Voice Connects
Smart voice technology improves the quality of life for older adults
Project Zilver

Project Zilver was established as a consortium to investigate how the new channel of voice can help older adults in their daily lives. Project Zilver’s mission is to improve the lives of, and around, older adults through voice technology, in a non-stigmatising manner.

Project Zilver is written with a Z to pay homage to its Dutch roots. In Dutch silver is spelled with a z: ‘zilver’. Also, when the movement will spread to other countries with their own Project Zilver initiatives, this will help the brand stand out.

Contributors to this research report

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A special initiative

Project Zilver stands for connecting older adults with their surroundings by using one of the five senses: speech, or voice. It may be an easy term to use but it is not self-evident – certainly not in the rapidly changing world around us. That is, until recently. A number of motivated people and organisations in the Netherlands came together and became convinced of the opportunities that smart voice technology offers: opportunities to improve the lives of and around older adults.

The number of older adults is increasing in the Netherlands. According to the Dutch Central Statistical Office, in 2029 there will be 4.2 million people over 65 in the Netherlands, more than 900,000 more than at present. This group is expected to live independently for longer. Can technology help to improve this independent living, without stigmatisation and from a positive point of view, focused on enjoying life?

The contacts were quickly established: a web/app developer, an innovation expert, an organisation for older adults, an insurer and a leading search platform were brought to the table. Together, we started the search for the practical applications of smart voice technology, which is currently in full development.

This was preceded by an important question: do Dutch older adults actually need this? To gain more insight into this question, it was decided to carry out a research, both quantitative and qualitative.

A survey and a diary analysis taught us much about whether older adults want to use their voice and, if so, how. The conclusion: the target group is also keen to work with voice technology.

In this report, we make an initial assessment by sharing the most important results of the research. We look back and forward.

However, the report is above all an invitation to continue to think along with us. Project Zilver was created in an open collaboration: feel free to join us! In addition to the current members, I owe a great deal of gratitude to two former members of the team for helping to start the consortium and conducting the research: Renée de Vries and Tim van de Rijdt: Thanks!

On behalf of Consortium Project Zilver, Maarten Lens-FitzGerald, founder

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Project Zilver set up an online survey about voice technology among 3,450 Dutch older adults. This survey was followed by a qualitative study among 14 older adults, whereby participants were given a Google Home smart speaker and kept track of their experiences. The quantitative and qualitative research yielded six important insights.
1. Onboarding
2. Information
3. Care
4. Convenience
5. Social
6. Entertainment
Most older adults could use help with the purchase, installation and usage of smart speakers and voice services. Although there are also older adults who know about this new technology and are actively using it. They also have the necessary experience with smart technology around the house. Although the concept of voice is not yet known to many older adults, the terms Google Home and Google Assistant are.

At the moment, older adults rarely use voice technology to operate devices in and around the house. Nevertheless, older adults do get their smart speaker to work. Working with different voice services sometimes raises questions and talking with the smart speaker has varying degrees of success. For example, the participants have to get used to the correct formulation of questions and commands. Connecting the speaker to other applications in the home (television, lighting) is also easier for some participants than others.
A lot of important information and services from institutions (municipality, bank, insurance, pension fund) have become digital and, therefore, sometimes difficult to access for older adults.

Nevertheless, a large part of this target group appears to be active online and uses the internet for banking, looking up information and following the news.
Ok, calling your doctor now.

3. Care
When you need it

Older adults see many opportunities for smart speakers, such as reducing loneliness and tackling illiteracy and health.

Many older adults do not feel comfortable wearing an ostentatious personal alarm. One feature that would be highly desirable for the future, is the ability to reach emergency services through smart speakers, but also to easily make contact with family, friends and carers.
4. Convenience
Make life easier

Growing old comes with mental and physical changes, which can make daily tasks more difficult. Voice technology can support users in these tasks.

The research shows that participants already know how to use many functionalities (weather forecast, traffic news, listening to the radio, keeping their calendar up-to-date, and making shopping lists).
As we get older, our lives can become much quieter. The research shows that working with voice technology has a positive impact on the social life of the participants.

They indicate that using a smart speaker provides a sense of companionship, convenience, entertainment and a greater sense of security.
6. Entertainment
Enjoy & relax

Voice can ensure that music, audio books and games remain available to the older generation.

The research shows that many participants already use services such as Netflix and Spotify via the internet, and that their smart speaker was also used for this purpose.
Approach & accountability

Before developing all sorts of specific applications of voice technology – especially aimed at older adults living independently – it is good to gain insight into their wishes, possibilities and interests. This includes researching how they can make use of the technology in their daily lives. For this reason, the research was divided into two phases:

Phase 1
extensive fieldwork

About 3,450 older adults completed an online survey on smart technology in their homes in December 2018. Approximately fifteen questions focused on the use of devices and technology, but also, for example, adjusting the house. The results have not been weighted or corrected and are therefore not representative. Nevertheless, they do provide an initial picture of how older adults see the use of (voice) technology.

Phase 2
focus group with diaries

As a follow-up to the survey in 2019, we zoomed in on the daily life of older adults. A group of 14 older adults were followed and given a Google Home device – Google’s smart speaker. They recorded their experiences in a diary. How did the installation of the device go, what is the speaker used for, what issues do people come up against, and above all: what is missing?
What is voice?

Just as we create websites for the web and apps for mobile phones, voice services enable us to talk to devices. Voice is the new conversational channel that is used by, among others, the smart speakers of Google, Amazon and Apple. Voice is already growing faster than web and mobile. And because you need only your voice to control it, it is the perfect tool for providing the modern services and assistance that support and improve the lives of older people. After all, people don’t have to learn how to talk.

In four years time, approximately 50 million speakers have been sold worldwide, most of them in the United States. In the Netherlands, Google started in 2018 with the Google Home speaker that is able to speak Dutch. It rapidly conquered the Dutch market. The Google Assistant is already available in Dutch and parties such as KLM, ING, Achmea and Albert Heijn already offer voice services. Various governments are also experimenting with this technology.
Voice in the Netherlands

Project Zilver is a Dutch initiative and the research discussed in this report was performed in the Netherlands. Dutch people started using the Voice channel when Siri became available on the iPhone in 2015. Dutch speaking smart speakers became available in October 2018 by way of the Google Assistant on the Google Home and the Google Home Mini. Within 6 months 6% of all households, which equals almost half a million, owned a (Google) smart speaker. Amazon Alexa is not available in Dutch and hardly - if at all - used in The Netherlands.
Quantitative research
older adults and voice

In December 2018, 3,450 people completed an online survey about voice-enabled technology. Eighty percent of the surveys were filled in completely. These are the most important results.

Devices around the house

The smartphone is by far the most popular among older adults (74 percent owns one). This is followed by laptops, tablets and ‘fixed’ desktop computers. More than forty percent have an ordinary mobile phone.

New technology

Nearly seventy percent of older adults surveyed indicated that they use technology in their homes. The smart meter tops the list, followed by smart television. Intercom, Chromecast and the smart thermostat follow remotely.

Need more?

When asked whether respondents would like to install (more) technology in their home, 15 percent answered positively. Most older adults said ‘maybe’.
Adapting the house

Asked whether they would like to adapt the house to new technology, the majority indicate that they are not necessarily keen or are not sure yet.

Respondents who are open to a home modification see, above all, opportunities to make the home more energy efficient. Comfort and safety also play a role, as well as making your own home smarter.

Active online

Internet banking is number one in terms of the online activities of older adults. Looking up information is a close second, followed by reading newsletters, completing surveys and planning travel routes.

Two thirds shop online and read the newspaper online. The use of new media such as Spotify and Netflix is known to around thirty percent of the respondents.
Using your voice

Just under eighty percent of respondents do not yet use their voice to control devices in and around the house. They use their own smartphone instead, followed by applications in the car. Here, too, Google Home scores some familiarity (21 percent).

Familiar with new terms

Many older adults are not yet familiar with the concept of voice. It is striking how familiar they are with Google Home and Google Assistant, fifty to sixty percent of the respondents have heard of this technology and know more or less what they mean.
Expected use
Looking to the future, half of the respondents do not know whether they will use voice to control devices. Finding information and planning trips score highest in the activities that people can imagine. This is followed by opening and answering emails (a clear plus compared to current online activities), followed by setting an alarm and operating the thermostat.

Answers to the question:
For which activities do you imagine you will use your voice?

About the participants in the research
The majority of respondents (85 percent) are between 61 and 80 years old. Respondents live predominantly in the provinces of South Holland (20.8 percent) and North Holland (17.8 percent). Some of the participants have a disability (impaired hearing, reduced mobility).
In the spring of 2019, a focus group of 14 older adults took the Google Home speaker home for two weeks. They recorded their experiences – without any direction – in a notebook that was given them. The home use was preceded by an instruction meeting about the use of the speaker, provided by Google. The focus group concerns women and men aged 52 to 81.

It is all about qualitative impressions, no quantitative data can be derived from the diaries. We arranged these impressions by theme.

Getting started

Although some participants had the speaker up and running within minutes, not everyone finds it easy to start up their smart speaker for use. Certain terminology is unknown. For instance, a term such as ‘mirroring’ in the instructions for use is not always understood, serial numbers can be difficult to find or read and there is a multitude of device numbers. A Wi-Fi network is required; do all older adults have that? The same applies to a Spotify subscription. People wonder: is that necessary? Several participants indicate that they would prefer a ‘quick installation’: for example, the purchase of certain services offered by the smart speaker should also be possible at a later date.

In most cases, connecting to the Wi-Fi network at home is trouble-free. Google Home retrieves the password from the device on which the app is installed; this is useful. One physical limitation is that people need to be close to the speaker to communicate with it.
In conversation

Many participants need to get used to speaking to a smart speaker. Some participants often get the answer ‘I can’t help you with that’ or ‘I’m still learning’. Sometimes there is also a long silence. That does not give much courage to some older adults to persevere: “It’s frustrating when I get the notification ‘I don’t understand’ too often.”

People have to find the correct terminology and questions by trial and error, as using the correct terminology is essential. An example: ‘Is the weather good for cycling?’ is not recognised or answered, but ‘Is it going to rain?’ is. Certain word combinations such as ‘Albert Heijn Bonus’ or ‘Start Netflix’ are also unknown or do not yield the desired response. This also applies to colloquialisms, abbreviations and sentences that are too long; these are not yet recognised by the speaker. Participants sometimes overcome this by using the Google Assistant app on their phone or tablet.

It is frustrating to get ‘I don’t understand’ too often.

The right questions

Some participants want to give the speaker a name of their choice, like they would with a pet or housemate. This prevents having to use ‘Hey Google’ all the time. Google Home does not offer this option. One thing that does already meet this need is the continued conversation modus, which means that the speaker does not have to be addressed every time. One participant suggested helping older adults with suggestions for specific questions that work well for the Google Assistant, more specifically, questions that suit their needs, such as ‘Contact my carer’. The example commands from the Google Inspiration letter that participants received beforehand generally work well.
Self-activation

It is striking that the smart speaker is occasionally activated by itself; the speaker may respond to sounds (from radio or television). When there is too much background noise, the smart speaker has trouble responding to a question. Every now and then English and Dutch are alternated by the speaker.

Reading out certain information – such as telephone numbers – goes too fast for some participants. One of the participants suggests being able to adjust the speaker voice themselves: “After a while listening to the same computer voice, it started to annoy me.”

The functionalities

The traffic and weather function is used regularly and works pretty well, although it also happens that the traffic jam information is only provided for just the street where the user lives. Calling your contacts is not yet possible at time of the research but is high on the wish list for many older adults.

Streaming / casting music to the speaker goes very well; this gives a much better sound than via their own telephone, participants indicate. Turning on the radio (via ‘Tune-in’) also appears to work, although not all channels are known. This also applies to displaying appointments via Google Calendar.

Some participants manage to play a complete news block using the ‘Hey Google, good morning’ command: the time, the weather, traffic to work, their diary, reminders and the news.
Grocery shopping

Google Home offers remote shopping for groceries at the supermarket (for example via the app ‘Appie’ from Albert Heijn (the largest Dutch supermarket chain) and online stores such as Bol.com (an Amazon like online store). The participants make use of this, for example by creating shopping lists via the speaker and then printing them out for a visit to the physical store. Looking up information (from various databases) also works well.

Experimenting

The participants encounter technical challenges when they experiment. The speaker can be placed in the kitchen by a participant as an extra loudspeaker to listen to the radio, for example. But because the Wi-Fi network has a different source than Google Home, an irritating delay occurs.

Another participant purchased an additional Google Home Mini for the bedroom: “However, I didn’t connect them, to prevent waking up others when I speak to the Google Home in the living room, saying: Hey Google, play radio!”

Link to other applications

Connecting the speaker to iPhones and iPads (and the iOS system) is not easy for everyone. The participants also investigate whether their smart speaker can be connected to other systems, such as the Sonos music system. Sometimes it works, sometimes it doesn’t. Connection with the Philips Hue lamp is successful, for example (“On command on and off and in the desired colour”), although connecting to a smart television can sometimes take much longer.
Opportunities and possibilities

Some participants see opportunities to use voice technology in other areas as well. E-health, for example, is seen as an important area of application. This also applies to older adults without a smartphone (or those who have trouble dealing with it) and those struggling with low literacy.

According to the participants, cities that want to expand their social work in the areas of welfare or isolation of older adults should look into this: “People who don’t get out much and who don’t speak to many people have something to talk to, something that even answers in return.”

Making phone calls with the speaker

A link to the public transport timetable would be appreciated (at the time of the research this wasn’t available yet), as well as being able to listen to audio books from the library and requesting information about medication. Two points of attention that the participants also noted are sustainability (how much power is used?) and privacy (what can smart speakers hear?). A feature that many are missing is the call function. Especially in emergencies, this could be very useful, more specifically, to make contact with emergency services.

As a useful addition, a rechargeable battery is proposed, making it easier to position the speaker anywhere – for example next to the user on the sofa. The participants would also like to receive a newsletter for Google Home owners, with the latest options.
Improving day-to-day activities

For some, working with a smart speaker and Google Assistant has significant impact. “It has changed my life. I now have a greater sense of security,” one participant wrote. Another participant said: “Google Home can grow into something really big.” Working with the smart speaker also turns out to be contagious: “Demonstrating is motivating, my eldest brother of 83 now has one too!”

The voice technology offers participants help in the form of various reminders, such as reminders for an appointment, medication use or to not forget doing groceries. One participant did wonder whether older adults will move less, now that certain functionalities can be operated from their lazy chair. Jokes and quotes from the smart speaker appear several times in the diaries, and appear to liven things up.

“I gained a more significant feeling of security.”

Smart Speaker

A smart speaker is a type of wireless speaker and voice command device with an integrated virtual assistant. It offers interactive actions and hands-free activation by reacting on the speaker’s voice. Some smart speakers also include a screen to show the user a visual response. Installing a smart speaker is done through an app on an Android or iOS phone. Once installed, the speaker works independently through an available WiFi network.

The smart speaker used in this research is a Google Home. Amazon offers a speaker called the Echo. Their assistant platform is called Alexa.
The Impact

Insights offer action points
On the basis of the six insights from the study, six action points were drawn up. This has provided a clear direction for Project Zilver. New projects are constantly emerging from these action points, initiated by organisations that share Project Zilver’s vision. These parties play an important ambassadorial role for Project Zilver.

At home and abroad
The knowledge gained from Project Zilver is being structured and widely shared. The Netherlands may become the ‘guiding country’ in the field of voice-driven technology in a short time. This means attention is paid to the research, the results and the spin-offs in the Netherlands and abroad. Project Zilver is being followed in countries such as the United States, Denmark, Germany and the United Kingdom. To further increase the impact, a Danish version of Project Zilver has been launched and Germany and the US are being investigated as potential countries for further roll-out.

Consultation with players in the field
The results of the survey and the diary research have already led to concrete adjustments at large players, that have taken the insights and recommendations to heart and processed them in the software of their applications. Public parties are also increasingly joining the project, such as various Dutch government departments. They see the use of voice technology as an opportunity to make digital technology much more inclusive and available to a wider audience.

Development of sub-applications
The founding partners of Project Zilver each work on new voice applications, individually and together. For example, the SVB website is already being optimised for voice. ANBO is exploring ideas about using the technology to create social networks among older adults. ANBO and Google are also collaborating on a ‘smart living cycle’, a campaign to make older adults enthusiastic about the possibilities of voice. For example, voice can help to promote the well-being of people in a broad sense.
Colofon
A large number of parties benefit from finding out how voice can help older adults in their lives. That is why Project Zilver was established. The goal: to improve the lives of and around older adults through voice technology in a non-stigmatising manner. We do this together with older adults.

Organisational structure
The Project Zilver consortium consists of a core team – consisting of founding members Maarten Lens-FitzGerald, Novum, Google, ANBO, Interpolis and Achmea – supplemented by various partners: organisations with which Project Zilver cooperates within one or more Project Zilver projects.

Core team members
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