IoT Cloud, All Seen Alliance

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• 6.7B devices in 2010 → 50B devices in 2020
• Revenue : 3 times bigger than Internet
• Many different segments
  – IT / Networks
  – Security / Public safety
  – Retail
  – Health care / Life Science
  – Transportation
  – Industrial
  – Consumer / Home
  – Energy
  – Building
What is important for IoT?

- Mobile and Web Applications
- Interoperability among devices
- Opening API to 3rd Party
- Security / Access Control
- Analytics, Big data
- Collaboration with existing services
Enabling the Internet of Everything

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Interoperability

The ability to intelligently share across electronic devices and systems regardless of product brand – is the key to advancing this new level of connectivity and enabling real technology transformation.
manufacturers having their own clouds is useful

predictive maintenance
ordering parts & service
control while away
and many other things
But for home’s things to interact with one another...

- Blink lights for fire
- "Daddy is home" message
- Appliances interacting
- And many other things
clouds are a “Basket of Remotes” problem

don’t talk to each other

each uses different protocols

Issues of trust

and many other problems
privacy issues and additional security risks

exposes the home

varying security

hacked baby monitors?

slow response, unreliable

and many other problems
AllSeen’s AllJoyn proximal IoT

discovery
security
peer-to-peer
Immediate
control
What is the AllSeen Alliance?

• Open source IoT framework for widespread adoption of products, systems and services for Internet of Everything

• Enables hardware manufacturers and software developers to create interoperable products that can discover, connect and communicate directly with other devices, systems and services regardless of brand.

• 44 members and growing
AllSeen Alliance Mission

To enable widespread adoption and help accelerate the development and evolution of an interoperable peer connectivity and communications framework based on AllJoyn for devices and applications in the Internet of Everything.

Computing devices  Consumer goods and appliances  Home  Auto  Industrial
The Alliance and Objectives

Alliance
- Open Source Community
- Industry leaders
- Tech/software innovators

Enable Vibrant Ecosystem

Evolution of AllJoyn

Evangelize

Contribute & Use
About the AllJoyn Open Source Project

AllJoyn is an open source project that provides a universal software framework and core set of system services that enable interoperability among connected products and software applications across manufacturers to create dynamic proximal networks.

| Core building blocks and services to address discovery, connectivity and management of ad-hoc proximal networks among nearby devices |
| All the benefits of Wi-Fi security |
| Interoperable across leading OS and embed devices like small home appliances that don’t run an OS |
| Devices can react regardless of how they’re connected – Wi-Fi, Ethernet, Powerline |
| Able to react to dynamic, ad-hoc network changes |
| Developer SDK |
AllJoyn Software Framework: High-level architecture
A comprehensive software framework lets devices and applications communicate

- AllJoyn Service Frameworks
  - Interoperable, cross-platform modules for common IoE functionality

- AllJoyn Core Framework
  - Fundamental building blocks

- AllJoyn Thin Client
  - Supports ultra low memory embedded devices
Thank You!

Website: http://www.allseenalliance.org

Twitter: @AllSeenAlliance
Role of IoT Cloud

• Testing devices
• Enabling mobile and web applications
  – Access from anywhere
  – Security
• Opening API for 3rd Party
  – Virtualization for each different devices
  – Access Control Interoperability among devices
  – Different Standards, proprietary implementations
• Collaboration with existing services
  – Social network
  – Weather, Traffic, etc
• Analytics, Big data
  – End user usage
  – Data from Sensors
Enabling Services (Mobile, Web)

- Device Discovery
- Device Registration /ACL
- User Management
- Data Management
- Push Notifications
- Device Control message
- Connection to Web services
- Analytics

Mobile/web apps interacting thru these Cloud APIs

Common APIs
Virtualization APIs

Web Services

IoT Cloud

Message from Device

Router

Data

Control

Router

TV

SDK

SDK

Device

TV

APIs

Virtualization

User Management

Data Management

Push Notifications

Device Control message

Connection to Web services

Analytics

Facebook

YouTube

Yahoo!

The Weather Channel

City of San Jose

Capital of Silicon Valley

SDK

Web Services

Message from Device

Router

Data

Control

Router

TV

SDK

Web Services

Message from Device

Router

Data

Control

Router

TV
Analytics for Devices

Big Data Analytics

Analytics

Analytics Console
- Device Info
- Device Usage
  - Events, Control, Msg
- Data from sensor
- Geo Information
- API calls

Router

Router

Router

Router

TV

TV

TV

TV