable demand of the project, the usage acceptance has to be analysed. To enable an adequate customer experience, a clickable prototype for a Compaq iPaq handheld computer was designed and implemented. Figure 2 shows two selected screenshots with the setup of a

user profile (left) and the search result of nearby petrol stations that provide the required kind of fuel (right).



Figure 2 - Screenshots of the HyNet prototype

5.2 Evaluating the customer acceptance

To foster well-founded decisions, significant and comparable results must be archived within the evaluation of the customer acceptance. The DART approach is an acceptance model that takes the special requirements of mobile services into account (Amberg et al. 2004). DART (Dynamic Acceptance Model for Re-Evaluating Technologies) provides a systematic procedure how acceptance can be categorised, subdivided into acceptance indicators and finally be measured. It distinguishes between the dimensions benefit and effort on one side, as well as service/product and contextual conditions on the other side.

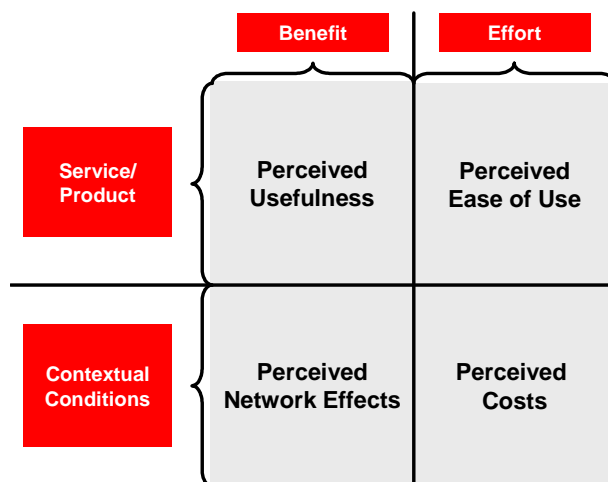


Figure 3 - Categories and dimensions of the DART approach

Figure 3 shows how four basic acceptance dimensions can be derived from this classification. The service or product specific dimensions *Perceived Usefulness* and *Perceived Ease of Use* were introduced within the widely spread Technology Acceptance Model (TAM) according to Davis (1989). Gefen and Straub (2000) emphasised the importance of considering the customer's perception. Degenhardt (1986) and Hermann et al. (1999) characterised the contextual conditions as important for the acceptance of innovations. In analogy to this category, DART identifies the two dimensions *Perceived Network Effects* as a benefit and *Perceived Costs* as an effort.

Kollmann (2000) differentiates between the attitude-, first use- and the usage-acceptance, which can be achieved step by step². According to this classification, each of the four dimensions can be subdivided into so called acceptance indicators. Together with the regarded service or product, the current stage of development and the specific focus of the project, reasonable acceptance indicators have to be defined. Dependent on the situation, a different number of indicators for the attitude-, the first use- and the usage-acceptance might be reasonable. In the next step the acceptance indicators have to be transferred into suitable questions, that can be evaluated appropriately (e.g. face to face interviews, written form questionnaires, internet surveys). The evaluation results can be visualised using the DART approach. The DART visualisation is explained in the following.

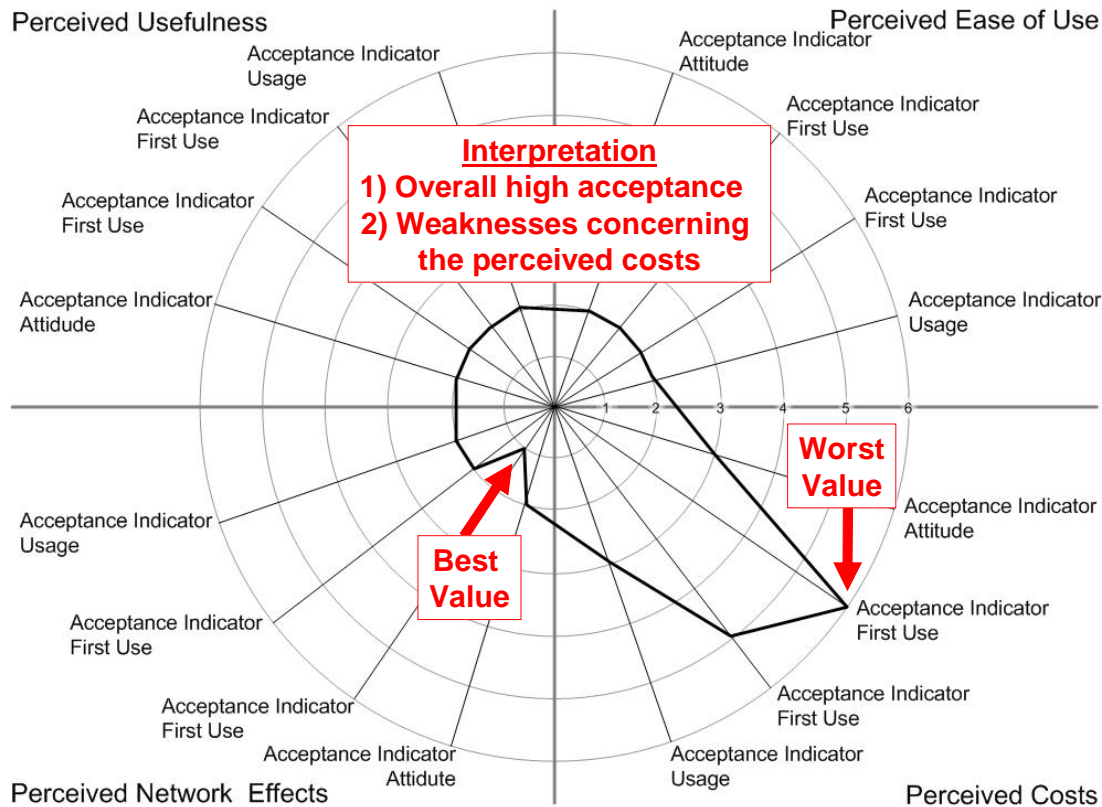


Figure 4 - 1st step of interpreting the acceptance results

1st step: Getting an overview: In a first step, it is important to get a brief overview over the results of the acceptance analysis. The solid black line represents the median of all results. That means that half of the test persons gave the same or a better value and the other half the same or a worse. The closer the values are in the middle, the better the indicator was valued. The scale in the example shown in Figure 5 ranges from one (best) to six (worst). The DART visualisation shows the result of the acceptance analysis at a glance. In the example, the most values are evaluated fairly well, that means that the overall acceptance is high. The indicators in the dimension perceived costs shows the weaknesses of service immediately.

2nd step: Getting a deeper insight: The grey area describes the statistical variance. The inner line is the 0.25 quartile, the outer line the 0.75 quartile. That means that the best and the worst quarter are not displayed. Figure 5 shows an example DART with four significant results (A to D). Possible interpretations are:

² The first use acceptance is originally termed as action acceptance, that implicates a buying decision. For the use of mobile services the first use corresponds with the buying decision commonly (Amberg et al. 2004).

- Interpretation A:** Uniformly distributed ratings with a small variance. This means, the customers have an almost similar perception.
- Interpretation B:** Good values but a dissent in customer perception with a strong negative tendency. This might be an alert for future acceptance problems.
- Interpretation C:** Poor values with a mixed customer perception. A positive trend can be identified. This can permit conclusions for future action.
- Interpretation D:** Regarding this aspect, the customer perception is equal. A minimum of 50 percent of all test persons assigned the same value for this indicator. Conclusions concerning this aspect are the most reliable.

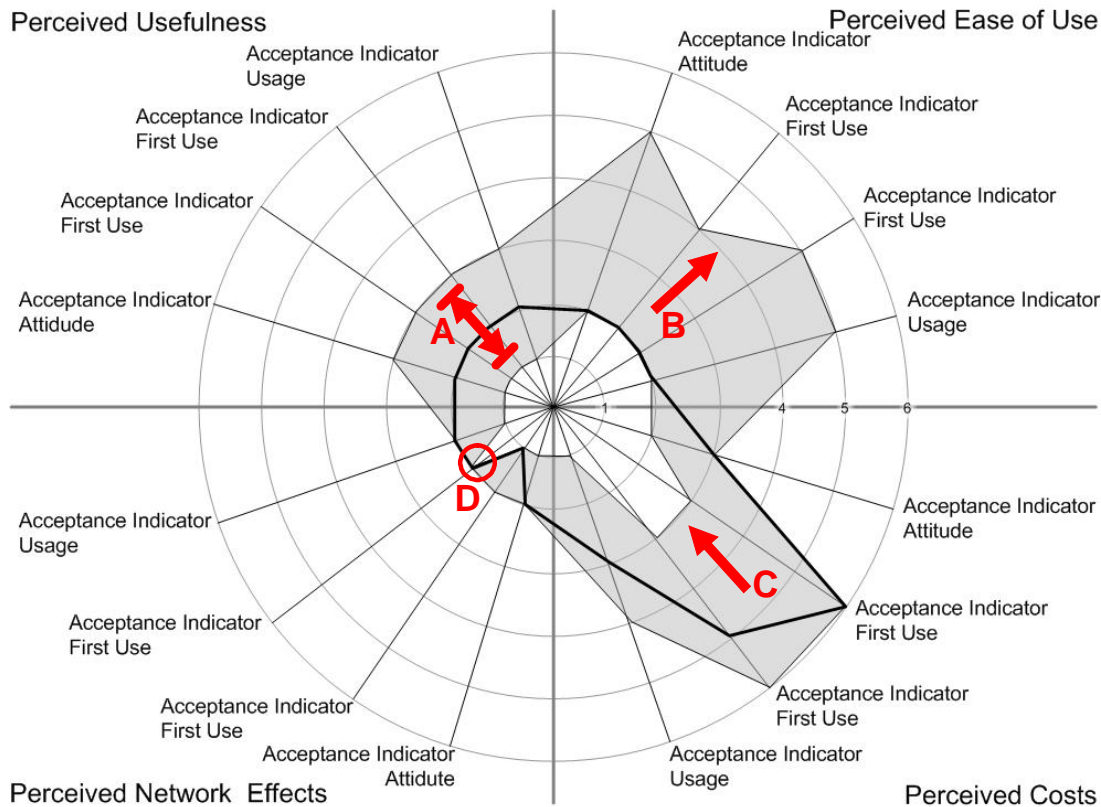


Figure 5 - 2nd step of interpreting the acceptance results

Beside an applicable methodology, a survey concept and questionnaire design is necessary. For the mobile service portfolio and the HyNet service, face-to-face interviews were chosen. For the internet portal, a web based survey was selected. The corresponding questionnaires were derived from a detailed analysis of acceptance indicators according to the dimensions above. Therefore, relevant acceptance indicators were selected, reflected and adjusted in a number of meetings and workshops.

5.3 Integrating evaluation processes into decision chains

Single acceptance analyses help to identify concrete strengths, weaknesses and suggestions for future service or product enhancements. But the benefit of customer acceptance management can increase by re-evaluating the acceptance periodically. The effort decreases from every evaluation to the next, because the initial project setup is already done and the effort for additional evaluation processes decreases step by step.

For an efficient re-evaluation of customer acceptance, the product development processes must be adapted. The integration of the customer acceptance processes into existing decision chains might be one of the major advantages. Especially regarding bigger enterprises, the benefit of re-defining standard product management and evaluation processes is particularly important to prevent a high effort to take the results of customer acceptance management into the decision chains. The process integration mainly depends on particular situations which is a complex construct of the enterprise, the people that are involved, the regarded service or product, the environment of services or products that are provided by the company itself or its competitors.

In a first step the product planning processes, decisions chains and specific conditions of the product, its environment and the organisation have to be analysed to understand, which procedural and organisational changes are required for an integration of acceptance management in product planning. Regarding the concrete situation in the context of the enterprise, leads to very specific issues that are hardly to describe generally. In the following section, the implication of the process integration and the organisational changes are outlined for the *clever-tanken.de* business case.

6 Organisational changes involved

The business case *clever-tanken.de* is dedicated to end users. The outlined customer acceptance management subprojects were organised in different depth of integration. According to the different scope of the regarded services (Table 1), the impact on the organisational changes depends on the depth of integration. The following types of integration can be distinguished.

- **One time acceptance analysis** (Mobile service portfolio)
For the mobile service portfolio, a single state-of-the-art acceptance analysis was intended. The acceptance indicators were defined uniquely for all regarded mobile push and pull services before evaluating each acceptance. Results are detailed acceptance analyses of the existing mobile service portfolio.
- **Enclosed project with predefined iterations** (Internet portal)
Aim of the internet portal acceptance analysis was a re-design of the *clever-tanken.de* web service in terms of general appearance, optimized advertising strategy and an easier user access. To provide a reference basis, the first iteration of acceptance analysis evaluated the existing internet portal. In the second iteration step, three design blueprints were analysed competitively. Based on this comparison, the new internet portal was constructed.
- **Evolutionary project approach** (HyNet Service)
Contrary to the mobile service portfolio and the internet portal, the HyNet service was in an early stage of development. During the conceptual phase of idea validating, an evolutionary project approach was chosen. The service was planned, evaluated and enhanced in iterative steps. Currently, two iterations were finished, but the project is not completed presently.

The *one time acceptance analysis* did not enforce immediate organisational changes. It can be compared with a single market study. Even important results do not usually affect extensive organisational changes. The *enclosed project with predefined iterations* affected the product based development processes. Management decisions were founded on the acceptance

evaluation results. The main impact of customer acceptance management to the organisation was breaking the dominant mindset that the product development must know the customer requirements initially. This paradigm was rethought to the attitude that the product managers have to find out what the customer requirements and possible acceptance problems are and how to draw appropriate consequences.

Regarding the *evolutionary project approach*, this effect applies even more powerful. Especially in the beginning of the project, the uncertainties concerning the future development of the Hynet service were noticeable. During the project, this uncertainty was displaced with the feeling of getting the complexity manageable. It initiated the reflection that it is suitable not to know how markets react to a product or the according marketing mix, but it is important to evaluate its maturity for the market, respectively managing the customer acceptance.

7 Results

After the detailed description of the project organisation, the customer acceptance management approach and the DART methodology, the results of the three subprojects will be presented. Due to space restrictions, not every aspect will be reflected in detail. An extensive project report for mobile service portfolio and the HyNet service can be found in Wehrmann (2004). In the following paragraphs, the major subprojects aspects will be outlined.

7.1 Mobile service portfolio

The first result of the *clever-tanken.de* mobile service portfolio subproject was the detailed understanding of possible and relevant influencing factors of the customer acceptance. For the evaluation, the following acceptance indicators were selected.

- **Perceived usefulness:** Supplies needs, Saves money, Content offering, Independence.
- **Perceived ease of use:** Configuration, Menu navigation, Waiting time, Display size.
- **Perceived costs:** Price (height), Price (transparency), Health concerns.
- **Perceived network effects:** Status symbol, Attractive device, Timeliness.

Based on these indicators, the acceptance was evaluated using survey supported face-to-face interviews. Figure 6 shows the results of the mobile pull service portfolio in an overview (WAP and i-mode). Figure 7 shows the direct comparison to the push service Portfolio (SMS). Bearing in mind that the values located close to the centre are the best, the first view on the comparison of Figure 6 and Figure 7 shows that the push services is evaluated superior than the pull services. This finding is based on a better rating in the perceived ease of use and the perceived network effect dimension (especially the timeliness). Regarding the price (level and transparency), the push services score significantly better.

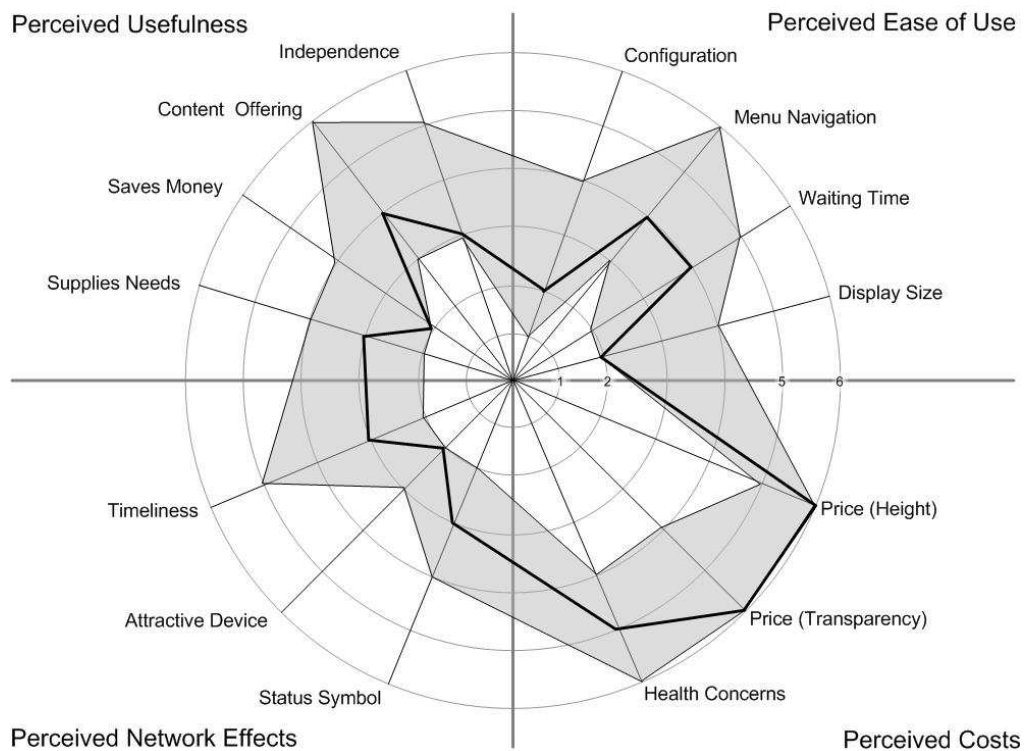


Figure 6 - Evaluation results of the mobile pull service portfolio

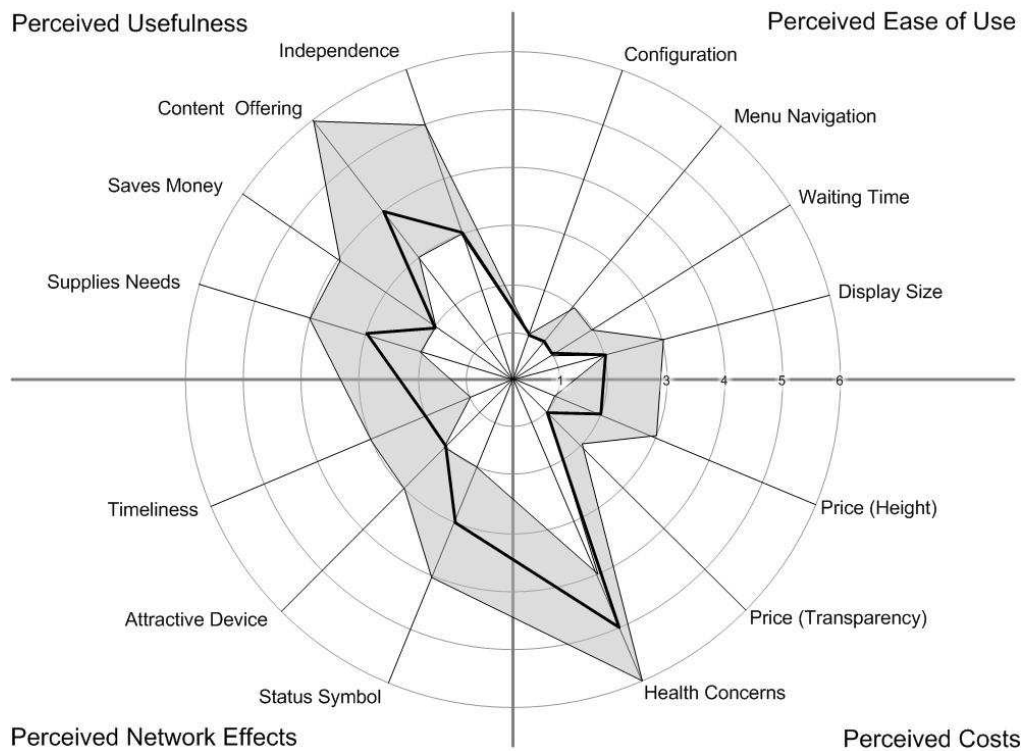


Figure 7 - Evaluation results of the mobile push service portfolio

But in spite of this comparative result both service alternatives have weaknesses in the perceived usefulness and the perceived costs dimension. The information offer can be enhanced for both service alternatives. Furthermore a target group analysis showed, that there were fundamental differences depending on the open mindedness concerning innovative

technologies. The so called late majority and laggards³ user group evaluated the customer acceptance worst.

Based on these evaluation results, three specific actions were derived:

- **Marketing strategy for the SMS service:** Taking the competitive strength of the mobile push service portfolio into account, *clever-tanken.de* extended the communication strategy with co-operations with content related partners. For example, the internet service *map24.com*⁴ contains a short description with a direct sms shortcut number to use the *clever-tanken.de* SMS service on every printout of a routing information.
- **Pricing strategy:** Regarding the high acceptance of the prices for the SMS service, the conclusion was that a price increase will not negatively affect the high acceptance. The prices were raised from 26 up to 48 percent to a unique level of 0,49 € per usage.
- **Integration of the service:** For expanding the service portfolio, *clever-tanken.de* negotiates for a co-operation with leading manufacturers of on- and off-board navigation systems. These kind of services feature a gps component which makes location based services easy possible whereas almost none of the existing cellular phones in the market do have an integrated gps. Therefore, the *clever-tanken.de* SMS can enhance these navigation services and devices to a location based fuel price provisioning that is integrated into the graphical user interface of a navigation system. The first such product in the market is the Falk active pilot system, the leading offboard navigation software for cellular phones.

As a consequence of the actions described above, *clever-tanken.de* has yielded an increasing usage during the past year. The measured average growth of approximately 30% is higher than the average growth of the years before. Taking the new and even more expensive pricing strategy into account, this can be regarded as a satisfying result.

7.2 Internet portal

The target of the acceptance management concerning this subproject was the re-design of the *clever-tanken.de* internet portal. The market research has been implemented with an internet survey. The customer experience is limited to the possibility of presenting the first hierarchy of the portal as a design blueprint. To keep the evaluation results reliable, it was decided to reduce the expectations to an analysis of the attitude acceptance. This makes an adaptation of the acceptance indicators necessary. To reduce the complexity and the length of the survey, the acceptance indicators were simplified and reduced to two indicators per acceptance dimension⁵.

- **Perceived usefulness:** Saves money, Recommendation (to a friend)
- **Perceived ease of use:** Design (first impression), Menu navigation
- **Perceived costs:** Advertisement, Pricing model and registration
- **Perceived network effects:** Exchange with others, Prestige of being informed

The evaluation of customer acceptance is done in two iterations. The first step is a state-of-the-art evaluation of the internet portal. In a second step, three design blueprints were evaluated. As the indicators are selected uniquely, the four evaluations could be compared

³ The terms “late majority” and “laggards” was used in the context of the Innovation diffusion theory (Rogers 1995).

⁴ *map24.de* is the German market leader for internet routing systems.

⁵ Furthermore, the scale for the questionnaire was reduced to a scale from 1 to 5.

easily. Figure 8 shows the results of the existing internet portal. Figure 9 shows one of the design blueprints as an example.

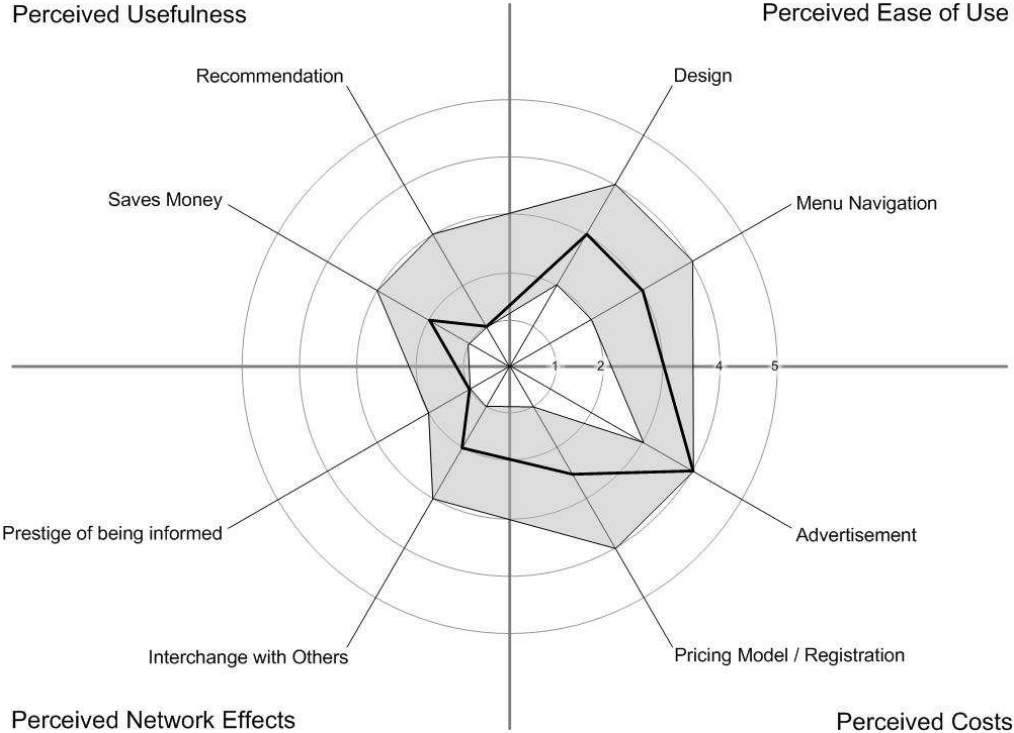


Figure 8 - Results of state of the art clever-tanken.de internet portal

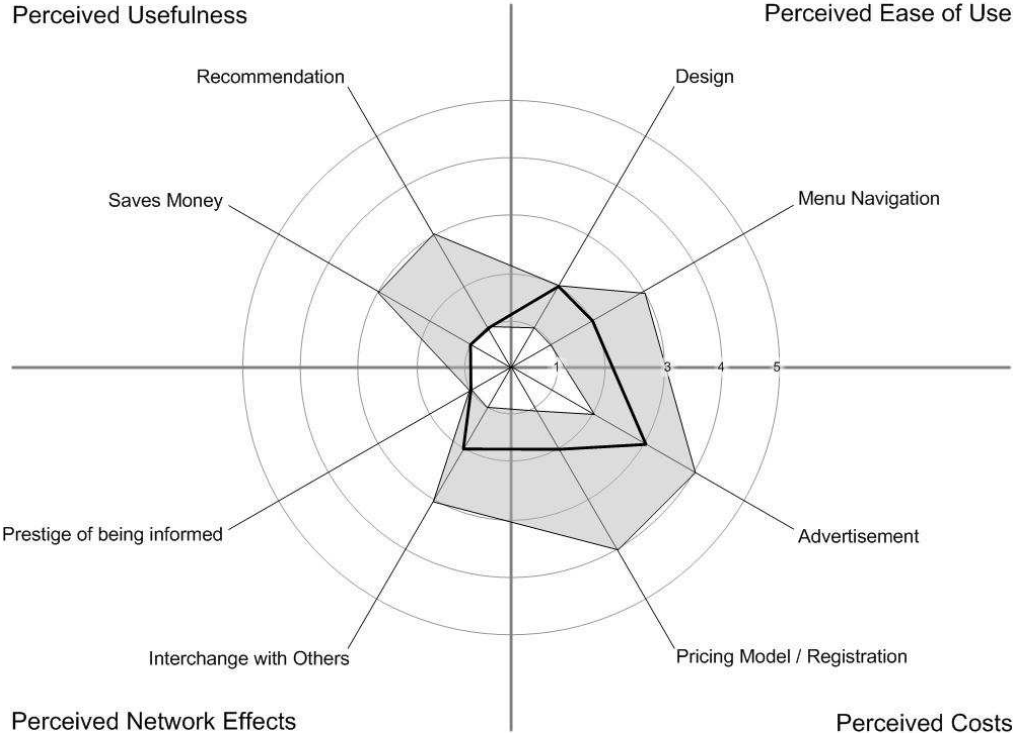


Figure 9 - Results of clever-tanken.de design blueprint evaluation

The state-of-the-art evaluation result of the acceptance analysis indicates good and moderate values for the dimensions selected before. The probands understand the benefit of the *clever-tanken.de* internet portal. Only the perceived ease of use and the perceived costs dimension were rated moderate. More than half of the users evaluate the advertising with a poor mark of

four on a scale, where five is the worst. Noticeable is the fairly good value concerning the pricing model and registration. This can be explained by the possibility of five free accesses per month for registered users.

A comparison of the design blueprint evaluation with the state-of-the-art result shows that every acceptance indicator has been improved or has remained equal. Even if the advertisement is still the weakest aspect, it could still be enhanced. The acceptance indicator pricing model and registration did not improve significantly, even if the registration is obsolete and there is no further access fee. This implies the assumption that a large amount of customers didn't notice that the pricing model changed completely.

One important aspect how to make the free service usage profitable is the intensification of advertisements. One specification of the design proposal was a predefined amount of advertisements (e.g. banner). Even if the amount of advertisements was more than doubled and the surface area increased more than three times, the customers evaluated them as less disturbing in the blueprint shown in Figure 8. For the re-launch of the *clever-tanken.de* internet portal, the design blueprint was chosen which was evaluated with the best overall acceptance.

Based on these results, *clever-tanken.de* could intensify the usage by co-operations and partnerships, especially via "link to clever-tanken.de", a feature which provides the entry form for fuel price comparison to other web portals for free and deliver the desired results on www.clever-tanken.de. The measured amount of customers that access the internet portal *clever-tanken.de* has a **growth of 60 %** since the completion of the project approximately one year ago. Enhancing the usage in such a magnitude is only possible by offering the internet service without any service fees.

7.3 HyNet service

The HyNet service is a hybrid mobile service, which is in an early stage of development. Initiating the project, the service was designed as a mobile assistant for **business people** who use their car for travelling. According to this target group, the project consortium nominated the content partners *clever-tanken.de*, Navigon and eHotel to design the HyNet service. From the customer acceptance management point of view, this presents a noteworthy challenge. On the one hand, the project aims to gain specific learnings about usability issues and a choice of devices. On the other hand, the service implementation is in an early conceptual phase. To solve this balancing act, clickable prototypes were used to ensure to obtain a sufficient customer experience. In principal, the indicators from the *clever-tanken.de* mobile service portfolio are directly transferable. HyNet is different from the mobile service portfolio in two aspects.

- **HyNet provides additional functionality:** This point is taken into account by expanding the perceived network effects by the acceptance indicator *additional functionality*.
- **HyNet requires a special device:** As adequate devices for the HyNet service must be able to receive DVB-H, it can not be assumed that the service can be used with any device like the existing mobile service portfolio. The *purchasing costs* for the handset was added in the perceived costs dimension.

Figure 10 shows the evaluation results of the target group mobile business people in the 1st iteration step. The result was not satisfying. Except some indicators (e.g. configuration, attractive device additional functionality), the validations are mediocre or bad. Especially, the

acceptance indicators in the perceived usefulness dimension and the pricing model were critical noticed. Further potential for improvement is seen in the purchasing costs of the handset and the usage with a digital pen.

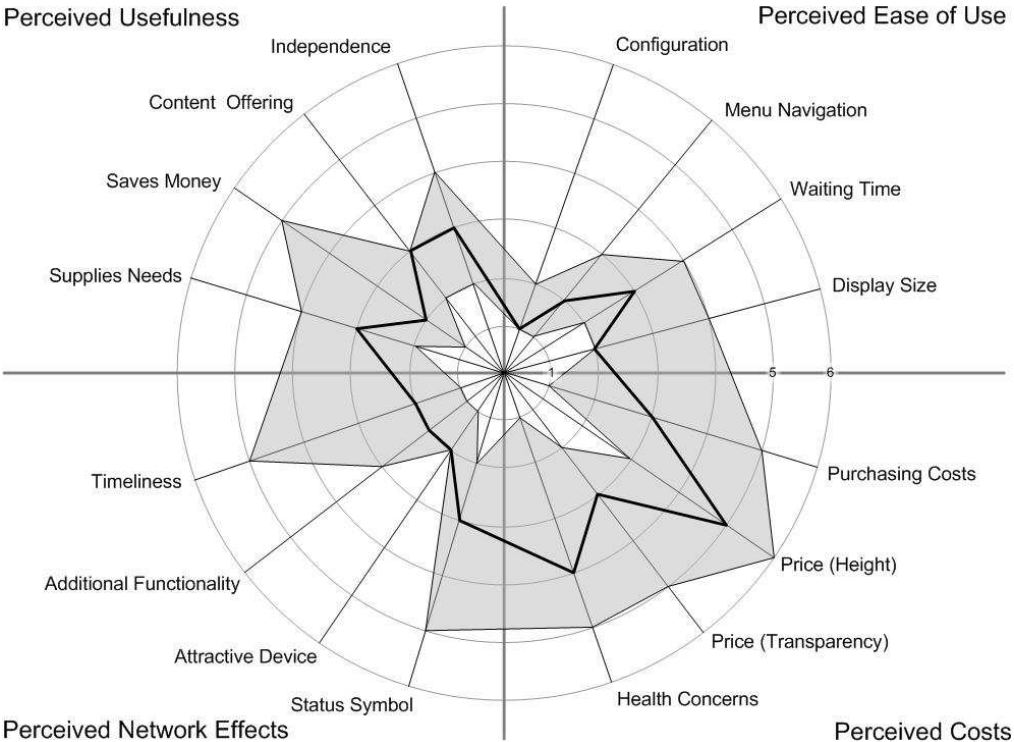


Figure 10 - Evaluation results of the 1st HyNet iteration

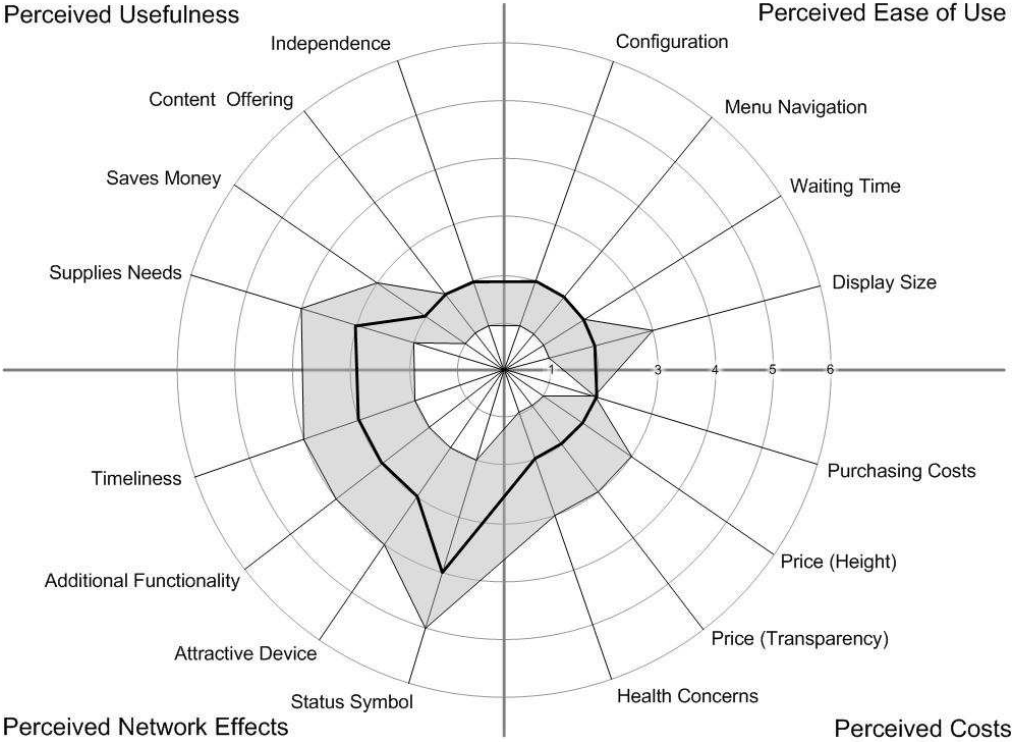


Figure 11 - Evaluation results of the 2nd HyNet iteration

These results lead to a substantial new definition of the HyNet service in the 2nd iteration step. The first change was to rethink the primarily defined target group. A detailed target group analysis showed that private users with a high technology affinity are more adequate.

Furthermore, the results lead to the choice of a more basic and common Siemens smartphone device with less purchasing costs and a menu navigation that is more intuitive and suitable for private users. In addition, the price model was changed from a pay-per-use concept to a simple flat fee. Assuming an average usage from less than five uses per day, this price model is even more expensive. Finally, the situation dependent and intelligent service structure was enhanced.

According to these results the prototype was adapted in a second step and the customer acceptance was re-evaluated. Figure 11 shows that the performance has significantly improved with regard to almost every acceptance indicator. The new pricing model has improved in the customer's perception even if it offers a higher margin. Another important result is that the acceptance indicator "health concerns" is evaluated better, even if no relevant factor has changed. This leads to the conclusion that different acceptance indicators affect each other. The perception is a complicated construct and the dependencies are hardly to comprehend or to forecast.

8 Summary and lessons learned

In the outlined business case, the service portfolio of *clever-tanken.de* was presented in detail using the **customer acceptance management** approach. This approach measures the acceptance of mobile services more objectively and comprehensible. The approach was applied in the subprojects mobile service portfolio, internet portal and HyNet service. In each of these subprojects, the **acceptance could be enhanced** significantly. For the mobile service portfolio and the internet portal, which are commercially provided, the higher acceptance lead to a rising usage that corresponds with **higher service transaction volumes** and finally the *clever-tanken.de* turnover. The lessons learned can be summarised within the following key learnings:

- **Key learning 1: Managing customer requirement instead of knowing them.**
It is a widely spread appraisal, that product managers should know the customer requirements and the specific acceptance problems in advance. But the customer acceptance is a complex and sensitive construct. A single change can affect the customer acceptance far beyond the original intention. As the *clever-tanken.de* business case implies, product managers do not have to know customer requirements initially, but they have to identify and manage them frequent and on an ongoing basis.
- **Key learning 2: Evolution in service development is controllable.**
Taking the high costs of a market introduction failure into account, the pre-testing of the service before the real market launch can help to identify and prevent serious acceptance problems. Regarding the results of the HyNet service, the evolutionary project proceeding generates significant enhancements compared with the service originally planned. In the outlined projects this leads to the feeling of having the "uncontrollable" under control.
- **Key learning 3: The perception of prices was more important than the price itself.**
Pricing is a very sensitive aspect regarding the customer acceptance. One result of the project is that the price de facto is less important than its perception. In every of the described subprojects, prices or advertisements have been increased. Nevertheless, the services were evaluated with a higher acceptance and/or a higher real usage, because

of differences in the customer's perception. Flat fees are very interesting because the customers benefit is often rated better than the effective average effort.

- **Key learning 4: The future of *clever-tanken.de* is services integration.**
This lesson learned can be derived by comparing the results of the different subprojects. The existing clever-tanken.de mobile service portfolio has specific constraints. The internet portal requires a personal computer or a laptop. The HyNet service offers an impression of how to use the service in a situation dependent and integrated context. Especially the integration with navigation services are forecasted as essential for location specific content.

In general, all the customer acceptance of the clever-tanken.de service portfolio has been significantly enhanced with the help of the customer acceptance management approach. The outlined subprojects have contributed to an evolutionary product development into the direction of a constantly improving customer satisfaction and acceptance.

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