

InStoreApp 2.0 - A Redesign of InStoreApp for Enhancing User Experience

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ABSTRACT

This report presents a redesign and evaluation of the existing on-premises retail app solution in preparation for its migration to the cloud. The redesign project focused on two parts of the applications purchase module, employing the Double Diamond design methodology alongside UX/CX guidelines and frameworks. Emphasising the current user needs, data collection and interviews were conducted to inform the redesign process. The resulting redesign showcases significant enhancements of overall usability, including an optimised flow and a coherent design language through the application. The design aims to enrich the user experience of the customers, with the goal of enhancing overall user satisfaction, cultivating loyalty, and promoting repeated engagement with the company. The report concludes insights of key areas for future refinement.

CCS CONCEPTS

• **Human-centred computing** → **Interaction design process and methods.**

KEYWORDS

Double Diamond, Interaction Design, Retail App, User Experience, Thematic Analysis

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1 INTRODUCTION

Together with the company EG retail, we have explored design solutions of the purchase module in their current on premises solution, EG InStore App, for an upcoming cloud based app. EG InStore App provides stores with a simple and portable tool for everyday store and logistics tasks, as part of the Chain back office solution. InStore App is used by store managers and employees for tasks such as item look-up, label printing, ordering, order picking, stocktaking, goods receipt, breakage etc. As the back-office system EG Chain transitions to the cloud, a rebuild of InStore App will be essential to ensure seamless integration with the already migrated cloud

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applications. This presents a great opportunity to upgrade user experience and visual identity to match established design guidelines by starting to design for a .NET MAUI application that will run on phones (Android and IOS) and Zebra devices with scanners (Android). The project carried out a design process that followed the four phases of the double diamond model. The modules Purchase order and Goods receipt of the current app have been explored, analysed and redesigned. This was done by individual researching and testing of the current app as well as collection of customer data through interviews to get an understanding of requirements and preferences, enabling us to identify problems with usability that needed to be improved. Data collection showed feedback related to the app flow, logic and usability. Drawing from above, combined with existing design methods and frameworks, we created design suggestions of improvement. Core features have been kept the same and focus has been in improving usability and desirability. Over the past years, EG has initiated a migration project with the goal to offer a fully cloud based portfolio of products that supports their customers within the retail industry. As a part of the ongoing migration, the mobile application InStoreApp stands next in line to migrate to cloud. In addition to leaving the on premises solutions behind, a new emphasis on the user- and customer experience is emerging as a central focus. This increasing focus on experience can be motivated to strengthen the company brand.

2 BACKGROUND

2.1 Costumer and user experience

Mobile applications are transient as they usually exist in a context-driven nature. Due to the limited screen space, effective navigation, layout, and design patterns are crucial for optimising the user experience [1]. Khan et. al. [2] refer to a social exchange theory, suggesting that individuals, such as customers, will continue engaging with a particular object of engagement as long as they perceive value in doing so. This theory also proposes that customers are likely to reciprocate their perceived value back to the brand, for instance, through repurchases or recommendations. The authors suggest that engaging with a brand's mobile app and experiencing favourable user experiences can lead to increased loyalty and repurchase intentions towards the brand [2]. With this background, our focus has been securing that the need for an user friendly Customer Experience (CX) is acknowledged during the design project. The authors study showed that CX with mobile apps has a greater impact on relationship quality and loyalty intentions [2], which thereby implies recommendation to the firms to provide mobile apps perceived as valuable to enhance and capitalise on their customer journeys and relationships. Further, Khan et. al [2] notes that there are significant implications for the design and implementation of mobile apps. With this in mind, the app experience is a critical role where the design should be prioritised and decisions when designing the cloud based InStoreApp 2.0 should be thought through strategically. To effectively engage customers and provide user friendly experiences through mobile apps, they should be tailored to meet the needs of the user. Apps that are perceived as relevant are much more likely to be used, as they are better equipped to capture and sustain customer attention and interest [2].

2.2 Accessibility guidelines

Since the initial publication of the Web Content Accessibility Guidelines (WCAG) in 1999, there has been a significant evolution in the field of accessibility [3]. Designing with accessibility in mind ensures that all users, regardless of their abilities or disabilities, can access and interact with digital products and services, fostering inclusivity and enhancing user satisfaction and engagement. In order to succeed with the forthcoming InStore App 2.0, designing according to UX guidelines are of great importance. Pinchot [4] summarises seven UX guidelines for mobile applications [4], drawn from a variety of literature, which further informs our approach to accessibility. Below, the guidelines are presented. (1) Deliver value by leveraging context; Use environmental, personal, and historical contexts to personalise settings and remember user actions, enhancing the app's utility. (2) Simplify information delivery; Design mobile apps with streamlined interfaces for common tasks, seamlessly integrating with other applications for a cohesive user experience. (3) Provide the simplest way to enter data correctly; Employ contextual automation, appropriate input controls, and tailored keyboard selections to simplify data entry, minimise errors, and guide users intuitively. (4) Manage user interactions and navigation; Ensure clear labelling of menu items, provide context for user location, and offer simple navigation controls for user-friendly interactions. Simplify registration processes and optimise form layouts for enhanced usability. (5) Employ information architecture to deliver content logically; Arrange content logically, avoiding overlapping categories and using clear language. Place controls and labels close to relevant content, allow customization of views and controls, and demonstrate the app's value upfront to improve usability and trust. (6) Use feedback to convey state; Utilise immediate feedback mechanisms, such as visual indicators and messages, to communicate errors and task completion effectively. Offer real-time updates on order status or task progress to enhance user understanding and engagement. (7) Leverage aesthetics for clarity of information; Employ aesthetics and graphic design principles to ensure clarity of information. Create layouts that fit device screens, use adequate text size and contrast, and provide images with the correct aspect ratio and resolution for an appealing and user-friendly interface. To contextualise the development process and underscore the importance of accessibility and user-friendliness, these guidelines serve as a foundation for ensuring that the application meets the needs and preferences of a broad spectrum of users, reflecting current best practices and industry standards in user interface design and ensures that customers can effectively use the app as intended, promoting inclusivity and maximising user satisfaction.

3 METHOD

The project was carried out in accordance with the established framework of the double diamond model, encompassing an iterative work process through four phases: Discover, Define, Develop and Deliver [5]. Clarke and Braun's thematic analysis [5] were used as a method during data collection and additional design guidelines were applied.

3.1 Discover

The initial phase of the double diamond model aims at understanding the problem. To prevent conclusions based on speculation, the discover phase encourages interaction with individuals who experience the area of focus [6]. Qualitative interviews were conducted to gather insights about the current experience with the app. The interviews were semi structured to generate rich insights about the users experience [7]. Additionally, a literature review and research was done to find relevant design patterns within user experience design to inform design decisions, such as Google's Material Design [8] and the framework of UX design concepts for mobile app development [4].

3.2 Define

During the define phase, the insights and gathered data are analysed and processed for a better understanding of the problem [6]. By using thematic analysis [5], the gathered data could be converted into themes and patterns that were later on translated into user stories and problem definitions.

3.3 Develop

The development phase focuses on clarification of the previous insights. In this step, it is beneficial to take inspiration from several sources to create an even clearer understanding of the defined problem [6]. Flowcharts were created as a tool to communicate the user flow internally in the group, but also externally. The flowcharts were also used as a basis for creating wireframes. Wireframes were created to capture structure and content in the different modules before creating the final design [7].

3.4 Deliver

The delivery phase involves testing and evaluation of the design solutions, identifying certain parts of the solution that will be improved in the next iteration, while other parts that will not work can be rejected [6]. During the delivery phase the solutions were presented to EG Retail, communicating and discussing improvements and possible development opportunities.

3.5 Thematic Analysis

Thematic Analysis by Clarke and Braun is a widely used qualitative method for analysing textual data and based on a process of six steps identifying and analysing the data in order to extract patterns [5]. As a first step researchers immerse themselves in the data by reading and re-reading it. This helps in gaining a deep understanding of the content. Afterwards, researchers begin by identifying and labelling interesting features or patterns in the data, referred to as "codes". Codes are then collated into potential themes, which are patterns that capture something important about the data. Researchers review and refine the themes, ensuring they accurately represent the dataset and that they are coherent and distinct from one another. Each theme is defined and named to clearly convey its meaning. This involves creating clear descriptions that encapsulate the essence of each theme. Finally, the analysis is written up, typically organised around the identified themes. Excerpts from the data are often used to illustrate each theme, demonstrating how they are grounded in the data [5].

4 DESIGN PROCESS

Below, the design process and its methods are described in more detail.

4.1 Gathering data

The first discover phase was initiated with the purpose of gathering insights about the application through internal research. An application consultant at EG retail provided a comprehensive overview of the application's functionality and its contextual milieu. Furthermore, the application was explored through the use of a test environment, providing an experiential understanding of the usability. Simultaneously, their design system was thoroughly explored, by engagement with a UX designer from the organization. Notably, this design system, based upon the Telerik and Kendo framework [9], served as both a source of inspiration and a repository of standardized components, fostering a cohesive approach to interface development. Furthermore, to enhance our understanding of the existing challenges and to better understand the needs of end-users, engagement in consultative discussions with another application consultant was conducted. This consultant, responsible for overseeing a client utilizing the application, offered valuable insights into user requirements and operational challenges. These insights deepened our understanding of the context and guided the next steps of the project. Additionally, external data was gathered through qualitative interviews with EG's customers and participation in a client meeting convened to address the current application's user experience.

4.2 Understanding data and user needs

The acquired data was processed using Clarke and Braun's thematic analysis [5] to identify recurring themes and patterns, which were then translated into user stories and problem definitions. By collecting data and conducting a thematic analysis of the users needs it was highly focused on perceiving value by enhancing the customer journey through a good CX/UX [2]. Throughout the project, user stories remained dynamic documents, continuously evolving and expanding to capture emerging insights and requirements. Examples of user stories for creating a purchase order are;

As a store employee, I want the ability to edit the quantity for structured items in order mode, so that I can accurately adjust the quantities of these items as needed during the ordering process.

As a store employee, I would like the overview to include the total sum per supplier and indicate how much more needs to be added to each supplier's order to qualify for free shipping, so that I can ensure efficient utilisation of resources and cost-saving opportunities.

4.3 Designing according to user needs

The project moved forward by entering the develop phase, while concurrently, data collection and user needs updates continued. Utilising Miro, flowcharts were generated to visualise the existing

app flow shown in Figure 1, and were subsequently analysed to propose various optimizations shown in Figure 2.

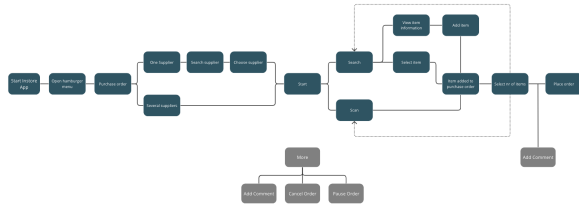


Figure 1: Current flow of the modules Purchase Order.

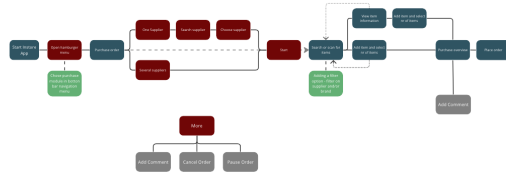


Figure 2: Suggestion of improvement on flow of Purchase Order.

Progressing further, the design development for the .NET MAUI application was initiated. Drawing from the suggested flow improvements in Miro, wireframes were crafted using Figma. Working in Figma, the design commenced with the creation of components, alongside exploration and adjustments of the design system. Subsequently, the design of the two distinct flows were continued: one pertaining to purchase orders and the other concerning goods receipt. By utilising Pinchot's [4] guidelines in the development of InStoreApp 2.0, we were able to address the identified themes and deliver mockups with a mobile-friendly design. In alignment with the principles mentioned by Khan et. al. [2] regarding the significance of perceived value and tailored user experiences in mobile applications, several key improvements have been implemented in our design.

4.4 Reviewing and iterating the design

Transitioning into the deliver phase, we engaged in a collaborative review session with one of the UX designers at the company, presenting our preliminary draft and outlining our forthcoming plan for the subsequent design iteration. Building upon insights from the initial double diamond iteration, discussions followed regarding design considerations, accompanied by iterative refinement of wireframes. Concurrently, the data collection was strengthened through two additional interviews conducted with key stakeholders, namely a store manager and an IT manager from the same customer. Furthermore, a meeting was convened with our internal supervisor to validate our progress and ensure alignment with the start of the next iteration within the double diamond framework. The next iteration followed a more parallel and overlapping approach with the

different phases. Starting with discovering with one final interview and identifying patterns from similar products, that could support design decisions. In addition, the previous work with data collection and analysis created a strong basis for guiding the development of the application. When defining the data from the final interview, and thereby finalising the overall thematic analysis in this sprint, we could design more deeply according to user needs.

5 RESULT

5.1 Thematic Analysis

The thematic analysis of customer needs revealed several key findings. First, current customers of EG perceive the InStore App to lack usability. This sentiment was derived from conducted interviews, resulting in the identification of six themes. Customers expressed desires for more streamlined features, corrections of logical issues, extended visible information, and an overall user-centred design. Below are the themes described together with customer input that were relevant to our design, where the three themes related to Visual information are merged into one.

Themes	Customer input
Streamlining features	<ul style="list-style-type: none"> Fill in everything when receiving goods
Logical issues	<ul style="list-style-type: none"> Enable to edit quantity Option "One supplier" unnecessary Clearer search view Too many clicks in the flow
Visible information (Details and overview, Stock, Receiving warnings)	<ul style="list-style-type: none"> CL stock balance Order statuses
User centred design	<ul style="list-style-type: none"> Graphic guidelines Colours Font sizes Icons Terminology

Table 1: Themes described together with customer input relevant to our design.

The analysis indicated that the current on-premises InStore App is not being utilised in the preferred manner. Customers often opt for the back-office system, Chain, over the InStore App due to its more comprehensible GUI. Despite the seamless support of common tasks by the InStore App on-premises, the thematic analysis revealed that EG's customers prefer the back-office system due to the InStore App's lacking usability. Problems such as inconsistent error messages, terminology, and information were identified, contributing to difficulties in navigating and interpreting the app. The gathered customer data revealed that the necessity for displayed statuses, item information and other related data varies depending on the branch and size of the store. These findings resonate with Pinchot's [4] emphasis on the importance of providing feedback, using clear language, and ensuring clarity of information.

5.2 Design choices

This section will include a thorough description of the made design choices of the main purchase module, relating them to the results obtained from the thematic analysis and supported by Pinchot's seven UX guidelines for mobile applications. The three themes of Visible information will be merged into one.

5.2.1 Streamlining features. "(2) Simplify information delivery." The design offers the possibility for the user to mark everything as received when receiving goods, designing streamlined interfaces for common tasks.

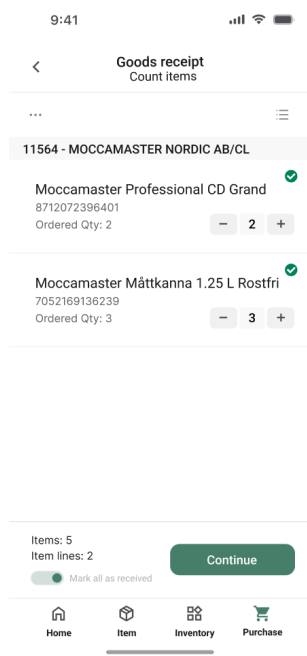


Figure 3: Goods receipt, mark all as received.

5.2.2 Logical issues. "(2) Simplify information delivery." and "(5) Employ information architecture to deliver content logically". In effort to minimise unnecessary user interactions, redundant views and clicks within the workflow have been minimised by redesigning

the flow by adding logical features. Design choices related to logical features such as slide to reveal drawers and more button functions have been made. Erasure of "one supplier" has been done.

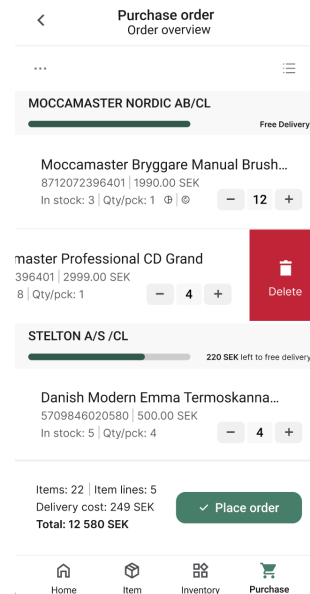


Figure 4: Slide to reveal drawers.

The finalised design allows users to place their orders directly from the overview interface and thereby reduce the number of clicks and views. To address potential user confusion resulting from this alteration, a dialog box has been incorporated to notify users that proceeding with the action will finalise the order. Dialog boxes are typically utilised outside of the primary flow [1]; therefore, an option labelled 'Do not ask again' has been implemented to afford users the choice to suppress future dialog box prompts. Selecting this option ensures uninterrupted workflow unless the user opts to modify their profile settings.

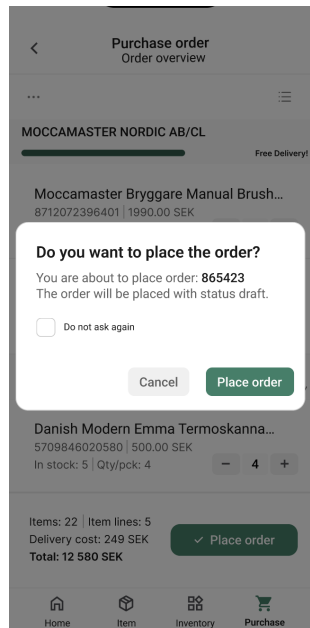


Figure 5: Dialog box.

The possibility to add line notes and order notes has been moved as an option within the button “more” to leverage the more straightforward look of the interface. Furthermore, the function has been expanded to enable the notation of identical notes across multiple lines, along with the ability to specify whether the note is intended for internal reference or external visibility.

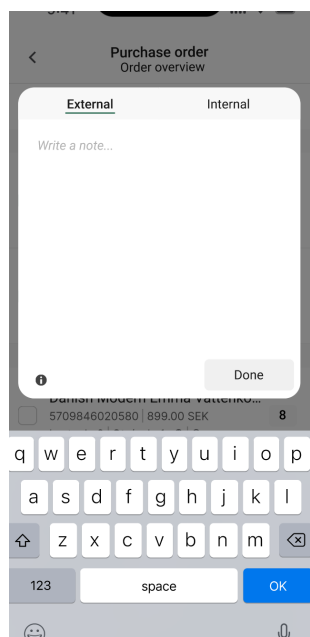


Figure 6: Line note.

“(3) Provide the simplest way to enter data correctly.” The design offers a variety of ways to enter and edit data, through clicking on a plus or minus button, entering and editing the quantity of data directly in the search field. Design choices were made related to adding views, selecting multiple items in a single search.

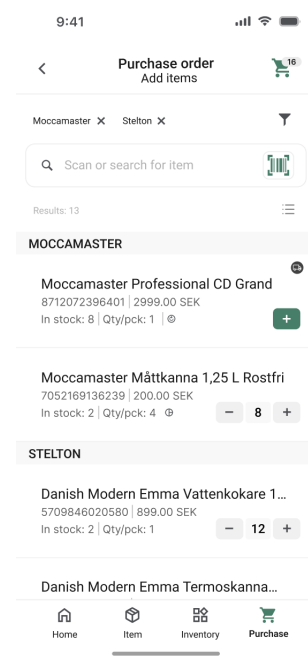


Figure 7: Purchase order, add items.

5.2.3 *Visible information.* “(1) Deliver Value by leveraging context.” Design choices related to statuses and campaign notes were tailored to accommodate varying needs across branches and store sizes.

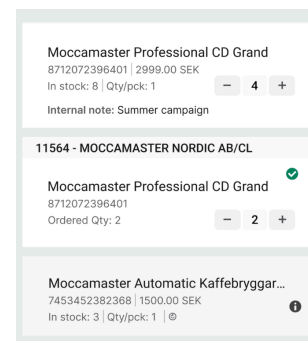


Figure 8: Status icons and campaign notes.

“(4) Manage user interactions and navigation.” Design choices were made related to arrangement of content logically and context for user location by providing clear labels and titles. “(6) Use feedback to convey state.” The system employs immediate feedback mechanisms, such as visual indicators of real-time updates on order status or task progress.

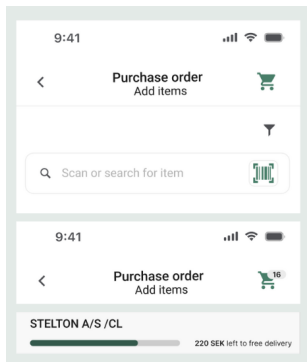


Figure 9: Labels and titles in the design.

5.2.4 *User centred design.* “(7) Leverage aesthetics for clarity of information.” Additionally, aesthetics and graphic design choices are made. Layouts are designed to fit device screens seamlessly, with adequate text size, colours, and contrast for readability. Icons and use of terminology have been carefully selected.

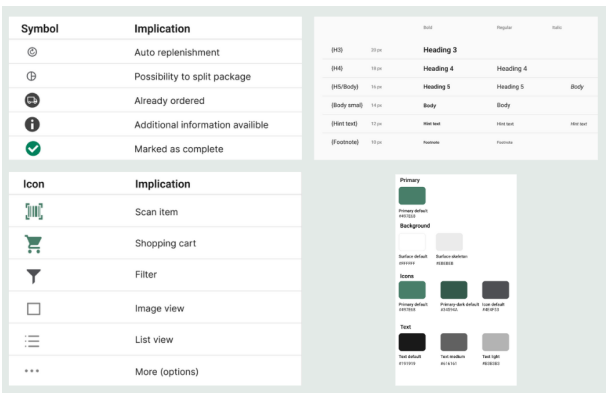


Figure 10: Symbols, icons, font size and colours used in the design.

6 DISCUSSION

6.1 Result

The findings of the thematic analysis underscore the evident necessity for enhancement within the InStore App. The project was initiated to redesign the two modules’ purchase order and goods receipt and the thematic analysis highlighted a critical need for usability enhancements with the design choices are meant to address. The result section describes how our design aligns with Pinchot’s principles, which aligns well with the UX principles elucidated by Khan et. al. [2], emphasising the importance of perceived value and tailored user experiences in mobile applications by following these seven UX guidelines. Accordingly, several key improvements have been implemented in the design of the InStore app 2.0.

6.1.1 *Streamlining features.* When receiving goods a function is added to be able to mark all items as received and then add the deviations, instead of going through each manually. This solution will

probably contribute to a more efficient workflow when receiving goods as it is most common that everything is received and with exceptions a deviation on individual articles.

6.1.2 *Logical issues.* The current inconsistency of elements and complex user flows lead to employees preferring the back-office system, Chain, to complete tasks intended for the InStore App. The reliance on Chain underscores the significant usability problems in InStoreApp that have been addressed in the project to improve user experience and efficiency when it comes to the user flow and the logic behind it. To easily complete tasks in InStoreApp, the design work has consistently focused on minimising the number of pages and clicks to aim for a more easy perceived flow. The feature in the Purchase Order module enabling store employees to efficiently edit quantities for items empowers employees to accurately manage inventory levels during the purchase process, thereby increasing the perceived value and usability of the system [2]. The search functionality, sorted by suppliers, has been redesigned to ensure intuitive use by removing the option “one supplier”. Restricting searches to the selected supplier reduces confusion for store employees and enhances engagement with the system [2]. InStore App on premise required users to perform a new search each time an item was added to the purchase order. InStore App 2.0, introduces a more efficient approach to adding items, allowing for the selection of multiple items from a single search result. This advancement enhances the data entry process by obviating the need for redundant search iterations. Workflow optimisations have resulted in a reduction in the number of clicks required to complete tasks, thereby enhancing operational efficiency and user experience. These improvements align with the recommendation to provide relevant and user-friendly experiences, ultimately increasing perceived value and engagement [2]. The usage of images for displayed items and the provision of comprehensive overviews enhance usability and reduce cognitive load [2]. The system ensures that store employees can navigate the system effortlessly while performing various purchase- and receipt-related tasks. The utilisation of the slide to reveal drawers in the item overview optimises screen space, as it still provides the user with possible actions [1]. Although this approach may result in users not discovering the actions delete and more, the In Store App on premise offers the same functionality today. Reusing the functionality therefore brings a familiar and cohesive user experience [4]. A big change that stands out from the previous design solution in InStore App on premise is the process of handling notes. Gained insights from the discovery phase showed that the function does not work as intended. Made line notes were merged together with the order note, leaving the user not knowing how the action would end up. A desire to be able to separate the notes for internal and external causes led us to include this in our design. The new functionality allows the user to choose whether the note should be visible in chain or sent to the supplier, increasing flexibility.

6.1.3 *Visible information.* Insights gained from interviews showed that the need for visible information varies depending on the customer. Realising early on that developing a view that suits the broad customer base would be difficult without having to compromise on usability and since EG offers the possibility to make fields adjustable through configuration, we chose to make the information customisable to make sure that the clarity of the application were

not to be neglected. The design provides a parameterised view of articles, enabling customisable settings for each customer. By doing this, the use of environmental context and personalise settings strives to enhance the app's utility [4]. The design enhances user understanding and engagement with the inventory management process by having immediate feedback mechanisms when the user orders or receives goods. Our design has great focus on that menu items are clearly labelled, providing context for the user's location within the app [4] and this simple navigation ensures user-friendly interactions. Placing information and labels close to relevant content and demonstrating the app's value upfront improves usability and trust [4]. However, it remained a daunting task to avoid making the views overly cluttered with everything that needed to be displayed.

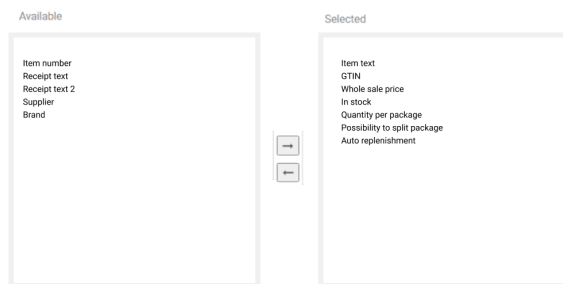


Figure 11: Configuration of visible fields.

6.1.4 User centred design. While a simpler flow with fewer pages can enhance the usability, organising all relevant data in a small screen is challenging. Achieving an accessible solution requires large text and buttons while including whitespace to maintain a clear overview. Addressing these challenges, the existing inconsistency in design elements has been considered in the redesign. The risk for errors and confusion increases with an inconsistent design language including colours, icons, terminology and navigation patterns. To work with a cohesive theme through the whole application can possibly reduce the employees cognitive load when using the app, which can contribute to more efficiently complete tasks and facilitate their work day. Aesthetics and graphic design principles are utilised to ensure clarity of information within the app following above mentioned design guidelines and frameworks. Since the layouts are designed to fit device screens seamlessly, with adequate text size, colours, and contrast for readability they enhance the user experience aiming for intuitive and visually pleasing interactions. To improve the flow, a strategy was to adjust it more closely to a typical e-commerce flow, incorporating similarities from other common patterns in external applications we believed could increase the chance of offering a great user experience. Our solution introduces a more efficient approach to adding items, allowing for the selection of multiple items from a single search result that is gathered in a shopping cart.

6.2 Limitation and challenges

The development of InStore App has come with several limitations and challenges. Because of limited time, only two iterations of the double diamond were carried out. Due to this, the user survey was limited to a sample of two customers. To obtain a more comprehensive understanding of customer perspectives, a longer survey period would have been necessary. Relating to data collection and thematic analysis, the themes somewhat overlap and realising later on, they are not thoroughly developed. While Streamlining features haven't been heavily emphasised as a theme, much of our design inherently includes streamlining features that facilitate the flow. Similarly, the theme User centred design essentially encompasses everything we do. A realisation from the discovery phase was that the majority of EG's customers run InStore App on a hand held Zebra device. Due to the lack of access to the device, we opted to conduct the mockups on an iPhone 13 instead. Whilst this meant that the mockups were not entirely comparable to the experience of the interviewees with different screen sizes and in some cases access to a physical keyboard, it did provide an opportunity for us to mirror the design on our own phones during the design process. However, the input we received regarding statuses and visible information, as well as the consideration of necessary information, posed a challenge. This challenge was particularly clear due to the diverse needs of customers across different industries. With limited screen size to work with, prioritisation became crucial. It's important to acknowledge that the time constraints may have limited our ability to fully explore and address all potential variations in customer needs and preferences. Despite challenges and limitations, we have delivered a comprehensive design proposal for the main purchase module based on frameworks, guidelines and collected customer data.

6.3 Ethical and societal considerations

During the redesign and evaluation process of InStore App, we have placed great value on user feedback to improve the app's functionality and user experience. By using the Double Diamond design methodology and established UX/CX guidelines, we systematically collected and analysed user insights through data collection and interviews. The users feedback has helped us identify and address specific areas within the purchase module that needed improvement. By listening to and integrating users' voices into the design process, we have ensured that our updates reflect a fair and user-centered development, which in turn promotes a more equitable and inclusive user experience.

Despite our effort to listen to customers' ideas and opinions in the design, it has been challenging to make decisions when different customers' opinions contradict each other. With the ambition to address all customer suggestions based on different needs, we chose to make visible data configurable to promote fairness within the application to be able to adapt it to all users' needs. By doing so, we want the design to contribute to ethical and social considerations where the customer's needs are the decision-making basis for their visible data.

We are aware of the impact that e-commerce can have on society and the environment, where the increase in transportation and packaging contributes to higher carbon emissions and waste.

Our app is designed to promote positive purchasing behaviors and contribute to societal well-being. We aim to create a platform that is not only user-friendly and efficient but also ethically defensible and socially beneficial. For example, by designing features such as showing the threshold for free shipping, we enable the promotion of more environmentally friendly and conscious consumer behavior.

By integrating these considerations into our design process, we aim to create a design that not only enhances the user experience but also contributes positively to society as a whole. These actions demonstrate our ethical responsibility to promote fairness, inclusion, and sustainability in the digital world, without compromising the positive effects of the app such as new business opportunities and easy, informed purchasing decisions.

6.4 Future work

The complexity of balancing various requirements within the constraints of screen size warrants further exploration. Moving forward, allocating more time for comprehensive user research, thematic analysis and iterative design processes could help mitigate these limitations and result in a more tailored and effective solution for diverse user groups. For future work, we aim to design specifically for Zebra devices, optimising user experience and functionality for the app. Additionally, we plan to conduct customer user tests to gather valuable feedback and insights, ensuring that the design meets the diverse needs and preferences of our target users effectively.

7 CONCLUSION

In conclusion, this report highlights the redesign and evaluation process of an existing on-premises retail app solution, undertaken with the goal of facilitating its migration to the cloud. Through a focused examination of two key aspects within the purchase module, our project leveraged the Double Diamond design methodology in conjunction with established UX/CX guidelines and frameworks. By prioritising user needs and gathering insights through data collection and interviews, we successfully identified areas for improvement. The resulting redesign shows significant enhancements, particularly in the streamlining of the purchase flow, resulting in reduced clicks and enabling enriched user experience through customisation. Moving forward, the insights gleaned from this project offer valuable guidance for future refinement efforts, ultimately aiming to enhance overall user satisfaction, foster customer loyalty, and encourage sustained engagement with the company.

REFERENCES

- [1] A. Cooper, R. Reimann, D. Cronin, and C. Noessel, *About Face: The Essentials of Interaction Design*, 4th ed. John Wiley & Sons, Incorporated, 2014, pp. 1–723.
- [2] I. Khan, L. D. Hollebeek, M. Fatma, *et al.*, “Mobile app vs. desktop browser platforms: The relationships among customer engagement, experience, relationship quality and loyalty intention,” *Journal of Marketing Management*, vol. 39, pp. 275–297, 3–4 2022. doi: <https://doi.org/10.1080/0267257X.2022.2106290>.
- [3] M. Ballantyne, A. Jha, A. Jacobsen, J. S. Hawker, and Y. N. El-Glaly, “Study of accessibility guidelines of mobile applications,” *Association for Computing Machinery*, Nov. 2018, pp. 305–315, ISBN: 9781450365949. DOI: 10.1145/3282894.3282921.
- [4] J. Pinchot, “User experience (ux) design concepts for mobile app development courses,” *Issues in Information Systems*, vol. 21, pp. 202–211, 4 2020, ISSN: 15297314. DOI: 10.48009/4_iis_2020_202-211.
- [5] V. Clarke and V. Braun, “Thematic analysis,” *Journal of Positive Psychology*, vol. 12, pp. 297–298, 3 May 2017, ISSN: 17439779. DOI: 10.1080/17439760.2016.1262613.
- [6] D. Council, *Design council: The process: Using the double diamond*, Accessed: 2023, 2023. [Online]. Available: <https://www.designcouncil.org.uk/our-resources/framework-for-innovation/>.
- [7] H. Sharp, J. Preece, and Y. Rogers, *Interaction Design: Beyond Human-Computer Interaction*. Wiley, 2019.
- [8] Google, *Material design*, <https://m3.material.io/>, Accessed: 2023, 2023.
- [9] Telerik, *Telerik & kendo ui - .net components suites & javascript ui libraries*, <https://www.telerik.com/>, Retrieved from Telerik.com.