GEMALTO M2M

KEY TECHNOLOGY TRENDS OF M2M

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security to be free

Anvay Lonkar, Marketing Manager M2M Solutions & Services Gemalto
M2M FORUM , MILAN, 15 May 2013

Gemalto delivers trusted and convenient digital services to billions of people as well as machines.

OUR COMPANY

?2 billion
Revenue 2011

10,000+
Employees

43
Countries worldwide with a site in operation

+70%
Increase in stock price since Jan 2012, CAC 40 index member

OUR INNOVATION

?150+ million
**Invested in R&D 2011**

4,200
Patents and patent applications

OUR SOLUTIONS

7 billion
Secure personal devices use Gemalto products and services

50 million
Things connect using Gemalto technology

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Gemalto M2M enable new business models, enhance efficiency and boost growth. And we give service providers worldwide the confidence to think big.

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.. in a city where everything is connected.
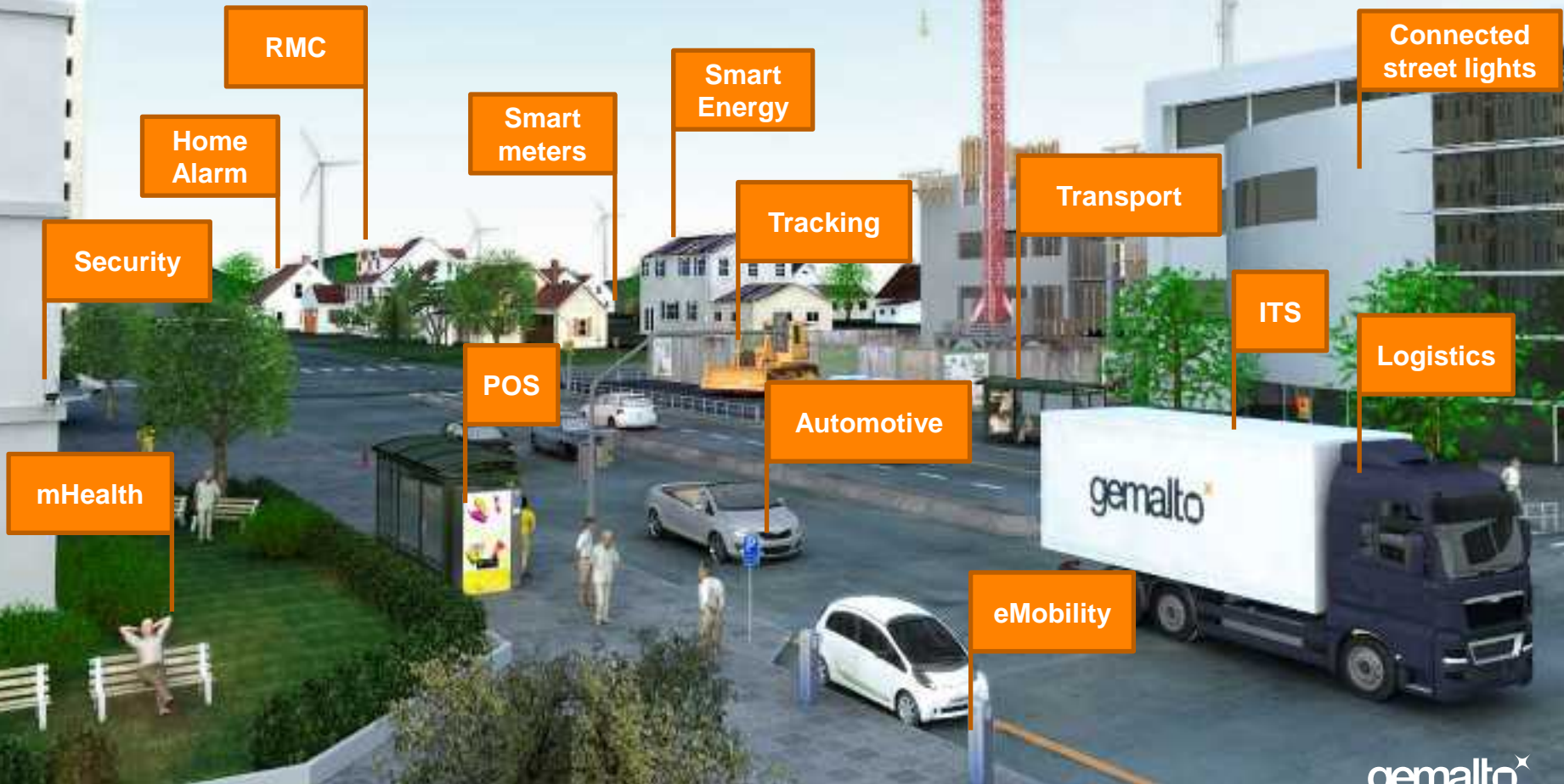
Gemalto can give you the confidence to think big ? and support you all the way

Professional Services

Solutions & Services for lifecycle management

- MODULES & MIMs
- SUBSCRIPTION MANAGEMENT
- SENSORLOGIC : APPLICATION ENABLEMENT
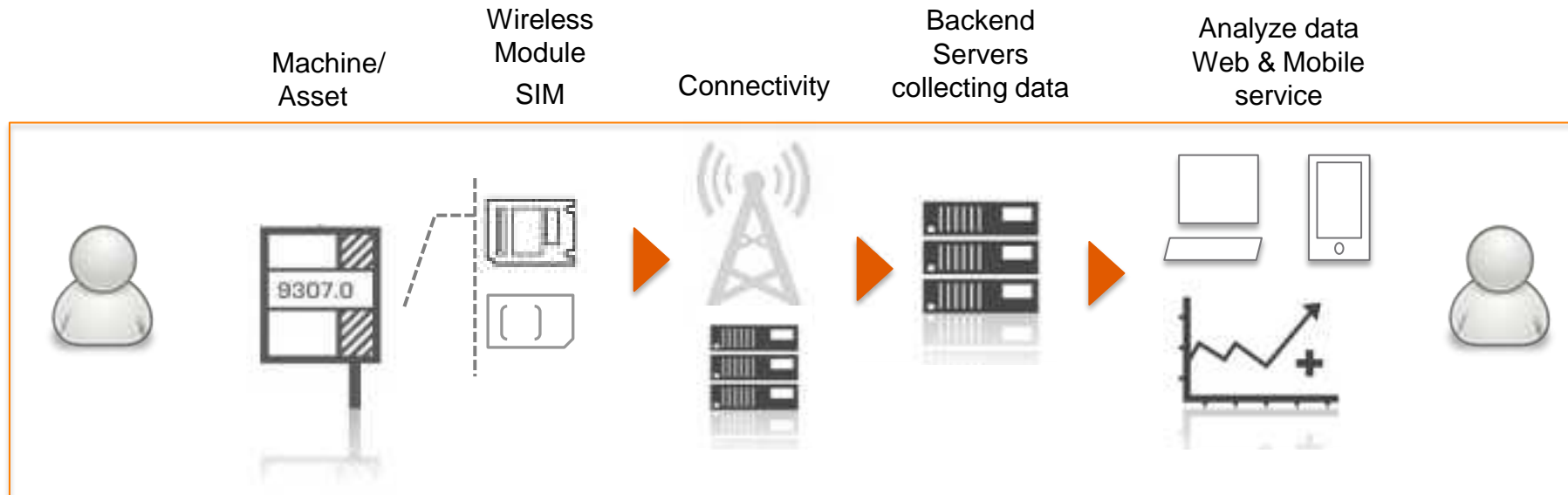
Cinterion®
Modules

Cinterion®
Terminals

Cinterion®
MIM

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We are the trusted partner of demanding global solution providers

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Anatomy of M2M Applications : Challenges of Scale

Machine/
Asset

Wireless
Module
SIM

Connectivity

Backend
Servers
collecting data

Analyze data
Web & Mobile
service

9307.0

New Challenges of M2M

COST
OF
SCALE

NEW
SECURITY
THREATS

OPTIMIZED
TIME TO
MARKET

LAUNCHING
GLOBAL M2M
SOLUTIONS

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M2M : Key Technology Trends

CLIFF EDGE

GLOBAL local

SOFTWARE

INTELLIGENCE AT THE EDGE

> Edge devices become smarter, easier to extend and manage over their lifecycles

> JAVA ON MODULES

> INTELLIGENT DEVICE AGENTS

SECURITY BY DESIGN

> Security no more an after-thought, cost-effective security desired

> SECURITY CONSULTING

> PROVEN SECURITY EXPERTISE

GLOCAL SOLUTIONS

> Tools to build GLOBAL solutions that answer LOCAL requirements

> SUBSRIPTION MANAGEMENT

> GLOBAL SUPPORT

SERVICE ORIENTED MODELS

> Easy to start and dependable to scale, pay-as-you-go business models

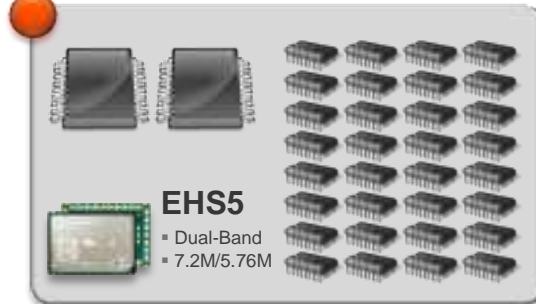> CLOUD BASED M2M APPLICATION ENABLEMENT

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INTELLIGENCE AT THE EDGE
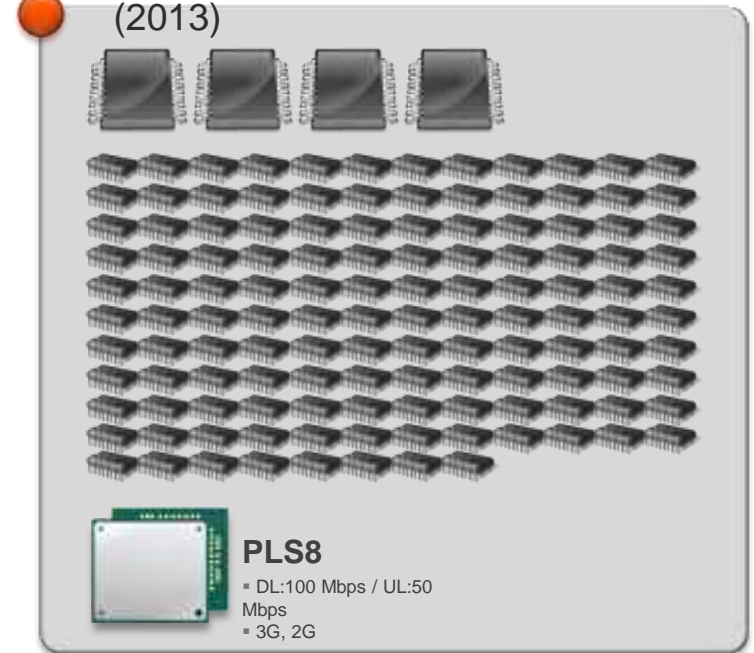
An era of unprecendeted embedded resources.

LTE PLS8
Cortex A5, 32 bit
550MHz, 4GB
(2013)

2G BGS2
C166, 16 bit
104MHz, 32 MB
(2010)

3G EHS5
ARM11, 32 bit
240MHz, 1GB
(2012)

BGS2
- Quad-Band
- GPRS

EHS5
- Dual-Band
- 7.2M/5.76M

PLS8
- DL:100 Mbps / UL:50 Mbps
- 3G, 2G

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Java to unlock the full power of modules.

Integrated Vertical Device (deployed in the field)

Vertical Data / Sensor Input	Vertical App & Business Rules	Communication Control	Backend Interworking	Communication Functionality	**Backend** Processing & Data Base

Vertical HW — Processing & Memory & Communication

> Real time
> Specific

> Hosting of application or application elements
> Aggregation, filtering of sensor data, local business logic

> Connection management
> e.g. Scheduling, duty cycles

> Backend client,
> Vertical specific protocols

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Edge to Enterprise Architecture

Java enabled module becomes a hub between deployed device and backend

Vertical Elements

> Payload Data
> Management Data

Backend
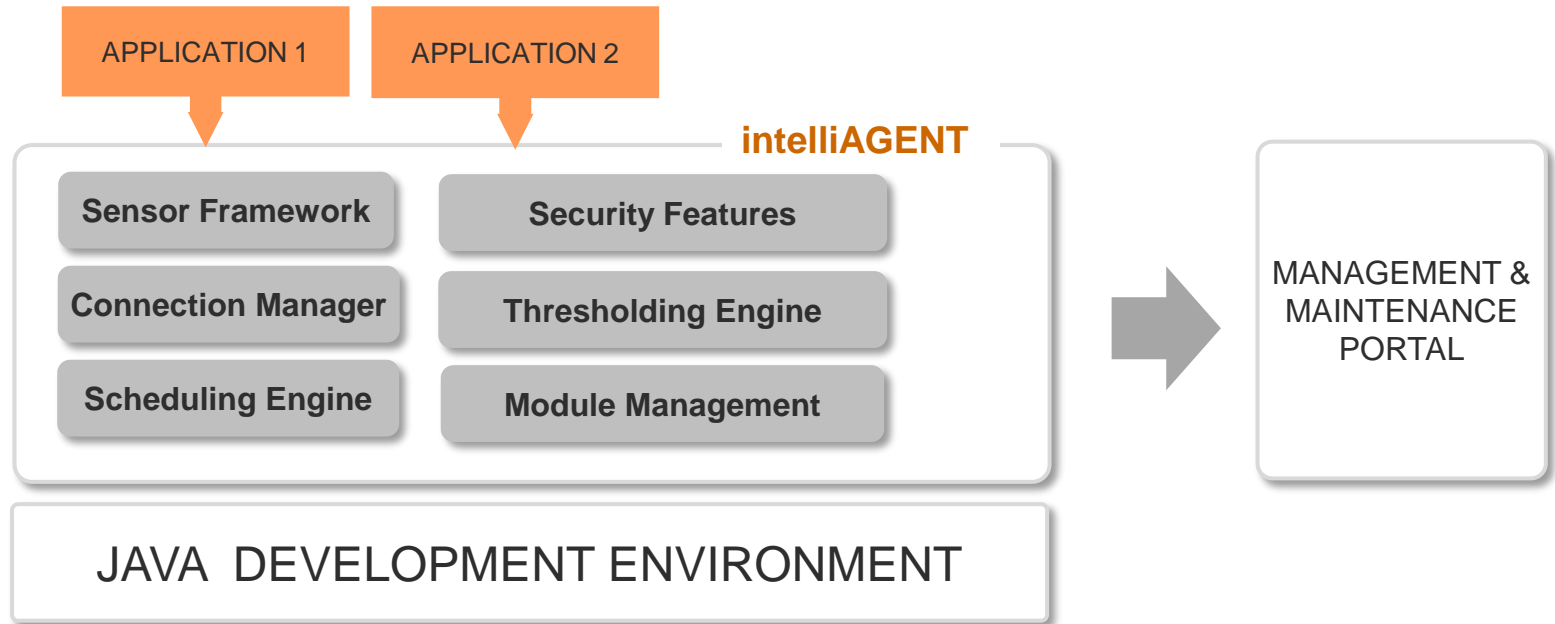
> Diverse landscape
> Multiple parties

Communication Protocol

Vertical Protocols/Data Formats

Business Logic

Configuration & Controll

Update & Maintenance & Optimization

Security
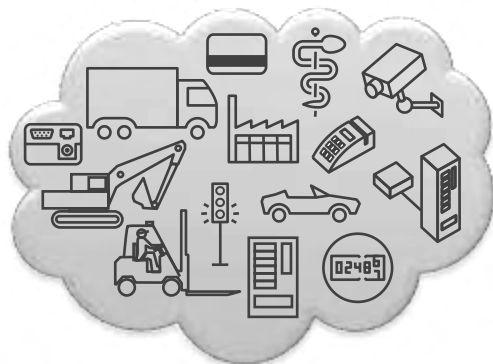
Device optimization

> Reduction of components / BOM

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intelliAGENT : Device Application Framework

APPLICATION 1	APPLICATION 2

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Sensor Framework	Security Features
Connection Manager	Thresholding Engine
Scheduling Engine	Module Management

MANAGEMENT & MAINTENANCE PORTAL

JAVA DEVELOPMENT ENVIRONMENT

> 15 years of M2M Expertise offered in a package

> Large existing code base and building blocks

> Shorter implementation cycles

> Extensible over lifecycle

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intelliAGENT : What are developers doing?

OPTIMIZE
Device Server
Communication

CONSERVE
Device
Resources

ENSURE
Real Time
reactivity

WEATHER STATIONS

STREET LIGHTS

COLD CHAIN

- MINIMIZE COSTS
- REDUCE NETWORK STRESS

- INCREASE DEVICE LIFECYCLE

- OVERCOME NETWORK LAG

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SECURITY BY DESIGN

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Unattended devices

Protection against physical attack

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Interconnected
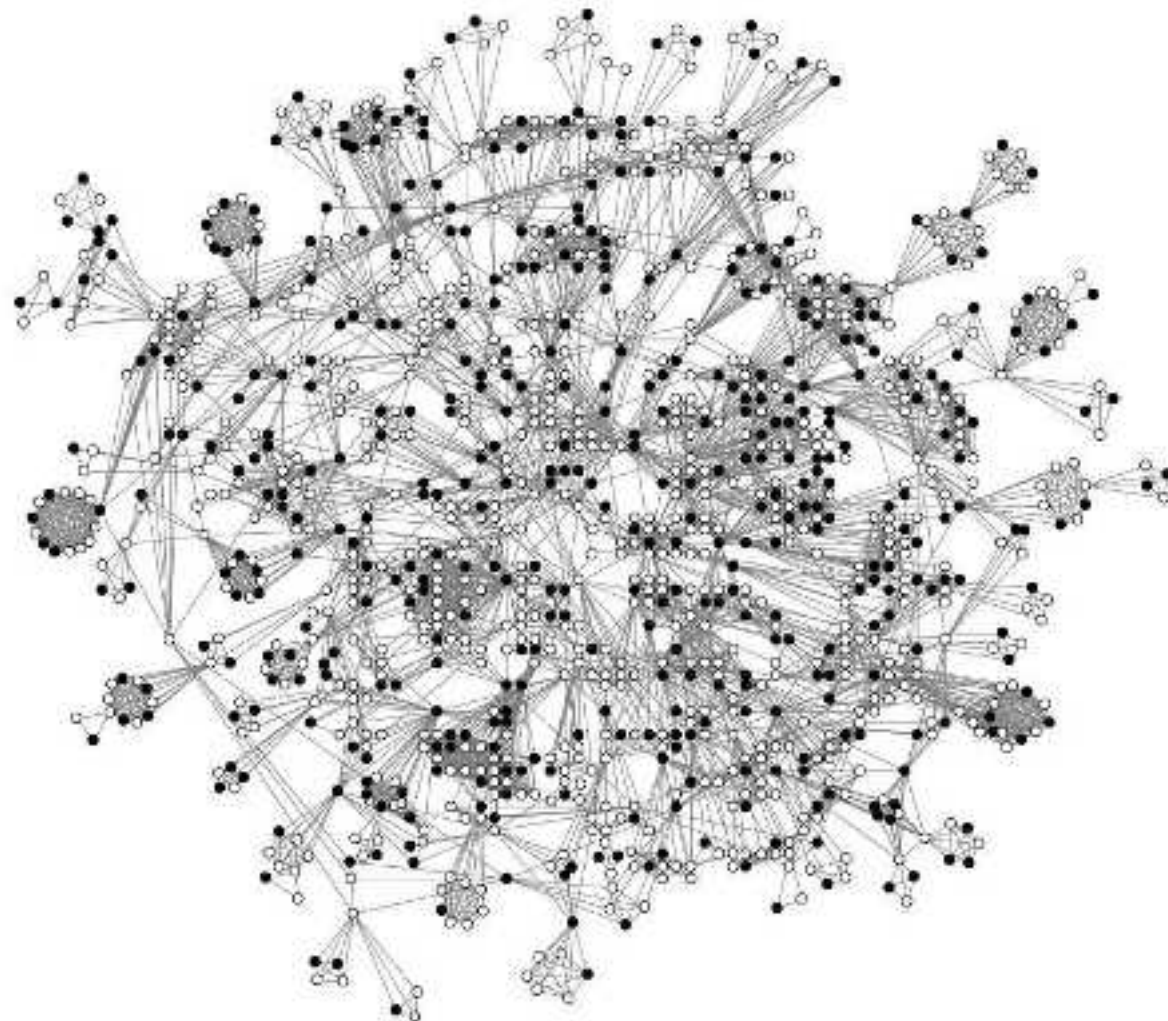
Scalability of the attacks

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Critical infrastructure

Standards, regulations to rise

Potentially life threatening!

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COST

Do not kill M2M benefits with excessive? security

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Security challenges for industries using M2M technologies is a matter of

Risk analysis

The right balance of

And regulations

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Automotive

Telematics

- eCall
- Remote diagnostic
- VRM
- Insurance based telematics

Multimedia

- Infotainment and content
- Navigation
- Real-time info
- Driver-centric Application
- WIFI hot spot

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Security needs in AMI

Critical infrastructure protection

SYSTEM INTRUSION

CYBER TERRORISM

FRAUD

PERSONAL DATA PRIVACY

Germany outlook

BSI is designin... protection p... smart grid de...

To be mandatory... to dep...

UK outlook

DECC iss... requireme... and...

US outlook

Federal Trade Commission open consultation to assess the needs o security

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GLOCAL SOLUTIONS

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Wireless Modules :
Global Coverage and Optimized Regional Variants

EHS5-US
3G: 850/1900
2G: 850/1900

EHS5-E
3G: 900/2100
2G: 900/1800

EHS6 / EHS8
3G: 800/850/900/1900/2100
2G: 850/900/1800/1900

BGS2 / BGS5
2G: 850/900/1800/1900

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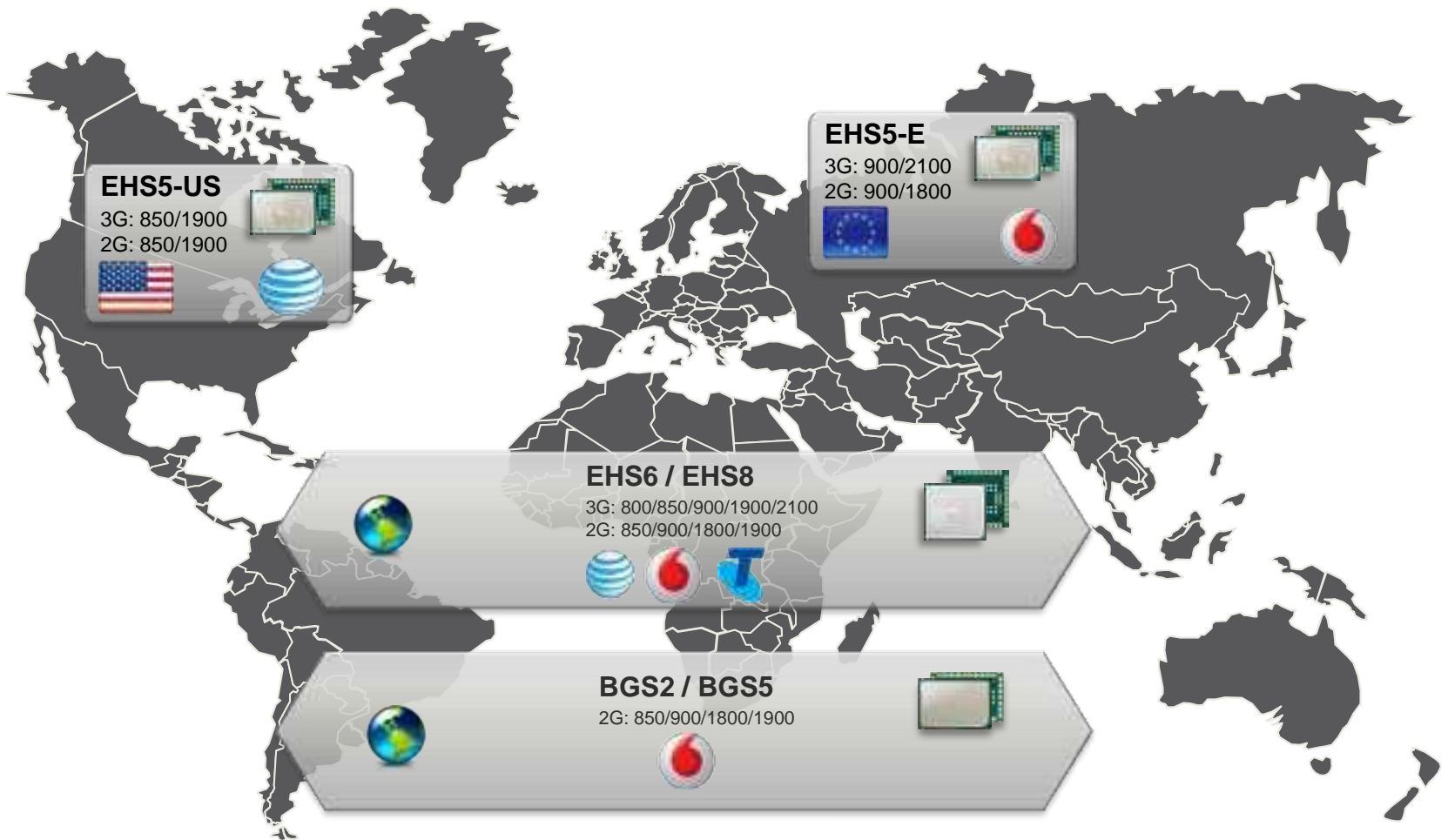
Challenges while deploying connectivity

Key learning from the field

- M2M ARPU ? 2? / month

- 2 to 3 years for ROI

- 1 SIM, 1 tariff, 30 countries >> Permanent roaming

- Data traffic > 10 MB a month

  - Data roaming issues

  - Need to go for a local subscription

ISSUE: **COST**

- M2M equipment and connectivity services

Low traffic	Huge data traffic	Internet access
Need best coverage	Need best tariff	Comply to Regulations
GLOBAL SUBSCRIPTION	**LOCAL SUBSCRIPTION**	**LOCAL SUBSCRIPTION**

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Standardization of Embedded SIM

✕ The mobile industry, lead by **GSMA** acknowledged the need to address:

Late Stage Personalization	**On the field subscription management**	**Trusted Subscription Manager**
Possibility to provision the initial subscription on the UICC remotely	Possibility to provision and switch to a new subscription over the air during lifetime	This requires a new role in the ecosystem, the, in charge of remote subscription management.

✕ **GSMA Embedded SIM Initiative?** will continue to address business issues related to the new model

✕ Definition of security scheme with the help of **SIM Alliance**

✕ **High standardization activity to target ETSI standard for 2013**

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Update From Mobile World Congress - 2013

- Flexible **Subscription Management** on **eUICC**
- A POC lead by GSMA with Automotive as lead use case
- Gemalto worked with leading automotive manufacturers and several MNO partners on the proof of concept

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SERVICE ORIENTED MODELS

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Remote Maintenance & Control
> Vending
> Digital Signage

Telematics
> Shipment Tracking
> Cold Chain

Mobile Health
> Chronic Care Management

Enterprise Application
> CRM
> BI Tools

DEVELOPER ZONE

Sample Code

Trial Access

IDE SDK

CINTERION
SensorLogic
APPLICATION ENABLEMENT PLATFORM

Application Services

Device Management

Device Translators

Data & Complex Event Processing

3rd Party Connectors

3rd Party System

Connectivity Management

Cell ID Lookup

Geocoding

Routing

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Industry Standard Protocls
Proprietary Protocols

Machines

Fleets

Healthcare Devices

Enterprise Assets

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Use Case: Mobile Health

Telemonitoring of Chronic Diseases

- Streamlined chronic care management
  - Detect changes and intervene before the patient has to be hospitalized.
  - Instead of constantly going to the doctor, the monitoring service can detect immediately if the patient has a problem.
- Prototype ready in 2 Weeks!
- JAVA, Continua, Cloud M2M Application Enablement

Confidence connected

Expertise
M2M market leader for close to 20 years

Security
World leader in digital security

Simplicity
Solutions to simplify the connected world

Partnership
Collaboration to provide guidance