

# SpeakLiz & VisionCommunication Apps for People with Hearing and Visual Impairment.

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## The Challenge

In general, and often not considered by societies and governments as a high priority, the whole world has a pending challenge: making it more accessible for people with disabilities. According to the World Health Organization (WHO), 25% of the world population has some kind of disability (hearing, visual, intellectual, physical), approximately 2 Billion people. Specifically, about hearing & visual impairment, 760 million people (470M deaf & 290M blind), face big challenges, like poor access to education and decent work. All these issues affect directly their independence.

Another big trouble it's in terms of the economic impact of that lack of access to those fields, according to UN, less than 5% goes to school, some hearing or visual aids can cost up to USD 100.000 and the combined global annual cost of unaddressed deafness & blindness is USD 1.400 Billion, this huge cost includes the impact of not having all those people in a decent job.

The overall sector of assistive technology has been growing in the last years due to important aspects like the rising of smartphones and mobile technology plenty of User Experience improvements. In that sense, developers of all the world have made important steps to create new tools that can embrace the new mobile technology and accessibility features for people with disabilities.

## Backgrounds and motivations

Talov was co-founded by Hugo Jacome and Carlos Obando, it's a company born in Ecuador, then opened in the US and from that last place, it's currently seeking of digital ways to expand to the world, whose purpose is to build technology for assist people with disabilities in their challenges. Although Talov is a recent company, the origins of that desire of working in this field are older.

All started when co-founders were high school classmates and a teacher at that time showed them the C++ programming language, that meant the beginning of a software development hobby. Many years later, when co-founders were finishing their engineering careers (Hugo studied Acoustical Engineering and an MBA, Carlos studied Mechatronics Engineering and ICT teaching postgrad), they started a research process without knowing each's other work.

Specifically, in 2008 Hugo started to work on a software (initially designed for macOS and Windows) that can follow him playing the guitar in real-time to create images, but almost immediately he realized that in addition to the entertainment field, this tool had a strong potential for a social purpose: assist people with hearing impairment to know through images, what's happening around them in terms of sound. Carlos was also working in coding mobile apps. In parallel to that co-founder's research process, they were also working as teachers in two different Ecuadorian Universities (University of the Americas in the case of Hugo and Northern Technical University in the case of Carlos), but then in early 2016 (8 years after being researching) they met casually and started to update each other about what they have been doing all those years. A couple of weeks later, Hugo and Carlos decide to quit their University jobs and start a new company from the scratch, and in January of 2017, the first app was launched: SpeakLiz (designed for people with hearing impairment). And, in early 2019 the second app was launched: Vision (designed for people with visual impairment).

## **The solutions**

Now, these two apps have evolved after several updates that are continuously uploaded to mobile app stores; they combine the power of Artificial Intelligence with the daily use of the smartphone to give people with hearing and visual impairment more independence for their daily life activities. Both apps work in real-time, without Internet and have 35 languages compatibility:

### **SpeakLiz for deaf people**

This app uses AI to understand the surrounding sounds and identify hundreds of them, this is important for deaf people to identify any sound, from emergency alerts to a baby crying, and many more. SpeakLiz also identifies human voices in many languages and transcribes them in real-time with no need for Internet. The most important feature is to understand sign language through a tiny hand gesture sensor (like a watch) and convert it in real-time to voice and text compatible with many languages, this allows deaf users to use their sign language with everyone, even with people that don't know the sign language.

### **Vision for blind people**

this app uses AI and Augmented Reality with the phone's live camera feed to identify thousands of objects and their distance, money bills of many world currencies, multi-language text reading on many surfaces, detect colors. Also, it can assist blind people for maps navigation when they want to go to any favorite place.

### **Hugo Jácome**

(Ecuador, 1986)

Serial entrepreneur in the fields of music production and technology development, he was the co-founder of MidSide music & recording studio and ATBS, a technology company.

Hugo has an academic background in Music by George Gershwin Conservatory, Acoustical Engineering, and MBA (International Business specialized) by the University of the Americas.

He is one of Talov co-founders together with Carlos Obando and currently works as President, but also leads PR, Digital Signal Processing and Artificial Intelligence models development.