mobile.de – Joy of Use in Practice
Use Case for a Development and Design Process

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Abstract

Optimal usability assumes a consistently user-centered developmental process. This also entails an added emotional value which goes along with functional user-friendliness: the so-called "Joy of Use" arises from the emotional interaction between the user and the contents, features and functions of a website, and is a central image-boosting success factor.

The present article will outline prototypical development and design processes for the interactive design of the internet vehicle market mobile.de regarding the "Joy of Use in Practice."

The article will also explain the iterative development process and effective interplay between employer, usability agency and web agency.

mobile.de's emotional user experience (and, consequently, its market image) can also be dramatically enhanced along with the considerably more comfortable operation, thus expanding the market leadership of mobile.de as Germany's largest vehicle market.

Keywords

User Experience, Joy of Use, Interaction Design, Usability Design, User-centered Development Process

1.0 Initial Situation

With an average of 44 million visitors per month, mobile.de is the most-visited internet vehicle market in Germany. In addition to an extensive selection of automobiles, utility vehicles and campers, mobile.de currently offers the largest truck selection on the German market, with around 1.3 million vehicles.

Between 2005 and 2009, mobile.de performed comprehensive user research and redesigned their website development in order to further expand its market leadership. Optimizing usability and enhancing the Joy of Use were crucial to this undertaking.

The user-friendliness and "comfort factor" should be improved especially for the private user, who constitutes the majority of users on mobile.de. The main goal was facilitating a simpler entry into essential site activities, particularly in the search for vehicles.

2.0 Development Process

The new search function and the redesign of the mobile.de website were developed by mobile.de in close collaboration with the usability agent "eye square" and the web agent "interactive tools". The iterative development process proceeded in different levels, whereby the designs were tested and revised step-by-step.

Until 2008, the emphasis was on the optimization of usability. With increasing "functional" improvement, the focus shifted to the Joy of Use and the design.

In the comprehensive analysis, as well as from the perspectives of usability and utility, branding and emotional effect, the entire user experience was improved and perfected.

3.0 Testing Methods

The development was accompanied by multiple research studies comprising the testing of the live site and iterative prototype testing, which took place both in the lab and online. The 11 individual studies were implemented between 2005 and 2008.

In the lab usability tests, the test personnel in the lab of the usability agent "eye square" interacted with various prototypes or the live site of mobile.de. In addition, screen and test persons were shown on video, as well as their mouse interactions and eye movements (the so-called "picture in picture" video).

Fig. 1: Usability Lab with Eye Tracker

During the online usability tests, the test personnel were invited by email to participate in the study. They opened a special tracking tool at home, the so-called i^2 browser, in which the site www.mobile.de was automatically downloaded.

While the users surfed, screen sequences (the sequence in which the sites were visited), the visit duration (how much time was spent on which site and in which area), and mouse and form data (what the participant did with the mouse and keyboard) were recorded.

The combination of both processes delivered comprehensively valid qualitative and quantitative data regarding user behavior, attention, emotions and motivation. At the same time, it offered contextual and background information concerning the interpretation of the data and processing of action recommendations.

4.0 Optimizing the Search Function

From July until September 2007, and in March 2008, eye square conducted multiple user studies concerning "Search".

4.1 Basis-testing Search

Initially, a study with 20 users in the lab and 50 users online was implemented. At first, a basis measurement of the performance of the search with the live site took place; afterwards, two mock-ups of the new detail search and search results were presented to the users.

In a task-based usability test, qualitative data concerning "thinking aloud", interviews, behavior observations, video illustrations, quantitative data via eye tracking, questionnaires and ratings were determined.

The eye tracking showed that the focus was on the quick search, with which most users entered the search process.

Fig. 2: Homepage Heatmap

Although no serious usability problems arose on the site of mobil.de at that time, the need for optimization was apparent in the search function. The quality of the search results targeted by the users was unsatisfactory.

The users targeted either too many search results or excluded too many vehicles, since it was not clear to them during the entry of search criteria how many hits would remain. This caused the users to always get lists that were either empty or much too long.

The newly designed mock-ups entailed a dynamic hit display that showed users how many hits the search criteria generated even as they were still searching. The new designs were, as a whole, clearly better assessed than the current live search: 90% of participants saw the new designs as a significant improvement.

The online study was realized with the aforementioned i^2 browser, and showed similar results: the quick search on the homepage was the most frequently used point of entry; the main problem with the search was always that the users received either too many or too few results; this was much more pronounced with the online sample than with the lab sample.

4.2 Iteratives Testing Prototype Search

In two further developmental phases—Phases 2 and 3—the respectively reworked prototypes were tested in the lab. In all, a three-stage developmental process was implemented in 2007.
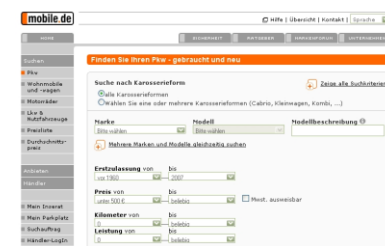

Fig. 3: Prototype Homepage

Fig. 4: Prototype Search

The concluding test results of Phases 2 and 3, with the focus on the optimization of the search, showed that the prototype succeeded in improving the search through innovative features. Above all, the dynamic showing of hits and the various possibilities of changing the

search criteria on the results page appealed to users.

- 70% used the quick search on the homepage: the new quick search really encouraged the users (a so-called "call to action").
- The detail search was very well received, and evaluated as clear by almost all users.
- The dynamic hits view was evaluated very positively by all users.
- 70% of participants took advantage of the option to modify the search on the search results page.

4.3 Testing the Live Site Search

After implementing the more extensive optimizing steps, a new online study (a so-called "remote usability test") was performed on the live site in March 2008, in order to examine the user experience with the modified search on a large sample (N=500). The remote usability test highlighted which search and search refinement strategies the users employed and which entries they made, and measured the visit durations on the individual sites as well as the users' click paths.

Fig. 5: Homepage Live Online Study

Fig. 6: Search Live Online Study

This remote usability test with a large sample confirmed the result already found under prototype testing:

- The new search was found to be faster, thus creating a clear improvement in operating comfort.
- The detail search was evaluated as clear, and the possibilities for search refinement were used intensely.
- mobile.de was clearly preferred to Autoscout24.

5.0 Design Optimization

Besides perfecting the search on a functional level, mobile.de also conducted a process for reconfiguring the design. The basic data from 2005 and the studies from 2007-08 showed very positive results regarding site usability, but considerable room for improvement in the areas of design and emotionality.

5.1 Study Results Design

As a basis for the redesigning, two studies (in the lab with 13 users and online with 55 users) of the current design of mobile.de were undertaken in 2005:

They revealed that the sites were overall perceived as clear, easily usable and functional. Regarding their hedonic and aesthetic qualities, however, there was a marked deficit: The sites caused little emotional reaction and were overwhelmingly rated as too gray and colorless. The evoked associations were accordingly often characterized as negative ("black-and-white TV," "deathly gray", "foggy November day in Berlin", etc.). Pictures and icons were hardly mentioned without a prompt to do so, indicating that these means had been implemented too reservedly.

The usability tests from 2007-08 revealed similar findings: mobile.de was rated as primarily very user-friendly, well structured and clear; most of the test subjects deemed the website's design as having little appeal. Typical user comments were: "too much black-and-white", "font size too small", "resembles the source text" and "too gray".

5.2 Overriding Redesign Goals

After mobile.de functionally relaunched the vehicle search publicly in November 2007, it became important to rework the site's look and feel. It needed to be more appealing as a whole, while the simple operability and structure were to be retained, and optimized if needed.

Thus, the central challenge was to improve the comfort level while simultaneously and consistently maintaining the central usability motto "don't make me think".

After the successful pitch in February 2008, the web agency "interactive tools" began their work with the following goals:

- Increasing the "comfort level"
- Conveying their market leadership
- Strengthening expertise and quality
- Updating for the times and the "Zeitgeist"
- Stronger market communication

Goals regarding the homepage and navigation:

- Easier entry into main site activities: searching for and offering vehicles
- Streamline Navigation

Specifically, this means that the designs should be revised in the "classic" sense: e.g. color choices, forms for presenting content (boxes, icons, etc.) and that navigation and structure should be streamlined, and entry in the search simplified.

5.3 Main Redesign Premises

The following developmental process is based on the core thesis that "user experience" and "joy of use" represent the key elements for the redesign—the "joy of use" primarily in its role as a central image-boosting success factor.

Furthermore, the agency proceeds with the assumption that optimal usability presupposes a consistently user-centered development process, and that central functionality and utilization will be implemented while maintaining maximal usability.

In addition to the "imagery", which will be dealt with in more detail later, the "search" will be given a key role, and the motto "the search is the star" will be followed.

5.4 "The Search is the Star"

The main activity of private users on mobile.de was, and is, to search for vehicles. In all, three-fourths of users turn to the site to search for and obtain information.

Based on the previously primary functional optimization of the search—including detail searches, search results, and detail results—interactive tools drafted an emotionalization and exposure of the site's core. The search should now move into the spotlight.

Acting by the principle "don't make me think", the central search functions "search" and "offer" were offered as a direct entry into the homepage via a search floater.

5.4.1 A Stage for the Star

In order to create an appropriate and emotional space for activity, a so-called "superteaser" was developed. ("Teaser" is an advertising term meaning "attention getter") We use the term "superteaser" for a prominently placed, space-consuming, attention-getting motif.

The superteaser had the task of staging the search while fulfilling the following conditions:

- The superteaser distinctly separates mobile.de from other brands and competitors, and positions it more strongly.
- The superteaser thematically supports the search, and thus the associations connected with it.
- The superteaser should therefore not dominate the search and the market header.
- The superteaser serves as a stage for the search function, and should produce emotions and feelings of comfort.
- The superteaser uses the stage in order to move the inventory into the foreground, thereby making the market leadership visible.
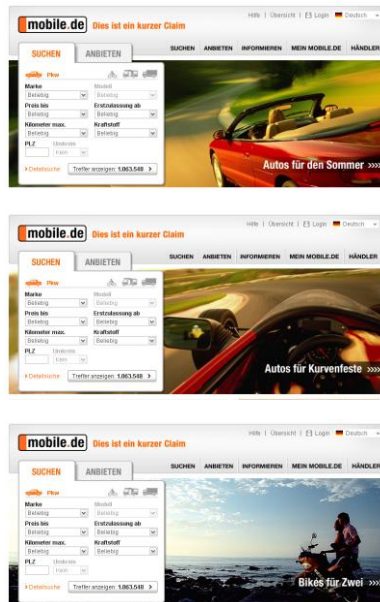

Fig. 7: Design Draft Superteaser

5.5 Composition of the Imagery

As part of the overall redesign process, and especially in connection with the superteaser's configuration, the topic "imagery" also took a key position. In so doing, the new imagery helped to increase the joy of use and to accentuate the search.

One of the most important challenges was that the images should address the topic of cars while also conveying friendliness and emotionality. At the same time, they were to convey a clear-cut message that would strengthen the appropriate "call to action".

Central questions in the composition and emotionalization of the imagery between the priorities of search and market were:

- How can a comparison between motif, search and market succeed?
- How can the image lead to a search, instead of becoming the focus?
- How many "people" and/or how many "cars" must there be?

Fig. 8: Vintage Car Motif

Fig. 9: Sunglasses Motif

5.6 Testing Redesign/Imagery

Just as in the first developmental process—primarily directed to functional usability—the usability agency eye square also accompanied the redesign in an iterative developmental process.

In May and June 2008, a total of four studies (two user studies in the lab and two online) were also performed. In addition to the testing of the look and feel of the new design, superteasers and imagery were mostly examined for their influence on the search.

5.6.1 Results of Design Study 1

The first redesign testing, with 21 users in the lab and 138 users online, showed that the new design had a positive influence on mobile.de's user experience. Two variations of the homepages presented under point 5.5 (see Figures 8 and 9) were tested. In the laboratory study with eye tracking, the look and feel and user-friendliness were qualitatively established with a smaller sample. The results of the laboratory study were validated in the online study; the German, Polish and Czech users employed the new design at home, and their mouse and click data were collected. The obtained test results included the following:

- The quick search was now prominently placed, and offered a strong "call-to-action".
- The new site was felt to be simple to use and helpful.
- The new design was perceived as clear, friendly, modern and attractive.

Furthermore, an important optimization potential was recognized: the superteaser was sometimes misunderstood as an advertisement, and not used as an entry. The vintage car motif was preferred to that of the sunglasses.

5.6.2 Results of Design Study 2

After a revision of the designs, eye square performed a further test of 15 users in the lab, based on the three variations of the homepage:

Fig. 10: Camper Motif

Fig. 11: Sunset Motif

Fig. 12: Sports Car Motif

The test revealed that the new design did not compromise the usability of the search function—quite the opposite:

The central position of the quick search increased acceptance and the feeling of user-friendliness.

The brand mobil.de could make strong improvements regarding the evaluation of design and emotionality. However, the most important realization from the study was that the superteaser on the homepage had a strong, relatively stable influence on the overall perception of the brand.

The camper motif was rated as too pale and colorless; most users liked the sunset motif; although the sports car motif was polarizing, the presentation of a vehicle was seen as thematically fitting and the motif as fast and dynamic.

Based on the results, mobile.de decided to systematically test the effect of the imagery in the superteaser in further studies.

5.6.3 Results of Design Study 3

Based on the identified importance of the imagery, a study (Lab N=40) was performed in September 2008 with four homepage variations, each containing other teasers:

Fig. 13: Vintage Car Motif

Fig. 14: Road Motif

Fig. 15: Convertible Motif

Fig. 16: Automobile Motif

The road motif, which conveyed breadth and dynamics, and the convertible motif, which radiated dynamics and joy in driving, are the most convincing in their effects. The vintage car motif evokes a good basic mood, but the motif is too specific. The automobile motif seemed cluttered, and was the least convincing.

The specific imagery tests revealed the following key findings:

The imagery should show the automobile in a realistic driving situation, which conveys fun in driving and a certain dynamic. This will clearly convey the core message and distract less from the actual contents.

In conforming to the viewing habits on the web, it seems clearly prudent to utilize images that are recognizable at first glance, so that they can convey the desired effect on the brand image.

With the choice of cars, the value should be considered; small, luxury, or medium-sized vehicles. Each type of automobile evokes a certain expectation regarding the website's offerings.

6.0 Key Findings from the Customer's Point of View

mobile.de has been optimally supported by interactive tools and eye square. In order to develop a website that satisfies both functional and emotional needs, it is necessary to embed the development in systematic user research in order to obtain feedback concerning the website's emotional effect.

With the new look and feel, and the new search functions, mobile.de entails an attractive user interface, and invites one to browse the current inventory of over 1.3 million vehicles. "*We wished to create greater clarity and transparency with the new design and simplified navigation, so that buyers and sellers can find their way around mobile.de better and*

quicker," explained Peter F. Schmid, the Managing Director of mobil.de at that time.

As far as the search optimizations and the new design suggestions are concerned, mobil.de finally implemented the designs that performed the best in the user test. The implementation was realized by an in-house development team as an agile project.

After mobile.de became free for private users in 2007, the optimizations of the search significantly helped mobile.de to assert itself as the clear market leader against its competition.

The launch of the changes improved not only the ongoing satisfaction of the users, but was also reflected in user behavior:

- The number of people requesting the site rose significantly,
- The number of site visits rose significantly,
- The number of advertised vehicles rose significantly.

However, the question of how this is to be seen in connection with the generally increasing online use remains open.

As expected, the new design led not so much to an altered behavior in users, but instead was reflected in "soft" factors. For example, the familiarity of the brand and the readiness to recommend the site were increased.

The encouraging results of the tests performed before implementation have also been verified in practical application. The close cooperation and the incremental optimization of the designs after each round of tests have ensured that users now have access to a clearly improved product.

And the further development of the mobile.de platform will also meet great challenges in the future, which will be addressed together with our partners.

In a current project, the personalization of the users' experiences are to be distinctly altered, and the users' responses and intentions better understood. Looking farther into the future, we may see new technologies in the front end, especially through the increasing relevance of mobile use cases. Not least in importance, mobile.de operates in a highly competitive field with numerous strong competitors, so that it is crucial to communicate an abstract size (such as market leadership) to the user, and make it come alive in the product.

In each of these further steps, it is not only important to maintain the strength of our position up to now, but also to adequately implement the website in other media and user contexts. To do so, mobile.de will be aided by the experience of our partners and the ongoing joint work on the website.

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