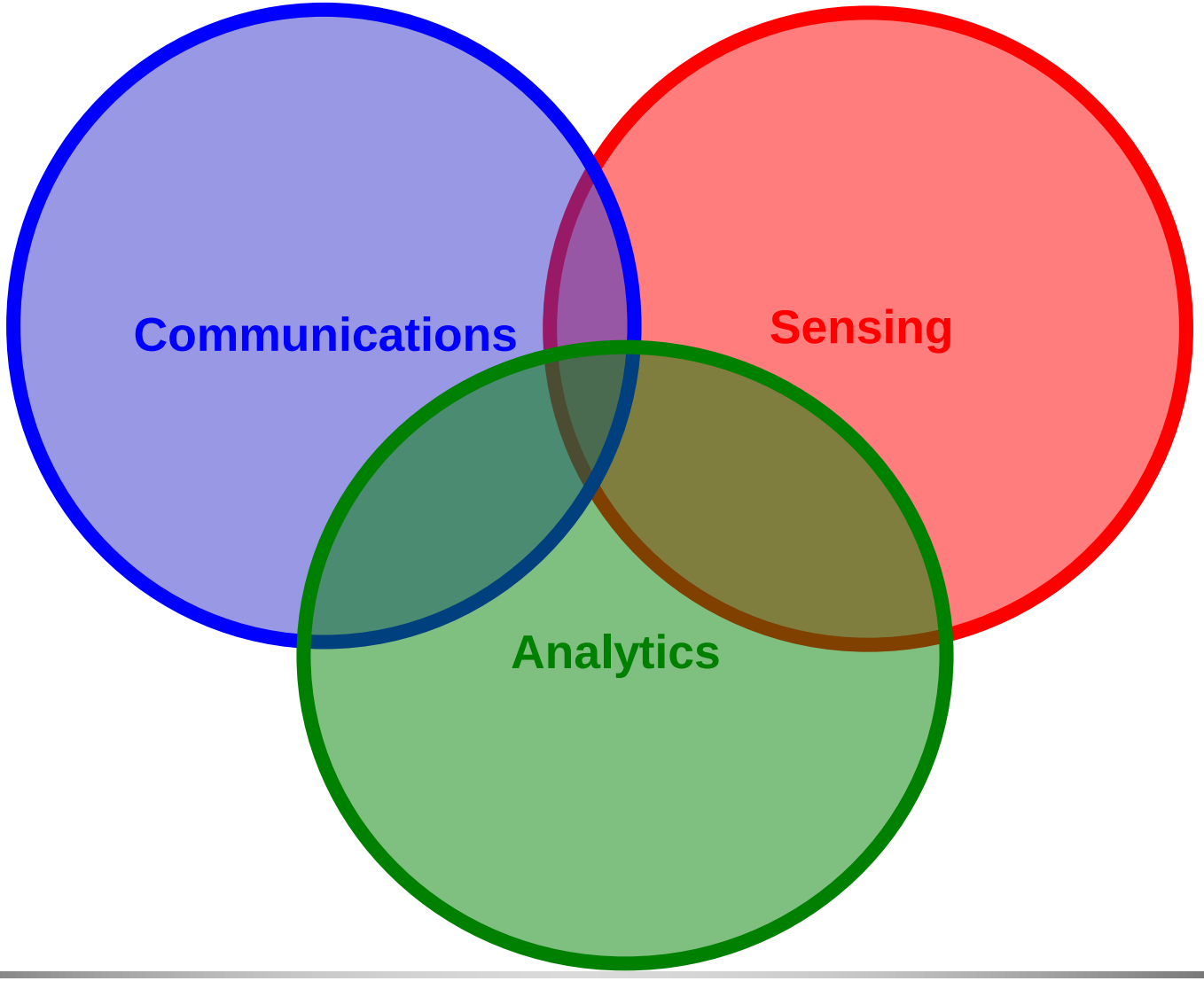
Wearable Computing
- an overview -

Prof. Dr. Touradj Ebrahimi
Touradj.Ebrahimi@epfl.ch

Converging trends



Generation-0 (smart) wearables

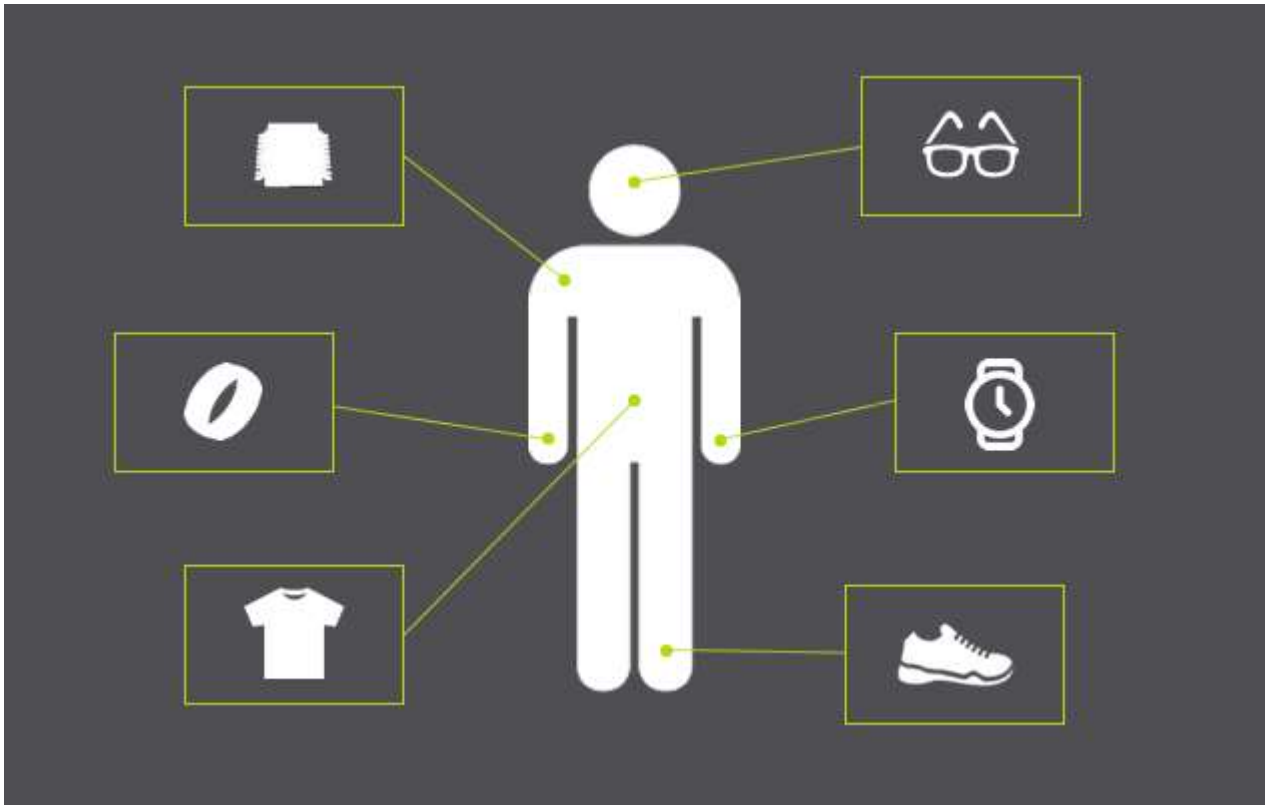
Mobile phones as wearables

Smart watches as wearables

Fitness trackers as wearables

Not all smart wearables are useful!

But all wearables will become smart in long term



A few examples…

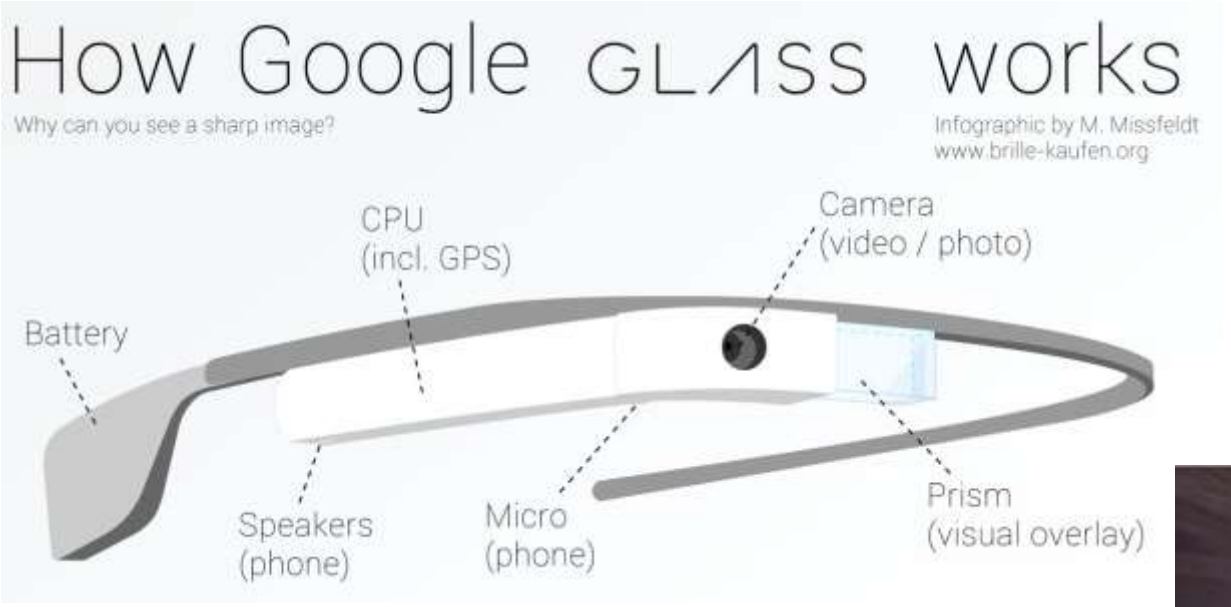
A few more examples…

Watches vs smart watches vs wearables

Smart watches

- Three current alternatives to wrist based wearable devices
  - Second screen
  - Sensors
  - Communication hub

Other wearables on the face…



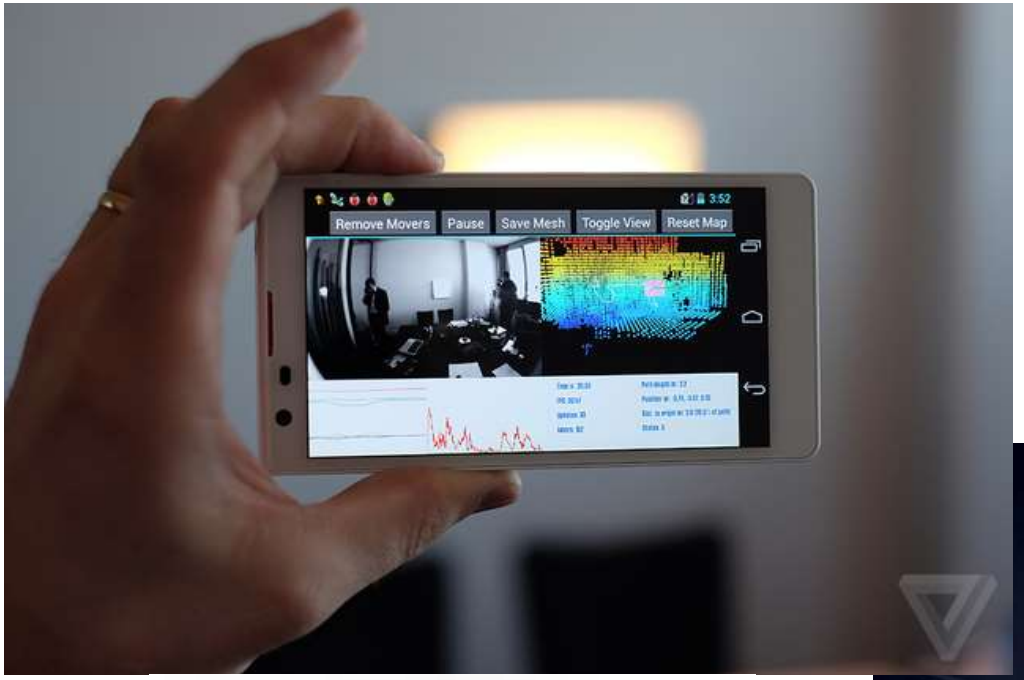
Other variants of smart glasses

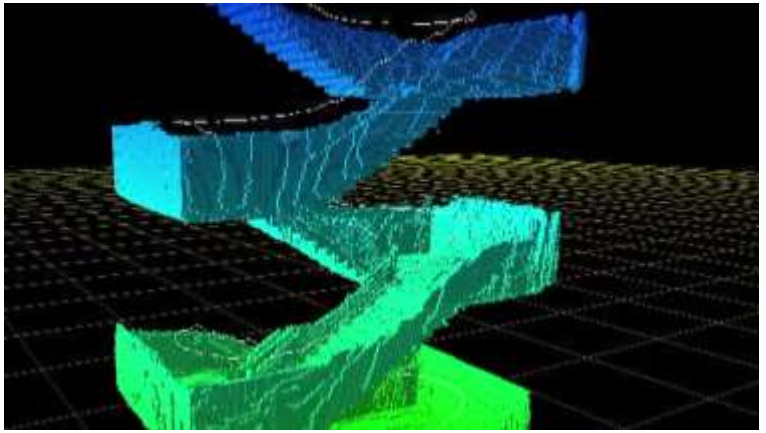
Sony's smart glasses

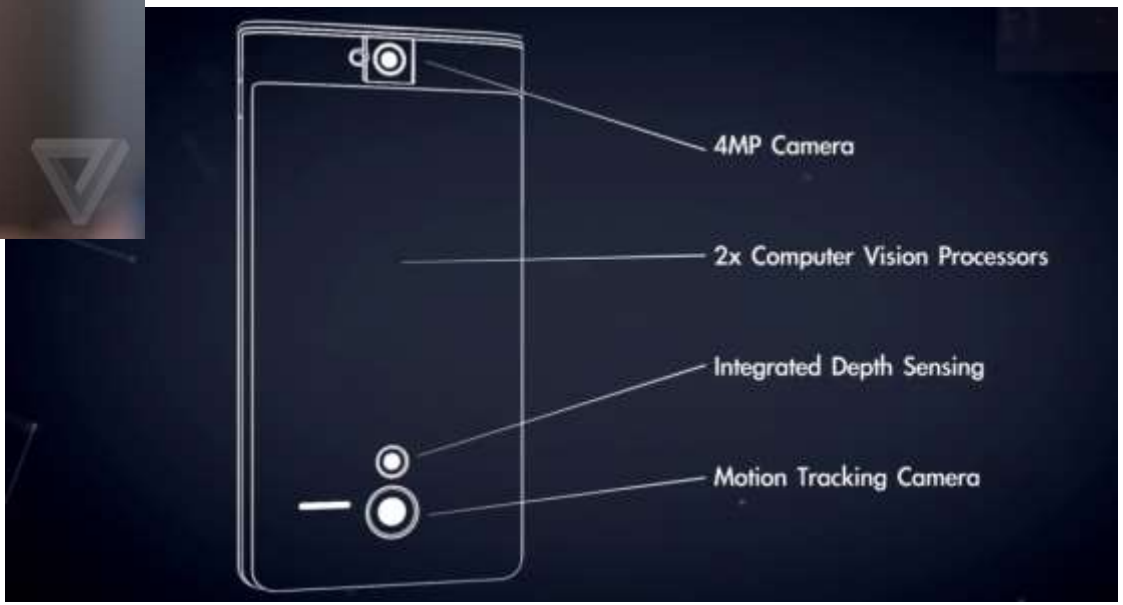
Microsoft Hololens

Other wearables for environment sensing

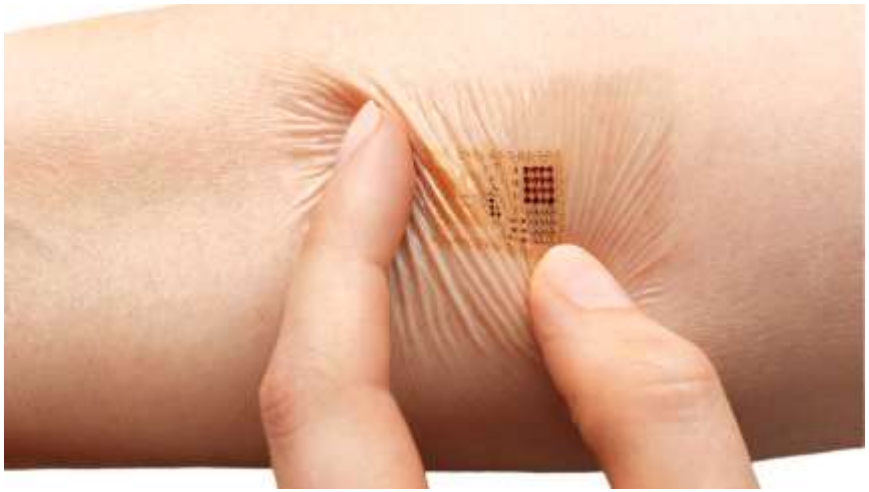
Other wearables for environment sensing

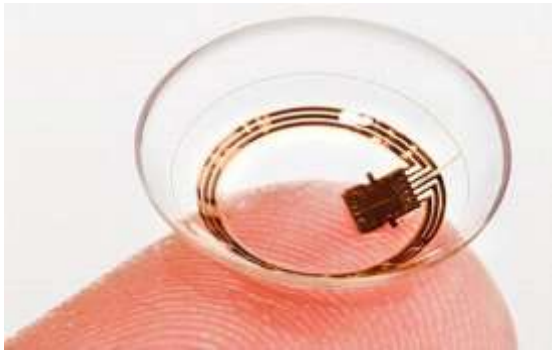


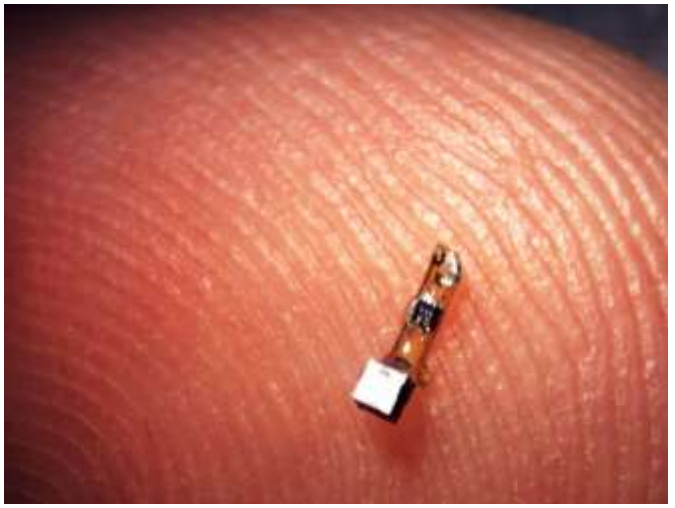




Other wearables for user sensing

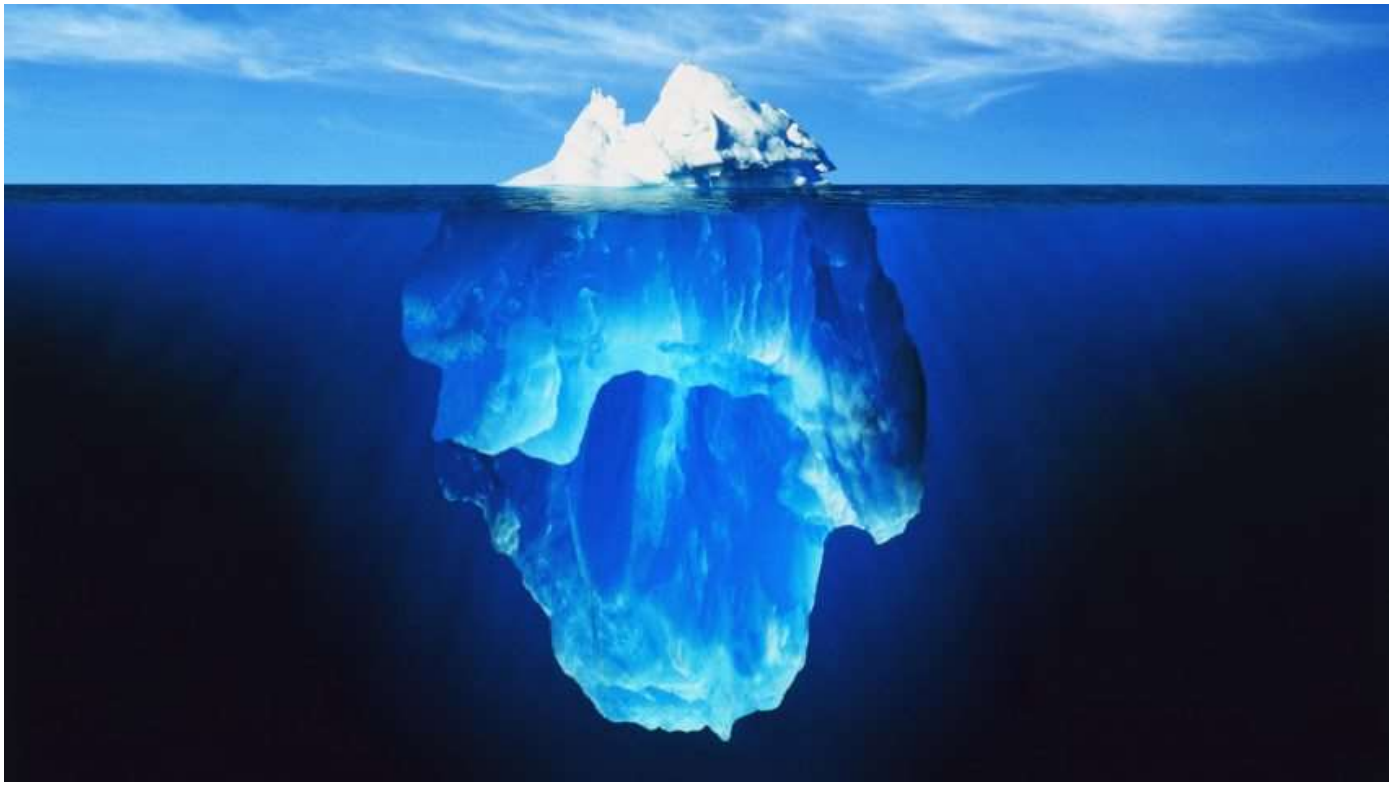




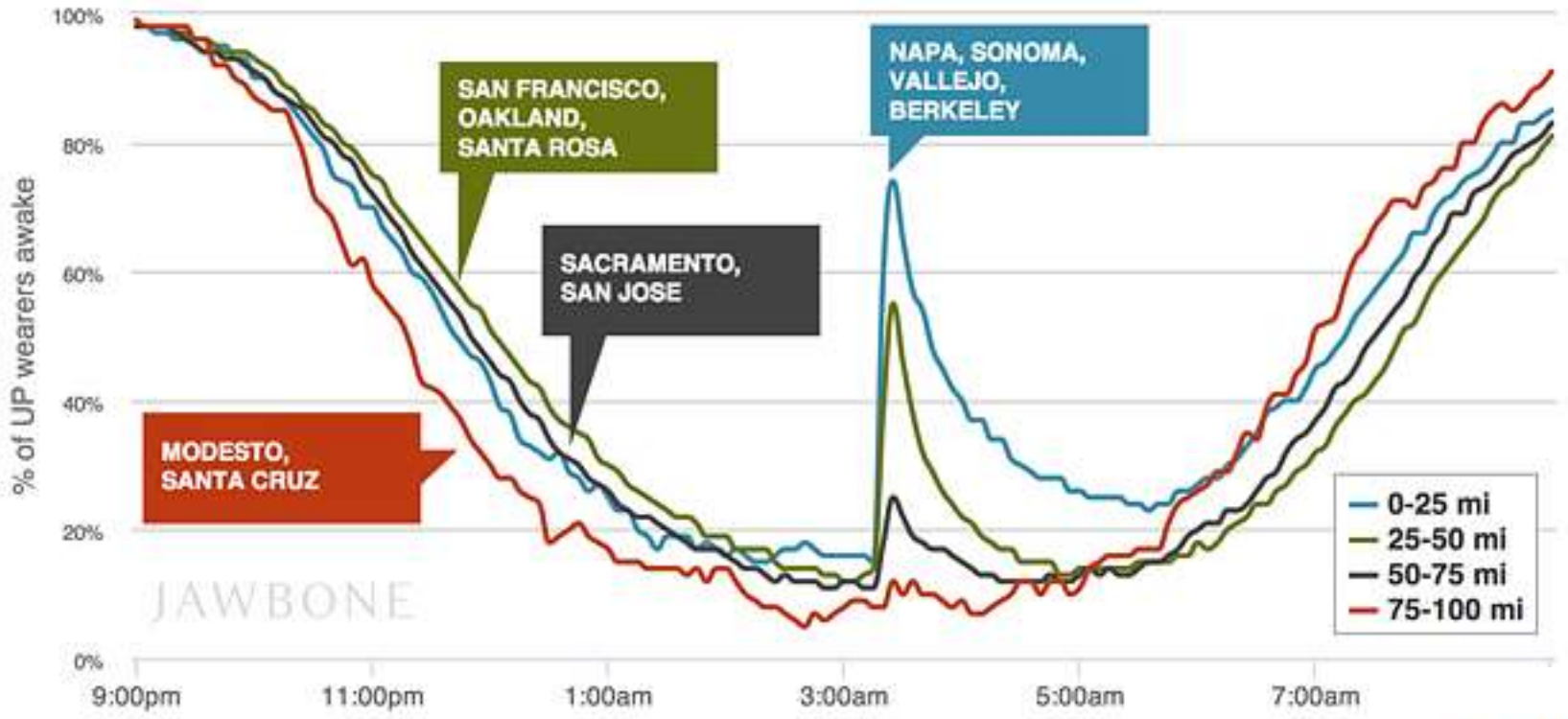


There is more than meets the eyes…

- There is far more in wearable computing than the device alone



Wearable data analysis

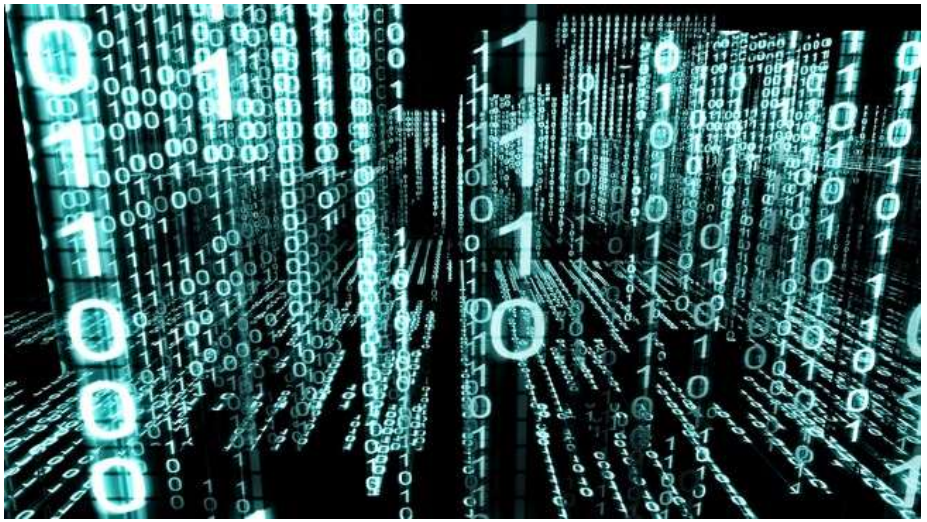


BIG DATA ANALYTICS

- IoT could turn the world into data …

Kevin Ashton
"First to coin IoT"

- (A lot of) Data from users and their environments is needed to create compelling products and services based on wearable and IoT technologies



Devices and sensors are Queens!

- (Easily available) Wearable devices and sensors are needed to generate the data:
  - Affordable components and sensors to be purchased by interested individuals
  - Reliable
  - Easy to configure and calibrate
  - User friendly

Software is the President!

- (Efficient) Software to control wearables and sensors
  - Open source
  - Extensible
  - Reliable
  - Easy to install on a wide variety of platforms

- (Distributed) server architecture for data synchronization, storage and access:
  - Cloud based
  - Reliable
  - Scalable
  - Respectful of Privacy and Ethical issues

Interoperability is essential!

- (Open) Standard solutions
  - Standard components
  - Standard data syntax
  - Standard Interface
  - Compliance/Certification

Compelling use cases are important!

- Concrete use cases
  - **Dietary assessment**
  - **Life log**
  - …

International consortium is needed!

- A seed consortium from US, Japan and Switzerland in place and has initiated reflections on Multimedia Dietary Assessment as a potential killer app

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What does it all mean to us?

- Watches and wrists are not the only battle fields in wearables
  - It may have started with wrist and face, but it won't stop there!
  - The entire body (and its immediate environment) is the play ground!
- Lessons to be learned from fashion/clothing industry
  - Design and fashion matter
- The device alone does not mean much without compelling applications
  - Wellbeing/Health
  - …

Thanks for your attention