WEC 2021 - Innovative Design Abstract - Western University

We-Sign

An Intermediary for Hearing Impaired Based Communication

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The hearing impaired face a universal challenge; their lack of auditory clarity imposes natural limitations on them when in pursuit of education, employment, and general communication. Over 5% of the world's population, 466 million people have disabling hearing loss [1]. In the education sector, it is estimated that 80% of the roughly 32 million deaf children around the world lack access to education altogether [2]. The statistics in the employment sector are also bleak, with fewer than 40% of those with a hearing disability working full time due to the limitations of their impairment [3].

To help facilitate communication and aid the issues many of the individuals in the hearing impaired community face, *We-Sign* aims to create a seamless interaction between individuals with severe hearing impairments and individuals without this impairment. By using machine learning and natural language processing, *We-Sign* is able to recognize 24 of the 26 letters within the American Sign Language (ASL) framework when the user interacts with the device's camera. The live feed is then carried through *We-Sign's* interpretive software to display a message to the individual. A two-way interaction is achieved by allowing the individual receiving the text display to speak into the device's microphone, where the message is displayed via text to the auditorily disabled individual [4][5][6][7].

To evaluate the fiscal feasibility of this venture, a marketing plan has been developed to integrate *We-Sign* into the community. The price point per unit is set at $300 which is approximately four times the estimated manufacturing cost of $75.80 [8]. In addition to making a profit, the pricing strategy ensures that other expenses are covered by *We-Sign's* strong margins. Given how expensive most current hearing impairment assistive tools are, the low price point gives *We-Sign* a strong value proposition. This marketing plan not only provides the business with a strong foundation to continue its operations for years to come, but *We-Sign's* various applications (such as schools, stores, and government offices) would be greatly beneficial to the auditorily disabled community and help to shrink the communication gap [9].

References

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