VIENNA ENERGY FORUM 2021
where action meets ambition

6th July 2021

TIM Group

VEF Side Event: Unlocking the potential of digital technologies for a sustainable energy transition

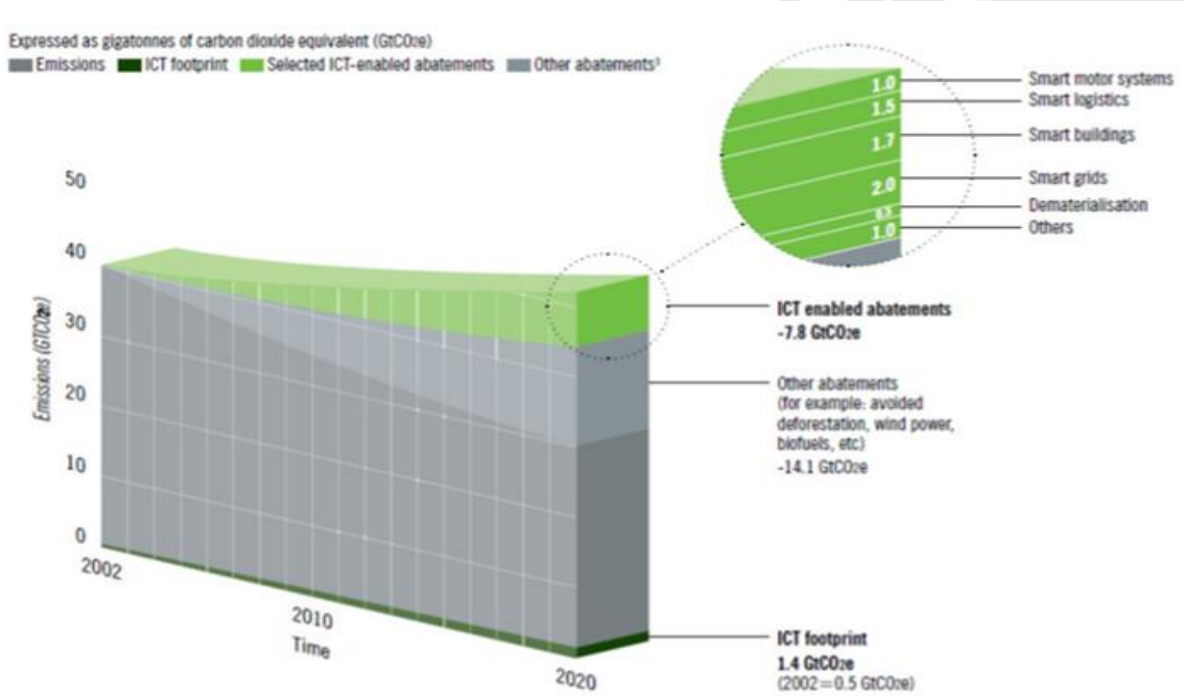
Vienna Energy Forum 2021

VIENNA ENERGY FORUM 2021 | where action meets ambition |
Hosted by Vienna Energy Forum

Claudio Bianco – TIM

The Global Enabling Sustainability Initiative (GeSI)

https://gesi.org/
http://smarter2030.gesi.org/



Estimation of ICT's global footprint and the enabling effect (GeSI)

The ICT sector can enable emission reductions in a number of ways (*):

- **Standardizing:** ICT can provide information in the form of standards on energy consumption and emissions, across the sectors;
- **Monitoring:** ICT can incorporate monitoring information into the design and control of energy use;
- **Accounting:** ICT can provide the capabilities and platforms to improve accountability of energy and carbon;
- **Rethinking**: ICT can offer innovations that capture energy efficiency opportunities across buildings/homes, transport, power, manufacturing and other infrastructures, and provide alternatives to current ways of operating, learning, living, working and travelling;
- **Transforming:** ICT can apply smart and integrated approaches to energy management of systems and processes, including benefits from both automation and behavioural change and develop alternatives to high carbon activities, across all sectors of the economy.

(*) Rif. "Boosting energy efficiency through Smart Grids" (https://www.itu.int/dms_pub/itu-t/oth/4B/01/T4B010000050001PDFE.pdf

TIM

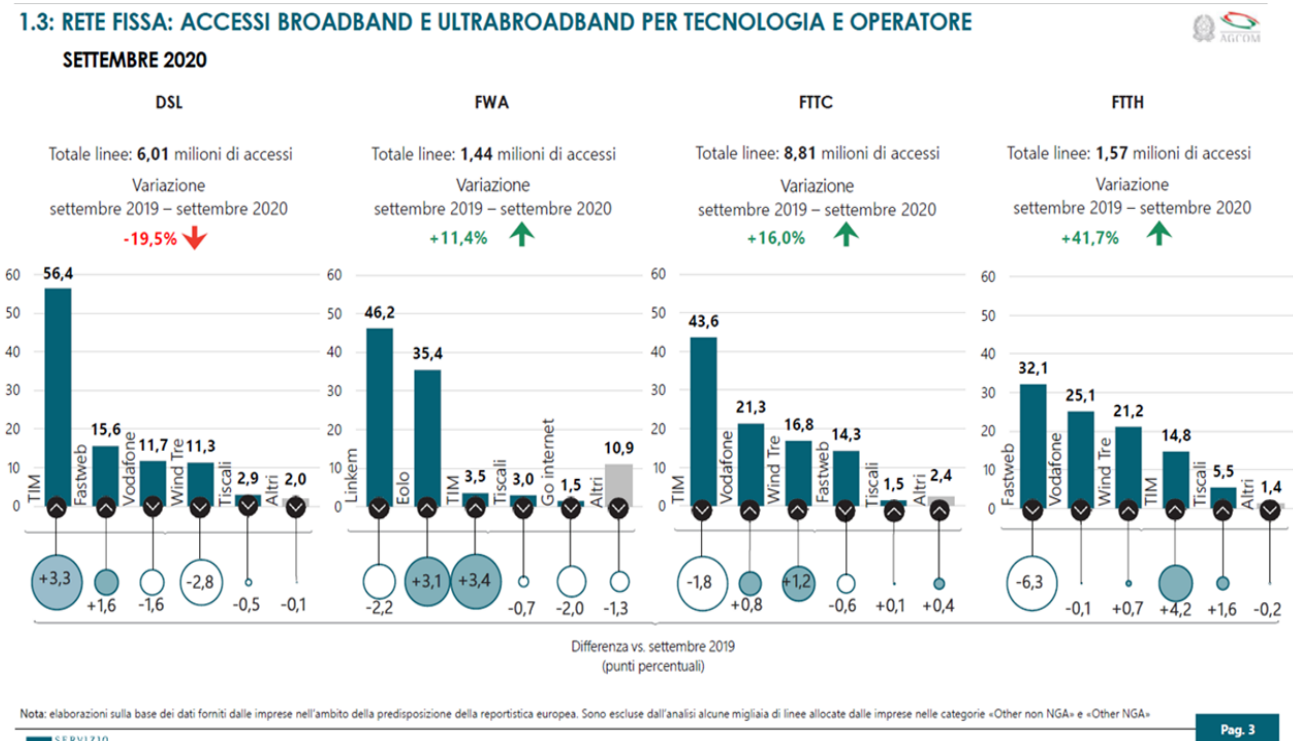
Sustainability has always been high on the agenda of TIM, which is included in the most important global sustainability indexes worldwide.

TIM joined GeSI (as Telecom Italia) in 2008 because the Initiative, thanks to its global outreach and industry wide membership, can speak with one single voice on behalf of the whole ICT sector and raise awareness of its potential and commitment to make sustainability happen vis-à-vis all interested stakeholders.

In particular the work carried out by GeSI on identifying and promoting the role of ICTs as an enabler of behavioural change, energy efficiency and GHG emission reduction, is well in line with the objectives of Telecom Italia, and the findings of the SMART2030 series of reports, as well as the overall involvement in the joint efforts aimed at the measurement of the carbon footprint of the ICT sector and at the creation of a low carbon society, support effectively the company's strategy at national and international levels.

https://gesi.org/members/tim-47

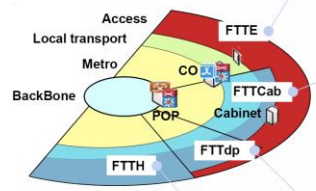
Fixed Networks: xDSL / FTTx / FWA



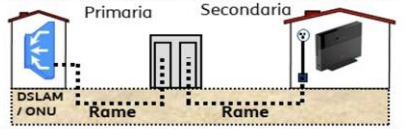
Report "Osservatorio sulle Comunicazioni" di AGCOM (04/2020) - Tecnologie di Accesso Fisso Rame (DSL) - FWA (fibra su rete mista radio) - FTTC (fibra su rete mista rame) - FTTH (fibra)

FTTx

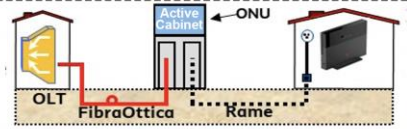
Le velocità DS indicate sono velocità massime nelle migliori condizioni di rete



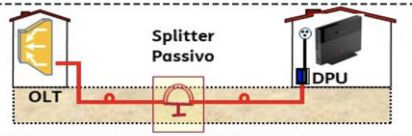
OLT = Optical Line Termination
POP = Point Of Presence
DS = Downstream
ONT = Optical Network Termination
ROE = Ripartitore Ottico di Edificio

FTTE Fiber to the Exchange


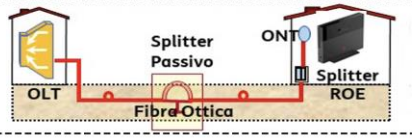
- ADSL2+
  - Up to 24Mb/s DS
- VDSL2 8b
  - Up to 80Mb/s DS

FTTCab Fiber to the Cabinet


- VDSL2 17a (VDSL2)
  - Up to 130Mb/s DS
- VDSL2 35b (E-VDSL)
  - Up to 300Mb/s DS

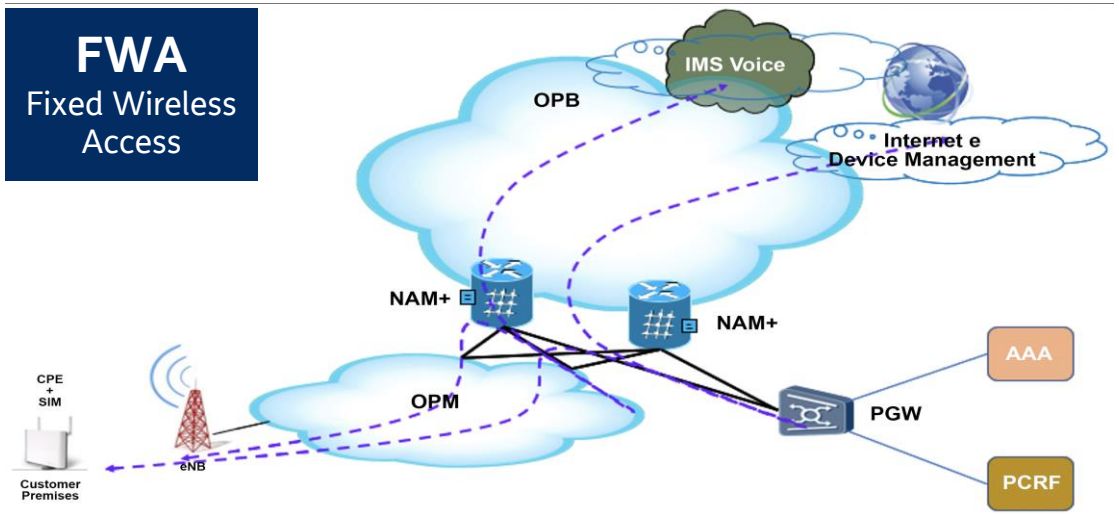
FTTdP Fiber to the Distribution Point


- G-FAST
  - Up to 1 Gb/s DS

FTTH Fiber to the Home


- GPON
  - Up to 2,5 Gb/s DS
- XGS-PON
  - Up to 10 Gb/s DS

FWA
Fixed Wireless Access

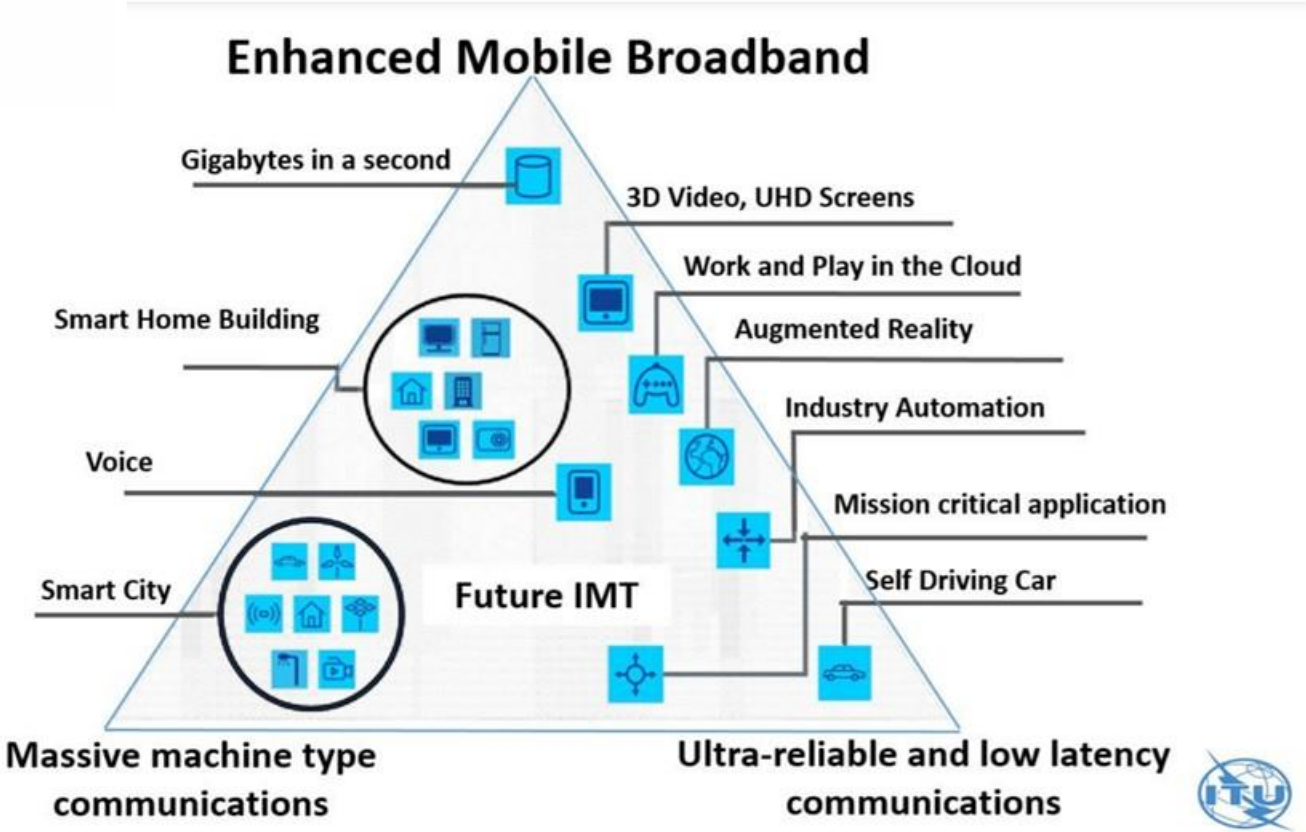


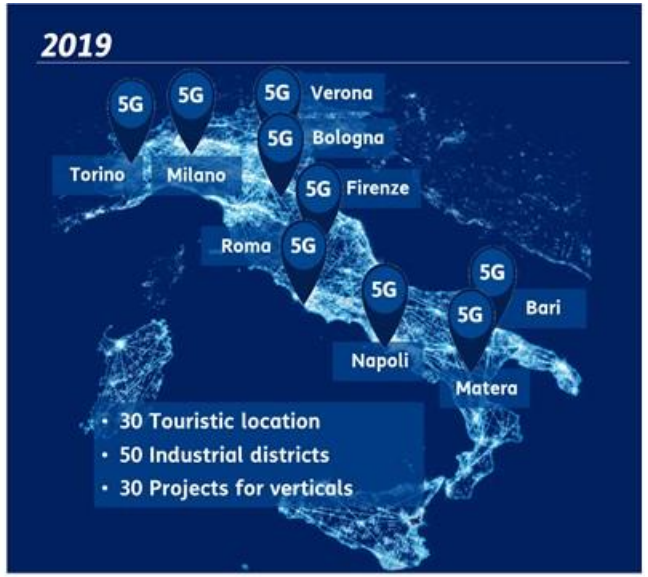
The networks..... towards THE Network: https://rete.gruppotim.it/
TIM NETBOOK 2020

https://www.gruppotim.it/content/tiportal/it/notiziariotecnico/edizioni-2020/n-3-2020/1-La-Nuova-Evoluzione-Accesso-Fisso.html
https://www.gruppotim.it/content/tiportal/it/notiziariotecnico/edizioni-2020/n-3-2020/2-Fixed-Wireless-Access-Tim.html

Mobile Networks: 5G (ITU T IMT-2020)

ETSI 3GPP





Mobile Networks: 5G (ITU T IMT-2020)

ETSI 3GPP

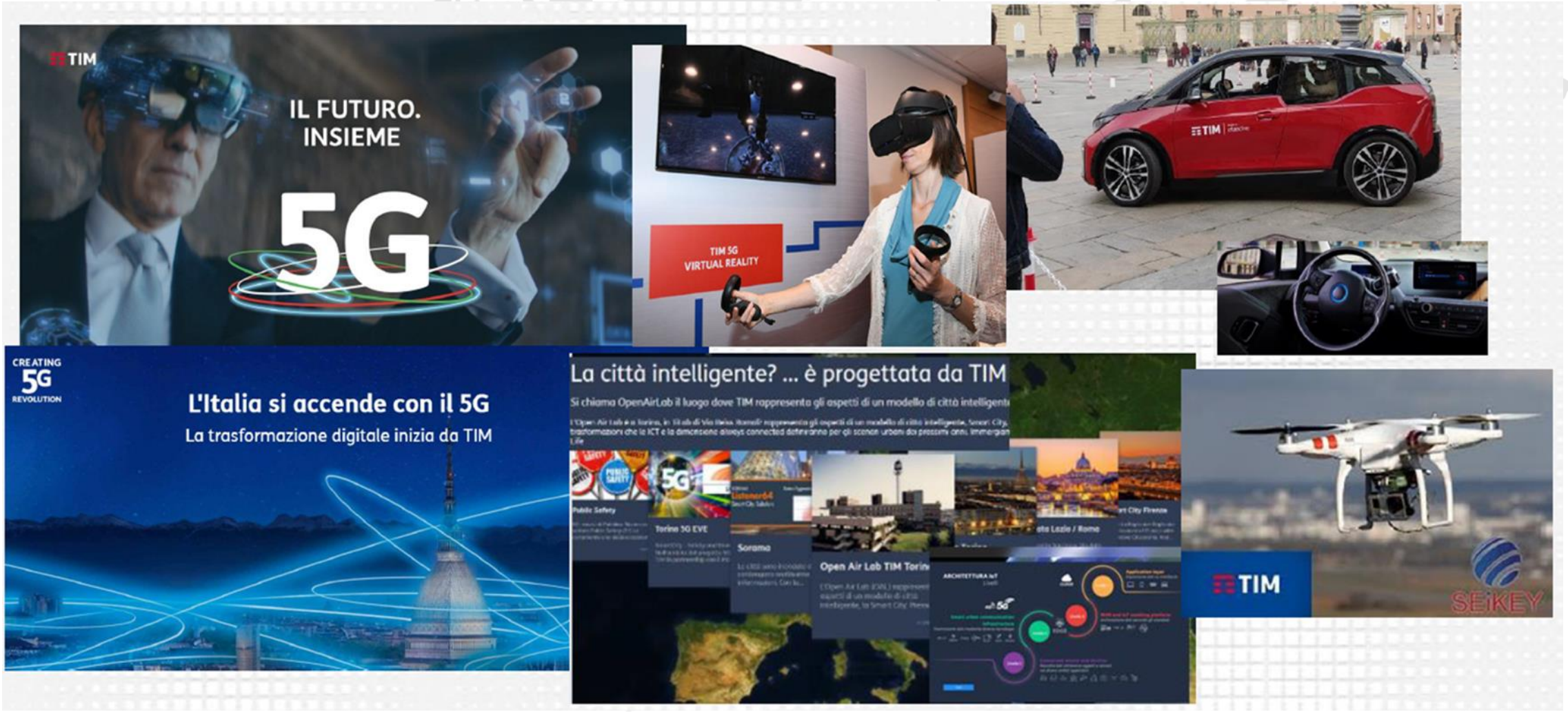
5G IA
INFRASTRUCTURE ASSOCIATION

5G PPP
PUBLIC-PRIVATE PARTNERSHIP

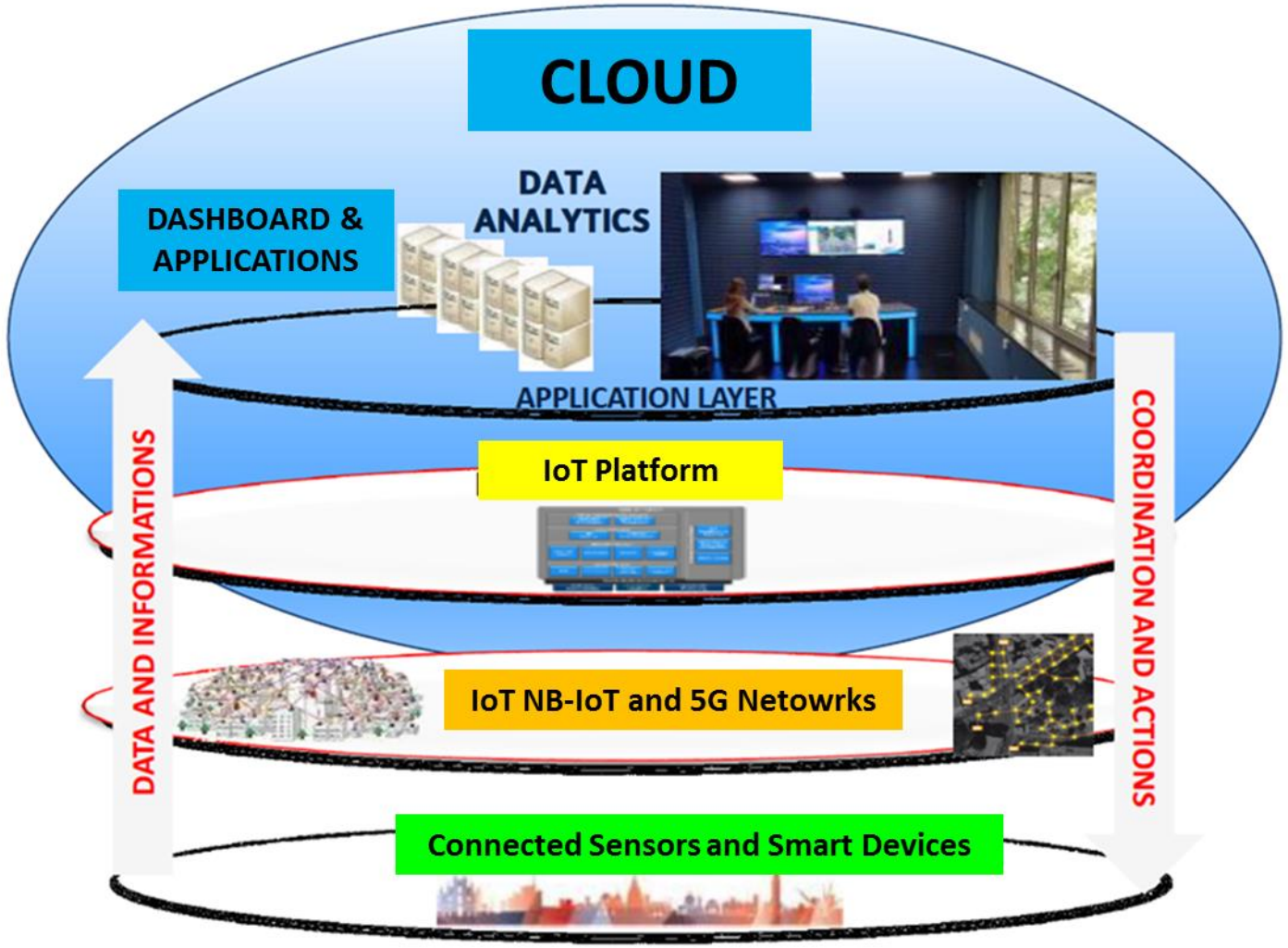
Network technologies for Smart Services (Energy, but not only….)

	Key requirements	5G	4.5G	NB-IoT	WiFi 6	Satellite
Public and Private Safety Real time detection (bodycam, drones, …)	Throughput Security					
E-Tourism Immersive visits (AR/VR)	Throughput alto Coverage Latenza low					
Waste management	Coverage Power efficiency					
Air and water quality monitoring	Coverage Power efficiency					
Buildings' structural remote monitoring	Coverage Power efficiency					
Smart Road – V2X platform	Mobility Coverage Power efficiency					

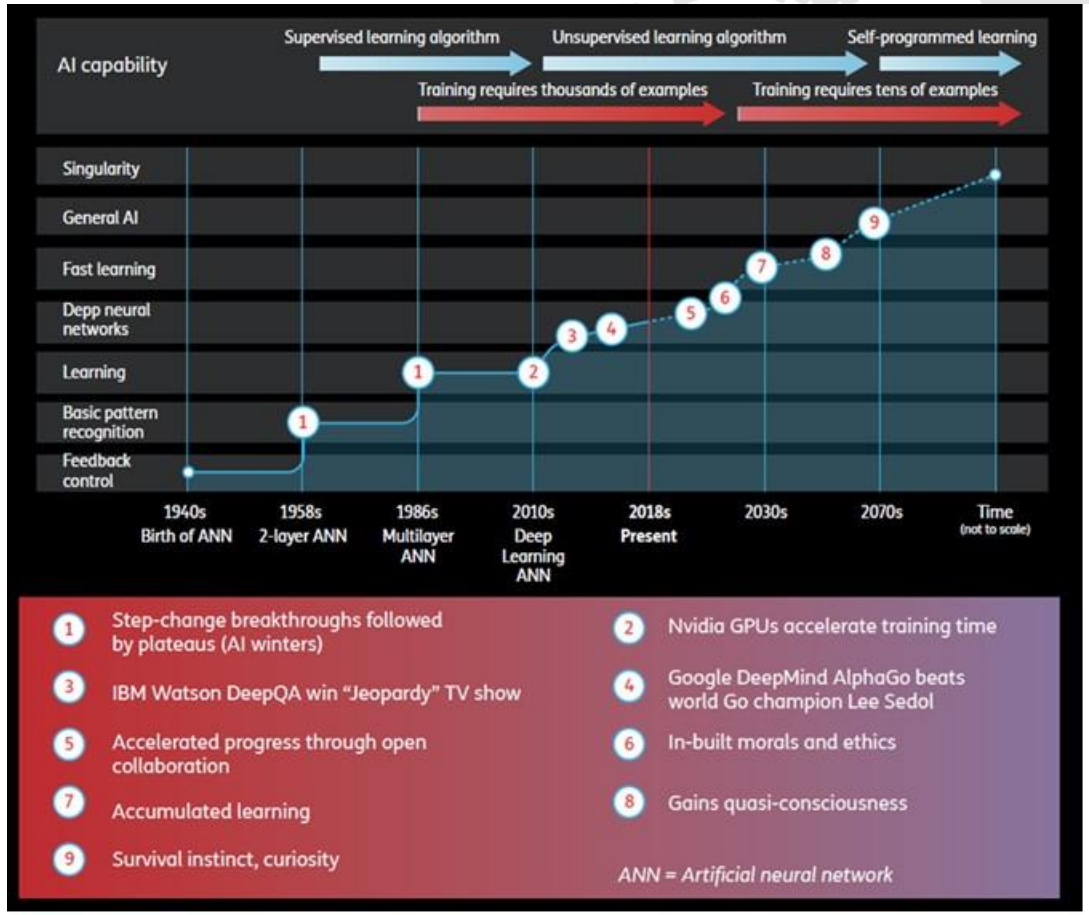
5G application examples .....



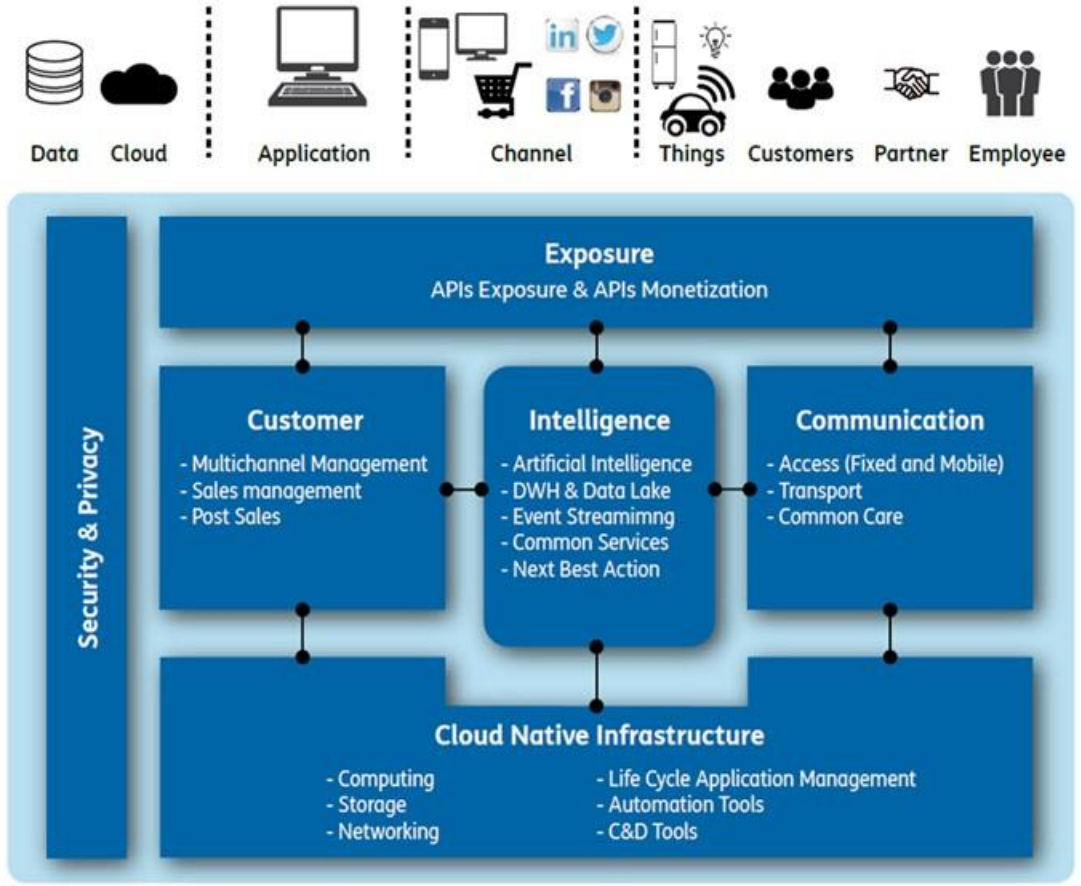
Technological platform for IoT/IoE



TIM – Technical Newspaper - Special issue on Artificial Intelligence
Some snapshots (1/3)

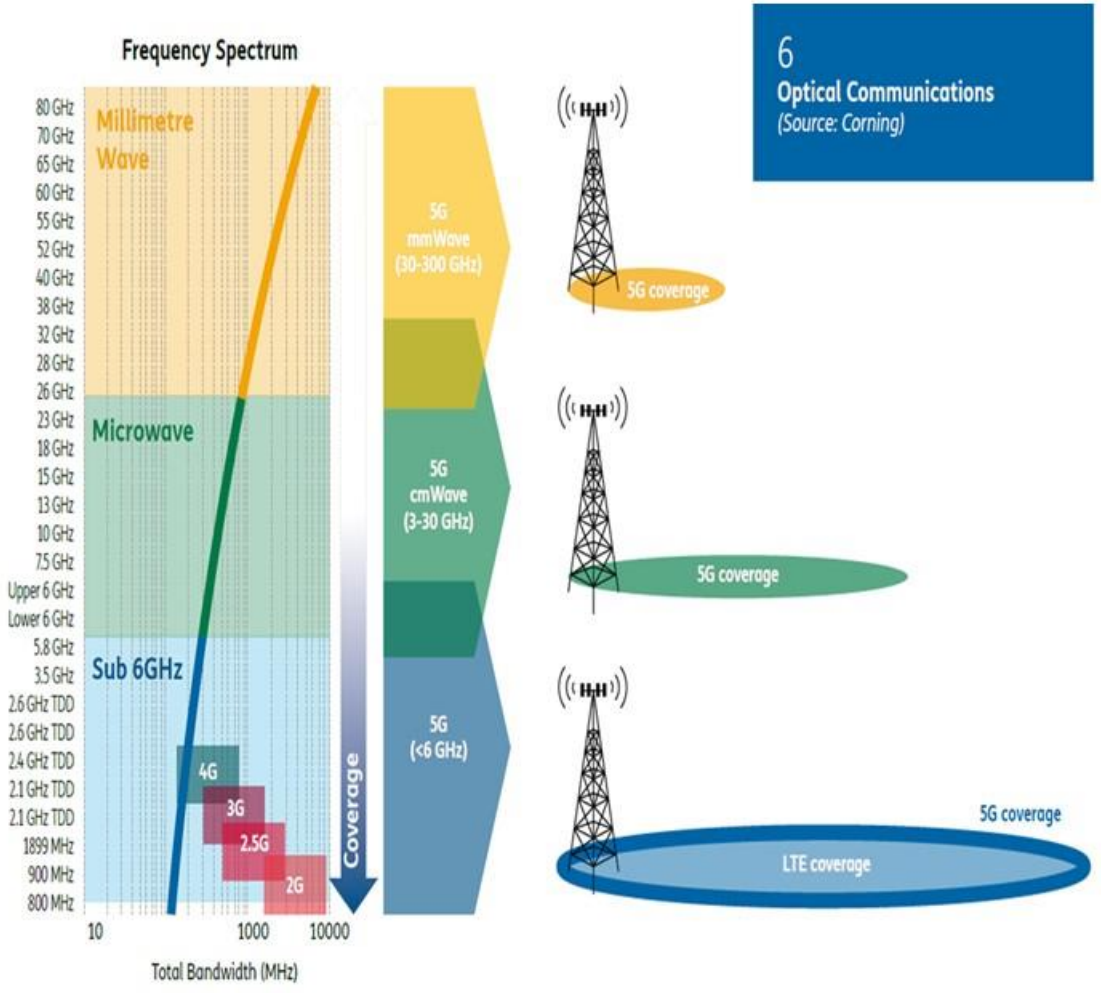


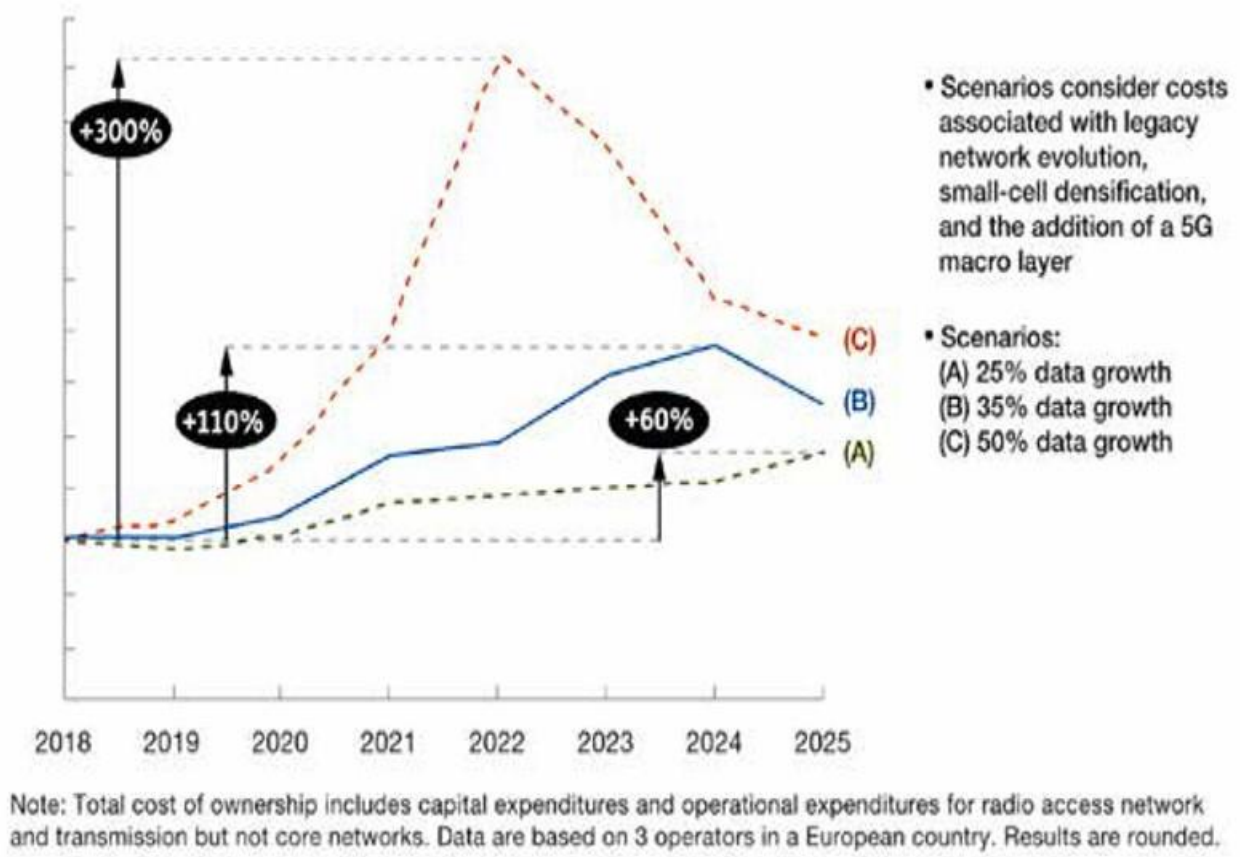
The long history of AI (AI past, present, future) - *(Source: Ovum)*



Source: https://www.telecomitalia.com/tit/it/notiziariotecnico/edizioni-2019/n-2-2019.html

TIM – Technical Newspaper - Special issue on Artificial Intelligence
Some snapshots (2/3)

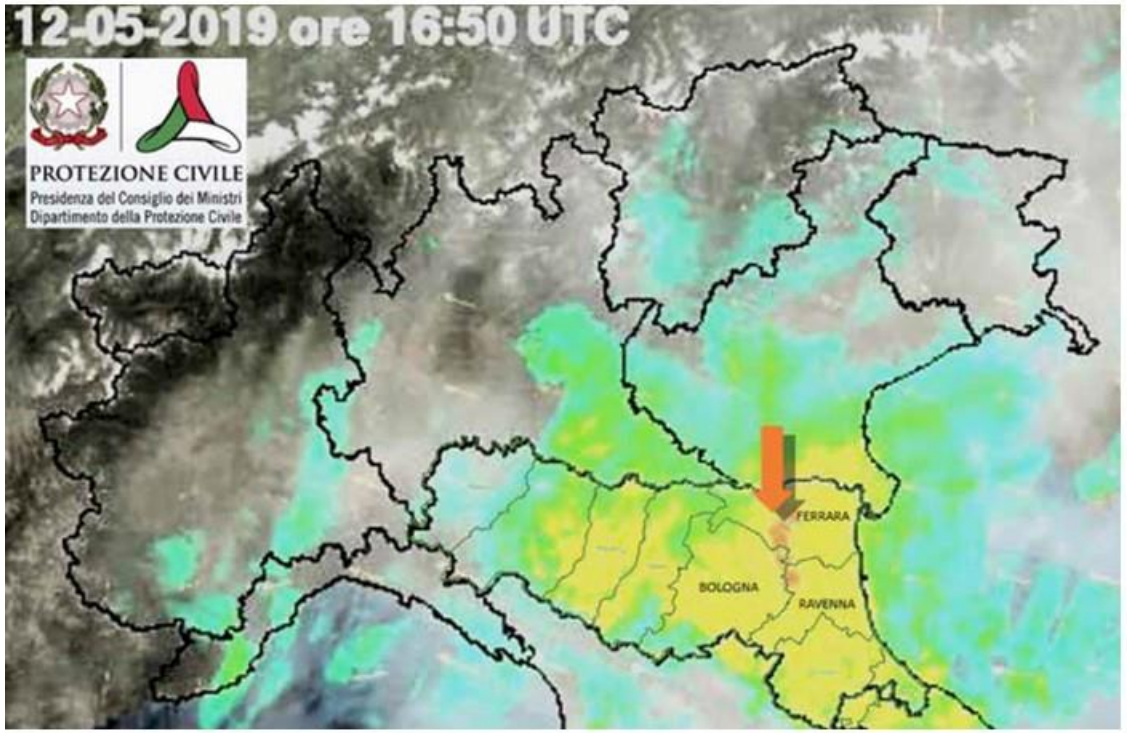




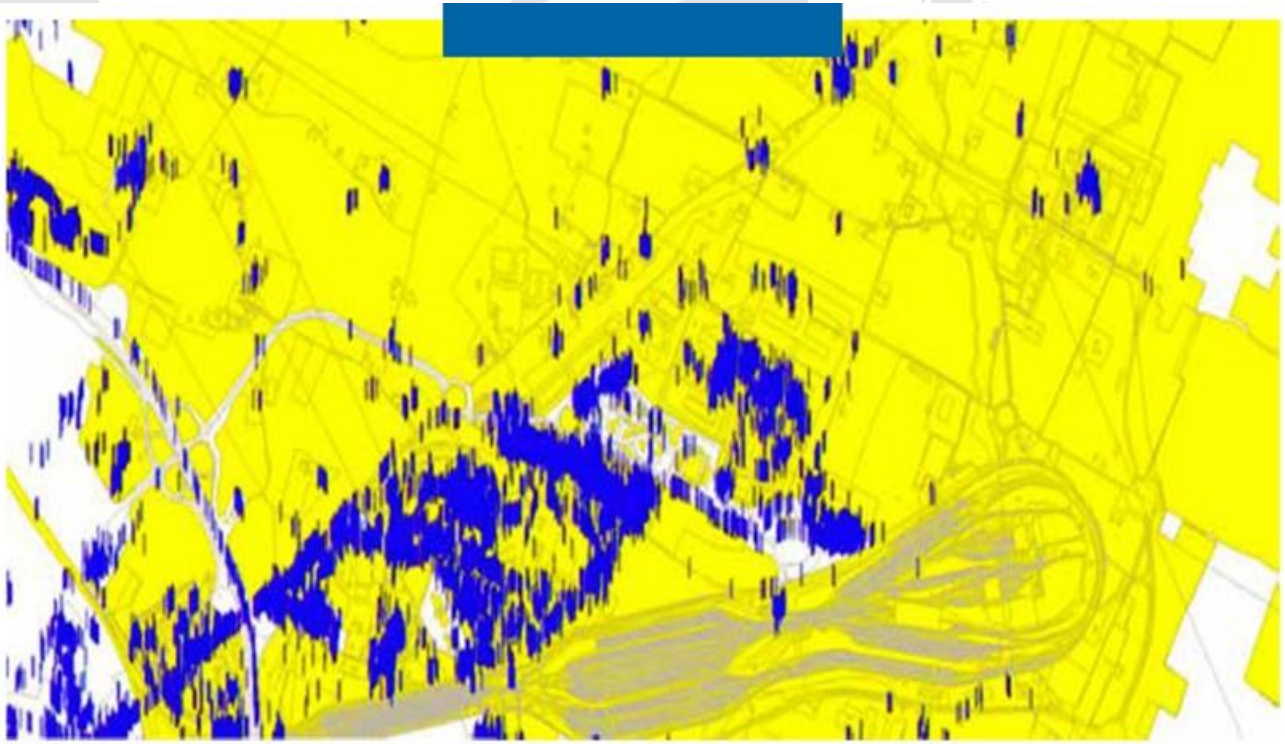
Total cost of ownership for mobile access networks will increase
(Source: McKinsey&Company)

Source: https://www.telecomitalia.com/tit/it/notiziariotecnico/edizioni-2019/n-2-2019.html

TIM – Technical Newspaper - Special issue on Artificial Intelligence
Some snapshots (3/3)



Radar images published by the Italian Civil Protection Service (strong storm near Ferrara, May 2019)



Graphic mapping of an example of geographical distribution of the samples in an area under study/observation

3GPP MDT (*Minimization of Drive Test*) standard (collection of measures from mobile terminals - both for Connected Mode and Logged Mode – in combination with GPS coordinates

Source: https://www.telecomitalia.com/tit/it/notiziariotecnico/edizioni-2019/n-2-2019.html

Blockchain for Energy Sector (TIM)

Energy Communites (pro-sumers = Producers & Consumers): renevables power plant (with storage) allows energy exchange

Optimization of RES (Renevable Energy Sources) usage and **energy cost savings:** possible with adoption of **blockchain, which allows process automation (not only … bitcoins …☺)**

See also: **Overview of blockchain for energy and commodity trading** (by EY - Ernst & Young)

https://www.ey.com/Publication/vwLUAssets/ey-overview-of-blockchain-for-energy-and-commodity-trading/%24FILE/ey-overview-of-blockchain-for-energy-and-commodity-trading.pdf

Vivere l'innovazione / Come la blockchain cambierà il mondo dell'energia

Stampa

Text size - +

Immaginate che i tetti dei condomini del vostro quartiere siano tutti ricoperti da pannelli solari di ultima generazione. Questo, però, non vi permette soltanto di utilizzare l'energia prodotta dal sole per la vostra abitazione, ma anche di immagazzinare quella in eccesso e rivenderla ai vicini che, invece, potrebbero averne bisogno.

Tutto ciò – che consente di **ottimizzare l'utilizzo delle rinnovabili** e di ottenere ulteriori **risparmi sulla bolletta** – è reso possibile dalla **blockchain**: la tecnologia del registro distribuito (resa celebre dai bitcoin) che permette non solo di scambiare moneta digitale, ma anche di **automatizzare** la gestione di alcuni processi.

Source: https://www.telecomitalia.com/tit/it/innovazione/come-la-blockchain-cambiera-il-mondo-dell-energia.html

Beyond connectivity

The TIM *'Beyond Connectivity'* plan provides for the ongoing improvement of the traditional business and the growth of **adjacent services beyond connectivity**.

It is largely based on the strategic initiatives developed over the last two years:

- *Noovle*, the largest **Cloud and Edge Computing project** in Italy, which will leverage the Group's data centres
- *FiberCop*, in launch phase, with an ambitious plan to provide coverage to the country by creating a **fibre optic** secondary access network
- *TIMVISION*, with major collaborations launched with the main **content** partners worldwide

https://www.gruppotim.it/en/press-archive/corporate/2021/PR-Strategic-Plan-2021-23-23-02-2021.html

Thank You for Your attention !