



MARCH 2018

# CHATBOTS

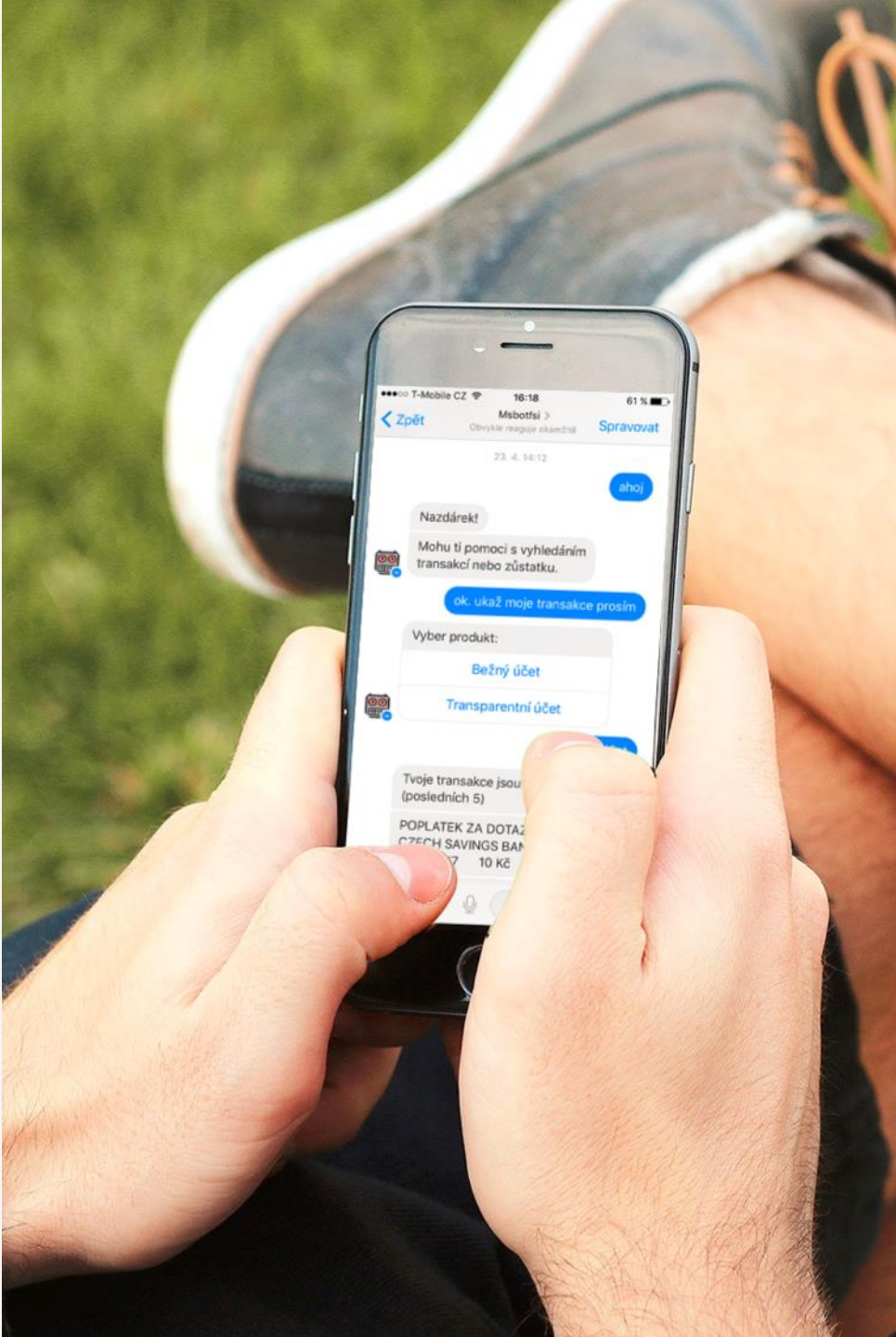
DELOITTE

Michal Founě – Jana Šťastná – Alexandra Strnadová



# 1. Selected References





## Franky: BankBot – Internal PoC.

### PROBLEM

We wanted to test the chatbot technology and create a real demo we could show to our clients who are mostly from the banking industry. We pin-pointed the most common banking interactions – checking the account balance and transaction history.

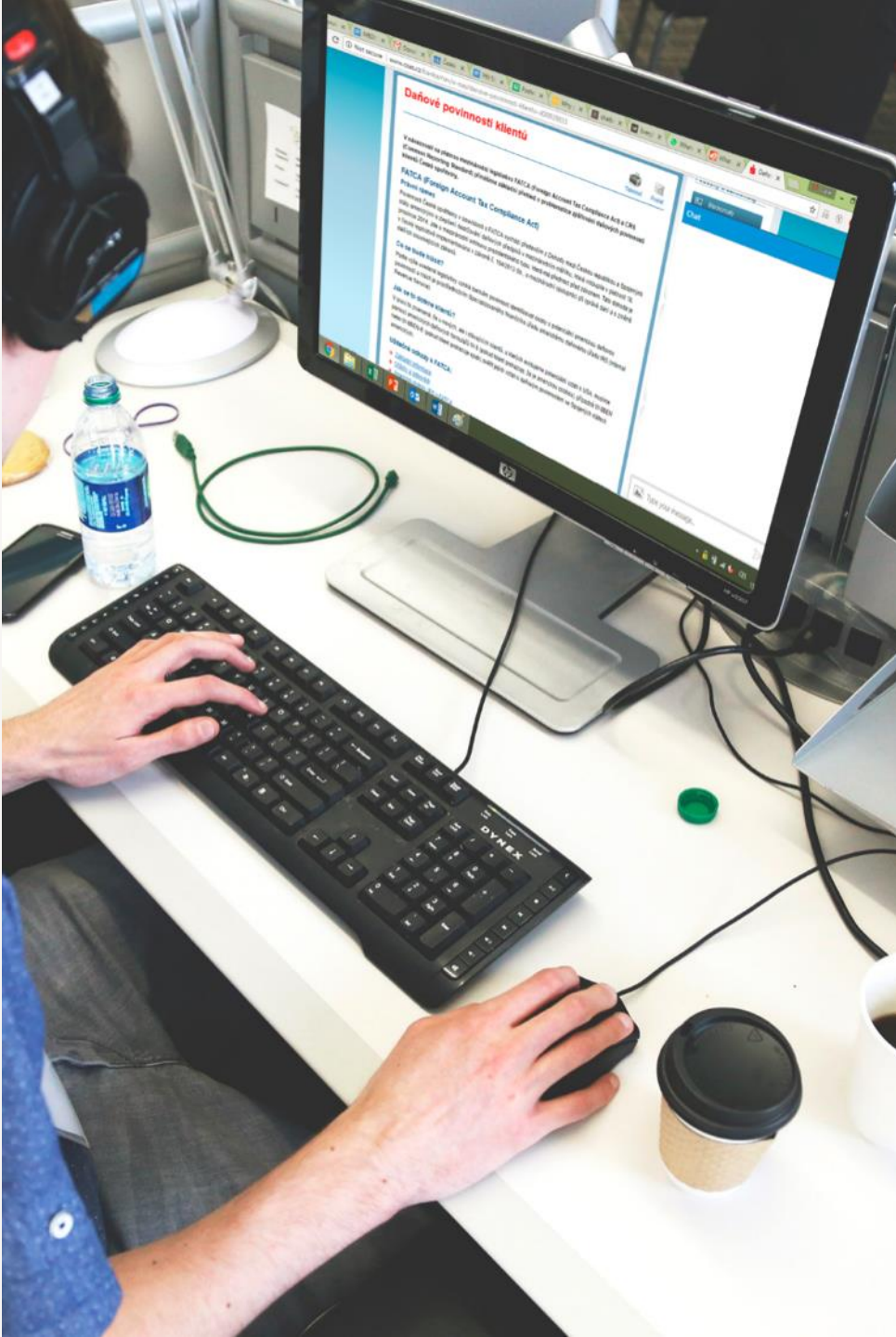
### SOLUTION

We chose the Microsoft Bot Framework to make this chatbot because it's open source and it provides the right tools like a channel emulator and a popular development environment. We had an issue that Czech language is not supported by the Microsoft LUIS and access to real banking transactions is limited. So we integrated the solution with third-party APIs for NLP and with transparent-account-transaction APIs which are offered publicly by one Czech bank. We also wanted the chatbot to respond to basic small talk and gave it a bit of a character.

### IMPACT

We managed to integrate the bot with all planned APIs and get it to respond with good response time. We trained the NLP technology to a very good level so utterances asking for account balance and transaction history are rarely misunderstood. We have proven that the technology we used is a good one and we have won an offering for PoC for a real client.





# Daník: FATCA / CRS specialist chatbot.

## PROBLEM

FATCA and CRS are standards adopted by governments worldwide. Their goal is to fight tax evasion. As a result, our client, a large Czech bank, is required to collect tax information from its clients. Because these standards are still quite new, clients and branch employees are often lost and confused about this topic and they search for help by calling helpdesks. This causes a lot of traffic and repetitive answering of the same questions.

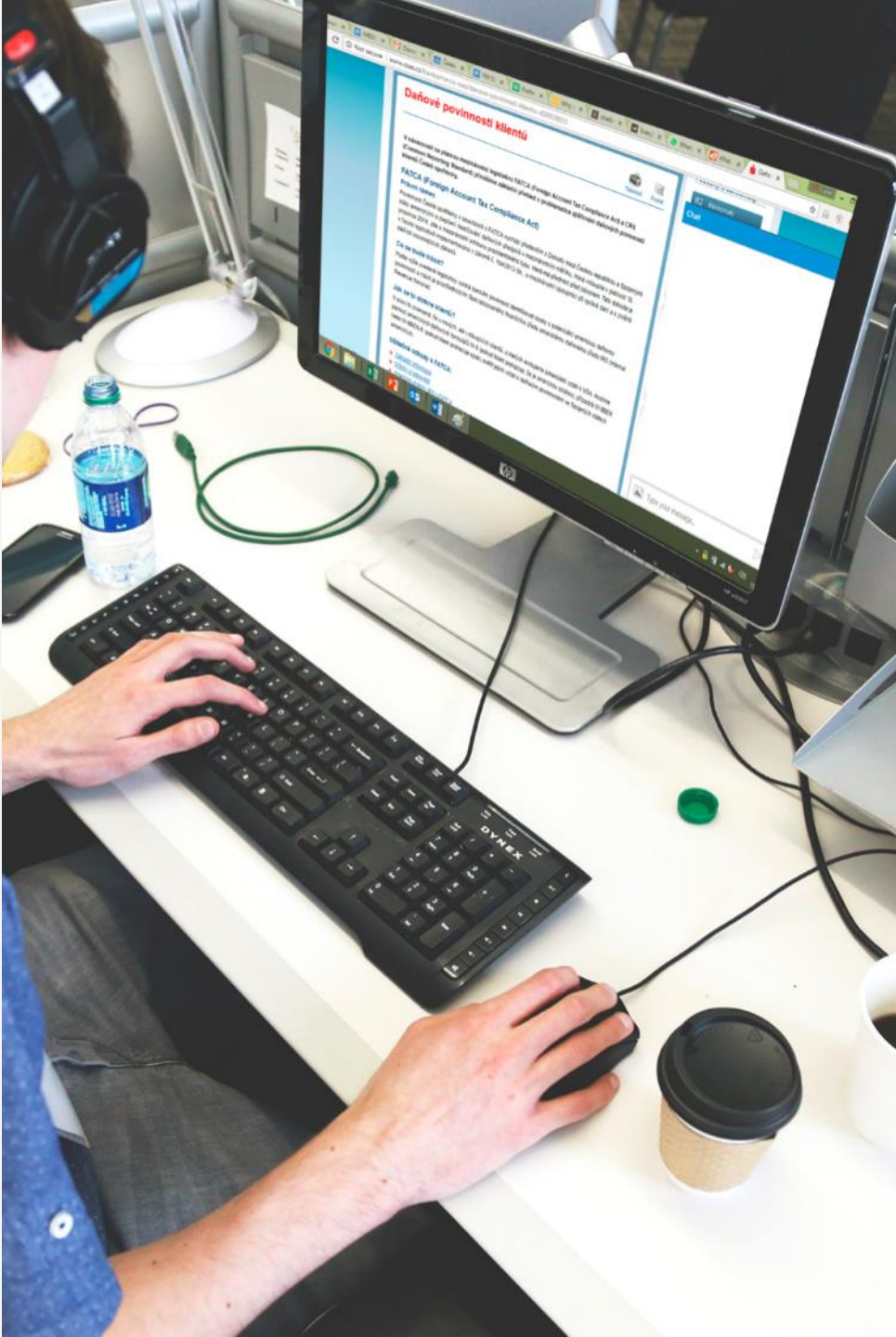
## SOLUTION

Based on the nature of this problem, we proposed to build a chatbot which would be able to answer those repetitive FAQs. As this is the first chatbot in this bank, this solution also serves as a test of a chatbot as a new technology and possible channel used for other topics and use cases in the future.

In the first phase, the chatbot will only serve internal employees via web chat. We designed a „hybrid“ conversational UI (combination of buttons and natural-language understanding). The chatbot covers the most frequent questions about FATCA and CRS and basic small talk. It's developed using Microsoft Bot Framework and we integrated it with third-party APIs to support Czech language understanding.

## IMPACT

The roll-out to branches is currently underway. The solution is fully integrated and we are mostly focused on gathering authentic user queries to further improve the accuracy of the NLP model. The planned impact is to decrease the number of phone calls and emails to the tax helpdesk and increase awareness about this topic. Our goal is to provide great first experience to the bank employees who are not familiar with this technology.



# Rey: Talent Chatbot for U.S.-based Consultancy

## PROBLEM

The company is receiving over 100K queries related to courses annually. Most of the questions are easy to answer. The complexity of the use cases is limited and it's easy to distinguish them (e.g. course rescheduling, hotel cancellation etc.).

## SOLUTION

Since there is a sufficient history of conversation logs we first started with analysis of this data. The aim was to understand what are the most common queries and build the intent design based on this. The data further provides authentic training data for the NLU model. We are now designing the chatbot flow and the technical architecture of the solution. The goal is to come up with a design that combines NLU capabilities with other UI elements as buttons and cards.

## IMPACT

After successfully completing the UAT Rey was launched into production on January 8. Now Rey is serving learners who want to manage their courses. The chatbot will now be evaluated during a two-month period. The average user rating so far is 4.5 stars out of 5. Based on the return on investment a roll-out to other programs will be considered.

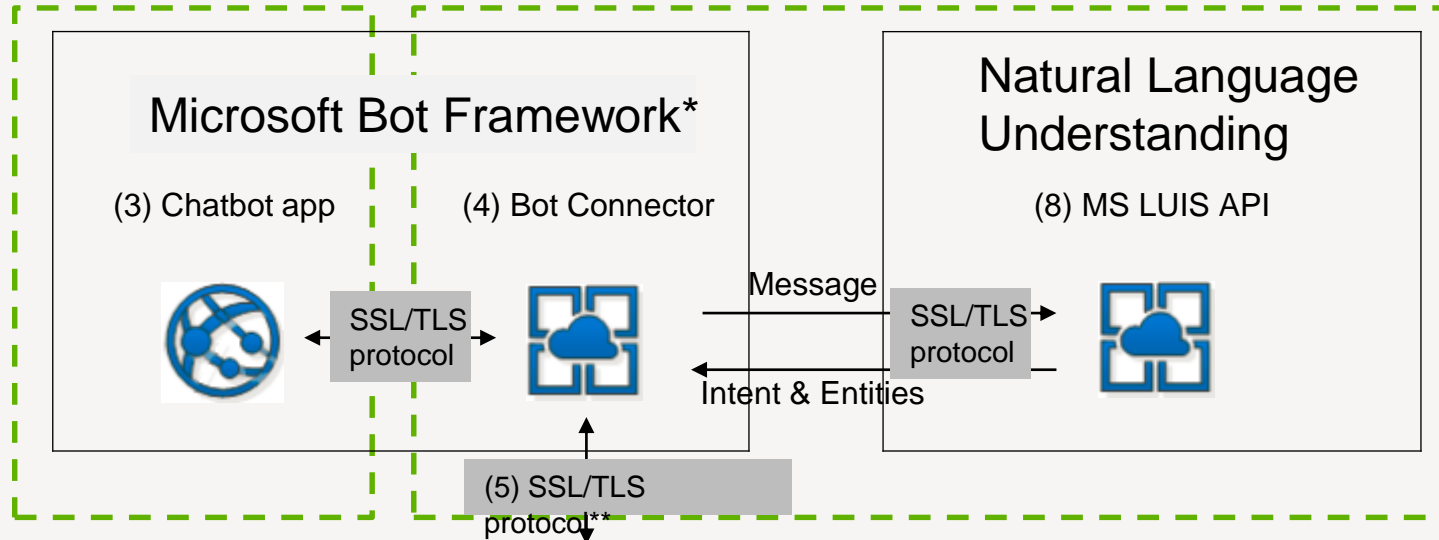




## 2. Architecture Diagram

(1) Hosting

(2) Cloud – MS Bot Framework services



Channels

(7) Client's Systems

(6) Web chat



Web chat is one of the many channels available



\* <https://docs.microsoft.com/en-us/bot-framework/>

\*\*<https://docs.microsoft.com/en-us/bot-framework/rest-api/bot-framework-rest-connector-authentication>



  
**Thank you.**

