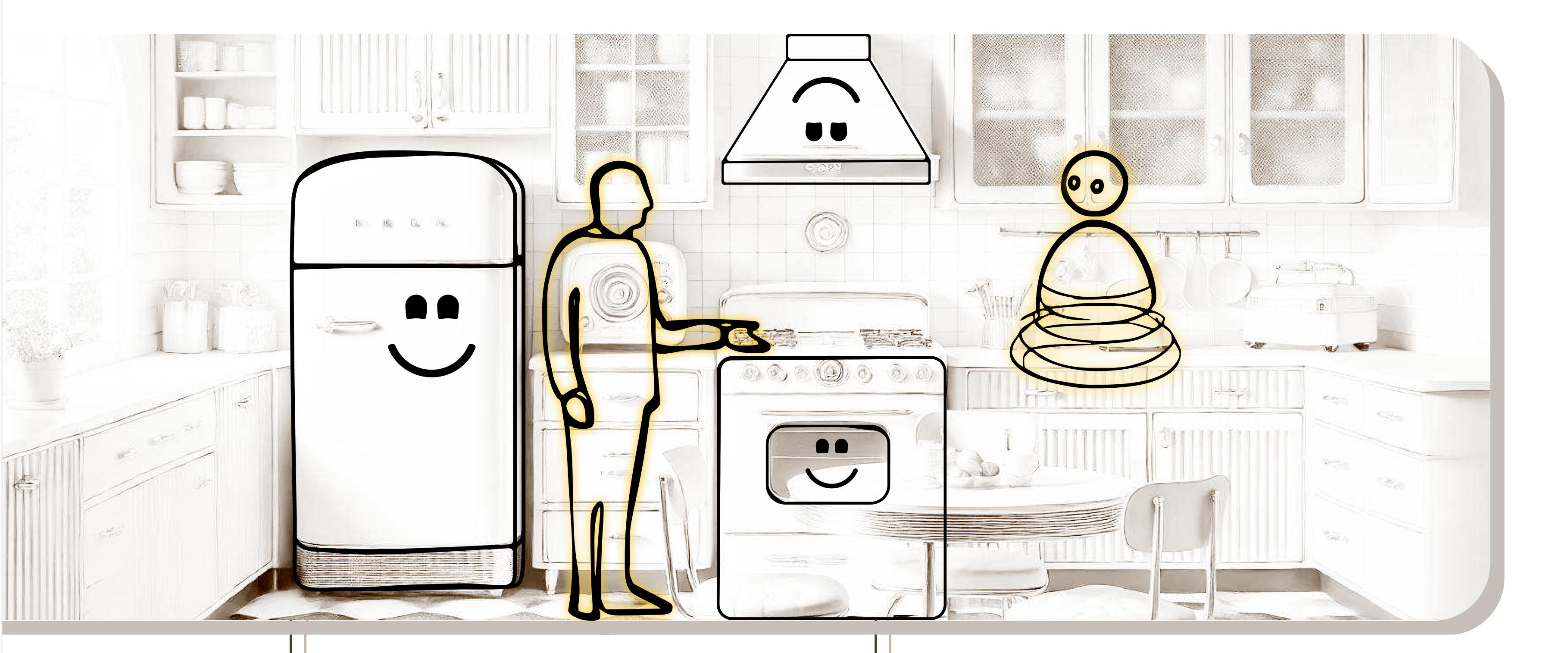# Smart Kitchens & Smarter Conversations

We are potentially close to reverse a technological paradox, leveraging AI and Natural Language Processing to revolutionize smart kitchen appliances. Imagine a kitchen where your fridge, oven, and hob anticipate your needs, making cooking effortless and enjoyable. Generative AI, particularly LLMs, enables natural communication with machines, akin to having a personal chef. This project explores consumers' experiences with modern kitchen appliances to identify their needs and expectations. By utilizing insights from literature, community trends, and user research, we create AI-driven use cases and personas. The outcome is a strategic story and actionable solutions for ASKO, transforming kitchens into intelligent, responsive, and delightful spaces, ensuring customer loyalty.
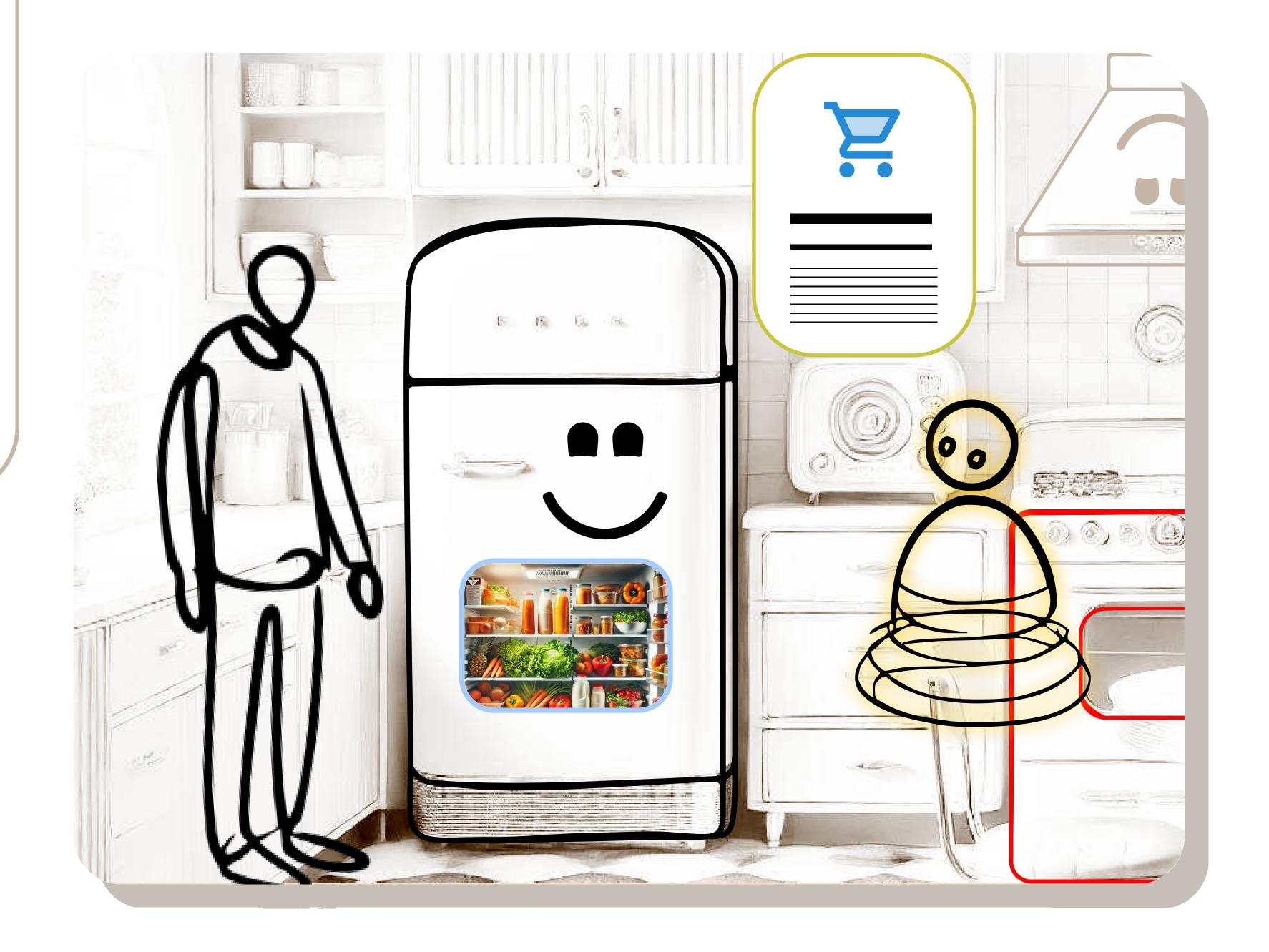

Imagine this

You're in the year 2030 and you live in a home with machines that "talk" to each other. You wake up and walk to the kitchen, the light turns on with a warm greeting. The fridge door makes a soft sound indicating your overnight oats are ready to eat. As you're eating, the coffee machine powers on and warms up your cup just in time for you to finish your meal. As the morning progresses, you see, that you already had lunch packed and feel grateful for making time to pack your lunch a night in advance. Once you're home from work, you leave your meal in a pot on the stove and take a warm shower to freshen up just in time for your meal to be at the ideal temperature to eat. Now imagine, this happens for others in the same home. there must be a billion other ways of living and in diverse condition. How can kitchens be adapted to these unique and diverse lives? Who does that?

This project highlights the use of AI in embracing that diversity through technology, addressing the needs of today and desires of tomorrow.

Getting things done with curated assistance

The goal is to employ a specialised language model in the context of individual kitchen fine-tuned with logic from experts of the ASKO brand thus ensuring positive customer experience. What appears as supreme luxury is often lack of accessibility. This project brings access to autonomous service through the application of Generative AI.

What does it mean to have special attention from machines?

What can an intelligent kitchen afford us?

An intelligent kitchen can make cooking much easier and more enjoyable, by contextualising the definition of ease and enjoyability to you. It learns about your needs, preferences, and habits, giving you personalized advice and help without you needing to explain much. It can quickly answer your cooking questions and give useful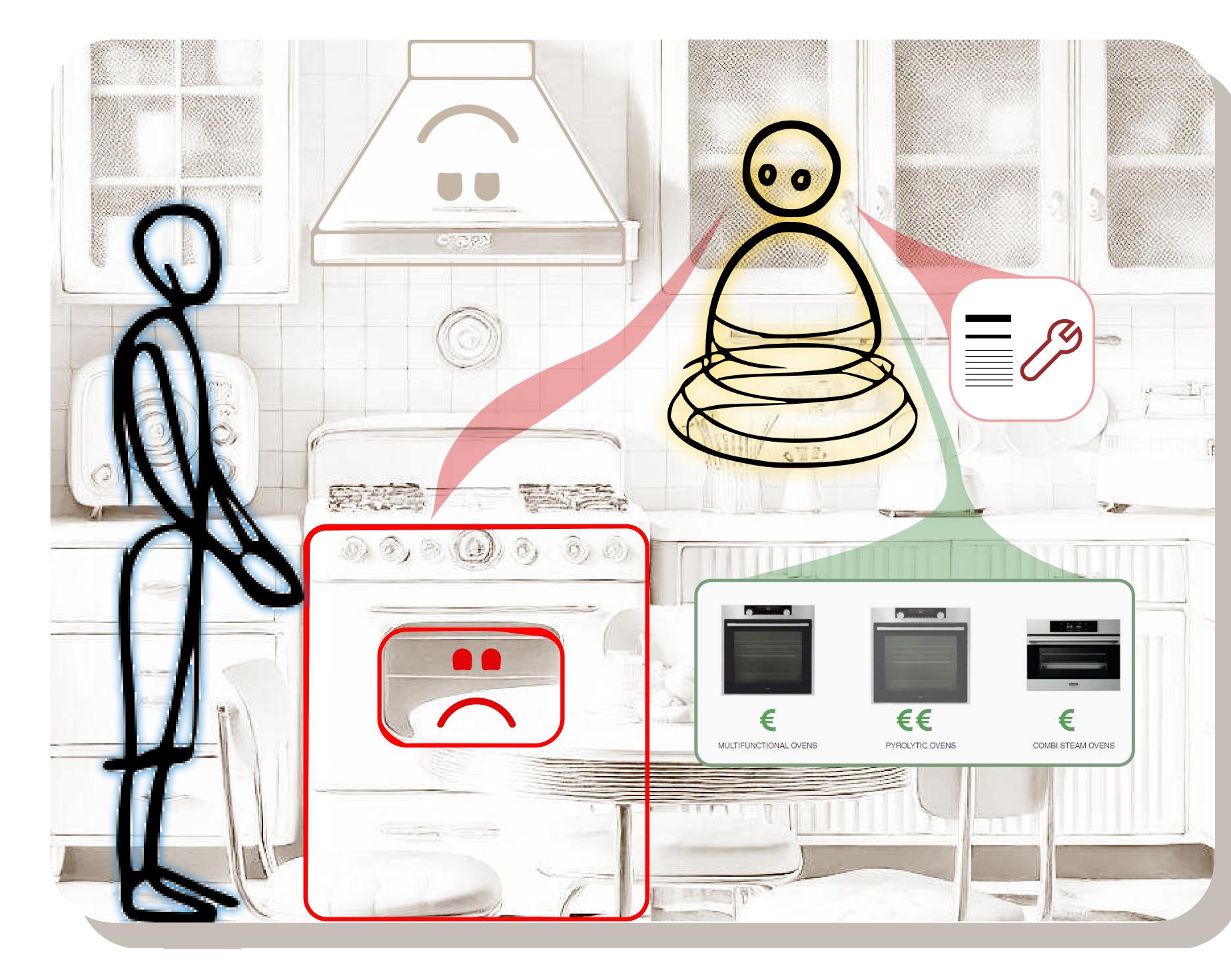 tips based on what it knows about you. For example, it can start pre-heating the oven when it knows you're about to bake, just from your usual way of talking.

The kitchen can predict and fix appliance problems before they happen, keeping everything running smoothly and saving you from costly repairs. It can manage your pantry by knowing when you're running low on items like milk or bread and suggesting what to buy. For health and nutrition, it can create diet plans tailored to your personal health needs.

When you're short on ingredients or have unexpected guests, the intelligent kitchen can help you find quick solutions. It also recommends the best kitchen appliances based on your cooking style and needs. By offering these features, an intelligent kitchen makes cooking simpler, more efficient, and more enjoyable, enhancing your overall kitchen experience.

Value for Customers

Customers don't just buy products; they hire them to perform a job. When purchasing an ASKO appliance, they get a seamless service and brand experience integrated into a digital system. ASKO's commitment to exceeding expectations translates into customer loyalty. Kitchens, evolving from wood fires to modern electric appliances, serve to help people cook efficiently. The historical context of home automation, like John Sutherland's 1959 ECHO, highlights the evolution of smart technology. The AI Revolution emphasizes creative thinking, and in smart kitchens, the true value of AI lies in personalized interfaces that enhance human-machine dialogue. This study identified communication gaps between consumers and smart appliances, revealing a need for kitchens that recognize users as humans first. Voice interfaces were found to enhance interaction, while large language models, though costly, should be tailored to specific needs. Ultimately, GPT interfaces can simplify interactions without changing the appliances themselves.

Yash Khinvasara
14th August 2024
Smart Kitchens & Smarter Conversations
MSc Strategic Product Design

Committee: Dr. Derek Lomas
Heng (Eric) Gu

Company: Vincent Hofstee
ASKO Wouter Ditters

TUDelft