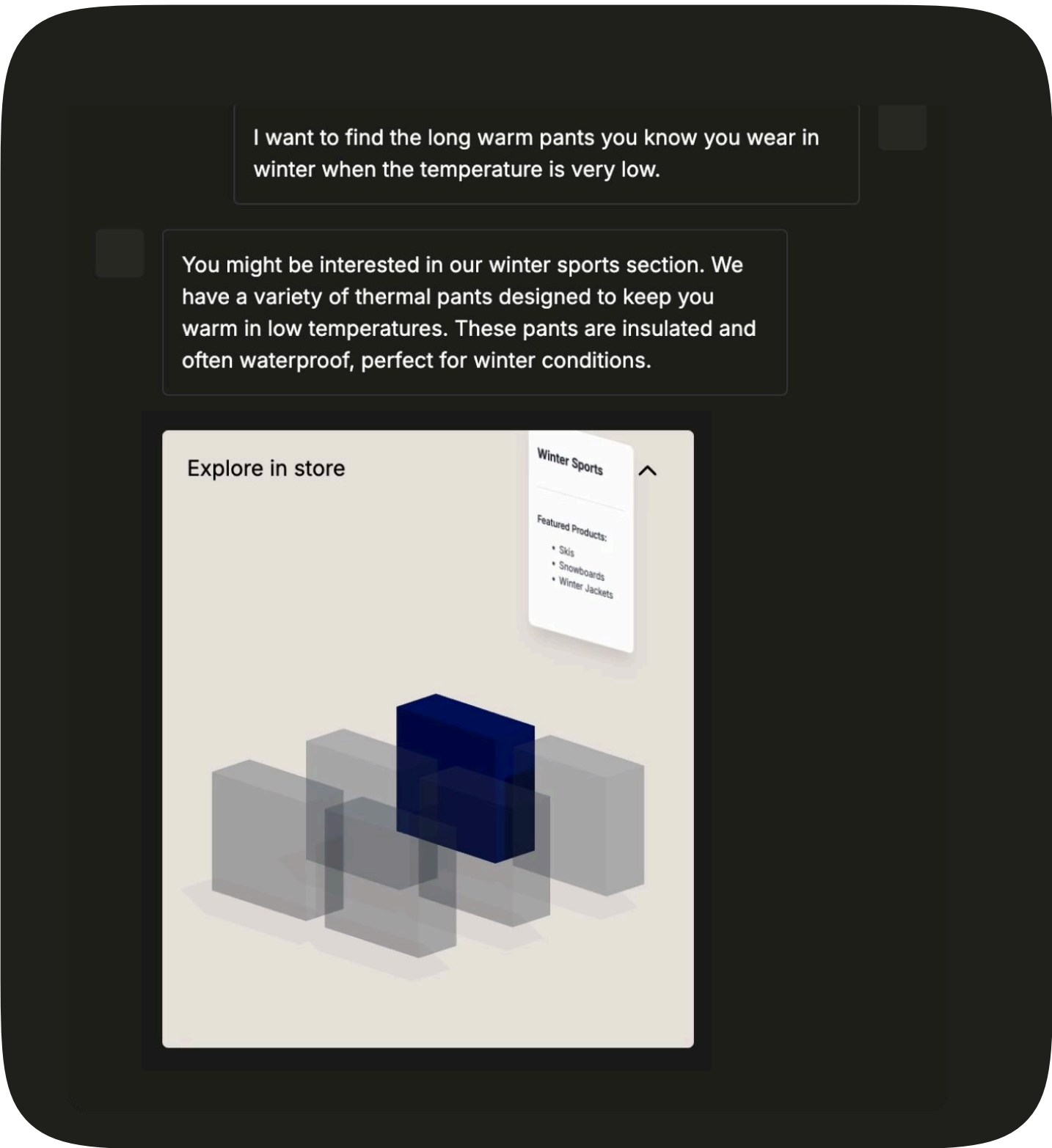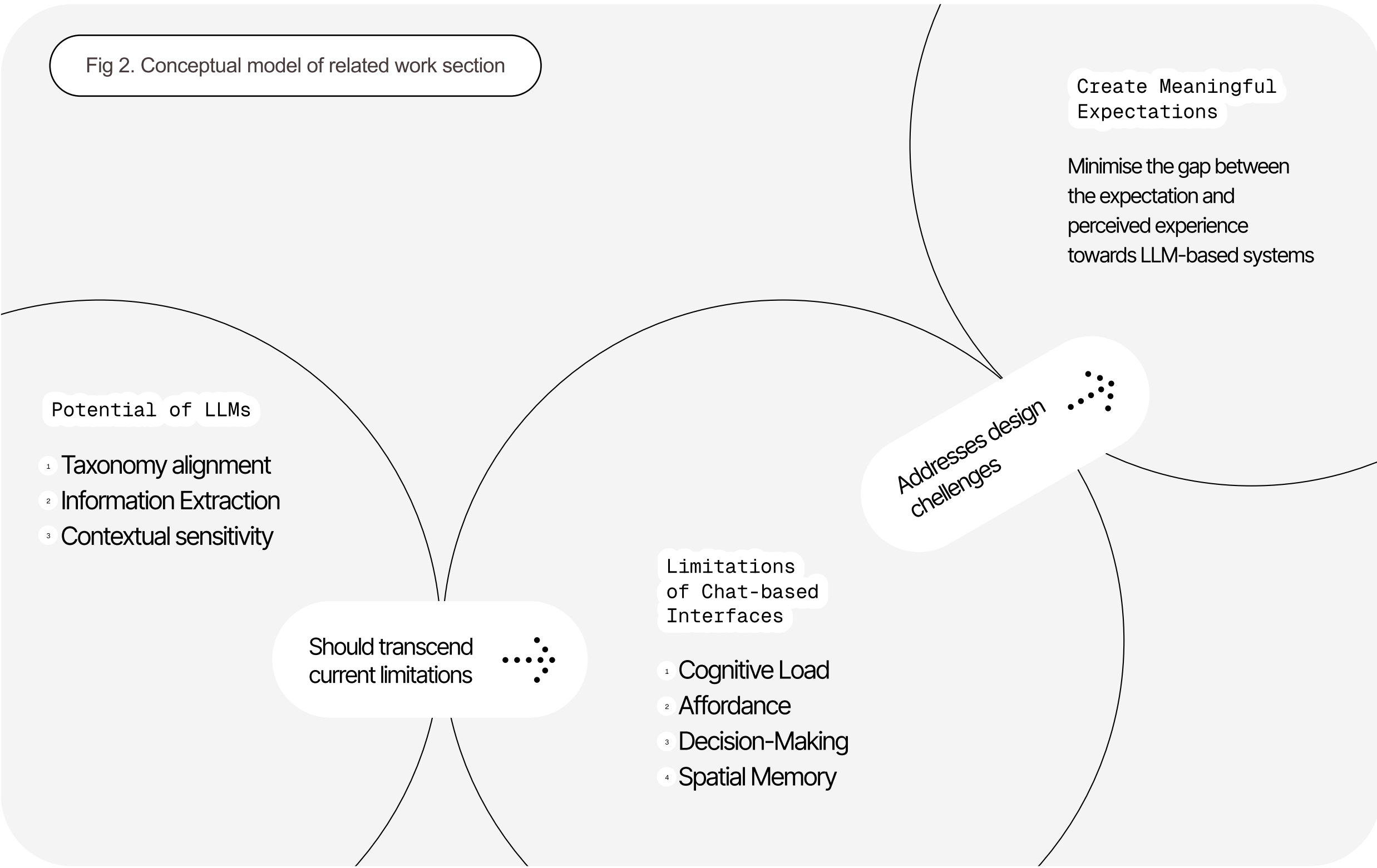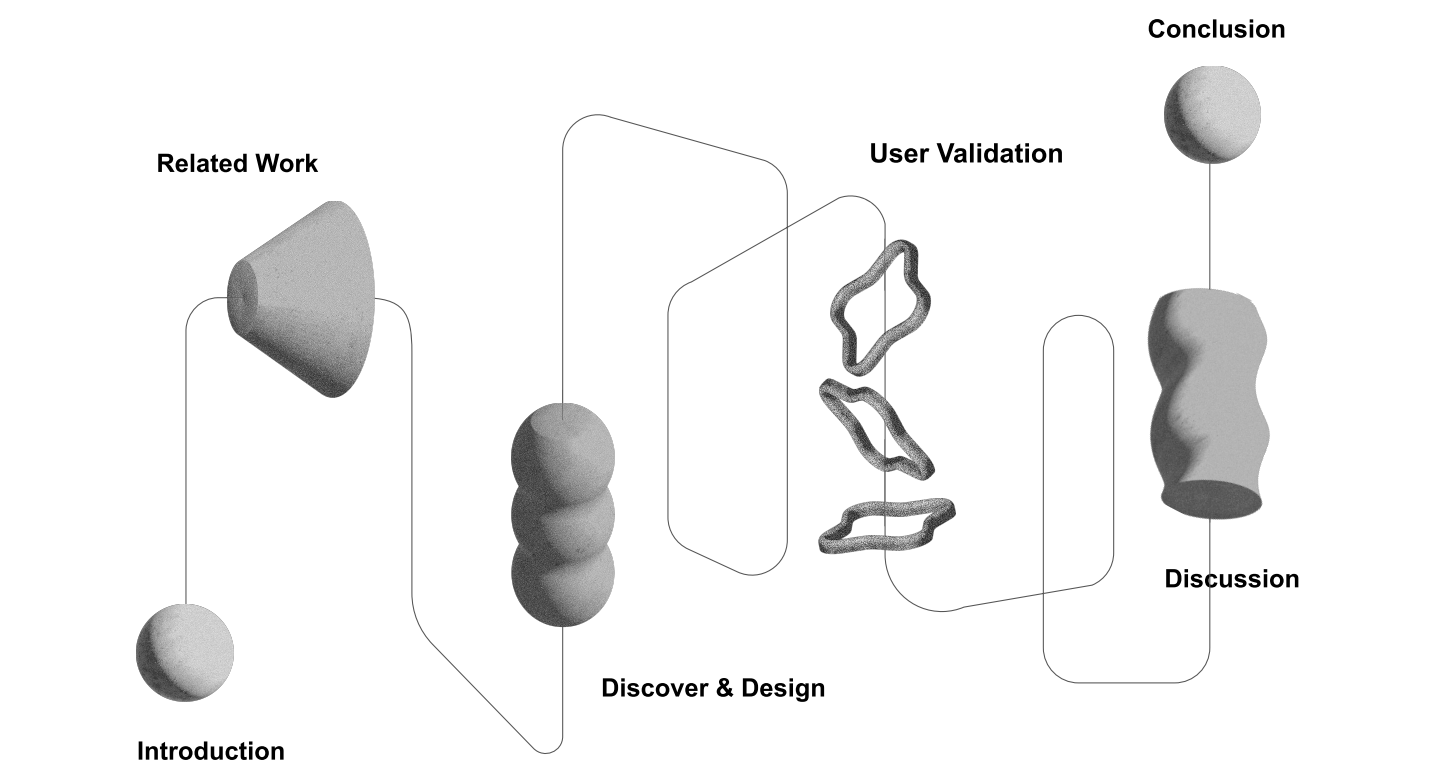# Bridging The Promise-Reality Gap
Aligning Expectations in the E-commerce AI Agent

Client:
DECATHLON

While LLMs have absorbed unprecedented computational investment in 2025, our interactions remain trapped in the text box—a sequential, linear dialogue that mirrors decades-old chat paradigms.
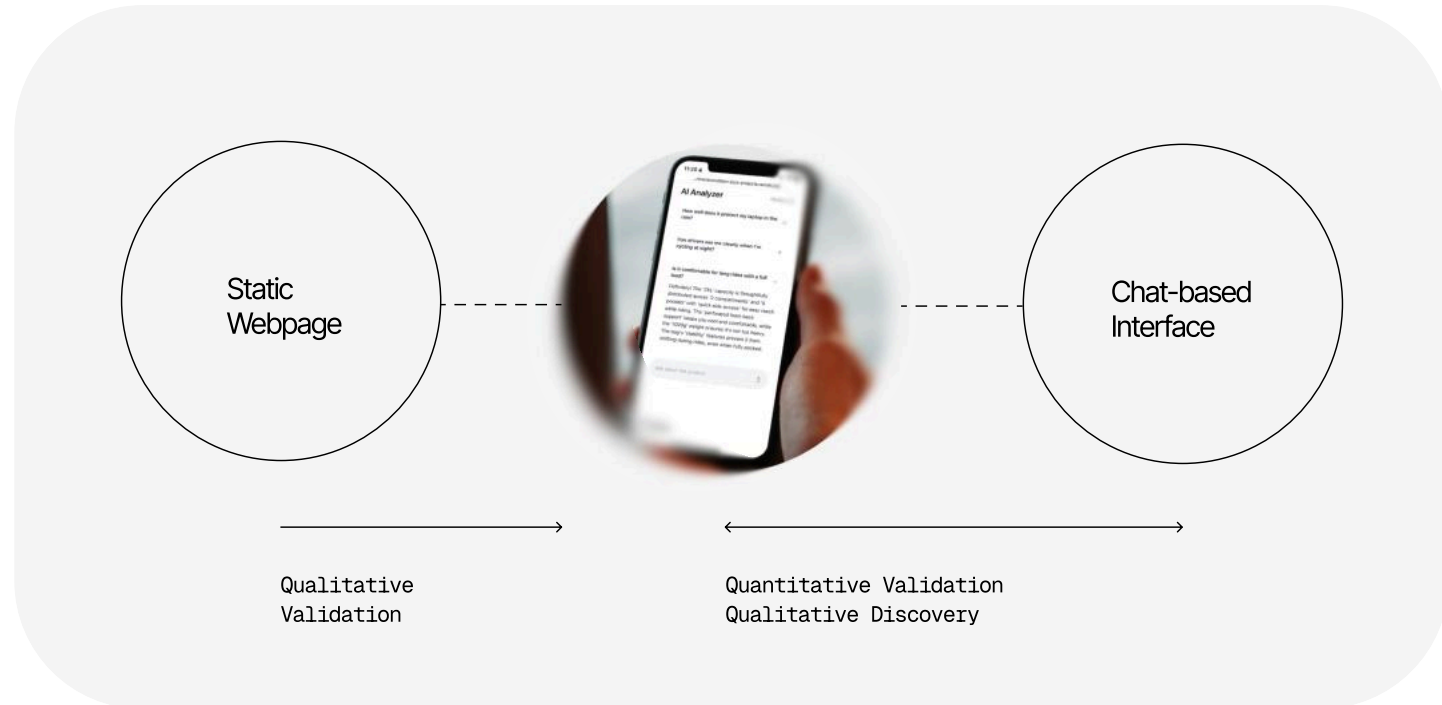
Fig 1. Report structure visualisation (Bottom)

Conclusion

Related Work

User Validation

Discussion

Discover & Design

Introduction

Fig 2. Conceptual model of related work section

Create Meaningful Expectations

Minimise the gap between the expectation and perceived experience towards LLM-based systems

Potential of LLMs

› Taxonomy alignment
› Information Extraction
› Contextual sensitivity

Addresses design challenges

Should transcend current limitations

Limitations of Chat-based Interfaces

› Cognitive Load
› Affordance
› Decision-Making
› Spatial Memory

I want to find the long warm pants you know you wear in winter when the temperature is very low.

You might be interested in our winter sports section. We have a variety of thermal pants designed to keep you warm in low temperatures. These pants are insulated and often waterproof, perfect for winter conditions.

Explore in store

Winter Sports

Featured Products
› Skis
› Snowboards
› Winter Jackets

To break free from these constraints, I worked alongside Decathlon's AI Innovation & Trust Team, deploying human-centred design methodologies and creative coding to **prototype radical new interaction models**. These interfaces transform overwhelming product catalogs into navigable, intuitive experiences that feel more like discovery than search.

Fig 3. Prototype 03 - "SpaceMap" (Left)

Fig 4. Conceptual model of user validation section (Bottom)

Static Webpage

Chat-based Interface

Qualitative Validation

Quantitative Validation
Qualitative Discovery

To validate these new paradigms, I conducted controlled comparative studies between **non-linear LLM interfaces** and **traditional chat interfaces**, collecting both behavioural metrics and nuanced qualitative insights. The data reveals critical tensions: between human reliance on spatial memory and the need to express ideas in natural language; between chat as an intuitive affordance and its misalignment with underlying AI functionality; between unclear system boundaries and usability demands for clear interaction limits.
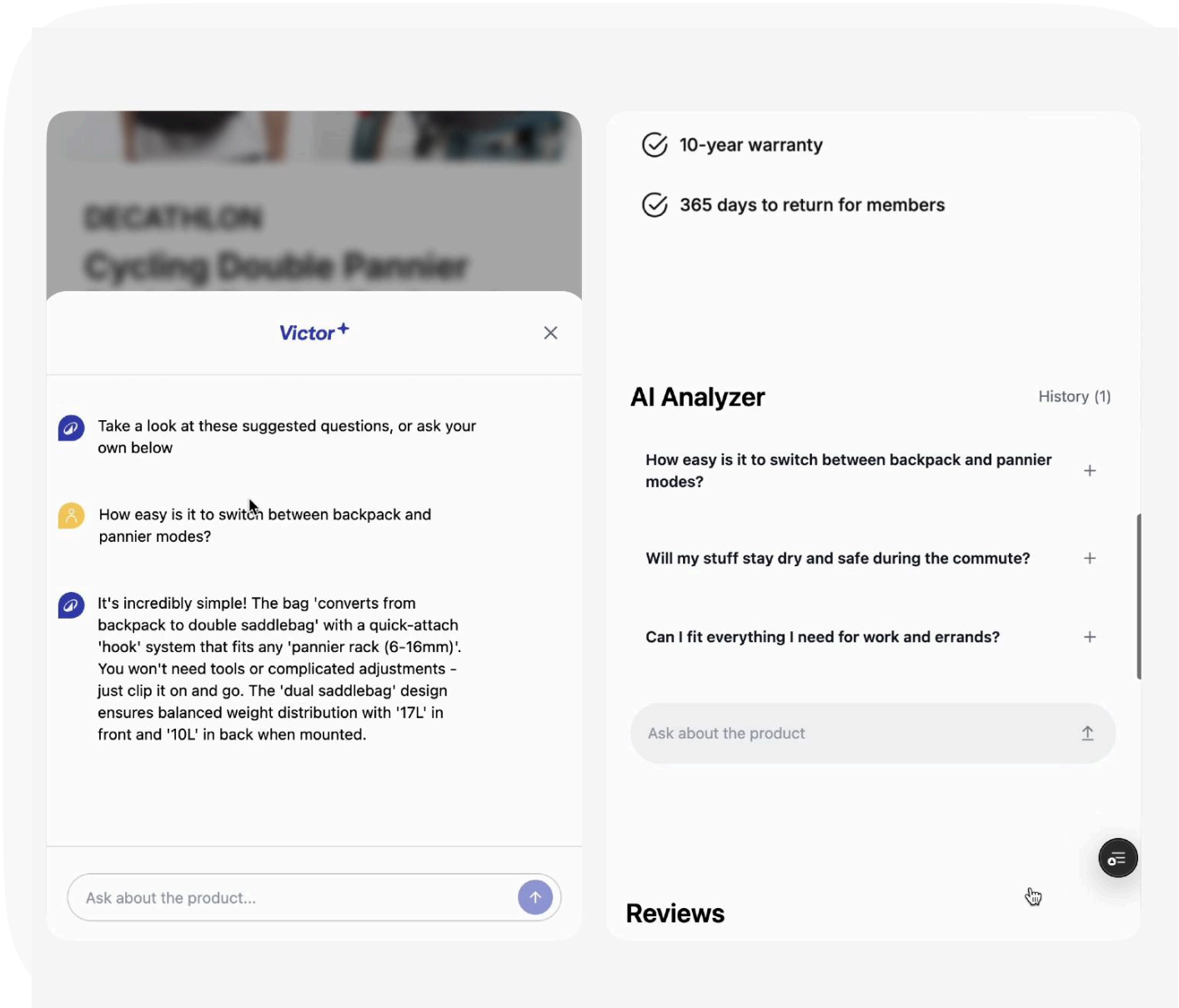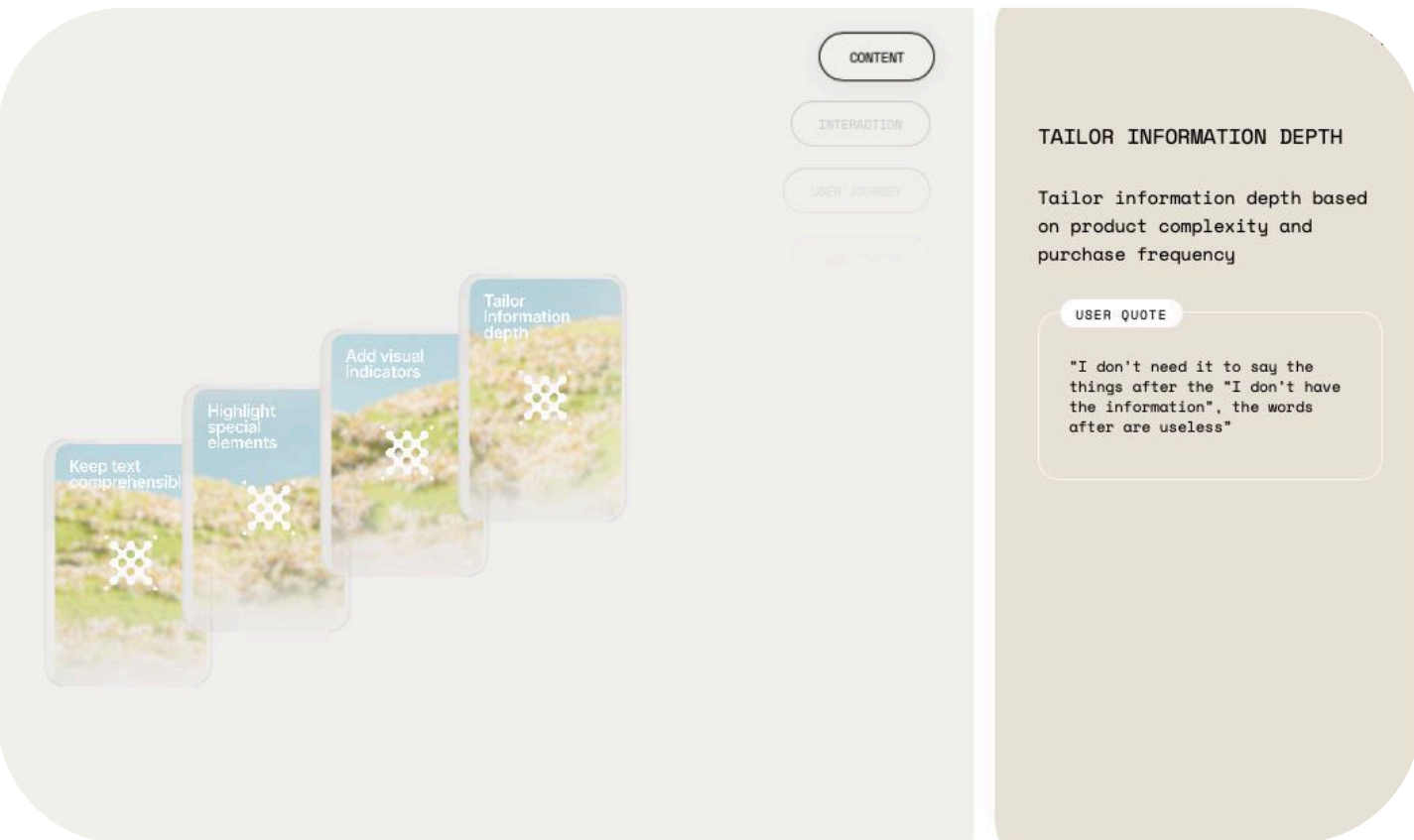

DECATHLON
Cycling Double Pannier

Victor +

Take a look at these suggested questions, or ask your own below

How easy is it to switch between backpack and pannier modes?

It's incredibly simple! The bag 'converts' from backpack to double saddlebag' with a quick-attach 'hook' system that fits any 'pannier rack (6-16mm)'. You won't need tools or complicated adjustments – just clip it on and go. The 'dual saddlebag' design ensures balanced weight distribution with '17L' in front and '10L' in back when mounted.

Ask about the product...

✓ 10-year warranty
✓ 365 days to return for members

AI Analyzer   History (1)

How easy is it to switch between backpack and pannier modes?

Will my stuff stay dry and safe during the commute?

Can I fit everything I need for work and errands?

Ask about the product

Reviews

Building on these findings, the project **culminates in a design framework** with detailed guidelines for the post-conversational era of human-AI interaction.

Fig 6. Design guidelines website (Bottom)

CONTENT

TAILOR INFORMATION DEPTH

Tailor information depth based on product complexity and purchase frequency

USER QUOTE

"I don't need it to say the things after the "I don't have the information", the words after are useless"

Fig 5. Two conditions of the controlled comparative user study (Top)

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Mentor: Dr. Ujwal Gadiraju
Client Mentor: Abdelrahman (Abdo) Hassan

TUDelft