DT: A NEW TECHNOLOGICAL AND ECONOMIC PARADIGM

Dr Claudia Tapia, Director IPR Policy

All views expressed in this speech are those of the author and do not necessarily represent the views of Ericsson

ERICSSON AT A GLANCE

NETWORKS
Create one network for a million different needs

IT
Transform IT to accelerate business agility

MEDIA
Delight the TV consumer every day

INDUSTRIES
Connect industries to accelerate performance

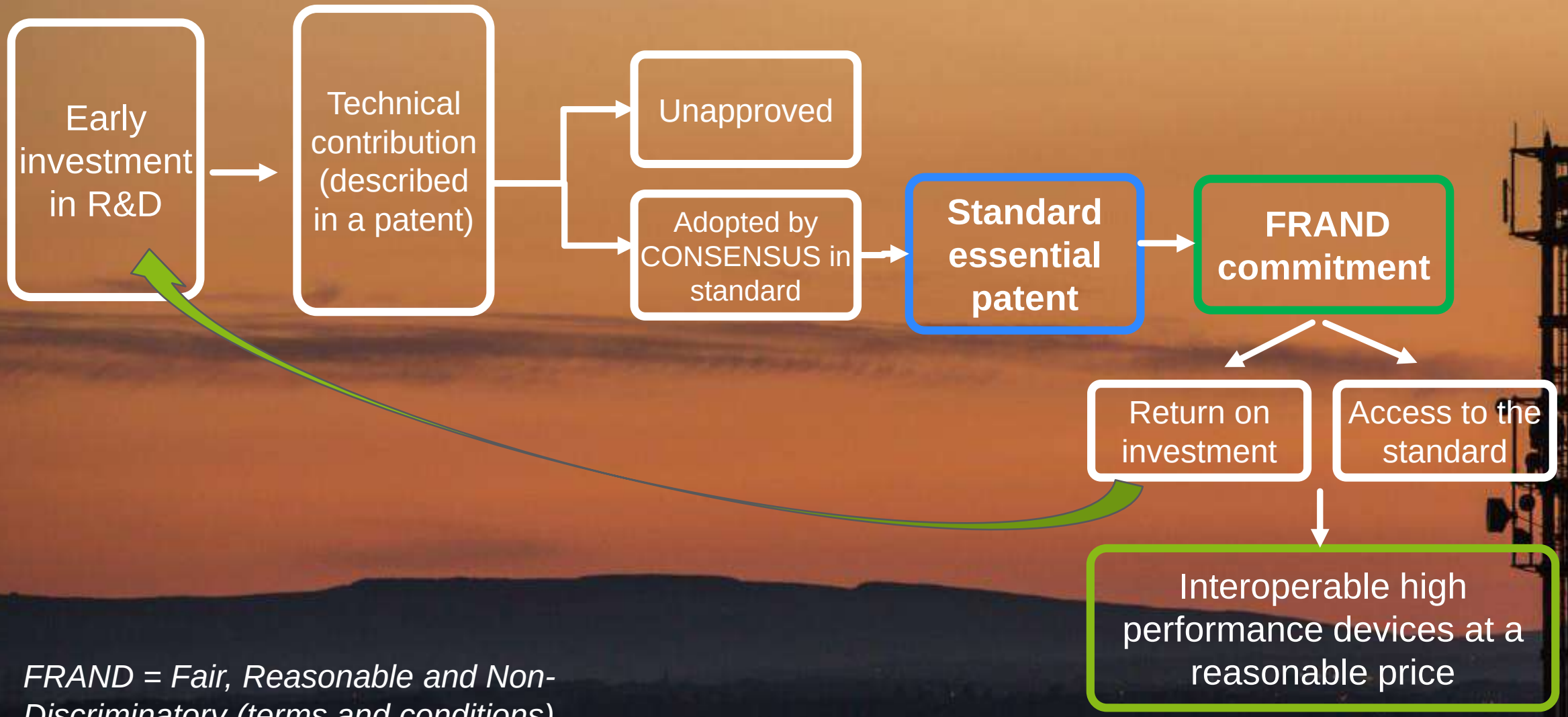
42,000	Patents
23,700	R&D Employees
5 B. USD	Average p.a. in R&D

40%	Worldwide mobile traffic provided by our networks
>100	Licensing agreements
10 B. SEK	Licensing revenues

222,6 B. SEK	Net Sales
180	Countries with customers
111,000	Employees

415,000,000,000

STANDARDISATION PROCESS



FRAND = Fair, Reasonable and Non-Discriminatory (terms and conditions)

4,000,000,000,000,000

3,452,040

3G AND LTE (3GPP - 1999 – DEC. 2014)

Submitted contributions

Approved contributions (16,7%)

Source: Signals Research Group. The Essentials of IP, from 3G through LTE Release 12, May 2015

LTE APPROVED CONTRIBUTIONS for 13 WGs (2009 - Q3 2015) –Source: ABI Research

COMPANY	RANK
Ericsson	**1**
Huawei	2
Nokia Networks	3
Qualcomm	4
ALU	5
ZTE	6
Samsung	7
Anritsu	8
Rohde & Schwarz	9
CATT	10

PRINCIPLES OF STANDARDISATION

CONSENSUS

TRANSPARENCY

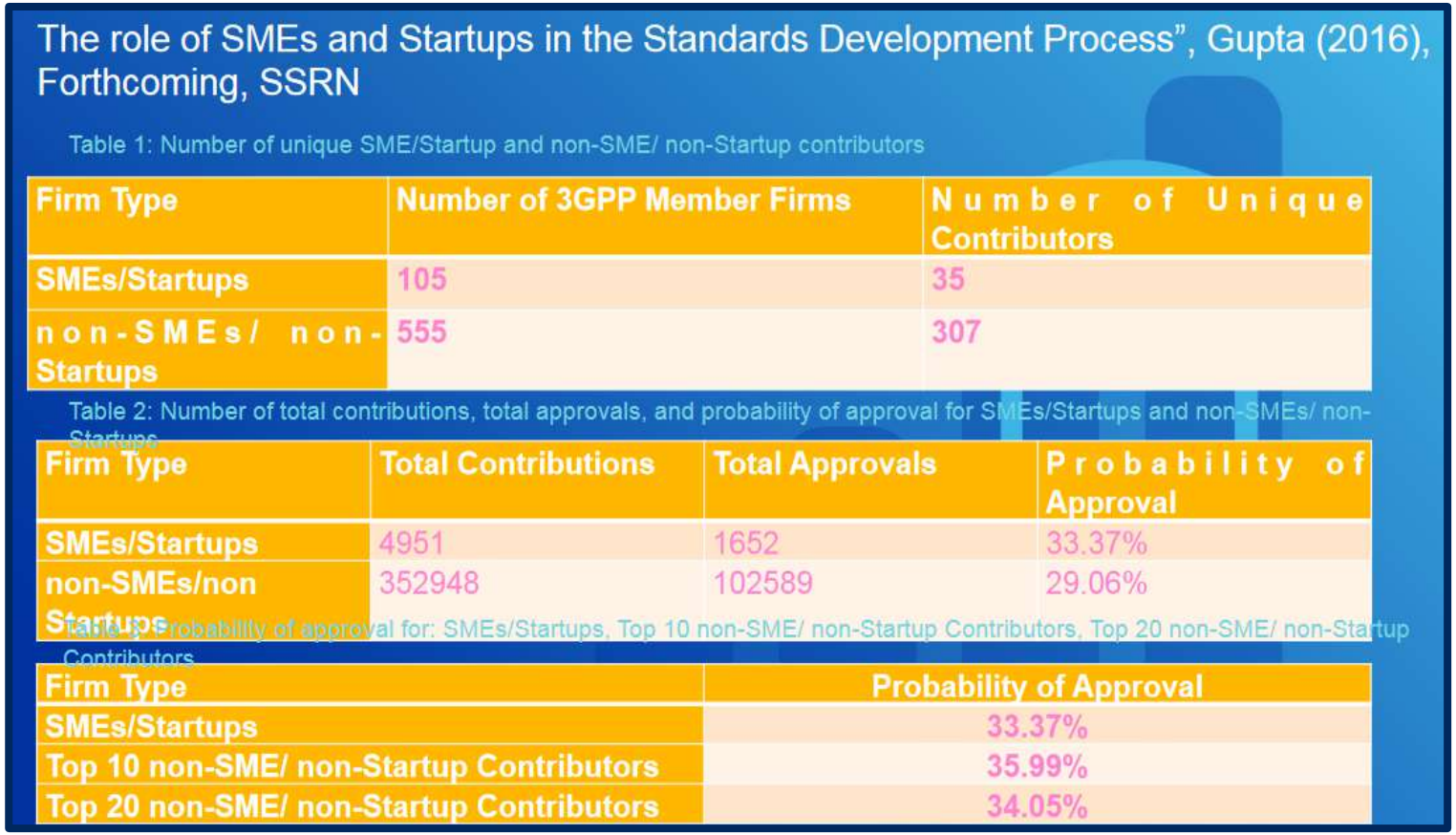
IMPARTIALITY

OPENNESS

...

See WTO TBT Agreement's Code of Good Practice
https://www.wto.org/english/docs_e/legal_e/17-tbt.doc

SELECTION ONLY BASED ON TECHNICAL MERITS



The role of SMEs and Startups in the Standards Development Process", Gupta (2016), Forthcoming, SSRN

Table 1: Number of unique SME/Startup and non-SME/ non-Startup contributors

Firm Type	Number of 3GPP Member Firms	Number of Unique Contributors
SMEs/Startups	105	35
non-SMEs/ non-Startups	555	307

Table 2: Number of total contributions, total approvals, and probability of approval for SMEs/Startups and non-SMEs/ non-Startups

Firm Type	Total Contributions	Total Approvals	Probability of Approval
SMEs/Startups	4951	1652	33.37%
non-SMEs/non Startups	352948	102589	29.06%

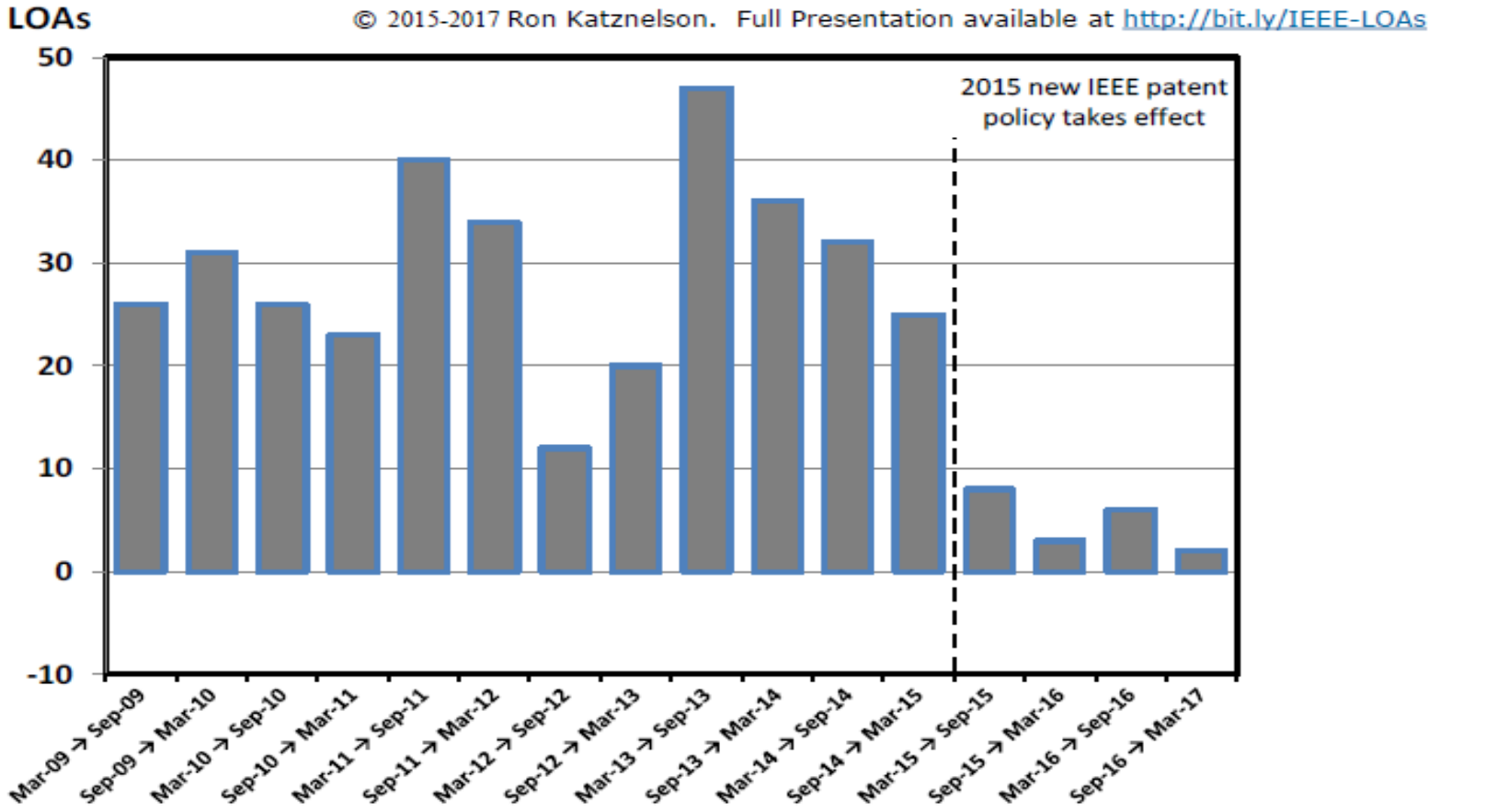
Table 3: Probability of approval for: SMEs/Startups, Top 10 non-SME/ non-Startup Contributors, Top 20 non-SME/ non-Startup Contributors

Firm Type	Probability of Approval
SMEs/Startups	33.37%
Top 10 non-SME/ non-Startup Contributors	35.99%
Top 20 non-SME/ non-Startup Contributors	34.05%

Decline in non-duplicate licensing Letters of Assurance for IEEE standards

(Netting out negative and missing LOAs)

Sources: LOA lists, IEEE-SA PatCom; Missing LOAs in: 802.15 minutes, 17-Sep-2015; 802.11 LOA Requests Register, 20-Jan-2017.



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Intervention needed?

RISING PRICING?

- Average mobile subscriber cost per megabyte (2005 -2013) : -99%
- Network infrastructure cost: - 95%

1983: Motorola ‚brick phone' priced at 3,995 USD, i.e. approx. EUR 3,750

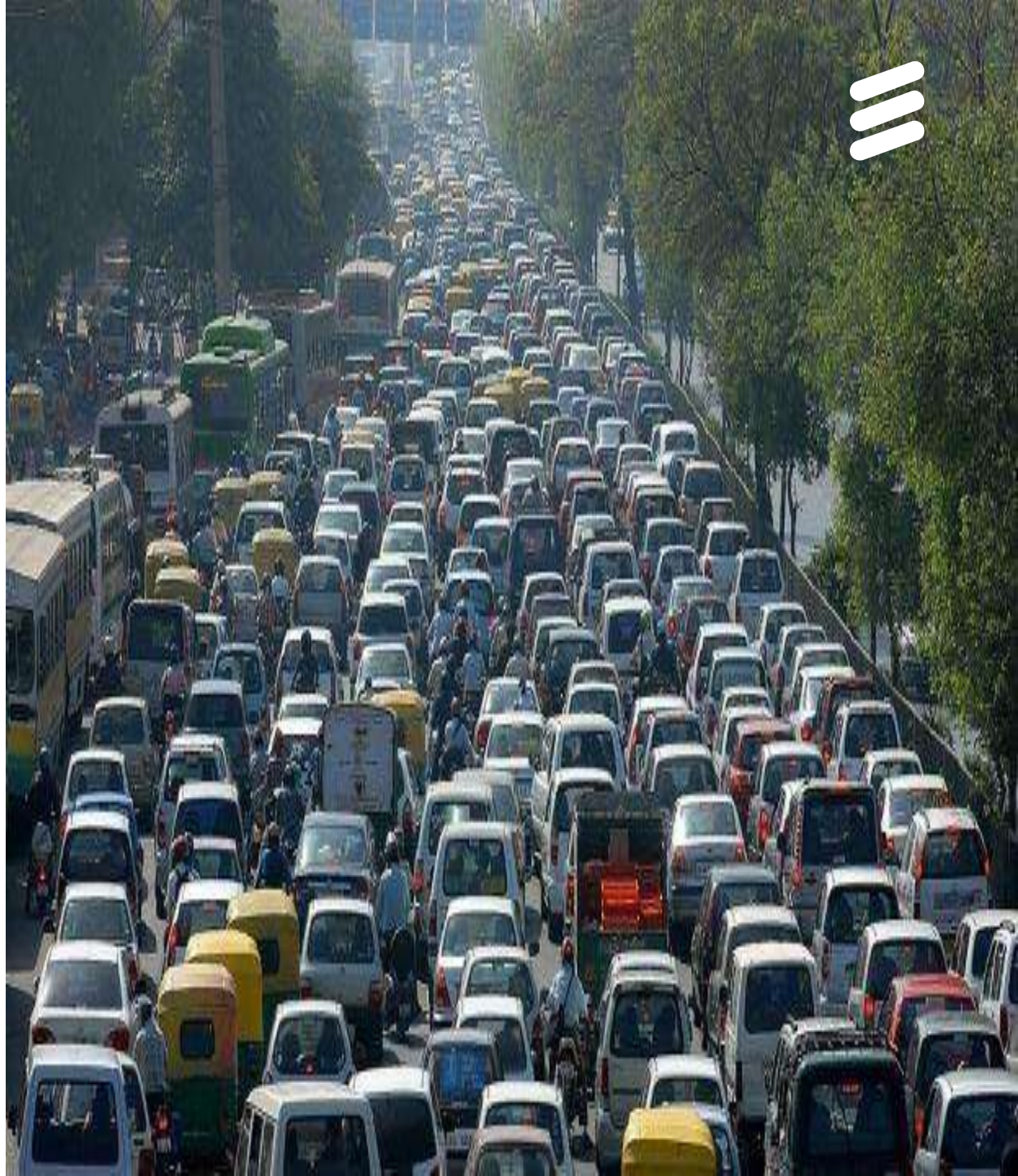
2016 France: Phones from EUR 9,99 EUR; smartphones 3G from EUR 49; Smartphones with LTE from EUR 69 in France without contract. In other countries even cheaper.

Smartphones features: Phone (call),email, texting, video calling, web browser, GPS, Apps., video, etc With 4G: Download of a 90 min. movie in 90 sec.

Source: Boston Consulting Group, The Mobile Revolution, Jan. 2015; Darty.com accessed 3. Dec. 2016

STAGNANT INNOVATION?

- Data-transmission speeds from 2G to 4G: 12,000 times faster
  - Health (remote surgery)
  - Economy (remote education, companies based on connectivity, etc)
  - Security (<interruptions, <latency, etc)
- Since mid ‘92 (GSM) market grew (by end 2015) to 7.6 billones mobile connections



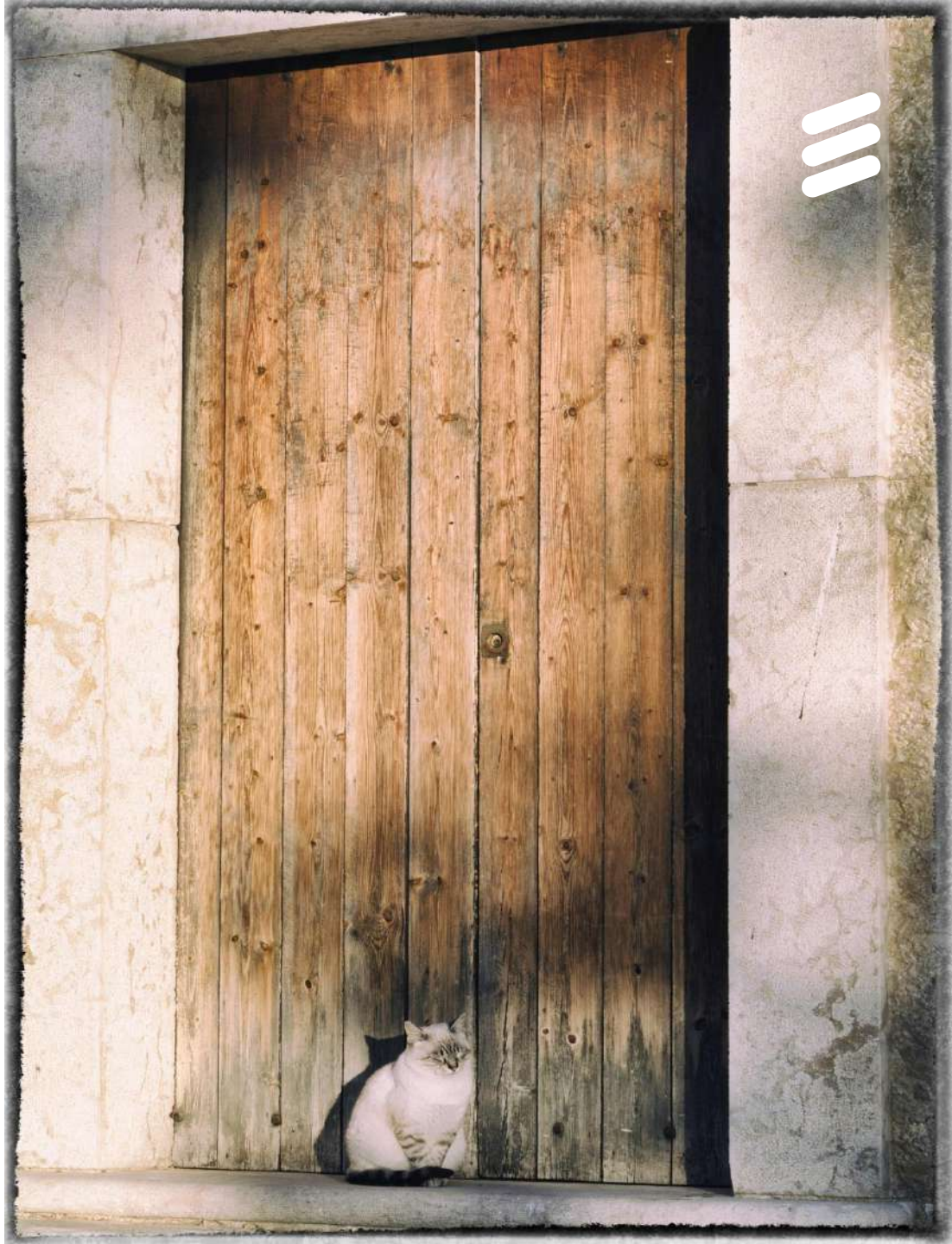
LIMITED MARKET ENTRY ?

- End 90‘s: 85% of GSM market:

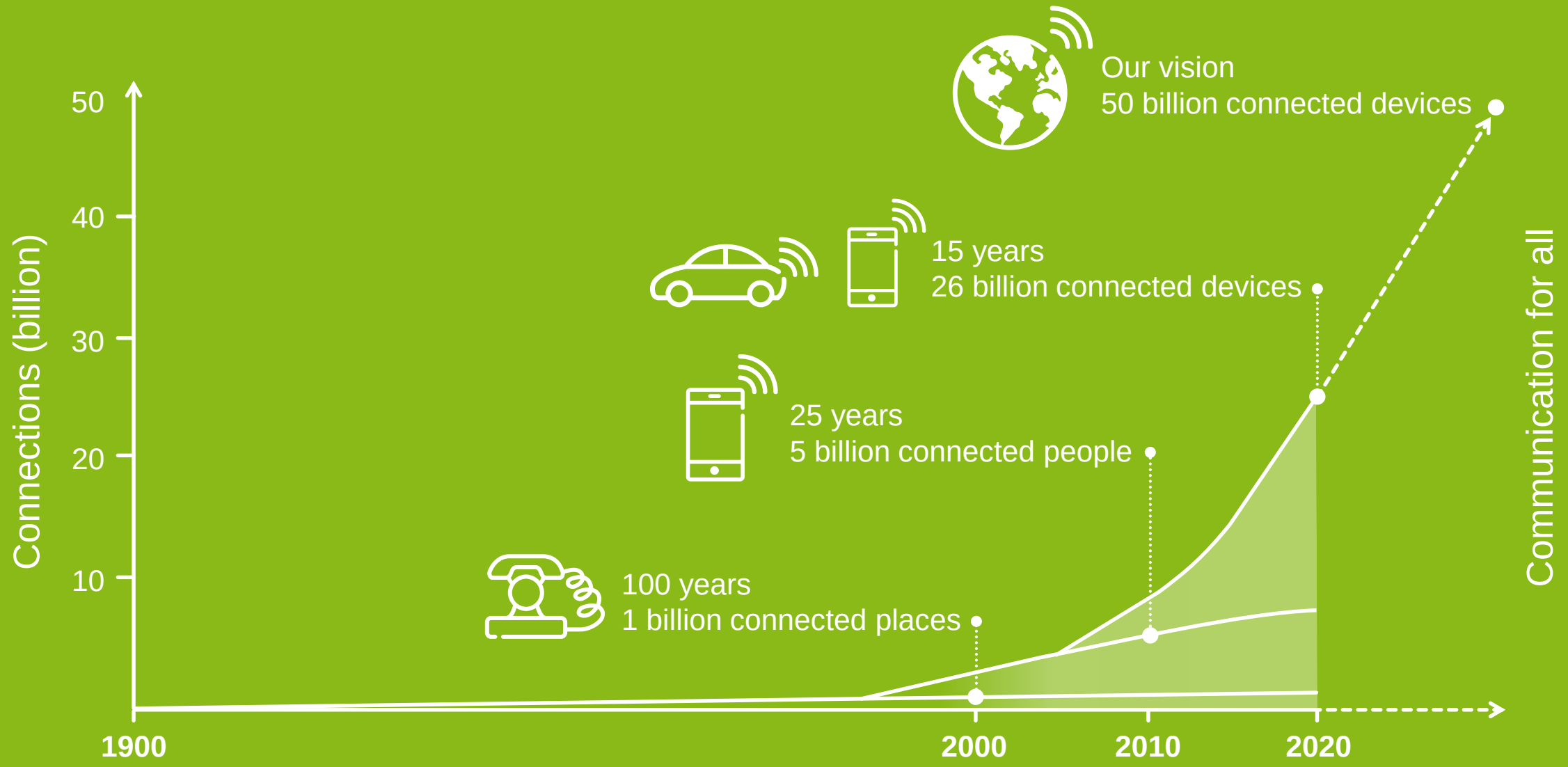
  Ericsson, Nokia, Siemens, Motorola and Alcatel

- 2016: if we look „only“ at the list of mobile phone manufacturers

Apple, Samsung, Huawei, BlackBerry, Xiaomi, Microsoft Mobile, LG, Pantech, Acer, ZTE, Bq, GeeksPhone, Gradiente, Positivo, DataWind, Amoi, BBK, Coolpad, Cubot, Gfive, Gionee, Haier, Hisense, , Konka, Letv, Meizu, Qihoo 360, Wasam, Technology Happy Life, Ningbo Bird, Smartisan, Zopo Mobile, Lenovo, Jablotron, Verzo, Jolla, Archos, Wiko, Videocon, Groupe Bull, MobiWire, AEG, Grundig Mobile, Telefunken, Tiptel, Celkon, IBall, Intex Technologies, Karbonn Mobiles, Lava International, LYF, Micromax Informatics, Onida Electronics, Ringing Bells, Spice Digital, Xolo, YU Televentures, Nexian, Evercoss, MITO, Polytron, Advan, Brondi, NGM, Olivetti, Onda Mobile Communication, TelitKyocera Communications, NEC, Panasonic, Sansui, Sharp Corporation, Sony Mobile Communications, DoCoMo, Just5, M Dot, Ninetology, Kyoto Electronics, Lanix, Zonda, Fairphone, John's Phone, Philips, Koryolink, QMobile, Voice Mobile, Advance Telecom, Dell, etc:

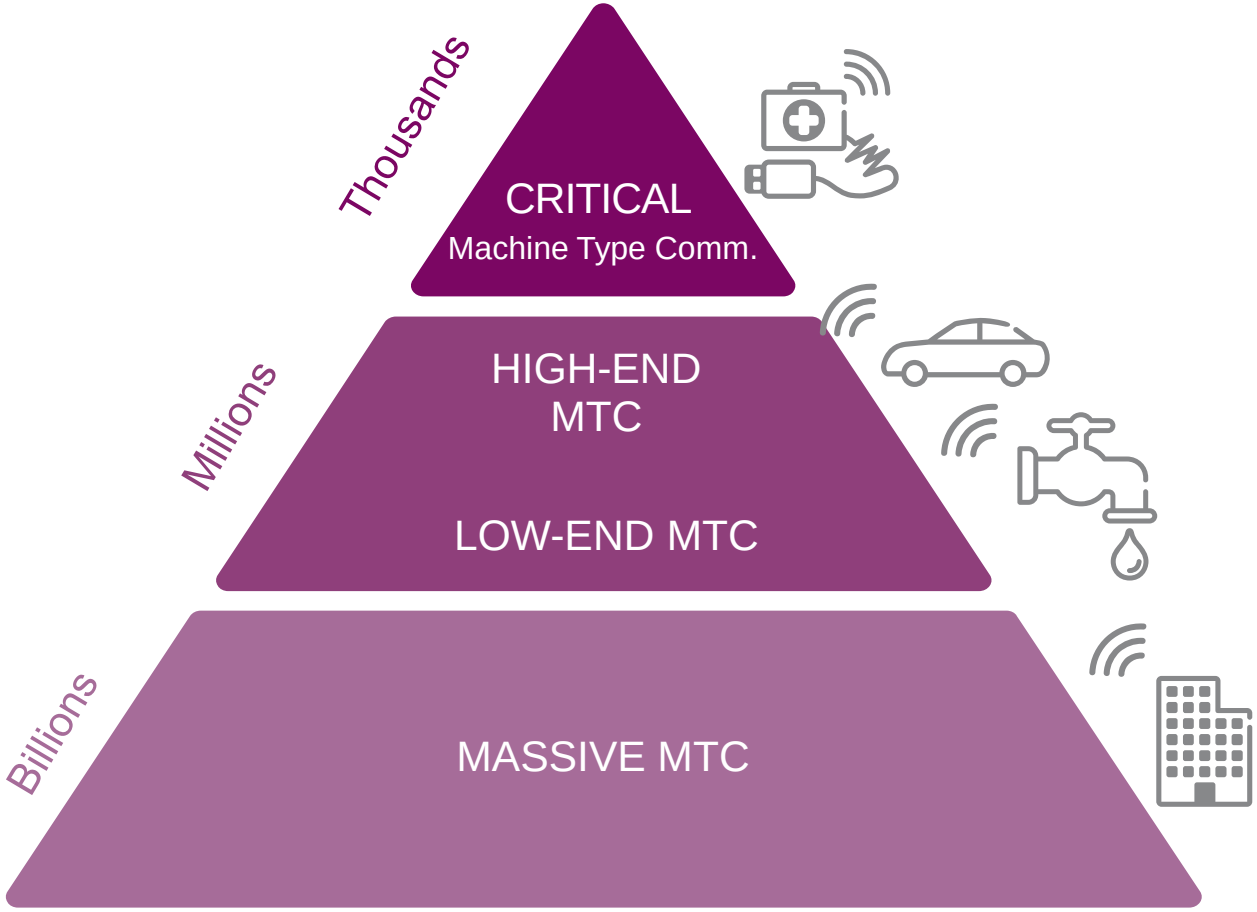


CONNECTING THE WORLD

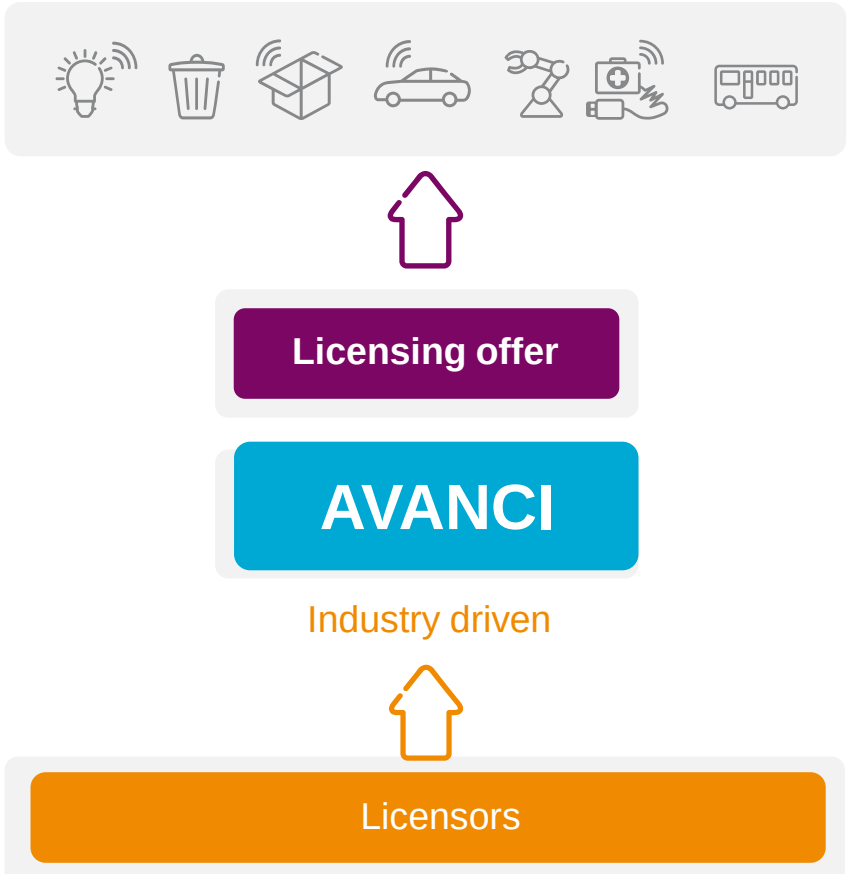


CONNECTING THE WORLD - IOT

- Value creation depends on the use case
  - Heterogeneous utilization of the global cellular standard
  - ‘One platform for all’ communication
- Large difference in scale
- Technical and commercial challenges are very different
- Speeding up adoption is crucial
- Very different from traditional telecom



ACCESS TO STANDARDS FOR IOT



- Predictable and non-discriminatory
- Fair and reasonable
- Removing barriers

http://avanci.com/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