Mobility in Smart and Connected World

Hardik Bhatt
Director, SCC IoE Strategy and Global PPPs, Cisco
The Only Constant is Change

Technology Transitions

- Mobility / Video
- Cloud
- New Breed of Apps
- Internet of Things
- Big Data & Analytics

Changing Role of IT

- Growth & Productivity Opportunities
- New Business Models
- User Experience & Expectations
- Globalization
- Security & Regulatory Compliance

Business Implications
Evolution of the Internet

Connectivity
Digitize Access to Information
- Email
- Web Browser
- Search

Networked Economy
Digitize Business Process
- E-commerce
- Digital Supply Chain
- Collaboration

Immersive Experiences
Digitize Interactions (Business & Social)
- Social
- Mobility
- Cloud
- Video

Internet of Everything
Digitize the World
- Connecting:
  - People
  - Process
  - Data
  - Things

Intelligent Connections
Internet Growth Occurring in Accelerating Waves

- "Fixed" Computing
- Mobility / BYOD
- Internet of Things
- Internet of Everything

1995 2000 2011 2020

- 200M
- 10B
- 50B things

Source: Cisco IBSG, 2012
Increasingly Relevant and Valuable Connections

Value of Internet of Everything comes from:

- **Connections**
  - Availability, comprehensiveness, accuracy, timeliness, relevance, and richness

- **Intelligence**
  - Convergence
  - Visibility
  - Security

- **People, Data, Things**
  - Context awareness, increased processing power, greater sensing abilities

Source: Cisco Internet Business Solutions Group, 2012
Cisco Pilots Developed Over Last 5+ Years... by 2016

Smart + Connected Communities
- $1.1T IoT Value at Stake Globally
- Education, Energy, Sports & Entertainment, Safety, Healthcare, Real Estate, Government
- 9 Iconic Projects / 100s of Projects

Connected Energy
- $670B IoT Value at Stake Globally
- BC Hydro... Vancouver
- 1,700 Poletop Routers
- 1.6M Smart Meters

Connected Industry
- 1.4T IoT Value at Stake Globally
- 13B B-to-B Connections by 2015
- Auto Plant... 50K IP-ready Devices
- Connected Vehicles, Defense, Industrial/M2M, Transportation
Intelligent Networks Transform the Delivery of Citizen Services

Integrated Operations Centre

Citizen Services Menu

Source: Intel
Our Iconic S+CC Engagements

Toronto Waterfront
Rio de Janeiro
Barcelona
Lake Nona

Songdo
London
China
Lend Lease (London and Sydney)
Skolkovo (Moscow)
Smart Work Centers: The Workplace of the Future

**Amsterdam**
- 120 Smart Work Centers Today
- $13 Mn Savings in Leasing Costs
- 3428 Tons Reduction in Carbon Emissions

**South Korea**
- 450 Smart Work Centers by 2015
- $1.3 Bn Savings in Transit Expenses
- 1.1 Mn Tons Reduction in Carbon Emissions

Social, Economic and Environmental Components

- **Mobile**
  - Parking
  - Individual Work Spaces
- **Social**
  - Communal / Lounge Areas
  - Child Day Care, Restaurant, Collaboration Rooms
  - Social Programs, Networking
- **Visual**
  - Function Room
  - Traditional Office Space
- **Virtual**
  - TelePresence
  - Virtual Education and Healthcare Services
Cisco’s Role

Industry Innovation: Business Processes and Operations

- B2C
- Smart Cities
- Connected Home
- Energy
- Industries
- Safety and Security

Sensors and Devices
Networks and Protocols
Data Analytics
Control Systems
Cisco’s Role

IoT Connectivity Platform

- Industry Innovation: Business Processes and Operations
- Sensors and Devices
- Networks and Protocols
- Data Analytics
- Control Systems
Cisco’s IoT Connectivity Platform

Manage Private and Public Networks
Enable Service Providers’ M2M Services
Connect to All Things, Even Unintelligent Ones
Secure the Infrastructure
Compute Data In Motion
The Platform for Partner Ecosystem

IoT Connectivity Platform
Internet of things for smart cities starts with parking!

Connected City Network and Infrastructure

Parking Sensors and Applications
San Carlos and San Mateo

City of San Mateo, CA
- Phase I: 200 sensors in Q4 2012
- ParkSight Applications
- Guided Enforcement
- ParkerMap and Parker mobile

City of San Carlos, CA
- Phase I: 200 sensors in Q4 2012
- ParkSight Applications
- Guided Enforcement
- ParkerMap and Parker mobile
- Cisco network integration
IoE for S+CC: a Multi-Layered Architecture

Application/Services Enablement
- Event Processing
- Notification/Alarm
- Reporting/Trending
- Billing
- Service Assurance
- Publishing

Resources
- Applications Catalog

Security
- Unified Collaboration

Public Apps
- Smart Parking
- Smart Transportation
- Open Data Portal
- Government Services

Private Apps
- Compute/storage/network

Compute/storage/network

API/SDK

API/SDK

Data Collection Service

City Transport/Access/Network Services

Data Collection Service

Waste Management
Risk Management
Operation Center
Energy/Water Management
Sensor Observation
Sensor Alarm

Sensors
Vehicles
Spaces (street, road, building)
Infrastructures (rail, light, gas, water, bridges)
Multimedia Kiosks/PoDs
People

Waste Management
Risk Management
Operation Center
Energy/Water Management
Sensor Observation
Sensor Alarm

© 2010 Cisco and/or its affiliates. All rights reserved.
City of Nice

- The “Lighthouse City”: Nice Metropolis joins aspiring global cities as smart city “living lab” – part of its larger initiative to improve overall public life.
- In the initial phase, the pilot will take the form of four city services over a specific zone:
  - Smart Parking
  - Smart Lighting
  - Waste Management
  - Environment and Air Monitoring.
- Real experience: the PoC to go LIVE in the streets of Nice on the occasion of the “Innovative City Convention” (June 17th 2013)
- Strategic partners include Urbiotica, a sensor network provider, and Think Global for the middleware embedded into Cisco 'smart' routers that act as an overlay open interface between data sources (things, people) and Apps.

- Nice City: 5th French city, 2d national airport
- Nice Metropolis: 1st Metropolis of France, 46 towns, 550 000 inhabitants – Christian Estrosi, Mayor of Nice & President of Nice
IOExceptions: end-to-end solution
Phase 1: Information collection

Wireless Sensors

• The wireless sensors family is provided by Cisco Partner ; and offers the following benefits:
  - Adapted to any vertical managed by the platform
  - Great autonomy (8-10 years)
  - Ergonomic and easy to deploy on the public road network
  - Low maintenance, as intelligence is positioned at the level of the information system

Powered Sensors

• Powered sensors require power supply
• They are deployed on the candelabra of the public lighting network
• They can involve multiple types of devices:
  - Public lighting system management
  - Smart cameras
  - Speed radars
  - Speakers
  - Etc …
IOE4Cities: end-to-end solution

Phase 2: Information transport & analysis

- Parking & traffic
- Prevention of natural risks
- City lighting
- Pollution/Environment
- Waste management
- Smart water meters

Communications infrastructure deployed on the street lighting network
(Wireless sensors connectivity, Fiber optic, Mesh WiFi & PLC for Intelligent Urban furniture)

Power Supply: Distribution Network or lighting

Data Collection Service provided by
(deployed in diverse “smart” routers)

Business applications provided by each vertical provider: open and transparent architecture

Serve any kind of application

Wireless sensor
Powered sensors
Street Smart Devices
IOE4Cities: end-to-end solution

Phase 3: Information Display

Smart Street Furniture

- The solution allows multiple forms of information display
- It adapts to the needs and requirements of each vertical managed by the platform
- Examples of smart street end-points:
  - Multiservice kiosk (parking, public info…)
  - Payment end-point
  - Car electric Charge (fast, semi fast, slow)
  - City digital signage
  - Road digital signage

Smart Citizen Devices

- The solution is completed with a series of smart phone apps and citizen services
- Some provided by EzPark displays real time information of traffic, environmental quality, parking spots availability … - EzMove suggests public transports
- Some provided by the local eco-system (open innovation): any start up can apply for a specific use of the platform and create its own service, eg, promotional coupons, social traffic network…
How Can We Enable...

...the creation of a new industry

- Visionary Leadership
- Global Open Standards
- Smart Regulation
- Public Private Partnerships
- New Ecosystem

& People
Thank you.
Amazing Things Happen When You Connect the Unconnected

99% of the World is Still Not Connected