



Mobile Navigation Guidelines

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Funka Nu.

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Introduction

These guidelines have been produced by Funka Nu AB in a project partnership with 20 organisations. The project ran from October 2013 to February 2014. The aim was to investigate how different navigation concepts work with mobile interfaces and to produce recommendations for navigation concepts that work for all users. The project was based on our "[Guidelines for the Development of Accessible Mobile Interfaces](#)" that were developed in a project funded by The Swedish Internet Fund. These guidelines have been widely adopted internationally and translated into several languages.

Funka Nu AB's methodology has been developed in close consultation with the disability rights movement. All our recommendations have been tested in real life conditions. We work in accordance with the international Web Content Accessibility Guidelines 2.0 (WCAG 2.0). However, our extensive experience at Funka of addressing accessibility concerns and testing potential solutions with the help of users with different needs and disabilities, with and without various aids and tools, have persuaded us that there are gaps in WCAG 2.0. Which is why we have developed our own test criteria for points that complement these international standards that EU legislation requires the public sector is follow.

Funka has produced an authorised translation of WCAG 2.0 into Swedish on behalf of W3C.

- [Web Content Accessibility Guidelines 2.0 \(WCAG 2.0\)](#)
- [Authorised translation of WCAG 2.0](#)
- [World Wide Web Consortium \(W3C\)](#)
- [Web Accessibility Initiative \(WAI\)](#)

Read more about Funka under the heading "[Funka Nu AB](#)" at the end of this document.

Background

Mobile surfing is on the rise and web layouts that are responsive to the size of the screen are becoming increasingly popular. Having said that, we know that page overview is poorer in a mobile interface compared with a desktop interface, which means there is no room for many traditional navigation concepts. Nonetheless, users have high expectations that everything is still going to work. As such, the mobile Internet must therefore enable access to the same content and functions as a desktop layout would.

The challenge is to find navigation concepts that also work well on small screens, which has proved to be a big problem as many users find their mobile interface difficult to navigate. The limited screen size means that many navigation concepts are structured in a complex way that ultimately results in users experiencing problems using the interface.

As yet, there are no standards for how navigation should work. As a result, users have to learn a new navigation concept every time they use a new mobile

interface, which can be both confusing and tiresome. As more and more users surf on mobile devices, the demands on organisations that develop and supply mobile interfaces are also increasing, not least because there are, as yet, no WCAG standards for touch screens.

Project structure

The project was structured into the following stages:

1. Review and test existing concepts
2. Reach conclusions on what works well and what works poorly
3. Produce and test prototypes for new concepts
4. Set out recommendations for mobile navigation concepts that work

Project results

The project has resulted in:

- A review of existing navigation concepts
- Test results from e.g. user tests with eye tracking and screen reader tests
- Prototypes for new navigation concepts
- These guidelines for navigation on mobile interfaces

All these results are presented on a project website.

About the guidelines

Based on the review, we were able to confirm that numerous different concepts are available to choose from. There does not seem to be any one “perfect” navigation concept, and all have their advantages and disadvantages. The choice of concept can also depend on the type of interface and amount of content. Many concepts work well sometimes, and sometimes less well. It is therefore hard to say whether you can resolve all problems with one single navigation concept.

We have therefore chosen to develop guidelines for mobile interface navigation that are intended to act as a guide when developing usable and accessible mobile interfaces. The guidelines have mainly been developed for information websites, but many of the guidelines can also be applied for other types of website and mobile apps. It is, however, possible it would be better for certain interfaces to deviate from some of these guidelines. To determine this, you should test the interface with real users.

The guidelines are based on:

- User tests of existing navigation concepts
- User tests of prototypes for new navigation concepts

- Tests with the screen reader VoiceOver on iPhone
- Conclusions from the review of existing navigation concepts
- Funka's previous experience of mobile interfaces

These guidelines are open access and free to use by everyone. We would, however, appreciate feedback and proposals for further development, additional clarification and changes.

Mobile Navigation Guidelines

Interaction

1. Navigation concept is easy to understand

Many factors can cause a navigation concept to be difficult to understand. For example, the navigation concept should not be based on expecting users to know how it works from previous experience. This can include expecting users to understand how arrows and icons work. The tests we performed showed that this was something that worked poorly. To be sure this point is observed, it is important that you test the concept with real users.

2. Navigation is consistent and predictable between different levels in the information structure

Different levels in the navigation concept should work in the same way. A predictable navigation concept makes life easier for users when moving between different levels in the information structure. It also reduces the risk of users missing underlying levels. One exception is the top level page that can sometimes differ from sub menus without creating problems.

3. User gets relevant feedback

It is important that users get feedback on what is happening in the interface. This can, for instance, be about knowing which menu option they have chosen or which part of the interface is being displayed. It is also important to provide feedback when users land on a new page. Here the main heading on the page acts as a receipt that the user has landed on the correct page. The main heading should therefore be placed at the top of the page and be visible on screen without having to scroll.

4. Understanding the navigation concept is not based on a link path

Many users do not notice a link path or understand what it is there for. A navigation concept cannot therefore rely on the link path to show where in the information structure the user is. You can have a link path, but the goal should be to build a navigation concept that is clear enough in its own right. Lack of space can also make displaying a link path difficult in a mobile interface.

5. Time it takes to navigate is minimised

It is important for users to find the right content quickly. There are several different methods for minimising the time it takes to navigate. For example, it is good to minimise the number of steps it takes to reach the right content, especially if each step requires a page load. Our tests show that scrolling is often quicker than clicking on a touch screen. For this reason it can be smart to combine pages and make them longer rather than dividing the content into several pages.

6. Navigation works on different screen sizes

Different screen sizes can require different concepts to ensure navigation works. For example, certain concepts work better on large screens while others work better on small screens. Nor should you switch to mobile navigation too soon. We know that mobile navigation creates a number of

problems as it makes content access poorer, something users have to accept with a small screen. It can therefore be worth keeping the “usual” navigation as far as possible when the screen size shrinks. It is also important that navigation works in both a vertical and horizontal viewing position.

7. The navigation structure can handle deep information structures (if so required)

Certain navigation concepts can only handle a maximum of one or two levels in the information structure. In the case of websites with deeper structures, you need a concept that works even when there are multiple levels. Unfortunately, these concepts are often difficult to understand and/or build, which makes the choice of navigation concept even more important.

8. Menu should only contain the information structure

Differentiate between the menu and search function, for example. If the search function is located in the menu, many people will have difficulty finding it. Also avoid placing function links in the menu. For example, it would be illogical for the user to have to open the menu to change language on the page. Nor should you locate links to documents or other websites in the menu.

9. Information structure is properly thought through

Many problems with navigation are due to the information structure rather than the navigation concept. If the information structure is illogical, the navigation concept becomes immaterial, as the information will be difficult to find. It is also important that the information structure is balanced, i.e. neither too wide nor too deep. One way to improve the information structure is to organise structure tests.

Layout and design

10. Menu has a clear design

It is important that users can clearly see which page they are on. It is also important to show which level of the information structure the page is at and what menu options there are at that same level. The layout design should also clearly show the boundary between different clickable areas. Also try to ensure the entire menu design is consistent.

11. Present menu vertically

In the case of narrow interfaces, you often have to stack information vertically, including the different menu options. If possible, therefore, make each menu option extend across the entire width of the screen. You will have less control if you present various menu options laterally, as the width varies depending on what screen the user has. Users will find it even more difficult if they cannot see the interface. Such users would easily miss some of the information displayed laterally.

Naturally, there can be exceptions to this point, such as when there is a very large number of menu options. This would, however, suggest problems with the information structure. Moreover, this point does not necessarily apply to the top menu. There it can work to present the menu

entries laterally. The problem is then what happens when there is not enough space for all the menu entries. Hiding parts of the menu and lateral scrolling often works poorly.

12. Big enough click areas

One known problem with mobile interfaces is that it can be difficult to enter data and there is a big risk of clicking on the wrong area. To avoid this, make sure the click areas in the menu are high enough and wide enough. It is also important to avoid putting small click areas too close together as this will increase the risk of clicking the wrong area.

According to tests done when Funka developed its "[Guidelines for the Development of Accessible Mobile Interfaces](#)" when it comes to the size of clickable areas the pain barrier is about 9 mm measured on the device screen. How this translates into pixels is difficult to say as screen resolution and size vary from device to device. Which means you need to evaluate how clickable areas work on different devices to find ones that work. Users with very small screen have to accept that their click areas cannot be quite as big.

13. Menu is easy to find

The menu is commonly packed together behind a button or icon. This often makes it more difficult to find. It is therefore important that the design and placement of the menu is clear. Most users expect to find the menu in the page header. Also place the menu on a separate row if possible. Small menu icons positioned at the top left or right of the screen can be difficult to find, especially for users who cannot see the interface.

14. Menu icon plus complementary text (if there is an icon)

Even though an icon can be very established, there will always be users who do not know what it stands for. If possible, you should add a descriptive text alongside the icon. For example, you could add a text saying "Menu" close to the menu icon (that usually looks like a hamburger). The menu hamburger alone has often proved to be insufficient for many users. Also avoid producing your own version of an icon, stick to using icons that users will be able to recognise from past experience.

15. Menu is easy to access

Users holding a mobile in one hand find it difficult to reach to the very top of the screen. It is therefore better not to position the menu button at the very top of the screen. According to Funka's "[Guidelines for the Development of Accessible Mobile Interfaces](#)" the page header should be minimised. Here it is a case of finding a compromise where the menu button is not too high up and the page header not too small.

16. Important menu options are not hidden

Sometimes parts of the menu are hidden behind objects such as "Show more" or "Other". This can be a problem as many users avoid clicking on these objects, even though they cannot find what they are looking for in the visible menu options. Many users start to look for alternative ways of navigating instead. This means there is a big risk that the user will miss the menu option they are actually looking for.

This recommendation does not apply when the entire menu is hidden behind a menu button. This solution has proved effective provided the location and design of the menu button are both clear. You also need to hide the menu if you want the content to be the focus.

Content

17. Focusing on the content

Certain menus take up far too much space. For example, users sometimes encounter a sub menu that takes up the whole screen when they have clicked on something and landed on a new page. One of the problems this leads to is that the feedback on which page the user had landed on becomes poor. Another is that content gets a lower priority. It is especially difficult for users viewing in landscape mode, as the screen height is already lower.

For users, it is the content that confirms whether what they are looking for is on that page or if they need to navigate further. Avoid therefore letting users get fixated with the menu, at the expense of focusing on the content. One basic principle is that the menu should not take up the entire screen unless the user has chosen to do so. Concealing the main menu behind a menu button has not proved to be a major obstacle either, provided you include descriptive text by the menu icon. Our tests also show that sub menus positioned at the bottom of the page work well in many situations.

18. Links to important pages are also included in the content

It is impossible to predict how users are going to navigate. Some prefer to click in a menu, others to search. Our tests show that many users skim through headings and links on a page. Users can then come across links to relevant pages and so avoid using both the menu and search function. It is therefore important to provide users with clear and descriptive links that can help them find the right page. Putting these links on a separate line is the clearest and most readable way to do this.

Technical design

19. Menu works with a screen reader

A screen reader is a tool for blind and visually impaired users that presents what is displayed on screen as text to speech or in Braille. Many smartphones and tablets have, or will have, an inbuilt screen reader. To work with these screen readers, the interface must be technically accessible. This means that different objects must be marked up in a correct way so the screen readers can render them as intended.

However, our tests have shown that there are problems associated with reading text that is visually concealed, even though it is coded in a correct way. For example, reading menu icons without any visual text rarely works. The only ways that seem to work for all screen readers is to insert the icon as an image with alt-text or to use the aria-label attribute. However, for the best possible clarity, we recommend a visible text, as it

will work with all screen readers. Other ways need to be tested from time to time to be certain that they work with a screen reader.

Please note that screen readers for PCs and touch screens work differently. Screen readers for touch screens read out what the user is touching. Where you place objects and the size of the click areas are therefore also important, something that does not affect traditional screen readers, as they are divorced from all visual presentation.

20. Menu can be used with a keyboard

Some users connect a keyboard to their smartphone or tablet. Some users also prefer to use a mobile interface with a keyboard on a PC. You must therefore be able to use a keyboard with the mobile interface.

This means for instance, that:

- All objects can be accessed via a keyboard
- The tab order is logical
- You can clearly see which object has keyboard focus

21. You can navigate even when JavaScript is deactivated

Most users have JavaScript today, but there are still some who do not have this. This can be due to various factors, such as the user having chosen to disable it. A navigation concept that requires JavaScript should therefore have a fallback solution that works without JavaScript. One solution is to make sure that the basic functionality works but to deactivate certain additional functions. Another solution is to have a separate “navigation page” that works without JavaScript. Users who do not have JavaScript activated should also get a warning that the page is not optimised for use without JavaScript.

User settings

22. Menu can manage different text sizes and fonts

In certain browsers and operating systems, users can change the text size and font themselves. There are also more and more opportunities to customise the interface. It is therefore important that the menu does not start to look odd to users who choose to customise the settings in the interface.

23. Menu can be zoomed

In the case of users with impaired vision, a large and clear font is not always sufficient and they can need to zoom. It is therefore important that the interface, and also the menu, can be zoomed. There are different technical solutions for this type of zooming. One option is to allow scrolling sideways when the user has chosen to zoom the interface. Another solution is for the whole page to flow when the user zooms. In which case, long words may need to be hyphenated to fit.

Funka Nu AB

Funka started as a project within the disability organisation. Today we hold pole position within the field of accessibility with over 80 % of Sweden's government authorities as customers. Since 2000 we are a privately owned company and our close relationship with the disability movement guarantees a unique quality control. We have offices in Stockholm, Sweden, Oslo, Norway and Madrid, Spain.

Funka works with accessibility in terms of information in all possible formats, digital interfaces, ATMs and similar systems. We also have a business area that focuses on accessibility in the built environment.

Via positions of trust and standardisation work, Funka sets standards for development and analysis as well as requirement specifications concerning accessibility. We have been commissioned by the EU Commission to develop methodologies and monitor the status of website accessibility in all EU member states plus Norway, USA, Canada and Australia. We have representatives on the Swedish Government's Användningsforum, Standard Norge, Svensk Standard and Mandat 376, that is commissioned by the EU Commission to develop common standards for accessibility in public procurement.

Funka has produced the authorised translation of WCAG 2.0 into Swedish on behalf of W3C. We have pushed through recommendations concerning keyboard shortcuts and icons. Our consultants were involved in developing Disability Ombudsman guidelines for an accessible civil service.

Funka is an EPIserver Solution Partner, Microsoft Partner and Adobe Certified Training Provider. We are behind the Funka portal, a forum for disability issues.

About the company

Registered address Stockholm

Board members: Jan Friedman (chair),
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