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Accessibility Not An After Thought

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Accessible

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Accessibility in Virtual Reality

- Immersive Virtual Reality is Multimodal
 - Accessibility is inherently just providing the information presented in one form into one or more additional modalities which the user has control over.
 - Having Accessibility built in to the foundation of VR means anything built with this will be able to support accessibility.
 - There may still be things for the developer and/or content author to do.
 - Both the Inputs and Outputs must be made accessible
 - INPUTS: Speech / Keyboard / Switch / Gesture / Eye Tracking / Brain Wave
 - OUTPUTS: Tactile / Visual / Auditory / Olfactory / Gustatory

Innovation Support for New Breakthroughs



● Accessible VR Shopping Experience

- I can envision a system whereby the user puts on gloves, and a headset complete with video and audio, they can interact with a Minority Report style virtual menu system, but a visually impaired user could enable a self voicing option and have each shopping category, or item description spoken to them.
- Proximity: More detail about items that are closer to you, or virtually “select” something and bring it closer to you to help with low vision.
- Speech input (but consider users who can not speak, or speaks a different language)
- Consider multiple disabilities such as a deaf-blind user may need the information sent to a braille or tongue display, or something else not yet invented.



VR Example to help Disabled

- using VR for training for new prostheses
- using VR for balance re-training for people who've had strokes
- adding emotional markup language (EML) to games or training to help people on the autism spectrum
- As VR matures this will make its way into the classroom and having accessibility APIs will allow all students to enjoy this new emerging technology



Final Thoughts

- How to make any VR application accessible to people with a range of disabilities
- How to use VR to innovatively address new accessibility use-cases
- Consider lessons learnt with making Videos and Images accessible

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Thank You

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