



TOBII Eye Tracker Technology

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BMSW4003_LON

14 December 2021

Presentation Objectives

- Background
- Company Structure
- Products and application of eye tracking technology
- Challenges

■ Background

Tobii is a Swedish global company with offices located in Asia, Europe, North America, and South America, supported by a global network of resellers.

- Founded in 2001 by John Elvesjö, Mårten Skogö, and Henrik Eskilsson
- CEO : Henrik Heskilsson , born 1974
- 1,000 employees (with one-third in R&D)
- Revenue: SEK 1,426 million (2020) Approximately 119 Gbp
- 17 offices globally with a sales presence in over 90 markets
- Top rated employer in both Sweden (Universum 2020) and Pittsburgh (Top Work Place by the Pittsburgh Post-Gazette 2016-2020).
- Polhem Prize 2015 for eye tracking

■ Company Structure

Since opening its doors in 2001, Tobii grew from a small Swedish 'garage' startup to the world leader in eye tracking technology structured in three business units

- **Tobii Dynavox** based in the US, The world's leading provider of assistive technology for communication empowering people with disabilities to do what they maybe did before, or never thought possible.
- **Tobii Pro** based in Stockholm, The world's leading supplier of eye tracking solutions for understanding human behaviour.
- **Tobii Tech** based in Stockholm, The world's leading provider of eye tracking technology for integration into customers' products, example, in high end gaming laptops.

SALES PER DIVISION



● tobii dynavox	60 % (SEK 894m)
● tobii pro	25 % (SEK 366m)
● tobii tech	15 % (SEK 230m)

■ Products and the application of technology

Tobii Dynavox : Assistive technology for communication apps, speech generating devices and eye trackers for people with disabilities.

I-Series is a speech generating device build for augmentative and alternative communication. It can be controlled through eye tracking in various conditions of lighting, even outdoor.

TD Pilot provides native integration of eye tracking in iPadOS and certified for Apple performance standards. It provides communication and the full use of iPad apps for people with disabilities, through eye control and more access methods.

SC Tablet also an iPad-based speech generating device pre-installed with a suite of AAC apps for people with communication disabilities, very portable.

Tobii Eye tracker 5th generation creates eye tracking devices stand-alone or integrated in high performance gaming laptops extending the gamers intentions. It can be found in Dell, Acer, MSI laptops.



■ Challenges

Health Care

Reveals the markers of brain and vision diseases and conditions. Supporting the development of new diagnosis, checks up and therapy devices.

Can be used in assessment and therapy : the development of tools for brain and behavioural health, reading and learning, as well as vision and ocular disorders.

Improving the medical technology — control of surgical robots, diagnostic imaging equipment, and other medical displays.

Assistive technology

Helping the people with communication disabilities through devices to live a richer life making possible.

Augmentative Alternative Communication through special designed devices, developed and designed for making possible the communication.

Tens of thousands of people with disabilities are dependent on eye tracking to communicate and that was not possible before.

Ava is a smart , seven years old girl but she can not use her voice or control the gestures but she use the Assistive Technology.

They use a TD-Snap for communication and surrounding control.

Challenges

Education and Training

- Using the Eye tracking as a tool to illustrate surgical methods and assess student's learning process.
- Eye tracking provides a view of where the visual attention of a person is focused showing the cognitive processes attached to particular tasks during the learning process.
- For the surgeons in an operating area, pilots in a simulator, athletes or control room operators, eye tracking reveals a lot of information and knowledge attached to how they perform their tasks, allowing you to utilize this insight.
- Improving the training and education process performing three tasks:

Capture the visual behaviour of a person.

Understand what is happens with his attention while is performing the task.

Improve Identify the area where the improvement is possible.

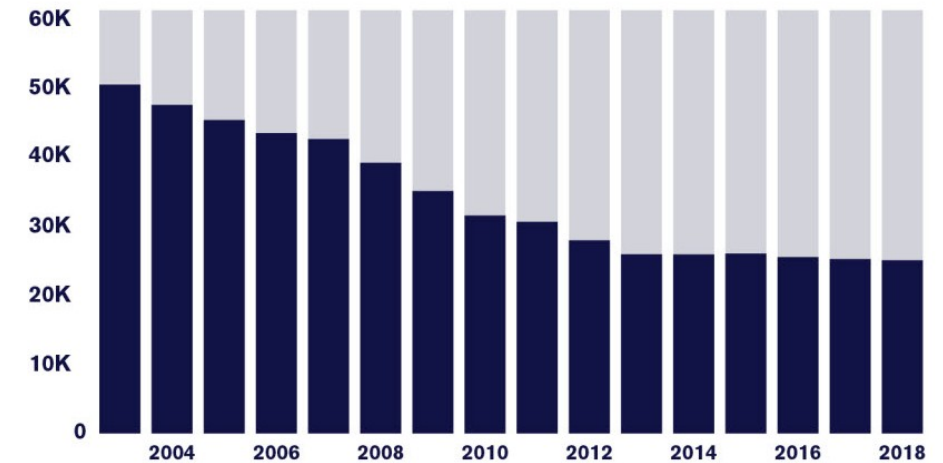
Challenges

Automotive

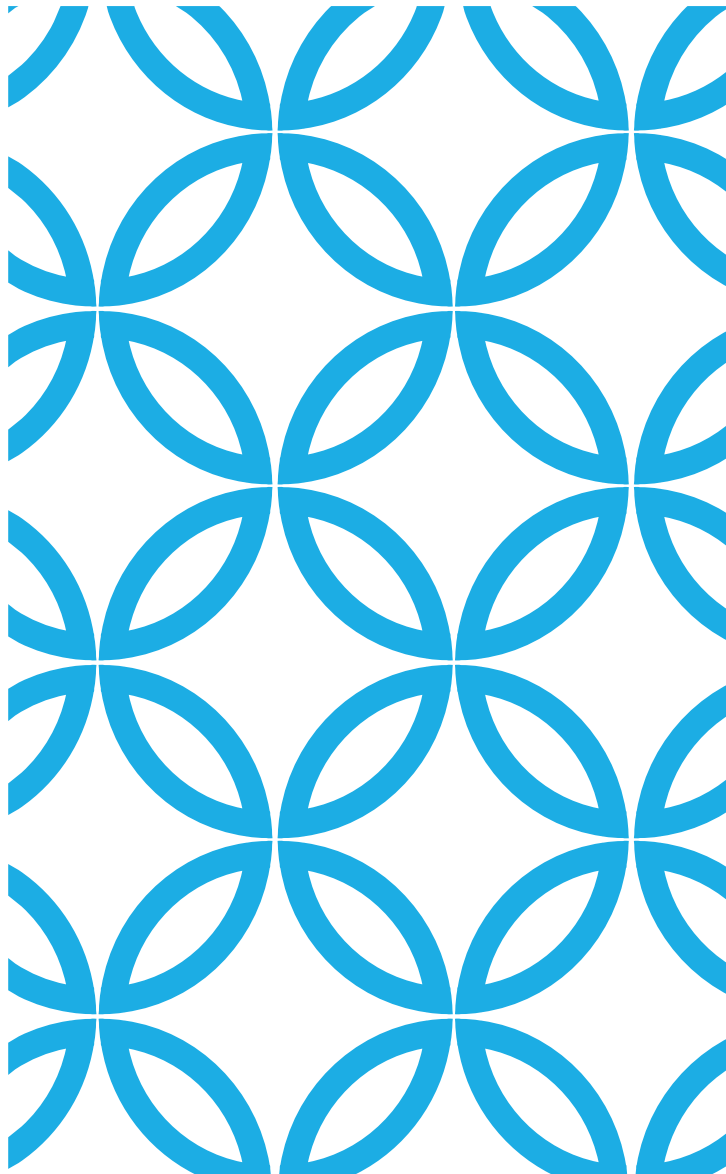
Increasing traffic safety used in monitoring systems detecting drowsiness, fatigue and distraction.

- **Research:** Tobii technology helps the companies to understand the impact of new features added, on driver behaviour by providing key metrics such as cognitive activity, stress, visual distraction for many vehicle models and weather conditions.
- **Drive:** Tobii Driver Monitoring System (Tobii DMS) is a powerful solution identifying the challenges for drivers like drowsiness and distractions — saving lives by delivering real-time feedback on driver state. Many studies shows that two-thirds of drivers are distracted short time before an accident.

Road fatalities in the EU from 2003 to 2018



Source: European Commission, Directorate-General Mobility and Transport



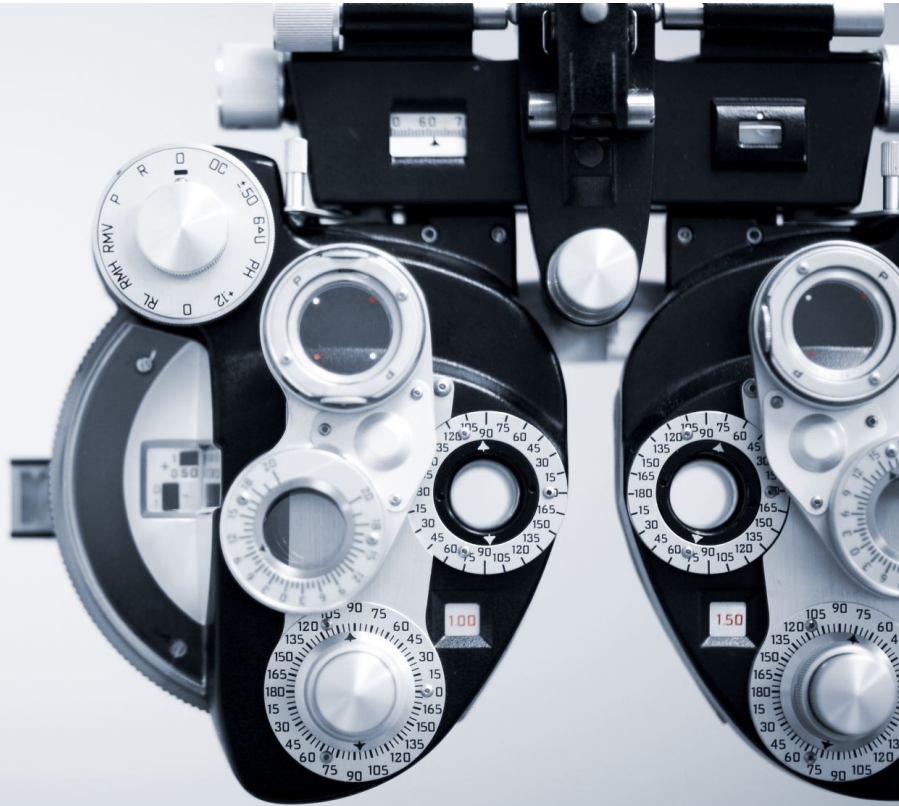
TOBII

WORLD LEADER IN EYE TRACKING

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INFLUENCE OF EYE TRACKER

❖ AUTOMOTIVE

❖ HEALTHCARE

❖ GAMING

❖ EDUCATION AND
TRAINING

AUTOMOTIVE



RAISING TRAFFIC SAFETY



MAINTAINING DRIVER STATES



UPHOLDING REGULATORY COMPLIANCE

HEALTHCARE

01

SUPPORTING
DIAGNOSIS AND
THERAPY

02

CONTROLLING
SURGICAL
ROBOTS

03

SIMPLIFYING
WORKFLOWS

GAMING



REDEFINING EXPERIENCES



INSIGHTS INTO PLAY



STREAMING WITH AN EDGE



AUTOMATING
ASSESSMENT



ENHANCING SKILLS
TRANSFER



GENERATING DEEP
INSIGHTS

EDUCATION AND TRAINING

Gaming Technology

How does it work ?

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Games designs

- Natural Targeting when you are able easily to locate the target in the game and eliminate it
- Infinite Screen is the all over experience of the game and how you are able to enjoy all the graphics and the style of the game
- Immersive graphics play a really important role in the game because they often can navigate you and be able to make the whole game much easier
- Unique style is team work it affects how the game is going to look like
- Ultimate experience is the whole played game and the pleasure of using such a improved technology

Products and technology

- Eye tracker is a device able to track head and eye movements for high quality experience in gaming and streaming
- Eye tracker motoring kit it controls the actual eye tracker device during a game or streaming
- Gaming Laptops are design for the specific needs of the person and what they are looking for there are laptops good only for streaming or gaming based on the para-metrics on the laptop

The Experience and Advantages

- Controlling how much time you spend in the front of the screen when you play game or streaming
- Special design software program detecting to your head movements with the built-in web camera.
- E-sports you can learn how to improve map awareness, and vision-related skills with the eye tracking

Tobii Launches X2 Eye Trackers to Expand Applications and Insights for Research Community

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Tobii Launches X2 Eye Trackers

- Tobii Technology, the global leader in eye tracking and gaze interaction, today announced the release of Tobii X2 Eye Trackers, a new line of highly portable and more affordable research products powered by the latest generations.
- This will create new research opportunities and discoveries in science, health, education, product development, usability testing, packaging design, advertising, branding and more.”
- The Tobii X2 product line comprises eye-tracking research systems at 30 or 60 Hz frame rates.

Features and Benefits

- **Maximum portability** – the X2 Eye Trackers are the smallest, most light-weight eye-tracking research systems on the market, powered by only one USB cable, making it easy to study human behaviour outside the lab, in participants' homes, clinics, schools or malls.
- **Extreme versatility** – modular design and different hardware options enable a wide variety of research study configurations and stimuli presentation options, from laptops and PC monitors to tablets, TVs, projections, control panels, ATMs and store shelves.
- **Easy-to use** – ease of set-up and operation makes it possible for anyone, from research novice to tech expert, to use the eye tracker.

Features and Benefits

- **High authenticity** – a revolutionary large track box allows participants to be tracked at their most natural distance from a screen or stimuli and move freely and naturally, lending to a more natural experience for the research participant and more valid results.
- **Ultimate tracking performance** – researchers can rely on an easy-to-use method for gathering highly accurate data throughout the entire track box and unparalleled capabilities for tracking a variety of users, regardless of ethnicity, glasses, etc.

References

- Tobii.com. 2021. *Celebrating 20 years - Global leader in eye tracking - Tobii*. [online] Available at: (<https://www.tobii.com>) (Accessed 7 December 2021).
- Tobii Gaming. 2021. *Tobii Gaming Powerful Eye Tracking for PC Games*. [online] Available at: (<https://gaming.tobii.com>) (Accessed 7 December 2021).