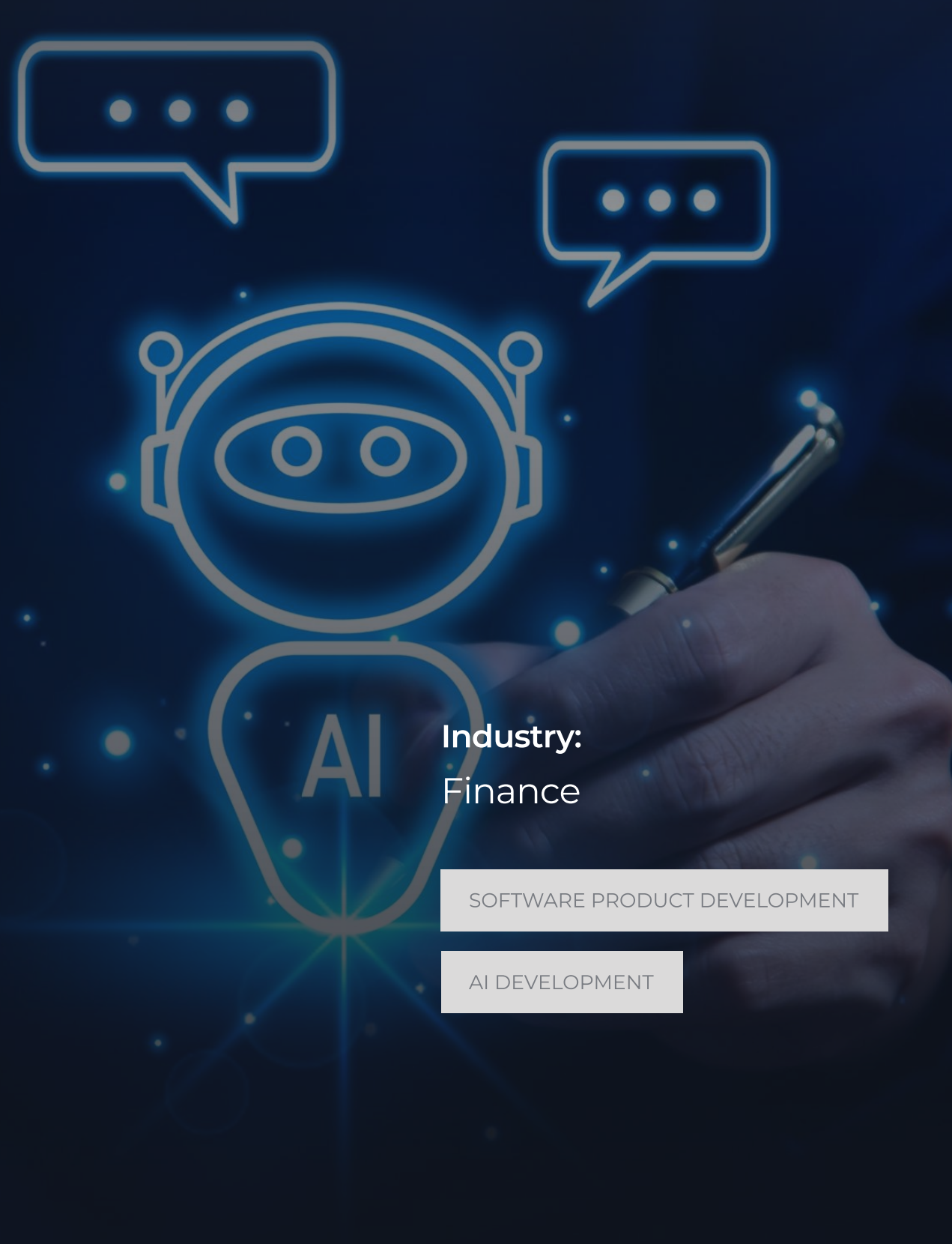


# Conversational AI Chatbot For a European Bank

How strengthening their existing chatbot for customer support with GPT-4 capabilities and voice assistance empowered a Czech bank to boost their 30-day retention rate by **7%**, Net Promoter Score (NPS) by **34%**, and First Contact Resolution (FCR) by **60%**.



## Business challenge

The worldwide shift from brick-and-mortar banks with face-to-face interactions to **online banking** in the 1990s was a major disruption of the banking industry. Since then, it has been one of the technologies shaping the future of finance.

However, customer expectations have evolved over the decades. **Customers of all generations shifted towards resolving their queries through a chatbot in a banking app** rather than making a call, emailing, or visiting a physical location.

The gen AI boom became one of the main contributors to the rise of customer demands. **End users were starving for more human-like, efficient, and fast communication in mobile banking, especially with chatbots as a leading communication channel.** And banks had to shape up or ship out.

Most-used banking communication channels among different generations



Source: American Bankers Association, 2023

Our client – a **trailblazing Czech bank** – saw it as a golden opportunity and didn't miss the chance to capitalize on it. They have been pushing the frontiers of local banking since 2015, and when the gen AI spike started, the client's center of excellence immediately concentrated on **quick-win** strategies of implementing conversational AI in finance services. **Enriching their existing chatbot functionality with natural language processing (NLP) and generative AI capabilities** became one of the projects at the top of their priority list.

To undertake the initiative, the client needed an **AI-savvy tech partner** by their side to confidently and safely integrate the new tech. With data security being a high-stakes issue, they were looking for a **vendor conformed to the ISO 27001:2022 standard**. Instinctools' data scientists and software engineers took the lead in crafting a stable and secure **conversational AI chatbot**.

## Solution

The client envisioned a **gen AI-powered chatbot with an intelligent Siri-like voice assistant**. Such an ambitious solution required in-depth knowledge of large language models (LLMs), pattern and speech recognition, and other frontier technologies.

### 01 Choosing the project's AI linchpin

The client's app has **over 100,000 users**, and they needed an LLM capable of handling a large volume of customer queries simultaneously. **ChatGPT 4.0** was a go-to option, as it can **process 12,000+ inquiries and transactions per second even in peak hours**. Moreover, this pre-trained language model is well-versed in basic banking concepts and doesn't require extensive fine-tuning, enabling swift project development.

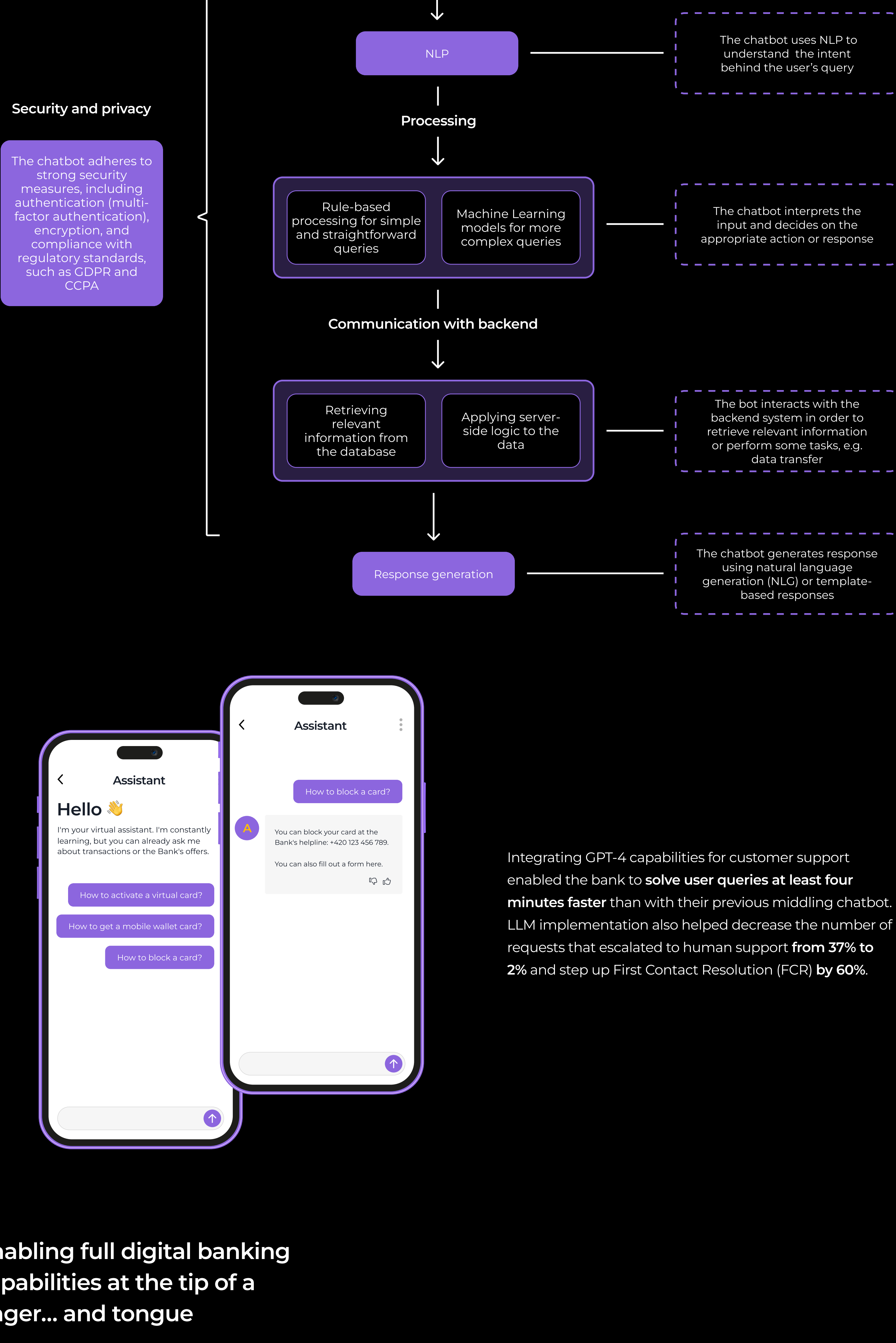
However, finance institutions can't hop on the open-source large language model right away due to restrictions of compliance regulations, such as GDPR, CCPA, etc. **Banks had to use private models running in a controlled environment.**

Hence, we **deployed a private instance of GPT-4 within the client's Azure tenant, connected their initial platform-based chatbot to the LLM through the API**, and proceeded with rewriting the banking chatbot's functionality.

### 02 Stepping up text chatting patterns

Moving forward, we provided the **LLM access to a sanitized dataset of internal banking data**, such as answers to the FAQs, information about bank offerings, user guidelines for performing various operations, etc. As a result, human-like conversations have covered finance and card management, transactions, loan management, investing, savings account creation, credit score monitoring, filing insurance claims — the list can go on and on.

Here's a **high-level scheme** of how GPT-powered banking chatbot works:



Integrating GPT-4 capabilities for customer support enabled the bank to **solve user queries at least four minutes faster** than with their previous middling chatbot. LLM implementation also helped decrease the number of requests that escalated to human support **from 37% to 2%** and step up First Contact Resolution (FCR) **by 60%**.

### 03 Enabling full digital banking capabilities at the tip of a finger... and tongue

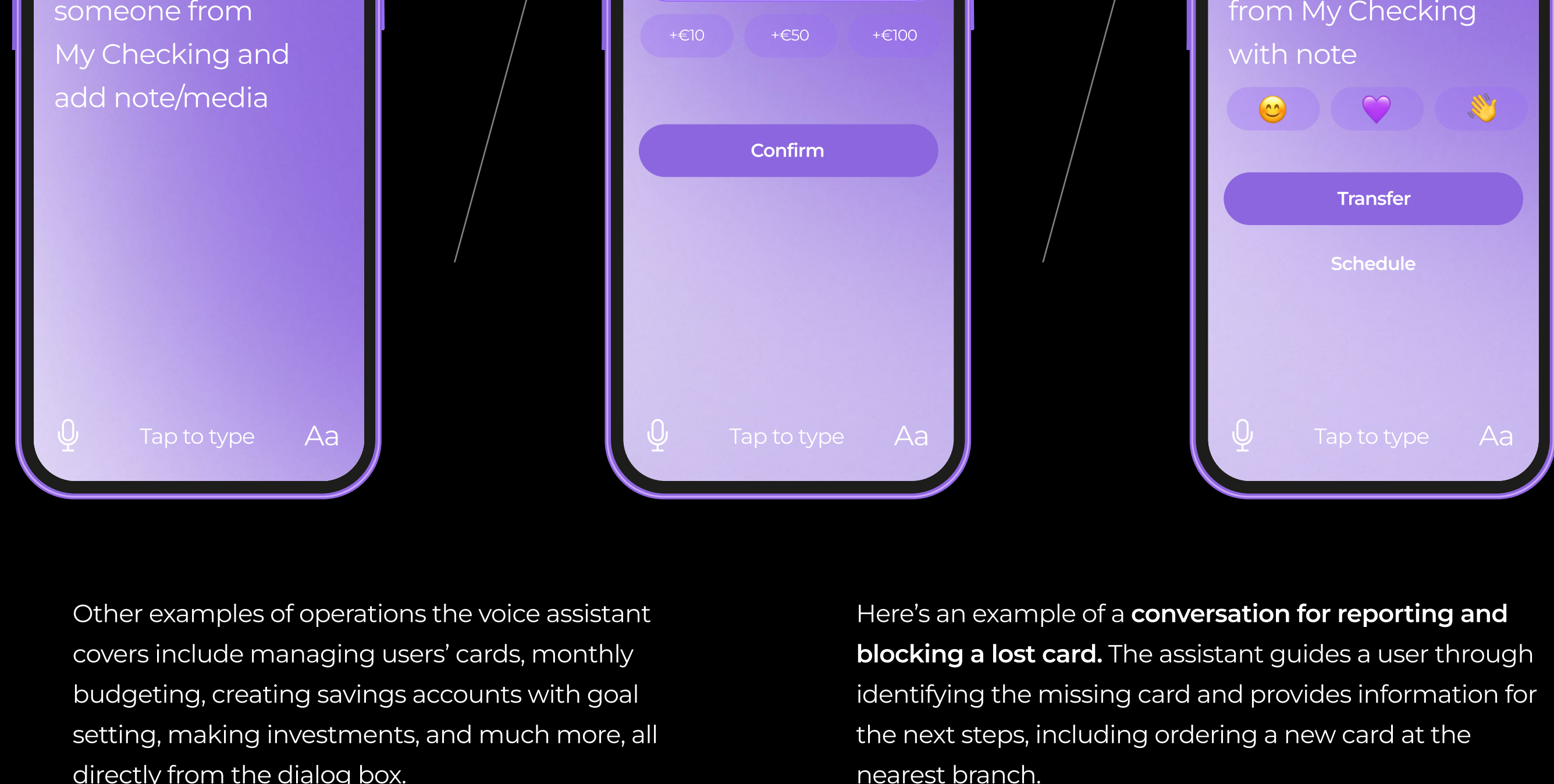
Motivated by their rapid gains, the client doubled down on reimagining user experience with conversational AI for finance. They announced pre-subscription to the new trailblazing features for their existing customers, who give **explicit consent to access some of their profile data**. In exchange, users were offered to be the first testers of a highly intelligent feature, a **personalized virtual financial advisor**. By analyzing customer data, their saving and expense patterns, the chatbot provides tailored insights, proactively helping users reach their financial goals.

Another grand step was the adoption of **automatic speech recognition (ASR)**. Customers can now effortlessly **manage their finances with simple, conversational commands**. With voice-activated banking, users can send money, check balances, and more, all with the ease of a casual conversation. For example, if a user says, "Send €150 to my mom", the bot will immediately generate a confirmation form for this request.



**Pattern recognition** under the hood of the chatbot enables it to anticipate the user's needs, spotting keywords, such as "pay", "send", "transfer", etc.

Here's, for instance, how the software reacts to the word "send" based on the user's spending habits.



Other examples of operations the voice assistant covers include managing users' cards, monthly budgeting, creating savings accounts with goal setting, making investments, and much more, all directly from the dialog box.

Here's an example of a **conversation for reporting and blocking a lost card**. The assistant guides a user through identifying the missing card and provides information for the next steps, including ordering a new card at the nearest branch.



An experimental AI-driven chatbot has been a resounding success with users, resulting in a **7% boost** in a 30-day retention rate. After making this feature available for all the users, our client also saw a noticeable increase in customer loyalty and satisfaction, measured in Net Promoter Score (NPS), which went up by **34%**.

## Before

- Old chatbot could cover only the most rudimentary user queries
- 37% of queries escalated to human support
- Text-based communication with the application

## After

- New chatbot can serve as a personal financial advisor
- 2% of user queries get to the client's call center
- Interaction with the app through a voice assistant

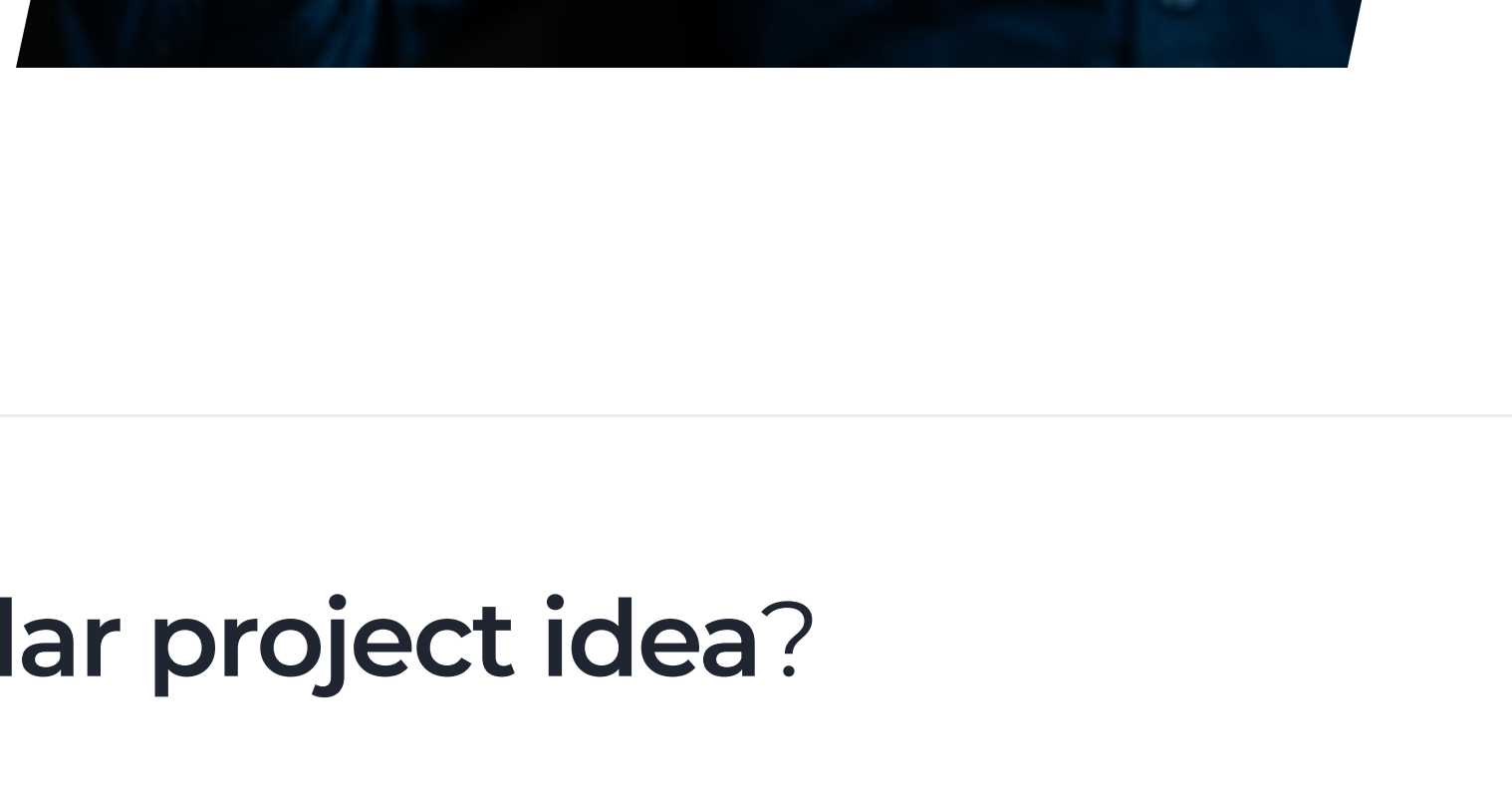
## Business value

- The first gen AI-driven personal financial advisor in the Czech mobile banking market
- 60% step-up in First Contact Resolution (FCR)
- 75% increase in Query Deflection Rate
- 7% boost in a 30-day retention rate
- 34% rise in Net Promoter Score (NPS)

## Multiplier effect

As much as conversational AI in finance is reshaping the banking sector, it's also changing the game for other domains, from healthcare and e-commerce to manufacturing and logistics. If your app implies communicating with end users, it has **room for gen AI adoption**.

Conversational AI enables your app to intelligently process users' needs on the fly. Just like saying "I've lost my card" initiates a card-blocking procedure, AI streamlines critical processes in other industries.



Do you have a similar project idea?