Helping
The Deaf To Communicate

DeafTawk uses mobile apps to provide real-time translation of text and audio into sign language

Executive Summary

The world's 466 million deaf people can find it hard to communicate and access the information they need to take advantage of educational and employment opportunities. But a combination of mobile connectivity and artificial intelligence (AI) can address this problem.

More than 68,000 people regularly use DeafTawk's mobile application and AI-based technology, which provides interpretation services for those with hearing loss. The start-up enables deaf people to quickly connect with an interpreter via a two-way video call or translate text and audio into sign language, whenever they need to. In the past, deaf people have to had to book an interpreter five days ahead of when they needed one.

DeafTawk charges customers an interpretation fee that reflects the length of the call. DeafTawk, which pays 80% of the fee to the interpreter and retains a commission of 20%, now employs about 3,200 human interpreters, covering six languages: Urdu, English, Spanish, Chinese, Singaporean and Malay.

It also provides an AI-based solution that can translate text and audio in three languages (English, Spanish and Urdu) into sign language with more than 95% accuracy. An avatar performs the sign language translation.

In the 12 months up to the end of July 2023, DeafTawk generated US$1.5 million in revenue and made a positive EBITDA. It is growing fast, with month-to-month increases in revenue of about 25%. As it expands, DeafTawk is in discussions with major transport hubs, such as airports and railway stations, and media channels, about deploying its technology to help deaf people access the information they need.

Approximately 466 million people[1] around the world are deaf, while nearly everyone else does not understand sign language. The result is a serious communication gap.

DeafTawk is trying to close this gap by using a mobile application and artificial intelligence (AI) to provide interpretation services for people with hearing loss. At any time day or night, DeafTawk's technology enables deaf people to quickly connect with an interpreter via a two-way video call or translate text and audio into sign language. Being able to communicate in this way will make it easier for deaf people to take advantage of educational and employment opportunities, and make a greater socio-economic contribution.

More than 68,000 people now use DeafTawk's services regularly, spending at least US$10 each per month. "We would love to be the Google Translate for the deaf community," says Ali Shabbar, Chief Executive Officer of DeafTawk.

Founded in Islamabad in 2019, DeafTawk has a deep understanding of the needs of its target market, as each of the three founders has a disability. Ali Shabbar is blind, as is Abdul Qadeer, the Chief Operating Officer, while Wamiq Hassan, Chief Technical Officer, is deaf. They worked together at Telenor, before boldly leaving to form DeafTawk.

"As we belong to this community, we understand the pain points of this community very well," notes Ali Shabbar. "We have much greater empathy than others. The major problem for the deaf users was if you want to arrange an interpreter, you have to book at least five days prior. We initially made sure you get the interpreter in a maximum of 60 minutes. But now we have reduced that to just 30 seconds. That's our major USP. You don't need wait for the interpreters."

DeafTawk now employs about 3,200 human interpreters, covering six languages: Urdu, English, Spanish, Chinese, Singaporean and Malay. DeafTawk, which now has 78 business clients, has even

introduced domain-specialist interpreters, to cover legal, medical and educational conversations, because every domain has its own terminology, which requires a specific set of interpretation qualities.

DeafTawk's human translation services are now available in the US, Denmark, Singapore, Sri Lanka, and Pakistan. Its geographic expansion is partly dictated by the time it takes to acquire a license in each market and the time it takes to recruit and train human interpreters. Another challenge is the regional variations in sign language, even within countries, which means an individual interpreter can't necessarily serve a large number of users. "That's why AI (artificial intelligence) is the future to go to scale," says Ali Shabbar.

DeafTawk has now supplemented the core interpretation service for live conversations with an AI-based solution that can translate text and audio in three languages (English, Spanish and Urdu) into sign language. An avatar performs the sign language translation. Ali Shabbar says this functionality will help the approximately 90% of the deaf community that are unable to read or write any language because their entire education was based on sign language. "Whatever the context is, our AI matches with the speed of the voices," he adds. "If somebody's speaking faster or somebody is speaking slowly, our AI catches that."

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Ali Shabbar - Chief Executive Officer of DeafTawk

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[1] The WHO estimated that approximately 466 million people (or 6.1% of the world's population) were living with disabling hearing loss in 2018

Growing accuracy and revenues

DeafTawk says its AI tool has been achieving an accuracy rate of 95% for about a year, and it is aiming to lift that figure to 99% by early 2024. Fast and responsive connectivity will help. "For AI, 5G is a game changer because it requires a lot of cloud servicing and most of the data is in the cloud," explains Ali Shabbar. "5G is the way to improvise the quick response and the activity level as well. So the accuracy with 5G in the US, Denmark and Singapore is much, much higher than in Pakistan or Sri Lanka."

While users of the AI-based translation pay a monthly subscription, human interpretation is charged according to the length of the call. DeafTawk pays 80% of the fee to the interpreter and retains a commission of 20%. "The charging reflects the unit economics of different regions, as we are operating in five markets which are Pakistan, Sri Lanka, Singapore, Denmark and the US," explains Ali Shabbar. "But the gross margin is almost the same."

In the 12 months up to the end of July 2023, DeafTawk generated US$1.5 million in revenue and made a positive EBITDA. It is growing fast, with month-to-month increases in revenue of about 25%, helping it recover from a catastrophic crash in revenues during the lockdowns relating to the pandemic. At one point its monthly revenue fell from US$ 64,000 a month to US$ 1,500, as deaf people had been using DeafTawk primarily to interpret during in-person interactions. That experience prompted DeafTawk to develop the AI product and begin targeting the business market.

In October 2021, DeafTawk announced it would use a US$250,000 grant it received from the GSMA Innovation Fund for Assistive Tech, to increase its coverage and build up the capacity of its interpret-ers, in order to reach both national and international audiences. For this grant, DeafTawk was competing with 350 other start-ups and SMEs from 31 nations. After a meticulous assessment process, four final grantees from Asia and Africa were chosen by an independent committee of specialists.

Several mobile operators, such as Dialog in Sri Lanka, Jazz in Pakistan, Verizon in the US and SingTel in Singapore, promote and distribute DeafTawk's services to their customers, wile providing the necessary connectivity. "These mobile network operators help us to reach our potential user base through their marketing strength, particularly on the digital avenue," says Ali Shabbar. Jazz also supported the development of DeafTawk through its accelerator programme Jazz xlr8, which helped the start-up translate its raw idea into a robust business model.

More markets, more services

Deaftawk is looking to expand both geographically, and in terms of functionality. It has plans to increas the number of languages supported by its AI tool to six, by adding Chinese, German and French, by the end of 2024. "We have a very strong in-house AI team and scientists who are working on that particular target," notes Ali Shabbar.

DeafTawk is also looking to develop AI tools that can convert sign language into audio or text. That would clearly help people to interact with deaf contacts without having to learn sign language. DeafTalk says there is only one sign language interpreter for every 8,000 deaf people. However, the subtleties of sign language and the corresponding emotions means both the device's camera and the cloud-based AI solution need to be very good. "It's translating from 3D to 2D and so requires a lot of in-depth research. We are working on it really actively and we have got very good breakthroughs," says Ali Shabbar. "Our prototype is fully ready, so we will be testing with a user base in September 2023 and hopefully it will produce results." The goal is to launch this functionality in 2024.

In the commercial domain, the start-up is in discussions with major transport hubs, such as airports and railway stations, and media channels, to encourage them to deploy its technology to become more accessible for deaf people. "It will just be a one-stop solution for them," explains Ali

Shabbar. "They will just need to plug in our API and their TV channels and all communications will be sign language-enabled." He envisions that the screens in transport hubs will display an avatar that is conveying travel information in sign language. The transport hub would pay DeafTawk for the service, which should encourage greater use of the hub. DeafTawk has started to conduct a pilot in two airports to fully test the concept.

More broadly, DeafTawk continues to create work opportunities for sign language interpreters, while increasing the independence of deaf people in their day-to-day life, making them less reliant on friends and family to help bridge the communication gap. At the same time, it is working with various companies, to generate job opportunities for deaf persons hence empowering them financially.

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Ali Shabbar - Chief Executive Officer of DeafTawk

About the GSMA

The GSMA is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change. Our vision is to unlock the full power of connectivity so that people, industry, and society thrive. Representing mobile operators and organisations across the mobile ecosystem and adjacent industries, the GSMA delivers for its members across three broad pillars: Connectivity for Good, Industry Services and Solutions, and Outreach. This activity includes advancing policy, tackling today's biggest societal challenges, underpinning the technology and interoperability that make mobile work, and providing the world's largest platform to convene the mobile ecosystem at the MWC and M360 series of events.

GSMA is a membership-led organisation where members collaborate with industry peers and stakeholders, engage in influential discussions, and drive industry-wide initiatives that address the most pressing industry challenges and opportunities. As a GSMA Member, you'll have a seat at the table where decisions are made, specifications are developed, and the future of mobile telecommunications is shaped. Join a global community of like-minded professionals and organizations who share a common goal of advancing the mobile ecosystem for the benefit of billions of people worldwide.

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Our vision is to unlock the full power of connectivity so that people, industry, and society thrive. This enables the mobile industry's mission: to connect everyone and everything to a better future.

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About DeafTawk

DeafTawk provides quality Sign Language Interpretation round the clock 7 days a week through a mobile application that is available on both Android and iOs platforms. DeafTawk started in Pakistan in 2018, and has now expanded to Sri Lanka, Singapore, Denmark, and other SEA and European countries.

DeafTawk bridges the communication gap between 466 million deaf individuals across the globe. DeafTawk facilitates deaf individuals to actively participate in society, access necessary services, and gain a better understanding of their rights and available resources. This inclusive participation will contribute to a more inclusive and equitable society, where deaf individuals have equal opportunities to thrive and improve their lives. We want to expand our reach and provide real-time sign language interpretation services to a larger number of deaf individuals globally. We do this by partnering with companies to make their services inclusive for the deaf, create employment for the deaf persons and empower them financially. DeafTawk is developing AI driven sign language interpretation to provide more affordable and reliable solution.

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