



OuluBot

**Oulu's emerging
innovations are
something other cities
will want to follow**

CASE STUDY: OULU

FRONT.AI





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Oulu Capital of Northern Scandinavia



A three-year innovation project funded by Business Finland and the City of Oulu is underway, the aim of which is to produce innovations and better serve the needs of local residents during the pilot period. The project is in collaboration with Front AI and Digital Workforce.

At the heart of the project is a modern, conversational and data-secure, **AI-based digital customer service agent, OuluBot**, which provides local residents with extensive and multi-channel information 24/7. In addition, OuluBot independently handles many service requests and personalised information, such as reporting a lost travel card or perhaps, in the future, the possibility for a resident to find out the status of a building permit.

People-oriented services are a key priority for the City of Oulu. Services are developed to meet the real needs of local residents, rather than focusing on what the organisation wants to offer. Feedback and ideas have been collected from local residents via mystery shoppers, a variety of surveys as well as through development projects.

For a city like Oulu with a big customer service unit, there's no shortage of development ideas. For many of the ideas generated during the innovation project, there is no ready-made implementation solution. This is exactly what the innovation project aims to achieve.

Bots have the potential to answer up to **96%** of questions

The City of Oulu's customer service unit serves through customer visits, by telephone, e-mail, through social media channels, on live chat and via OuluBot. In addition, there are several customer service points and channels connected to the various branches of the City of Oulu. There is no exact aggregate data on the number of contacts for all the city customer services. However, in the case of the Oulu 10 centralised service point, there are already on average 7,000–8,000 contacts per month.

In November 2020, OuluBot was put into operation on the Oulu public transport website, precipitating hundreds of discussions per month. This number of conversations has almost doubled every month as OuluBot has been added to new webpages of the City of Oulu. In May 2021, more than 2,000 discussions had already taken place. New topics are continually being added, including topics related to welfare services are currently being taught to the bot.

While most of the discussions take place during office hours, there is also activity in the evening and late at night. In Oulu, it is believed that over time, local residents will increasingly require service outside of office hours.

The bot's high response rate is a delight to customer service professionals. The bot has been on the public transport website for the longest time, so it knows these subject areas the best. OuluBot is able to answer up to 96% of questions about public transport. Customer service representatives can focus on the most complex cases instead of the most common questions.

For local residents, OuluBot offers consistent service around the clock. Once the bot has learned the secrets of the city's various subdivisions, the same depth of knowledge is available to every resident and user, and no longer depends on the experience of the employee on hand.





Changing work challenges and inspires Oulu's employees

The implementation of the project is divided into ten two-month sprint periods. Many of the solutions created in the sprints are already in use by city residents.

Teaching of the bot began with public transport data in the summer of 2020. Since then, the bot has been taught comprehensive and multidisciplinary content from a variety of Oulu's units, such as Business Oulu, Wellbeing Services, Tourism, Urban and Environmental Services and the Library.

Working in connection with OuluBot are a large number of employees. 37 people have participated in content producer training, and 29 people have been trained as 'bot whisperers' (an AI coach).

Front AI's training has helped employees orientate into their new roles with artificial intelligence and content. Training covers best practices and how to use the technology, but also gives guidelines on common styles and lines of communication. Training is provided in English and it is available to everyone.

In addition to training, the supplier also holds an open support session, available every week for an hour. During the week, you can write engaging questions on the channel that will be addressed by the supplier during the session. These sessions are also available as recordings, giving new content producers access whenever required.

The change in work brings a challenge for employees, with some fearing that bots may make them redundant. But an open mind, a willingness to try and learn by doing, have led to a sense of enthusiasm and renewed purpose among employees.

Unique innovations on a global level

The goal of the innovation project is to generate something new and create novel, pioneering solutions as a result of the cooperation between customer and supplier. Already, the OuluBot project has generated many such solutions.

In connection with the launch of the project, the supplier was challenged to make use of previous conversation data, including 300,000 messages accumulated over a three-year period from a customer service chat. Front AI carried out a **cluster analysis** – the first in the world to provide Finnish-language discussion analysis. Based on this analysis, the algorithm independently formed about half of the required AI teaching data from the old discussions.

The way AI was used to cluster messages and build a multidimensional hierarchy from them is completely exceptional. By utilising the entire body of data in this way, it was possible to immediately understand what previous customer service discussions had concerned. For example, public transport accounted for 5.5% of all chat messages. Of these messages, 68% were related to the bus card and a further 15% were related to a lost bus card. This helped the team focus on the most common questions from local residents and thus develop more comprehensive and effective answers.

Another example of innovation is the utilisation of location data not previously built into chat bots. Using the My Oulu event calendar and location data, the OuluBot is able to automatically provide location-targeted information about events near the user, offering the same features as the event calendar.

Utilising location data offers enormous potential. Imagine a bot that can immediately search for childcare centres and schools in a nearby radius, whilst during the same conversation, finding out which of the places might have availability for the new autumn term. Or perhaps where to find biking and hiking trails nearby or whether or not the skiing tracks are in working condition.

Various integrations have been built into OuluBot, such as the Suomi.fi Finnish Service Catalogue (FSC) or the My Oulu event calendar. If a customer asks, for example, the opening hours or location information for the Oulu10 service points, OuluBot retrieves the data from the FSC and shows the information to the customer.

OuluBot is designed to work with all technology and smart devices, from mobile phones to smart TVs.

Unparalleled procurement method for the public sector

The Innovation Partnership is a Business Finland programme directed at the public sector, which enables experimental and innovative product development projects in collaboration with business partners. Unlike many other programmes, the Innovation Partnership is a procurement model in which the public sector operator doesn't purchase a ready-made solution from the market, nor precisely define the features of the solution in advance. Instead, a new solution is created during the project in cooperation between customer and supplier.

The collaboration with Digital Workforce and Front AI has been superb. The supplier has been challenged to create new types of implementation alternatives for a variety of ideas. The aim is to commercialise and exploit the new service and technology solutions created during the innovation partnership. These commercial opportunities can be found in the wider Finnish municipal sector, or potentially amongst Front AI's and Digital Workforce's international clientele.

FACTS OF OULUBOT

96%

Resolution rate

Many

Integrations

50+

AI trained staff

IN COLLABORATION WITH

