6. Sketching and Design - Zuzanna

Entering the next phase of Double Diamond (chapter ref) called ‘Develop’, we also moved into the next significant part of our project – design. In this chapter, we are going to talk about its early stages such as making sketches and creating Style Tiles as well as more advanced things like prototyping and user testing.

We will focus on describing and discussing our design choices (for example, the layout of the application, typography, cards, and micro-interactions together with their functionalities) and the reasoning behind them. Additionally, we will summarise the chapter by presenting our findings from user testing and improvements that were incorporated based on it.

6.1. Sketches

‘Design is not just what it looks like and feels like. Design is how it works.’ – said Steve Jobs once and it has been engraved in many people’s minds ever since. For our project group, it was also an inspiration. That is why we have started the design process of our mobile app by discussing how each of our chosen ideas from the priority matrix (Chapter 4) that we incorporated in the application's sitemap (Chapter 5) can work in the future prototype.

However, only a discussion is usually not enough. As stated by Vyhouski (Vyhouski, 2018) sketching ‘is a very efficient way of communicating design while allowing designers to iterate multiple ideas before settling on one’. Consequently, we created sketches to visualize better some of the crucial functionalities and to roughly present chosen features. We used the most common and simple way of doing that by using pens and paper.

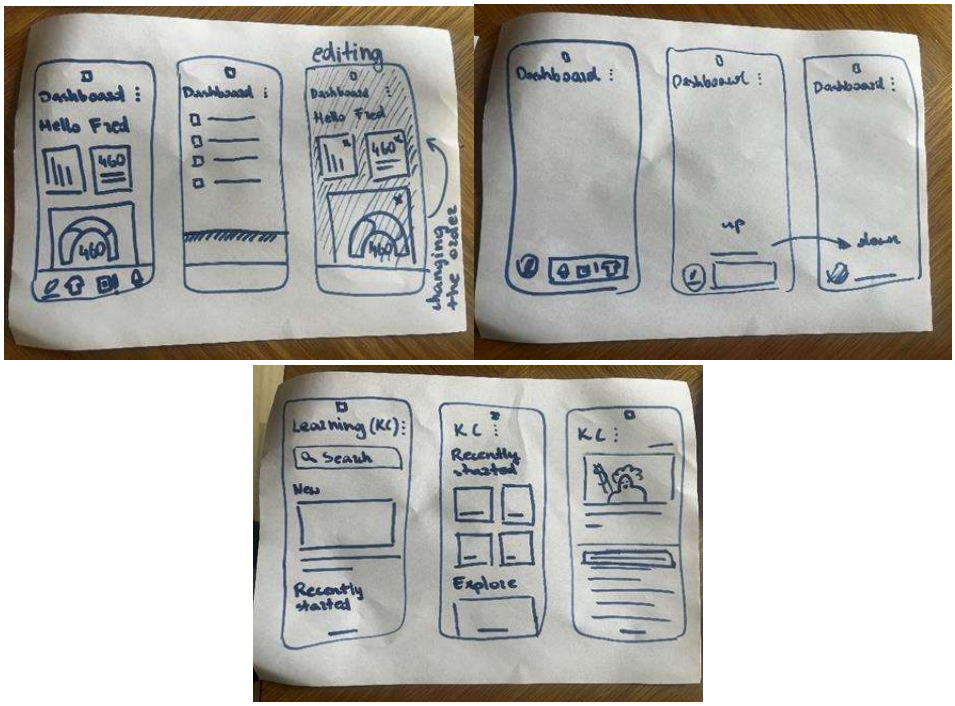

Figure 16 - Preliminary sketches

As a result, two sets of sketches were created while we were brainstorming together. The focus was intensified on creating a general understanding of how our future digital product could look like. We had to agree on basic elements such as the placement of navigation bars and an overview of the main pages (Figure 16).

Despite that, during the process of making sketches, some other issues were identified. For example, discussion and visualization of different options for customizing widgets with various charts appeared to be needed. That is why we sketched 'editing mode' (Figure 18). In creating that we were inspired by the interface design of iOS (Figure 17) in which one can modify different widgets on the home screen.

Figure 17 - iOS widgets' design - https://www.macrumors.com/how-to/use-widgets-iphone/

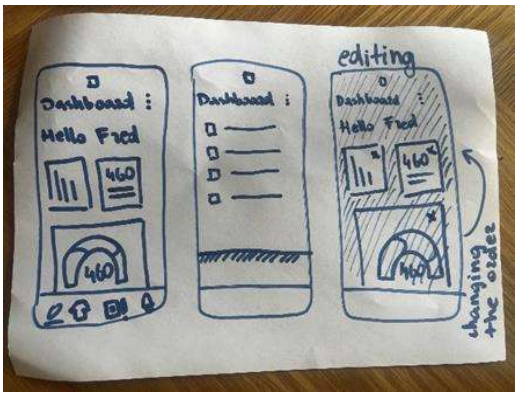

Figure 18 - Editing mode sketch

Taking into consideration the project's time constraints and the fact that our prototype needed to be at least partially developed into a live website/app, we set our minds to working as fast as possible to achieve a satisfactory result. Therefore, we decided to speed up the design phase by skipping a part (between sketches and making high-fidelity wireframes) in which the creation of low-fidelity wireframes usually takes place.

According to (Simic, 2022) 'A low-fidelity wireframe is a simple outline that uses only basic shapes and text to represent UI elements'. However, despite all of the possible advantages, low-fidelity wireframes tend to represent only the rough idea of upcoming design, there is no space for colors, fonts, etc. (Mockplus, 2023).

It could be questioned whether one should ignore such a highly appreciated by other UX and UI designers step in the development process, however, our goal was to make the prototype possible for being precisely tested by users. It goes without saying that low-fidelity wireframes could be given user feedback, although, in our case, it would not be that beneficial. The reason for this is that the mobile app we were creating was incredibly complex as even information on how exactly PriceShape works used to be often not fully comprehended and misunderstood by the potential testers.

6.2. Style Tile

Consistency in design is extremely important. As we were working together on creating the prototype, we needed a clear guide on how to use colors, fonts, etc. Furthermore, as stated by (McKay, et al., 2021) “The success of engineering product development depends on the effective communication of design descriptions”.

The Style Tile is “a design deliverable that references website interface elements through font, color, and style collections” (Warren, 2012). In other words, it is a representation of what the future design would look like which helps in maintaining the consistency of the whole digital product, especially when more than one designer works on developing it.

However, consistency should be not only applied to one of many brands’ products but also to the rest. In our case, we were working with PriceShape – a company that has already established its online presence as well as design recognition. We could not develop a digital solution that does not follow current design guidelines at all. The reason for this is that potential users of the application could be confused to the point that the questions like “Is it even an original PriceShape product?” and “Is it a scam?” could arise.

Consequently, we created the Style Tile (fig 19, 20) for the project with the usage of previously created Style Tiles for their website and similar to the desktop platform to create a feeling that those two can work together. We took into consideration the fact that the design guide for their current desktop platform also differs from their website. Mixing it together gave us a perfect Style Tile for a new product which could eventually become a part of PriceShape’s offer.

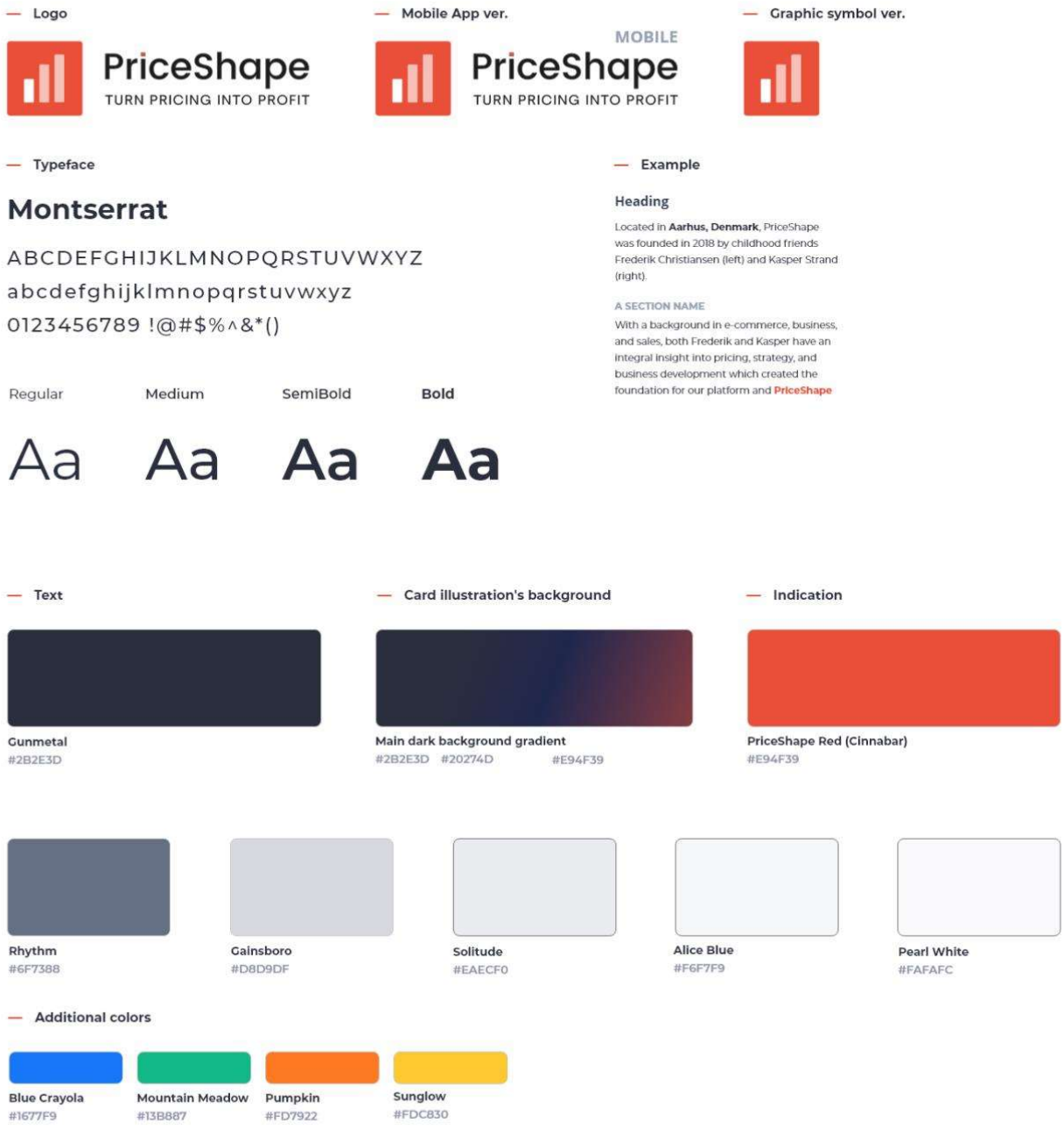

Figure 19 - Style tile; Design elements

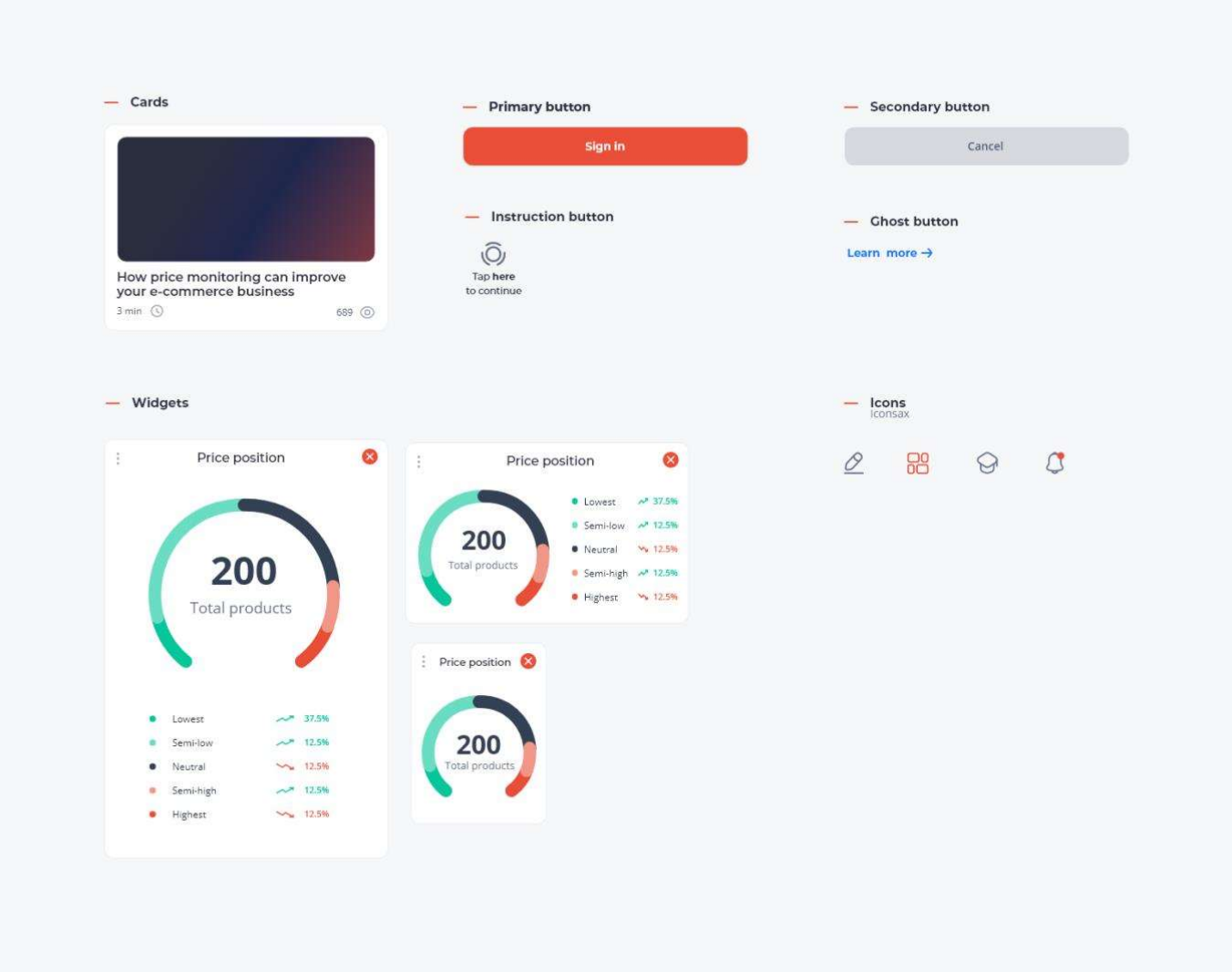

Figure 20 - Style tile; Components

However, why did not we use only the current PriceShape design guide? This decision was made based on the fact that even though the mobile app will be similar to the desktop platform, it won't have exactly the same functionalities. Additionally, some of the design guidelines were designed specifically for desktop usage and there were almost no specific rules dedicated to mobile design. In consequence, the final version of the mobile app's Style Tiles is supposed to communicate that even though it is not entirely the same product as the current desktop app, it can be a great and useful addition to it as a new PriceShape offering.

When it comes to Style Tiles' details, we chose grey shades for the background and card design, almost black for the text (in order to show a good contrast), and the brand's main color – tint of red – for main buttons and the most crucial indicators. Additionally, four other colors were chosen for minor elements like

graphs and charts displayed on the app's dashboard and "writing mode" on the settings page and log-in screens.

For the typeface we used Montserrat. We decided on that particular one as it has been already used throughout their current design. We used size and weight variations of Montserrat to establish a clear visual hierarchy which was aimed at making it easy for users to differentiate texts' roles, intuitively navigate through the application, and notice the most crucial elements (Gordon, 2021).

6.3. Design and Prototyping

After completing Style Tiles and as we decided to skip low-fidelity wireframes creation, we entered the prototyping phase. Having previously prepared sketches as well as examined PriceShape's current online desktop platform, we decided to create an inspiration board (figure 21).

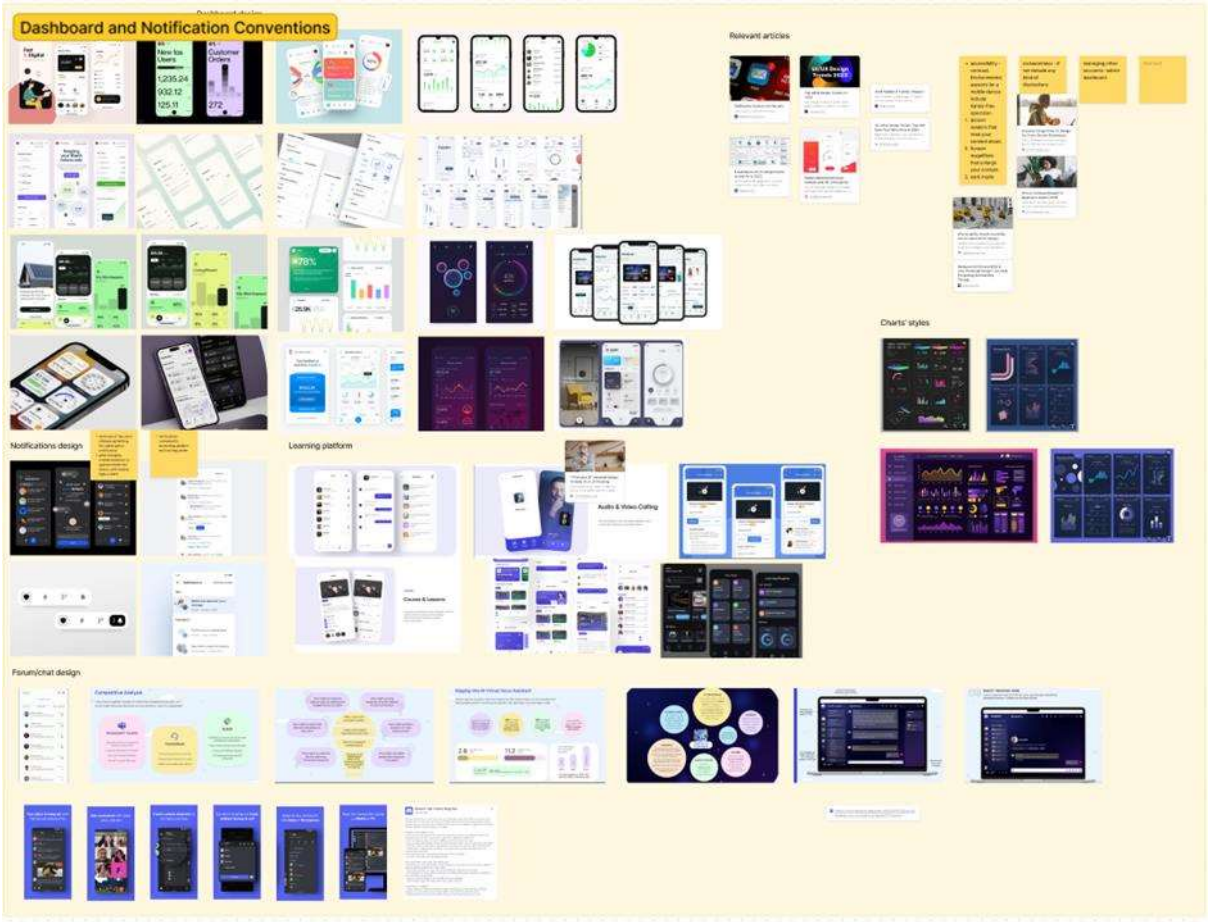

Figure 21 - Inspiration board

The reason behind this was simple – as Jakob's Law says "Users spend most of their time on other sites. This means that users prefer your site to work the same way as all the other sites they already know". Therefore, we wanted to see how

similar problems can be solved by different designs in order to gather more ideas for our own project. Moreover, having in mind that “A mental model is based on belief, not facts: that is, it’s a model of what users know (or think they know) about a system such as your website” (Nielsen, 2010), we wanted to have an overview of conventions in designing dashboards, notifications’ centers, learning centers, etc. It was supposed to help us in creating an experience in which users do not have to learn a lot about how the app works to perform their tasks.

In the inspiration board can be seen screenshots of designs found on the internet. Despite images of similar prototypes, we also included links to relevant articles which were discussing issues such as notifications’ system architecture, UX/UI trends for 2023, or the importance of accessibility. This gave us more insights into what we should take into consideration during prototyping, for example, the dark mode of the application.

Setting up the workspace and using components in Adobe XD

To smoothly start working in Adobe XD, which is a software used for creating prototypes of digital products such as websites and applications, we decided to set the workspace in the XD file and therefore, use the potential of the tool to the fullest. We made sure that our working file’s assets were arranged according to the previously made Style Tile. In other words, we saved every kind of font and color we had decided to use.

Then, we gradually created components that later on were used throughout the design such as navigation bars. As specified by (Moore, 2023) “XD components are reusable groupings of elements, such as text, shapes, or lines”. Additionally, every component consists of “Main Component” and “Instances”. They are, respectively, a parent (when changed, every instance is automatically changed as well) and children (placed on different artboards).

What is more, components have an option for creating different states. For example, when a text input component is created it is considered a default state (fig 22), there is also a possibility of creating a toggle state when a button is clicked as well as a new state when one makes a variation of the component, however, without any triggering animations. Finally, the last option is creating a hover state when a user is hovering over the component, however, as hovering is used only in the development of digital products for PC, we did not use this function in our mobile app design.

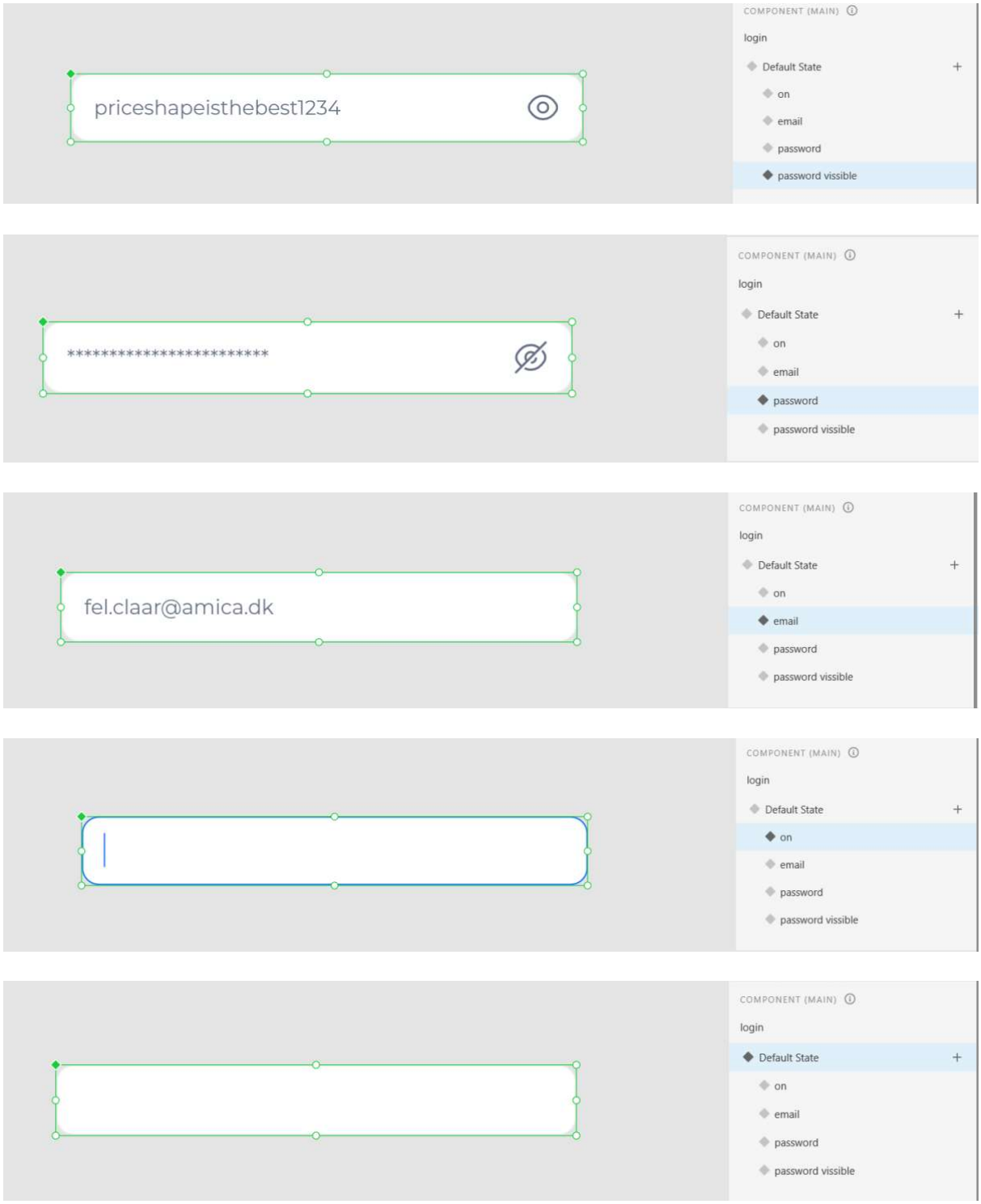

Figure 22 - Component states

Navigation bars

Our journey towards our current design of navigation bars can be easily described as time-consuming. We wanted to make sure that our mobile app, even though it does not contain every function of the desktop online platform, has all the essential options needed to work without creating unnecessary confusion when being used.

To begin with, we decided to create three different navigation bars: one placed on the top of the screen (containing a button that allows accessing the Account Settings and PriceShape's logo), another one for the bottom of the screen (for navigating through app's sections such as Knowledge Centre, Notifications, Editing Mode, Dashboard as well as "go back" button) and finally the one for Editing Mode (with options like adding new widgets, accepting changes, exiting Editing Mode, "go back" button). Additionally, at this point of production, we wanted to contain dark mode in our prototype which, consequently, led us to design dark mode versions of the navigation bars.

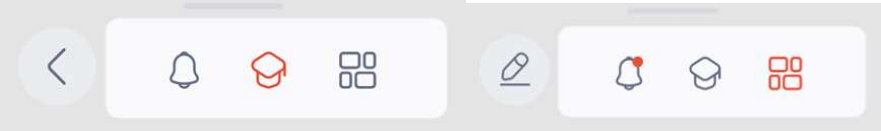

Figure 23 - Navbar 1.0

The first set of navigation bars' design (fig 23) clearly distinguished the Editing Mode/"go back" buttons icon from the rest, however, took a lot of unnecessary space. That is why we included the horizontal grey line in order to enable users to hide the whole navigation bar if not needed.

As Editing Mode could only be accessed from the Dashboard, on pages different from the dashboard we decided to replace the Editing Mode button with a "go back" button represented by one arrow pointing to the left.

Moreover, we created the second set of navigation bars in slightly darker shades of grey because we suspected it to be a possibly greater fit for the app as in our opinion it could get users' attention more effectively. However, after further discussion, we agreed that users should be focused on the app's content instead of being disrupted by the navigation bar.

Figure 24 - Minimize Bar - https://9to5mac.com/2017/11/10/opinion-home-indicator-essential-iphone-x-interface/

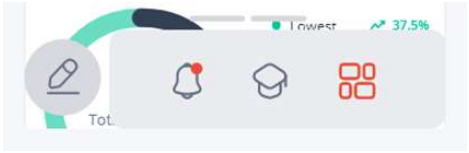

Figure 25 - Inspiration was taken from iOS bar minimization

Additionally, we experimented with different types of grey horizontal lines (fig 25) in order to make it easier to differentiate from the ones used in iOS systems (fig 24). We were concerned that in some cases it can be confusing. Nevertheless, having in mind Jakob's Law and the fact that users like to use similar solutions, we settled on one singular grey line.

Figure 26 - Dark Mode Navbar

Considering our previous plans, we also created a dark mode version (fig 26) of the navigation bars listed above. In order to make that, we simply inverted their colors and kept the brand's red as indicating color.

Figure 27 - https://www.androidpolice.com/2020/11/13/instagram-revamps-its-bottom-bar-putting-reels-and-shop-front-and-center/

Figure 28 - https://dailyrindblog.com/tiktok-going-viral-or-black-hole-spiral/

Figure 29 - https://uxdesign.cc/duolingos-redesign-4-things-they-got-right-1-possible-improvement-acec8af9ec10

Being still concerned by the amount of space taken by the bottom navigation bar and reviewing navigation bars' conventions used in successful apps such as Instagram (fig 27), TikTok (fig 28), and Duolingo (fig 29), we decided to redesign our bottom navigation bar once again.

Figure 30 - Navbar 2.0 & Figure 31 - Navbar 2.0 Dark Mode

This time we resigned from the circle-shaped button for Editing Mode and the "go back" arrow. We united all the icons together in one simple rectangle with slightly curved corners with a radius of 12 pixels which is used throughout the whole design for cards as well as other elements. Another change was placing a grey horizontal line inside the navigation bar. We decided to do that in order to make it clear that the line is one of the navigation bar's functions. Additionally, with that change line no longer was lost between the app's content while scrolling. In this way, a third and final set of bottom navigation bars (fig 30, 31) was created.

Figure 32 - Editing Mode Bottom Navbar

Moving to the second out of three option bars considered by us in the earlier stages of designing, we created two sets of Editing Mode bottom buttons. One set (fig 32) is visible when opening the Editing Mode. That is why we included an option for exiting the Editing Mode as well as adding a new widget. The second set replaces the first one after adding a new widget which requires accepting the new Dashboard's setup.

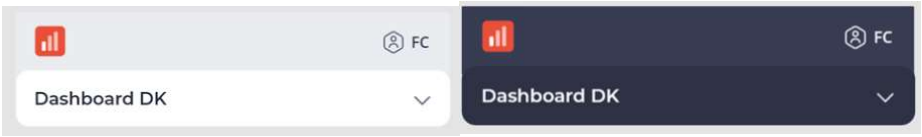

Figure 33 - Top Navbar

The third and final set of navigation bars (fig 33) was created to be placed on the top of the pages all the time. The reason for it was that it includes the name of the page the user is currently using. Besides that, we placed PriceShape's logo and

button to access Account Settings. Additionally, on the Dashboard one can access different versions of their Dashboards and their options by clicking on the rectangle with curved corners. This option is indicated by the arrow pointing down to symbolize that it is a drop-down menu.

Dashboard

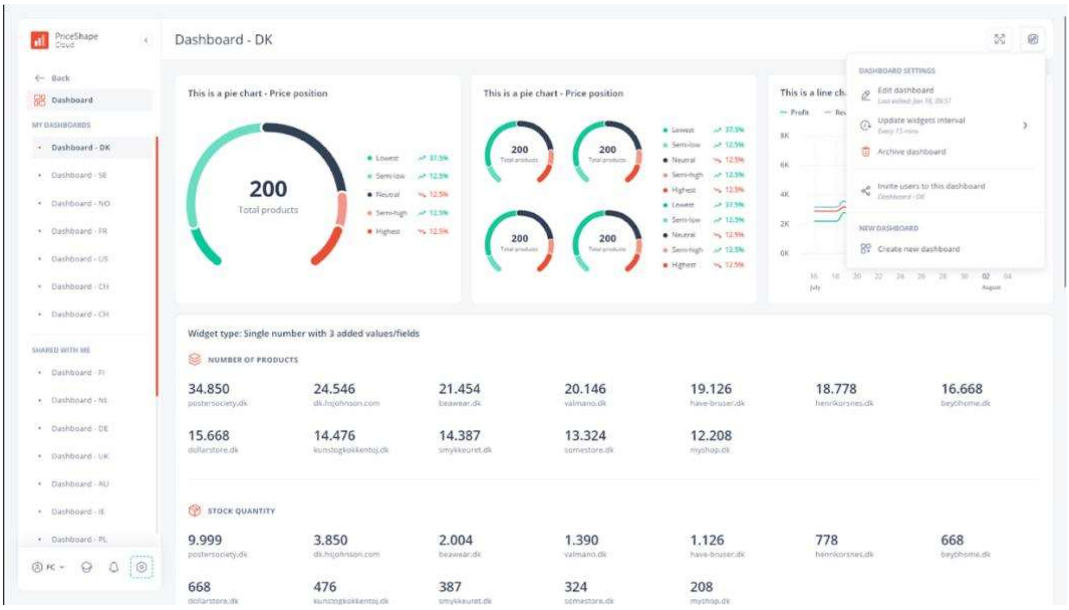

Figure 34 - Dashboard design in the New PriceShape desktop platform

At first, creating the dashboard seemed like an easy job to do. What we needed to do was take PriceShape's desktop platform design (fig 34) and accommodate it to be displayed in app format. Therefore, we decided on a drop-down menu - to hide all the different dashboards one can create - which eventually became a part of the top navigation bar that was mentioned before. Additionally, we changed the size of the widgets from the original design. In this way, the design for the Dashboard (fig 35) was created.

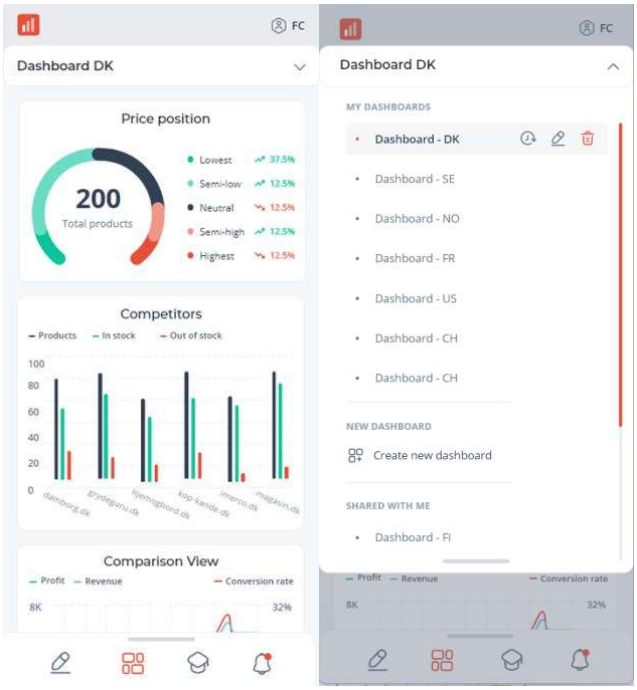

Figure 35 - PriceShape Mobile Dashboard & Figure 36 - Dashboard dropdown menu

Yet, there were still some options, like creating and deleting the dashboard, updating the widgets intervals and (originally) sharing the dashboard, that needed to be incorporated into the app. Mentioned functions were placed in a separate drop-down menu in the PriceShape's design. Nevertheless, as we were designing the mobile app and, consequently, did not have as much space, we decided to position all those options (represented by icons - excluding creating a new dashboard placed in the separate section) in the navigation bar's drop-down menu (fig 36) as each of them could be considered an editing option for the Dashboard.

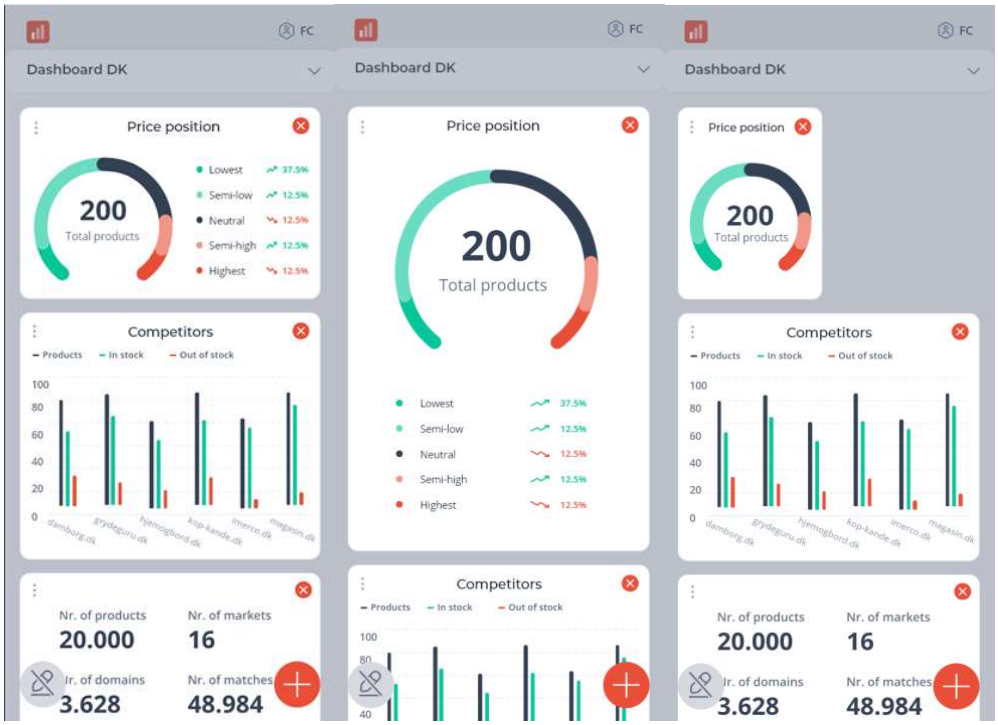

Figure 37 - Dashboard in editing mode

However, in order to edit widgets on the Dashboard one needs to enter the Editing Mode (fig 37). It is possible by clicking the dedicated icon on the bottom navigation bar and from the top navigation bar's drop-down menu. For the Editing Mode we created the following options: changing the order of widgets by dragging them up/down, changing the size of widgets by tapping directly on the widgets (there are three different sizes available, deleting the widget, and adding the new one. Mentioned editing functions were made to make it possible for users to personalize their dashboards as "Product customization is a means that effectively caters to personal needs" (Zeng, et al., 2022)

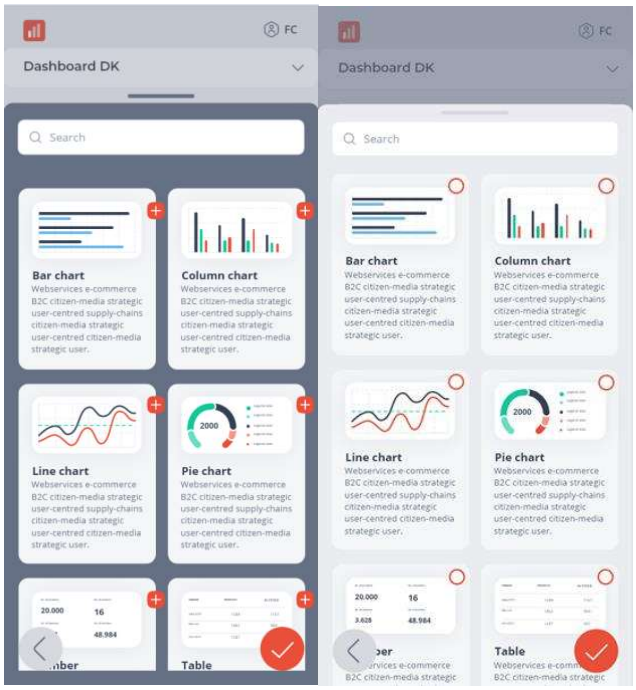

Figure 38 - Add widget with dark background & Figure 39 - Final add widget design

At first, we decided that the “adding the new widget” section should significantly differentiate from the design of the main pages. That is why we used a dark shade of grey as the background (fig 38). However, in that way the colours” balance deteriorated. That is why we decided to incorporate the lighter shade of grey. Moreover, during the prototyping process we changed the design of the “adding” buttons as well as placed a grey horizontal line inside the rectangle.

Figure 40 - Dark Mode Dashboard

Moreover, as nowadays the popularity of dark modes of applications increases, we designed the dark mode of the Dashboard (fog 40). Our aim was to prototype the whole mobile app in the dark mode, however, due to time constraints, we decided to prioritize completing the light version.

Notifications and Change Approvals

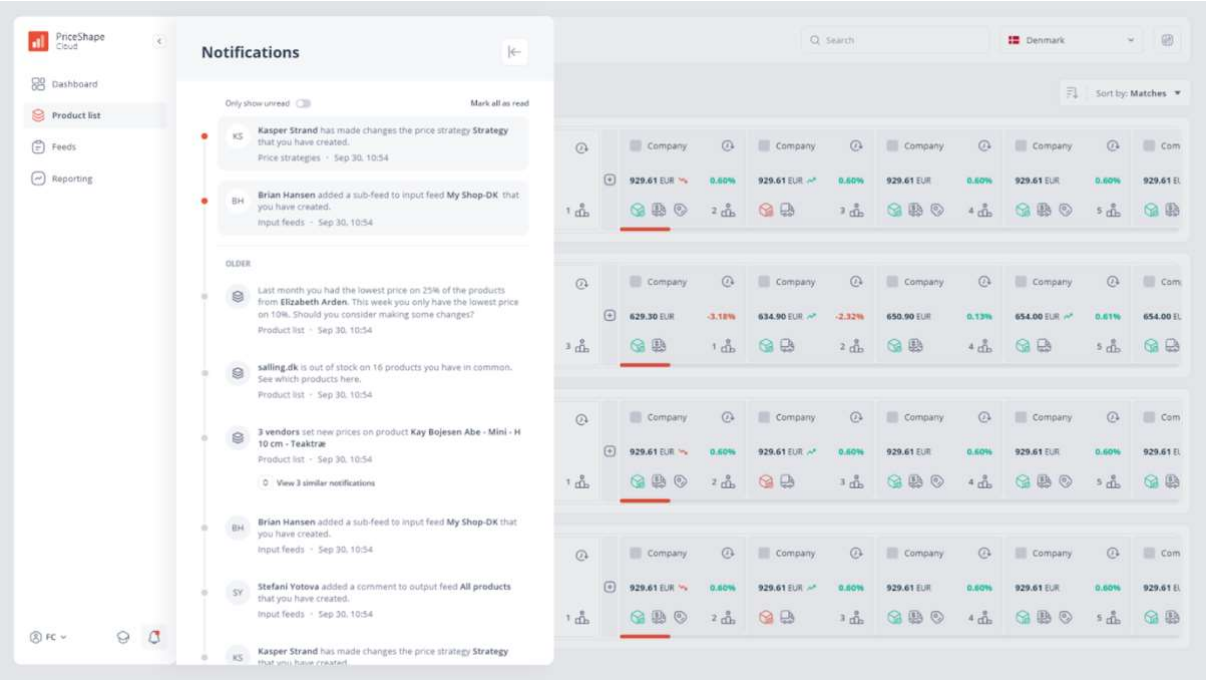

Figure 41 - Notification Page Design for the new PriceShape Platform

Original PriceShape's design of notifications (fig 41) can be described as a side menu that one can access after clicking on the relevant icon. However, this great solution for desktop apps was not a good idea for mobile apps. That is why we decided to create something different. In the beginning, we created three sections for each kind of notification: price approvals, admin alerts, and others (fig 40). Nevertheless, after discussing it and coming to the conclusion that there won't be so many notifications at once to create a need for additional screens in the app, we chose to create only one page (fig 42) - more similar to the original design, with which users have been already familiar.

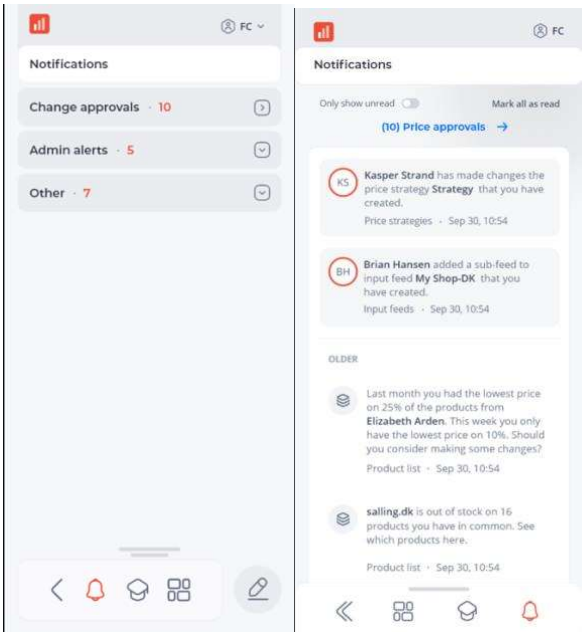

Figure 42 - Notifications 1.0 & Figure 43 - Notifications 2.0

However, not so familiar for the current PriceShape users was the Price Approvals feature (fig 44). It was an idea brought to us by the company's UX & UI Designer - Stefani - during our interview (chapter 4). The idea behind it was that users would receive the push-up notifications and they can choose to approve/disapprove a price change immediately or come back later. Therefore, we decided that we should place this feature in the Notifications.

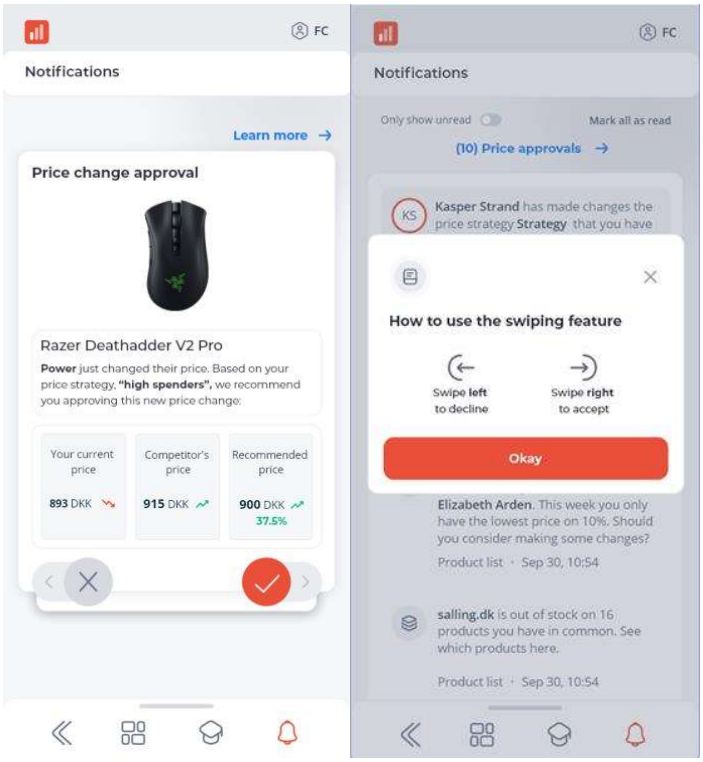

Figure 44 - Price Approvals Swiping feature & Figure 45 - Swiping feature instructions

After tapping on the “Price Aapprovals” button, the user is transferred to the swiping Tinder-like feature. The principle to use it is easy - swipe right to approve, swipe left to disapprove. However, as it is something new for users, when entered for the first time, short instructions are displayed in the form of pop-up information (fig 45).

Figure 46 - Tinder inspiration - https://www.designweek.co.uk/issues/14-20-august-2017/tinder-redesigns-app-new-logo/

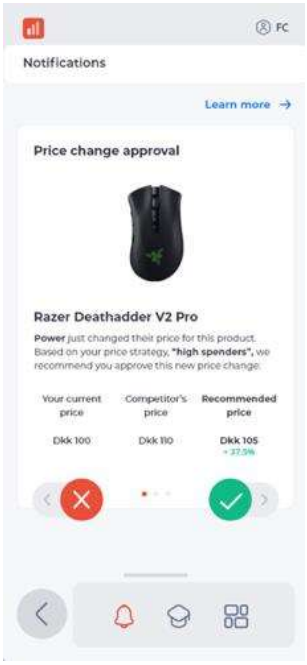

Figure 47 - Initial design of Card swiping feature

As we were inspired by Tinder’s design, at first, we chose similar colors for our buttons as well (fig 47). However, after revising it together, we agreed that it did not align with the previously prepared Style Tile for the app, where the tint of

green is used specifically for minor elements in the design of for example widgets.

Knowledge Centre

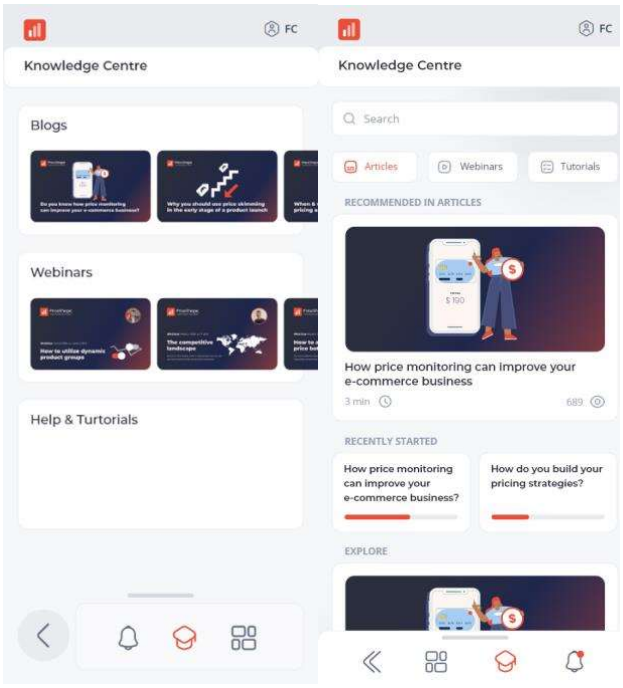

Figure 48 - Knowledge Center 1.0 & Figure 49 - Knowledge Center 2.0

Our first approach to designing Knowledge Centre pages (fig 48) had some usability issues such as too small text in the cards which were hard to read and could easily be perceived as crowded. Consequently, we tried once again and developed a different version (fig 49) in which three sections can be distinguished (recommendations, recently viewed, explore) as well as a search bar and three buttons (articles, webinars, tutorials) - aimed at helping to sort the content. Additionally, our final version of the main Knowledge Centre page represents a better visual hierarchy by using different sizes of cards and different types of fonts.

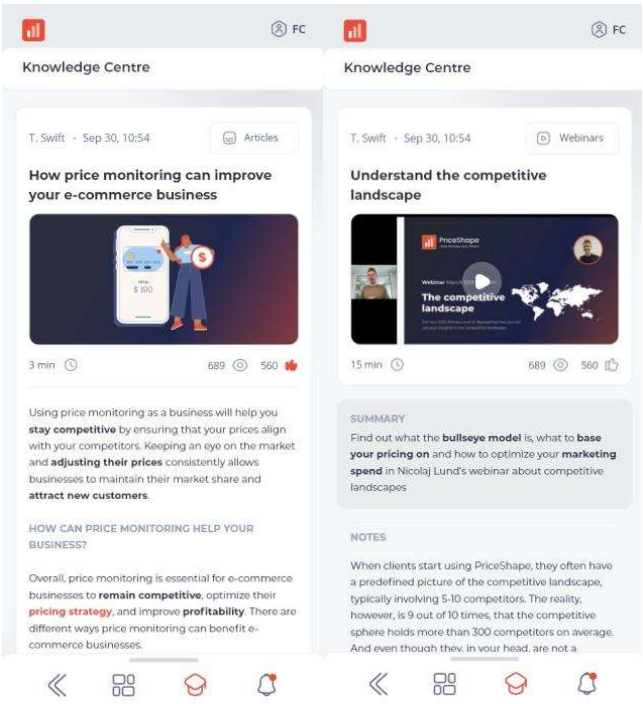

Figure 50 – Article & Figure 51 - Webinar

Furthermore, we created layouts to represent the examples from all three types of content (an article (fig 50), a webinar (fig 51), and a tutorial (fig 52)). Each of them includes an author, a date, a category, a number of views and likes as well as an approximate time needed to read/watch it.

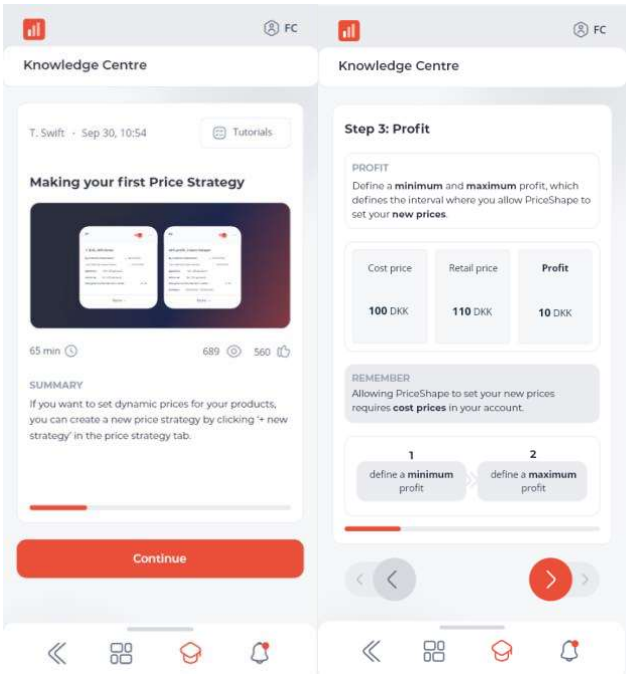

Figure 52 - Tutorial

When it comes to designing tutorial pages, we wanted it to look almost like a game to create a feeling that users can accomplish something even though it sounds complicated and hard. That is why we used the same layout and functionality for the steps as for the Price changes. Moreover, it follows the previous design making the whole app seem less complicated and easy to use - users do not have to learn once again how the new feature works.

However, it needs to be noted that used illustrations and content were previously created by PriceShape.

Settings

Designing all the pages for Settings was quite impossible due to time constraints and how detailed the whole part of the app is, however, we wanted to show what some parts of them could look like. Besides, the layout of all the other sections would look the same. In the prototype, we included a process for changing the name of the user in the “Personal details" of the account.

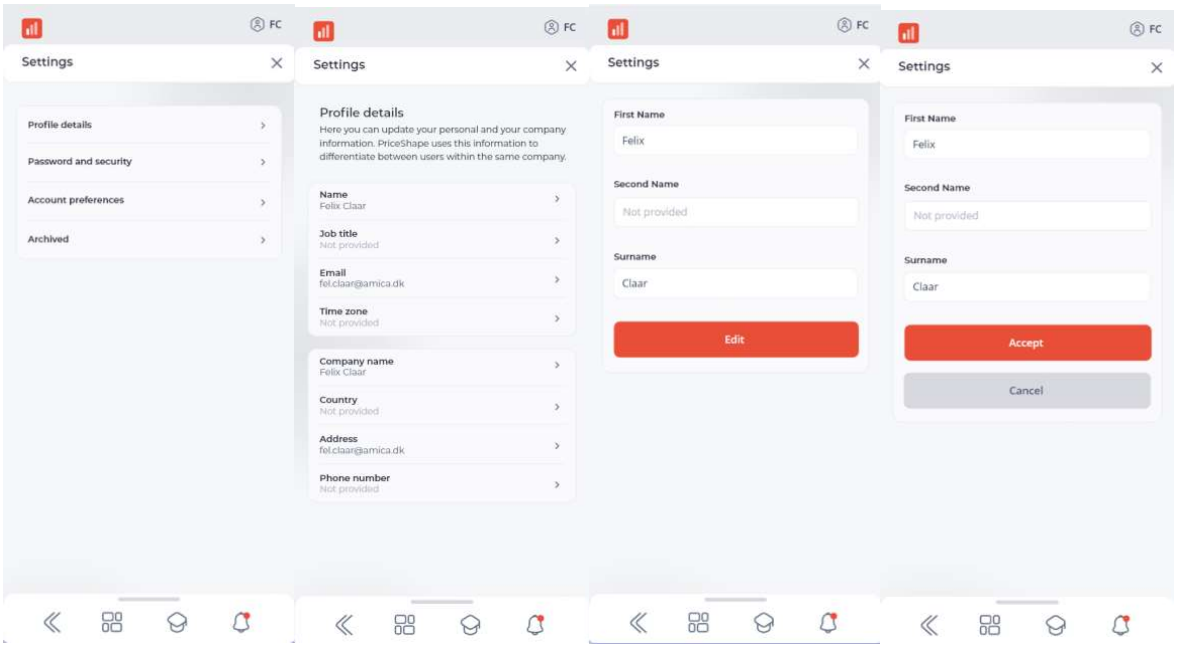

Figure 53 - Settings Pages

We decided to make a new layout for the Settings pages (fig 53) - inspired by the way Meta works with the UI Design of their settings pages – because the layout used currently by PriceShape (fig 54) on their online desktop platform could not be applied for a mobile app as well as needed a little update, in our opinion.

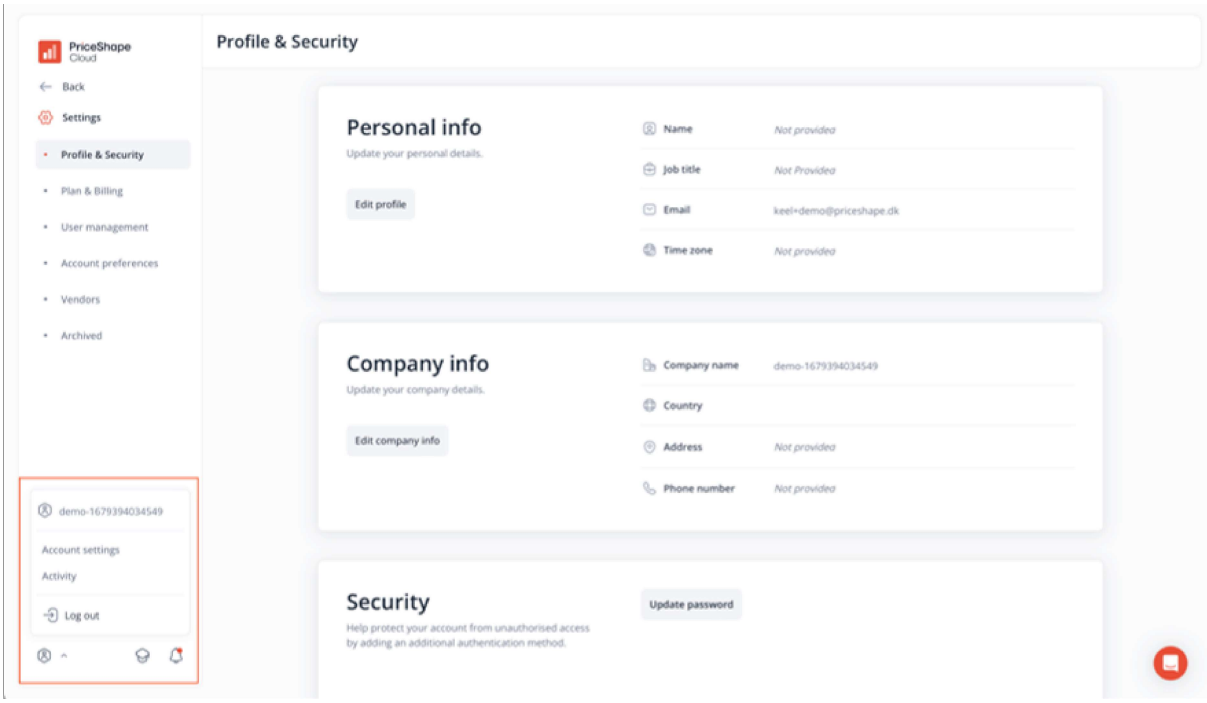

Figure 54 - PriceShape Desktop Design for Settings

Pop-up information

When it comes to pop-up information, we followed the original PriceShape design (fig 56) with small adjustments like a different shade of grey for secondary buttons and their placement (fig 55).

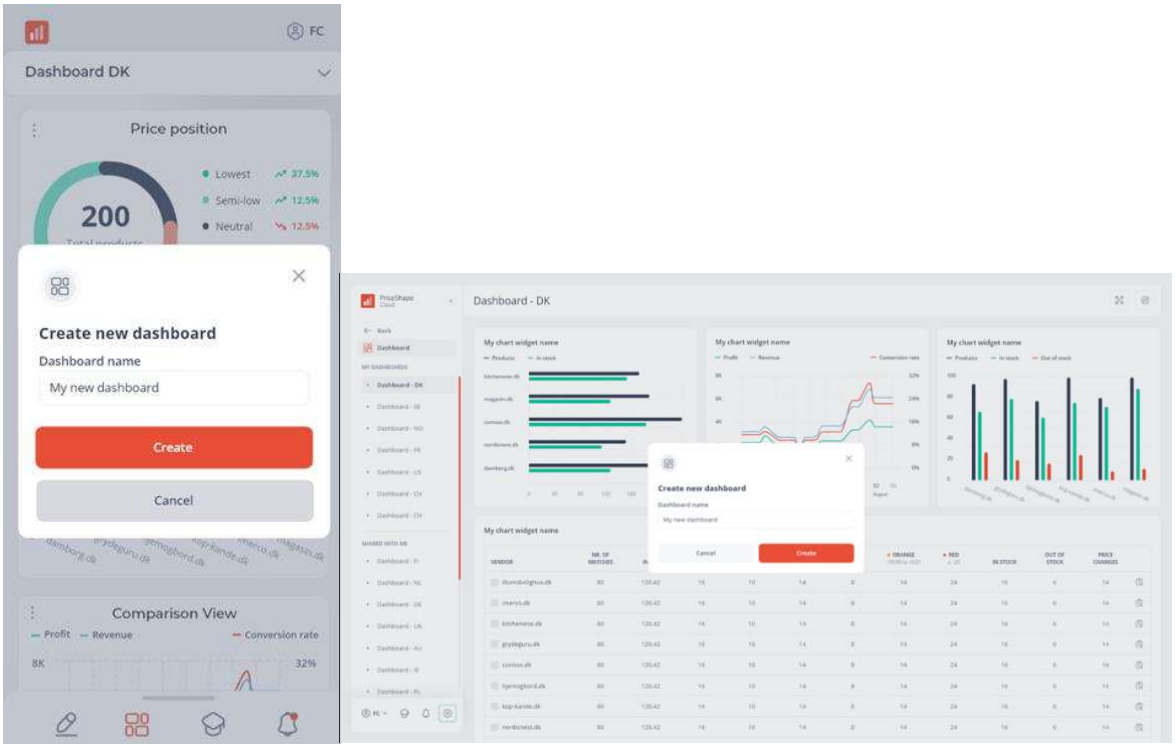

Figure 55 - Pop-up message in PriceShape Mobile & Figure 56 - Pop-up message in PriceShape Desktop

Hidden menus

Hidden menus (fig 57), which appear after tapping on particular buttons/icons (for example account icon), were designed in the same way. After tapping on the icon, a hidden menu shows up from the bottom of the page. In order to close it, one can drag it down - this function is indicated by the grey horizontal line as usual in our mobile app.

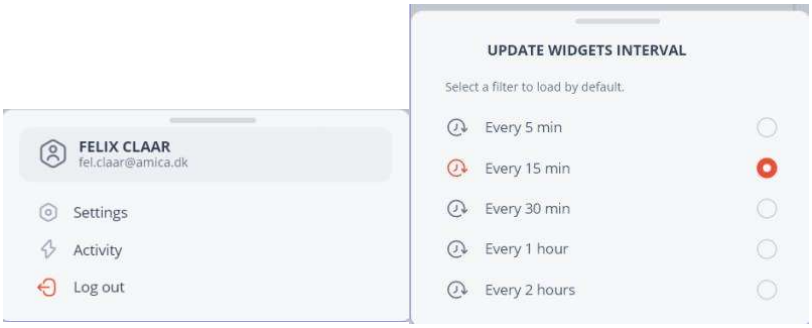

Figure 57 - Hidden menus

Loading

Inspired by the study from Linnæus University, we planned to include an animated loading process in our digital solution. According to Persson (2019) loading screens without any kind of animation tend to be perceived as significantly slower than the ones with animation. That is the absolute opposite of what every UX designer wants to achieve because a user that needs to wait is an unsatisfied user. An unsatisfied user won't use the digital solution. Moreover, usual approaches for loading screens such as loading bars and spinners were

perceived also as slower ones in correlation to loading animations created in order to entertain or distract users.

Consequently, we settled for creating simple animated loading animation aimed at distracting users from the amount of waiting time. Our design choice – the animated PriceShape logo (figure 58) – is supposed to be the introduction to the app, an assurance that users opened the PriceShape product, and finally, a professionally looking and aesthetically pleasing start of the app.

Figure 58 - Loading animation

Onboarding

Figure 59 - Onboarding Progress Bar

During onboarding, the user is shown the main functionalities of the mobile app such as Notifications, Knowledge Centre, and Dashboard in the shape of the animation. On the top of each screen, the progress bar (fig 59) was positioned. As stated by Amer and Johnson (2014) "The purpose of progress indicators is to inform users of the progress being made to complete a task".

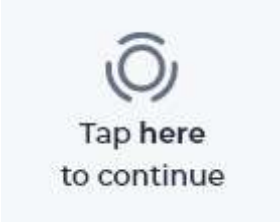

Figure 60 - "Tap Here" indicator

Knowing how important is the engagement of the users, we included micro-interactions - instructions like "tap here to continue" (fig 60) to lead the user through the onboarding. According to (Joyce, 2018)"Microinteractions are trigger-feedback pairs in which (1) the trigger can be a user action or an alteration in the

system's state; (2) the feedback is a narrowly targeted response to the trigger and is communicated through small, highly contextual (usually visual) changes in the user interface".

Sign In

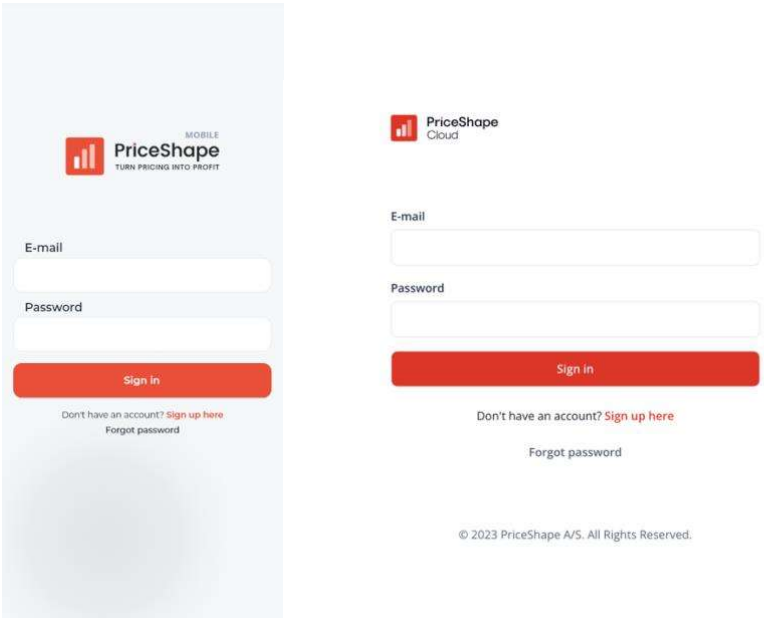

Figure 61 - Sign in screen PriceShape Mobile & Figure 62 - Sign in screen PriceShape Desktop

Pages prototyped for the signing-in process (fig 61) are the same as the original PriceShape design (fig 62).

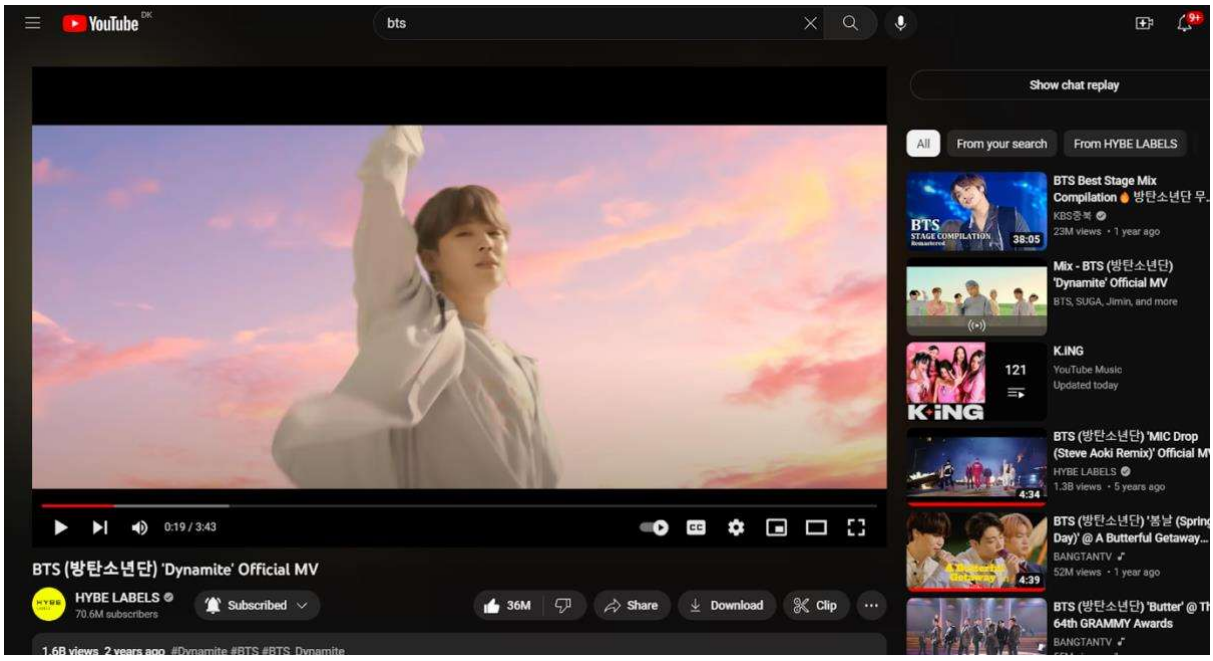

Figure 63 - Soft glow gradient behind YouTube video

However, during the signing-in process, we introduce for the first time to our users our slowly-moving grey gradient which creates a subtle movement in the background. It does not disturb but adds to the experience. In creating it we were inspired by YouTube design where behind the video box a subtle gradient is moving slowly (fig 63 - gradient can be noticed in the left upper corner). The mentioned moving gradient is present throughout the rest of our app's design.

6.4. User Testing - Kenza

Testing is a crucial part of the design process because it allows the creators to make sure their views alre aligned with the users. At the time that the prototyping phase has reached a point where it allowed enough functionality in its interactions, we decided to start testing some user flows with people outside of our group, prepared to take their feedback into consideration and adjust our prototype accordingly.

Guerrilla & Think Aloud

We opted to employ the Guerrilla (Adiseshiah, 2017) and Think Aloud (Nielsen, 2012) methods simultaneously to streamline our testing process and enhance efficiency. The nature of these methods allows for their concurrent use. The Think Aloud method involves users completing tasks while vocalizing their thoughts and providing real-time feedback. On the other hand, Guerrilla testing involves recruiting spontaneously selected users to perform tasks, with the testers assessing the difficulty level and assigning scores on a 1 to 3 scale, where 3 denotes the easiest. Thus, we made the decision to combine these two methods.

The users we selected for testing were chosen randomly from individuals present at the Academy during our testing period. Our only screening criterion was to ensure that we did not include anyone beyond the second semester in Multimedia Design. We approached other students and requested a few minutes of their time to assist us with a Think Aloud test. We deliberately chose not to inform them about the Guerrilla testing aspect in order to avoid overwhelming them or placing undue pressure on their responses and performance. The testers could adequately assess the users' performance and assign the appropriate score based on observation.

We commenced the testing sessions by providing an overview of our project's scope and introducing PriceShape's software. We then requested the users to openly express their thought processes as they completed a series of tasks. We