

The Future of Accessible Digital Media

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About AMI



- A not-for-profit organization
- Includes three broadcast channels
- Mandated as must-carry services for all TV providers
- 20+ years of making accessible media

Software

Imagery

Video

Digital Media

Audio

Video Games

Social
Media

Web Pages and
Applications

Machine
Learning

Expert
Systems

AI Planning

Artificial Intelligence

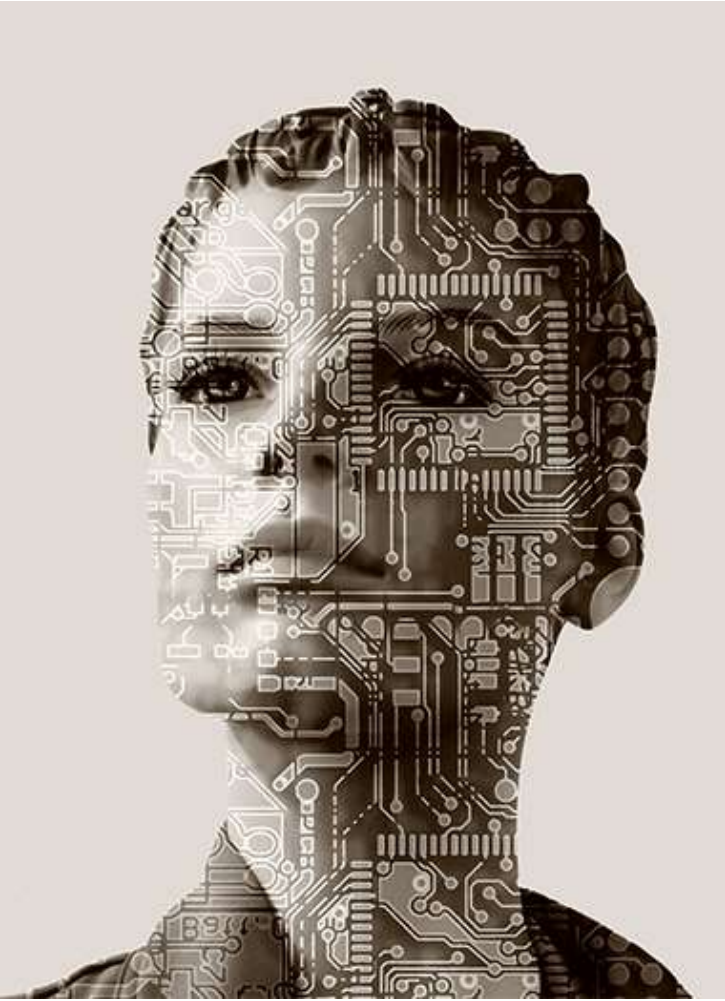
Natural Language
Processing

Computer
Vision

AI General
Intelligence

Robotics

Accessibility Impact



- Increased accuracy: object / facial recognition
- Automated, real time captions and subtitling, and sign language for media.
- Automated Audio Descriptions for video. Verbosity manipulation.
- Content customization: Customize reading levels on the fly, remove ambiguous language and jargon. Transform “walls of text” in to concise summaries..



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VR / AR / MR



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(V/A/M)Reality



Virtual Reality (VR)

- **Immersive** computer generated simulation, providing a realistic experience, explorable by the viewer

Augmented Reality (AR)

- Generated content delivered as an overlay on reality, but does not interact with it

Mixed Reality (MR)

- Generated content delivered as an overlay on reality which **can** react with its environment in real time

Resonance Audio



- Google initiative provides immersive, multi-platform audio experiences
- Simulates the way sound waves interact with the human ear by adjusting the timing of how sound waves hit the ears, and changes in frequencies called “Spectral Events”
- Full sphere surround sound, speaker independent technique called “Ambisonics” which provides ability for highly flexible sound design and directional audio



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Accessibility Impact

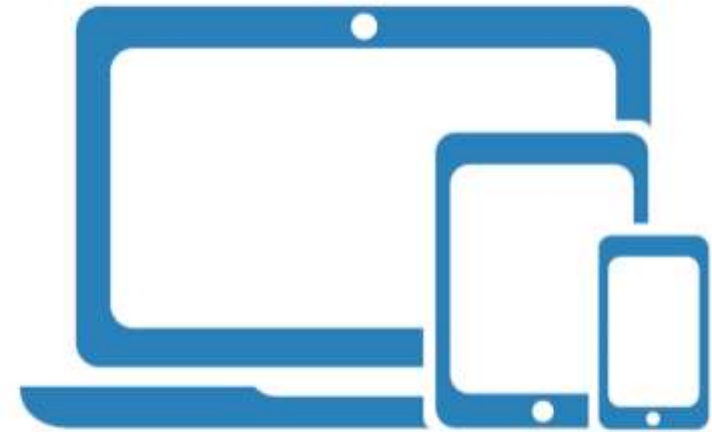


- Advanced delivery platform with unlimited potential
- User control. You are essentially the director and control what you observe within the environment
- VR/AR/MR + Resonance audio: Rich multimedia environments which enhance will story telling
- Enhanced audio capabilities can limit the need for Audio Description in some scenarios.
- Simulated environments for instructional purposes

Second Screen solutions

Second Screen Solutions

- Bind to another media source with “companion device”
- Provide user with the ability to consume supplementary content simultaneously
- Enables next-level interactivity
- Consume and control (eg YouTube TV)



Accessibility Impact



- Elimination of access issues to traditional infrastructure through (eg settop boxes, televisions)
- Discreet consumption of accessible content such as descriptions, captioning or sign language
- Deafblind access to content in real-time through streaming of captions and/or text based audio descriptions

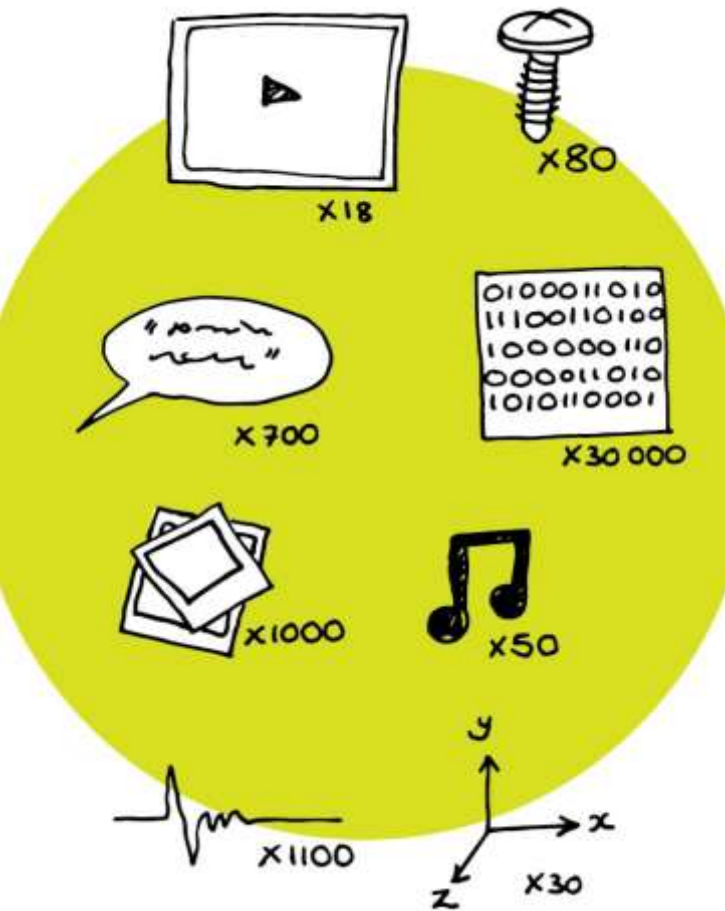
Object Based Media



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Object Based Media



- Approach where production elements can be broken down into smaller parts and described with metadata, the reassembled at runtime based on audience preference or device context
- Dialogue, camera angles, on screen graphics, text, etc are examples of possible objects
- Delivered independently with a set of instructions on how to display. Conventional media is sent and rendered as a package
- Object Based media makes it possible to interact with any object

Traditional Versus Object Based Media

Traditional

- 1) Media is captured using traditional tools
- 2) Linear programming is produced
- 3) The program is broadcast
- 4) The program is consumed across multiple devices resulting in compromises for some experiences

Object Based Media

- 1) Media captured with new and traditional tools with metadata recorded
- 2) Packaged as a collection of objects
- 3) Package is broadcast with instructions (metadata) on how to assemble at runtime
- 4) Objects assembled at the device level based on best experience for that device context, environment or preferences



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Accessibility Impact



- Massive opportunity for personalization and customization
- Highly personalized content opportunities which are not possible without costly human interaction
- Fine grain control over almost every aspect of a production. Eg track isolation / manipulation
- Eg. Replace a speaking presenter with a sign language interpreter

Voice Interfaces



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Voice User Interfaces (VUI)



- VUI's provide a means for a human to interact with a computer by simply using your voice
- Already widely used in today's apps (Siri, Cortana, Alexa, etc)
- According to Google 20% of search is executed via voice command. That figure is set to increase by 10% by 2022

Accessibility Impact



- Ease of access to services and information
- Eliminates unnecessary operations through straightforward voice commands
- Will become tightly integrated into everyday devices eg. Home, car, office

Keep in touch

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References

Accessible Media Inc (AMI)

- [Learn more about AMI](#)

Artificial Intelligence (AI)

- [AI Rabbit hole](#)

(V/A/M)Reality

- [VRGlossary](#)

Resonance Audio

- [Developer's Resource](#)

Ambisonics

- [Ambisonics Primer](#)

Second Screen

- [Second Screen Explained](#)
- [HbbTV 2.0 Companion Screen Framework](#)
- [Second Screen Working Group](#)

Object Based Media

- [An Object Lesson in Personalized Streaming Video Experiences](#)
- [Object Based Media and Accessibility](#)

Voice Interfaces

- [Voice User Interfaces](#)



Thank You



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