How Wearables intersect with the Cloud and the IoT

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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

1999: Steve Mann’s Eyetap device

2000’s: Pedometer

2002: Xybernaut Poma

2004: Microsoft launches SPOT Smartwatch

2008: Google Glass

2010: Vuzix STAR 1200

2011: Fitbit Ultra

2011: Jawbone UP

2012: Pebble

2012: Nike Fuelband

2013: Samsung Galaxy Gear

2011: Jawbone Ultra

2012: Nike Fuelband

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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

# of Times Typical User Checks Phone per Day

- Messaging: 23
- Voice Call: 22
- Checking Time: 18
- Music: 13
- Gaming: 12
- Social Media: 9
- Camera: 8
- Alarm: 8
- News & Alerts: 6
- Calendar: 5
- Web: 3
- Search: 3
- Other: 14

Source: Tomi Ahonen Almanac 2013. ‘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.
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
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 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
The home of the U.S. Government’s open data
Here you will find data, tools, and resources to conduct research, develop web and mobile applications, design data visualizations, and more.

GET STARTED
SEARCH OVER 55,000 DATASETS:

Federal Student Loan Program Data

BROWSE TOPICS

Agriculture  Consumer  Education  Energy  Finance  Geospatial

Global Development  Health  Jobs & Skills  Public Safety  Science & Research  Weather

MORE TOPICS
Global Climate Change

NASA's Eyes on the Earth: Global Climate Change and Global Warming. Current news and data streams about global warming and climate change from NASA's Jet Propulsion Laboratory.

Data and Resources

About this Dataset

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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
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
**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.
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


CE Magazine articles *:


* CE magazine articles are available for downloadable for a fee or free of charge to IEEE CE members
Thank You