

# Heuristic Evaluation

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IC1007 Human-Computer Interaction

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## **Grupp B3**

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# 1. Introduction

A heuristic evaluation is a method used to evaluate a user interface design using Jakob Nielsen's set of usability principles, known as heuristics. By involving multiple evaluators, the effectiveness of the method can be significantly improved. This is because different people will find different problems. After all evaluations have been completed, the evaluators are allowed to aggregate their findings. They are not allowed to communicate during the evaluation itself in order to ensure that the individual evaluations are unbiased and independent.<sup>1</sup>

The purpose of this evaluation is to find existing issues on the 1177 website and app, which is a website and telephone service that provides information, advice and healthcare. 1177 is run by Inera on behalf of all regions of Sweden<sup>2</sup>.

In order to conduct a proper evaluation concerning the usability problems that are found, each problem has to be assigned with a severity ranking. According to Nielsen, the severity of a usability problem is a combination of three factors:

- The **frequency** with which the problem occurs.
- The **impact** of the problem if it occurs.
- The **persistence** of the problem.

As stated by Nielsen, the aspects of severity are commonly combined in a single severity rating as an overall assessment of each usability problem in order to facilitate prioritizing and decision-making. The scale intended for the severity rating consists of five levels, 0-4. These ratings carry different meanings:

- 0 = I don't agree that this is a usability problem at all
- 1 = Cosmetic problem only: need not be fixed unless extra time is available on project

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<sup>1</sup>Nielsen, Jakob. "How to Conduct a Heuristic Evaluation", Nielsen Norman Group, 01/11/1994 <https://www.nngroup.com/articles/how-to-conduct-a-heuristic-evaluation/>, retrieved 12/09/2020

<sup>2</sup>Writer unknown. "Om 1177 Vårdguiden", 1177 Vårdguiden, 21/08/2015 <https://www.1177.se/Vastmanland/om-1177-varldguiden/om-1177-varldguiden/>

- 2 = Minor usability problem: fixing this should be given low priority
- 3 = Major usability problem: important to fix, so should be given high priority
- 4 = Usability catastrophe: imperative to fix this before the product can be released.<sup>3</sup>

## 1.1 Method

In order to conduct a heuristic evaluation of the 1177 website, we began by individually examining the site, acting as evaluators. Everyone looked through the site several times and compared its structure and functions with Nielsen's ten heuristic principles. After everyone had collected a number of design flaws separately, we summarized our findings together and ensured that we had at least two examples of some portion of the website violating each of the ten principles.

With the flaws found, we discussed potential severity ratings for each example together. The final severity ratings were agreed upon through these discussions and through all members of the group voting. With this done, we then moved on to writing our overall thoughts in the report's discussion section, and also offered some potential improvements to the site's issues under their respective sections.

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<sup>3</sup> Nielsen, Jakob. "Severity Ratings for Usability Problems", Nielsen Norman Group, 01/11/1994  
<https://www.nngroup.com/articles/how-to-rate-the-severity-of-usability-problems/>, retrieved 12/09/2020

## 2. Usability Issues and Suggested Improvements

This section of the report presents the usability issues found through the heuristic evaluation. Sections 1 through 10 correspond to Nielsen's ten principles

### 2.1. #1: Visibility of System Status

Visibility of system status is about communicating the state of the system to users. This is done through providing users with feedback,<sup>4</sup> for instance in the form of a mobile phone displaying how much battery life it has left, an email application displaying the number of unread emails<sup>5</sup> or a progress bar indicating how much is left of an activity or process.<sup>6</sup>

#### 2.1.1. Non-Immediate Error Information

##### Severity rating: 1

If a user, after logging in, changes their settings and makes an obvious error, such as adding an overly long phone number, the system can detect that a mistake has been made but does not immediately notify the user of this. The user is not notified that an error has been made until they attempt to save their settings, before which they might have made various other changes and additions to their settings. Since the information that an error has been made could just as easily (and more appropriately) be given to the user immediately, this violates the first heuristic principle.



Figures 1 & 2. A clearly erroneous phone number entered at the 1177 website (figure 1). The error message (figure 2) does not appear until the user attempts to save the information.<sup>7</sup>

<sup>4</sup> Nielsen, Jakob. "10 Usability Heuristics for User Interface Design", Nielsen Norman Group, 01/11/1994 <https://www.nngroup.com/articles/ten-usability-heuristics/>, retrieved 12/09/2020

<sup>5</sup> Harley, Aurora. "Visibility of System Status (Usability Heuristic #1)", Nielsen Norman Group, 03/06/2018 <https://www.nngroup.com/articles/visibility-system-status/>, retrieved 12/09/2020

<sup>6</sup> Devazya, Akshay. "10 usability heuristics with examples", UX Collective, 11/06/2019, <https://uxdesign.cc/user-experience-is-one-of-the-hottest-topics-in-day-today-designers-life-fb314978e1ff>, retrieved 12/09/2020

<sup>7</sup> Image source: Sebastian Lihammer. Screenshots from 1177 website, settings section. 10/09/2020 <https://www.1177.se>

## 2.1.2. Length of Time for Automatic Redirects

### Severity rating: 2

Several times during a session, the user gets automatically redirected when trying to go back one page (see figure 4).

Du kommer nu automatiskt att bli omdirigerad och det kan ta lite tid.

Figure 3. The message displayed during redirection.<sup>8</sup>

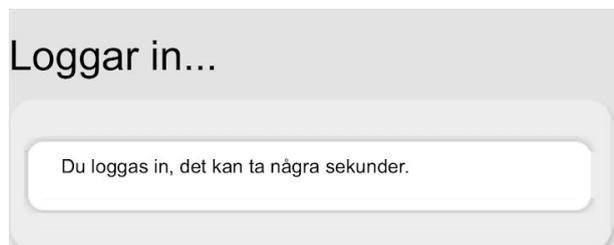


Figure 4. The message displayed during the log-in process.<sup>9</sup>

On both pictures, the user is notified that the redirection may take "some time" or "a few seconds". This is not quite true since in both cases, when taking the time of this procedure, they both could take over one minute in some cases. In addition to this, even though it is stated that the procedure might take a few seconds on the right hand picture, several times it is actually possible to press the "go back" button one more time and be redirected immediately. This causes great confusion since on one hand a user would wait until the page loads by itself while it on the other hand is possible to be redirected immediately if they just press "go back" a second time.

In a research by Google, it states that 53 % of mobile website visitors will leave if a webpage does not load within three seconds<sup>10</sup>. What this means for 1177 is that there is a huge risk of losing users due to this violation of the first heuristic principle.

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<sup>8</sup> Image source: Larisa Cof. Screenshot from 1177 website, redirection screen. 12/09/2020 <https://www.1177.se>

<sup>9</sup> Image source: Larisa Cof. Screenshot from 1177 website, log-in screen. 12/09/2020 <https://www.1177.se>

<sup>10</sup> David Kirkpatrick. "Google: 53 % of mobile users abandon sites that take over 3 seconds to load", Marketing Dive, 12/09/2016 <https://www.marketingdive.com/news/google-53-of-mobile-users-abandon-sites-that-take-over-3-seconds-to-load/426070>, retrieved 13/09/2020./

### 2.1.3. Suggested Improvements

The problem introduced in 2.1.1 could easily be fixed by simply making the system inform the users immediately that they have made a mistake. This should be easily implementable considering that the system is obviously capable of looking for errors. To fix the issue presented in 2.1.2. the developers could include more detailed information on what the system is doing and how long it will take.

## 2.2. #2: Match Between System and the Real World

Match between system and the real world is about making the interaction easier between the product and the users. In order to do this, the system should not use system-oriented and difficult-to-understand words and phrases, instead using the user's language; familiar words and concepts.<sup>11</sup>

### 2.2.1. Difficult to Find Language Options

#### **Severity rating: 3**

It is difficult to find the language options when navigating the 1177 website. The two relevant options (“lätt svenska” and “other languages”) can be found at the bottom of the website together with seven other unrelated options (see figure 5), which means that users will have to scroll down through the entire site to find them. In most other websites, the language options are clearly presented at the top of the page.

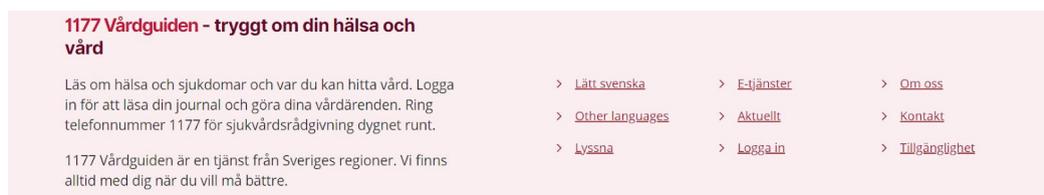


Figure 5. The footer at the 1177 website and the options therein.<sup>12</sup>

<sup>11</sup> Nielsen, Jakob. “10 Usability Heuristics for User Interface Design”, Nielsen Norman Group, 01/11/1994 <https://www.nngroup.com/articles/ten-usability-heuristics/>, retrieved 12/09/2020

<sup>12</sup> Image source: Sebastian Lihammer. Screenshot from 1177 website, footer. 12/09/2020 <https://www.1177.se>

Since the language options do not appear where users would expect them to be, they are not presented in a natural and logical order and thus violates the second heuristic principle. Because this hinders non-native Swedish speakers, a significant minority in Sweden, from fully accessing the site, this flaw has a severe market impact.

## 2.2.2. Presentation of Information Under “Sjukdomar & besvär”

### Severity rating: 2

The tab “Sjukdomar & besvär” (see figure 6) is organized in a confusing manner.



Figure 6. The “Sjukdomar & besvär” tab at the 1177 website.<sup>13</sup>

The options are sorted by organ, body part or type of condition (i.e. “stomach”, “heart”, “infection”), but a user wanting to find what condition they have might not immediately know in which organ or body part this condition originates. For example, if a user has chest pains, it might be unclear if this has to do with the heart, lungs or some form of infection. Because the information within the tab is not presented in a natural and logical order, it violates the second heuristic principle.

In comparison, the “Olyckor & skador” tab (see figure 7) does list locations of accidents in a more straightforward and user-friendly manner and contains nine options instead of the sixteen options under “Sjukdomar & besvär”.

<sup>13</sup> Image source: Sebastian Lihammer. Screenshot from 1177 website, “Sjukdomar & besvär” tab, 12/09/2020 <https://www.1177.se>

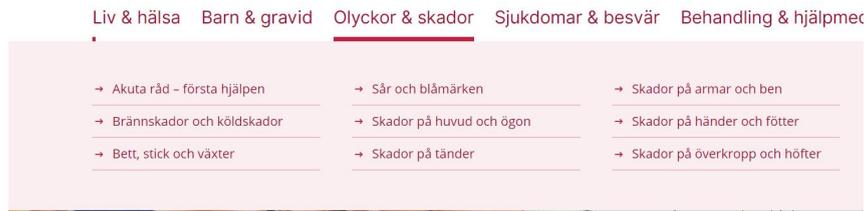


Figure 7. The “Olyckor & skador” tab at the 1177 website.<sup>14</sup>

### 2.2.3. Suggested Improvements

One improvement for the problem in 2.2.1 is to more clearly present the language options in the top of the page. The most clear way to do this would be to use flag icons instead of just text to catch the users attention. In 2.2.2 one improvement is to decrease the number of options in this tab and perhaps listing them by symptom (i. e. “headache”, “chest pain”, “fever”) might make more sense.

## 2.3. #3: User Control and Freedom

User control and freedom is about making it easier for users to regret their decisions in regards to their interactions with the system. The most typical example of conforming to this principle is featuring “emergency exit” options to allow users to leave an unwanted state, such as going back from a part of a website they did not intend to access.<sup>15</sup>

### 2.3.1. Inconsistency Regarding the Hyperlink Logo

#### **Severity rating: 2**

When a user is on a specific page on a website, they sometimes want the option to redo or undo a mistake. When browsing the 1177 website users mostly have the option to go back to the main page by clicking on the logo at the top-left. However, this is not always the case.

For instance, it is possible to go back to the main page when browsing the website by clicking on the main logo, but in the “Logga in” page that option is suddenly gone even though the logo is there. Because the user should have the option of a clearly marked “emergency exit”,

<sup>14</sup> Image source: Sebastian Lihammer. Screenshot from 1177 website, “Olyckor & skador” tab, 12/09/2020 <https://www.1177.se>

<sup>15</sup> Nielsen, Jakob. “10 Usability Heuristics for User Interface Design”, Nielsen Norman Group, 01/11/1994 <https://www.nngroup.com/articles/ten-usability-heuristics/>, retrieved 12/09/2020

this violates the third heuristic principle. Of course, there is the option to go back to the previous page by using the browser's "go back" button, but those buttons are technically not part of the website and it is still not a way to return to the main page.

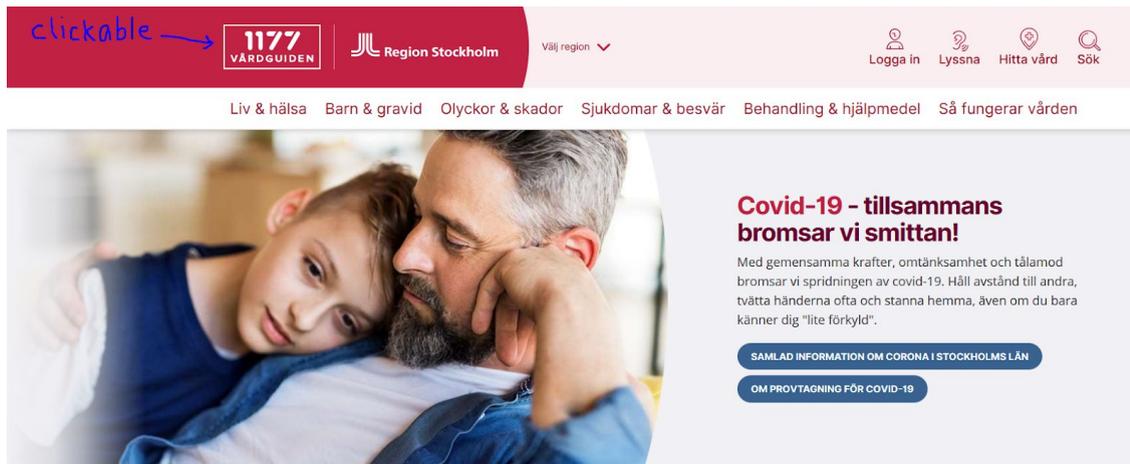


Figure 8. The homepage of the 1177 website, with emphasis on the clickable logo.<sup>16</sup>

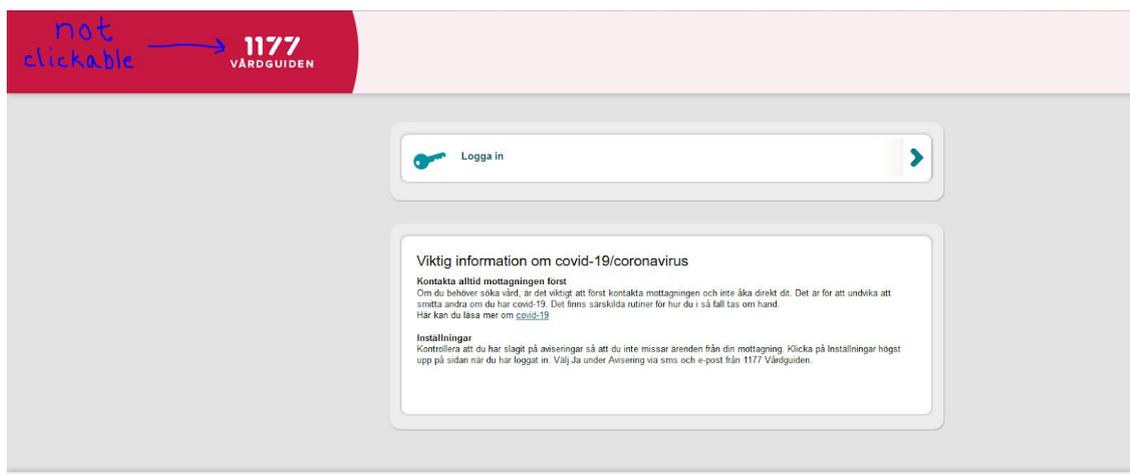


Figure 9. The log-in page at the 1177 website, with emphasis on the same logo, not clickable on this page.<sup>17</sup>

### 2.3.2. Locked in an Unwanted State After Using the Zoom Button

#### Severity rating: 2

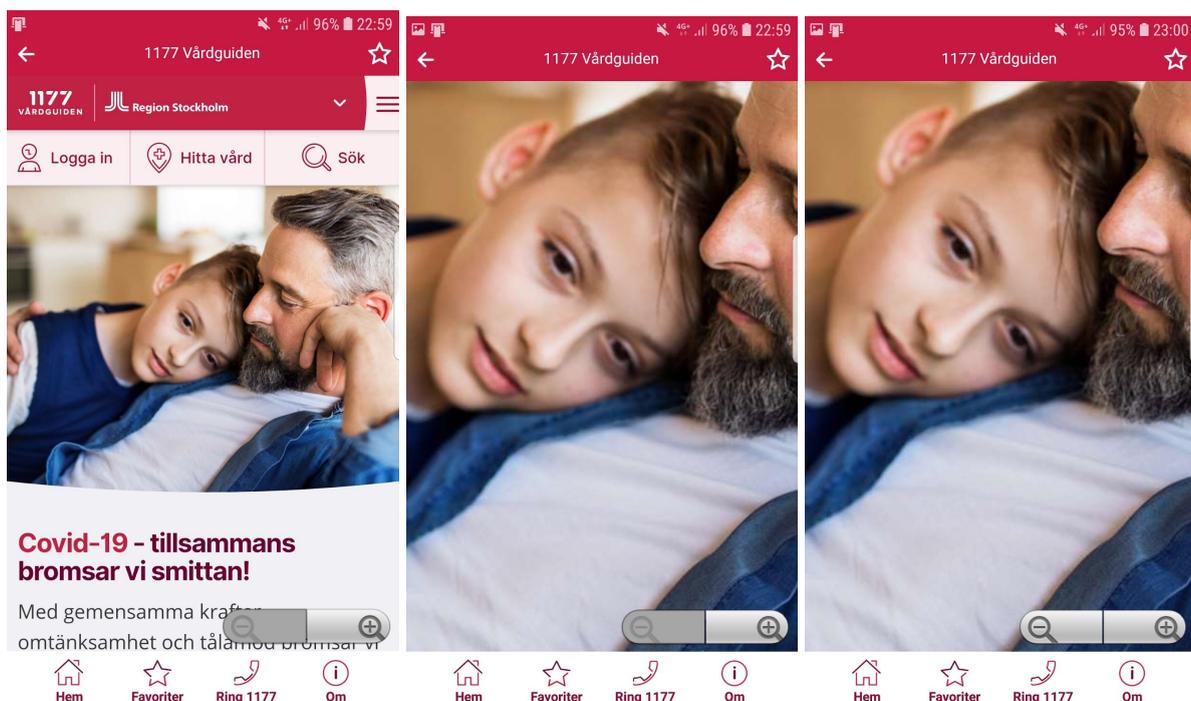
When using the app version of 1177, users are immediately presented with the option to zoom on the screen. This is done by clicking on a grey button with two magnifying glasses, one

<sup>16</sup> Image source: Benjamin Jansson Mboniyimana. Edited screenshot from 1177 website, homepage 11/09/2020 <https://www.1177.se>

<sup>17</sup> Image source: Benjamin Jansson Mboniyimana. Edited screenshot from 1177 website, log-in page 11/09/2020 <https://www.1177.se>

with a plus sign and one with a minus sign on it, that fades away after not touching the screen for a couple of seconds.

When the app is started, the glass with the minus sign is dark grey, and the glass with the plus sign is light grey. This indicates that the zoom is already maxed out. However, as users proceed to zoom in by clicking on the plus glass, the minus glass is still dark grey, leaving the user in a state of not being able to zoom out again. Users are only able to zoom out again after waiting for about 4 seconds for the grey button to fade out, and then touch the screen again for the grey button to fade in with a light grey coloured minus glass appearing.



Figures 10, 11 & 12. The oddities with the zooming feature in the 1177 app.<sup>18</sup>

While being stuck in this unwanted state for 4 seconds may seem insignificant on paper, it is still frustrating for users that are used to having everything work in an instance. And for users unfamiliar with the app, unaware of the fact that the button has to fade away first, it would be a common mistake to keep tapping the dark grey minus glass until something happens. This would lead to users being stuck in the unwanted state for a lot longer than 4 seconds, and therefore, it violates the second heuristic principle of user control and freedom.

<sup>18</sup> Image sources: Benjamin Jansson Mbonyimana. Screenshots from 1177 app 12/09/2020

### 2.3.3. Suggested Improvements

The issue in 2.3.1 can easily be improved upon by making the logo in the header of the log-in page function in the same way as the logo in the header of the homepage. To improve on the issue in 2.3.2., the option to zoom out should be instantly available once a user has zoomed in.

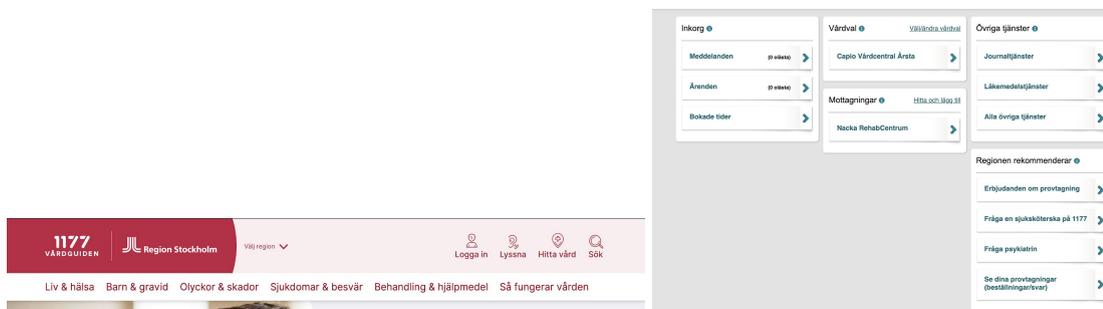
## 2.4. #4: Consistency and Standards

Consistency and standards is about keeping functionality and style consistent throughout the system. Similar problems and tasks within a system should have similar solutions and implementations in order to not bewilder and confuse users.<sup>19</sup>

### 2.4.1. Navbar Consistency

#### Severity rating: 1

The navigation bar on the homepage of the 1177 website is horizontal with several tabs that redirects the user to their desired pages. In contrast to the navigation bar of the homepage, navigating the log-in page is completely different. The log-in page features several vertical navigation bars rather than a single horizontal bar (see figure 13 & 14), clearly violating the fourth heuristic principle. The change in structure and orientation is made even more confusing since the functionality (as a navigation bar) remains the same. If the functionality changed then there could be an argument for the change but the functionality is still the same.



Figures 13 & 14. The navigation bars on the 1177 website on the homepage (fig. 13) and the personal section after logging in (fig. 14).<sup>20</sup>

<sup>19</sup> Devazya, Akshay. “10 usability heuristics with examples”, UX Collective, 11/06/2019, <https://uxdesign.cc/user-experience-is-one-of-the-hottest-topics-in-day-today-designers-life-fb314978e1ff>, retrieved 12/09/2020

<sup>20</sup> Image sources: Mustafa Ali. Screenshots from 1177 website, navbars 12/09/2020 <https://www.1177.se>

## 2.4.2. Impossibility of Returning from the Login Page

### Severity rating: 2

Another feature that is missing in the log-in page that is prominent in other parts of the site is the option to go back to the previous states without the use of the browser's "go back" button. For example, imagine a user that is on the main page and then clicks on the following options in the following sequence: "Sjukdomar & besvär", "Allergier och överkänslighet", "Celiaki", "Celiaki hos barn". When the user is at the "Celiaki hos barn" page, the sequence of pages the user visited in order to get to "Celiaki hos barn" is visible on the screen.



Figure 15. The method in which the 1177 website displays its site structure.<sup>21</sup>

However, the "Logga in" page does not have this option. If this option existed and was consistent with the rest of the website, it would say "Du är här: Start / Logga in". This violates the fourth heuristic principle.

## 2.4.3. Suggested Improvements

The issue in 2.4.1. could be improved by ensuring that all pages and sections of the 1177 website are navigated in the same way, for instance through using horizontal navigation bars consistently. Improving on the issue in 2.4.2. is possible through adding "Du är här: Start / Logga in" in the same place as in the other pages.

<sup>21</sup> Image source: Benjamin Jansson Mboniyimana. Edited screenshot from 1177 website, "Celiaki hos barn" page 11/09/2020 <https://www.1177.se>

## 2.5. #5: Error Prevention

Error prevention is about the system not allowing errors to happen in the first place. This can be done through either designing the system so that common errors are impossible to make or by forcing users to confirm their action before they are about to engage with an error-prone part of the system or give them suggestions.<sup>22</sup>

### 2.5.1. Search Function Not Allowing Mistakes

#### Severity rating: 3

It is easy to make spelling errors when searching for something on a website. While the search engine on 1177 does give users suggestions while typing for something, it only does so if they type everything correctly, without making spelling mistakes.

For instance, when searching for the word “öroninflammation” by typing “öron”, the correct suggestions are provided by the site. But if a mistake is made, like typing “öronn”, no suggestions are provided whatsoever. While the slip can be easily corrected, it can be confusing for someone who is not too familiar with certain complicated medical terms, or in this case simply does not know the Swedish language well enough. This does not correlate with the fifth heuristic principle.



Figures 16 & 17. Suggestions and lack of suggestions in the search engine of 1177.<sup>23</sup>

<sup>22</sup> Nielsen, Jakob. “10 Usability Heuristics for User Interface Design”, Nielsen Norman Group, 01/11/1994 <https://www.nngroup.com/articles/ten-usability-heuristics/>, retrieved 12/09/2020

<sup>23</sup> Image sources: Benjamin Jansson Mbonyimana. Edited screenshots from 1177 app 12/09/2020

## 2.5.2. Changing Account Settings

### **Severity rating: 3**

If a user that wants to change their account settings, accidentally changes something unintentionally and saves their changes, they do not have to confirm their changes. This means that if the user makes an unintentional error that the system cannot immediately identify as a mistake, it is highly likely to slip by undetected. Because nothing prevents these errors, this clearly violates the fifth heuristic principle.

## 2.5.3. Suggested Improvements

To improve the issue in 2.5.1., the search function should be able to detect spelling errors and still offer matching words and phrases, as is done in many other search engines (such as Google). To improve on 2.5.2, the system should force the user to review and confirm their changes before saving them, avoiding unintentional mistakes.

## 2.6. #6: Recognition Rather than Recall

Recognition rather than recall is about minimizing the use of the user's memory through, for example, suggesting them options. Information from one part of the dialogue to the other should not have to be remembered by the users.<sup>24</sup>

### 2.6.1. Search Suggestions

#### **Severity rating: 3**

The search function at the 1177 website does not give the user suggestions based on their past searches. This violates the sixth heuristic principle. In contrast, Google does this very well; storing past searches and giving suggestions to their users (see figure 18 & 19).

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<sup>24</sup> Nielsen, Jakob. "10 Usability Heuristics for User Interface Design", Nielsen Norman Group, 01/11/1994 <https://www.nngroup.com/articles/ten-usability-heuristics/>, retrieved 12/09/2020



Figure 18. The search bar at Google.<sup>25</sup>



Figure 19. The search bar at 1177.<sup>26</sup>

## 2.6.2. Narrowing Searches on the Searching Engine

### Severity rating: 3

The search engine on the 1177 website does not enable the user to use any type of search filters in order to narrow their search. As seen in figure 20, when searching for the word “stomach” (mage) there are 724 results. There is no possibility for the user to narrow their search in order to limit the amount of results that show. This violates the sixth heuristic principle since there is no guidance for the user on how to find the right condition amongst all the suggestions based on the searched word.



Figure 20. Shows the search engine at the 1177 website.<sup>27</sup>

## 2.6.3. Suggested Improvements

To improve the issue in 2.6.1., the 1177 website could store the past and most frequent searches of individual users and present them as suggestions, in the same way that Google handles their search engine. The issue in 2.6.2. could be improved through adding search filters, perhaps implementing them in the same way that Foursquare, another site (see figure 21) does. With search filters, users could pinpoint their search through specifying which

<sup>25</sup> Image source: Sara Moazez Gharebagh. Screenshot from Google website. 09/10/2020 <https://www.google.se/>

<sup>26</sup> Image source: Sara Moazez Gharebagh. Screenshot from 1177 website. 09/10/2020

<sup>27</sup> Image source: Larisa Cof. Screenshot from 1177 website. 09/11/2020 <https://www.1177.se>

subjects they are searching for, such as searching for “blood clot” and using the search filters “lung” or “heart”.

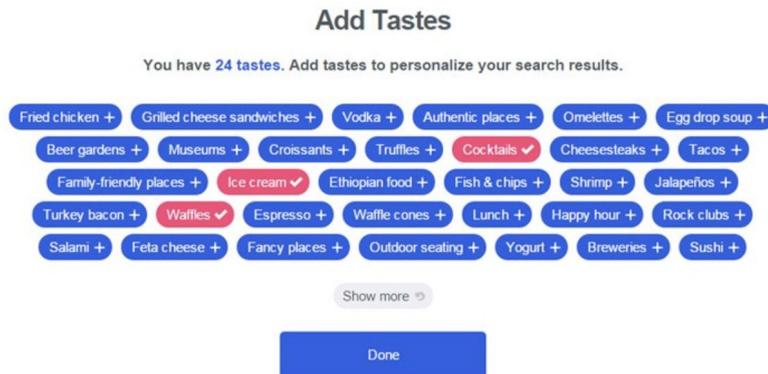


Figure 21. The search filters at Foursquare search engine.<sup>28</sup>

## 2.7. #7: Flexibility and Efficiency of Use

Flexibility and efficiency of use is about catering to all types of users.<sup>29</sup> All users should be able to use the system, but more experienced users should be able to speed up their interactions through shortcuts and customization.<sup>30</sup>

### 2.7.1. Electronic Identification Login

#### Severity rating: 4

In order to log into the 1177 app with electronic identification, the user has to go through four steps. Through this segment, 1177 will be compared to two of its biggest competitors, KRY and Doktor.se (online services for booking of doctor’s appointments that also enables renewal of prescriptions online as well as many other services).

The leading electronic identification in Sweden is BankID. According to their website, BankID has 8 million active users (note that the population of Sweden is 10.3 million people<sup>31</sup>). BankID is a solution that allows digital identification as well as signing transactions and

<sup>28</sup> Image source: Mustafa Ali. Screenshot from medium website 9/10/2020 <https://medium.muz>

<sup>29</sup> Unknown author. “Flexibility and Efficiency”, The University of Texas, unknown date <https://sbmi.uth.edu/nccd/ehrusability/design/guidelines/Principles/flexible.htm>, retrieved 12/09/2020

<sup>30</sup> Nielsen, Jakob. “10 Usability Heuristics for User Interface Design”, Nielsen Norman Group, 01/11/1994 <https://www.nngroup.com/articles/ten-usability-heuristics/>, retrieved 12/09/2020

<sup>31</sup> Unknown author. “Population statistics”, Statistiska Centralbyrån, unknown date

documents. According to Swedish law, a signature made with a BankID is legally binding<sup>32</sup>. When a user needs to identify through Mobilt BankID (mobile BankID), usually the user gets automatically transferred from the current app that they are using to Mobilt BankID where they have to enter their personal six-digit code.

Below are four pictures with associated descriptions that show the login procedure on the 1177 app:

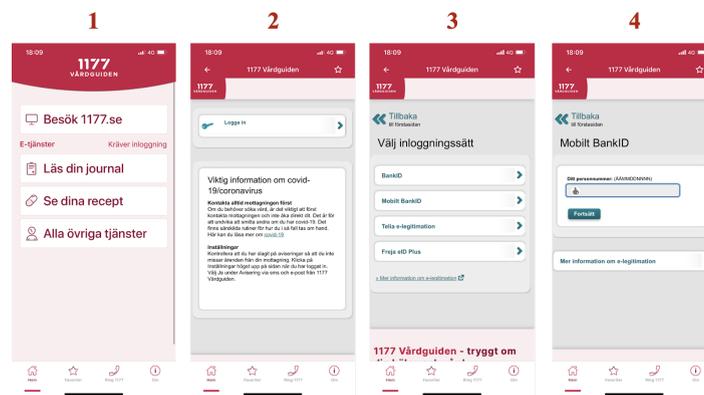


Figure 22. The 4-step log-in process in the 1177 app.<sup>33</sup>

**Step 1:** Home page. In order for a user to reach their journal, prescription or other services, the user has to log in through some form of electronic identification. **Step 2:** By clicking on one of the listed options in picture no. 1, the user is then forwarded to picture no. 2 where they have to press “Logga in” (log in) in order to log in. **Step 3:** After the user has chosen the option to log in, they then have to choose one of the listed alternatives for electronic identification seen in picture no. 3. **Step 4:** Lastly, in order to log in using their Mobilt BankID, the user has to manually type in their social security number in order to get forwarded to the online identification process.

In addition to this, there is no possibility to go through this procedure any faster, no matter how experienced the user may be. This means that all users need to go through this same

<https://www.scb.se/en/finding-statistics/statistics-by-subject-area/population/population-composition/population-statistics/>, retrieved 10/09/2020

<sup>32</sup> Unknown author. “This is BankID”, BankID, unknown date  
<https://www.bankid.com/en/om-bankid/detta-ar-bankid>, retrieved 10/09/2020

<sup>33</sup> Image source: Larisa Cof. Screenshots from the 1177 app 11/09/2020

four-step procedure every time they intend to login to 1177. Because of this, there is a violation against the seventh heuristic principle in this implementation.

The login procedure on the KRY and Doktor.se apps:



Figure 23. The log-in button in KRY.<sup>34</sup>

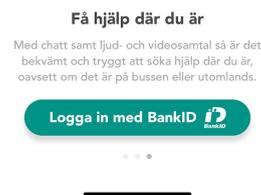


Figure 24. The log-in button in Doktor.se.<sup>35</sup>

In the KRY and Doktor.se apps, users who press “log in” are instantly forwarded to Mobilt BankID to identify themselves. This 1-step log-in process is significantly faster and more efficient than the same process when using 1177. The fact that 1177 carries this major usability issue, which its largest competitors have successfully dealt with, could lead to 1177 struggling to retain its users.

## 2.7.2. Impossibility of Pausing the Listening Feature

### Severity rating: 4

Visually impaired users can access the content of 1177 Vårdguiden through using the “Lyssna” feature, which makes an online reader read the website’s content aloud. A significant problem is that there is no “pause”-button for the reading; there is only a “stop” button, which means that there is no way to pause and resume the reading. Pressing the “stop”-button means that users will have to restart the entire reading. This is made especially problematic due to some pages being very long and due to the reader reading the information contained in the header of the website (“log in”, “search” etc.) every time. This is a severe problem in regards to user-friendliness and is incredibly inefficient, with there not being any more efficient options, thus violating the seventh heuristic principle.

<sup>34</sup> Image source: Larisa Cof. Screenshot from the KRY app 11/09/2020

<sup>35</sup> Image source: Larisa Cof. Screenshot from the Doktor.se app 11/09/2020

### 2.7.3 Suggested Improvements

Regarding 2.7.1, one improvement that could be made is to shorten the amount of steps needed for a user to complete certain tasks. For instance, in order for a user to renew a prescription through 1177, they have to send a request for this inquiry by signing into 1177.se. This means that the app users have to be transferred from the app to the website and sign in (through all four steps) once again! In comparison to KRY and Doktor.se, the users are enabled to access the prescription renewal page within a few seconds after entering the app.

As for the problem stated in 2.7.2, the listening feature would remarkably improve by simply adding a pausing function.

## 2.8. #8: Aesthetic and Minimalist Design

Aesthetic and minimalist design is about removing unnecessary information to maximize the signal-to-noise ratio of the design, which is the ratio of relevant to irrelevant information in a display.

### 2.8.1. Redundant Information

#### **Severity rating: 2**

When visiting the 1177 website, the home page has a lot of redundant information (see figure 25) which violates the eight heuristic principle. If the user is trying to find something specific on the web page, the amount of unnecessary information can lower the relevant information's visibility.<sup>36</sup>

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<sup>36</sup> Moran, Kate. "Usability Heuristic 8: Aesthetic and Minimalist Design", Nielsen Norman Group, 20/09/2019 <https://www.nngroup.com/videos/aesthetic-and-minimalist-design/>, retrieved 12/09/2020



Figure 25. Screenshot from the 1177 home page.<sup>37</sup>

## 2.8.2. Redundant Translations

### Severity rating: 1

At the bottom of each page on the 1177 website, it is possible to switch the language of the site. Although, even when choosing a different language than Swedish, there are still translations of every headline from the chosen language to Swedish. In figure 26, this is demonstrated when choosing English.



Figure 26. Screenshot from the 1177 website when translated into English.<sup>38</sup>

<sup>37</sup> Image source: Sara Moazez Gharebagh. Screenshot from 1177 website home page 10/09/2020 <https://www.1177.se>

<sup>38</sup> Image source: Larisa Cof. Screenshot from 1177 website 09/10/2020 <https://www.1177.se> <https://www.1177.se/en/Vastmanland/other-languages/other-languages/>, retrieved 13/09/2020

This is an unnecessary implementation since the user has already chosen which language it would like to have for the page. The Swedish translation is irrelevant and only uses up extra space which makes this a violation of the eight heuristic principle.

### 2.8.3. Suggested Improvements

In 2.8.1 it is only sufficient to include the titles of the articles and hide additional information under a “Read more” button to keep a clean interface. As shown in 2.8.2, there is redundant translation into Swedish when the user clearly has chosen another language. In order for the design to correlate with the eight heuristic principle, the suggestion regarding this design problem is simply to remove all redundant translations in Swedish.

## 2.9. #9: Help Users Recognize, Diagnose, and Recover from Errors

Help users recognize, diagnose and recover from errors is about helping users who encounter errors in the system. This is accomplished by the system identifying the error encountered and suggesting a method to the user with which the error can be bypassed and overcome.<sup>39</sup>

### 2.9.1. Recovering from Search Errors

#### **Severity rating: 3**

Figure 16 and 17 in section 2.5.1 show that there is no feedback when a user misspells a word. For a user to recognize their mistake, they have to fix the error by themselves. After having made the search, the website does not provide any suggestions on what the user might have meant, meaning that it is hard to recover from mistakes. This is a huge problem for people who do not speak Swedish as a first language and are having a hard time spelling correctly. This violates the ninth principle considering it does not help the user to recognize or recover from errors.

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<sup>39</sup> Devazya, Akshay. “10 usability heuristics with examples”, UX Collective, 11/06/2019, <https://uxdesign.cc/user-experience-is-one-of-the-hottest-topics-in-day-today-designers-life-fb314978e1ff>, retrieved 12/09/2020



Figure 27. Shows a screenshot from the search engine at the 1177 website.<sup>40</sup>

## 2.9.2. Error Messages When Searching for Care

### Severity rating: 2

When searching for care on the 1177 website, error messages are displayed under the fields “Place” and “Type of care” but no errors are filtered when searching for a certain clinic (see figure 28). This violates the ninth heuristic principle since there are no suggestions for what the user might have meant or other relevant clinics for the chosen place or type of care.



Figure 28. The “Hitta vård” (“find care”) service at the 1177 website.<sup>41</sup>

## 2.9.3 Suggested Improvements

Regarding the problem in section 2.9.1, it can easily be avoided by adding a spelling error detector. With a detector, the website could point out spelling errors in the search bar immediately when they happen. Additionally, implementing some function which finds similar words and phrases in the case of a user searching with a spelling error would also help users recovering from errors. To improve the issue introduced in 2.9.2., the same type of error recognition used in the other two search fields could be used in the field for the clinics.

<sup>40</sup> Image source: Sara Moazez Gharebagh. Screenshot from 1177 search page 10/09/2020 <https://www.1177.se>

<sup>41</sup> Image source: Benjamin Jansson Mboniyimana. Screenshot from the 1177 website, retrieved 10/09/2020

## 2.10. #10: Help and documentation

Help and documentation is about providing those users who do not find the system to be intuitive enough with the necessary information and help to use it. Information provided through documentation should be focused, to the point, easy to search for and list concrete steps to follow.<sup>42</sup>

### 2.10.1. Menu Implementation

#### **Severity rating: 3**

One feature available when logged in is the webpage map as it is called. This feature enables users to navigate on the site. The part where it gets really complicated is when they refer to the webpage map (webbkarta) as the menu (see figure 29).

- Om du har frågor som gäller beroende: alkohol, narkotika, läkemedel och spel, kontakta istället Fråga om Beroende. Du hittar dem under menyvalet "Alla övriga tjänster".

Figure 29. Reference to the webpage map (webbkarta) at the 1177 website using the term “menu”.<sup>43</sup>

Intuitively, a user would start searching for a menu icon on the page, which in the majority of cases, is situated on the top or sides of the page. That is not the case on the 1177 website. The user first has to scroll down to the bottom of the page and then go to “webpage map” (webbkarta). It is not intuitive or obvious enough for the user where to find the menu, especially when the implementations for the menu differs a lot from the usual menu implementations.

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<sup>42</sup> Nielsen, Jakob. “10 Usability Heuristics for User Interface Design”, Nielsen Norman Group, 01/11/1994 <https://www.nngroup.com/articles/ten-usability-heuristics/>, retrieved 12/09/2020

<sup>43</sup> Image source: Larisa Cof. Screenshot from the 1177 website 1177.se, retrieved 10/09/2020



Figure 30. The “webpage map” (webbkarta) in the 1177 app.<sup>44</sup>

## 2.10.2. Booking appointments

### Severity rating: 3

Most users who visit the 1177 website are looking to book some kind of an appointment, but that is in itself a challenge. There is no clear indication on the website on where to click in order to be able to book the appointment. This breaks the tenth heuristic principle that it should be easy for the user to get help and that the website should be focused on the user's task. In this case, users who visit the 1177 website and are looking for a doctors appointment will have a hard time booking an appointment. The website recognizes that there are no appointments booked yet does not help or redirect the user to the correct site.

## 2.10.3 Suggested Improvements

Regarding 2.10.1, it would facilitate the use significantly by changing the name from “webpage map” (webbkarta) to “menu” (meny). Furthermore, the menu should be more visible, a suggestion could be that it should be placed at the top of the page. As for 2.10.2, the procedure of booking an appointment could be shortened significantly and made more practical.

<sup>44</sup> Image source: Larisa Cof. Screenshot from the 1177 website 1177.se, retrieved 10/09/2020

### 3. Discussion and Conclusion

After examining the 1177 website and app it is safe to say that the site is overall well structured and professionally made. However, it is not a flawless webpage, and there are quite a couple of segments that can be improved upon.

A continuous issue that can be observed on multiple fronts is the problem of being locked in a specific state. These complications mainly occur when situated on the “Logga in” page, as discussed in section 2.3.1, and when using the zoom button in the app, as examined in section 2.3.2. Both of these issues are fairly easy to correct and have most likely been overlooked by the people responsible for developing the website.

In fact, this is a common trend among most problems found. That is, the trend of minor flaws that can be easily implemented. For instance, as mentioned in section 2.1.1 and 2.1.1, all the developers need to do in order to satisfy the first heuristic principle is to include more detailed information on what the system is doing and how long it will take.

Furthermore, the issues found concerning the second and seventh heuristic principles is to simply make the website more visually appealing and user friendly, by for instance decreasing the number of options available to the user (2.2.2), adding a pausing function to the listening feature (2.7.2), hide information under a “Read more” button (2.8.3), or simply making the menu more visible (2.10.1). The search engine can also be further developed as suggested in sections regarding principle number five, six and nine. Some of the proposed solutions regarding those issues are to store frequent searches of individual users (2.6.2), or adding a spelling error detector (2.5.1 and 2.9.1).

Lastly, the website has some consistency issues, where some pages do not follow the same overarching pattern. For instance, using the horizontal navigation bars consistently (2.4.1) is an example of ensuring that all pages are navigated in the same way.