ASIA-PACIFIC TELECOMMUNITY

15th APT Policy and Regulatory Forum (PRF-15))
3-5 August 2015, Singapore

Document
PRF-15/INP-32

3 *August*2015

AT&T Global Network Services Hong Kong Limited

Global IoT Solutions: Societal Benefits and Business Models
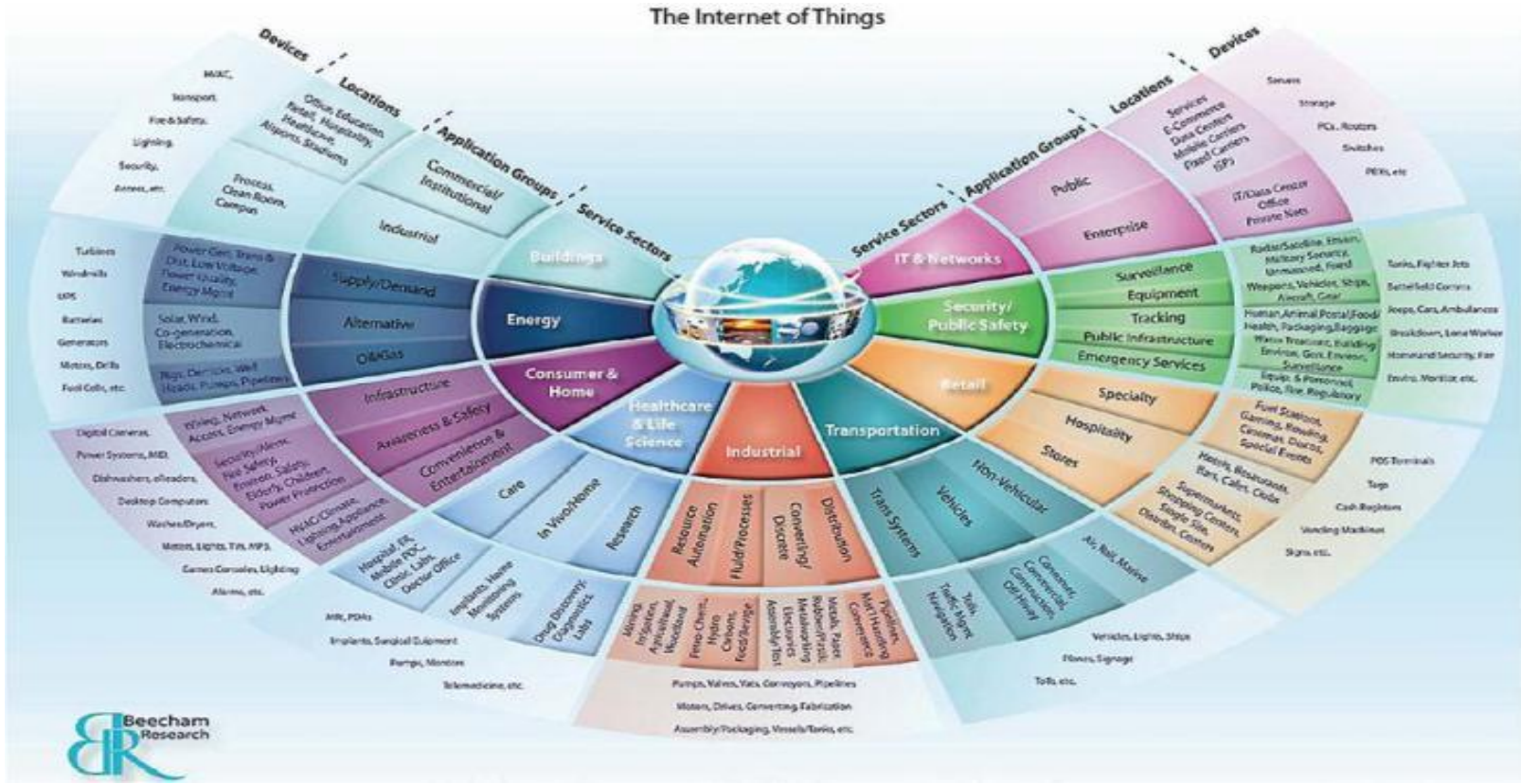
Contact :

Tel:
Email:

Global IoT Solutions:
Societal Benefits and Business Models

APT Policy & Regulatory Forum August 2015

Chris Perera
Senior Director, International External Affairs
AT&T Asia Pacific
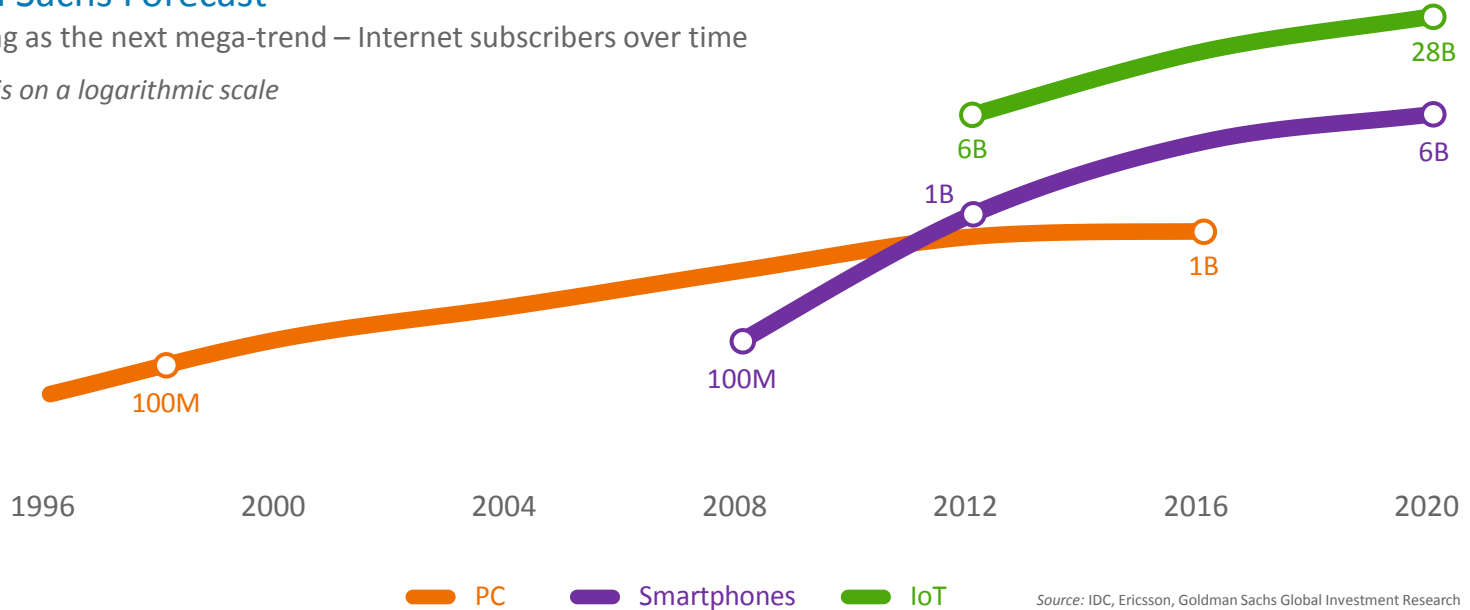
IoT Driving Innovation in Multiple Industries

The Internet of Things

Beecham Research

Billions of devices connected in the Internet of Things

Goldman Sachs Forecast

IoT emerging as the next mega-trend – Internet subscribers over time

Note: y-axis is on a logarithmic scale

IoT: 6B → 28B
Smartphones: 100M → 1B → 6B
PC: 100M → 1B

1996 · 2000 · 2004 · 2008 · 2012 · 2016 · 2020

— PC   — Smartphones   — IoT

Source: IDC, Ericsson, Goldman Sachs Global Investment Research

IoT and M2M Unlock New Business Value

Top 5 Reasons to Implement an IoT Strategy

Streamline operations

Reduce costs

Save time

Increase visibility

Increase or protect revenue

IoT Benefits: 1% savings from efficient IoT solutions could save billions in operational costs*

$30B
fuel cost saving in aviation industry

$66B
fuel cost saving in gas powered fleets

$63B
productivity improvement in healthcare

$90B
reduction in Cap X in oil & gas exploration and development

$27B
productivity improvement in rail industry

* Projected savings are based on 1% efficiencies/savings

Source: Industrial Internet: Pushing the Boundaries of Minds and Machines, Peter C. Evans and Marco Annunziata, November 26, 2012

AT&T Industrial & Consumer IoT: Connecting people, processes and assets

Consumer IoT

- Stand alone assets
- Less time critical
- Human-centric

Industrial IoT

- Machine-to-Machine
- Mission critical assets
- Integrated control and information

AT&T investing in the leadership of IoT

The AT&T network has over 22 million M2M connected devices

The AT&T Single Global M2M SIM, delivers roaming access in over 200 countries with over 500 carriers networks

GSM location tracking abilities in more than 100 countries

"AT&T Blows Away Connected Device Numbers in Q3 2014:"[1]

"... 3- 4 times that of the competition"

[1] James Brehm & Associates, October 2014

Global Intermodal Container Tracking

- An Industrial IoT Solution enabled GPS location monitoring of containers moving across the globe and routes departing from major ports worldwide

- Monitor temperature of refrigerated container anywhere in the world from one central monitoring center.

- Solution - Container, Vessel System, Platform – Communication & Back End Application

Results

- Reduced labour costs
- Decreases losses
- Theft prevention
- Risk management and mitigation
- Audit efficiency

AT&T Cargo View

With FlightSafe®

Cargo View – *High Asset Cargo Monitoring Solution*
with FlightSafe®

23 million Tons of air cargo shipped annually representing **$928 Billion** of Merchandise

25.8 million Mishandled bags
$2.5B Cost Annually

Parked at Gate	Taxi and Take Off	Climb	Cruise	Descent	Taxi and Take Off	Parked at Gate

Automatic airplane mode turns radio off and on
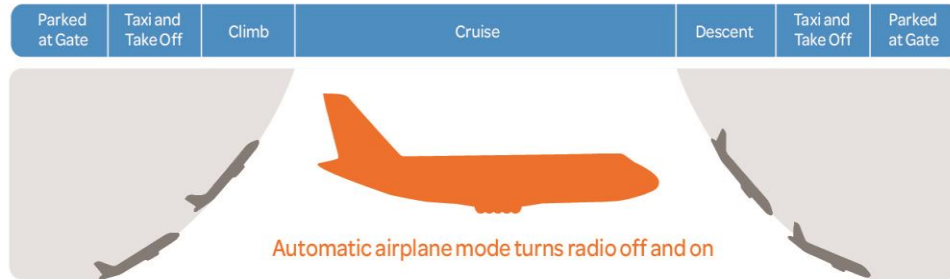
- Global near Real-Time Tracking & Monitoring Service
- AT&T Cloud-hosted & secured Cargo View application
- Automatic Airplane Mode with FAA Compliance
- Exclusive – certified by 23 Airlines
- Tracking on land or air

Simply PULL from the rack and pack

Return to origin FAST using reverse logistics

Storage Rack
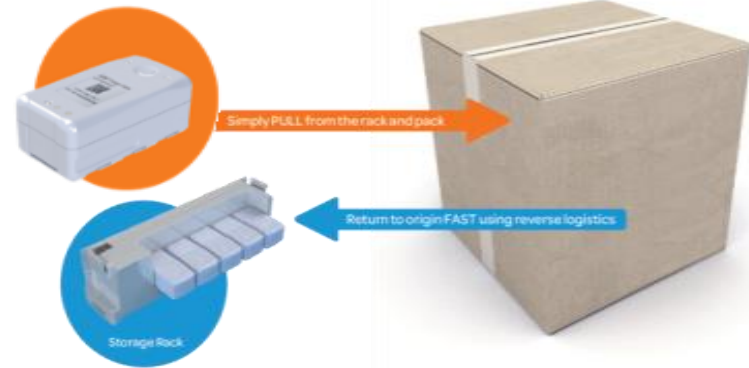
Uses Sensors to Detect:
- Location
- Pressure
- Light
- Temperature
- Shock

Rise of the Connected Machines & Data - *Going beyond Technology*

What do we need to consider

Business Model

Globalization

Regulatory & Compliance

Ecosystem Strength

Case Study

- **Biggest Growth inhibitors to the Industry & our business**
- **ROI Model**

Global IoT Integrated Solutions: More than Connectivity

Mobile Networks
- Global Cellular Coverage
- WiFi
- Satellite

Mobile Devices

IoT Packaged Applications

AT&T M2M Foundry
- Agile Development
- Proof of Concept
- Beta Testing
- Commercialization

Professional Services
- Consulting
- Application Development
- Staging / Kitting / Logistics
- Managed / Lifecycle Services

Data Management
- Cloud
- Storage
- Analytics

Application Development Platform

Service Management
(Provisioning, SIM management)

Single SIM
that can operate Globally

2,100+
Approved Devices

22 Million
Devices on network

Manufacturer Perspective:
IoT Platform Requirements for Economic and Operational Viability

Streamline Manufacturing

Embed single SIM in product.

Manufacturing site test for deployment anywhere in the world.

Global Distribution

Track device location and condition pre sale when shipped to and from warehouse.

Test before shipping.

Consistent Worldwide Operations

Build once, works everywhere

Automatically activate SIM and initiate billing upon sale.

Upgrade software and security on one platform worldwide.

Minimize points of vulnerability.

Manage through a single service device platform.

Not Using International M2M Roaming

o Restriction on extraterritorial use of numbers would stifle M2M roaming
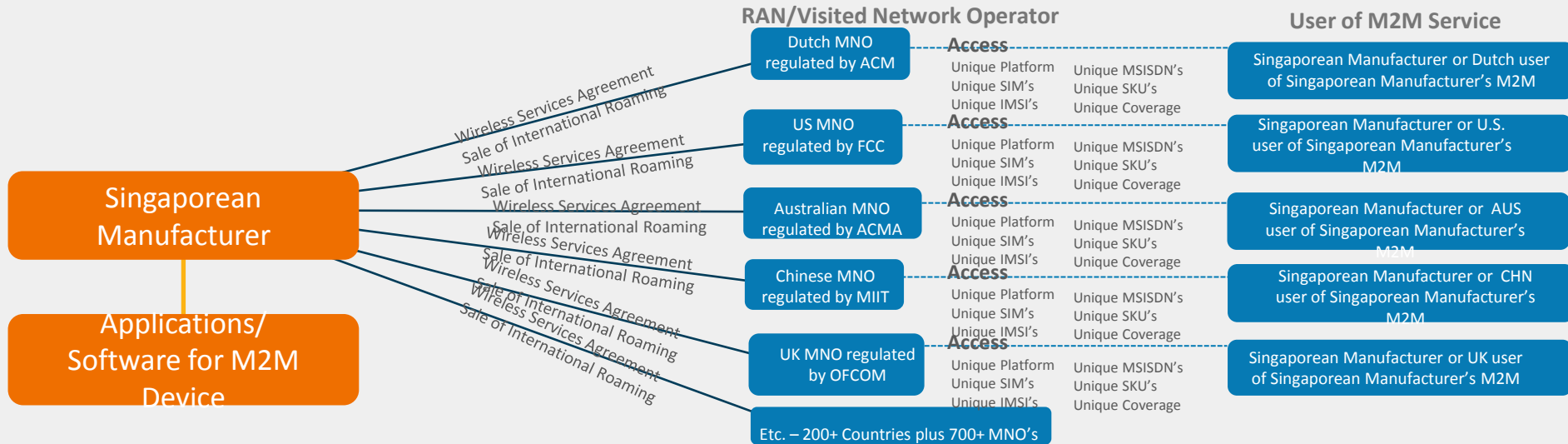o Manufacturers would need to build between 200-700 platforms to have global coverage
o Each platform costs between $500,000 to $1 million

In Singapore

Outside Singapore

RAN/Visited Network Operator

User of M2M Service

Singaporean Manufacturer

Applications/ Software for M2M Device

Wireless Services Agreement
Sale of International Roaming
Wireless Services Agreement
Sale of International Roaming
Wireless Services Agreement
Sale of International Roaming
Wireless Services Agreement
Sale of International Roaming
Wireless Services Agreement
Sale of International Roaming
Wireless Services Agreement
Sale of International Roaming

Dutch MNO regulated by ACM

US MNO regulated by FCC

Australian MNO regulated by ACMA

Chinese MNO regulated by MIIT

UK MNO regulated by OFCOM

Etc. – 200+ Countries plus 700+ MNO's

Access
Unique Platform   Unique MSISDN's
Unique SIM's   Unique SKU's
Unique IMSI's   Unique Coverage

Access
Unique Platform   Unique MSISDN's
Unique SIM's   Unique SKU's
Unique IMSI's   Unique Coverage

Access
Unique Platform   Unique MSISDN's
Unique SIM's   Unique SKU's
Unique IMSI's   Unique Coverage

Access
Unique Platform   Unique MSISDN's
Unique SIM's   Unique SKU's
Unique IMSI's   Unique Coverage

Access
Unique Platform   Unique MSISDN's
Unique SIM's   Unique SKU's
Unique IMSI's   Unique Coverage

Singaporean Manufacturer or Dutch user of Singaporean Manufacturer's M2M

Singaporean Manufacturer or U.S. user of Singaporean Manufacturer's M2M

Singaporean Manufacturer or AUS user of Singaporean Manufacturer's M2M

Singaporean Manufacturer or CHN user of Singaporean Manufacturer's M2M

Singaporean Manufacturer or UK user of Singaporean Manufacturer's M2M
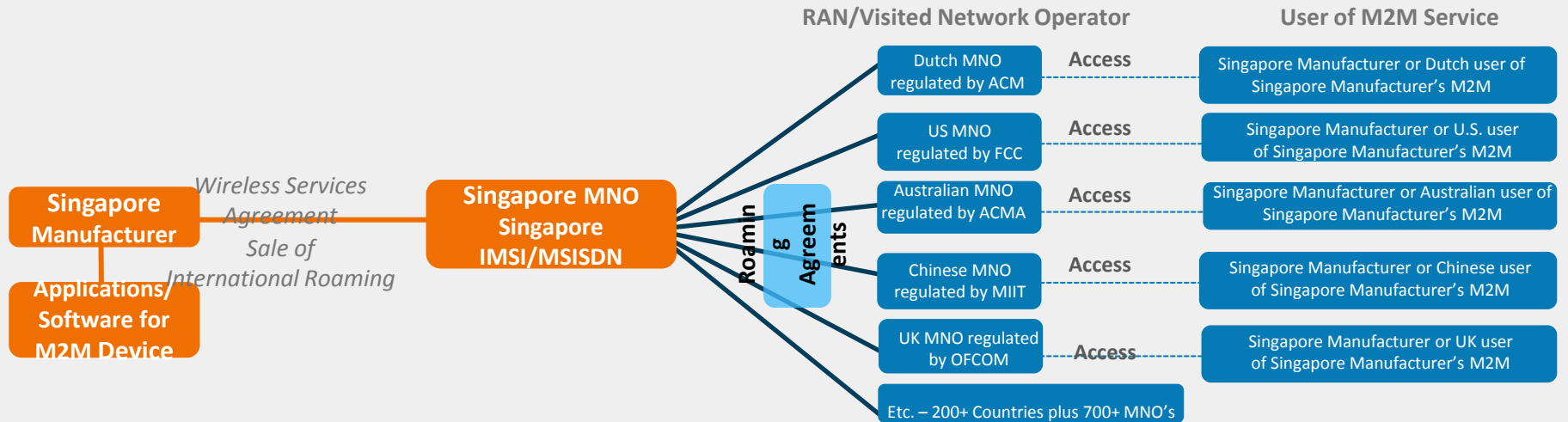
Using International M2M Roaming

One agreement makes global expansion economically and logistically viable

Eases expansion and provides predictability

Critical for MNC and SME alike, both exporting and importing from Malaysia

In Singapore

Outside Singapore

RAN/Visited Network Operator

User of M2M Service

Singapore Manufacturer

Wireless Services Agreement

Sale of International Roaming

Applications/ Software for M2M Device

Singapore MNO Singapore IMSI/MSISDN

Roaming Agreements

Dutch MNO regulated by ACM

Access

Singapore Manufacturer or Dutch user of Singapore Manufacturer's M2M

US MNO regulated by FCC

Access

Singapore Manufacturer or U.S. user of Singapore Manufacturer's M2M

Australian MNO regulated by ACMA

Access

Singapore Manufacturer or Australian user of Singapore Manufacturer's M2M

Chinese MNO regulated by MIIT

Access

Singapore Manufacturer or Chinese user of Singapore Manufacturer's M2M

UK MNO regulated by OFCOM

Access

Singapore Manufacturer or UK user of Singapore Manufacturer's M2M

Etc. – 200+ Countries plus 700+ MNO's

Partner with us at the AT&T Foundry to merge industry expertise with leading technology

Thought Leadership

- Open and collaborative

- User-centric design

- Everything on wheels

- Built for innovation and speed

- Multiple locations:
  - Palo Alto, CA
  - Plano, TX
  - Atlanta, GA
  - Ra'anna, Israel

Thank you.

Chris.Perera@intl.att.com

Rethink Possible®