Maahanmuuttovirasto
Migrationsverket
Finnish Immigration Service

Lin land design

User feedback of Kamu voice experiment

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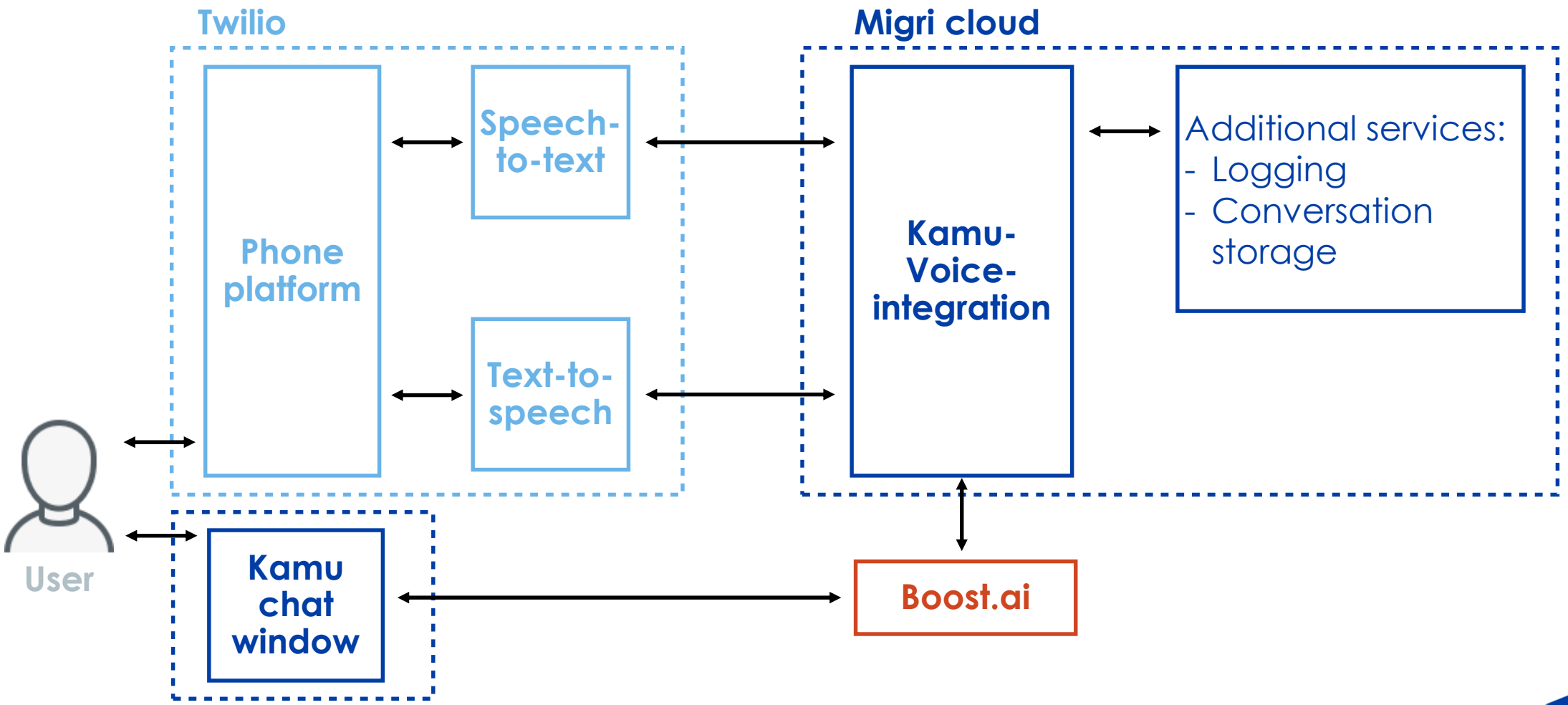
Technical solution (target)



Research question

Can the current voice implementation of Kamu satisfy the same user needs as Kamu's text-based implementation?

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Participant overview

ID	Gender	Age (guess)	Country of origin	in Finland for	current permit	occupation
P1	M	20/30s	Pakistan		work	
P2	M	30s	South Korea		work	designer
P3	M	30s	India	4 years	work	software engineer
P4	M	50/60s	Scotland	35 years	EU	lecturer
P5	F	Early 30s	Switzerland	4 years	EU	student
P6	F	40s	Argentina	18 years	Finnish citizen	service designer
P7	M	30s	India	8 years	A-permit	MBA student, works parttime in tech startup
P8	F	Late 20s	Russia	4 years	student	
P9	M	65	Britain	2 years	EU	pensioneer, married to a Finn

Dark Orange: Test in Finnish

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Setup

Tests took place in Helsinki.

Users were given a mobile phone, from where to call the voice implementation of Kamu.

They used the external speakers of the mobile phone, so the echo of the room have an small effect on the results.

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Tasks

Users were given 3-4 out of 4 test tasks.

Most users were given tasks A, B and D. Some users also tried task C.

A. Imagine the situation where you came to Finland the first time. Find out which permit you need to come to Finland in your situation.

B. Imagine you have submitted the application. Find out how long you will need to wait for your answer.

C. Find out if you need to visit Migri after you have submitted your application.

D. Now let's imagine you have applied for Finnish citizenship. You used the online service and it tells you that you should visit the closest service point. Call this number to find out the address of the closest service point.

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Results

The results from our voice user testing concern 5 main areas. Results regarding general content of Kamu are not included.

A more detailed list of all errors that occurred during the test can be found in the test's data collection file.

A. Speech-to-text-transcription varies a lot
B. Change of language during conversation not supported
C. Unexpected and unresponsive behaviour
D. Talking speed & additional commands
E. Content adjustments needed

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Speech-to-text-transcription

With the wide variety of users, backgrounds and levels of English language command the voice-to-text-transcriptions sometimes work well, but at other times they do not work at all.

User	Transcript
I have applied for Finnish citizenship and I need to visit the service point. (P2)	I have applied for finish the kitchen s*** and I need to visit.
I need to find out more information about *(thinking a)* residence permit. (P8)	I need to find out more information about a residence permit.
I am an EU citizen and I would like to come to Finland and would like a permit. (P9)	I mean he used to dissing and I would like to come to pedant and would like a permit.

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Speech-to-text-transcription

With the wide variety of users, backgrounds and levels of English language command the voice-to-text-transcriptions sometimes work well, but at other times they do not work at all.

Possible solutions

- narrow down a use-case for voice-based Kamu, where inputs are shorter (but not 1 worded).
- try out other providers than Twilio
- try out the effects of using another default accent than American English
- try to deduce the dialect from geolocation or by using a fallback cycle during the conversation to get best possible transcription

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Change of language during conversation

BoostAI affords such language change easily, but the Twilio standard setup does not. This results in strange intonation of replies which may make them nonunderstandable.

Possible solutions

- check for technical possibilities

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Unexpected and unresponsive behaviour

This includes problems with sudden hang ups of the call, long waiting times for a reply and not waiting until user has finished the question.

Possible solutions

- need to check from technical point of view what can be done

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Talking speed and additional commands

Problems in this area include Kamu speeding up during long reply texts, missing pauses between action links and long pauses before a reply. Users also requested features such as repeat a reply and interrupting Kamu during its talk.

Possible solutions

- shortening of reply texts
- consistent talking speed implemented technically
- pauses between action link options added technically
- additional features: “repeat this reply”, “stop talking”, “speak slower”

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Content adjustments needed

To support voice users better the content needs adjustments in different areas to support a more natural feeling of a voice-conversation.

Possible solutions

- replacement of “click” and similar words
- hide weblinks & send as email or sms - tech check needed
- shorten answers
- feature to repeat answers
- avoid one-word action links since they are harder to predict reliably

Research question

Can the current voice implementation of Kamu satisfy the same user needs as Kamu's text-based implementation?

No.

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Voice- vs. text-based Kamu

For both text- and voice-based Kamu it is challenging to answer complex inquiries. This is more prominent and visibly annoying to voice-based users because when talking to Kamu they expect the same affordances that a human-to-human conversation has.

Users are more insecure about answers because they cannot see their inputs.

Users cannot read an answer several times in order to understand it fully.

Users have problems to remember e.g. lists of requirements or attachments when hearing them spoken only.

Users tend to ask more follow-up questions in voice-based conversations, than in text based ones.

Users don’t have control over the speed of the conversation. they cannot go back, repeat, check again, pause, control the speed.

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Kiitos

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