CONNECTED ENTERPRISE – ROLE OF AI and IOT

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Enterprise IoT is fundamentally changing the business of companies

- **Products**
  - Smarter Products
    - Embedded and enhanced processing power
    - Greater data capabilities
    - Bi-directional communications

- **Isolated**
  - Connected
    - Pervasive coverage and greater bandwidth
    - Multiple technologies
    - Real time communications

- **Operational Technology**
  - OT + IT Convergence
    - Applications and data
    - Integrated/advanced analytics
    - Shift in traditional product design

- **Service Innovation**
  - “Servitisation”
    - Products designed with integrated services
    - New business models

Competitive Advantage
IoT solutions can span across different network technologies. AT&T offers a multi-network approach to provide the flexibility and agility customers need to optimize their IoT solutions.
Global SIM – Value Proposition

Single SIM Simplicity

Global wireless IoT connectivity (2G/3G/4G) in all regions of the world
  • Best-in-class roaming partners with optimized national coverage
  • Access to hundreds of mobile network operators worldwide

Integrated compatibility with global networks
  • Flexible solutions, best-in-class services
  • Designed and built to the GSMA specifications for remote provisioning

Operational and financial efficiency
  • Reduces the need for multiple device SKUs
  • Eliminates need for customers to have agreements in each market
  • Helps improve logistics, operations, and time to market

AT&T Control Center streamlines device deployment
  • Agile and scalable – supports massive deployment of IoT solutions
  • Global service management platform with advanced diagnostic tools, smart process automation, and machine monitoring
  • Flexible global billing meets local regulatory and legal requirements
  • Global customer care and support
# Security

### Pillars of IoT

#### Endpoint Security
- Establishing trust and control of IoT devices
  - Global SIM for bi-directional device & network authentication
  - Firmware/Software updates over the air (FOTA/SOTA)
  - Enterprise Mobile Management (more complex devices)

#### Network Security
- Highly secure connectivity from endpoint to backend with network-based controls
  - Default configuration: Private IP address, Peer-to-Peer block
  - End-to-end private tunnel & closed loop communication path (Private APN/AT&T VPN/AT&T NetBond for IoT)
  - Blacklist/Whitelist for Voice/SMS/IMEI

#### Data/App Security
- Securing workloads and applications in the cloud and/or premise
  - Industrial IoT (SCADA/ICS): Bayshore IT/OT Gateway
  - Firewalls: network and premise-based
  - DDoS Defense

### Four Layer Approach to Securing the Internet of Things

- **Endpoint Security**
  - Establishing IoT device trust and control

- **Network Security**
  - Highly secure E2E connectivity
    - Cellular & non-cellular

- **Data/Application Security**
  - Protecting data in the cloud and premise

- **IoT Security Consulting**
  - IoT Security Consulting
  - IoT Security risk assessment
  - Standards compliance
  - Penetration testing
  - Secure network architecture

### Threat Management
- Monitoring customer assets and network for proactive threat detection and response
  - IoT Anomaly Threat Detection (POC)
  - AT&T Threat Manager Log Analysis

### IoT Security Consulting
- Ongoing security validation and risk assessment of IoT ecosystem
  - IoT Security Consulting
  - IoT Security risk assessment
  - Standards compliance
  - Penetration testing
  - Secure network architecture

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AT&T By The Numbers (2Q17)

- 147M Mobility Subscribers
- 25 Number of connected car OEMs
- 200+ Countries & territories via roaming
- 264,000 Worldwide employees in 60 countries
- 2.5M Connected fleet vehicles
- 1.7M Asset management devices
- 34M Connected IoT devices
- Relationship with a single global carrier with connectivity to over 500 carrier networks
- 140 Years serving customers
- 8 Nobel Prizes
- 14.6M Connected cars
- 36 Internet data centers across the globe
- 400+ Headcount of personnel focused on IoT
- 2.5M Connected fleet vehicles
- 14.6M Connected cars
- Internet data centers across the globe
- 36

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“...anything that is not eatable and costs more than $50 will have a sensor in it”

Andrew McAfee