1. M2M in the context of IoT, Present Challenges
2. Tech Mahindra case example – IoT on the road
3. Tech Mahindra IoT practice overview
M2M in the Context of IoT

Internet of Everything (IoE)
“Binging together people, process, data, and things to make networked connections more relevant and valuable than ever before”

Internet of Things (IoT)
“Physical objects are linked through wired and wireless networks”

Industrial Internet
“Integration of complex physical machinery with networked sensors and software”

M2M
“Technologies that allow both wireless and wired systems to communicate with other devices of the same type”

Reach (who/what is impacted by the concept)

Scope (what is being altered by the concept)

Virtual world

Physical world

Source: iot-analytics.com
Ideal M2M Solution

- Platform
- Device management
- Data Management
- Analytics
- Security
- ...

Internet Of Things

Medical & healthcare

Enterprise Mobility

Transportation & logistics

Remote Monitoring & Security

Energy & Utilities

Consumer & Smart Home

A representative concept, inspired by multiple sources
M2M Present Challenges

- Medical & healthcare
- Enterprise Mobility
- Transportation & logistics
- Remote Monitoring & Security
- Energy & Utilities
- Consumer & Smart Home

A representative concept, inspired by multiple sources.
Point of View – Present Challenges

- **Closed Options**
  - App specific, market specific, propriety SDKs, protocols, device specific …etc. Monolitic solutions,

- **Fragmented Market**
  - Lack of integration between enterprise system, devices, platforms ..etc
  - Software, hardware, protocols, all independent & different

- **Complex M2M development**
  - Multiple skills needed, HW, OS, Embedded, IT network, telecom ..etc,
  - Need for a common architecture and guidelines
Point of View – Enablement required from **OneM2M**

- Interconnection between platforms - *Scaling beyond a single solution*
- Many to Many rather than One to One – *Decoupling M2M device data*
- Flexibility in device options – *Cost effective, agile, and low power hardware platforms*
- Tools for open and development community – *IT and developer centric frameworks & architecture*
- Efficient bidirectional – *Adoption of open IoT*
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Case Example - Auto
Example: Intelligent vehicle platform

- **Driver monitoring**
- **Driver & passenger identification**
- **User habits and behavior**
- **Personal data acquisition (Journey, Agenda, messages)**
- **Environment perception & driving context (Traffic, weather, etc)**

**Applications**

- Mobile Devices
- Personal devices

**Learning and Predictive Intelligence**

**Vehicle HMI**

- Vehicle Functions (infotainment, Cabin, etc)
- In Vehicle networks (ECUs and other electronics)
Content x Context = Value
Connected Vehicle Program – Multiple Vehicle Types

OEMS
- German Tier-1
- American Navigation Tier-1
- German Multinational Engineering
- Indian Tier-1
- Israeli Tier-1
- TechM In-House

TCUs
- Vehicle 1
- Vehicle 2
- Vehicle 3

Communication Protocols
- Transfer Control Protocol
- Internet Protocol
- Ethernet Protocol
- POP3
- IMAP
- SOAP
- ICMP
- User Datagram Protocol

Apps
- REAL TIME TRACKING
- HISTORY TRACKING
- GEO FENCING
- E-Call / B-Call
- Green Driving Analytics
- Vehicle Alert
- E-COACH
- Vehicle Health Check
- REMOTE Vehicle Fun.
- Stolen Vehicle Tracking

Communication Protocols

Database(s)
- Oracle 11g
- PostgreSQL
- MS SQL Server
- MySQL

Expected of connected vehicle solution across different vehicle type

- One Framework for Multiple Vehicle Line Integrations
- Multiple Industries, Variety of Vehicles-TCU Agnostics with Industry Specific Customization
- Managed Services Model for CoVe
- Features packaged post Due Diligence to achieve maximum cost benefits to customer

Highlights:
- TechM’s SDF is already integrated with Field proven TCUs.
- Customizable communication adaptors which can work with any standard protocols like TCP/IP, UDP, HTTP/HTTPS & etc.
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TESTING FOR SEAMLESS CONNECTIVITY

CREDENTIALS
- 7 labs
- 100,000+ hours of Field Test expertise
- 2500+ Mobile & IoT Devices
- 15+ Telcos & MVNOs
- 2+ million hours of testing expertise
- 10+ Chipset makers
- 30+ OEMs/ODMs

FORUMS AND ACCREDITATIONS
DIGITAL CAPABILITIES FOR A CONNECTED World

PARTNERS

Generate new revenue streams
Enhance operational parameters such as productivity, efficiency and availability
Deliver better Experience to your customers

Enhanced safety, convenience, comfort
Improved Quality of Life
Unique, tailored experiences

ENTERPRISES USERS

Platforms
Edge Computing
Data Acquisition & Asset Gateways
Connectivity & Sensors

System Integration
Analytics
Enterprise Mobility
Global Managed Services

Microsoft Intel CISCO
Telit IBM
BOSCH prodea aeris
Thank you.

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