Ask the *expert*

Stefan Launer on the future of hearing aid technology

Hearing technology has come a long way in recent years, and the future looks bright for those with hearing loss. Advancements in technology are making it easier and more affordable to diagnose and treat hearing loss, as well as providing new tools for communication and connection. We have talked to Dr. Stefan Launer, who has been a driving force behind the innovation in hearing health technology at Sonova Headquarters for the last two decades, about trends in society and their impact on hearing health, technical achievements in the industry, and future applications in hearing aids.

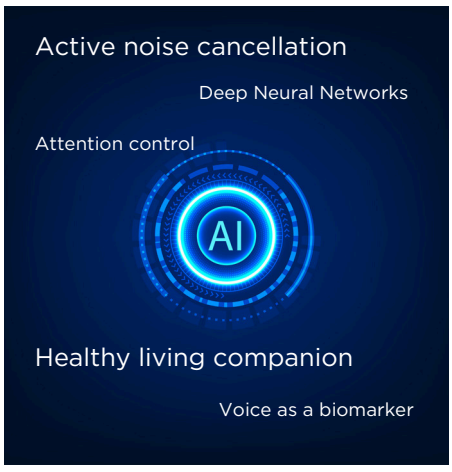
Which major trends in communication do you see?

Today, communication has become omnipresent. Smartphones, earbuds, and other devices featuring communication functionalities have led to people communicating wherever and whenever they want to.

With a more holistic view on our health, hearing loss has also been put into a different context. By now, we know that hearing loss also has a socio-emotional impact, resulting in fatigue, social withdrawal, and even social isolation. There is also more and more research indicating a correlation between hearing loss and conditions like dementia, diabetes, and cardiovascular diseases.

Which technical advancements in hearing technology to date would you rate most important?

We have seen some very exciting developments in our industry over the past decades, and artificial intelligence (AI) has further accelerated the pace of the technological advancement in hearing technology. Modern hearing aids are intelligent microsystems.



They make sounds audible again, improve speech comprehension in different listening environments. and automatically adjust to different daily life listening situations and the user's individual needs. And above all, modern beamforming technologies have helped to not only improve audibility of sounds, but to reduce the listening effort and thereby fatigue significantly.

And how about the future of hearing technology – which new applications will we see?

Active noise cancellation:
By introducing an additional microphone in the ear canal, we can bring this established feature from ear buds to hearing aids as well.

Deep Neural Networks (DNN):
This well-explored technology can help improve speech intelligibility by reducing background noise. As DNN requires a lot of computing power, the possibilities to leverage this functionality in hearing aids has been limited to date. With the upcoming chip generation, we might be able to bring DNN technology to hearing aids as well.

Attention control:
This feature is more of a glimpse into the future, but first lab results exploring EEG or eye gaze tracking to identify which target a person is attending to, are very promising. These data might allow for much more sophisticated automated focusing functionalities in the future.

Voice as a biomarker:
Also still tested at lab level, it is currently being explored how the voice can help to detect mental and physical health conditions like depression, and Parkinson's disease earlier.

Hearing aids as healthy living companion:
With preventive models of healthcare becoming more of a focus, the ear can become a hotspot for vital sign monitoring. It is already possible to track activity and heart rate via hearing aids, and more functionalities will follow. This development puts hearing care professionals in a unique position to not only generate a direct impact on health through hearing aids, but also foster prevention through vital signs tracking and counselling on a healthy lifestyle. To ideally leverage these opportunities, we will need stronger interprofessional collaboration, but together, we can advance the overall health and well-being of hearing aid users.

Dr. Stefan Launer,
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