Journal Publication of International Research for Engineering and Management (JOIREM)
Volume: 04 Issue: 09 | Sep-2026
ISSN (O) 3107-6696

Designing Better Grocery Experiences

Frano Paulson, Ruchi Gaur
Student, Department of UX & DPD, School of Design, World University of Design, Sonepat
Assistant Professor, Department of UX & DPD, School of Design, World University of Design, Sonepat

---

Abstract
The rapid adoption of digital commerce has created new opportunities for grocery delivery services, particularly in markets where online grocery shopping was still emerging. This paper examines the UX/UI optimisation of Popote Fresh, a Benin-based grocery delivery application, undertaken in 2021 as part of a four-month remote design engagement. The project focused on improving the usability and visual clarity of an existing mobile application while preparing interfaces for development.
The study focuses on a central UX challenge observed during the design process: presenting large amounts of product information without creating cognitive or visual overload. A retrospective design research approach was used, combining existing-product analysis, competitive review, UX principles, team critique, information architecture, user-flow development, wireframing, and iterative interface design. The work examined key journeys including product discovery, search, product details, cart, checkout, payment, delivery, and supporting features such as recipe videos and wallet management.
The resulting design approach prioritised information hierarchy, progressive disclosure, predictable navigation, persistent access to important actions, and consistent Ul patterns. Particular attention was given to the redesign of product cards, where primary purchase information was retained at the browsing level while secondary information was moved to deeper layers of the experience. The study demonstrates how UX reasoning can translate into practical interface decisions within an information-dense mobile commerce environment.
Keywords: Mobile Commerce, Grocery Delivery, Information Hierarchy, Progressive Disclosure, Usability

1. Introduction

The growth of digital commerce has increasingly changed how consumers discover, evaluate, and purchase everyday products. Mobile applications have become an important channel for completing routine commercial activities because they allow users to browse products, compare alternatives, make payments, and manage orders without being physically present in a store.
The grocery category presents a particularly interesting UX challenge. Unlike many specialised shopping experiences, grocery applications need to accommodate large and frequently changing product catalogues. Users may browse dozens of categories and hundreds of products while simultaneously comparing prices, quantities, availability, discounts, and other attributes. This creates a tension between providing sufficient information for decision-making and maintaining an interface that remains easy to scan.
Research on e-commerce interfaces has demonstrated the importance of product-listing design in supporting consumer decisions. Product listing pages are environments where users compare alternatives and determine which products deserve further attention. Studies have also identified relationships between product presentation, cognitive workload, and purchasing decisions.
This challenge became particularly relevant to Popote Fresh, a grocery delivery platform operating in Benin. The project was undertaken in 2021, when grocery delivery platforms in the market were still developing and there were comparatively fewer mature local design patterns to reference.
The project therefore required more than visual refinement. It required the design team to determine how information should be organised, prioritised, and progressively revealed so that users could move through the shopping experience with minimal unnecessary cognitive effort.
T The project was undertaken remotely over four months. The design team consisted of six designers, with English used for collaboration. My role was primarily focused on UI/UX design, translating UX decisions into developer-ready mobile interfaces while contributing suggestions around information hierarchy, interaction flows, and usability. The application itself was primarily presented in French, requiring translation tools and regular client validation to ensure content accuracy.
The project documentation records the resulting work across product discovery, search, product details, cart, checkout, wallet, payment, delivery, messaging, recipe content, and account-management experiences.

2 2. Project Context

Popote Fresh was a grocery delivery application designed for the Benin market. The project represented a stage of design improvement for an existing product rather than a completely new application.
I In 2021, grocery delivery was still an emerging digital behaviour in the market. This created two important constraints. First, there were relatively few mature grocery-delivery products within the local context that could serve as direct design references. Second, the application needed to handle a large product catalogue and significant amounts of product information within the limited space of a mobile screen.
T The project therefore focused on improving the existing experience while maintaining the functional requirements of an expanding grocery platform.
T The application supported a broad set of activities including:

- Product browsing and category exploration
- Product search
- Product details
- Cart management
- Checkout and payment
- Delivery information and order tracking

- Wallet recharge
- Messaging
- Account management
- Recipe videos and user-generated recipes

The project documentation identifies the principal design constraints as limited design references and high information density.

3. Research Background

3.1 Mobile Commerce and Grocery Shopping

Mobile commerce allows consumers to perform shopping activities directly through mobile devices. Unlike physical stores, however, digital interfaces must communicate product attributes through a limited visual space.

In physical grocery shopping, consumers can move through aisles, visually scan shelves, compare packaging, and physically inspect products. A mobile interface must replicate enough of this discovery and comparison experience through structured information, imagery, navigation, and interaction.

This makes information organisation particularly important. A product listing must communicate enough information to allow users to determine whether a product is relevant without forcing them to repeatedly enter individual product pages.

Research on product-listing pages has shown that interface presentation can influence cognitive workload and product-selection behaviour.

3.2 Information Overload in E-Commerce

One of the primary challenges of digital shopping is the volume of information available to users. E-commerce platforms can present product names, images, prices, discounts, descriptions, sizes, availability, reviews, specifications, and other attributes simultaneously.

While additional information can support decision-making, excessive information can also increase cognitive effort. Research has shown that rich information can create perceptions of information overload when the quantity exceeds what users can effectively process.

This creates an important design principle:

The goal is not to show less information, but to show the right information at the right stage. This principle became central to the Popote Fresh project.

3.3 Information Hierarchy

Information hierarchy determines how users understand the relative importance of different interface elements. On product-listing pages, users need to quickly identify which products are relevant before deciding whether to explore further. Nielsen Norman Group recommends prioritising list-entry attributes according to user needs and reflecting those priorities through visual hierarchy. It also notes that too much information can make product lists difficult to scan and compare.

For Popote Fresh, this meant distinguishing between:

Primary information

- Product image
- Product name
- Price
- Discount
- Quantity/weight
- Availability

Secondary information

- Detailed description
- Additional product information
- Related products
- Extended contextual information

This separation allowed the interface to retain important decision-making information without requiring every attribute to compete for attention simultaneously.

3.4 Progressive Disclosure

Progressive disclosure is a design approach in which information or functionality is revealed progressively rather than presented simultaneously.

The principle is particularly relevant to information-heavy interfaces because it allows users to first understand the most important information and then access additional detail when required.

I In Popote Fresh, progressive disclosure became a practical strategy for product cards. Instead of attempting to communicate the complete product story within the card itself, secondary details were moved into the product-detail experience.

This approach is consistent with established usability guidance that product listings should provide enough information for initial comparison while avoiding unnecessary overload.

3.5 Human-Centred Design

The project was also informed by a human-centred approach. ISO 9241-210 describes human-centred design as an approach that considers users, their needs, and the context of use throughout the design and development lifecycle.

For Popote Fresh, this translated into focusing on the practical questions users would encounter while shopping:

What information do I need first?

- Can I quickly identify the product?
- Can I compare products?
- Can I understand the price?
- Can I tell whether the product is available?
- Can I move to my cart without losing context
- Can I complete the purchase without unnecessary uncertainty?

4 ## 4. Research Objectives

The study had five primary objectives:

1 1. To identify usability issues within the existing Popote Fresh mobile experience.

2 2. To understand how product information could be structured for faster scanning and comparison.

3. To determine which information should appear at each stage of the shopping journey.
4. To develop clear and consistent mobile interfaces capable of supporting a large product catalogue.
5. To translate UX decisions into developer-ready Ul designs through iterative collaboration.

5. Research Methodology

The original project documentation was created primarily as a design deliverable rather than a formal research archive, the present study reconstructs the design investigation retrospectively from the available project artefacts and documented decisions.

No formal participant study, survey dataset, or usability-test dataset was retained from the original engagement. Therefore, the research findings presented in this paper are treated as design observations and UX inferences, rather than statistically validated user-research findings.

The methodology consisted of five complementary activities.

5.1 Existing Product Analysis

The existing application was examined to identify areas where the interface could better support product discovery, comparison, navigation, and purchasing.

5.2 Competitive Review

Globally recognised e-commerce platforms, including Amazon, were considered as reference points for established interaction patterns. Because the project was undertaken in 2021, there were fewer mature quick-commerce products that could serve as direct references.

5.3 UX Heuristic Analysis

The interface was considered against established usability principles including:

- Information hierarchy
- Consistency
- Visibility of system status
- User control
- Clear feedback
- Recognition over recall
- Errorprevention

Nielsen's usability heuristics emphasise principles such as system visibility, matching interface language to users' understanding, consistency, and user control.

5.4 Team Critique

The six-person design team reviewed flows and interface decisions collaboratively. Design decisions were discussed rather than treated as purely visual preferences. The project documentation specifically describes the process of discussing what information belonged on product cards, moving secondary information into product-detail pages, creating wireframes, and refining hierarchy.

5.5 Iterative Design

The identified issues were translated into low-fidelity wireframes and subsequently refined into high-fidelity mobile interfaces and reusable Ul components.

6. Target Users

The primary target audience was defined as:

Urban smartphone users aged 20-45 with moderate to high digital literacy who seek a convenient alternative to physical grocery shopping.

The audience primarily included:

- Busy professionals
- Homemakers
- Families
- Digitally comfortable smartphone users
- Users accustomed to mobile commerce and digital services

The project documentation also developed a representative persona, Seynabou, a 28-year-old homemaker, to represent a typical grocery-shopping user.

The persona was used as a design reference rather than as evidence from formal participant research.

7. Competitive Analysis

The competitive review focused on understanding how established digital commerce platforms handled:

- Product discovery
- Search
- Category navigation
- Product cards
- Pricing
- Product information
- Cart access
- Checkout
- Navigation patterns

Amazon and other globally recognised commerce products served as references for established interaction patterns.

However, direct replication was avoided. The purpose of the review was to identify

transferable principles rather than copy interface solutions.

Three areas were particularly relevant.

7 7.1 Product Information

Established commerce interfaces tend to prioritise information that helps users decide whether to investigate a product further.

7 7.2 Navigation

Journal Publication of International Research for Engineering and Management (JOIREM)
Volume: 04 Issue: 09 | Sep-2026
ISSN (O) 3107-6696

Predictable navigation allows users to move between discovery, search, product information, and cart functions without losing context.

7.3 Progressive Information

Detailed information is typically available deeper within the product experience rather than forcing all attributes into the initial listing.
This supported the direction taken for Popote Fresh: reduce competition between information rather than reduce the amount of information available.

8. Key Research Insights

The retrospective analysis identified five major design insights.

Insight 01-Scannability is critical
Grocery shopping involves browsing many products in succession. Product cards therefore need to communicate the most important information immediately.

Insight 02-Information hierarchy reduces cognitive effort
When product name, price, discount, quantity, availability, and description receive equal visual weight, users have to determine the hierarchy themselves.

Insight 03 - Persistent actions support continuity
Frequently used actions such as search and cart access should remain easy to reach throughout the browsing journey.

Insight 04 - Visual recognition supports product discovery
Product imagery provides an immediate recognition cue, particularly when users are browsing familiar grocery categories.

Insight 05 - Predictability reduces interaction friction
Navigation and interaction patterns should remain consistent across screens so that users can focus on the shopping task rather than learning the interface.
These insights are consistent with established research on product listings, which emphasises information hierarchy, comparison, and avoiding unnecessary information overload.

9. Information Architecture

The information architecture was developed around the main shopping journey while accommodating supporting product features.
The primary navigation included:
Home Search Recipes Basket Messages. Menu

The wider structure included:

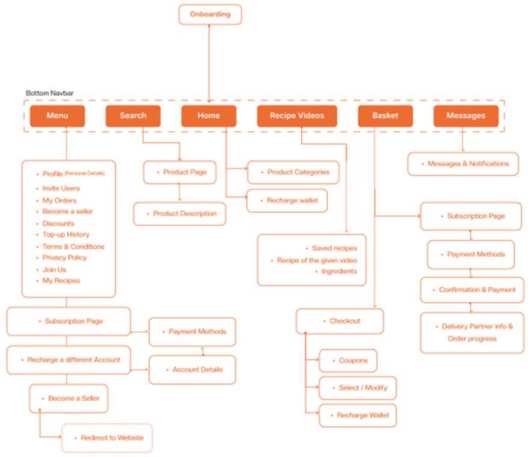


Fig 1.1 Information Architecture

The resulting information architecture supported the transition from discovery → evaluation → purchase delivery, while separating supporting functions into secondary areas.

10. User Flow

The principal shopping flow was structured as:

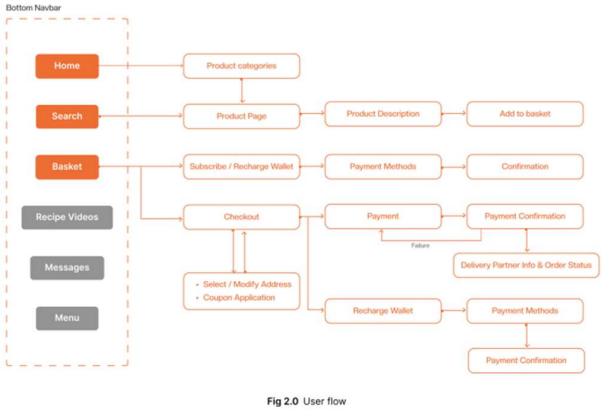


Fig 2.0 User flow

Supporting flows included:
1. Home → Recipe Videos → Recipe Ingredients

2. Menu → Wallet → Recharge Method Payment Confirmation

The user-flow documentation covers product discovery, product details, basket, checkout, payment, delivery, recipe content, messaging, and wallet functionality. The purpose of mapping these flows was to ensure that individual screens were not designed in isolation. Each interface decision needed to support the user's movement toward the next meaningful action.

11. Identifying the Core UX Problem

The most important UX challenge emerged around the product listing experience.

Product cards were information-dense. Product name, image, price, original price, quantity, availability, discount, and descriptive information competed for attention.
The result was a visual hierarchy problem.
The issue was not that the application contained too much information in absolute terms. Rather, too much information was competing for attention at the same level. central to the redesign.
This distinction became
The design team therefore reframed the problem:
How might we preserve the information users need while reducing the amount of information they must process simultaneously?
The answer was not simply to remove content
It was to sequence information according to relevance.

12. Design Strategy

Four design principles guided the solution.

12.1 Prioritise Primary Information

The first layer of the interface needed to communicate the information required for quick product recognition and comparison.
Product imagery, product name, price, quantity, and important status indicators were therefore prioritised.

12.2 Apply Progressive Disclosure

Secondary information was moved into the product-detail experience.
This allowed users who were simply browsing to remain within a lightweight scanning experience while giving users who wanted more information a clear path to deeper content.

12.3 Establish Visual Hierarchy

Typography, spacing, scale, and placement were used to establish relationships between information.
The interface was designed so that users could understand:
What is this? How much does it cost? What quantity is it? Is it available? →
Do I want to know more? rather than processing every attribute simultaneously.

12.4 Maintain Consistency

Repeated patterns were standardised across the product.
This included:

- Product cards
- Buttons
- Dropdowns
- Navigation
- Typography
- Spacing
- Colour states
- Iconography

Consistency reduced the need for users to relearn interaction patterns across different screens.

13. Product Card Redesign

The product card became the most significant design intervention.

After

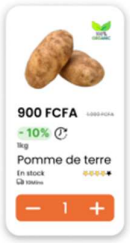


Fig 3.0 Modified Product Card

The original card attempted to communicate multiple attributes simultaneously:

- Product image
- Product name
- Description
- Original price
- Discounted price
- Quantity
- Availability
- Delivery information

The visual competition between these elements made rapid scanning more difficult.

After



Fig 3.1 Previous Card

The redesigned card prioritised the information most relevant to initial product comparison.

Secondary details were moved into the product-detail page.

The redesign therefore followed a two-layer information model:

Layer 1 Browse

- Image
- Product name
- Price
- Discount

- Quantity
- Key status

Layer 2 – Evaluate

- Detailed description
- Product information
- Related products
- Additional context

The design objective was not to reduce functionality, but to reduce simultaneous cognitive demand.
This approach aligns with usability guidance suggesting that product listings should contain enough information for initial selection while avoiding excessive detail that makes comparison difficult.
The project documentation records this as a collaborative redesign process involving discussion, wireframing, hierarchy refinement, and simplification.

14. Wireframing and Iteration

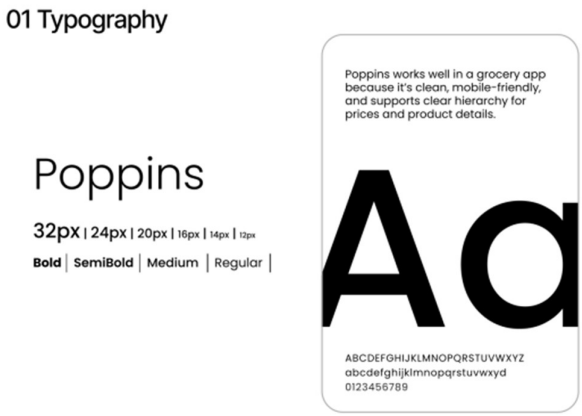
Low-fidelity wireframes were used to explore information structure before visual styling was finalised.
The purpose of the wireframes was to answer structural questions:

- What information should appear first?
- How many products should be visible at once?
- How should categories be grouped?
- Where should search appear?
- How should cart access remain visible?
- What information belongs on the product card?
- What information belongs on the product-detail page?

This stage separated UX structure from visual styling.
Once the hierarchy was established, the interface was translated into high-fidelity screens.

15. UI Design System

A lightweight design system was developed to maintain consistency across the application.



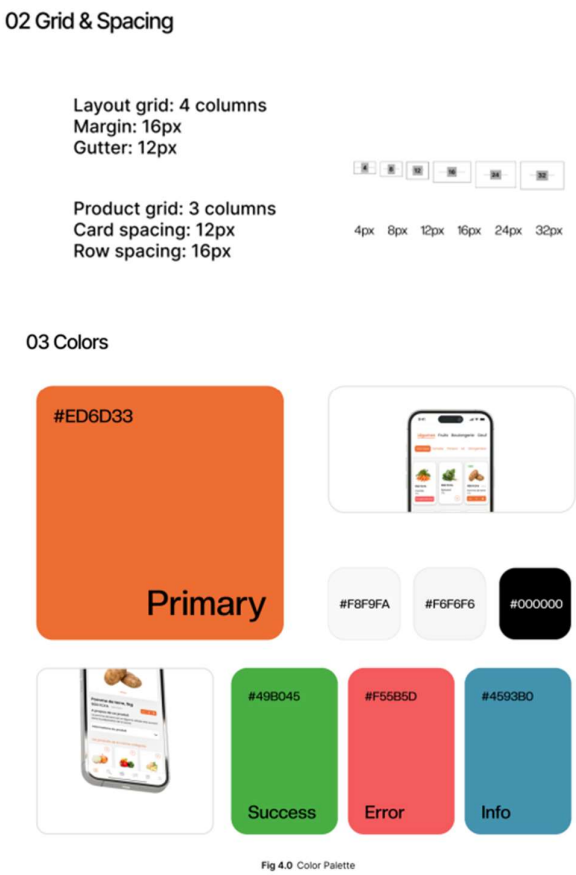


Fig 4.0 Color Palette

The colour system was designed to balance brand recognition, usability, and functional clarity. The primary orange #ED6D33 was used to create a warm, energetic visual identity suited to a grocery and commerce experience while providing strong emphasis for key actions and interactive elements. Neutral tones such as #F8F9FA, #F6F6F6, and black were used to establish visual hierarchy and prevent the interface from becoming visually heavy. Functional colours-green for success, red for errors, and blue for informational states were introduced to communicate system feedback consistently and intuitively.

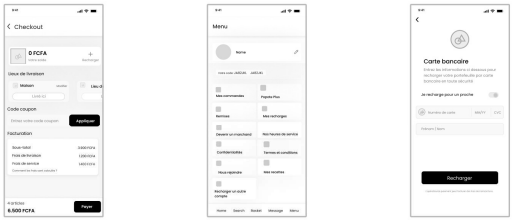
Journal Publication of International Research for Engineering and Management (JOIREM)
Volume: 04 Issue: 09 | Sep-2026
ISSN (O) 3107-6696

04 UI Elements



Fig 4.1 Icons & UI Elements

Low-Fidelity Prototypes



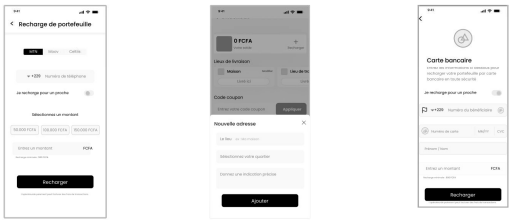


Fig 5.1 Lofi Prototypes

Low-Fidelity Prototypes

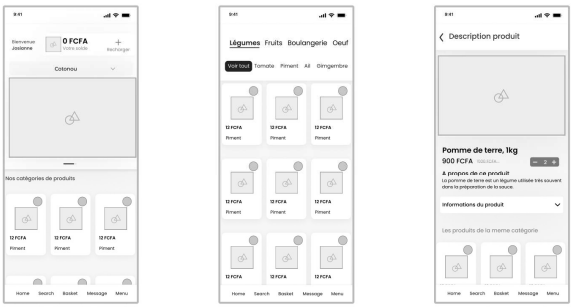
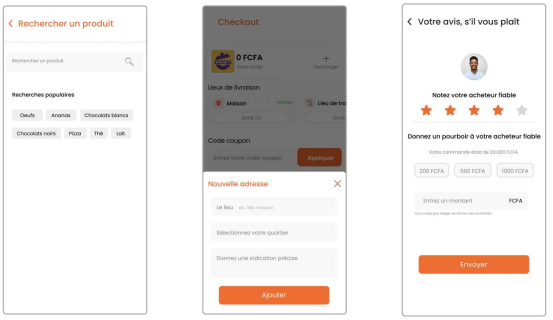


Fig 5.0 Lofi Prototypes

High-Fidelity Prototypes



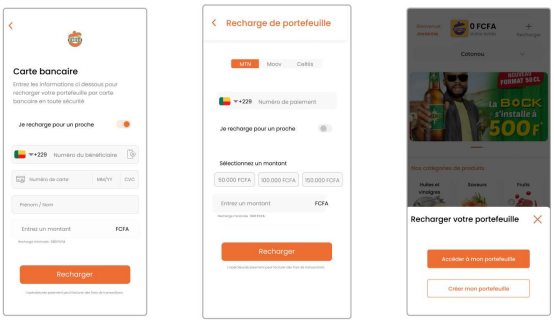


Fig 6.0 Hifi Prototypes

Journal Publication of International Research for Engineering and Management (JOIREM)
Volume: 04 Issue: 09 | Sep-2026
ISSN (O) 3107-6696

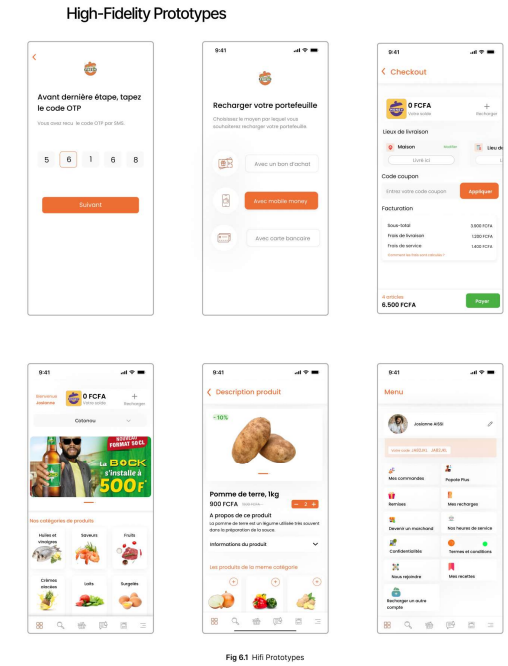


Fig 6.1 Hifi Prototypes

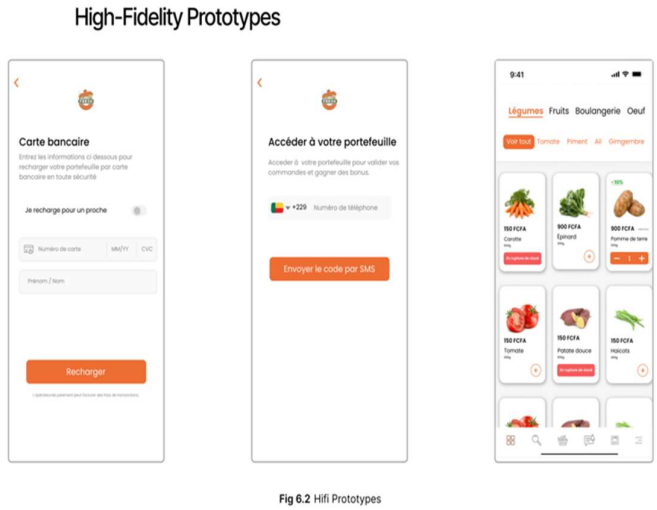


Fig 6.2 Hifi Prototypes

17. Design Evaluation

Because formal usability-testing records were not retained, the final design was evaluated retrospectively against the original design objectives and established usability principles.

Criterion 1-Information Clarity
The redesigned product cards established a clearer distinction between primary and secondary information.

Criterion 2-Scanability
The reduction of competing visual elements allowed more products to be understood within a single browsing context.

Criterion 3-Consistency
Reusable components and a defined spacing/type system established consistent patterns across the application.

Criterion 4-Flow Continuity
Persistent navigation and predictable actions supported movement between browsing, product evaluation, cart, and checkout.

Criterion 5- Developer Readiness
The final interfaces were structured with reusable patterns and documented visual rules suitable for development handoff.

These criteria provide a qualitative evaluation framework rather than claiming statistically measured usability improvements.

18. Discussion

The Popote Fresh project demonstrates that improving an e-commerce interface does not necessarily require adding features. In information-heavy environments, improvement can instead come from better organisation of existing information. The product-card redesign illustrates this particularly well.
A grocery product contains many attributes. Removing too much information can force users to repeatedly enter product-detail pages, while displaying everything simultaneously can create visual overload. Nielsen Norman Group similarly describes this balance as a need to provide enough information for comparison without overwhelming the listing.
Research on e-commerce product listings also suggests that presentation affects cognitive workload and consumer selection. Therefore, the design problem can be understood as an information architecture problem within the interface rather than simply a visual-design problem.
The project also demonstrates the value of collaborative design critique. Design discussions challenged individual assumptions and required decisions to be justified using principles rather than preference.
For a designer, this represents an important shift:
From designing what looks good to designing what can be justified.
The project also reinforced the importance of context. The absence of mature local grocery-delivery references meant that established global commerce platforms could provide useful patterns, but these patterns still needed to be interpreted according to Popote Fresh's product requirements and market context.

19. Contributions and Responsibilities

My contribution to the project included:

- Designing mobile Ul screens in Figma
- Translating UX decisions into visual interfaces
- Contributing UX suggestions to improve flows

- Participating in product-card redesign discussions
- Working on information hierarchy and progressive disclosure
- Developing low-fidelity wireframes
- Creating reusable Ul patterns
- Maintaining visual consistency across screens
- Working collaboratively within a six-person design team
- Validating French interface content with the client
- Preparing developer-ready designs
- Participating in regular design reviews and client meetings

The project documentation identifies the role as UI/UX Designer, with responsibilities spanning UX-informed Ul design, flow optimisation, collaboration, and developer-ready execution.

20. Outcome

The project resulted in a refined set of mobile interfaces covering major grocery-shopping and supporting product journeys.
The final design system established consistent typography, colour, spacing, components, and interface patterns. The product-card redesign provided a clearer information hierarchy, while the broader interface work structured the experience across discovery, product evaluation, basket, checkout, payment, delivery, wallet, and supporting features.
The designs were prepared for developer handoff.
While quantitative post-launch metrics were not retained as part of the project documentation, the design outcome can be evaluated through the improved structure, consistency, information hierarchy, and implementation readiness of the resulting interface.

21. Key Learnings

21.1 Reducing Cognitive Load
Effective UX often comes from structuring information clearly rather than adding more features.

21.2 Rationale Over Opinion
A design decision becomes stronger when the designer can explain why it supports a user need or product objective.

21.3 Collaboration Improves Design
Critique and discussion exposed assumptions that would otherwise remain invisible and helped strengthen the final decisions.

21.4 Information Has a Hierarchy
Not every piece of information deserves equal prominence. Designing for relevance requires deciding what users need first and what they can discover later.

21.5 Friction Can Be Intentional
small amount of friction is not inherently negative. In certain high-intent interactions, it can encourage deliberate action.

21.6 From UI Execution to Product Thinking
The project shifted my role from primarily executing screens toward thinking about user behaviour, information structure, interaction logic, and product outcomes.
These reflections are also documented in the original project material.

24. Conclusion

The Popote Fresh project explored how UX principles could be applied to improve an emerging mobile grocery-delivery experience in Benin.
The central challenge was the relationship between information density and usability. Grocery shopping requires users to process numerous products and attributes, yet mobile interfaces provide limited space in which to communicate them. The project therefore approached the problem through information hierarchy, progressive disclosure, predictable navigation, reusable patterns, and structured interaction flows.
The product-card redesign became the clearest example of this approach. Instead of treating the problem as a lack of information, the design team considered how information could be sequenced according to relevance. Primary product information was retained at the browsing level, while secondary information was moved into deeper layers of the experience.
The project also demonstrated the role of UX reasoning within collaborative Ul design. Working within a six-person design team required decisions to be communicated, challenged, and justified. My contribution extended beyond visual execution into UX suggestions, information prioritisation, flow optimisation, and developer-ready implementation.
Ultimately, the project demonstrated that usable interface design is not simply about reducing complexity; it is about organising complexity so that users. encounter it at the right moment.

References

Baymard Institute. (n.d.). E-commerce UX research and usability guidelines. Baymard Institute. International Organization for Standardization. (2019). Ergonomics of human-system interaction Part 210: Human-centred design for interactive systems (ISO 9241-210:2019). (ISO)
Nielsen, J. (2020). 10 usability heuristics for user interface design. Nielsen Norman Group. (Nielsen Norman Group)
Nielsen Norman Group. (2016). The anatomy of a list entry. Nielsen Norman Group. (Nielsen Norman Group)
Schmutz, P., Roth, S. P., Seckler, M., & Opwis, K. (2010). Designing product listing pages-Effects on sales and users' cognitive workload. International Journal of Human-Computer Studies, 68(7), 423-431. https://doi.org/10.1016/j.ijhcs.2010.02.001 (ScienceDirect)
Chen, Y.-H., Shang, R.-A., & Kao, C.-Y. (2009). The effects of information overload on consumers' subjective state towards buying decision in the internet shopping environment. Electronic Commerce Research and Applications, 8(1), 48-58. https://doi.org/10.1016/j.elerap.2008.09.001 (ScienceDirect)
Nadkarni, S., & Gupta, A. (2011). The effects of the number of alternative products and the way they are presented on

consumers' subjective states in online travel sites. Behaviour & Information Technology, 32(7). https://doi.org/10.1080/0144929X.2011.572185 (Taylor & Francis Online)