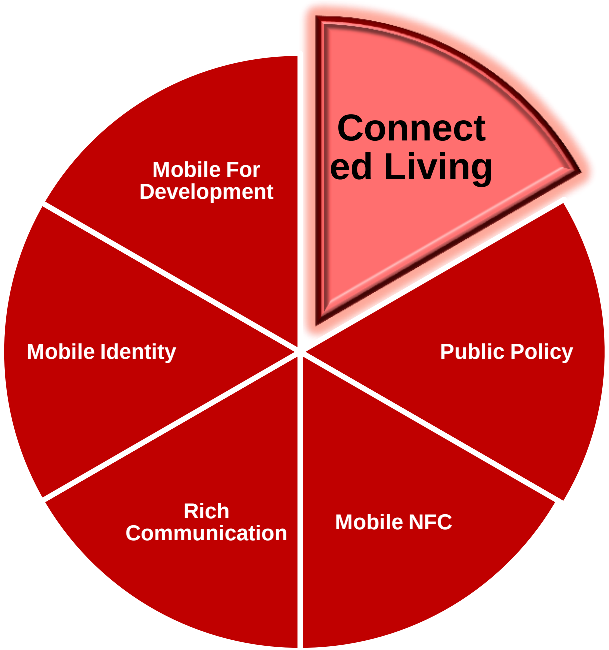
mAutomotive and GSMA Connected Car Forum

Francesca Forestieri,
Director mAutomotive project, Connected Living, GSMA

GSMA Goal – Connected Living

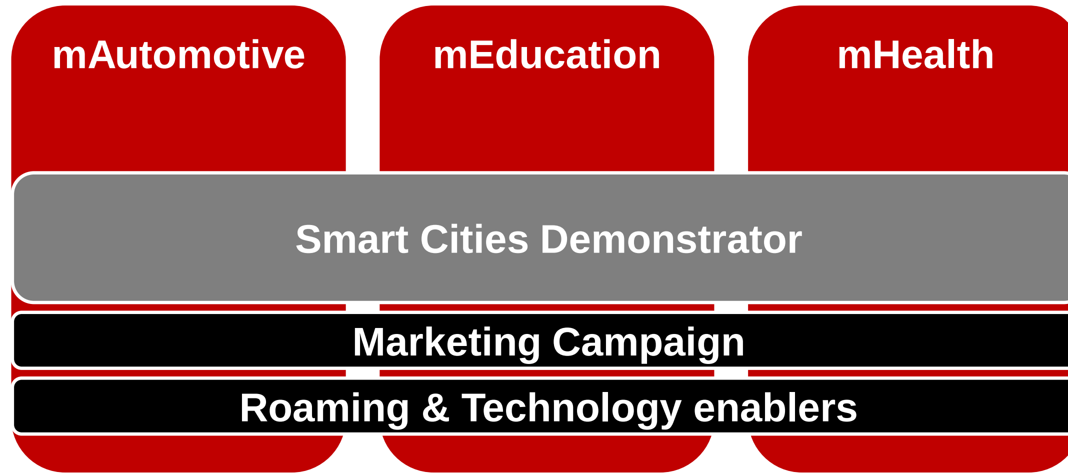
Leadership Team: AT&T, KT, Etisalat, Orange, Qtel, Telenor, Vodafone



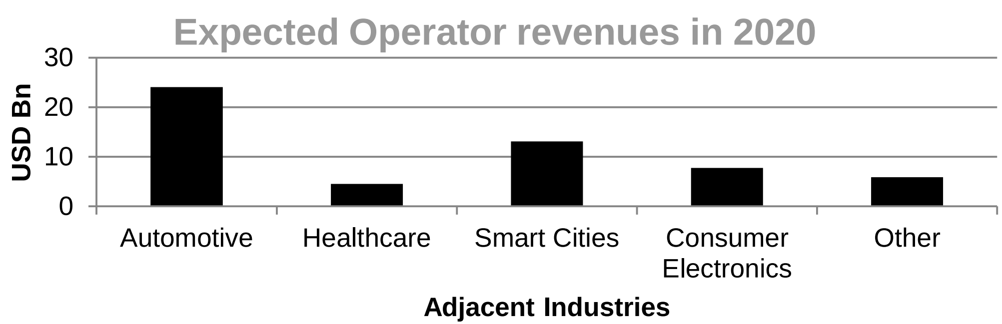
Context	• The emergence of new connected devices and M2M brings an increased number of mobile connections and presents a new revenue opportunity to the mobile industry • Educating the adjacent industries on mobile operators' capabilities and assets, to maximise the use of mobile and to ensure that the operator's role is not limited to a just a connectivity provider and builds on operator assets (like identity, security, billing, etc)
Market size	• **4 billion mobile connected devices beyond handsets by 2020. Target Mar 2013 = 700M** • **US$1 trillion revenue opportunity** for Mobile Operators • Largest markets are: Asia $447 billion, Europe $305 billion, North America $241 billion Source for all sizing data: Machina
Market Issues	**3rd Party Service Providers** •Service Providers delivering value added services, reducing the role of mobile operators to 'just' connectivity

Connected Living - Objectives, Structure and Forecast

- The Connected Living Programme is designed to:
  - A. <u>Unlock</u> the revenue opportunity from connecting adjacent industries, through new partnerships
  - B. <u>Incentivise</u> the launch of services beyond simple connectivity



- The programme is focused on **3 verticals** - **Automotive, Education and Health** - and in the delivery of **Smart City demonstrators** (through Mobile World Capital)



Source: Machina Research September 2012

mAutomotive Strategic Objective 1: Building Value-Added MNO Assets

Connecting Vehicles

Market standard for MNOs, with 38 OEMs providing embedded connectivity in their vehicles

Extending Connectivity Services (Core Operator Assets)

Supporting Extended M2M functionality (enhanced platform services, security, testing, etc.)

Expanding Core Operator Assets

Providing New Value Add Services, based upon operator key capabilities (charging & revenue management)

Complementary Sector-Specific Services

Providing New Value-Add Service Specialisations, which are Integrated Into Connectivity Management (e.g. Telematics Service Providers)

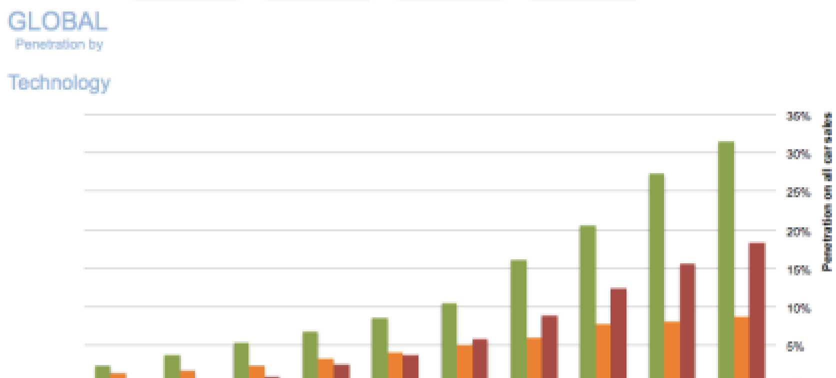
Clearly moves operators beyond core operator assets into competitive space of other automotive stakeholders

Places Operators as Core Competitors with Existing Stakeholders

May require acquisitions or leasing of infrastructure from other stakeholders

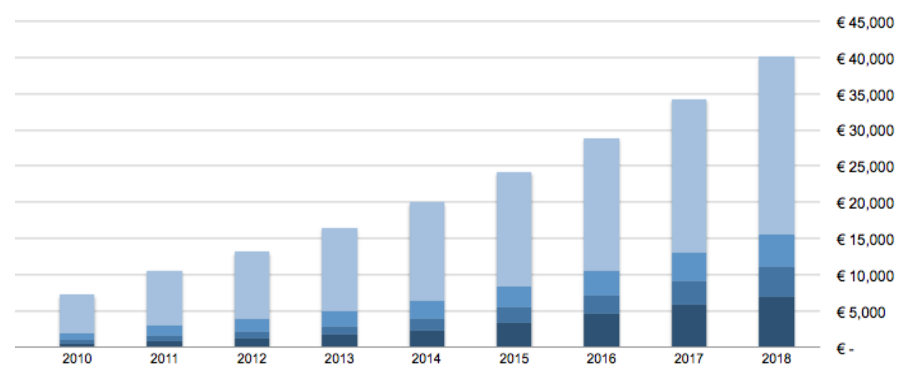
mAutomotive Strategic Objective 2: Connected Vehicle Market Growth

More Connected Vehicles + More Variety of in-Vehicle Services + More Geographies Covered by In-Vehicle Services + More Service Usage by Consumers = Global Telematics Services



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Embedded	2%	4%	6%	7%	9%	11%	16%	21%	27%	31%
Tethered	1%	2%	2%	3%	4%	5%	6%	8%	8%	9%
Smartphone	0%	0%	1%	2%	4%	6%	9%	12%	16%	18%

Global % of Connectivity Technology 2013-2018 (SBD 2013)



2010	2011	2012	2013	2014	2015	2016	2017	2018
€ 5,237	€ 7,663	€ 9,336	€ 11,434	€ 13,565	€ 15,765	€ 18,230	€ 21,140	€ 24,526
€ 988	€ 1,446	€ 1,766	€ 2,165	€ 2,572	€ 2,971	€ 3,421	€ 3,942	€ 4,535
€ 470	€ 637	€ 814	€ 1,122	€ 1,513	€ 1,997	€ 2,551	€ 3,226	€ 4,052
€ 533	€ 830	€ 1,221	€ 1,689	€ 2,335	€ 3,431	€ 4,630	€ 5,926	€ 6,942

Global Revenue Components by Technology 2013-2018 (SBD 2013)

What is the GSMA Connected Car Forum?

What is it?

The GSMA Connected Car Forum (CCF) is where automakers and mobile operators meet to:

- Share information and enable industry cooperation
- Resolve barriers to connected car deployment
- Speed the adoption of telematics and infotainment services.

Focusing on?

The GSMA CCF addresses cross-industry initiatives of international relevance that focus on telematics & infotainment services:

- **Enablers** for service deployment
- **Operational improvements** for services
- **Business Development** Opportunities for service deployment
- Regulations for mandatory telematics fitment

Results Oriented…

GSMA CCF members commit to laying the groundwork for connected cars becoming ubiquitous. Target figures include:

- More than 20% of global vehicle sales in 2015 to include embedded connectivity solutions
- More than 50% of global vehicles sales in 2015 to be connected (either by embedded, tethered connectivity or smart phone integration)

Who participates in the GSMA CCF?

Leadership Team: KDDI, KPN, Orange, Softbank, Telecom Italia, Telenor, Vodafone

No other group focuses purely on resolving primary connectivity barriers and fostering opportunities for connectivity growth

Automakers:
Audi, BMW, Chrysler, Fiat, Ford, GM, Honda, Hyundai, Jaguar Land Rover, Mazda, Nissan, Peugeot, Renault, Toyota, Volvo, VW

Operators:
AT&T, Bell Canada, China Unicom, Deutsche Telecom, KDDI, KPN, KT, NTT Docomo, Orange, Rogers, Softbank, Sprint, Telecom Italia, Telefonica, Telenor, Telstra, Teliasonora, Turkcell, Verizon Wireless, Vodafone

Why is the GSMA CCF unique?

What we do…

Id. Barriers & Opportunities → Requirements & Use Cases → White Papers → Specifications & Guidelines → Trials & Proof of Concepts

Not just a talk shop - pragmatic approach to solving common problems that both industries face

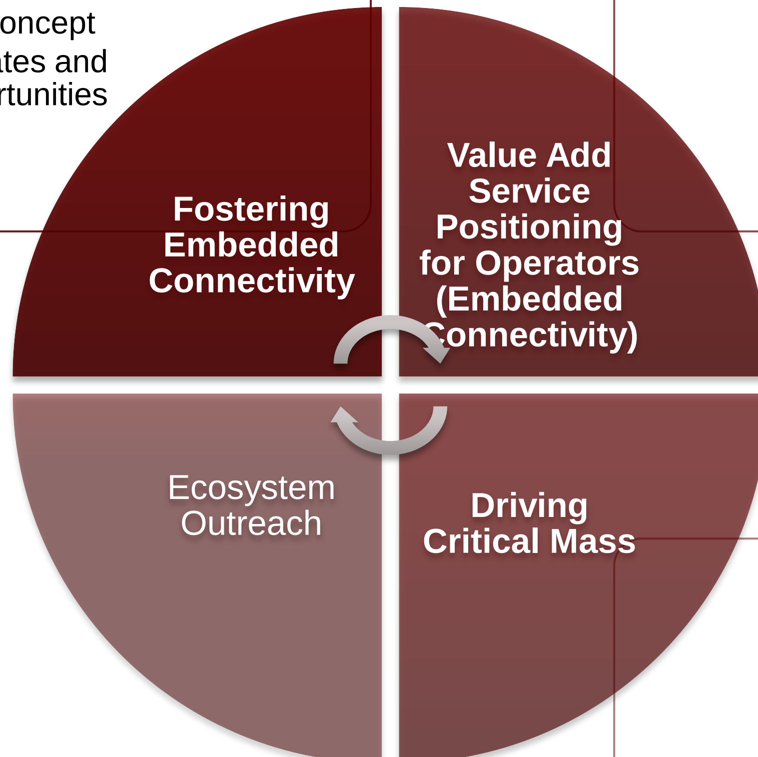
High functioning forum

- Unusual to get OEMs to gather, open up and share, with operators present
- Important source of new information for OEMs, driving participation

Key Themes 2013-2014

- Remotely Provisionable Embedded SIM Proof of Concept
- Regulatory Fitment Mandates and Ensuring Value-Add Opportunities for New Services

- Billing & Charging Trial
- Ultimate Big Data Mash-up: Connected Car Meets your Connected Life
- TDD-FDD LTE Automotive Trial (GTI)

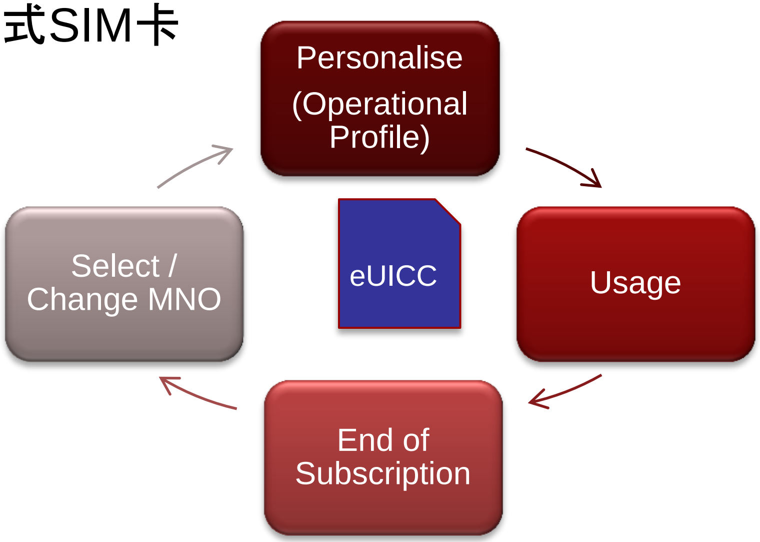


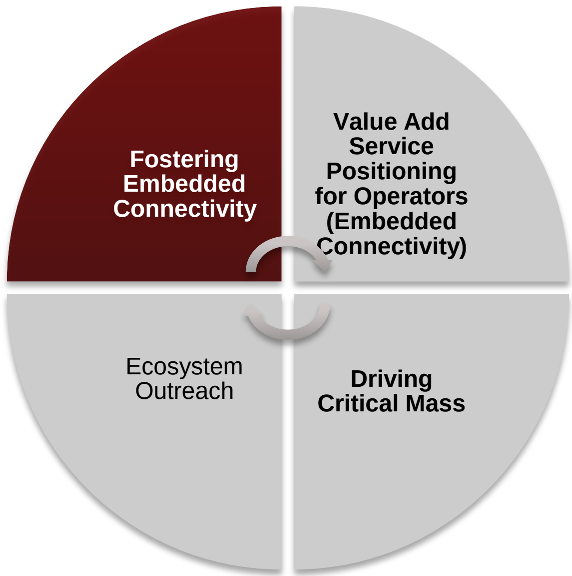
- Defining Next Generation Tethering

Fostering Embedded Connectivity 1/2

What are the key building blocks?

Remotely Provisionable Embedded SIM
可互操作的、具备远程配置能力的嵌入式SIM卡





Fostering Embedded Connectivity 2/2

What are the key building blocks?

Regulatory Fitment

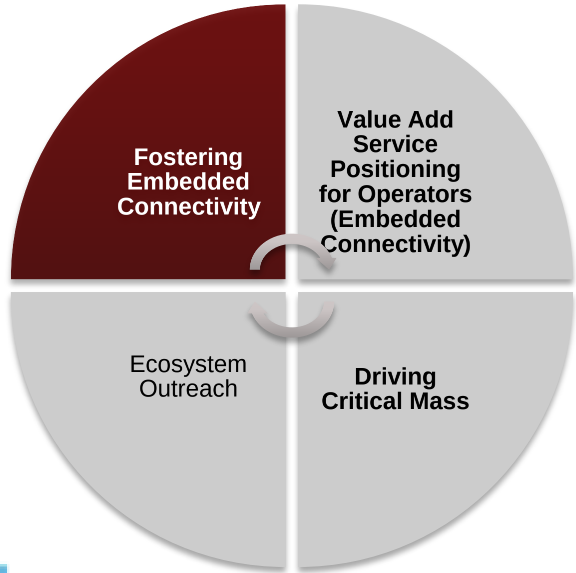
ERA GLONASS emergency response system

eCall

Denatran

Ministério Das Cidades

BRASIL UM PAÍS DE TODOS GOVERNO FEDERAL



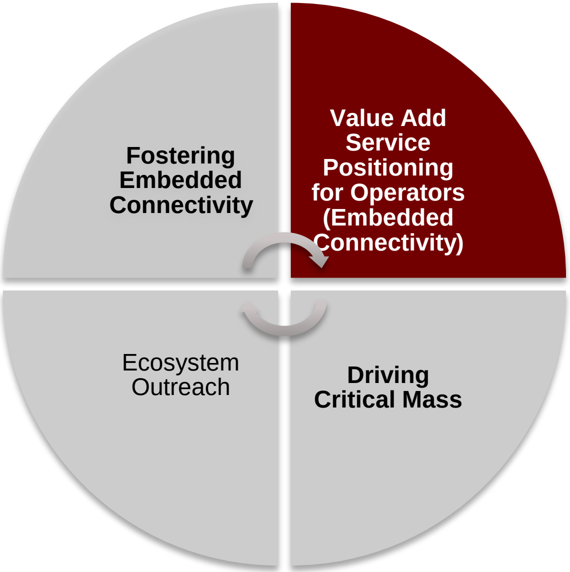
Value-Add Propositioning for Operators 1/3

What are the key building blocks?

Charging 计费 &
Billing 结算

Split Charging Capabilities

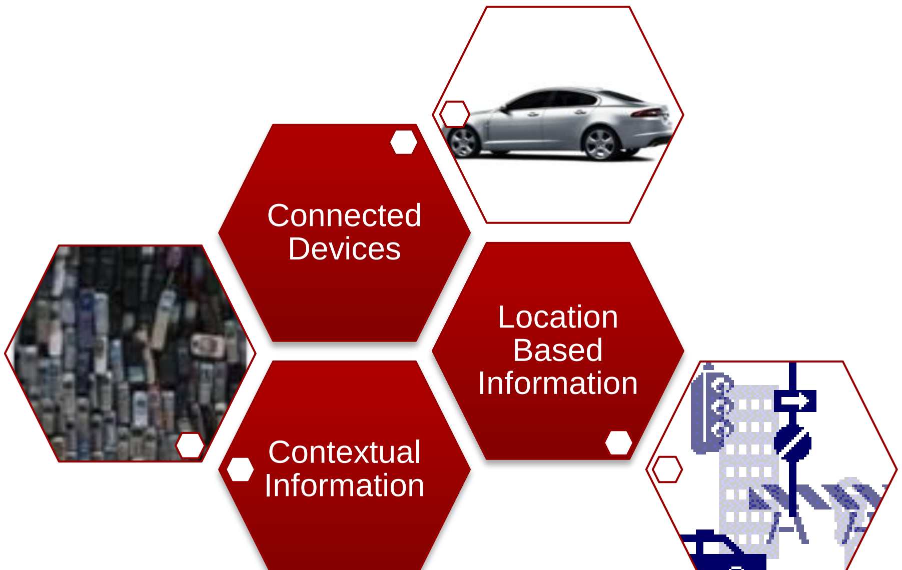
- Integrated charging capabilities
- Management of multiple revenue streams
- Billing & invoicing
- Payment & collection

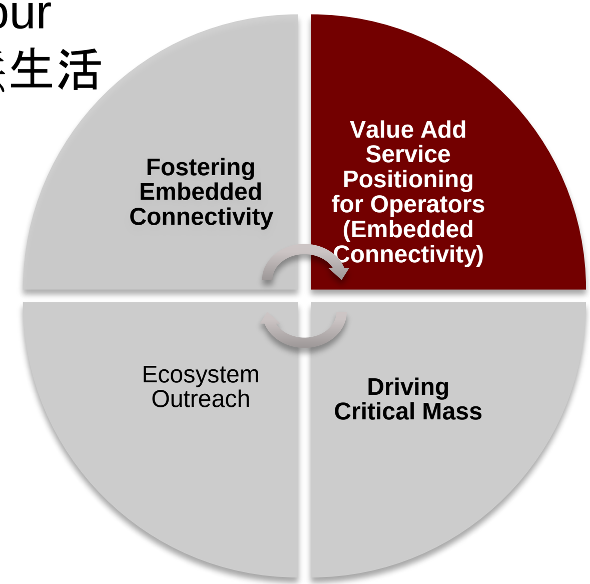


Value-Add Propositioning for Operators 2/3

What are the key building blocks?

Ultimate Big Data Mash-up: Connected Car Meets your Connected Life 大数据的终极融合 : 由互联汽车到互联生活



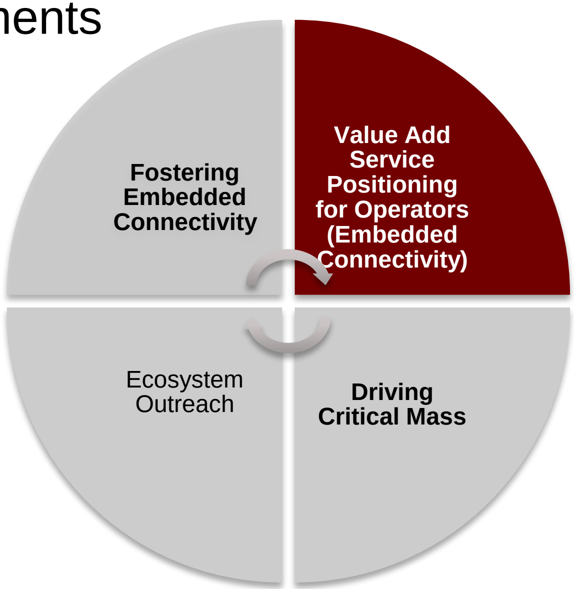


Value-Add Propositioning for Operators 3/3

Embedded LTE in the CAR

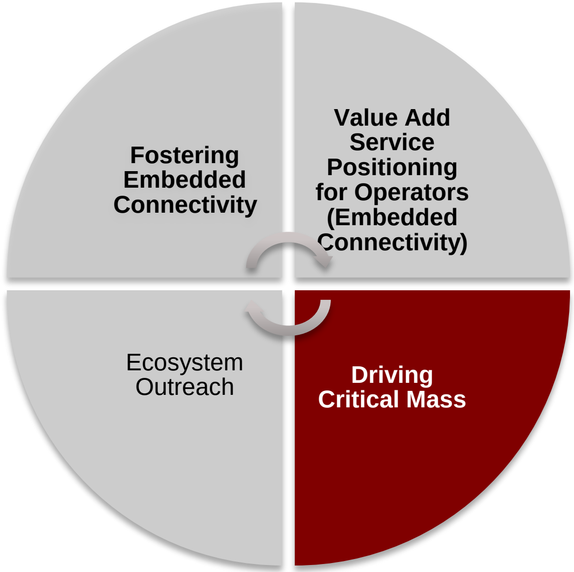
Enabling new uses & leveraging technology developments

- New service with better performance
- Leverage the cloud for in-vehicle services (such as natural language–based functionality) and the capabilities of HTML5 for the development of services



Driving Critical Mass 1/2

How can we expand business opportunities further? 怎样才能进一步拓展业务发展机会？
Application development 应用程序开发

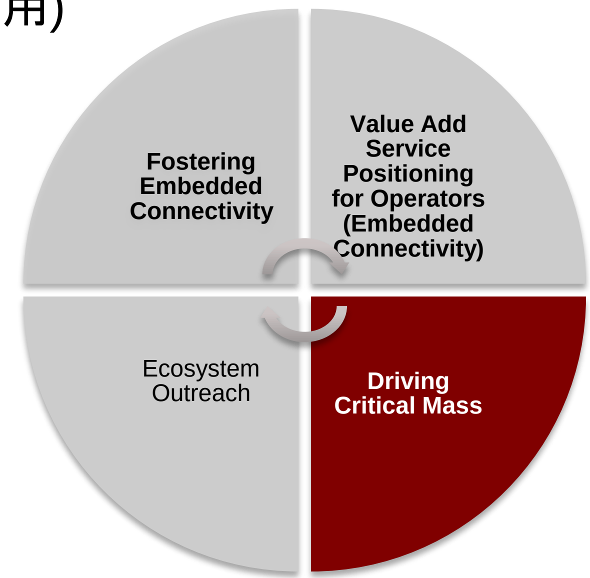


Driving Critical Mass 2/2

What could make it more efficient?

Tethering (IP sharing) 手机网桥 (手机网桥的IP共用)

Connectivity Type	Embedded	Tethered (IP Sharing)	Smartphone Integration
Modem	Built-in	Brought-in	Brought-in
UICC ("SIM")	Built-in	Built-in/Brought-in	Brought-in
Intelligence/Applications	Built-in	Built-in	Brought-in
User Interface	Vehicle HMI	Vehicle HMI	In vehicle HMI OR Phone HMI



Today's Panel will discuss…

- Requirements, challenges & opportunities for Connected Car Services
- Outlook to the Future:
  - What does China need to maximise the opportunity of the Connected Car?
  - What do operators need to help position themselves for value-add opportunities in this sector?

- Panel:
  - Edward Pleet, Ford
  - Stefano Villanti, Qoros
  - Mr Michael Huang, China Telecom
  - Madam Huang Yuhong, China Mobile
  - Mr Ma Yan Director, China Unicom
  - Peter Zhou, Telematics@China Community (TCC)

Further Discussion for OEMs and MNOs in the afternoon, if you are interested in attending please contact Emma Kane.

mAutomotive

For more information: www.gsma.com/connectedliving/mautomotive

Or Contact: mautomotive@gsma.com

Thank you