

Expert review by Teamo

NS Reisplanner Xtra by Nederlandse Spoorwegen

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Introduction

This is a report about our expert review we did for the course “Research & Development”. This report is built up by: discussing the target audience for the app and creating persona’s, a heuristic evaluation combined of all evaluations of each author, the conclusion and at last suggestions for the app for further development. We have chosen to review ‘NS Reisplanner Xtra’, made by Nederlandse Spoorwegen.

It is an app that lets you plan your journey with the Dutch public transport system. The app was recently updated to include travel options from 9292, which also allows users to consult public transport options other than trains, a feature that previous versions lacked.

We chose “NS Reisplanner Xtra”, because it is an app we are not familiar with. That way, we can get a first impression and evaluate it well.

Personas

Target audience

The users who are likely to use the app are people aged 13 to 50 who use a smartphone and use public transport in The Netherlands. The criteria of having a smartphone is necessary, because the app runs on a smartphone. Those people also have to use public transport in The Netherlands - at least on occasion - because the app plans a journey using public transport systems. The user base for this application consists mostly of people between the age of 13 and 50, because most people between those ages use a smartphone. Children younger than 13 years old may also use smartphones, but they don’t travel alone with public transport very often. Because of this, we have left them out of our target audience. Their parents might use the app, so they are within our scope. Smartphones aren’t really as popular among people over 50 as they are under people between 13 and 50, so we’ve left them out of our scope as well.

Persona profiles

Persona 1

Eefke Liekens, female, 36 years old, lives in Belgium, is a receptionist in a hotel. She lives alone in an apartment and has a dog. Eefke uses her smartphone mostly to stay in touch with friends from college. Sometimes she goes drinking with her friends in The Netherlands, and she uses public transport to get there safely. Her computer skills can be described as ‘advanced’. She can help other people with most computer problems.

Persona 2

Wouter Jansen, male, 14 years old, lives in Nijmegen, goes to school. He lives with his parents, has many friends at school and plays soccer. His normal week contains of: going to school, playing with friends in his neighbourhood and playing soccer. He cycles to his school, because it’s not far away from his home. And when he has soccer training, his parents will get him there with their car. His computer skills

aren't advanced; he knows how to use the internet to play online games, or search something with Google. Bob has a smartphone, but is not an active user.

Persona 3

John Smith, male, 49 years old, lives in Amsterdam, is a professor of biochemistry at the UvA.

He lives in a terraced house. His computer skills can be described as 'moderate'; he can check his email or browse the web, but he cannot connect a new printer for example. He does however have a smartphone which he uses to communicate with his colleagues. When he goes to his work, he uses public transport, because he doesn't have a driver's license.

Justification of persona's

We have chosen these persona's since they represent the target audience well. The age group fits and we have chosen mixed amount of technical expertise.

Heuristic evaluation

Setup

The setup has 4 evaluators (the authors of this report). Following the article on heuristic evaluations by Jakob Nielsen, it seems that heuristic evaluation works the best with 3 to 5 evaluators, so our group was sufficient for this evaluation. We did the evaluation individually and aggregated the findings afterwards. First, we downloaded the app and looked at the interface to get a first impression. Then, we looked at the interface again to inspect it thoroughly. After that, we determined the following scenarios which we reported on:

- The evaluator has to find the fastest journey from bus stop "Huygensgebouw" to train station "Ede-Wageningen". The result expected is the journey to follow starting at the bus stop and ending at the train stop, including scheduled departure and arrival times.
- The evaluator has to find out if there is any delay of trains leaving the station closest to them. The expected result is a list of all trains delayed nearby.
- The evaluator has to save a journey. The expected result is that the evaluator would be able to load the journey easily after saving it.
- The evaluator has to find which trains are about to depart from the train station "Nijmegen". The expected result a list of trains with their departure times.

We have not specified the steps that should be required to complete the task; there are probably multiple ways of completing the given tasks and the evaluator should figure out for themselves how to complete the task, while documenting their steps.

These scenario's are representative for the overall usage of the app; the app is used by travellers described above, and these scenario's comprise most use cases.

After that, we inspected various elements, compared to Jakob Nielsen's article about 10 usability heuristics for user interface design. And lastly, we rated each problem we encountered on the basis of Jakob Nielsen's article about severity ratings for usability problems.

Aggregated findings

After we discussed our own findings with each other, we aggregated the findings.

Issue	Description	Rating
Switching between tabs	On Android switching between different tabs within an activity is usually done by swiping. This is in violation of consistency and standards. This problem does not really persist and its impact is quite low.	1
Unknown symbol	In the list of travel possibilities, on the right of every recommendation a symbol is displayed which purpose is not clear. This is in violation of a match between system and the real world. Persistence of an unknown symbol is quite high, and the user does not know what its purpose is, even though it is visible in one of the most important activities.	2
No costs without explanation	When opening the details for a specific journey, at the bottom it is explained that costs cannot be displayed. However, it is not explained why it cannot be displayed or how the user can resolve this error. This is in violation with helping the users diagnose and recover from errors. It is important for many users to see the costs related to a journey, so this problem has a high frequency, reasonable impact and high persistence.	3
Settings menu not complete	There is a general settings menu, but not all settings can be changed from there, this is not	1

	<p>what you expect. This is in violation of flexibility and efficiency of use, since for example if an experienced user installs the app, he or she might want to change all settings immediately. This problem only occurs rarely, so is not of high severity.</p>	
<p>No back button on child activities</p>	<p>When opening another activity via the left menu, an activity opens without back arrow in the top bar, while the back button can be used to navigate back to the main screen. This is in violation of user control and freedom, or consistency and standards. The frequency, impact and persistence of this problem are all reasonable, so this is a minor usability problem.</p>	3
<p>Button without clear purpose</p>	<p>While viewing the details of a specific recommendation, in the top bar there is a button that does nothing if you press it. There is no easy way to get extra documentation on what its function is. This is in violation with good help and documentation. This is just like the unknown symbol a minor problem.</p>	2
<p>Star icons appear when pressing context menu button</p>	<p>While in the departure times activity, pressing the context menu button makes extra stars appear in the top bar. The user is not giving any notification of what is going on, this is in violation of the visibility of system status. The frequency of this problem appearing should not be so high, and its impact is low though it makes the app look low-quality, but its persistence is low.</p>	2
<p>Confusing Arrow symbol</p>	<p>The button to switch the departure address and the destination address doesn't indicate very well that that is its function. It consists of two arrows pointing in opposite direction, but it only stands in the top box which means that there is no clear indication that its function is</p>	1

	<p>between both boxes. A better way would be to lower the button, or to give it a facelift to make its action more pronounced.</p> <p>This probably falls under the heuristic of recognizing instead of recalling items.</p>	
No quick option to plan a journey from your current location	Falls under 'Match between system and the real world', since it's a natural thing you want to do. You can add your own location, but it is hidden behind a big + button	2
Impractical input of textfields	<p>When clicking on the box to enter your destination/departure address the keyboard doesn't pop up straight away. This is done to give you a clear look at the train stations nearby and the locations you have selected before, but it's not the way I prefer it.</p> <p>Falls under 'Flexibility and efficiency of use'. The trade off isn't worth it, because it now takes significantly longer to manually enter your destination.</p>	2
Time and Date selector	The time and date selector lets you select the time by letting you slide through the hours and minutes, which could take a long time if you are far removed from the time you want to select. The date is selected in increments of one day, which also isn't very fast.	1
Swap different menu items	You can swap the different menu items only by large section, not piece by piece. This gives some form of customizability, but not the granularity some people might want.	1
Stations redundant	The 'Stations' option in the side menu opens the same menu as the station selector while planning a journey. This is fine, but there is no clear way to return to the menu. You can either swipe in from the left (a quite obscure gesture), press the back button until you can select the menu again or tap 'Sluiten' in the top right corner. It would help a lot for uniformity	2

	if they use a yellow bar at the top of this option as well, just like they've done in the other menus.	
Microphone button confusing	Though the microphone is quite persistent, it is not ubiquitous, which may make it confusing for some people. Either make it a staple in the app, or constrict it to the planning section.	2
Redundant Button	The '+' button next to the 'My NS-login' is redundant as the field around that text is already a button itself, this is in violation against consistency and standards.	1
Redundant Screens	Going to Customer Service -> "Questions about this app" leads to the same screen as "About this app" which is redundant so should be fixed.	2

For the observations themselves, we refer to the appendix which can be found at the end of this document.

Problem classification

We drew a definite conclusion on the app's usability based on the results from our findings. We did this, on the basis of Jakob Nielsen's article about severity ratings for usability problems.

Conclusion

We found the app pretty decent besides the few problems that should be fixed soon, but overall the app was quite pleasant to use. The severity levels did not exceed 3, so the app can be used. Furthermore most issues are not a big problem except the bug with the star icons (violation of visibility of system status) and the back button (violation of user control and freedom), which both should get a high priority. Those bugs can be solved by not adding stars when the context menu button is pressed, and adding a back button in child activities.

Appendix

Our appendix contains the individual evaluations.

Expert review by Jelle Loman

First impression

When you open the app, you are immediately greeted with the possibility to plan a journey. One text field to enter the departing address, and one text field to enter the destination address. Below that is a box in which you can set the date and time at which you either want to leave your departing address, or arrive at your destination address. It looks very clean and modern, and gives the impression that this interface has been thought through.

In the top right corner there is a microphone button, that when tapped first shows you a dialog in which you get an overview of the kinds of phrases you can say. The application takes your phrase – spoken in Dutch – and tries to plan a journey for you.

Just below the microphone button there is a tab Planhistorie. In this tab you can quickly see all the journeys that you've planned before, making it easy to select them again.

You can also add an extra point that you want to reach during your journey. This can be done by pressing the button below the date and time selector, and then giving your layover destination. In this interface you have the option to add certain requirements like 'no international trains' or your layover time.

The interface of the application looks very clean and well thought out. It uses the colors of the Nederlandse Spoorwegen – yellow and blue – and has a modern look. It doesn't 'threaten' the user with too many overcomplicated options. It overall gives a good first impression.

Second impression

For the second impression I explored the menu that was hidden behind the hamburger button in the top left, or a swipe from left to right on the main screen.

At the top of the menu you can log into 'Mijn NS' if you have an account. The log in interface is simple; a text box for your username and one for your password, and a button to log in. I don't have an account, so I haven't tested this feature.

After the login option, the menu is divided into four parts – planning, information, services and general.

The first planning option is 'Reisplanner', which is the main screen where you can plan a journey.

Below that is 'Mijn reizen', where your saved journeys are located. If you save a journey, this screen shows the next departure time for the saved journey, and you can swipe through the different times.

The next option is 'Vertrektijden', which initially shows you the departure times and locations from all the trains on the station closest to you. You can change stations if you want to with a search bar at the top of the screen.

Below 'Vertrektijden' the information section starts with 'Storingen'. This option gives you all disruptions on the railways. Next to the name there is a badge in which the number of disruptions is listed.

The option below is called 'Werk aan het spoor'. This tab gives you all planned work in the upcoming few months, so you quickly see if any of the work affects your journey.

The 'Nieuws' option gives you news messages from the NS.

'Stations' lets you select a station, after which the app gives you an overview of all the stores located at that station, all services available, and the position of the station on a map.

Below 'Stations' the option 'Treinradar' gives you a map of the Netherlands with all the trains from the NS and their current position. If you click on a dot that represents a train, you get information about the train – the services on board and the type of train.

Now comes the services tab, which starts with OV-fiets, a service that you can use to rent a bicycle at train stations. When clicked it gives you a map with all available OV-bikes in a radius that you can specify with a slider. You can also search a location.

The second and final service is 'NS Zonetaxi', which requires a log in with your 'Mijn NS' account. It is a service that lets you plan taxi rides from certain stations with a fixed price per zone.

The final category is general, which gives you information about the app, lets you get in contact with customer support, and has a settings menu. In the settings you can change the language of the application and a whole lot of other things.

The app still gives a good impression when inspected more thoroughly. The problems I found with the interface are listed below, but none of them reached a severity rating higher than 2, making them minor issues, not major ones.

Scenarios

Scenario 1

I typed in 'Huygens' in the departure address, and I could choose the bus stop easily. I typed in 'Ede' in the destination address, and 'Ede-Wageningen' was my second choice. I tapped 'Plannen' to plan my journey, and I got a list with all possible journeys. The fastest journey was easy to discern, since the travel duration is listed prominently in the search results. The quickest journey takes 41 minutes, and involves 1 transfer. I would have to get into Bus 15, walk 3 minutes, and then take an Intercity. This can all be seen without selecting the journey itself.

Scenario 2

From the plan screen I couldn't see a delay or disruption option anywhere, so I turned to the hamburger menu. There I saw the option 'Vertrektijden' which has correlation with delays. I tapped it, and got the departure times for the station nearest to me. I saw that there were no delays as of now.

Scenario 3

On the planning screen, I planned a random journey (Nijmegen to Amsterdam Centraal), and tapped 'Plannen'. I didn't see the option to save a journey right away, so I long pressed on one (usually this brings up more options). Not in this app however, so I just clicked on the journey itself to see if I could find more options. The three dots in the top right didn't give anything useful, so I explored for more options. I tapped the big + in the bottom right, and I found what I was looking for: the option 'save trip'. Once I selected that option, I got the opportunity to set alerts for changes and/or disruptions on this journey, and for a checkout reminder so I wouldn't forget to check out with my OV chip card at the end of the journey.

Scenario 4

This one wasn't hard, because I could find the delays in scenario 2, and this is the exact same menu. I clicked it, and voila.

Problems

Problems during first impressions

The only gripe I have with the interface – and it's a very minor one – is that the button to switch the departure address and the destination address doesn't indicate very well that that is its function. It consists of two arrows pointing in opposite direction, but it only stands in the top box which means that there is no clear indication that its function is between both boxes. A better way would be to lower the button, or to give it a facelift to make its action more pronounced.

This probably falls under the heuristic of recognizing instead of recalling items. I would give this a severity rating of 1, a minor cosmetic problem.

Problems during second impressions

The system back button in 'Stations' doesn't bring you back to the station selector, it instead brings you back to the previous screen.

This falls under 'Consistency and standards', since the back button behavior here is different. A severity rating of 2

No quick option to plan a journey from your current location.

Falls under 'Match between system and the real world', since it's a natural thing you want to do. You can add your own location, but it is hidden behind a big + button. A severity rating of 2

When clicking on the box to enter your destination/departure address the keyboard doesn't pop up straight away. This is done to give you a clear look at the train stations nearby and the locations you have selected before, but it's not the way I prefer it.

Falls under 'Flexibility and efficiency of use'. The trade off isn't worth it, because it now takes significantly longer to manually enter your destination. Severity rating of 2

The time and date selector lets you select the time by letting you slide through the hours and minutes, which could take a long time if you are far removed from the time you want to select. The date is selected in increments of one day, which also isn't very fast. Severity rating of 1, a minor gripe.

The 'Mijn NS inloggen' button doesn't appear to be a clickable button, which they try to achieve by putting a '+' next to it, but that doesn't help at all. Falls under 'Consistency and standards'. Severity rating of 1

You can swap the different menu items only by large section, not piece by piece. This gives some form of customizability, but not the granularity some people might want. Falls under 'User control and freedom'. Severity rating of 1

The settings menu starts with a bombastic printing of 'Algemeen' (which means general) at the top, but this isn't carried on in the Sound section, which gives the settings menu overall a confusing look. Falls under 'Consistency and standards'. Severity rating of 1

The 'Stations' option in the side menu opens the same menu as the station selector while planning a journey. This is fine, but there is no clear way to return to the menu. You can either swipe in from the left (a quite obscure gesture), press the back button until you can select the menu again or tap 'Sluiten' in the top right corner. It would help a lot for uniformity if they use a yellow bar at the top of this option as well, just like they've done in the other menus. Falls under 'Consistency and standards'. Severity rating of 2

Though the microphone is quite persistent, it is not ubiquitous, which may make it confusing for some people. Either make it a staple in the app, or constrict it to the planning section. Falls under 'Consistency and standards'. Severity rating of 2

Problems during scenarios

During scenario 1 I didn't have any problems. It was very intuitive to plan a journey, which is good, since it's the core feature of the app. I think anyone who knows the basics of a smartphone can figure this out, since labelling is done well, and the interface looks clean.

No persona would have had trouble with this.

During scenario 2 I was a bit flustered at first, since the option 'delays' wasn't listed anywhere. With some logical thinking I was able to see that 'Vertrektijden' was the item I was looking for, but it wasn't as quick as I wanted it to be.

From the personas, I think that Eefke and Wouter wouldn't have much trouble with this, because they're used to poking around in an interface until you find what you're looking for. John however, will probably give up before he finds the correct information, since he is not that used to looking around. Maybe creating a tab with delays would help people like John more.

Falls under 'Match between system and the real world'. Severity rating of 2

During scenario 3 I didn't have much trouble, because I'm used to trying a lot to see what works. If a long press doesn't work, there is almost always another option and so on. From the persona's only John will probably struggle with this, but I think he will be able to find it eventually, so there are no problems with this function.

During scenario 4 I didn't have any problems, because it was clear that the option 'Vertrektijden' would give me what I want, and I think all personas would be able to execute this.

First impression

When opening the app a clear and short changelog is displayed, this is good for the visibility of system status. The main purpose of the app is of course to plan journeys, and the app opens in a clear and simplistic view where a new journey can be planned. An aesthetic and minimalist design is used, only the most used options are visible at first. The match between the system and the real world seems good, simple and plain Dutch words are used. Changing to the journey history would usually be done by swiping in most Android apps, but this is not possible. All functionality is easily accessed via the menu on the left-hand side, following consistency and standards of the platform.

Second impression

When planning a journey, the main purpose of the app, the travel possibilities are clearly listed in a list. On the right of every possibility, however, an unclear symbol is displayed: a few men with a question mark on them. When taking a closer look at a possible journey, at the bottom a message is displayed (translated): "The price of this journey can unfortunately not be displayed in this advice". While listing travel recommendations, a settings gear is visible allowing to change what information is visible, while nice, it would be logical if these settings could also be accessed from the general settings menu.

Scenarios

Finding the cheapest journey from bus stop "Huygensgebouw" to train station "Ede-Wageningen" is not possible, since the app cannot calculate the cheapest route, only the fastest; but in practice, these are usually the same. Entering the travel information is simple, if you are in another menu the back button can be used to go back to the main menu planner screen, but a back button is not displayed. When going to the details of a specific recommendation, all details can be viewed clearly. Unfortunately there is a button in the top bar with no clear meaning that simply does nothing if you press it.

Hunting down delays in trains nearby is very easy. As you would expect the functionality can be accessed using the menu on the left, and by then going to the map tab you can easily view whether there are delays near your area.

Saving a specific journey is also easy; when viewing its details there is, like the convention, a snackbar menu in the bottom-right corner of the screen. Pressing it and then choosing for saving the journey will even ask whether you want to receive notifications if there are delays. After saving the journey the left menu pops out temporarily to highlight "My journeys" to inform you it's saved it there. As you would expect, going to "My journeys" shows you the journey you have just saved. Removing it is done intuitively by a long click on it, and then choosing to delete.

Finding departure times of a train is also quite easy. Again the functionality can be accessed via the left menu, and then choosing departure times. Then you are asked to choose a station of which you would like to see the departure times, followed by all trains departing from this moment in time. It is easy to note a bug however, if you press the context menu button of Android on this screen, more and more star icons appear...

Usability issues

Issue	Description	Rating
Switching between tabs	On Android switching between different tabs within an activity is usually done by swiping. This is in violation of consistency and standards. This problem does not really persist and its impact is quite low.	1
Unknown symbol	In the list of travel possibilities, on the right of every recommendation a symbol is displayed which purpose is not clear. This is in violation of a match between system and the real world. Persistence of an unknown symbol is quite high, and the user does not know what its purpose is, even though it is visible in one of the most important activities.	2
No costs without explanation	When opening the details for a specific journey, at the bottom it is explained that costs cannot be displayed. However, it is not explained why it cannot be displayed or how the user can resolve this error. This is in violation with helping the users diagnose and recover from errors. It is important for many users to see the costs related to a journey, so this problem has a high frequency, reasonable impact and high persistence.	3
Settings menu not complete	There is a general settings menu, but not all settings can be changed from there, this is not what you expect. This is in violation of flexibility and efficiency of use, since for example if an experienced user installs the app,	1

	he or she might want to change all settings immediately. This problem only occurs rarely, so is not of high severity.	
No back button on child activities	When opening another activity via the left menu, an activity opens without back arrow in the top bar, while the back button can be used to navigate back to the main screen. This is in violation of user control and freedom, or consistency and standards. The frequency, impact and persistence of this problem are all reasonable, so this is a minor usability problem.	3
Button without clear purpose	While viewing the details of a specific recommendation, in the top bar there is a button that does nothing if you press it. There is no easy way to get extra documentation on what its function is. This is in violation with good help and documentation. This is just like the unknown symbol a minor problem.	2
Star icons appear when pressing context menu button	While in the departure times activity, pressing the context menu button makes extra stars appear in the top bar. The user is not giving any notification of what is going on, this is in violation of the visibility of system status. The frequency of this problem appearing should not be so high, and its impact is low though it makes the app look low-quality, but its persistence is low.	2

First impression

My first impression was that the app looked like the app “9292”. They’re both apps to plan a journey, so it’s logical they have a similar interface. It’s obvious where to fill in the needed data so the app can look up the journey. It’s also easy to find the menu and to understand the meaning of the buttons in the menu. So far, it looks like the app is developed very well.

Second impression

When I opened the app for the second time, I saw a different screen than what I saw when I opened it for the first time. But there was a button to close that screen so the app went to the home screen (what the app showed when I opened it for the first time). The screen I saw when I opened the app this time, was a screen where it’s possible to choose the starting place. This isn’t clear because in that screen, you can’t see where that screen is meant for.

The app works decent and it’s clear what the buttons mean. It’s also very easy to plan a journey. The colour of sidebars is chosen very well, because yellow is the colour of the developers of the app.

Scenarios

- The evaluator has to find the fastest journey from bus stop “Huygensgebouw” to train station “Ede-Wageningen”.

This was easy to do, because the third column in each journey suggestion shows the duration of the journey. After looking for earlier suggestions than the time now (14:59), I found a journey which took 40 minutes. That is the fastest journey I could find.

- The evaluator has to find out if there is any delay of trains leaving the station closest to them.

I did this by looking for a journey from train station A to train station B nearby my location. It turned out there were no trains which had a delay.

- The evaluator has to save a journey.

This was an easy task, because when I selected a journey, there was a “plus” button and a few options popped up, including the option to save the journey.

- The evaluator has to find which trains are about to depart from the train station “Nijmegen”.

This was also an easy task, because in the menu, there is an option to check which trains depart on what time on the selected train station.

Problems - Heuristics

- Visibility of system status

The app did this very well. For example: when I pressed the button to plan a journey without filling in the starting point, the app told me this wasn't possible because the starting point wasn't passed.

- Match between system and real world

The language used in the app is Dutch, which is chosen well, because the app is for traveling in The Netherlands. Words used in the app are also clear. They use simple words with icons next to the words so it's hard to misunderstand the meaning of the button.

- User control and freedom

When the user sets a setting and wants to change it back, the user simply goes to "Settings" and changes the setting back. So this is really easy.

- Consistency and standards

The words which are used aren't confusing. The options used in the app are not ambiguous. And the services the app provide are simple and aren't similar to the other services.

- Error prevention

There are no error prevention options. When the user wants to delete a saved journey, the app doesn't ask for a confirmation.

- Recognition rather than recall

This is implemented well, because the user doesn't have to remember what options he chose in the previous screen. This occurs in all services.

- Flexibility and efficiency of use

I couldn't find services where the app uses this heuristic.

- Aesthetic and minimalist design

The interface is really minimalistic. The shown buttons are the buttons which are really needed. The text shown is also necessary.

- Help users recognize, diagnose, and recover from errors

The app did this very well. For example: when I pressed the button to plan a journey without filling in the starting point, the app told me this wasn't possible because the starting point wasn't passed.

- Help and documentation

There was a pop-up with a tip, saying the user can change the interface. And when the user saves a journey, the app will show where it has been saved at. So the app does help the user using the app.

Problems – severity rating

- Visibility of system status

Frequency	rare
Impact	difficult
Persistence	one-time

The market impact is: 0

- Match between system and real world

Frequency	rare
Impact	difficult
Persistence	one-time

The market impact is: 0

- User control and freedom

Frequency	rare
Impact	difficult
Persistence	one-time

The market impact is: 0

- Consistency and standards

Frequency	rare
Impact	difficult
Persistence	one-time

The market impact is: 0

- Error prevention

Frequency	rare
Impact	difficult
Persistence	one-time

The market impact is: 0

- Recognition rather than recall

Frequency	rare
Impact	difficult

Persistence	one-time
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The market impact is: 0

- Flexibility and efficiency of use

Frequency	common
Impact	difficult
Persistence	one-time

The market impact is: 0

- Aesthetic and minimalist design

Frequency	common
Impact	difficult
Persistence	one-time

The market impact is: 0

- Help users recognize, diagnose, and recover from errors

Frequency	common
Impact	difficult
Persistence	one-time

The market impact is: 0

- Help and documentation

Frequency	common
Impact	difficult
Persistence	one-time

First impression

When opening the app for the first time I got greeted by a changelog screen followed by the reisplanner screen containing a textfield for your place of departure. Under that is a textfield for your destination. The input of both fields can be swapped by a button in the textfield of your place of departure. After that is a field where you can select the time of departure/arrival, with a special button to set the departure time to now. Besides that you can add a transit station. On the top right you'll find a microphone button, when clicked I received a minor tutorial how to use the function. Furthermore there is a tab with "planhistory" containing your previous searches. The app uses the color scheme of their company the NS: yellow and too many types of blue. The interface looks very modern and clean.

Second impression

I now opened the left menu by swiping from the left to right, here you can see quite a few functions. On the top is a place where you can login into your NS Account. Below that you get the "My Trips" where you can save a certain traject of choice. Now you can immediately see when then next train departures. You can also view your saved travels here.

The next thing is the

"Departures" in which you can choose a station and it shows which trains at which moment will departure. You can enter the name of the station and you can also save that station so it will make a shortcut for that station. There are already shortcuts for all stations nearby you.

Next is the "Disruptions" which shows all current disruptions in either list form or a map with all disruptions. Maintenance shows all planned maintenance for the coming weeks.

Next is "News" which is mainly a place to advertise their promotions.

Next is "Stations" where you can choose a station by typing in the name of the station in the text field or select a station nearby, these are already shown. Here you can see 3 tabs, one containing all shops in the station and their promotions and opening hours. The second tab is about available services in the station and, where applicable, if they are open or not. The third tab is a small map that shows where the shops and services are located in the station.

Next is "Train radar" which shows approximately where all trains of the NS are right now. When clicked on such a train it shows the route it takes and which intercity it together with its Destination, Type of train, train number and the length of the train.

The next two functions give information about services: the OV-Fiets and NS Zonetaxi. What's exactly inside these functions is unclear as you have to be a member of these services, to be a member you have to pay a subscription.

The next functions are in the category general: Customer service, which contains a FAQ and a link to the customer service on the NS website.

Next is the “About this app” which shows a way to contact the NS, being able to rate the app itself and some tutorials.

Finally there is “Settings” which shows some settings like adjusting the shown prices by my subscription at the NS.

Scenarios

Scenario 1

This went pretty well. Typing in “huygensgebouw” showed the right stop in an instant. Typing in “ede” was enough to find Ede-Wageningen. It picked the fastest route which was going into bus 13 to Nijmegen CS and then using the IC to schiphol. It was good that it showed which bus I needed to take without having to click on the particular route, but it was not the case with the train which just showed IC.

Scenario 2

Using the function departures the app directly showed all nearby stations and when clicked on it showed all delays, like the train I needed to take to get to the university in time today.

Scenario 3

I tried to save a journey from ‘s-Hertogenbosch CS to Huygensgebouw. First I thought that I could just long press the journey to save it, like in most apps. Apparently you can save a journey by pressing the journey and then pressing the + button on the bottom-right corner there you’ll find the save journey option.

Scenario 4

Using the function departures and then typing "Nijmegen" showed me all the trains that departure from Nijmegen.

Problems

To save a journey, you have to go to a specific menu instead of long pressing the journey, this is in violation against consistency and standards, since it still works with a workaround it gets a rating of 2.

The '+' button next to the 'My NS-login' is redundant as the field around that text is already a button itself, this is in violation against consistency and standards, and gets a rating of 1.

The hardware back button is implemented wrong as it is meant to return from a child screen to its parent, instead it returns to the page you visited before. This is in violation against consistency and standards and gets a rating of 3 as it interferes a lot with the user experience.

Instead of being able to type in your desired time of arrival/departure on the planning screen, you have to swipe around the hours and minutes which is less convenient when planning ahead. So it gets a rating of 2.

Going to Customer Service -> "Questions about this app" leads to the same screen as "About this app" which is redundant so should be fixed and gets a rating of 2.