



TAMPERE POLYTECHNIC
BUSINESS SCHOOL

FINAL THESIS REPORT

**A USABILITY RESEARCH OF AN INNOVATIVE START-UP
COMPANY**

Case ReturnMe



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ABSTRACT:

The main purpose of this Final Thesis was to conduct a usability research and analysis on the Internet pages of a Helsinki-based start-up company called ReturnMe, which offers a global and mobile lost-and-found service that can be used via the Internet or a mobile phone. The aim was to improve the existing website and especially the web shop of the company through a method called heuristic evaluation, in which the usability of a product is judged against a specific set of 10 heuristics. These so-called heuristics include guidelines regarding for instance error prevention and recovery, minimalist design and ease of navigation. This part of the research was followed by altogether 6 usability tests conducted on actual test users, who represented the average web user. Through these methods many problems that had made the website difficult or even impossible to use were uncovered and fixed.

The research was done by gathering empirical and qualitative data rather than quantitative. The main theoretical method used in this research was that of usability expert Jakob Nielsen's Discount Usability Testing Method, which is concentrated on a heuristic evaluation and simplified user tests that focus on quality rather than volume. This means the tests should be conducted on approximately 5 test users, since the majority of the usability problems can be found with surprisingly few users.

The main findings of this research concentrated around the fact that the website and service that ReturnMe provides are not only difficult to use but also hard to understand. The tests uncovered serious technical shortcomings such as the incompatibility of the web shop and Internet Explorer, but mostly there were problems with the users not understanding the purpose and operation principles of the service with only the information that is available through the website. The solution was to increase necessary information on the site, but the biggest and most important challenge was to gather the information into a compact form that can be digested quickly, easily and effortlessly by an average, novice user, so that the barrier for using the website is lowered considerably. Other ways to support the ease of use of the website were simplifying the registering and buying process, making navigation through the site easier by cross-linking, emphasising important information with highlighted design and making help more easily available.

Keywords: Usability Heuristic Evaluation Discount Usability Testing
Website design Lost-and-found services

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1 Introduction

1.1 The aim of the thesis

The aim of this final thesis is to perform an extensive usability analysis on the internet pages of a Helsinki-based start-up company ReturnMe. The purpose is to find out and repair usability problems that will most likely occur with the service concept that ReturnMe provides. The company is based solely on the Internet and mobile means of communication and is therefore very vulnerable to usability issues. The usability analysis will be conducted in two parts: the first part is a preliminary heuristic evaluation, which will be conducted according to Jakob Nielsen's 10 heuristics (Nielsen 2006), and the second part is a series of usability tests performed on 6 individual test users. The questions in these tests will be based on the findings of the preliminary heuristic evaluation. The user tests will be executed using the Discount Usability Testing method, an important part of which is the Think aloud-method.

This research is also done to help the company's efforts in marketing and in both customer recruitment and satisfaction, since the website is the only 'face' of the company that new customers see. After all, the building and maintenance of a customer relationship are performed via the customer's interaction with the Web system (Dustin, Rashka & McDiarmid 2002). Like a shop window of a brick-and-mortar company, the system has to be in perfect, appealing – and most of all – usable condition for people to get interested in it and become customers.

1.2 The company and the environment

The company that the research is focusing on is an Internet-based Finnish company called ReturnMe. According to its owner and CEO Joonas Pekkanen (2006), it is the only global and mobile Lost and Found Service, which helps one get his or her lost property back quickly and safely anywhere in the world. The service notifies the owner of the lost item by SMS as soon as someone finds the lost property he or she has tagged with a special tag that can be purchased from the company's website (Pekkanen 2005).



Picture 1: A key tag

The mission of ReturnMe.org is to relieve the financial and emotional distress related to losing important possessions. ReturnMe.org Ltd operates in the European Union and is located in Helsinki, Finland. The visiting address is Melkonkatu 28 E in Helsinki (Pekkanen 2005).

1.2.1 How the mobile lost-and-found service works

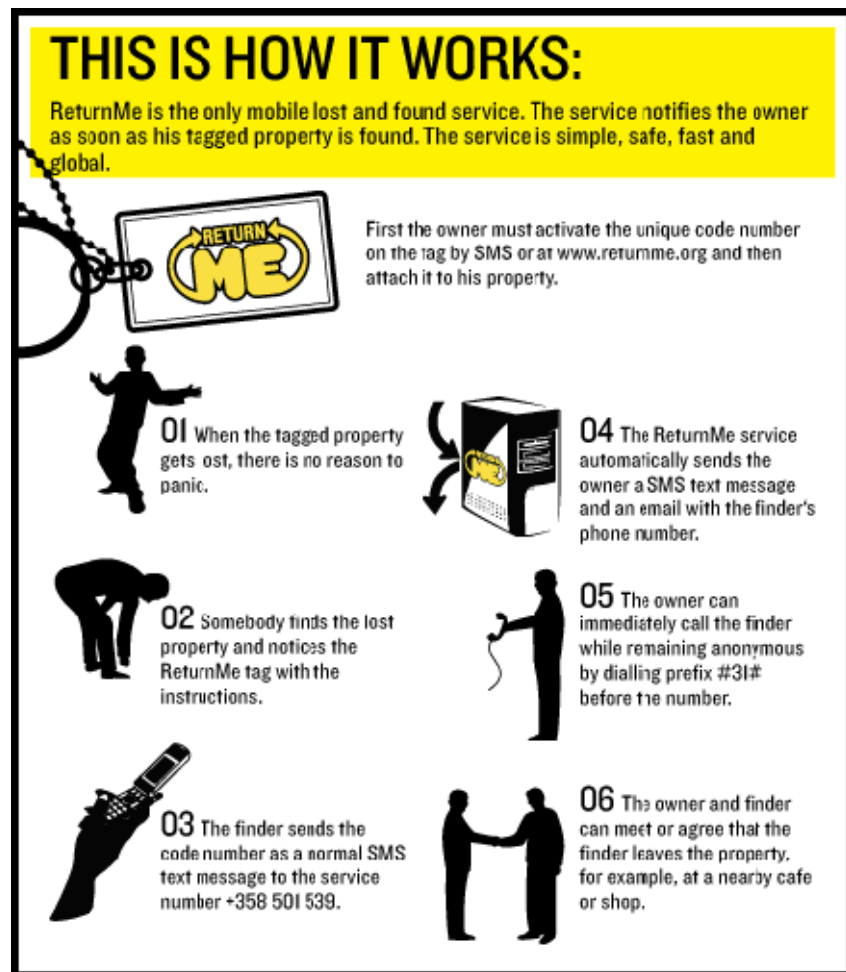
The first step in using the service is to register as a user before activating the unique code on the tag. The tags range from key rings to zipper pullers, stickers and USB sticks. Each user can activate several tags. As soon as you have registered as a user on the website or activated a tag by SMS (in which case you'll receive a password by e-mail), you can sign in on the website and start activating tags to your user profile (Pekkanen 2005).

The service really starts working when you actually lose something. The ideal situation is that somebody finds your lost property and notices the ReturnMe tag with the following instructions: "Please return to owner. Send ID-code below as an SMS to +358501539 and my owner will call you. Thank you!" (Pekkanen 2005).

As soon as the finder has sent the unique code to the service number, the ReturnMe service automatically sends the owner of the lost property a SMS test message and an e-mail with the finder's phone number. The text messages cost only the normal operator rate and there are no extra costs when something is lost and found. After receiving the notification that someone has found the lost item the owner can then call the finder and still remain anonymous by dialling the prefix #31# before the finder's number. After this it is up to the owner and the finder to meet and exchange the property or agree that the finder leaves it for example at a nearby café or shop for the owner to pick up. If the finder prefers, he or she can also give his or her mobile phone number and the tag's code number to a special field in the website (Pekkanen 2005).



Picture 2: A luggage tag



Picture 3: How the service works

ReturnMe's lost and found service relies on the good nature of people so it is naturally not absolutely guaranteed to get a lost item back. The service relies on people doing other people a service; ReturnMe only wants to make returning the items easier (Pekkanen 2005). What ReturnMe can guarantee is that the probability of getting an item back faster is significantly improved by tagging the items with ReturnMe tags.

Normally the subscription price of the lost and found service is 6 euros per user. This subscription covers the service for up to 10 tags. The prices of the tags start from 3 euros. When something is lost and found Returnme does not charge the finder nor the owner of the lost property anything. If one has received a sponsored tag, it typically contains a 12-month totally free service. The only thing left to do is to register as a user on the website and activate the tag to get the complimentary 12-month mobile lost and found service (Pekkanen 2005).

1.2.2 The products

ReturnMe tags can be bought from the site's web shop. These tags can be used on all kinds of belongings. Everything from sports equipment, digital cameras, MP3 players, laptops and PDAs can be marked with ReturnMe stickers. Also clothes, bags and accessories can be tagged with zipper pullers, pins or fabric labels. ReturnMe acquired just recently a collaboration agreement with Nokia mobile phones, which means that Nokia will start packing a ReturnMe mobile phone tag with every phone they sell beginning from 2007 (Pekkanen 2005).



Picture 4: A zipper puller

ReturnMe tags are also available as promotional gifts. ReturnMe products are said to make an ideal promotional gift and give positive exposure to the sponsor's logo. The products are available in any language and the service works globally. Some ReturnMe products are also currently available only as promotional gifts, such as luggage tags, USB sticks and mobile phone tags. The key tags, zipper tags and stickers are also available for individual consumers (Pekkanen 2005).

Each tag has the standard instructions and a unique code number on the front and the logo and slogan of the sponsor on the back in 1 to 4 colours. Promotional items are packed in a see-through bag with a standard instruction card. The back of the card can also be customized with the sponsors artwork in 4-colour print (Pekkanen 2005).

The company is owned by W.Steinmann, Tietotalo Infocenter Ltd and the CEO Joonas Pekkanen. The company has patented its SMS-based lost and found service. "ReturnMe" and "the mobile lost and found service" are registered trademarks of ReturnMe.org Ltd. The company has received financing from the Foundation of Finnish Inventors, The Finnish National Fund for Research and Development (Sitra), the National Technology Agency of Finland (Tekes) and Finnvera Plc (Pekkanen 2005).

1.2.3 The service

The main attributes describing the service are fast, secure, smart, double safe and global. The service is regarded as fast due to the instant nature of the service and communicating through mobile means; secure due to the fact that the service allows the customer to stay anonymous throughout the whole process; and smart because writing your phone number to your keys isn't smart whereas linking yourself to a service which reveals nothing to any outsider is smart, i.e. the customer's contact information is not visible to the finder at any time. The service is also double safe because you get both an SMS and an e-mail when something is found. If the item lost is the customer's phone, it is possible to register a secondary mobile number (e.g. of a family member or friend) and the service sends the SMS to this number. The last attribute of the service is global, which means the service works everywhere in the world. The tags are in English to increase the probability that the finder understands the instructions on the tag. While travelling people usually carry more belongings that might be lost. This means that they also have less time to spend looking for them (Pekkanen 2005).

2 Usability

2.1 Introduction to usability terms

Usability Usability is a quality attribute that assesses how easy user interfaces are to use. The word "usability" also refers to methods for improving ease-of-use during the design process (Nielsen 2003).

Heuristic evaluation

Heuristic evaluation is a discount usability engineering method for quick, cheap, and easy evaluation of a user interface design. Heuristic evaluation involves having a small set of evaluators examine the interface and judge its compliance with recognized usability principles (the "heuristics") (Nielsen 2005).

Think aloud "A technique in which the user verbalizes his or hers thoughts, shows the test team what is behind the user's actions" (Barnum 2002: 235).

User interface design

"User interface design is the overall process of designing how a user will be able to interact with a system/site" (The Usability Company, 2005).

User-centered design

User-centered design can be defined as the process of developing products based on information learned from users. This can usually be done through usability testing (Barnum 2002: 85).

Usability engineering

An umbrella term that describes the set of activities underlying the process of creating user-centered product designs. They include usability testing, but also a variety of methods that can be divided into two approaches: methods using feedback from experts and methods using feedback from user. Heuristic evaluation is the best known of the first mentioned method (Barnum 2002: 31).

2.2 What is usability?

“On the Internet, it’s survival of the easiest: If customers can’t find a product, they can’t buy it” (Nielsen & Norman 2000).

There are numerous ways to define usability, one of which would be to define what usability *is not*. Usability is not:

- Quality assurance
- Zero defects
- Utility of design features
- Intrinsic in products

The before mentioned terms relate to the product itself, not to the interaction between a person and the product (Barnum 2002: 6). Therefore, the definition of usability should focus on the user and the user experience instead of the product. Jakob Nielsen defines usability as “The measure of the quality of the user experience when interacting with something – whether a Web site, a traditional software application, or any other device the user can operate in some way or another” (Barnum 2002: 6). Nielsen, a renowned usability expert, also includes the following attributes of usability in the definition:

Learnability	The system should be easy to learn so that the user can rapidly start doing some work.
Efficiency	The system should be efficient to use, so that once it is learned, the user can achieve a high level of productivity.
Memorability	The system should be easy to remember, so that the casual user is able to return to the system after a period of time and not have to learn it all over again.
Errors	The system should have a low error rate, so that users make few errors and can easily recover from them. Furthermore, catastrophic errors must not occur.
Satisfaction	The system should be pleasant to use, so that users are subjectively satisfied when using it; i.e. they like it (Nielsen 1993: 26).

Therefore usability of a product, any product, can be very roughly defined as how easy and satisfactory it is to use. When it comes to Web sites and especially e-commerce Web sites, it can be said that usability is an essential factor in the completion of a sale. Simply put, if the web site is confusing to use, the customer won’t buy anything from you. If the product is hard or impossible to find, another store is simply one click away. 27 % of all Web transactions are abandoned at

the payment screen (Binstock 1999), which means that the ease of use of a Website can either make you or break you.

2.3 Why usability?

Usability encompasses many areas, such as computer science, cognitive science, engineering, psychology, technical communication (Barnum 2002: preface XIII). Therefore usability should be included in education of managers, marketers and engineers. Investing in usability guarantees results in not only profitability but also in customer satisfaction, so why are all products not made as usable as possible? Negative attitudes combined with lack of expertise, resources and skills are the most commonly used reasons in different companies. The following figure by William Horton (Barnum 2002: 11) encompasses some of the excuses used by managers, product managers and technical communicators in a tongue-in-cheek style:

Excuses, Excuses, Excuses

William Horton

Excuses by managers

Many managers, especially midlevel technical managers who "cut their teeth on glass teletypes and machine code," seem to regard usability as a bureaucratic waste.

Economy—Sure it's awkward, but we can explain it in documentation . . . in training . . . with phone support.

Urgency—We don't have time for usability testing. We barely have time to finish the product.

Continuity—It may be bad but our customers are used to it by now.

Marketing—We designed exactly what our customers said they wanted.

Pride—Our customers are so intelligent, educated, and motivated, they can handle it.

Force—They'll use it because it's their job to use it.

Excuses by product managers

On some projects the engineers, programmers, and technical gurus seem to view usability as an unnecessary frill, a fad of interest only to technowimps.

Inertia—If it ain't broke, don't fix it.

Absolutism—We can't make it totally obvious so let's not even try.

Puritanism—It's a computer. It's supposed to be hard.

Denial—It's NOT a bug. That's the way we designed it.

Elitism—If our customers can't figure it out, we should get new customers.

Legality—We followed the user-interface standards manual.

Excuses by technical communicators

Yes, even writers, editors, trainers, and customer-support engineers sometimes resist efforts to make products more useful.

Protectionism—Obviousness would eliminate my job or what I like about it.

Bureaucracy—It's not my job.

Ignorance—I don't have a Ph.D. in ergonomics

Impotence—They won't let me.

Defense—Everything users need to know is in the manual. It's not our fault they won't read it

Exasperation—We don't have time to simplify the product. We're too busy documenting it.

*Source: William Horton. "Let's Do Away with Manuals . . . Before They Do Away with Us." *Technical Communication* (First Quarter, 1993), p. 29. Reprinted with permission from *Technical Communication*, the journal of the Society for Technical Communication, Arlington, VA, U.S.A.*

Figure 1: Excuses, Excuses, Excuses by William Horton (Barnum 2002: 11)

According to Marcus Aaron (2002), making computer-based products (and services) more usable is simply smart business. Improving usability increases both internal and external ROI (return on investment) in the following ways:

Internal ROI

- Increased user productivity
- Decreased user errors
- Decreased training costs
- Savings gained from making changes earlier in design life cycle
- Decreased user support

External ROI

- Increased sales
- Decreased customer support costs
- Savings gained from making changes earlier in the design life cycle
- Reduced cost of providing training (if training is offered through a vendor company)

Usability also plays a role in the public's perception of a company. It can affect a company's brand value and market share, and even the financial health of a company in some less obvious ways, such as overlooking the issues the users might have with the product, which leads to defective design, which eventually leads to loss of income (Aaron 2002).

2.4 Web usability

Web usability is basically usability principles exercised in an Internet environment, i.e. web pages. Usability of web sites is earning higher importance in the minds of business people, not least because in the Internet, customer is king. According to Jacob Nielsen (2000: 9), "The Web is the ultimate customer-empowering environment. He or she who clicks the mouse gets to decide *everything* [sic]". This means that the customer always holds the power, ability and possibility to prefer a competitor's product – and website – over yours. After all, there are often vast quantities to choose from. The reasons a customer will abandon a website and opt for something else are numerous, most of which usually relate very close to usability issues. Like mentioned before, if the website is difficult to use, the customer will not buy anything from it.

If the unwilling attitudes and excuses web usability faces are the same that traditional usability faces, why is it regarded so much more important for e-commerce businesses to conduct usability tests for their ultimate end products, the websites? It can be said that the

customer is king in a traditional brick-and-mortar business, too. The customer can just go to another store. Still, why does the software industry have more motivation than a physical product industry to improve usability? According to Nielsen (2000: 10-11), it's quite simple. In the Web, the users experience usability of a site before they have bought it and *before* they have spent any money. In essence, with traditional products, customers pay first and experience usability later; in the Web, users experience usability first and pay afterwards.

2.5 Usability testing

Usability testing is done to learn from actual test users about the usability of a product by observing them actually using the product (Barnum 2002: 9). More often than not the developers, designers and marketers of a product simply know too much about the product to actually notice if there is a major flaw in it, which makes it difficult to use. That is why testing the product on an 'average Joe' consumer is essential. Surely the engineers know how operate a system they built themselves and of course a web designer of ReturnMe can activate a simple key tag on the site since he designed the site. That is the essence of usability and usability testing: a person who has never seen or used the product or site can't necessarily use it. The following characteristics by Dumas and Redish describe usability testing – and can also be used as a checklist:

1. The primary goal is to improve the usability of a product. For each test, there must be specific goals and concerns that you articulate when planning the test.
2. The participants represent real users.
3. The participants do real tasks.
4. The team observes and records what participants do and say.
5. The team analyzes the data, diagnoses the problems, and recommends changes to fix these problems. (Dumas and Redish 1993: 22)

Like established before, usability testing is the process of getting live feedback from actual users performing real tasks. Again, it is best to clarify what usability testing *is not*. It is not:

- Function testing – Verifying that users are able to perform certain tasks.
- Reliability testing – Verifying that the product performs as designed.
- Validation testing – Verifying that the product performs without errors or “bugs”.

Again, these types of tests are more functional and product-orientated and don't correspond with the user's wants, needs and desires (Barnum 2002: 9-10).

2.5.1 Costs of usability testing

A commonly used reason – or excuse – for not testing a product's usability is money. Companies can view usability testing as redundant or even a waste of time and money. Even if attitudes can change, there is still the aspect of how to finance usability tests. Well into the 1980's, usability testing was truly expensive, time-consuming and more so than anything, scientific. The usability experts were usually cognitive scientists or experimental psychologists, and the tests were conducted in top-of-the-art usability labs with 30-50 test users. Naturally the costs were high (Barnum 2002: 10).

Only after Jakob Nielsen presented a paper entitled "Usability Engineering at a Discount" in 1989 (later entitled "Guerilla HCI: Using Discount Usability Engineering to Penetrate the Intimidation Barrier), usability testing could be seen as something else than implicitly expensive and therefore close to impossible. Hence came forth the concept of Discount Usability Testing (Barnum 2002: 10).

2.5.2 Discount usability testing

Nielsen presented in his 1989 paper the concept of Discount Usability Testing, a method which would cut costs with a combination of a very small number of test subjects and a room with human recorders instead of video recorders. The approach wasn't originally considered as the best of all options but nevertheless "good enough" to produce usable results. A year later Robert Virzi reported identical results from his own research, in which he concluded, as did Nielsen, that using between 4 and 5 test users, 80 % of the usability problems are detected (Barnum 2002: 11-12).

The idea that most usability problems can be discovered and corrected with the help of just a few test subjects revolutionized usability as a whole. Now usability testing could be incorporated into the development of product at a small cost, there would be no negative effect on the product's development time and usability testing could be done early and often. It also meant that expensive usability labs are not needed to achieve valid results (Barnum 2002: 12).

According to Nielsen (1993), the discount usability testing method is based on the use of the following three techniques:

- Scenarios
- Simplified thinking aloud
- Heuristic evaluation

2.5.2.1 Scenarios

Scenarios are a special kind of prototyping. The entire idea behind prototyping is to cut down on the complexity of the implementation by eliminating parts of the entire system. Scenarios are often implemented as paper mock-ups or paper prototypes (Nielsen 1993). Paper mock-up is simply a prototype of the product concept made from paper or other simple tools (Barnum 2002: 124).

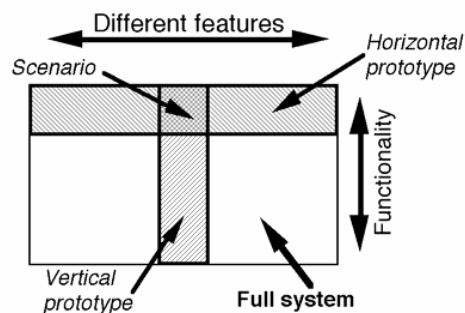


Figure 2: Scenarios (Nielsen 1993)

Scenarios are an excellent way of getting quick and frequent feedback from users and since a scenario is always small in size, it can be changed frequently. If, in addition, cheap, small thinking aloud studies are being used, the company can also afford to test each of the versions (Nielsen 1993).

The idea behind scenarios is presented in the graph above. Horizontal prototypes reduce the level of functionality and result in a user interface surface layer, while vertical prototypes reduce the number of features and implement the full functionality of those chosen (i.e. we get a part of the system to play with). A scenario can be very cheap to design, make and implement, but it is only able to simulate the user interface as long as a test user follows a previously planned path (Nielsen 1993).

As such, scenarios have two main uses: firstly, they can be used during the design of a user interface as a way of expressing and understanding the way users will eventually work with the finished system. Secondly, scenarios can be used during the early evaluation of a user interface design (UID) to get user feedback without the expense that occurs with constructing a running and functioning prototype (Nielsen 1993: 100).

2.5.2.2 Thinking aloud

Thinking aloud is the second part of the discount usability testing method. Traditionally, thinking aloud studies are conducted with psychologists or user interface experts who videotape the test users and then perform detailed protocol analysis. For an ordinary developer, this kind of testing can seem rather intimidating. However, it is possible to conduct user tests without sophisticated (and expensive) labs, simply by bringing in some real users, giving them some typical test tasks, and asking them to think out loud while they perform the tasks (Nielsen 1993).

2.5.2.3 Heuristic evaluation

The final part of the method is performing a heuristic evaluation. This will be explained in further detail in Chapter 3. Heuristic evaluation is a systematic inspection conducted by one or more usability experts following a list of recognized usability principles – the “heuristics”. The goal is to detect usability problems (Nielsen 2005).

2.6 User-Centered Design vs. User Interface Design

User-centered design can be defined as the process of developing products based on information learned from users (Barnum 2002: 85). This can usually be done through usability testing. Again, the emphasis is on the users and their respective tasks. User-centered design is “...a process that focuses on cognitive factors (such as perception, memory, learning, problem-solving, etc.) as they come into play during peoples' interactions with things.” (Katz-Haas 2004).

According to The Usability Company (2005), user interface design is the overall process of designing how a user will be able to interact with a system/site. User interface design is involved in many stages of product development, including requirements analysis, information architecture, interaction design, user testing, documentation, and help-system design. User interface designers require skills in many areas, including graphic design, information design, software engineering, cognitive modelling, technical writing, and a wide variety of data collection and testing techniques (The Usability Company, 2005).

3 Heuristic evaluation

3.1 Heuristic evaluation

There are many ways to obtain information of a product's usability, one of which – usability testing – was described in chapter 2.5. Another widely known method is heuristic evaluation, which is also one of the three elements of Discount Usability Testing described in chapter 2.5.2. In heuristic evaluation usability experts judge the usability of a product against a specific set of heuristics, or principles (Barnum 2002: 35). The two methods, usability testing and heuristic evaluation, are different in a way that whereas usability testing is conducted with the help of 'regular' users and therefore potential customers who don't have any previous experience with the product in hand, heuristic evaluation is done by a professional or an expert.

According to Barnum (2002: 36), in a heuristic evaluation, the evaluator (or evaluators) work alone to inspect the product against a set of rules (heuristics) to discover usability problems. Usually the evaluator(s) go through the interface/web site at least twice: the first time is to become familiar with it and the second is to perform the evaluation against the list of standardized rules, as described in detail in Chapter 3.1.1. After that the findings are collected, analyzed and reported, with a list of the usability problems discovered and usually also a list of recommendations for the product developers (Barnum 2002: 36).

Nielsen continues to say (Nielsen 1993) that the basic heuristic principles "...can be presented in a single lecture and can be used to explain a very large proportion of the problems one observes in user interface designs". Unfortunately applying the principles sufficiently does require some experience, so usually companies find it necessary to spend some money on getting outside usability consultants to help with the heuristic evaluation (Nielsen 1993).

Nevertheless, Nielsen does report also that even non-experts can find many usability problems by heuristic evaluation and many of the remaining problems can be revealed by a simplified thinking aloud test (Nielsen 1993). This is the reason a simplified version of the discount usability testing method will be conducted on the website of ReturnMe, which means there will be a heuristic evaluation and a simplified thinking aloud test, but scenarios won't be used, since the product under inspection is already available. I will naturally act as the expert usability evaluator and produce a list of the usability problems on the site based on the heuristics. The intension is not to try and find all the possible usability problems, as that is nearly impossible even

for actual usability experts; that is why there will also be thinking aloud tests conducted on a selected number of test users.

Performing both the heuristic evaluation and the user tests is quite common, since only an expert knows after a profound heuristic analysis which are the exact pitfalls of the site from a customer-point of view and can therefore compile an equally profound questionnaire for the user tests. After all, more often than not, the product or web site is perfect from the developer's point of view and he or she couldn't think of anything that might be problematic with it. The user tests can also unravel some additional problems that even a usability expert couldn't think of.

In a traditional setting, a heuristic evaluation is done in the earliest possible stage in the product development cycle (Barnum 2002: 36), so that the results can be taken into account before the actual completion of the product. In the case of ReturnMe, the evaluation has to be performed on a finished and published website and the results can't be communicated to the company before the completion of the usability tests, which will follow the heuristic evaluation. The test assignments will be designed based on the results from the evaluation, and therefore the website has to be exactly the same throughout the heuristic evaluation and the user tests.

3.1.1 Jakob Nielsen's 10 heuristics

The heuristic evaluation will be based on Jakob Nielsen's following 10 heuristics:

1. Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time (Nielsen 2006). Feedback should not wait until an error situation has occurred, which means the system should also provide positive feedback. Also partial feedback should be offered as information becomes available. The feedback should restate and rephrase the user's input to indicate what is being done with it. A good example is a warning message when the user is about to do something irreversible such as overwriting a file (Nielsen 1993: 134).

2. Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Real-world conventions should be followed and information should appear in a natural and logical order (Nielsen 2006). As far as possible,

dialogues and also nonverbal elements such as icons should be written in the users' native language and not in a foreign language. Another important point is viewing interactions from the user's perspective. For example, a transaction statement should read, "You have bought XX amount of xx" instead of "We have sold you XX amount of xx" (Nielsen 1993: 123).

3. User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. The system should also support undo and redo (Nielsen 2006). As Nielsen (1993: 138) says, users do not like to feel trapped by the computer. In order to make the user feel like he's in control of the dialogue, the system should offer an easy way out of as many situations as possible.

4. Consistency and standards

Consistency is one of the most basic usability principles. If users know that the same command or the same action will always have the same effect, they will use the system with more confidence. Basically the same information should be presented in the same location on all screens and dialog boxes and it should be formatted in the same manner to facilitate recognition (Nielsen 1993: 132). Users should not have to wonder whether different words, situations, or actions mean the same thing (Nielsen 2006).

5. Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. In an ideal situation, error-prone conditions should be totally eliminated. As an alternative, one can also simply check for them and then present users with a confirmation option before they commit to the action (Nielsen 2006). For example, every time a user is asked to spell out or type something, there is a risk of spelling errors, so selecting a name for the file from a menu rather than typing it in is a simple way to redesign a system to eliminate numerous errors (Nielsen 1993: 146).

6. Recognition rather than recall

The user's memory load should be minimized by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate (Nielsen 2006). According to Nielsen (1993: 129), computers are very good at remembering things accurately, so they

should take over the burden of memory from the user and display dialogue elements to the user and allow them to choose from items generated by the computer. Menus are typical technology to achieve this goal.

7. Flexibility and efficiency of use

Accelerators – unseen by the novice user – may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users (Nielsen 2006). Even though the user interface should be possible to operate with the knowledge of just a few rules, it should also be possible for an experienced user to perform operations especially fast using dialogue shortcuts. Typical accelerators include abbreviations and command keys that package an entire command in a single press of a key (Nielsen 1993: 139). Users should also be allowed to tailor frequent actions (Nielsen 2006).

8. Aesthetic and minimalist design

According to Nielsen (1993: 115), user interfaces should as simplified as possible, since every additional feature or item of information on a screen is one more thing to learn, misunderstand or search through when looking for the thing you want. Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility (Nielsen 2006).

9. Help users recognize, diagnose, and recover from errors

Error messages should be expressed in clear language with no codes, they should indicate the problem precisely, and suggest a solution constructively (Nielsen 2006). They should also be polite and not intimidate the user or put the blame solely on him or her. In addition to good error messages, the system should also provide good error recovery (Nielsen 1993: 143-144).

10. Help and documentation

Even though it is better if the system can be used without further help or documentation such as manuals and help systems, it may be necessary to provide them. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large (Nielsen 2006). Nielsen does mention (1993: 148-149) that “the existence of help and documentation does not reduce the usability requirements for the interface itself. ‘It’s all explained in the manual’ should never be the system designer’s excuse when users complain that an interface is too difficult”.

3.2 Heuristic evaluation of ReturnMe.org

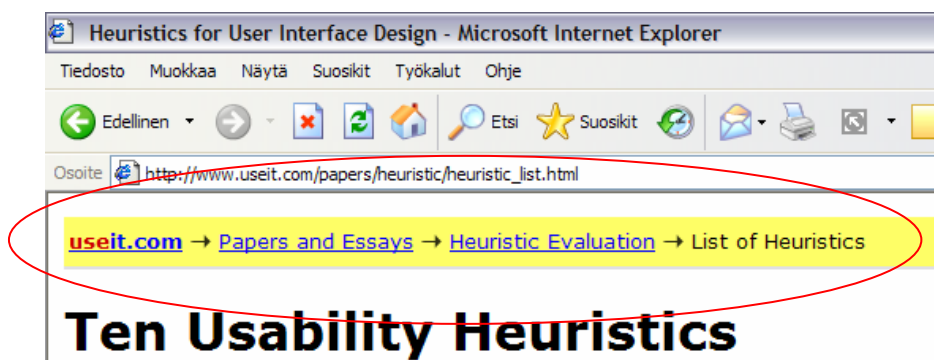


Picture 5: The front page of ReturnMe (Pekkanen 2005)

The heuristic evaluation of the site www.returnme.org goes as follows:

1. Visibility of system status

The good thing regarding system status visibility is that there is a clear 'welcome to the website'-message in the beginning of the first page. There are also topics on all of the pages on the site which means you always know where you are. The topics, though, are too small on every page. They could be on a bigger font and more visible from the actual text. Every page also has a distinct title: About the service, Registration, Prices, Contact. The titles guide the user naturally through the site.



Picture 6: Navigation on Usetit.com (Nielsen 2006).

To make navigation easier, there could be a lines saying Front page > About the service > etc. as hyperlinks on top of each page. That way the user would always know where he or she is and how to return to the front page, as shown in the screenshot above.

At the moment the site's window title says "ReturnMe.org – Home page" which should say something more to the direction of "ReturnMe.org – Welcome to the global lost & found service – Front page". After all, home page is not the same thing as front page, and the window title should also explain clearly that you are now at the front page.

The different phases of the service are explained in the front page very briefly and there is a link in two places to the page "About the service" where you can find a big black-and-yellow picture explaining how the service works. It's rather good that that isn't immediately on the front page, but the service could be explained more in detail already in the beginning. The phases of buying are clear in the web shop:

Stage 01: Choose the tags you wish to order

Stage 02: Type in your contact information and the delivery address, if the tags are to be sent as a gift

Stage 03: Pay electronically with Nordea, Sampo or Oko

The phases could also be visible to the user before he chooses anything from the web shop. In the web shop the prices are updated automatically as you choose more products, but the final amount and the products you have chosen cannot be seen in Stage 02, only in Stages 01 and 03.

2. Match between system and the real world

The user may choose between English, Finnish, Norwegian and Polish as the languages of the service, so there's definitely variation and at least a Finnish-speaking user doesn't have to do anything on the site on a foreign language. The web shop only works in the Finnish site at the moment, which is a shortcoming for an international service. The site could also provide a Swedish version for Swedish-speaking Finnish population.

Technical words such as 'teletunnistetietojen' could be explained in a more simple way, http://www.returnme.org/fi/Palvelun_toiminta/, but otherwise the site uses clear, understandable language.

The links, functions and the web shop with its ordering, buying and paying are all in a logical order. The About us-link should be the last link in the navigation bar.

When you click the "Terms of agreement" (Käyttöehdot)-link on the registration page, a new window opens with a PDF-file including an English version of the front page. This is a serious usability problem and must be reported immediately.

Also in the registration form there is a problem with the language selection: all the other countries are written in Finnish, but when you want to choose Finland, it is not found after "S" as in "Suomi", but it's in "F" as in "Finland".

There some illogical aspects to the tags: the ReturnMe website is mentioned but there is no "www" in the front of it (just returnme.org) and in the tag it says "Send ID-code as an SMS..." but for clarity's sake it should say something in the lines of "Send the code below as an SMS.."

One important matter also is that the tags are all in English. This creates a problem if for example an elderly person who doesn't speak English and doesn't understand the instructions in the tag, finds the item. This might exclude some segments from using the service.

3. User control and freedom

The web shop supports undo and redo: when buying from the web shop you get 'edellinen vaihe' (previous stage) and 'seuraava vaihe' (next stage) on every page, which creates confidence in the security of the shop. The rest of the site doesn't support undo and redo.

One important problem regarding user control and freedom of the site is that there is no visible way to return to the front page. The user can

return there through the picture on the top and the ReturnMe-text on the up left, but there is no clear 'home' button to be found nor 'Back to front page', 'Home' or 'Front page' links on any page.

The language selection also disappears when you move away from the front page, which means if you go to for example the About us-page, you can't change the language from there directly, you have to go back to the front page. There is not enough crossing in links: you should be able to move back and forth for example in the web shop. The phases, 1 BUYING - - 2 ORDERING - - 3 PAYING should all be hyperlinks.

4. Consistency and standards

The website is rather simple in a way, as it follows standards in for example marking and language pretty well. Most of the links are marked in a standard way (blue and underlined) and they don't for example change into bullets along the way.

In the Contact us-page there is only a link to an e-mail address, which opens in an Outlook-format. There should be specific text area or a box for sending mail to the company, where you only type in your e-mail address, perhaps choose a topic and write the text and send it.

5. Error prevention

Menus are being used throughout the pages when possible, and therefore the user has to write as little as possible. The feeds should be clarified more, for example in the registration page you can't automatically know in what form you should type in your phone number as it should be typed in the international format +358....

To avoid any errors in the web shop, when products and prospective amounts are being chosen, the only thing being updated should be the amounts (1, 2, 3...). At the moment the amount and the word "pieces" are tied together in the drop-down list (1 pcs, 2 pcs, 2 pcs...). The good thing is that the final sums are updates automatically and there is a euro-sign (€) in the price, so that there is no confusion on which currency the prices are mentioned. This is especially good for future international buyers.

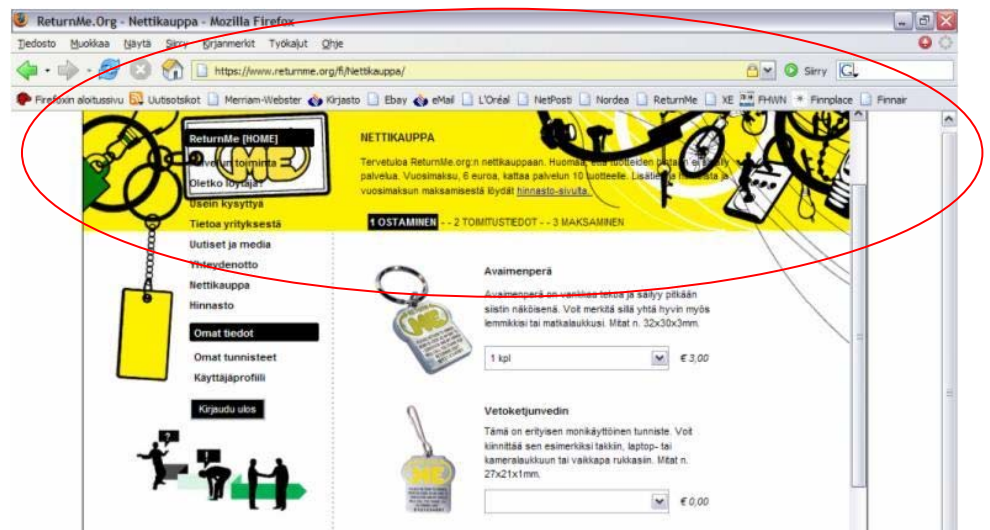
6. Recognition rather than recall

There is not too much typing required in the site. For example in the web shop you can choose the quantity you want from a drop-down menu. The price is always updated, in the correct currency, but you should see on the 'Toimitusehdot' (Terms of Delivery) page what you have ordered and how much at the same time you're writing down

your contact information. After choosing what you want you should still see exactly what you have bought and for what amount in the same page.

7. Flexibility and efficiency of use

In the web shop there is some disturbing action with the black picture on the top of each page: when you scroll the page down completely, some of the text goes on top of the picture and disappears out of sight, as showed in the screenshot below:



Picture 7: Text disappears in the web shop

There should also be more shortcuts and cross-linking throughout the pages.

8. Aesthetic and minimalist design

There is too little information given on the site about how the service works and it is scattered in too many places, and this is one of the most serious issues on the site. The information should also be a lot clearer for a normal, non-expert user: for example, when you look for some information on what you should do first before anything else, you can't find it. There should be one clearly marked and logical place for this sort of information.

There are also too many scroll-down bars on several pages, especially in the web shop. Sometimes the bars also appear 'inside' the page on some pages which means you have to operate 2 different bars next to each other. When you choose a product in the web shop, this is exactly what happens. At the registration site it is explained briefly what happens when you registrate, which is very good for navigation.

9. Help users recognize, diagnose, and recover from errors

On one hand, this area is covered weakly in the site. When you type the wrong registration info, you get an error message and then you can choose ‘Have you forgotten your password?’, but you’re not explained what happens after you type in your e-mail address. If you don’t type in anything at all and press ‘send’, you still get a message saying that ‘We have sent you an email with your new password!’” On the other hand, though, it was discovered that if the user has found a ReturnMe tag that hasn’t been registered and tries to return it by following the instructions, he or she receives a SMS message pointing out clearly that the owner of the item hasn’t registered the tag and the item can be returned to the nearest police station.

The error messages should be more detailed and more so than anything, they should be correct. When a user makes a mistake in the sign-in, he or she only gets a message saying that you have made a mistake, not any guidance on how to recover from it. The error messages are in the right language, but they don’t explain what to do differently.

10. Help and documentation

There is no obvious ‘help’ link or page available from the front page. Help in the form of an e-mail address can be found under the link ‘Contact info’.

Like mentioned before, the site should provide the user with simple and understandable advice and maybe even simple numbered steps on how to use the service and get it working. The picture that includes the guidance on what to do when you lose something that has been tagged is enlightening and amusing, but a little bit unclear.

3.2.1 Screen real estate

Screen real estate is basically the amount of space available for an application to provide output on a display. Usually the effective use of screen real estate is one of the most difficult design-related challenges because of the desire to have as much data and as many controls as possible visible on the screen to minimize the need for hidden commands and scrolling. Simultaneously, excessive information may be poorly organized or confusing, which means effective screen layouts must be used with appropriate use of white space or blank space (Usability Glossary... 2005).

According to Jakob Nielsen, the screen real estate of a webpage can be broken down into the following categories: unused, filler, self

promotional, advertising and sponsorship, content of interest, navigation, welcome & site identity, operating system & browser controls (Nielsen 2000: 18, Nielsen 2002: 57). For the front page of ReturnMe, the screen real estate is divided as follows:



Picture 8: Screen real estate of ReturnMe.org

	unused	31,9 %
	filler	16,2 %
	self promotional	0 %
	advertising and sponsorship	0 %
	content of interest	18,2 %
	navigation	7,9 %
	welcome & site identity	6,8 %
	operating system & browser controls	19 %

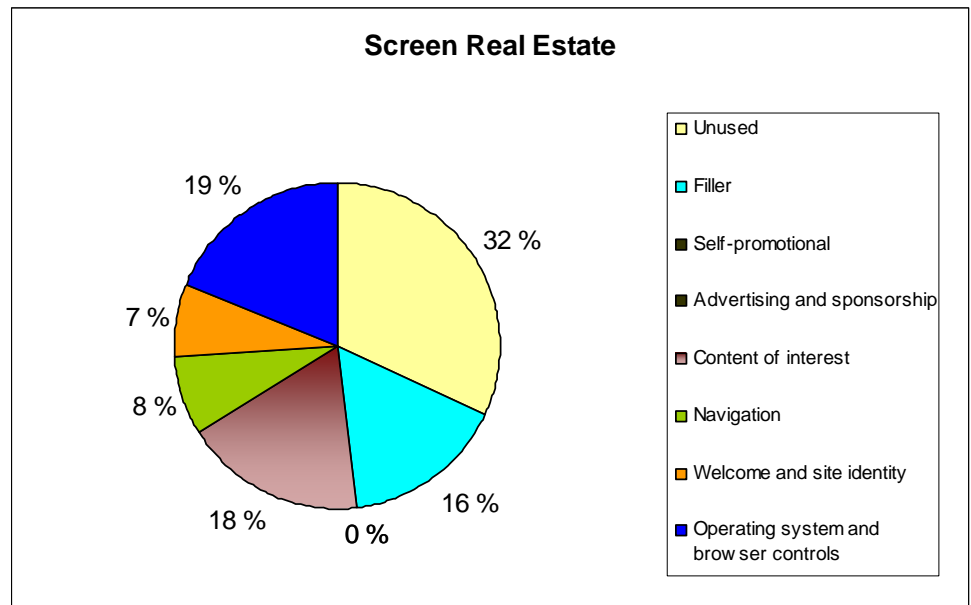


Table 1: Screen Real Estate of ReturnMe

What these figures tell us is that first of all there is too much unused space. Unused space, or whitespace, accounts for almost one third of all the screen real estate of ReturnMe.org. Jakob Nielsen (2000: 18, 22) doesn't consider whitespace as waste or useless, and he also says it would be a mistake to design overly compact pages. Whitespace can guide the users' eye and help them understand the grouping of information. However, web pages should be dominated by content of interest to the user, which, in this case, is only 18 % of the screen real estate. As a rule of thumb, content should account for at least 50 % of a page's design, preferably closer to 80 % (Nielsen 2000: 22).

The two things that are completely missing are self-promotional content and advertising and sponsorship. On some commercial sites especially the advertising can be too heavy and can therefore scramble the whole message and meaning of the front page, but some very subtle advertising for example from ReturnMe's collaborator GoldenDoor might be in place. Also a self-promotional effort regarding the web shop – i.e. an accentuated link button from the front page to the web shop – could also be very functional.

3.3 Visual heuristic evaluation

Despite the technical usability problems of the ReturnMe website, the visual look has been accomplished relatively well. The website has been designed around three main colours: black, yellow and white. According to Merlyn Holmes (2002: 283), white and yellow should never be used on the same context, since light colours stand out from

each other very badly. Despite this the usage of the two colours has been managed very well, since black has been used to outline and separate between the white and the yellow. The entire idea of the site is to use black and white as counter colours in the main text and yellow is used to highlight pictures and other graphic elements. These three colours have created an appealing entity, which is easy on the eye but still manages to grab attention. As Holmes emphasises (2002: 283), there is a natural limitation to the number of colours that can be used effectively, which means colours should be used moderately and with consideration, since a large scale of colours can strain the eye. Jakob Nielsen has also indicated that there should be a maximum of 5 colours used on a site (Kuutti 2003: 100).



Picture 9: The picture on the top right of the front page

The white-and-yellow pictures that have been used for emphasis can be a little confusing at times, though the black outlines do give a certain balance. At times, though, black on such a light background is too overwhelming and distracts from the actual text, which is naturally the most important part on any site. The picture on top right of the front page (Picture 10) is graphically amusing, but very ill-defined. By using only three colours the picture can't obviously be very clear, but it might've been a better idea to make it simpler and more minimalist. Perhaps only the illustration of the Nokia phone on the very right side and the small human figurine standing on top of what seems like an mp3 player would have been enough.

Holmes also explains the concept of colour coding (2002: 282-283) and using different colours in different parts of the application. The colour coding of ReturnMe's site has been implemented rather well, which means the colours remain the same throughout the site; the same three basic colours are present at all pages. The biggest problem regarding colour coding is that different links have been executed rather badly. This means that there are both black and blue hyperlinks in the text. For example the navigation links on the left hand side are in black, which is also the colour of the main text. There are also unnecessary bold words on the site, which makes following the text

difficult, since they attract the user's attention continuously. Bold and bigger text should only be used for important headings.

All in all, the site is visually in a reasonable condition, and regardless of the unconventional colour choices the site looks surprisingly good. The only suggestions for improving the visual look of the site would be to simplify the pictures and concentrating more on colour coding the site and especially the hyperlinks. Sticking to the yellow-white-and-black style is an interesting move and can even be regarded as effort towards more effective brand management, since everything in the ReturnMe-brand beginning from the logo is so fundamentally concentrated on yellow, white and black.

3.4 Summary: Lessons learned from the heuristic evaluation

Based on the heuristic evaluation, it has been decided that the following topics that proved to be problematic will be included in the usability testing of the ReturnMe website:

1. Changing the language settings of the site
2. Returning to the front page
3. Personal opinion regarding the visual look of the site
4. Looking for help when there's a problem with the site
5. Finding out information from the site on how the service works
6. Registering into the service and activating a tag

These topics will be formed into actual questions for the user tests.

4 Testing procedures

4.1 Goals

The goal of the user tests is to uncover usability problems on the website. There are always some issues that can't be found out with a heuristic design, so the user tests are done to complement the expert evaluation and to find out the remaining usability problems.

4.2 Test methods

The tests will be executed using the Discount Usability Method described in Chapter 2.5.2. and especially the Think aloud-protocol according to Jakob Nielsen. Also post interviews will be done. The post interviews will be conducted in order to gather feedback and opinions after the tests.

4.3 The process of testing

There are some preliminary actions that should take place before the testing. First of all, a heuristic evaluation has to be conducted on the entire ReturnMe website. Based on the usability problems, weaknesses and strengths the user test questions will be created. The results will be evaluated immediately, and the notes will be disseminated afterwards to append the immediate findings. It was decided that the schedule of the testing will be limited to 5 weeks, during which all the tests have to be executed. This should be a long enough time to do the tests, summarize the results and convey them over to the management of ReturnMe.

4.4 Budget

As the Discount Usability Testing method described in chapter 2.4.2 will be the main theory used in the tests, there will only be a limited number of participants in the tests. After all, even with a very small number of participants it is highly likely that a clear pattern of problems emerge with very little variation (Barnum 2002: 142). That is why the amount of participants has been limited to 6. The actual recruitment of these 6 users required no monetary efforts from anyone, and therefore the only cost regarding the participants was rewarding them for taking part in the tests. This was easily done with the help of ReturnMe, who supplied the users with free ReturnMe

keytags and one-year free service that they got from and was paid by ReturnMe. According to Carol Barnum (2002: 145), the test personnel can offer small gifts, such as mugs, mousepads, key chains or even food, as incentive for taking part in the tests. Since monetary compensation couldn't be offered to the participants for taking part in the tests, it was decided that the complimentary keytags from ReturnMe and some refreshments after the tests should be quite enough.

It was agreed upon with the management of ReturnMe that they will not actually pay for the research. They did agree to pay for the refreshments and for the test personnel's transportation to the field, i.e. the test users' homes. The testing personnel will also receive a lifetime supply of ReturnMe keytags.

4.5 Results gained from the tests

All the problems and results gained from the tests will be dissolved in the executive summary for the management of ReturnMe from the test notes in the following manner:

Disaster	Extremely serious problem, prevents completion of task, has to be reported and fixed immediately
Serious	Serious problem, has to be fixed
Cosmetic	Minor problem, purely visual or cosmetic
Ok	A good solution, worth keeping and using in the future

5 Requirements for the testing environment

5.1 Testing environment

In the testing situation the aim is to create as authentic a situation as possible beginning from the first time the test user starts to use the system, so with that in mind it was decided that the testing environment will be in each test person's home. After all, every potential customer becomes familiar with and uses the system at their own home or apartment and therefore also faces any possible problems there. It is these situations the testing aims to facilitate and bring forward.

A clinical, laboratory-like setting can highly affect a person's behaviour in a test situation, so it was decided to be a bad choice for this testing. One reacts and adapts to different situation differently in a familiar environment than in an unfamiliar one. Especially since there will be older people among the test users, who might have difficulties in adapting to a new and unfamiliar setting, field testing instead of laboratory testing was an obvious choice. Everyone will surely be more relaxed at their own home and therefore the testing situation will be as 'real' as possible.

5.2 Equipment and facilities

The testing itself only requires a computer equipped with a internet connection, on which the testing will be implemented. Naturally the test personnel must have some paper and pens to make notes during the testing situation and also a list from which one can check and keep up with the questions.

5.3 Software & Tools

Regardless of the operating system (Windows, Macintosh) there will always surely be some kind of web browser on any given computer. Windows is the most commonly used operating system, and with a Windows operating system you automatically get Internet Explorer, the most commonly used web browser. Internet Explorer is perfectly suitable for the testing purposes (even though in the early stages of the heuristic evaluation it was discovered that the web shop didn't function at all with Internet Explorer; the problem was fixed immediately). In case there is no web browser on the computer for some reason, there are many browsers that are free of charge and can be downloaded from the web, such as Mozilla Firefox and Netscape

Navigator. There are no other requirements regarding software and equipment.

6 Preparation of the Tests

6.1 Test personnel

Carol Barnum summarizes that the optimum size for a team would be 3 persons. She says that when putting together a cross-functional team, all those with a common goal of learning about the product should be included. In a corporate setting, these stakeholders may come from development, marketing, sales, training and technical support (Barnum 2002: 141). In this case, though, the only stakeholders are me and the company's management, which will convey the findings of the tests to the outsourced web designers. And since the manager of the company naturally can't be present in the testing, the only test personnel is me.

Barnum also says that the roles of the team members vary from facilitator/briefer to observer/note-taker and camera/video operator (Barnum 2002: 18, 204-205), and since the web site itself is relatively small and a camera won't be used, the responsibilities of the facilitator and the observer can be easily taken care of by one person. The test won't be too extensive either, so it is possible to control the test and take notes perfectly well at the same time.

It also helps that the test personnel is already familiar with most of the test users, which will help in creating a calm and relaxed atmosphere for the tests. This will hopefully encourage the users to use the Think aloud method more freely.

6.2 Education of the test personnel

The education of the test personnel regarding the methodology and processes of usability and heuristics is mostly concentrated on studying related literature and articles. In addition to one course regarding web technologies, in which usability was covered briefly, I have had a personal interest for usability and the writings of Jakob Nielsen for a longer period of time. Nielsen's pioneering work in the field of usability has been a cornerstone for the theory in this thesis. Usability as a concept is very broad and therefore naturally needs the efforts of other professionals in addition.

The user tests form the essence of the thesis so it required careful planning and education to play out properly. This was also the most interesting part of the studying process.

6.3 Planning of test assignments

Planning the test tasks took a serious amount of time and required getting acquainted with the complexities of the ReturnMe service and site, since there is nothing to be accomplished with bad, invalid test assignments. The planning started off by studying related literature and other material about usability testing and especially about drafting the test tasks for the users and then performing the heuristic evaluation, which obviously pointed out the biggest usability problems and gave a natural outline to the test tasks.

After this it was time to clarify and define exactly what the management of ReturnMe wanted to learn through the tests. It had to be 100 per cent sure that the test assignments complied with ReturnMe's goals, needs and wishes before the actual testing starts. After consulting once again with ReturnMe it was much easier to continue with compiling the perfect set of tasks.

Jakob Nielsen says that "the basic rule for test tasks is that they should be chosen to be as representative as possible of the uses to which the system will eventually be put in the field" (Nielsen 1993: 185). This means that when the system being tested is a website like the one of ReturnMe, the tasks should represent possible situations that might and will happen with a normal visit to the site. Nielsen also continues to say that the tasks should provide reasonable coverage of the most important parts of the user interface (Nielsen 1993: 185). These are the reasons why tasks such as finding information about the service, purchasing an item from the web shop, registering a tag and finding help in the tests were included, since these are all situations that are very likely to happen to an average customer visiting the site. From the heuristic evaluation it was also noticeable that changing the language of the site and returning to the front page were rather tricky, so they were also included as tasks. Nielsen (1993: 186) also continues to say that the test tasks should never be frivolous, humorous or offensive, which naturally goes without saying.

When it comes to wording the test questions, the goal was to follow some basic guidelines about making good, valid and non-leading questions, but also keep in mind that the questions should be easy to understand and follow. A leading question would be "Did you like the appearance of the site?", so instead of that something in the likes of "What is your opinion on the appearance of the site?" will be asked. Since some additional questions during the course of the testing will

be made – just to keep the users “thinking aloud” – the questions should be neutral and the kind that allows the users to answer in their own words. One should always also ask open-ended rather than closed questions. A closed question receives a limited yes/no response, from which very little can be learned, whereas open-ended questions allow the user to share information more broadly and freely. You often end up learning much more than you actually anticipated (Barnum 2002: 96).

The one thing that one must remember is that you cannot test everything. Like mentioned before in Chapter 2.5, usability testing is not validation testing nor is it quality assurance testing. Usability is more of an exploratory tool to learn about user preferences, satisfaction and problems (Barnum 2002: 141), and that it is exactly what is meant to accomplish with these user tests.

6.4 Preparation of tests

The preparation of the tests is a key factor for a successful completion of the tests. In the actual preparation stage the wording of the assignments was checked and double-checked so that it was clear and logical, and the questionnaire was also revised numerous times so that the order of the questions was as logical as possible. It was also studied how the actual testing situation would go. During the preparation stage the assignments changed numerous times, and the goal was to find the best possible ‘mix’. As was later found out, there were still some minor mistakes in the order of the questions, but as a whole the last version of the questionnaire was satisfactory.

I also tried to prepare myself for how to react when a test user encounters a problem and is asking for help. It was important to figure out how to appear as calm as possible and how to convey only the necessary information to the user when the situation requires it. A short list was made about the different types of problems and thought was given to what kind of help to provide for each of these problems. This was to ensure a full preparation status for the tests.

Practising using the pads which will be used to make notes on during the tests was one of the phases in the planning process, and it was important to figure out how to be able to write quickly and effectively during the tests. In the testing situation efforts to manage the users, the test situation and also my notes has to be combined – i.e. the most essential information has to be written very quickly. The notes have to be made in a clear enough manner so that when the proof writing starts, it should be understood and remembered what happened in each situation. The conclusion was that note-making with a pad and a pen will be sufficient.

Most of the actual preparation happened in the test users' homes, where it was made sure that the computer, Internet connection, sitting arrangements and other factors were functioning well. It was also taken care of that all the needed material was easily accessible and there wouldn't be need to look for any papers etc. during the tests.

The ultimate goal was that everything would go well during the testing and there would be no major problems. This is why the 'easiest' test user was chosen to be the first one, which was made to also test me and the test assignments. The user was a technical student who had previous experience on computers and using the Internet. Many of the practical problems were discarded in the first test, but this arrangement still presented a chance to notice faults in the first version of the assignments.

6.5 The implementation of tests

The implementation of the tests happened in each test users' home so that the environment would be as calm and relaxed as possible. All external distractions should be kept to a minimum. The tests were completed in a room with just me and the test user, and everyone else was asked to leave the room for the time. This was only because hearing comments such as 'Click there, click there!' or 'You just missed it!' from any outsider observers during the test can be very disturbing. The whole point of the test is to find out how you can operate in a web shop without any help from anyone, and usually help isn't even available.

When the best possible room for the tests was chosen, it was made sure that everything was in place and only after this the test user was asked to enter the room. I wanted to sit near the test users at all times so that they would see me during the test and not think like they are talking to themselves during the implementation of the Think aloud-method. If a problem would occur, someone would also be close to give the user help and the closer I am to the user and the screen, the better it is visible what's happening at any point.

Firstly the users were explained what kind of assignments they'll be performing and what kind of expectations they might have of the tests and how they should to behave during the test. After this it was emphasised that the user can't do anything wrong and when there is a problematic situation, it is not because of the user, but because of the system. It was also mentioned that the user can stop the test at any time.

After the preliminary explanations there were some facts told about ReturnMe to the test users so that they would know a little about the

company they're dealing with. After this the list of assignments was handed over and the user was encouraged to start reading the first question. Naturally throughout the tests the user's reactions, actions and thoughts were examined and listened to closely. Everything needed to be written down starting from their expressions to their comments in order to understand their thought processes better.

6.6 Documentation

The goal was to make as accurate and specific notes as possible during the testing, so that later there would be no difficulties in proof writing them. The notes that are made during the course of a testing are naturally made in a hurry and there is no time to focus on grammar or handwriting, since new situations that needed attention come forth continuously. The notes were meant to be proof written as soon as possible after the tests, when the events are still in recent memory.

There was an unofficial individual report made on each test including individual thoughts and comments regarding the course of the testing. There was also a short summary after every test report about the major problems that arose during the test so that it would be easier to decide whether something should be changed in the assignments or not.

6.7 Feedback

After each test there was a post interview conducted on the users where they were asked to share their unofficial opinions about what they thought about the site and the test itself. This was to find out general opinions about the site and its content. They were also asked to define why exactly they thought the site was good or bad in their opinion.

The test users were also told how their tests went and what the good things were he or she did during the test. This was merely a formality since it was unnecessary to let the test users walk out thinking they did something wrong at any point. If the test did go badly, the user was told that a lot of important information was gained about the site because there's obviously something wrong in the site if the user can't use it. As Steve Krug (2000: 11) mentions, the user should be able to "get" the Web page without expending any effort thinking about it.

ReturnMe was continuously given reports on the progress of the tests and the problems and shortcomings that were encountered, but this was only for catastrophic problems. Most of the results were given to them when all the tests were finished. The final executive summary included the results, usability problems and suggestions on how to

solve the problems by altering the web pages. The final decision was naturally ReturnMe's as to what elements of the site they want to keep and what to change according to the recommendations.

7 Test users

7.1 Recruitment of test users

Recruiting participants can be a major issue affecting the budget that is set for the testing. Companies that have a very small or no budget at all often resort to recruiting test users ‘down the hall’. It can be a fatal flaw to the testing, since someone who is down the hall or even on the other side of the building might not represent the actual user of the product. No matter how removed the employees of the organization might be from the product, usually they still have some understanding of the technology or even the terminology that is associated with the product and therefore are not a typical or possible user of the product. Finding real test users for the tests is one issue the testing personnel must always take into consideration in the recruiting process (Barnum 2002: 143-145). Taking this into consideration, the test users that needed to be found for these tests had to be completely unaware of the existence of ReturnMe – so that they have never used the service before – but who are still able and possibly interested in using the service. This means also that they have to fit the potential customer base – the target group – of ReturnMe.

According to Barnum (2002: 145), recruiting friends or even family members for the tests is possible, if they match the user profile. Recruiting participants straight from the streets can also work, but in this case it was decided to be too time-consuming. Also using the company’s customer base is a possibility (Barnum 2002: 145), but not in this case, since the whole idea of this research is to test the product on users who are experiencing it for the very first time. People in the customer base are already familiar with the service, and one of the topics to be tested is first impressions and ease of use for a first-time user. Other possible places (mostly for companies with more resources at hand) to look for participants are user groups or professional organizations, newspaper advertisements and outside agencies such as employment agencies and marketing research firms (Barnum 2002: 192-193).

With this in mind, recruitment of the users started from my family and friends. This worked out rather effortlessly, since half of the test users were recruited through friends and relatives on a short notice and half were found through the manager of the ReturnMe, which also gave some variation regarding age and other demographic factors. It is also beneficial for the research that the tester and the test user know each other. The atmosphere is more relaxed and less clinical and the test users will be able to give more truthful critique. On the other hand, it will be easier to immediately ask for help, if an assignment doesn’t go

well at first go. Consideration must be used when giving help to the test users; it must only be done when it's absolutely necessary. The test user might also get frustrated if he or she can't find the solution to a problem regardless of extensive efforts, so a balance must be maintained in the help giving.

When recruiting the test users one important factor to take into consideration is that taking part in the test is completely voluntary, and nobody has to take part if they don't wish to for any reason.

7.2 Profiles of the test users

As established in the previous chapter, the test users of this test will be regular people, who fit the target group of ReturnMe: in other words, people who might be ReturnMe's potential customers. They also don't have any previous knowledge of the company or the service, and the company also wished that the test users would have different backgrounds regarding factors such as age and computer literacy.

It was decided that the testing wouldn't be limited around one specific user group. With this it is meant that it would be useless to conduct the tests only on people who have been using computers and the internet during their entire lives. A 22-year-old student will more likely be more accustomed to using computers and systems than a 40-year-old. Also, people who have never used computers will not be involved in the testing, since there is no use in involving that group at this point. Perhaps in the future the service will be expanded so that it can be used completely without computers (a truly mobile service).

There will be altogether 6 test users. The tests will be conducted anonymously and none of the participants will be familiar with the service beforehand.

	Age	Occupation	Knowledge of computers	Location
Test user 1	23	Student of electric engineering	Very good	Tampere
Test user 2	50	An entrepreneur	Basic	Tampere
Test user 3	51	A medical doctor	Basic	Tampere
Test user 4	30	An engineer	Very good	Ylöjärvi
Test user 5	30	A chef	Fairly good	Ylöjärvi
Test user 6	25	Business student	Fairly good	Tampere

Table 2: The test users

7.3 Education of test users

There will not be any major education or orientation given before the testing, because the purpose of the testing itself is to find out how the test users are able to use the ReturnMe-system in an authentic environment, which, in this case, would be their own home, and with the skills, abilities and knowledge they already have. There will be no one telling them how to use the system in normal circumstances, so in any case they would still have to become familiar to the system on their own. There is also no need to study and teach the basics on how to operate a computer, since the people who simply cannot use a computer at all or have never done so, have already been ruled out in preliminary stage of choosing the test users for this testing. They are, after all, not in the target group of the service.

In the very beginning of the testing the company and its services will be introduced briefly and the users will be told what the service is mainly all about. The actual test assignments will be given only after the test user for sure understands what the test – so therefore not necessarily what ReturnMe – is all about. As in any usability test situation, the testing personnel must be very cautious of giving any helpful hints or clues that might help in the execution of the assignments.

7.4 Permission for testing

There was no need to ask for any official permission for testing from the test users, since all of them were willing to take part in the tests, which were also very informal in nature. The management of ReturnMe didn't have any need for such permissions either, even though sometimes in a larger scope they are used, especially if filming is involved.

8 Test assignments and results

8.1 Description of test assignments

1. You have heard of a company called ReturnMe (seen an ad or a tag at R-Kiosk) and you want to find some additional information about the company. The first assignment is to go to the website and find out as much as you can about the service and how it works. Where do you go on the page? How easily was this information available? Did you have to think where you might find it or click more than one link to find it? Do you understand based on the information on the website how the service works?

The aim of this question is to find out how easily potential customers are able to find out understandable basic information about the company. It seems as though when a user becomes acquainted with the service for the very first time, the principles of the service are found complicated and very difficult to understand at first, even for a professional. It took the testing personnel too long a time to completely understand all aspects of the business, and it should not be so with customers. The aim is to eliminate any comprehension problems that might occur with new potential customers.

2. You have bought a ReturnMe key tag from R-Kiosk. Read and follow the instructions on the package. Go to the website and register the tags. Were the instructions understandable and helpful?

3. You get a ReturnMe Luggage tag and you want to activate it also. Log on the service and activate the new tag on the website. Select the type of property that you have tagged with the two tags.

4. Describe with 3 words how you find the appearance of the first page

5. You have a question about the service and you want to send an e-mail to the company. How do you do this and where do you find the needed information?

6. You are satisfied with your key- and luggage tags and have decided that you want to buy another key chain and one zipper puller. You need to find the web shop and buy the items. What would your comments be on the overall transaction? Could some area be improved?

You will not actually have to buy the items, you can end the assignment at the final click. To make the experience feel real, you

will be shown a screenshot of the final stage (when your payment has been accepted).

7. Now you would receive an order confirmation via email. You will see a copy of the actual email you would get. What comments do you have on this email? Would you like it to include more information?

8. There's a problem with the registration. Where can you find help for your problem and do you think it's sufficient enough (did it solve your problem)?

9. You have found someone's lost property with a ReturnMe tag. You want to use the website to return the item to its owner. How do you do this?

10. Name three things that could be improved in the service / on the pages.

The test users will naturally get to keep the tags used in the tests. The tags include a free 12-month service.

8.2 Test results

As a general rule, the test users had the most difficulties in understanding the whole meaning of the service. As most of the test users didn't quite understand what the company actually does and why, the questions were not only visibly difficult but also time consuming to execute. This also led to some minor frustration and tiredness from the users' part, which also might mean that the questionnaire consisting of altogether 10 questions was too long. The results will be dissolved question by question. In chapter 9 there will be a summary of the results and the comments and recommendations to the management.

All the tests started off with a short briefing about what will happen during the tests, why the tests are being done and what the company does (very shortly, since after all the users were not to know too much before the tests). The Think aloud-method was also explained to them and that they should basically keep speaking aloud what's on their mind all throughout the tests. After this they were asked to open a web browser and move on to the given URL address.

As the first test started with the first user, he was handed a key tag, the instructions that come with the tags and finally the first assignment. It was immediately noticeable that the user had been given too much information and too much to do at first, and he didn't quite comprehend what he's supposed to do. From this it could be

understood that the first question should definitely be about finding information about the service instead of going straight into registering the tags. It was obvious that this needs more back-up information, and if the situation was “real”, a first-time customer would not have enough information to start registering a tag immediately. Therefore, the question number 4 became question number 1.

1. You have heard of a company called ReturnMe and you want to find some additional information about the company. Go to the website and find out as much as you can about the service and how it works. How easily was this information available? Do you understand based on the information on the website how the service works?

Actually the first task was to change the language setting of the pages, since the default language was English. This task wasn't made the first actual question, since the goal was to see how quickly the users understand that changing the language is possible and there is a place in the front page where you can do it. This test was not a trick question, it was only done to find out if the users are able to locate the language links on their own. Naturally they could have done the test in the English site, but all preferred the Finnish site. Fortunately everyone managed to change the language eventually, some had to be helped and some could do it on their own. The users commented that the language links were not visible enough, and some wished that the links would be in the form of flags (Finnish flag for Finnish, British flag for English etc). Some of the users were also puzzled about the fact that the site is translated into Norwegian and Polish, but not Swedish. One comment at this point came also about the 'unusual .org-suffix of the website'. This can be explained with the fact that www.ReturnMe.com has already been taken.

As a general rule regarding the actual first question, the users had to click more than one link to look for satisfactory information about the service. Most of the users clicked the 'About the service'-link, but didn't find enough information there. The users also opened the links 'About us' and even 'For the finder', but none of the pages contained clear, simplified instructions. The second user accidentally closed the entire browser at this point, as she got frustrated and tried to get back to the front page, where she started.

All in all, the users found the search for information time consuming and frustrating. All the users clicked at least 2-3 links. It can be said that the information is rather scattered and should therefore be collected behind one obvious link.

2. You have bought a ReturnMe key tag from R-Kioski. Read and follow the instructions on the package. Go to the website and register the tags. Were the instructions understandable and helpful?

This was the assignment that had the most devastating results. Even though it was changed from being number 1 to 2, it was still extremely confusing for all of the test users. Most users hardly even understood that you have to first register yourself into the service and only then can you start activating the tags on the website. Some users found the instructions on the package otherwise clear but missing the point that you have to register first, while some didn't understand any of it – what they're supposed to do and where. Most of the users did say that they needed extremely clear instructions in the style of 'now you do this and now you do that, in this order'.

When the users managed to find their way into the correct site and started to add their information into the registration sheet, other problems occurred. The users didn't remember how to write their phone number in the international format (+358); there was a PDF-link saying "Terms of the service", which opened into a new website that was basically the front page in English; when a tag was activated the user got a SMS message saying that the lost item (in his hands) has been found; the country Finland was found in F rather than S (Suomi) even though everything else in the country menu was in Finnish; the users didn't understand why the e-mail address has to be written in the form twice and how long should the password be. They also wondered whether their user name is their e-mail address, since that's the only one they are asked to write in the form, and then later the service asks for both your user name and password to sign in. Many problems occurred in this assignment, but on the other hand, the rest of the assignment, activating the tags was very easy for all of the users. They found the link from the front page easily and activating the tag was effortless.

3. You get a ReturnMe Luggage tag and you want to activate it also. Log on the service and activate the new tag on the website. Select the type of property that you have tagged with the two tags.

This was in conjunction with the second assignment and was in the questionnaire in order to test if the test users understand how to do the activating again and if they realize that you have to be logged in the service (from the front page) when you want to activate more tags. All the users knew how to log in with their user name and password and use the Own pages-section of the site very well, so there were no problems with this assignment.

4. Describe with 3 words how you find the appearance of the first page

The words that came out the most were [visually] confusing, stylish and 'clean'. Other words (and phrases) that came out were clear, simple, dull, nice, problematic for a beginner, 'visually bad', 'that black graphic area on the right is confusing', 'text is too small everywhere', 'the picture of the key tag is too small', 'not too crowded' and 'bad choice of colour'. This tells us two things. Most of the users did find at least one thing wrong about the front page, but most of them were very minor things and purely cosmetic. No one for example said that they definitely think that the appearance of the site is making things difficult or harder to understand or 'that shouldn't even be there'. If the site's appearance doesn't exactly support the company's mission and message, at least there's nothing in it that would make it much harder to understand.

Then again, when a page is described 'confusing' by many, that is quite a problem. It might also be that the reason they found the appearance so confusing is that – and this is the second finding regarding this question – the question was asked at the wrong point. The users had already started to do the assignments, the completion of which was difficult for many users. This way they might have associated the confusing nature of the service with the appearance of the service. Visual aspects are often connected with first appearances, so in hindsight, this question should have been asked before anything else. The order of the questions wasn't changed anymore, since it had already been done once, and this question was more a 'filler' question than anything else.

5. You have a question about the service and you want to send an e-mail to the company. How do you do this and where do you find the needed information?

About half of the users found the correct link (Contact info) immediately, so finding the e-mail address was relatively easily found. Another problem came forth when the users realized there is only a mailto (Outlook)-link on the site and no special feedback-box where you can type your question and send it directly from the website without having to open up your own e-mail account and then send it from there. Only 2 of the users said they have no problem doing that, the rest 4 would have wanted to have the feedback box.

Regarding the link, there was again one user who didn't manage to find the correct link at all. At first she clicked the 'About us'-link and then got frustrated. She had to be advised to go back to the front page and then click at the correct link. When she got to the correct page, she thought the contact could be made if she clicks the Golden Door-

link, which is on the page also. This, she realized, only takes her to the website of ReturnMe's collaborator, Golden Door.

6. You are satisfied with your key- and luggage tags and have decided that you want to buy another key chain and one zipper puller. You need to find the web shop and buy the items. What would your comments be on the overall transaction? Could some area be improved?

This was a very important question because it tested how the web shop works and whether the purchasing is easy. The outcome of this assignment was a bit of a surprise, since all the users managed this very well. None of them had any real problems with finding the web shop, choosing the amount and product they want and proceeding to checkout. The only murmur was about the fact that you have to pay via credit card, as the customer can't pay for example through mail order. Some users also wondered about the delivery: on the site it is said that the orders always come in a post parcel which costs 5 € (Pekkanen 2005), but if you order only one small keychain, shouldn't it arrive in a cheaper and smaller envelope? This way it would also arrive straight to your door and you wouldn't have to go pick it up from the post office.

One user also would have wanted more detailed instructions in each phase of the buying and more than one remarked that they would never buy anything from the Internet if you have to pay by credit card, but otherwise the process of buying is clear to the users for the most part.

7. Now you would receive an order confirmation via email. You will see a copy of the actual email you would get. What comments do you have on this email? Would you like it to include more information?

The comments that the order confirmation e-mail got were very positive in nature. It was described as very clear and informative. A couple of users did wish that the ordering number or such could be emphasised more. One aspect that was praised highly was the fact that it's said in the e-mail confirmation that there is still a possibility to cancel the order and how it can be done. Some random wishes came forth that the 'wording and outlook' of the message was a little confusing and plain, which most probably means that the message should either be shorter or arranged in a HTML-style format.

8. There's a problem with the registration. Where can you find help for your problem and do you think it's sufficient enough (did it solve your problem)?

Interestingly enough, after reading this question most users opted for trying the Registration-page for assistance. The first user said that "it just made good sense". Obviously there is no help found there for problematic situations, so some users got frustrated at this point and started clicking all the links systematically from the beginning of the navigation bar, as if to find something by accident. Two users decided that at this point they would send an e-mail to the address that was found in the Contact info-page. All the users wished that there would be a link inside the Registration-page and close to the Registration sheet named as clearly as possible so that "you know you have to click here if something goes wrong". It can be said that in this case help wasn't sufficient.

9. You have found someone's lost property with a ReturnMe tag. You want to use the website to return the item to its owner. How do you do this?

The 'For the finder'-link was relatively easily found by everyone. After the first test the users were given an actual stack of keys with a ReturnMe key tag tagged to it, which made it easier to comprehend to the users that they might have actually found it in the middle of a street. Most of the users found the link where you can type in the ID-code and return the belonging to its owner easy to use and simple. In the first test the user had to be notified that you can also do the 'returning' by SMS, which is actually said in the tag.

One user out of the six couldn't use the service, and said it was confusing. She said she doesn't understand the instructions and whether her information goes to the owner of the lost item or does his/her information come to her, the finder of the item. Since this was only one of the users and the rest had no problems at all, it's safe to say this part of the service works just fine.

10. Name three things that could be improved in the service / on the pages.



The users all asked for better instruction and help on how to go on with using the service, 'flashier' and 'cleaner' visual look, better general functionality, bigger fonts on both the site and the key tags and a note somewhere saying that you can return the lost item to its owner through both SMS and the website. One user also made a

Picture 10: A key tag

comment that the middle ring on the key tag seems 'flaky' and 'it'll break in minutes' (Picture 10).

8.3 Evaluation of testing

All in all, the tests went well. There were some slight difficulties during the first test, but that was mostly because the order of the test questions was wrong. In my opinion, though, I performed in the test situations extremely well, and it definitely did help that I knew or had gotten to know the test users in advance; it made the situation definitely more relaxed and allowed the Think aloud-method to function perfectly.

After the tests there was a discussion with each user and they were asked some comments regarding the tests. Since they were all taking part in a usability test for the first time, they all found the whole process very interesting and they usually asked a lot of questions regarding the process it had taken me to get that far in the usability testing process.

The schedule of the testing was limited to 5 weeks, during which all the tests were executed. This means there were 2 tests on each week except the first, fourth and fifth weeks; on the first week there was only the first test after which ReturnMe was informed about the most catastrophic flaw on the site, the problem with Internet Explorer and the web shop. On the fourth week there was also only one test, which was also the final one. On week 5 all the results were gathered into an executive summary which was sent along with all the logs from the tests to the management of ReturnMe.

9 Summary of results

9.1 Language selection

The tests proved that the language selection of the front page is not easy to use at all. Three out of six users experienced problems in switching the language into Finnish. The links to the foreign sites should either be highlighted, written on a bigger font or placed in a different location.

9.2 Information and guidance

One of the biggest problems in the site is finding information and help regarding the service. All the users experienced difficulties in understanding the concept of the service with the information the site offers. There is no one specific page with all the needed information about the service in a clear, understandable format. There are too many places with bits and pieces of information scattered around the site, which means the site needs one logical place with profound guidance beginning from how to register, how to activate tags and what to do when something goes wrong. One possible option is to use a step-by-step approach.

9.3 Links and navigation

There definitely isn't enough guidance throughout the pages, and at some instances you can't exactly tell where you are at the moment and – most importantly – how to return to the front page. There should be links navigating the users effortlessly from page to page, and also there should be a 'Home' or preferably a 'Return to Home page' link in each page. Cross-linking should also be maximized.

9.4 Problems with Internet Explorer

The most serious problem from the lot is that the web shop doesn't work on Internet Explorer browser, which just happens to be the most common and most user browser on the market. Most people – especially novice computer users – never use another browser, since the Explorer comes with the Windows operating system. Downloading another browser from the Internet requires some knowledge and effort and most people wouldn't even understand that

as a cure to make a web shop work. In fact, probably none of them would even bother, given the knowledge. One point worth looking into is also that right after activating a tag the user received a text message saying that the activated product has gone missing... while the product is still in the user's hand.

9.5 Operating principles of the service

The users had difficulties in perceiving how the system and service actually works and what they should do after receiving the tag, especially as they were not familiar with the service beforehand. Giving some essential, basic information was necessary. The problem, of course, is that on one hand if there is too much text and information to be digested it discourages reading it all, but on the other hand much of the information cannot be eliminated if it's important for using the service. One also cannot expect customers to know which bits of the information are the most important and essential ones, and this is why the users who completed the test assignments with least effort were also the ones who had the endurance to read everything on the webpage. The Terms of agreement-file didn't work at all on the first couple of users, but then again it was only user number 4 who even had the interest to read it. The terms of agreement were otherwise clear, but it could be specified somewhere what the user name is. The user name is your e-mail address, which is not mentioned anywhere. This could also be mentioned somewhere else in the registration page.

9.6 Instructions along the purchased tags

The small yellow card holding the instructions on how to activate the tag and purchase the yearly fee were extremely ambiguous and confusing to many of the users. None of the users realized on their own that activating the tag via SMS is the same thing as registering through the website and activating a tag there. It should somehow be explained that you can do it either way. One test user actually thought that you activate the product via e-mail! It should be mentioned at least in the instruction card that you can also activate the product through the website. Almost all users also complained that the text on the tags is written on a too small a font and it should be made a bit bigger.

9.7 Registering

In the Registration-page there should be more guidance regarding how to go on about it, for example on how the phone number should be added (in the +358-format). There should also be a kind of disclaimer on the page regarding who gets the information and to what purpose will they be used. Also, some users wondered over what sort of advertisements will they get if you tick the box where you agree that the company can send you advertisements. The question is that are the advertisements only from ReturnMe or from some collaboration partners.

9.8 Sending feedback

For sending questions and other feedback to the company there should be a text area or a box on the Contact us-page. In this box you could write your feedback and e-mail address and send it directly without having to manually open your own e-mail and then send the company mail from there. Many thought that this was too time-consuming and they would opt for simply not doing it. None of the users use Outlook Express in any case, so that really makes the mailto-link which opens in Outlook rather useless.

9.9 Confusing visual look

Even though ReturnMe's visual design was regarded as satisfactory or even good for the most part in chapter 3.3, some of the users still found especially the pictures on the front page 'confusing' and 'messy'. This is presumably due to the choice of colours, which are yellow, white and black throughout the site, and especially the strong use of black generated different opinions. Technically the colour choices have been made well considering that the colour coding of the site works also for the benefit of ReturnMe's brand, but for some users the contrast was too much. If it is possible without compromising ReturnMe's brand, the site could include one more colour, which naturally needs to be mellower compared to the other colours.

10 Conclusions

From the usability analysis that was conducted on the website of ReturnMe it can be seen that the site had some grave and many minor usability problems. The preliminary heuristic evaluation indicated the most obvious flaws of the system, which gave an excellent starting point for compiling the actual questionnaire for the user tests. The user tests, in turn, gave a new view to some of the issues that were already discovered in the heuristic evaluation and they also produced some interesting results and insights that were perhaps overlooked both in the basic design process of the site and in the heuristic evaluation.

The biggest problems facing the ReturnMe website were those regarding the overall form and place of information, guidance, help and navigation and the general operating principles of the service. In other words, information was not found in a timely manner, which resulted in confusion and a feeling that the operating principles of the system are too difficult to understand for an average user. The solution for this is to not only word the instructions and necessary information in an understandable form, but also to gather all that information into an obvious place, where it's easily found. The information was scattered under so many links that an average user got extremely frustrated looking for it.

Perhaps the most difficult part in the practical implementation of the research, the user tests, was to make the questionnaire as short as possible but also logical, comprehensive and informative enough so that it delivers results and provides as much information as possible to all concerned parties. It was noticeable in the first test that some questions should perhaps be left out and the order of the questions should be changed, which actually made the following tests go much smoother. In the next usability testing situation it is also clear that a slightly shorter questionnaire must be used; 10 questions seemed a lot for some users.

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Appendices

Appendix 1: Finnish translation of the usability test assignments

1. Olet saanut ReturnMe avaimenperän lahjaksi eräältä yritykseltä. Lue ja seuraa pakkauksessa olevia ohjeita. Sinun täytyy mennä webbisivulle ja rekisteröidä tunniste. Olivatko ohjeet helposti ymmärätettäviä ja hyödyllisiä?
2. Olet saanut ReturnMe:n matkatavaratunnisteen ja haluat aktivoida myös sen. Kirjaudu sisään palveluun nettisivuilla ja aktivoi uusi tunnisteesi. Kun olet löytänyt oikean kohdan, valitse valikosta oikea vaihtoehto tunnisteellesi.
3. Kuvaile kolmella sanalla miltä webbisivuston ensimmäinen sivu näytti mielestäsi, kun näit sen ensimmäistä kertaa.
4. Haluat lisätietoa yrityksestä. Mistä löydät etsimäsi? Löytyikö tieto helposti vai pitikö sitä kaivaa? Pitikö sinun miettiä pitkään ennen kuin löysit oikean linkin tai klikata enemmän kuin yhtä linkkiä?
5. Mieleesi nousee kysymys palvelun toiminnasta ja haluaisit lähettää yrityksen omistajalle postia. Mistä löydät tämän tiedon ja löytyikö se mielestäsi helposti?
6. Olet tyytyväinen avaimenperäsi ja matkalaukkutunnisteeseen ja päätät ostaa webbishopista toisen avaimenperän ja vetoketjunvetimen. Sinun täytyy löytää webbishoppi ja ostaa esineet. Mitä kommentteja sinulla on tapahtuman sujuvuudesta? Voisiko jotain osa-aluetta parantaa? Sinun ei pidä oikeasti ostaa webbishopista mitään, vaan lopetat tehtävän ennen maksun hyväksymistä. Jotta tapahtuma tuntuisi mahdollisimman aidolta, sinulle näytetään ruudunkaappauskuva siitä, mitä tapahtuu viimeisen klikkauksen jälkeen.
7. Olet nyt saanut sähköpostissa tilauksenvahvistuksen. Näet kopion oikeasta sähköpostista, jonka nyt saisit. Mitä mieltä olet tästä sähköpostista? Onko tiedon määrä riittävä, toivoisitko lisää tietoja?
8. Rekisteröinnin kanssa ilmenee ongelmia. Mistä sivuilta löydät apua ongelmaasi ja oliko apu mielestäsi riittävä?
9. Olet löytänyt kadulta hukkuneen esineen, jossa on ReturnMe tunniste. Haluat palauttaa esineen omistajalleen webbisivujen kautta. Kuinka teet tämän ja ilmeneekö tehtävässä ongelmia?

10. Mainitse kolme asiaa, joita mielestäsi pitäisi parantaa verkkosivuissa/palvelussa.

Tunnisteet (sisältävät 12kk:n ilmainen palvelu) jäävät tietenkin vastaajille lahjaksi.

Appendix 2: Finnish questions revised

1. Olet kuullut ReturnMe-nimisestä yrityksestä (esimerkiksi nähnyt tuotteita R-Kioskilla) ja haluat tietää siitä lisää. Ensimmäinen tehtäväsi on, että menet yrityksen verkkosivuille ja otat selvää siitä ja sen tarjoamista palveluista. Mistä löydät etsimäsi? Löytyikö tieto helposti vai pitikö sitä kaivaa? Pitikö sinun miettiä pitkään ennen kuin löysit oikean linkin tai klikata enemmän kuin yhtä linkkiä? Ymmärrätkö verkkosivujen tietojen perusteella kuinka palvelu toimii?

2. Olet ostanut ReturnMe avaimenperän R-Kioskilta. Lue ja seuraa pakkauksessa olevia ohjeita. Sinun täytyy mennä verkkosivulle ja rekisteröidä tunniste. Olivatko ohjeet helposti ymmärrettäviä ja hyödyllisiä?

3. Olet saanut ReturnMe:n matkatavaratunnisteen ja haluat aktivoida myös sen. Kirjaudu sisään palveluun nettisivuilla ja aktivoi uusi tunnisteesi. Kun olet löytänyt oikean kohdan, valitse valikosta oikea vaihtoehto tunnisteellesi.

4. Kuvaile kolmella sanalla miltä verkkosivuston ensimmäinen sivu näytti mielestäsi, kun näit sen ensimmäistä kertaa.

5. Haluat lisätietoa yrityksestä. Mieleesi nousee kysymys palvelun toiminnasta ja haluaisit lähettää yrityksen omistajalle postia. Mistä löydät tämän tiedon ja löytyikö se mielestäsi helposti?

6. Olet tyytyväinen avaimenperääsi ja matkalaukkutunnisteeseen ja päätät ostaa verkkoshoppista toisen avaimenperän ja vetoketjunvetimen. Sinun täytyy löytää verkkoshoppi ja ostaa esineet. Mitä kommentteja sinulla on tapahtuman sujuvuudesta? Voisiko jotain osa-aluetta parantaa? Sinun ei pidä oikeasti ostaa verkkoshoppista mitään, vaan lopetat tehtävän ennen maksun hyväksymistä. Jotta tapahtuma tuntuisi mahdollisimman aidolta, sinulle näytetään ruudunkaappauskuva siitä, mitä tapahtuu viimeisen klikkauksen jälkeen.

7. Olet nyt saanut sähköpostissa tilauksenvahvistuksen. Näet kopion oikeasta sähköpostista, jonka nyt saisit. Mitä mieltä olet tästä sähköpostista? Onko tiedon määrä riittävä, toivoisitko lisää tietoja?

8. Rekisteröinnin kanssa ilmenee ongelmia. Mistä sivuilta löydät apua ongelmaasi ja oliko apu mielestäsi riittävää?

9. Olet löytänyt kadulta hukkuneen esineen, esimerkiksi avainnippun, jossa on ReturnMe tunniste. Haluat palauttaa esineen omistajalleen verkkisivujen kautta. Kuinka teet tämän ja ilmeneekö tehtävässä ongelmia?

10. Mainitse kolme asiaa, joita mielestäsi pitäisi parantaa verkkisivuissa/palvelussa.

Tunnisteet (sisältävät 12kk:n ilmainen palvelu) jäävät tietenkin vastaajille lahjaksi.

Appendix 3: Instructions along the tags



Picture 11: Instructions along the tags (front)

6 430022 901018

ReturnMe ON MAAILMAN ENSIMMÄINEN MOBIILI LÖYTÖTAVARAPALVELU.

Merkitse haluamasi tavara ReturnMe-tunnisteella. Saat tekstiviestinä tiedon heti, kun joku on löytänyt kadonneen omaisuutesi. Lähettämme sinulle löytäjän puhelinnumeron, jotta voit soittaa ja sopia, mistä kadonneen tavaran voi noutaa. Salaathan oman numerosi anonyymiksi säilyttämiseksi soittaessasi löytäjälle (näppäilemällä #31# numeron alkuun).

Palvelu maksaa 6 euroa vuodessa ja se on voimassa 12kk aktiivinnista, jonka jälkeen voit hakutessasi jatkaa sen voimassaoloa. Yhdellä vuosimaksulla olet oikeutettu käyttämään jopa 10 ReturnMe-tunnistetta.

PALVELUN AKTIIVOINTI:

1. Lähetä viesti "REG [koodi] [email]" palvelun numeroon 0501538. [koodi] on tunnisteessa oleva numerosarja ja [email] on sähköpostiosoitteesi, esim. "REG 1000012345 matti@yritys.com".
2. Saat paluuviestinä vahvistuksen palvelun aktiivinnista. Lisäksi lähettämme sähköpostilla linkin, jota klikkaamalla pääset omalle käyttäjäsivullesi.

Lisätietoja saat osoitteesta: www.returnme.org. ReturnMe.org Oy

Picture 12: Instructions along the tags (back)