Seeing AI and OrCam MyEye: A Comparison

Today we have an unprecedented range of options to access and convert information into accessible formats. Seeing AI and OrCam MyReader are 2 of the most recent, most innovative and most exciting technologies that are literally changing the world for people who are blind or have low vision. While they share many features, these 2 products are very different and it is important to understand how these differences impact individual users. This comparison aims to inform and assist anyone involved in the assessment and recommendation of technology.

Seeing AI is an app developed by Microsoft. Seeing AI uses Microsoft AI (artificial intelligence) and the camera on the iPhone to read documents, recognise people’s faces and provide a description of their appearance, identify a product using its barcode, and recognise and narrate images.

OrCam MyEye is a small wearable artificial vision device designed to assist people who are blind, have low vision or are otherwise unable to access print such as stroke victims, or people with dyslexia. The intuitive, lightweight camera instantly and discreetly reads printed and digital text aloud – from any surface – and recognizes faces, products, and currency, all in real time. OrCam MyEye’s proprietary algorithms work independently offline – without any data or subscription fees, connectivity lapses, or privacy concerns.

Seeing AI is free, and OrCam MyEye costs a similar amount to an average hearing aid. Increasingly products are being recommended to people based on their cost and not on the ability of the product to best meet each individual’s needs. While Seeing AI is recognised as exceptional technology, here are a few reasons why proper evidence based needs assessment should be the guiding principle of product recommendations.

Who Can Use it?
Seeing AI is currently only available for IOS application (iPhones and iPads), entailing the cost of the device and on-going data plan. In Australia less than 50% of seniors own a smartphone or tablet (Sensis Social Media Report 2017-Chapter 1). Seeing AI needs a phone connection or WiFi access which can be limiting outside metropolitan areas, within large buildings or any area receiving poor signal strength. Good smartphone skills and good working knowledge of VoiceOver are required (check the availability of VoiceOver trainers in your area). A Seeing AI user also needs the dexterity to hold and position the phone correctly. If the client is a cane or guide dog user the use of Seeing AI is limited (or impossible) when travelling on foot as only one hand is available.

OrCam MyEye can be used by anyone of any age and any skill level, at any time, in any location. As a wearable device it offers hands-free use, a critical issue in workplace and educational environments, as well as accessing printed information in the environment.
**How long can it be used?**

If Seeing AI is used continuously there is a rapid loss of the phone’s battery power. Reports of 20 – 30 minutes only of continuous use are common. This may suit a casual user who needs to use it only sporadically but is not at all suitable for any professional, employment or educational application, or for extended recreational reading. If a user is dependent on other phone features, such as GPS for navigation, this can be a very serious issue.

OrCam MyEye’s battery lasts all day with typical use. Since the device is stand-alone and doesn’t compete with other power drains on the same platform, OrCam MyEye has full use of its processing power, ensuring smooth and long lasting operation.

**Where can it be used?**

The use of smartphones is becoming a contentious issue in many areas. Here are just a few of the areas where smartphone use is either banned or restrictions are in place;

- Many government departments (especially in secure areas such as Social Security, Defence, Immigration etc) limit the use of smartphones and cameras within premises
- Hospitals, Medical facilities, Doctors waiting rooms
- Public areas where children frequent – beaches, swimming pools, playgrounds etc
- Public Restrooms
- Shops (wary of competitors photographing pricing) and public transport (invasion of privacy)
- Increasingly in schools. France has just introduced a total ban on smartphone use in schools.
- In examinations or testing environments (for obvious reasons)
- Many cities have started banning use of smartphones whilst walking or crossing the road (the so-called “smartphone zombies”)
- Gyms, change rooms
- Increasing concerns in public use around issues of copyright and intellectual property
- Increasing security concerns in public use at airports, transportation hubs and public events.

The OrCam MyEye can be used anywhere without repercussions from any of the issues listed above.

**How Does the Reading Process Work?**

Both devices will capture an image of printed text and convert it to speech output.

For the Seeing AI user they have the option of capturing a few lines of text directly on their phone, without having to go to a cloud connection, or if a longer document is required they can do this in the cloud (requiring a good phone connection or WiFi). Finding the desired content within a document may require multiple attempts (capturing multiple images) and listening to text that may not be relevant. The phone needs to be held about 30cms from the text being read which can be problematic depending on the user’s level of vision.

For the OrCam MyEye user, there are three options for how text can be accessed; pointing at the desired text to be read, pressing a button to capture a whole page, or simply looking in the direction of the text and waiting for several seconds. A unique ability of the OrCam MyEye is to simulate visual scanning of a page, by simply moving your finger around the text, listening to the start of that text and moving to another section instantly if the desired content is not found.

There are huge differences in the functional outcomes from these two devices. Special care and extended testing needs to be done to ensure that the device is fit for purpose. A scooter and a semi-trailer truck are both transportation devices.
How Does Facial Recognition Work?

Both devices will recognise stored faces and announce the stored message describing the person. Let’s assume a person needs to recognise faces of people attending a professional meeting.

The Seeing AI user needs to stand at a certain distance in front of each person and capture their image. For discretion they would need to be wearing earphones at the same time. All data is stored in the cloud on the users account.

The OrCam MyEye user can remain seated, continue with other activities such as note-taking, and receive a discrete message in their ear announcing each person recognised, as well as directional information about their location in the room. All data is stored on the device as an algorithm not a picture, without the potential for hacking.

Again, an apparent similarity on face value however very different functional outcomes.

Summary

Seeing AI is exceptional technology provided at no cost by Microsoft and this makes it an attractive option for many people. For casual or sporadic use Seeing AI may satisfy the needs of a user who only occasionally has to access printed information, like read a food label. However due to some of the limitations outlined above it cannot be compared to the OrCam MyEye for any application within a professional, employment or educational setting, or for someone who requires all-day access to printed information wherever they happen to be.

The biggest shortcoming of Seeing AI is not the app itself so much as the platform on which it operates. Smartphones at this stage do not have the battery capacity to make apps like Seeing AI useful for more than the casual user. They also require the use of both hands and above average dexterity skills.

OrCam MyEye is a new generation wearable device and while the feature list between the 2 devices is similar, there are very real and pervasive differences in the functional outcomes from both devices. You can get free or very inexpensive apps that do most of what Microsoft’s WORD does, but the large majority of us choose to purchase WORD.

Seeing AI has announced hand-writing recognition and that could prove to be a game changer in the long run. However, hand-writing recognition is in its infancy and it is important that this feature is tested in real world situations that the user will find themselves in. It is well documented that hand-writing recognition works best with standardised cursive writing. Hand-writing standards vary widely from country to country and the latest NAPLAN results (August 2017) reported a “serious decline in writing skills”. There is a great deal of hype about this feature but real world use is yet to be confirmed.

This article is clearly pro-OrCam MyEye and the reason for that is funding bodies are increasingly evaluating the suitability of a device on the basis of cost, and not outcomes. Both Seeing AI and OrCam MyEye represent outstanding technological innovation and advances. As Australia rapidly moves to a funded environment under NDIS it is important that the differences between these 2 devices are well understood.

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