Bürokratt: overview and roadmap for 2021-2022

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Pille is enjoying her morning coffee when her smartphone awakens. The virtual assistant Hedgehog that came along with the phone’s software, says in clear Estonian language:

“Good morning, Pille! You have 10 new messages.”
#bürokratt in a nutshell

#bürokratt is the vision of how digital public services should work in the age of artificial intelligence (AI)

All government services and information available via virtual assistants:
- by voice
- in Estonian language (+ more)
- in any most common device
- proactively
What problem is Bürokratt solving?

**Problem**

People don’t know which public agency to contact. They don’t have an overview of their obligations and opportunities offered by the government, and communication is time-consuming for both the people and the government.

**Current situation**

Mobile devices are used by 98% and the Internet by 90% of Estonian households. The use of mobile devices and the Internet continues to increase amongst the public.

**Opportunity**

Improvements in AI and especially in virtual assistants (e.g. in mobile devices) enable us to solve this problem significantly better than before.

**Aim**

Making digital public services radically easier to use and more accessible to people through voice-based virtual assistants, providing the best user experience for digital government.
Roadmap for year 2021

- Cooperation with Finland
- Speech enabled pilot projects
- Bürokratt core team
- Machine translation and speech recognition
- Consent management platform
- CVI
- Analysis and PoC of National Mobile App
- Classification of citizen messages: analysis and PoC
- Bürokratt development and implementation

March | June | September | December
Bürokratt development and implementation

Project goal
Bürokratt chatbot is developed and implemented at three agencies.

Future benefits
People can communicate with the government 24/7, and thanks to the interoperability of bots, it is possible to interact with the whole government from one communication channel.

Duration
August 2021 – February 2022

Involved agencies
State Information System Authority, Policy and Border Guard Board, IT Centre for Ministry of Interior, Ministry of Economic Affairs and Communications, National Library, Consumer Protection and Technical Regulatory Authority
MVP development

I phase
Real-time conversation and implementation

II phase
Chatbot development and integration

III phase
Analytics module, open data, MVP live

Duration
August 2021 – February 2022
Implementation at agencies

1. Police and Border Control
2. Consumer Protection and Technical Regulatory Authority
3. National Library

Hi! How can I help you?
Further development

+ Further onboarding
+ Speech recognition and synthesis
+ Personalized services (both public- and private sector)
+ Government mobile application and alternative communication channels
Classification of citizen messages: analysis and PoC

Project goal
To complete analysis and create a PoC on classifying citizen and private sector messages at domain/sectoral level.

Future benefits
Automatic classification of citizen and private sector messages and forwarding them to the responsible AI bot, agency or government official. Therefore, there is no need-to-know which agency or government official to contact.

Duration
February – July 2021

Involved agencies
State Information System Authority, Policy and Border Guard Board, IT Centre for Ministry of Interior, Ministry of Economic Affairs and Communications, National Library, and others
Analysis and PoC of National Mobile Application

Project goal
Based on the analysis and PoC, decide whether there is a need for a separate national mobile application as a channel/interface for Bürokratt.

Future benefits
The administrative burden of the citizen is reduced by combining and improving accessibility of services and by creating the possibility for speech-based communication and push notifications.

Duration
February — December 2021

Involved agencies
State Information System Authority, Policy and Border Guard Board, IT Centre for Ministry of Interior, Ministry of Economic Affairs and Communications and others
Consent management platform

Project goal
Enable citizens to give third parties (e.g. private companies and AI bots) access to their data to provide additional services.

Future benefits
A person has the opportunity to share their data to receive personalised services through Bürokratt.

Duration
until October 2021

Involved agencies
State Information System Authority, Ministry of Economic Affairs and Communications, Estonian Tax Authority, Health Board and others
CVI

Project goal
To create Bürokratt’s visual identity, which reflects the ambitions of the next-generation e-government.

Future benefits
Providing communication tools to introduce the Bürokratt concept to agencies, companies and individuals.

Duration
June — September 2021

Involved agencies
Ministry of Economic Affairs and Communications
Machine translation and speech recognition

**Project goal**
Create machine translation technology adapted to public sector needs that allows translating text and speech from Estonian to English, Russian and German and vice-versa.

**Future benefits**
The foreign-speaking companies and individuals will have easier access to public services, supporting integration and reducing the time and cost of translation.

**Duration**
March — December 2021

**Involved agencies**
Ministry of Education and Research, Institute of the Estonian Language, Ministry of Economic Affairs and Communications
Bürokratt core team

Building the core team responsible for implementing the Bürokratt program, managing the solution and its technical development, and providing support to the agencies.

**Duration**
January — December 2021

**Involved agencies**
State Information System Authority, Ministry of Economic Affairs and Communications
Speech enabled pilot projects

**Project goal**
Developing first speech-enabled public services in collaboration with global companies developing virtual assistants

**Future benefits**
A citizen can access public services and contact the government through existing virtual assistants.

**Duration**
January — December 2021

**Involved agencies**
State Information System Authority, Policy and Border Guard Board, IT Centre for Ministry of Interior, Ministry of Economic Affairs and Communications, Tartu University, Tartu University Hospital
Cooperation with Finland

Project goal
Launch cooperation with the Finnish government and agree on an action plan to test and develop cross-border AI services’ interoperability.

Future benefits
Citizens can be offered cross-border public services through Bürokratt and Aurora AI.

Duration
March 2020 — July 2021

Involved agencies
State Information System Authority, Ministry of Economic Affairs and Communications
High-level roadmap for year 2022

- Development of classification module
- Machine learning infrastructure
- Integration with article warehouse
- Bürokratt implementation at agencies
- Integration with alternative communication channels
- Development of message rooms
- Biometric identification
- Providing public services through Bürokratt
- Customer support analytics
Development of classification module

Project goal
The classification module is developed and implemented in first government agencies.

Future benefits
Messages are automatically classified and forwarded to the responsible AI bot, agency or government official. Therefore, the citizen does not need to know which agency or official to contact.

Duration
December 2021 – November 2022

Involved agencies
State Information System Authority, Policy and Border Guard Board, Ministry of Economic Affairs and Communications and other agencies who implement Bürokratt
Machine learning infrastructure

Project goal
Creating a machine learning infrastructure as part of the government cloud for providing high-performance computing to support the implementation of Bürokratt.

Future benefits
Reduces the time it takes to train machine learning models and allows to train better models, thus improving the public service quality.

Duration
December 2021 — August 2022

Involved agencies
Ministry of Economic Affairs and Communications
Integration with article warehouse

Project goal
Bürokratt is integrated with article warehouse.

Future benefits
Ensures the information is correct and updated across all agencies and communication channels.

Duration
June — December 2022

Involved agencies
State Information System Authority, Policy and Border Guard Board, Ministry of Economic Affairs and Communications and other agencies who implement Bürokratt

Why do I need to wait 15 minutes after I received a vaccine?
Integration with alternative communication channels

**Project goal**
Alternative communication channels (Signal, Whatsapp, Facebook etc.) can be used to interact with the government.

**Future benefits**
Better availability of government information and personal services across every possible touchpoint and interaction moment.

**Duration**
In 2023

**Involved agencies**
State Information System Authority, Ministry of Economic Affairs and Communications and other agencies who implement Bürokrat
Development of message rooms

Project goal
It is necessary to create message room architecture for best efficiency and to enable the mediation of information between different agencies and services.

Future benefits
Reliable and efficient communication across agencies and services.

Duration
until December 2022

Involved agencies
State Information System Authority, Ministry of Economic Affairs and Communications
Biometric identification

**Project goal**
To find out the extent biometric identification (voice, ear shape, fingerprint etc) can be used in Bürokratt.

**Future benefits**
Extend the means for identification and make it more convenient to use Bürokratt.

**Duration**
in 2022

**Involved agencies**
State Information System Authority, Policy and Border Guard Board, IT Centre for Ministry of Interior, Ministry of Economic Affairs and Communications,
Providing public services through Bürokratt

Project goal
Providing public services through Bürokratt.

Future benefits
Possibility to use public services through Bürokratt, for example, renewing driver’s licence and borrowing a book from library.

Duration
December 2021 onwards

Involved agencies
State Information System Authority, Ministry of Economic Affairs and Communications and other agencies who implement bürokratt
Customer support analytics

Project goal
Enable better and more customer-centric public services through understanding customer needs.

Future benefits
Improve the quality of public services and customer support.

Duration
February — September 2022

Involved agencies
State Information System Authority, Ministry of Economic Affairs and Communications
Improve machine translation

Project goal
Improve the quality of machine translation through creating new corpora and training of new models.

Future benefits
The foreign-speaking companies and individuals will have easier access to public services, supporting integration and reducing the time and cost of translation.

Duration
Ongoing activity

Involved agencies
Ministry of Education and Research, Institute of the Estonian Language, Ministry of Economic Affairs and Communications and other agencies
Transcription of additional corpora of speech

Project goal
Transcribe additional corpora of speech, which will be provided as open data to all interested stakeholders working on speech recognition and synthesis. The goal is to extend the support for Estonian language technology development and improve its quality.

Duration
Ongoing activity

Involved agencies
Ministry of Education and Research, Institute of the Estonian Language, Ministry of Economic Affairs and Communications
Speech enabled Bürokratt

**Project goal**

Bürokratt allows people to get their governmental deeds done with voice interactions from any device. This improves accessibility and ease-of-use of digital public services.

**Duration**

In 2023

**Involved agencies**

State Information System Authority, Ministry of Economic Affairs and Communications and other agencies who implement Bürokratt
Thank you!

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