



Business Opportunities beyond Ultrabroadband: *Proximity Services and LTE direct*



Agenda

- ▶ LTE Direct: concept;
- ▶ Service Logic;
- ▶ Use Cases and Scenario
- ▶ Value Proposition: Domestic market;
- ▶ Tetra Vs LTE Direct;
- ▶ LTE Direct vs alternative technologies;
- ▶ Takeaways.

Concept

LTE-Direct known as well as D2D, LTE Radar or ProSe, it's a device-to-device technology enablers to:

- ✓ Discovers the relevant utilities service and people for user's in proximity via licensed LTE spectrum;
- ✓ Discovers thousands of devices within a range of hundreds of meters (0 ~500m);
- ✓ Allows a secure ID/profile and geo-localization transmission.

2 Main areas of application:

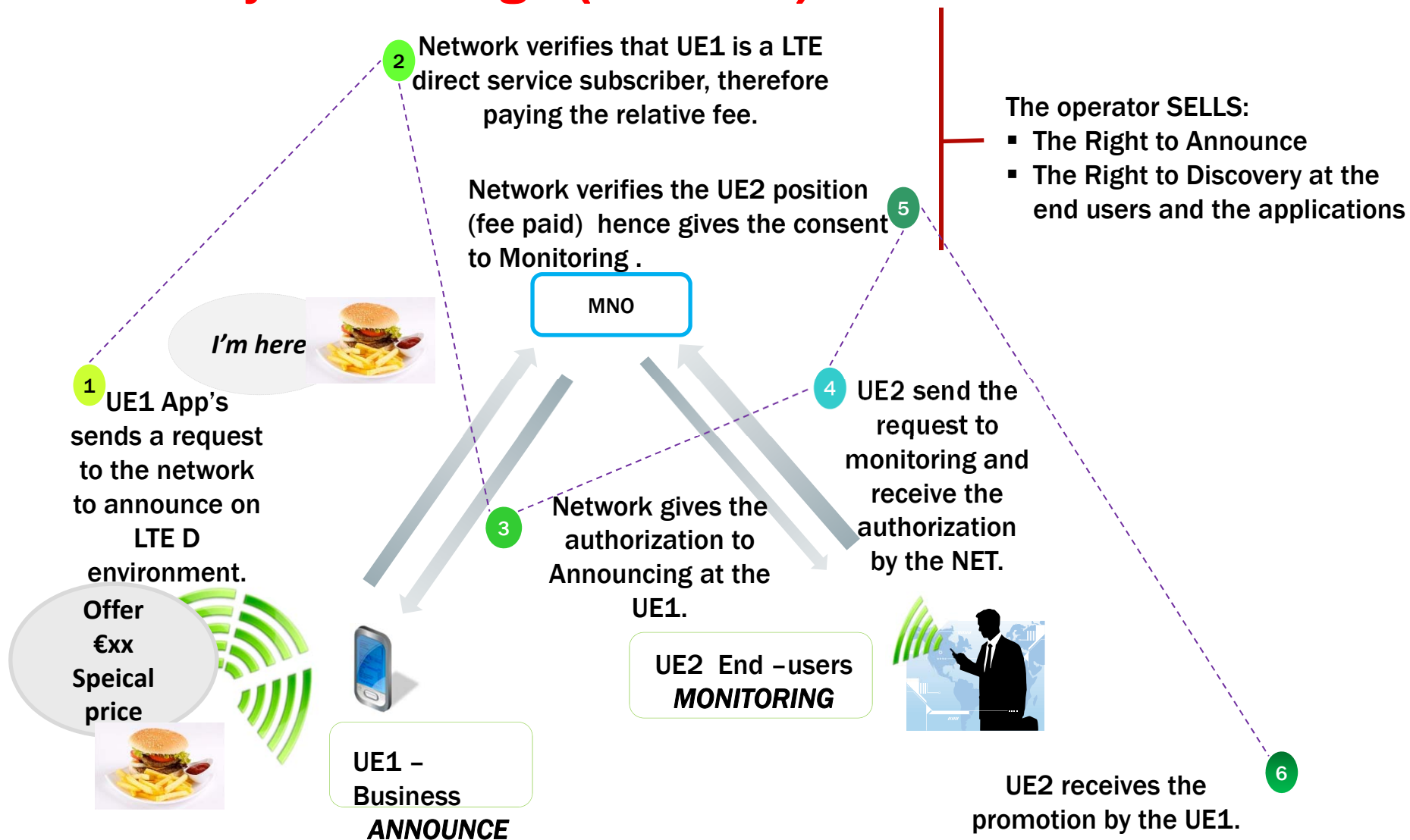
Proximity

Connection between LTE-D Device's is always managed by the LTE Network.
Devices must be in E-UTRAN coverage

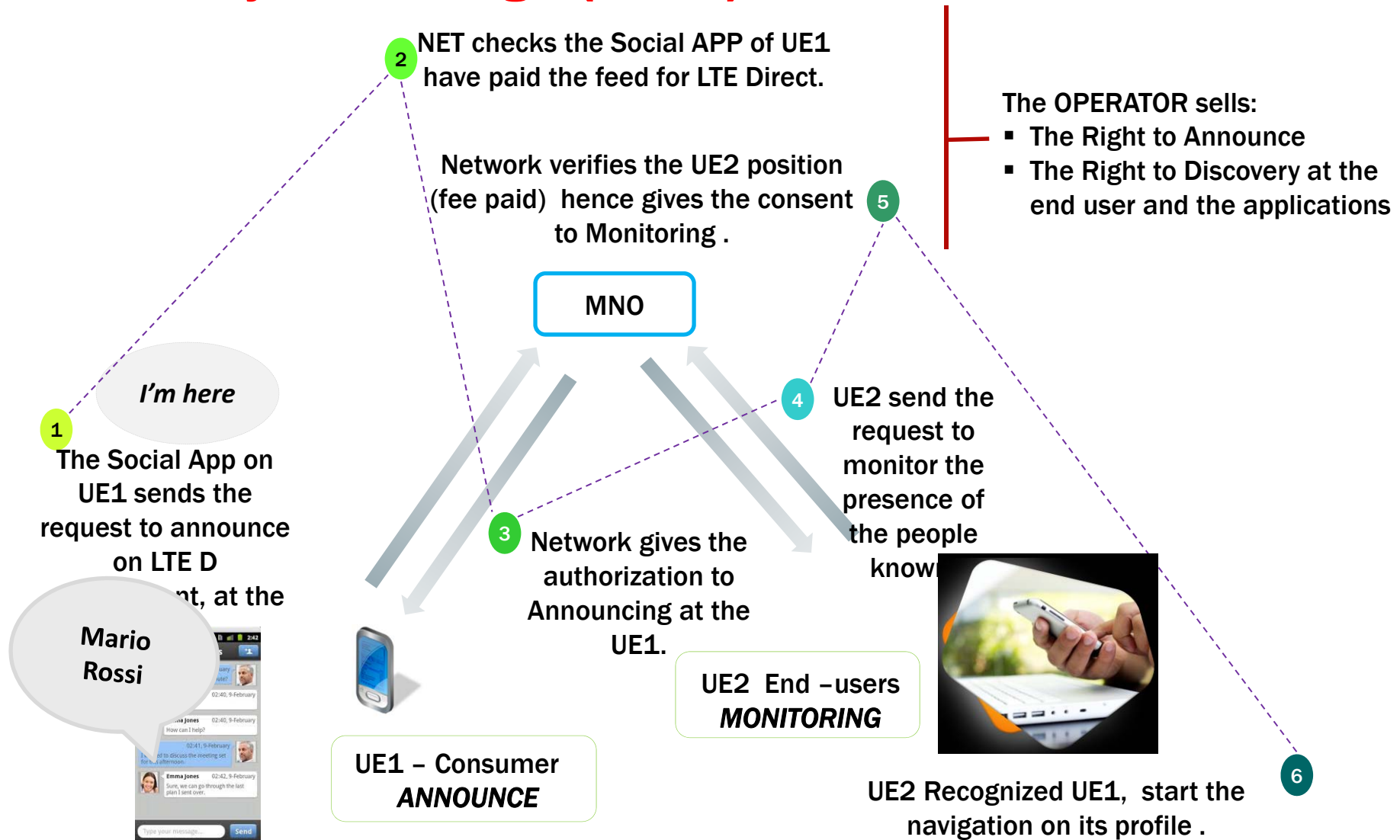
Public Safety

- Communication between all authorized Users in proximity can be out of coverage: Users can automatically use LTE D when E-UTRAN coverage is not available
- In PS mode the Users can create a "closing group" to direct communicate between them

Proximity: Service logic (Local Adv)



Proximity: Service logic (Social)



Public Safety: Service logic

Direct communication One-to-Many



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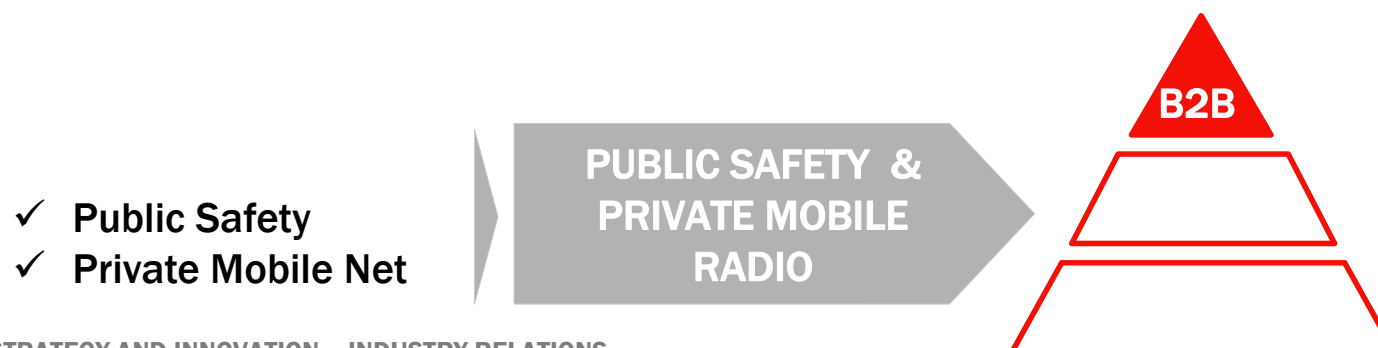
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Use Cases and Scenarios





B2C – Utility, Social, Entertainment: VALUE PROPOSITION

CONCEPT



REASON WHY

It provides a big opportunity across a large range of applications and services in a proximity environment

KEY BENEFITS

- **Customer:** enhances user experience by providing privacy sensitive and battery efficient discovery services
- **MNO:** increase ARPU providing a Premium Service



B2C – Utility, Social, Entertainment: BUSINESS MODEL

MNO

Sales

Services of Utility, Social & Entertainment to its customer base

Consumer Customer

Pays

Monthly Fee for LTE-D Services

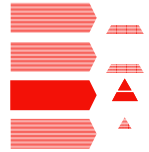
Download

App to utilize service and social network

Gives

Consent to receive advertising messages





B2B2C – Local Advertising: BUSINESS MODEL

MNO

Trades with a Sales House several applications identities to announce on the LTE Direct channel

Sales House

Resells to the advertising's stakeholder the application identities LTE Direct by providing the opportunities to develop Apps for local advertising





B2B2C – CRM, Loyalty, Couponing: BUSINESS MODEL

MNO

Pre installed App on LTE-D Device Ready

Large Enterprise

Pay fee for each app installed

- ✓ CRM
- ✓ Loyalty
- ✓ Couponing

2 mins
B. Weiss Event

Bookshop



Food

At 50m
2 points for 1€
expended

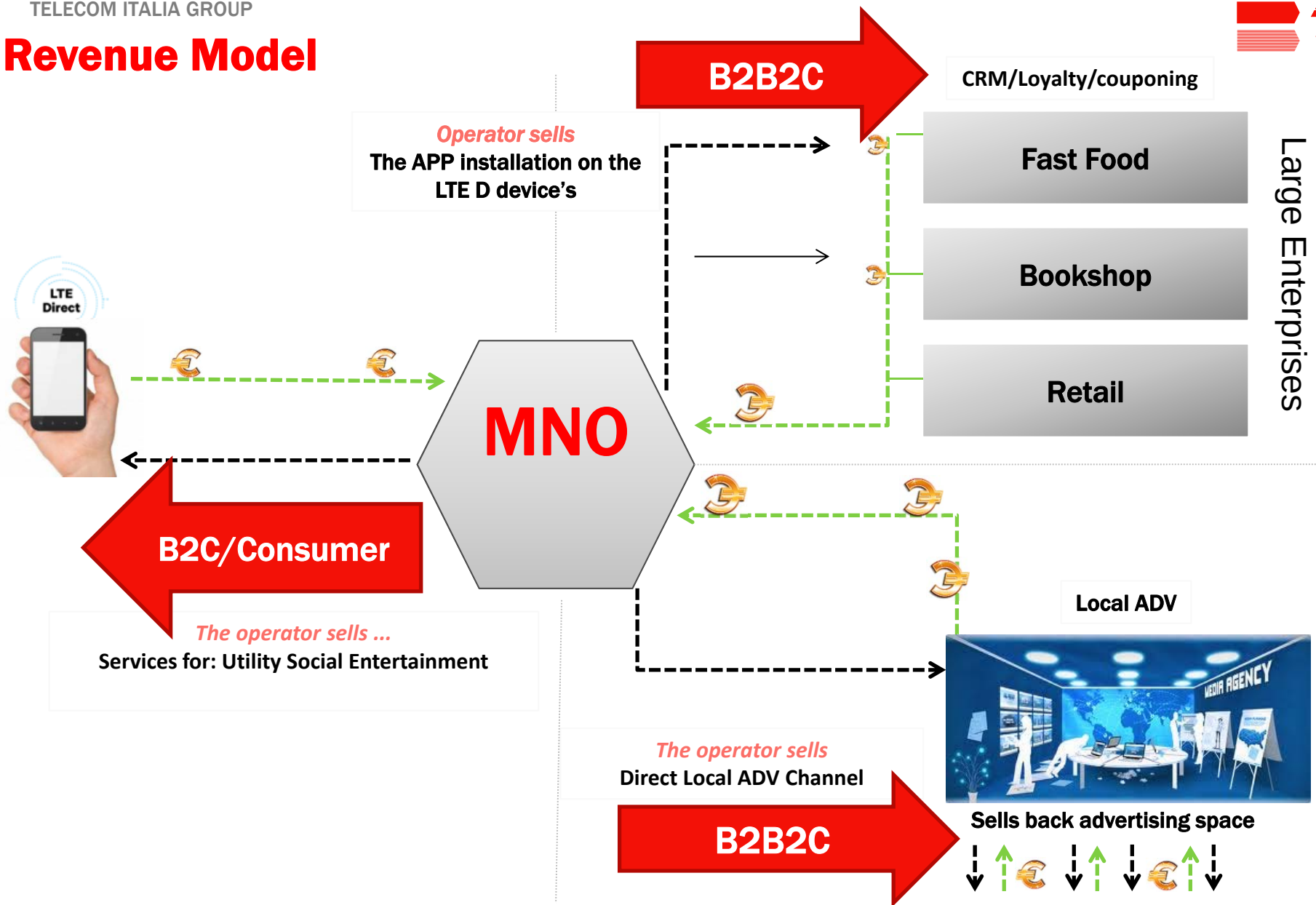


Retail

1 Lips Gift
each 10€
expended



Revenue Model



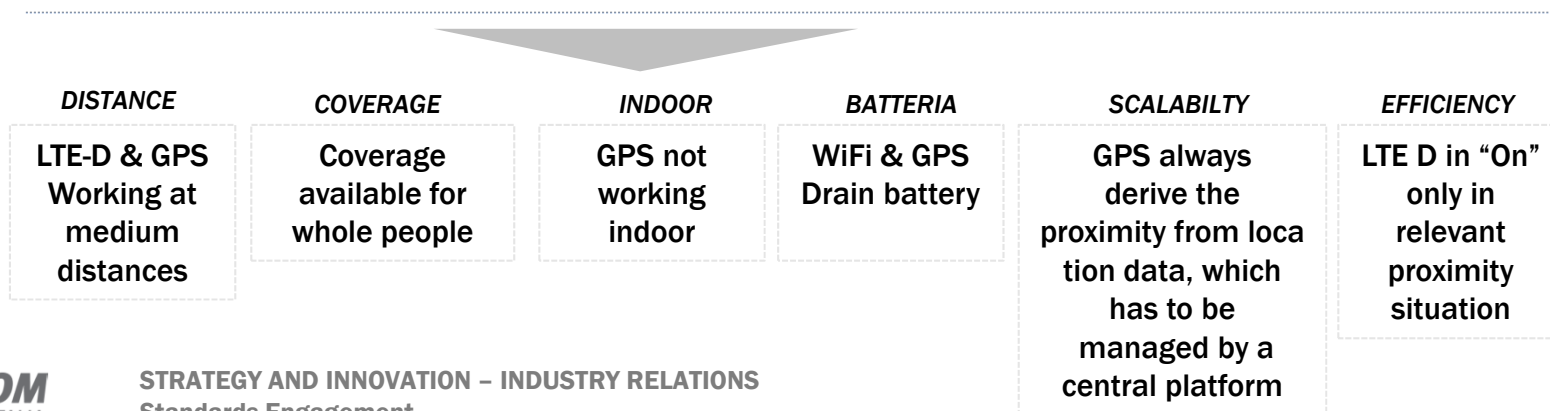


TETRA vs LTE Direct

	TETRA	LTE-Direct
FEATURE	➤ Device-to-device ➤ Relay ➤ Push to Talk ➤ Group Communication	➤ Proximity based Service (with a Groups & Relay for public safety) ➤ Push to Talk (OMA) ➤ Group Communication Enabler
PERFORMANCES	➤ Broadcast data: max 538kbps ➤ Call Setup <300 ms	➤ Broadcast data: ▪ DL: max 100 Mbps ▪ UL: max 75 Mbps ➤ Call Setup tra 5.5. – 7 secondi
SECURITY	➤ Mutually authentication over-the-air ➤ Encrypted (over-the-air, Employee-to-Employee)	➤ Authentication & Key Agreement (AKA, in USIM e AuC) ➤ Encrypted over-the-air (Integrity e Confidentiality) ➤ ID protection of the user & device ➤ Legal Tap
COVERAGE	➤ Needs a dedicated access Radio infrastructure	➤ Any LTE Radio infrastructure could be ultize
SPECTRUM	➤ Dedicated (400 MHz, 900 MHz, etc)	➤ It's possible to utilize a licensed band (2.6/2.1GHz,1900/1800/900/800/700 MHz etc)
INTEROPERABILITY	➤ Equipment and MS interoperable and compatible	➤ Interface open standard ➤ Backward compatible

LTE D vs alternative technologies

	DISTANCE	COVERAGE % pop	INDOOR	BATTERY	SCALABILITY'	EFFICIENCY
LTE D	0~500m	> 80% - 2016	Yes	Low	High	100%
WiFi	50m	100%	Yes	Medium	High	At customer discretion
NFC	1mm	100%	Yes	Low	High	100%
GPS	50m~infinity	100%	No	Higher	Low	At customer discretion

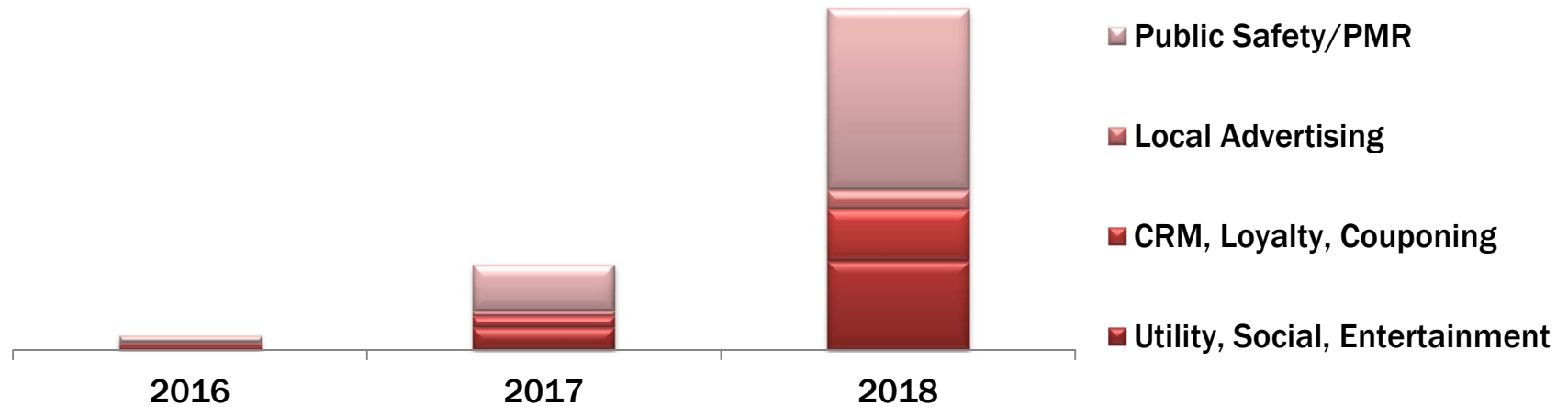
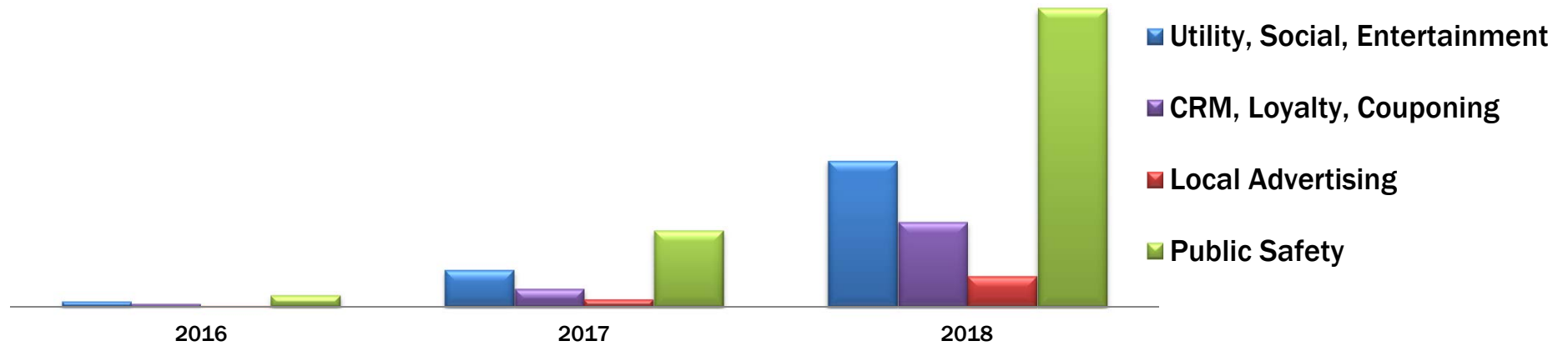


Mapping technologies into services

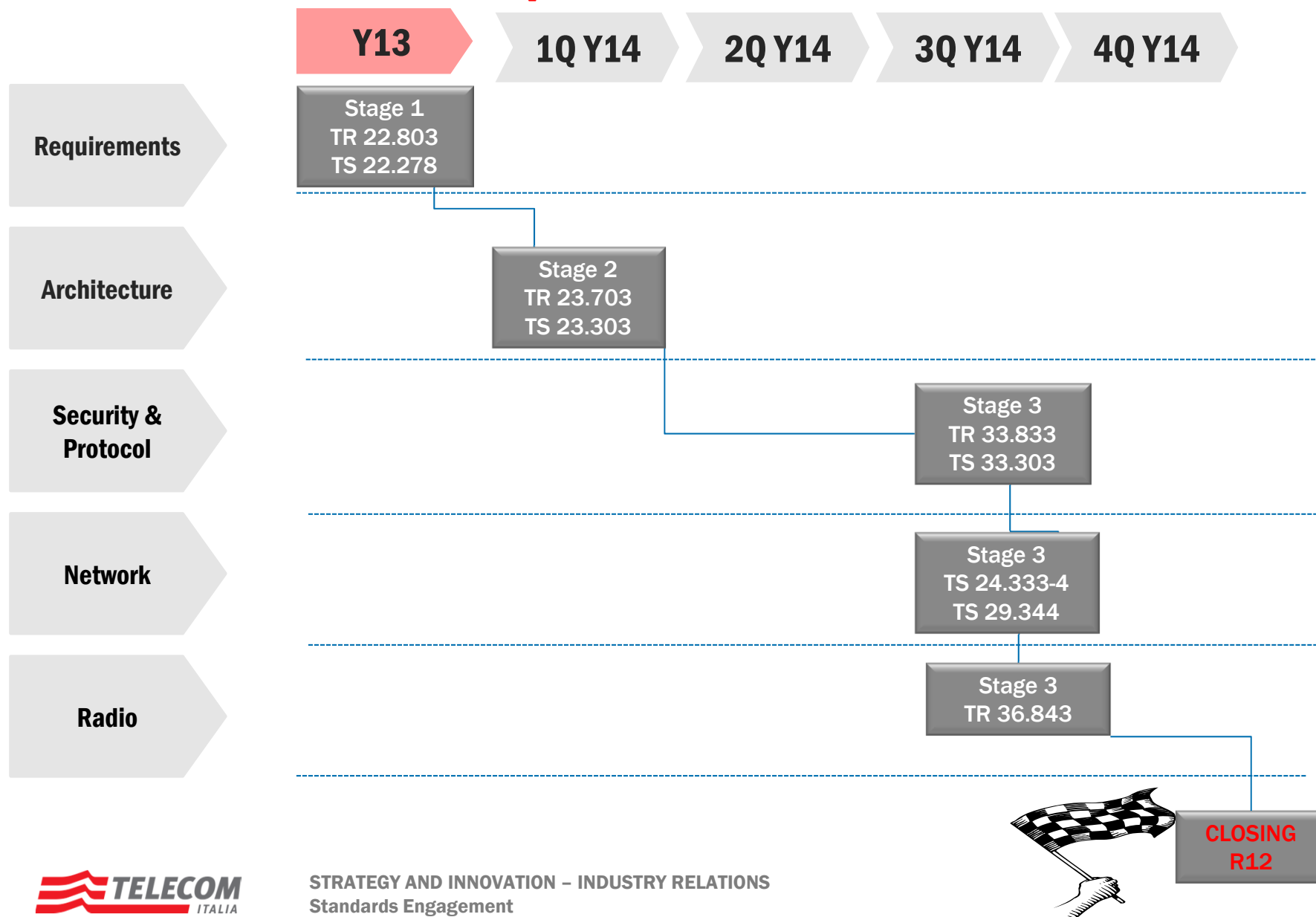
		LTE Direct	WiFi Direct	GPS	NFC
Utility	Trasportation				
	Security				
SOCIAL & ENTERTAINMENT	Dating				
	Events				
MOBILE MARKETING	Local ADV				
	CRM Loyalty Couponig				

Opportunity sizing

REVENUES DISTRIBUTION FOR A TELCO



Standardization Roadmap



Takeaways

- **LTE Direct /D2D is the technology that fits the best to the requirements of proximity and public safety services**
 - **Adopting the best value proposition and the most suitable business model for each class of new services will guarantee the best return to all the players in the value chain: MNOs, technology vendors, application developers;**
 - **The interoperability between MNO's and the referred agreements is necessary, in order to rapidly achieve an acceptable addressable customer base;**
 - **A wide LTE coverage is a key success factor in order to realize a prompt growth and expansion of the services**
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