How Wearables intersect with the Cloud and the IoT

Joseph Wei
joseph.wei@techventures.co

Agenda

- Interest in Wearables
- Brief History of Wearables
- Why we need Wearables?
- Market Segments
- Wearables, Cloud and IoT
- Open Data and US Data.gov
- Use cases involving Wearable, Cloud and IoT
- Summary
- Resources

Tremendous interest in Wearables

A Brief History of Wearables

1983: Casio Databank calculator watch

2004: Microsoft launches SPOT Smartwatch

2012: Pebble

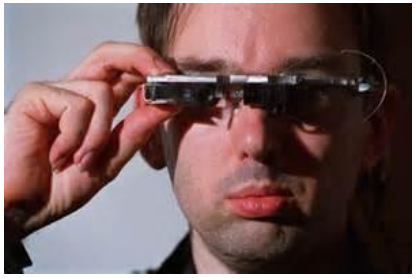
2013: Samsung Galaxy Gear

2000's: Pedometer

2011: FitBit Ultra

2011: Jawbone UP

2012: Nike Fuelband



1999: Steve Mann's Eyetap device

2002 : Xybernaut Poma

2012: Google Glass

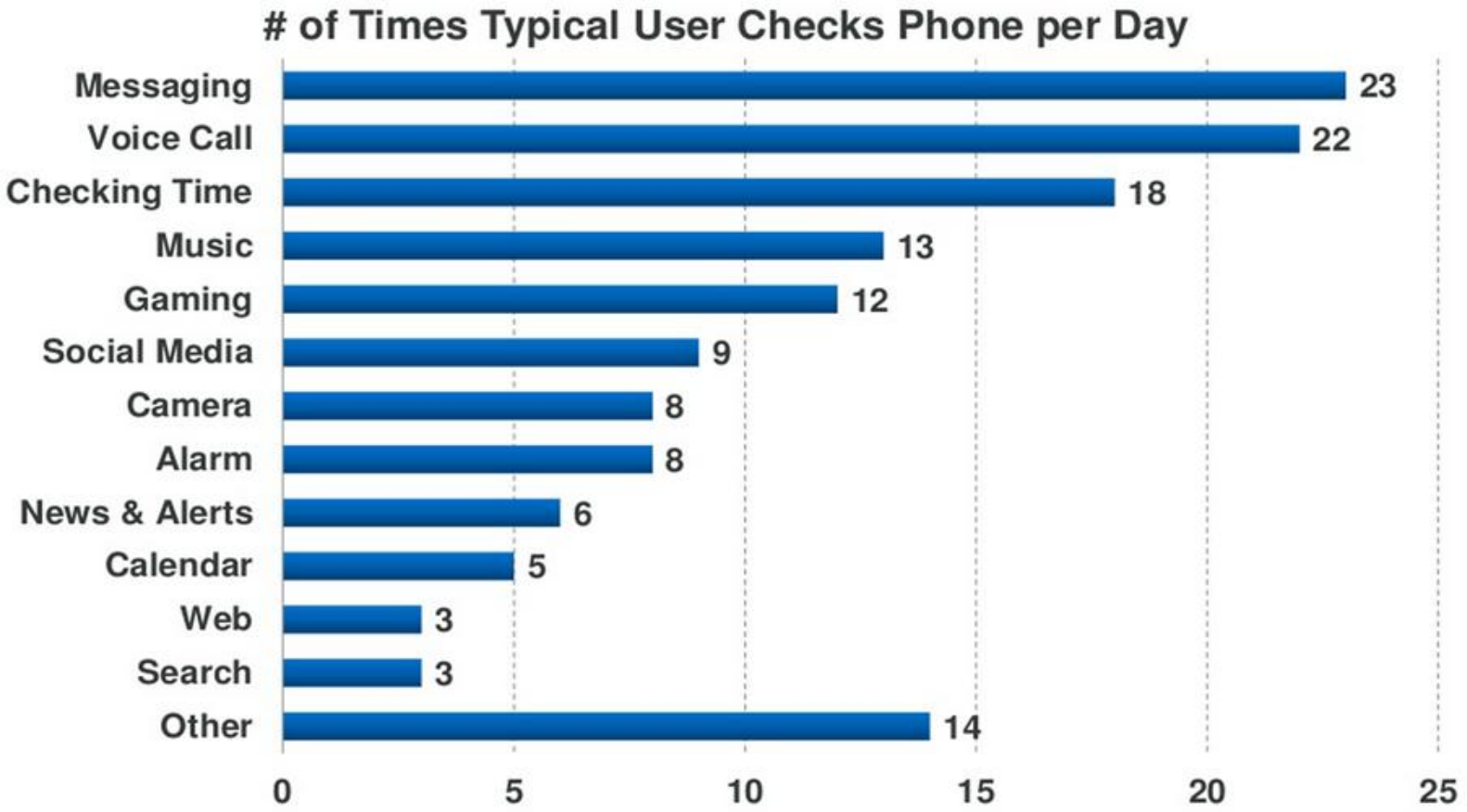
2010: Vuzix STAR 1200

Wearables catch the perfect wave

Wearables catch the perfect wave created by the **Smartphones** and **Tablets** with **Bluetooth**, **WiFi**, **4G/LTE** for connectivity and **Cloud** for **Big Data Analytics**

Reasons for Wearables

Number of times users reach for their device daily=150



KPCB

Source: TomiAhonen Almanac 2013, LINK. 'Other' includes voicemail, charging and miscellaneous activities. We cross-checked Tomi's analysis to gain context. Our references include: 1) Motorola Mobility / Google (consumers interact with their phones more than 100x per day, mid-2012); 2) Leading 3G Carrier with Operations in Europe & Asia (smartphone users interact with mobiles ~150x per day); 3) IDC (51 blended average of social sessions per smartphone user per day in USA, 3/13…excluded services like checking time, alarm and calendar events, web browsing, gaming, using camera, listening to music, searching, using maps, charging and other activities that require checking the phone) and 4) other third parties, including app providers.

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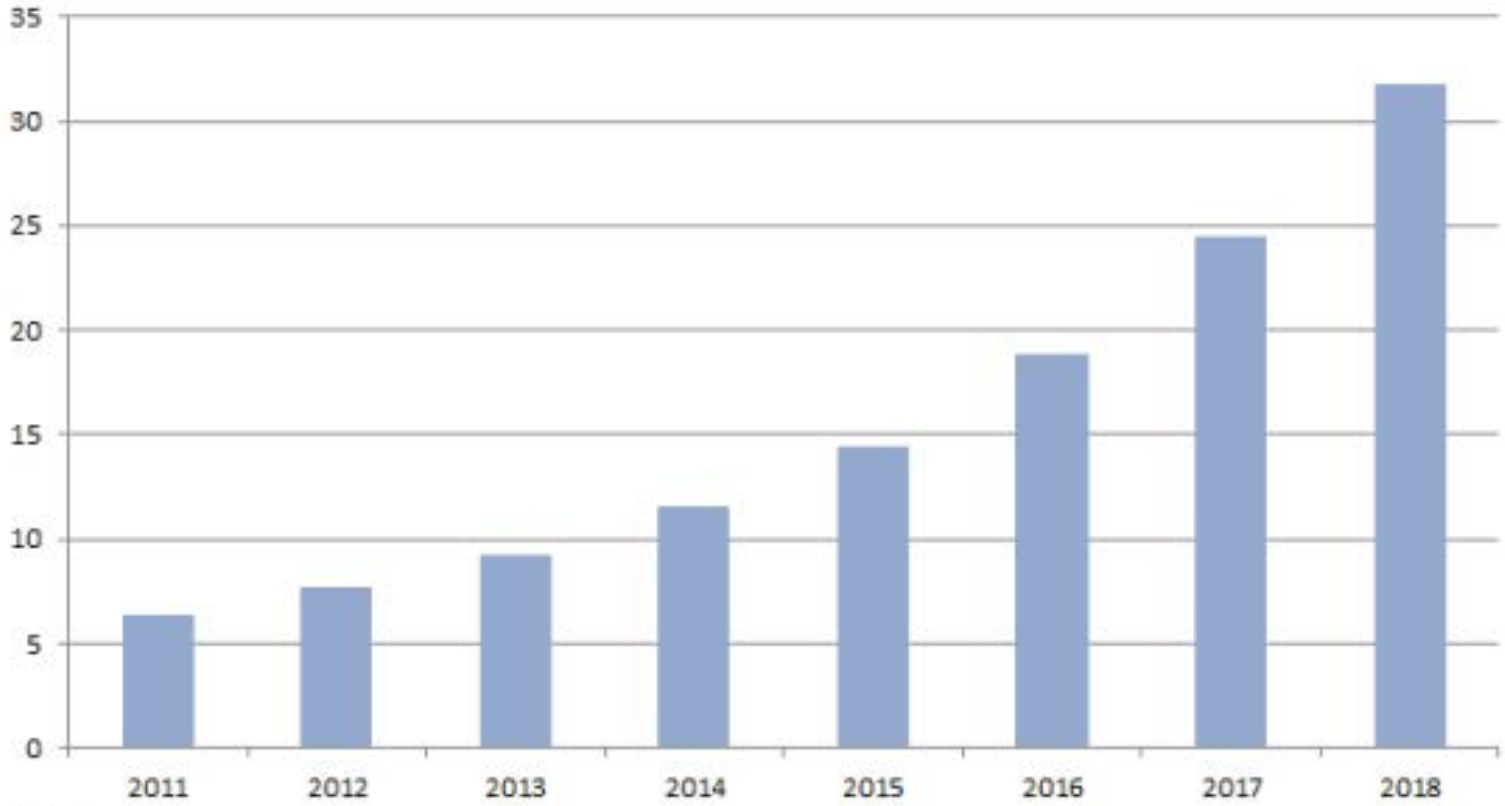
Forecast For Wearable Tech

Forecast for wearable tech revenue growth

In billions of U.S. dollars

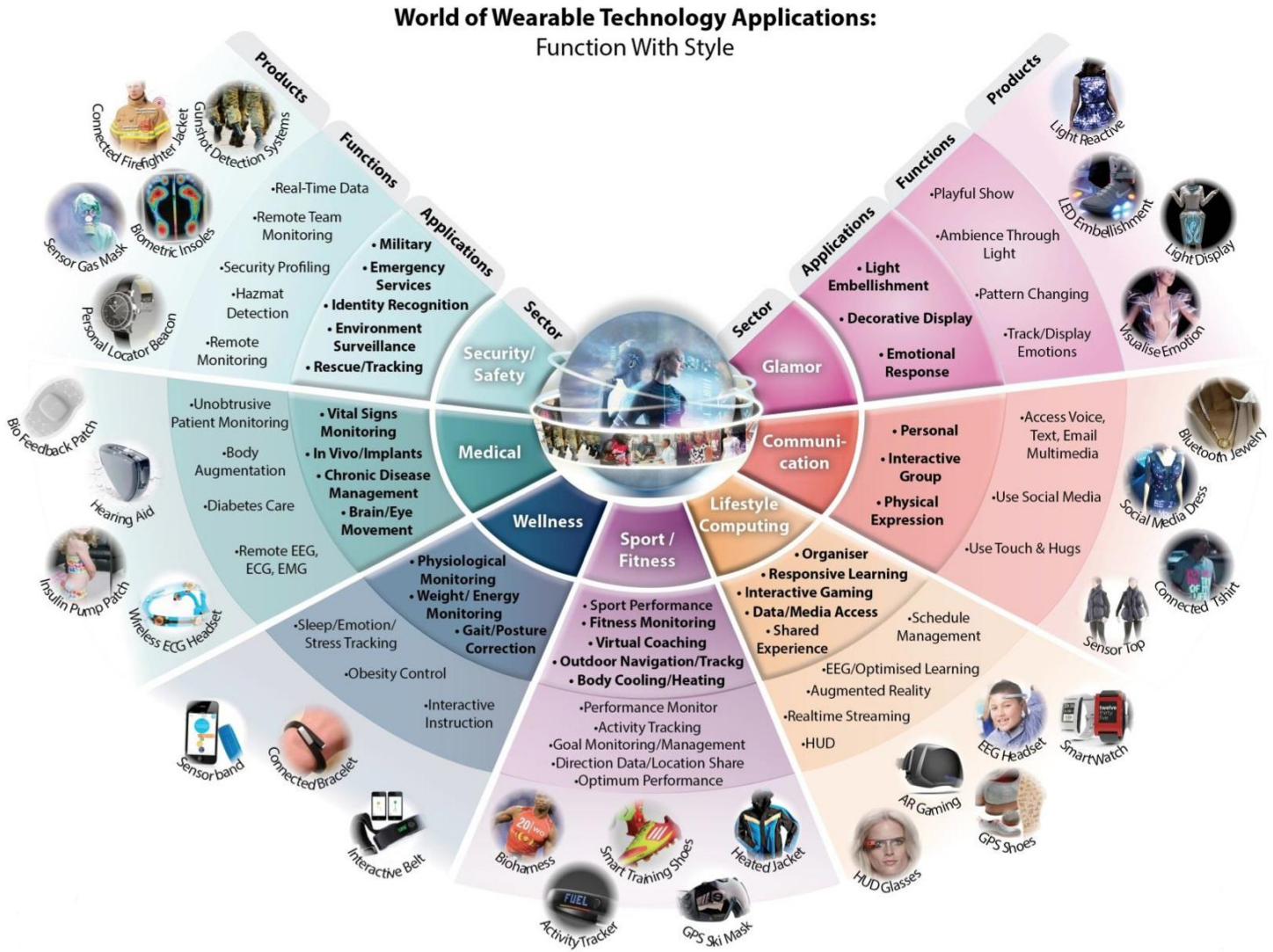


Source: IHS Inc,

Wearables Market Forecast

- Large market growth predictions:
  - USD 750.0 million in 2012 to USD 5.8 billion in 2018 by Transparency Market Research
  - $1.4 billion in 2013 to $19 billion in 2018 by Business Insider Intelligence
  - 13 million in 2012 to 130 million in 2018 in units shipment by Juniper Research
- Variance in forecast due to wearables still in relative infancies and hyper-growth phase

Wearable Has Many Market Segments

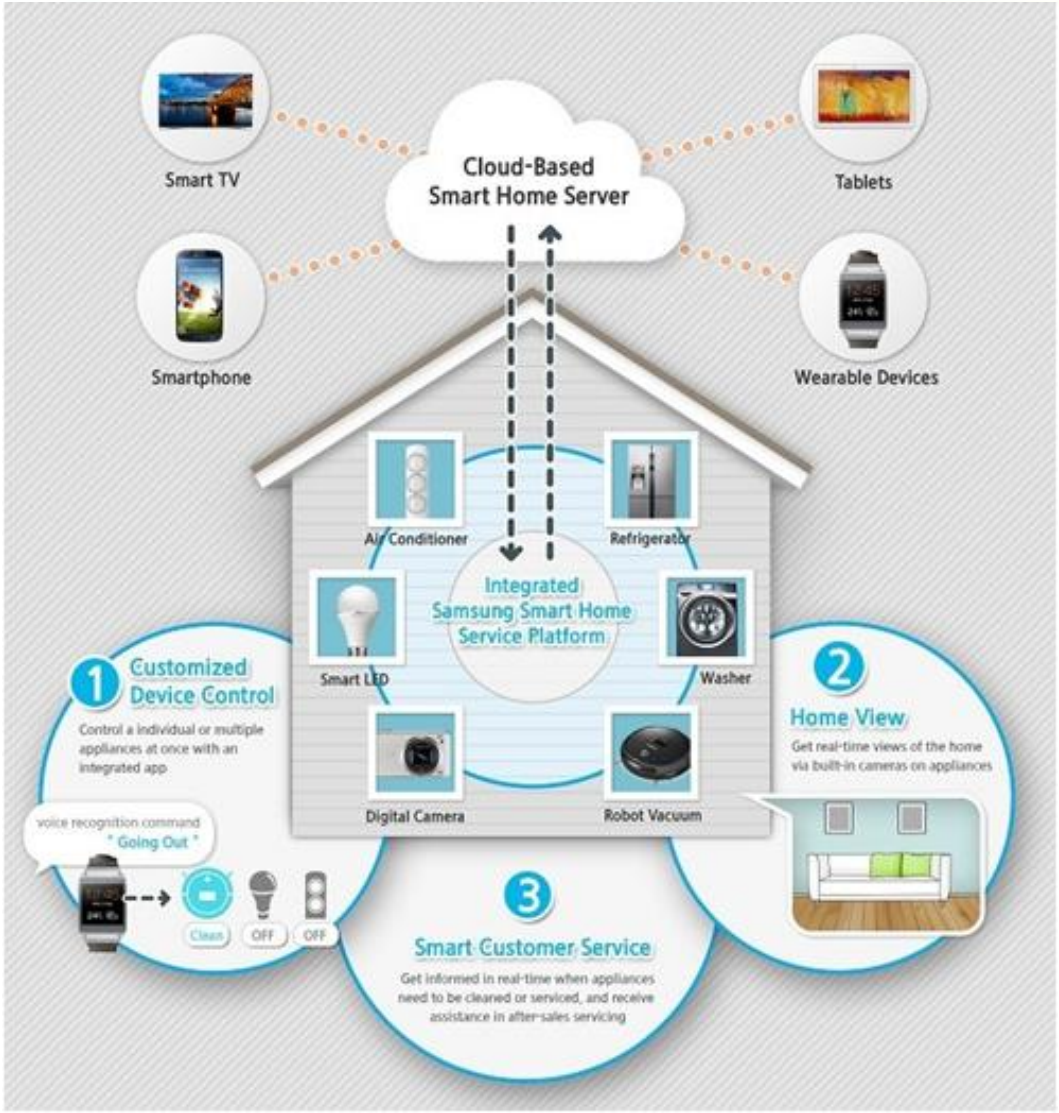


Current available Wearables

The Internet of Things (IoT)

- Increasing number of electronic and electrical devices will be connected to the Internet, wearable is no exception

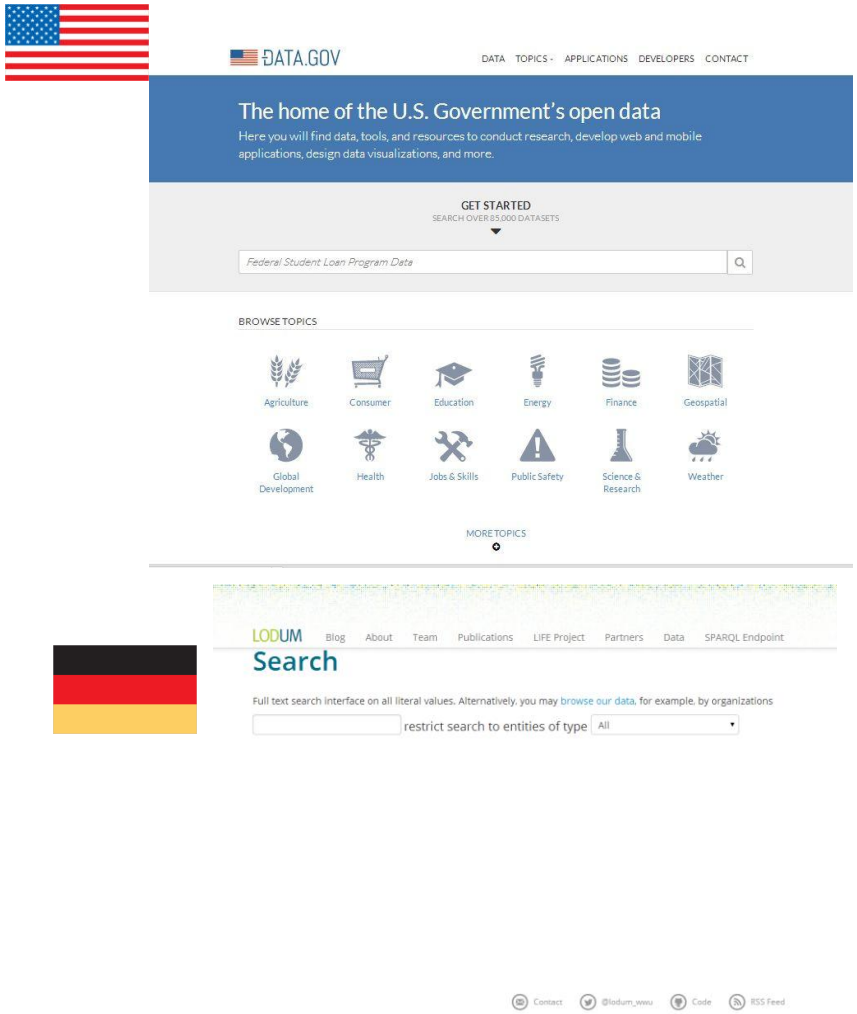
Wearable, IoT and the Cloud

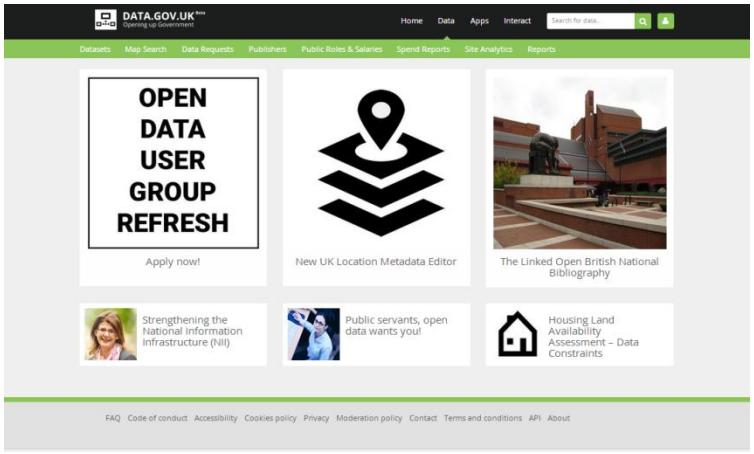


Wearable and the Cloud

- Wearables generate huge amount of sensor data, however, most wearables do not have sufficient power for local processing of the data
- Most sensor data are not meaningful until they are aggregated or combined with other sets of data
- Most wearables do not have sufficient storage and rely on data being stored in other devices or the cloud
- Data analytics and the cloud enables a continual, fee-based business model for wearables

Open Data from Various Countries





US Open Data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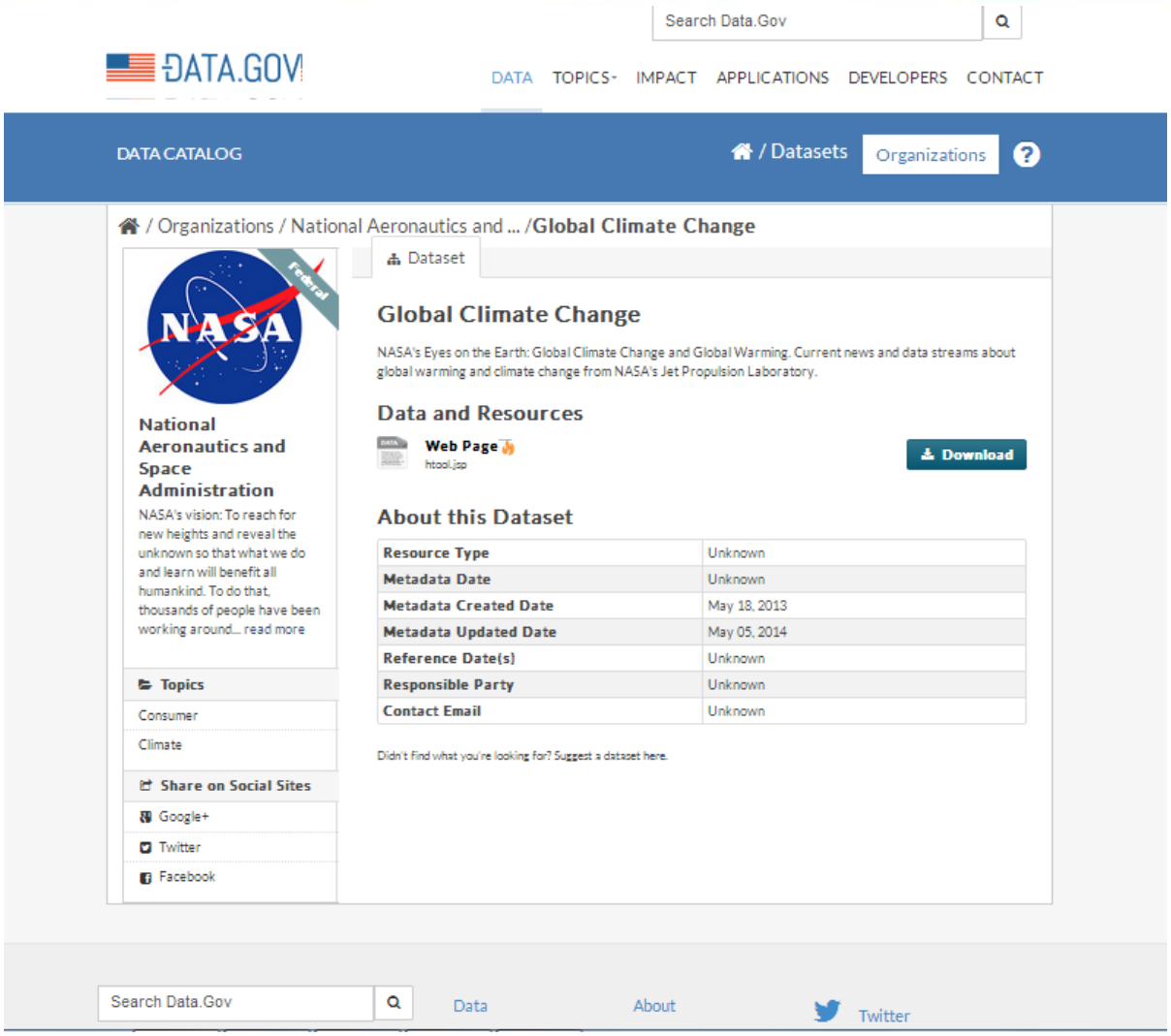
US Open Data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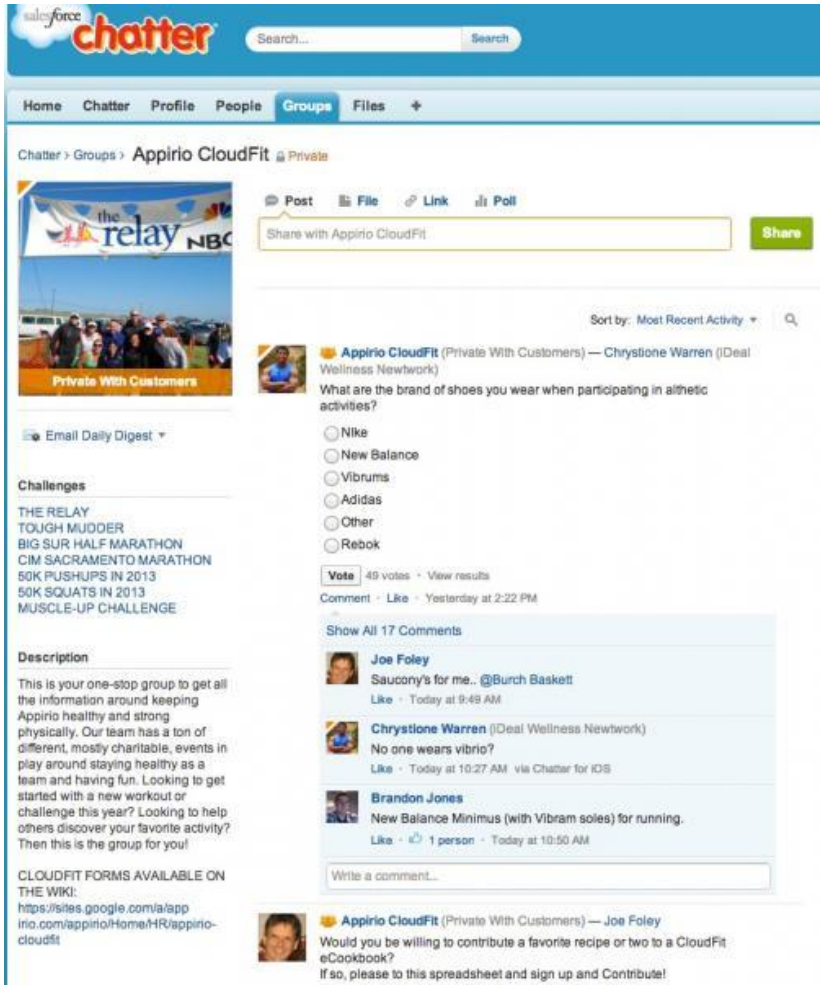
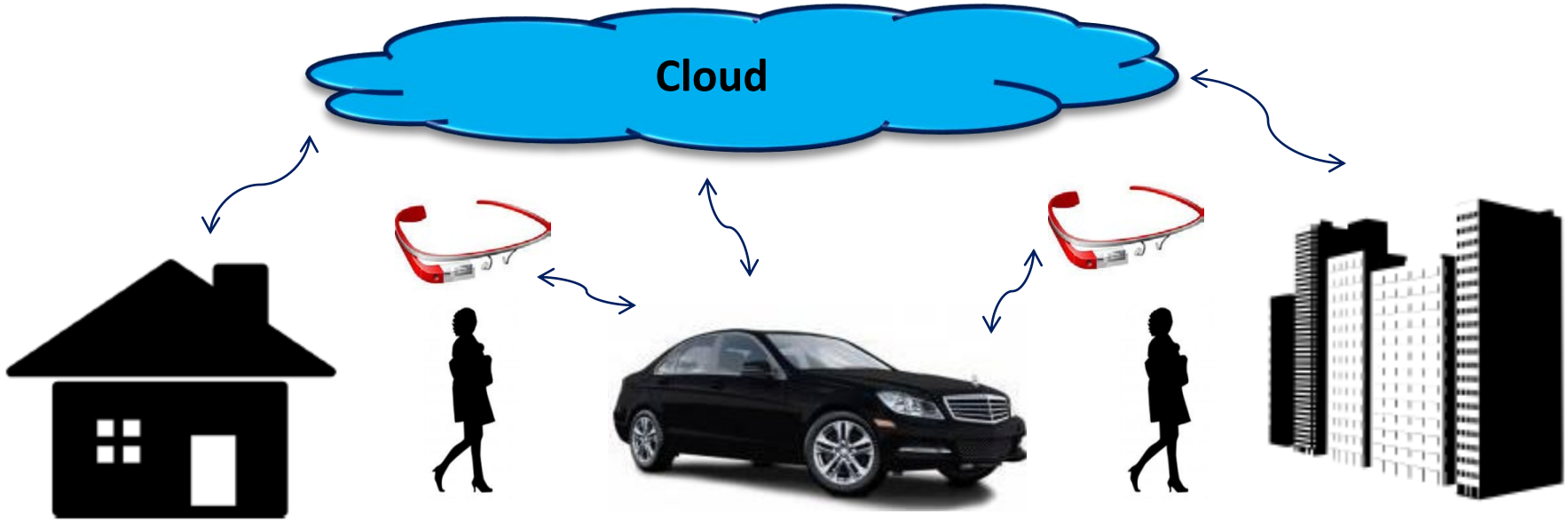
Appirio CloudFit Program with Jawbone



- 200 employees of Appirio were given Jawbone fitness bands
- Teams and competitions are set up between work groups or between offices in different regions of the world.
- Aggregate user data as well as tie corporate information into the Jawbone dashboard
- Appirio got a credit from its insurance company that covered the cost of the UP bands as well as the personal trainer.

Door-to-Door with Google Glass by Mercedes -Benz



User selects a destination on Glass at home

Glass gives user walking directions to the car

User gets in the car & use car Navi to drive to selected destination

Once arrived, user exits the car & Glass gives user walking directions to the door of her final destination

Brand Specific Wearable

Disney's MagicBand is a battery assisted **RFID** tag allows you to:

- Unlock the door of your Disney Resort Hotel room
- Enter theme and water parks (with valid admission).
- Check in at FastPass+ entrances.
- Connect Disney PhotoPass images to your account.
- Charge food and merchandise purchases to your Disney Resort hotel room (only available during your hotel stay).

Wearable GPS Tracker for Kids

TINITELL - Wristphone for kids

- 2G GSM SIM card for connectivity, to power the voice calls and GPS tracking
- Battery good for an hour's talk time on a single charge or seven days on standby
- It's also water resistant and sandbox proof, to ensure it's robust enough for outdoor child's play

Better Intelligence with Sensor & the Cloud

Propeller Health, *a Wisconsin company that has developed a Bluetooth sensor with GPS that attaches to most inhaler to help people with asthma do a better job tracking and controlling the chronic respiratory disease.*

Video

Summary

- Unlike, smartphones and tablets with standardized form factors, wearables will come in many shapes and forms due to its diverse markets
- Newer forms of wearable will be influenced by their vertical markets (e.g. fashion, sports, etc.)
- IEEE, UL and eco-system suppliers are leading efforts in device testing, regulations and security standards for wearables

Resources

- IEEE Consumer Electronics Society, SCV http://www.ieee.org/scvce
- CE Magazine articles *:

  " How Wearables Intersect the Cloud and the IoT" by Joseph Wei
  http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6844949

  Introducing Bluetooth Smart: Part 1: A look at both classic and new technologies by Joe Decuir
  http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6685914

  Introducing Bluetooth Smart: Part II: Applications and updates by Joe Decuir
  http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6776529
- Silicon Valley Wearable, IoT and Connected Car Meetup
  http://www.meetup.com/svwcdinv/

* CE magazine articles are available for downloadable for a fee or free of charge to IEEE CE members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Dziękujemy
Dėkojame
Ďakujeme
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Kiitos
Täname teid
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