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Chabla and CGI: Partnering to break down communication barriers between the deaf and hearing

First-of-kind Chabla service enables the deaf to converse by mobile phone—with anyone, at anytime

Finnish rap artist Signmark (a.k.a. Marko Vuoriheimo) is a true visionary. Born deaf, he dreamed of becoming a musician as a young boy and defied all odds to achieve his dream, releasing the world's first sign language DVD in 2006 and, three years later, becoming the first deaf music artist to be signed by an international record label—Warner Music. Since then, Signmark not only has performed in more than 40 countries, but also has been involved in disruptive visioning beyond the world of music.

In 2015, his company, Signmark Productions, launched a new start-up, Chabla Ltd., to explore and develop new ways

of breaking down communication barriers between the deaf and the hearing. Chabla partnered with CGI and, in 2016, the two companies built and launched a first-of-its-kind mobile service for enabling the deaf to make and receive phone calls—to and from anyone, at anytime.

"Without the Chabla app, it is literally impossible for a person who does not know sign language to call a deaf person," said Signmark. "I've personally experienced this many times. This application doesn't merely enable communication, but significantly empowers the deaf community."

Starting with an **idea**

Across Europe, there is an estimated 750,000 deaf people who use sign language, but only 12,000 sign language interpreters. That adds up to fewer than 2 interpreters for each 100 deaf sign language users. This ratio of interpreters to deaf people is even worse in most parts of the world. For example, in India, there are about only 250 certified sign language interpreters for a deaf population of between 1.8 million and 7 million*. Accessing the support of a sign language interpreter has been a challenge. Availability not only is limited but the interpreter must also be physically present, resulting in travel costs and time delays.

Signmark Productions and Chabla sought to address these challenges with an idea—develop a mobile app that virtually connects deaf people with interpreters, so that they can make phone calls. In 2016, Chabla chose CGI as its partner of choice because it offered the following:

- Multi-disciplinary and knowledgeable team with experience in service design, prototyping and mobile development
- Global capabilities and footprint, providing the ability to adapt the service for global markets
- Realistic view and a pragmatic approach for implementing the new business model
- Deep understanding and knowledge of Chabla's business environment

Chabla and CGI formed a unique partnership that involved tight collaboration. All stakeholders were involved in the design process from the beginning: the deaf, sign language interpreters and interpreter agencies. The most important end users for the service were the deaf.

In addition, the close collaboration enabled CGI to offer insight and new ideas that broadened Chabla's initial vision for the service. For example, the CGI team demonstrated the possibility of using the app not only to make calls, but also to receive them from a person who's not using the Chabla app. In addition, the need for instant face-to-face communication with interpreters via video conferencing was brought up in the design process.

*Source: http://ijaers.com/uploads/issue_files/7%20IJAERS-FEB-2018-33-Support%20Vector%20Machine.pdf

Driving design through **experience prototyping and user journeys**

When entirely new service experiences are developed, it's important to understand how these services could be used. To gain an understanding, methods can be used to simulate and analyze a genuine service situation from a user perspective. In the case of Chabla, the design of the service was driven by experience prototyping and user journeys involving several stakeholder groups, including the deaf, sign language interpreters and the hearing.

One of the important early-stage methods used was experience prototyping. During the first round of experience prototyping, the team used a Minimum Viable Product (MVP) to simulate how the Chabla app would work by connecting a deaf person and an interpreter via a video call, while connecting the same interpreter and a hearing person via an audio call. The participants acted out several challenging communication scenarios and, based on the prototyping sessions, key issues and objectives were identified.

For example, one objective was to ensure communication begins immediately after a call is connected because only a few seconds of silence in the beginning could cause the receiver, not realizing the call is an interpreted call, to hang up.

User journeys were then developed with each stakeholder group. The journeys helped formulate the ideal service process based on crucial insights, such as the importance of having a transparent and fair system for dispatching interpretation jobs and the importance of video quality for fluent communication between the deaf and interpreters. Later, the user journeys were expanded to serve as blueprints for the underlying back-end system functionality.

Walk-throughs and discussions with user groups were organized to further understand and develop the ideas generated through the experience prototyping, user journeys and storyboards. All of the testing and input significantly helped to reduce the risks and costs involved in the development of the novel and complex app.

Developing a **revolutionary app**

Once the core services journeys and blueprints were ready, the system's actions were modelled as logical flow, which then became the starting point for sketching the user interface (UI). The first UI concept was developed with wireframes, with design changes made based on feedback. The second iteration included visual design and a prototype that could be tested on a smartphone.

Development was done using DevOps, and both designers and developers worked on the same team, checking the outcomes continuously. CGI's team in Finland developed the iOS version, while another CGI team in India handled the Android version. Once development was completed, a pilot group of users from different countries tested both versions of the app, receiving the latest software versions directly to their smartphones.

The end result is a first-of-its-kind, cloud native solution that provides the deaf with anytime, anywhere access to interpretation services in multiple languages. With Chabla, the deaf can make interpreted calls and the hearing can receive calls from the deaf—even if the hearing person is not using the Chabla app. The deaf also can access interpreters remotely for any situation requiring face-to-face communication.

With emphasis placed on the user experience and ease of use, the app allows a deaf person to be in the driver's seat, with complete control, and benefit from intuitive, fluent and simple communication. The complexity of the system is kept completely behind-the-scenes.

Achieving a **revolutionary impact**

Chabla simplifies and speeds up access to sign language interpretation services by reducing steps and bottlenecks. Prior to Chabla, it could take from two hours to two days to access an interpreter. With Chabla, it takes 20 seconds.
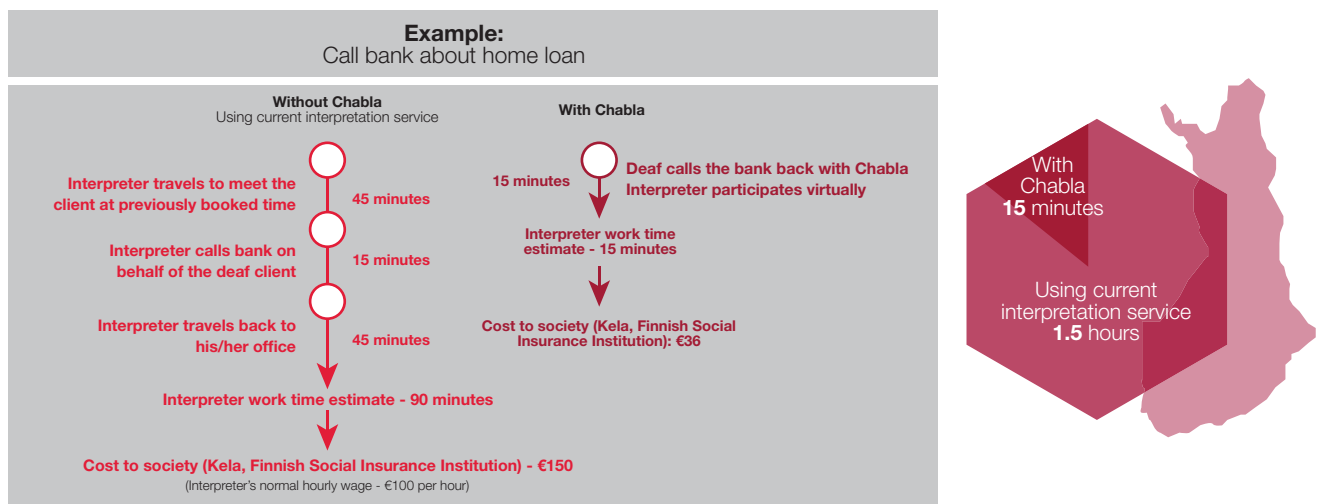
Chabla also drives time and cost savings in the delivery of interpretation services. Prior to Chabla, an interpreted phone call required approximately 90 minutes of an interpreter's time. With Chabla, it can take only minutes. Chabla also eliminates the need for interpreters to travel.

To date, Chabla has been rolled out across five countries, including Finland, Denmark, France, the UK and Germany. CGI designed the app for unlimited scalability, facilitating its international rollout and use.

The app also has garnered significant media publicity and industry recognition. In 2017, it won a Blue Arrow Award in three categories: Best Digital Service, Best Customer Experience and Best Societal Influence. It also received a 2017 Grand One Award for Most Innovative Digital Service and an Entrepreneurial Award at the 2017 Global E-commerce Summit.

CGI continues to work closely with Chabla to enhance the service. Most recently, functionality was added to enable companies that use Chabla to set up free phone calling for the deaf.

> Chabla was a finalist at the Interaction Awards 2018 in three categories: Connecting, Disrupting, and Empowering.(http://awards.ixda.org/2018-interaction-awards/). This prestigious annual award from the Interaction Design Association (IxDA) recognizes design thought leadership and innovation around the globe.

Example:
Call bank about home loan

Without Chabla
Using current interpretation service

Interpreter travels to meet the client at previously booked time — 45 minutes

Interpreter calls bank on behalf of the deaf client — 15 minutes

Interpreter travels back to his/her office — 45 minutes

Interpreter work time estimate - 90 minutes

Cost to society (Kela, Finnish Social Insurance Institution) - €150
(Interpreter's normal hourly wage - €100 per hour)

With Chabla

15 minutes — Deaf calls the bank back with Chabla Interpreter participates virtually

Interpreter work time estimate - 15 minutes

Cost to society (Kela, Finnish Social Insurance Institution): €36

With Chabla **15** minutes

Using current interpretation service **1.5** hours

Using digital technology **to change the world**

Even in the 21st century, people with disabilities continue to face many challenges in managing simple everyday tasks. Chabla helps to change this. With CGI's know-how and experience, Signmark's disruptive vision was transformed into a real-life mobile experience that truly makes a difference. Chabla is a great example of how digitalization can change the world and improve the lives of countless people, including those who live with disabilities.

> " Chabla enables an amazingly simple and natural way for communication, integrating deaf people better in our society. "
>
> The Blue Arrow Awards 2017 jury

About CGI

The Chabla service is just one example of the work CGI is doing across the globe to improve people's lives, the communities in which they live and the businesses that serve them. We're helping clients in a wide range of industries revolutionize our world through digital technology.

We partner with financial services companies to help them efficiently and securely move the money that moves the goods that society needs. We also deliver expertise and solutions that help their customers save for homes and an education, as well as provide a safe and secure financial future for their families

In government, we work with public service agencies to meet the everyday needs of their citizens, supporting a backbone of services that enable healthcare, justice and transportation systems. We also help governments defend their citizens and protect against growing cybersecurity threats.

In communications, we help send satellites into space to transmit ever-important data—and enable the largest communications service providers in the world to build mission-critical systems that enable families and friends to share first steps, first words, pictures and laughs and tears.

Across other industries, we help keep the shelves full, the lights on, the registers ringing and people living the best quality of life possible.

And, for our clients' businesses, we help them maximize the technologies that run their business and then help them change their business by moving through the doors the digital world has opened.

We accomplish all this and more through our people. Committed and creative, CGI professionals understand our clients' businesses and the technology that drives forward their digital transformation.

CGI

cgi.com/digital-transformation

Founded in 1976, CGI is one of the largest IT and business consulting services providers in the world. Operating in hundreds of locations across the globe, CGI helps clients become customer-centric digital organizations. We deliver high-quality business and IT consulting, systems integration and transformational outsourcing services, complemented by more than 150 IP-based solutions, to support clients in transforming into digital enterprises end to end. CGI works with clients around the world through a unique client proximity and best-fit global delivery model to accelerate their digital transformation, ensure on-time, within budget delivery, and drive competitive advantage in today's increasingly digital world.