Eyes-free Computing
Looking Back, Looking Forward

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Video Of Talk

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Overview

Goal

Insights

Conclusion

Efficient Eyes-free Interaction

Effective Information Access

- When we want,
- Where we want,
- The way we want!

This Journey Began 30 Years Ago!

Milestones Along The Way

- ASTER —Audio System For Technical Readings —(1990s).
- PDF —Capture and extract document structure —(1995).
- Web —Design standards for multimodal interaction —(2000).
- Search —Deliver results the way the user wants —(2005).
- Mobile —Ubiquitous information access —(2008).
- Smart speakers —Mainstream eyes-free information access —(2014).

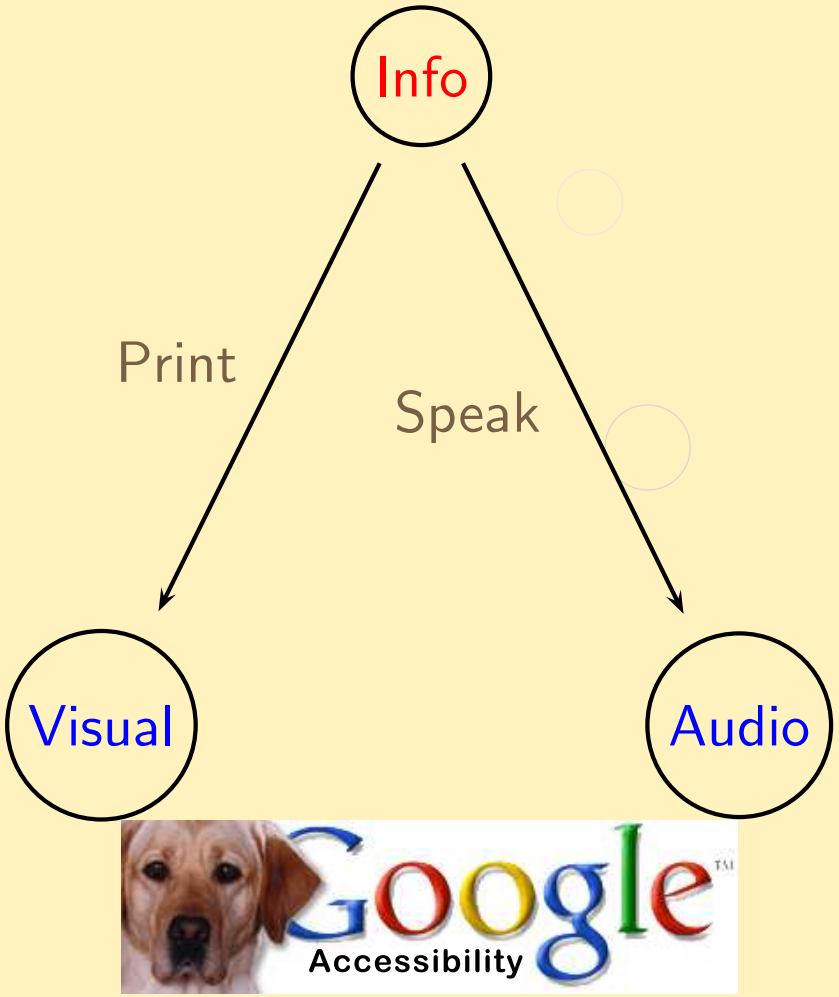
Insights Gathered Along The Way

- Electronic information is *display-independent*.
- Leverage features of specific interaction modalities *e.g.*, speech.
- User Interface is a means to an end.
- UI —Capture User Intent, Grab User Attention.
- UI peripherals determine the size and shape of computing devices.

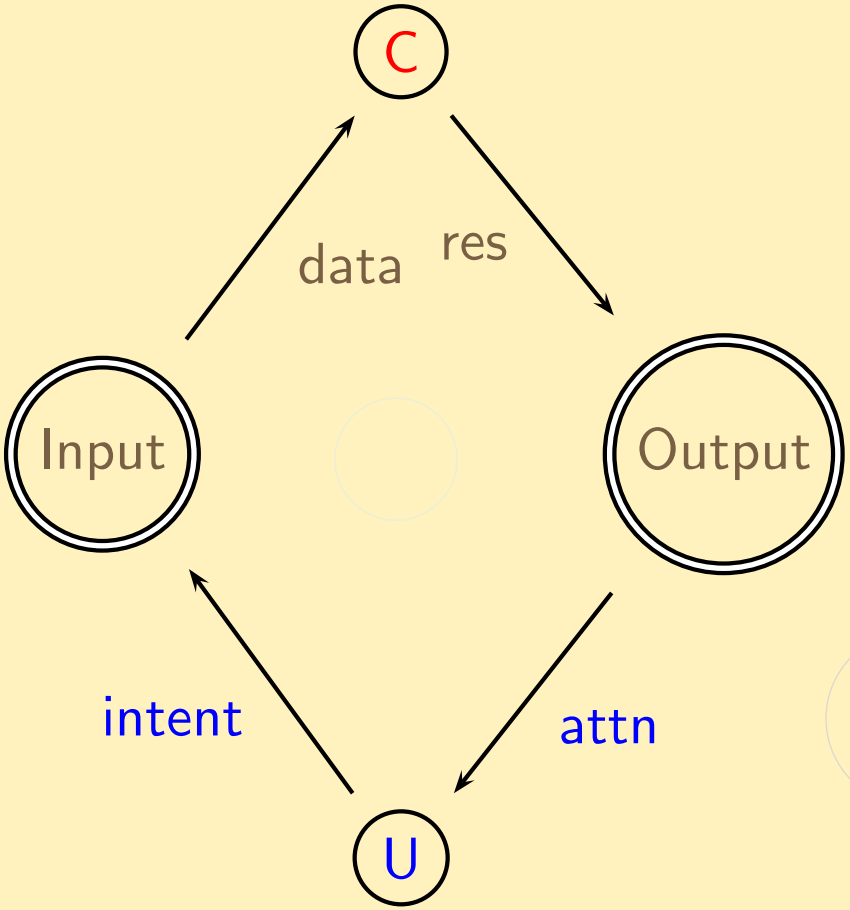
Insights Along The Way

Information Is Display Independent

Single Source, Multiple Outputs



UI —Capture Intent, Grab Attention



UI Defines The Device

- Desktop: Keyboard, Monitor, Mouse.
- Laptop: LCD Panel, Keyboard, Trackpad.
- Smart Phone: Shiny piece of glass.
- Smart Speaker: Microphone array.

UI Peripherals Determine Device Form-factor!

Conclusion

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- UI determines size and shape of computing.
- Ubiquitous information access requires User Aware UI.

Watch Computing Take Off!