Turning Things On
Embedded SIM and Remote Provisioning

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Trust in the digital world starts with a reliable identification

End-users ›› Present their digital ID… ›› to the service provider

Once the service provider is sure who is accessing it, exchanges can begin.
Software and data stacks in secure elements

- **End-user identities**
  - Billions
- **Service Provider profile and applications**
  - Thousands
- **Industry applications**
  - Tens
  - Mobile
  - Payment
  - Transit
  - Access
  - OnlineID
  - eGov
- **Operating system**
  - General purpose multitenant
  - Multitenant
  - Specific
- **Secure hardware**
Leveraging cellular networks, Turning Things On

- People
- Machines
- Consumer Additional Devices

Cumulative Cellular Connections

- 2006: 2.7bn
- 2016: 7.9bn
- 2020: >9.5bn

Source: GSMA Forecasts, Gemalto
Evolution of connected devices

SIM form factor evolves…

...the need to authenticate remains
Evolution of the specifications and availability of devices

- **2014**: Machine-to-Machine (M2M)
- **Early 2016**: Consumer secondary devices
- **Nov 2016**: Consumer all devices

**Devices in the Market**
- **Beginning**: e.g. Automotive
- **Limited**: e.g. Wearables
- **Under design**

**GSMA Specifications**
- Embedded SIM & Remote subscription management
Software and data stacks in secure elements

End-user identities

Service Provider profile and applications

Industry applications

Operating system

Secure hardware

billions

thousands

tens

General purpose multitenant

Multitenant

Specific

Software and data stacks in secure elements

End-user identities

Service Provider profile and applications

Industry applications

Operating system

Secure hardware

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Software and data stacks in secure elements

End-user identities

Service Provider profile and applications

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Operating system

Secure hardware
Software and data stacks in embedded SIM

Secure hardware
Specific
Multitenant
General

billions

End-user identities

Mobile Network Operator profile and applications

Industry applications

Operating system

2G 3G 4G voip...

Operating system

General Purpose
Multitenant
Specific

Secure hardware

Mobile Network Operators

Removable SIM

On-Demand Connectivity
Remote subscription management

Mobile Network Operators

Consumer Devices
Embedded SIM

Machine-to-Machine
Embedded SIM
Software Modules for On Demand Connectivity (ODC)

billions

End-user identities
Mobile Network Operator profile and applications
Industry applications
Operating system
Secure hardware

GSM 3G 4G 5G

On-Demand Connectivity
Remote subscription management

Profile Generation
Profile Delivery
Routing Service
Discovery Service

1
2
3

1

Consumer Devices
Machine-to-Machine

Embedded SIM
Embedded SIM

Device Agent

Mobile Network Operators
Business Models for Embedded SIM and ODC

**Billions**
- End-user identities
- Mobile Network Operator profile and applications
- Industry applications
- Operating system
  - General Purpose
  - Multitenant
  - Specific
- Secure hardware

**Business Models**
- **Hosted/Managed Services**
  - Event Fee
  - Annual Subscriber/Device Fee
- **On-Premise**
  - Licenses
  - Software Maintenance

**Software stacks only**
- Per installation

**Software stacks & Secure Hardware**
- Per installation

**Mobile Network Operators**
- **On-Demand Connectivity**
  - Remote subscription management

**Consumer Devices**
- Embedded SIM

**Machine-to-Machine**
- Embedded SIM

**Turning Things On - Embedded SIM and Remote Provisioning**
Ecosystem support and accreditation

A scalable solution to support the expected increase of volume with a clear vision on solution cloud readiness
Take Away

• SIM form factor has evolved over the years and will continue to evolve

• Functions and principles are unchanged with the need to authenticate the users to access the cellular network

• On Demand Connectivity will trigger new use cases in the Internet of Things providing opportunities in different verticals

• Machine-to-Machine is the first industry to adopt the eSIM and remote provisioning as the Machine just start to get connected

• The consumer market is following based on the recent GSMA architecture we expect the market to migrate progressively
Gemalto

Enabling trust in the digital world

- World Leader in Digital Security
- Markets in Strong Development
- Unique Technology Portfolio
- Blue Chip Customers
- Large Free Float and Robust Financials
- A Business Model with Strong Leverage on Growth