

The Fair Contribution Debate

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Il futuro delle comunicazioni elettroniche: il
tema del fair contribution

14 giugno 2023

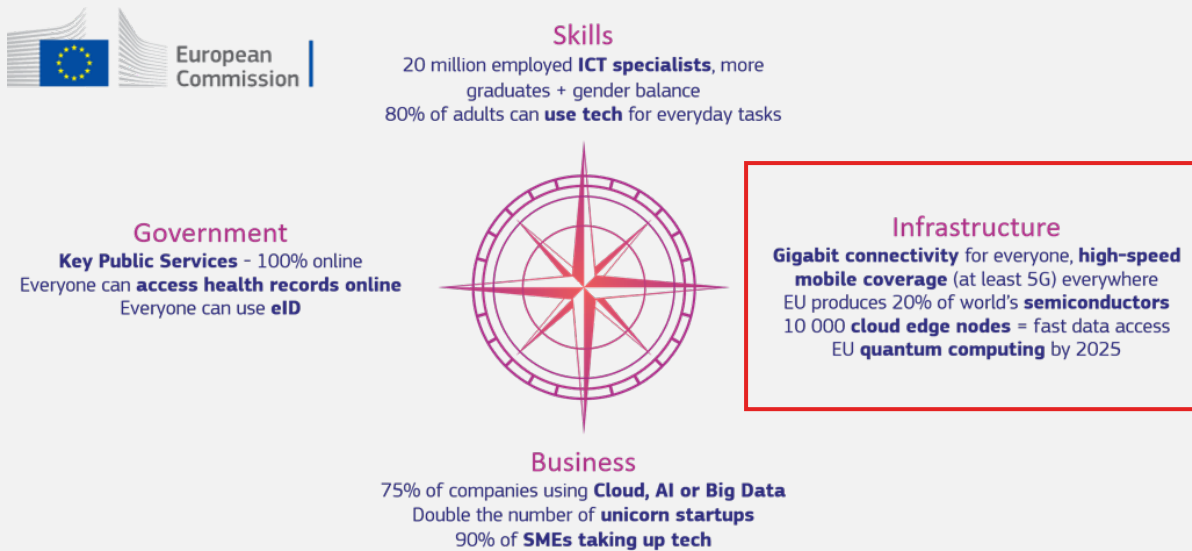
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The goals of the Digital Decade

European Declaration on Digital Rights and Principles

"all market actors benefiting from the digital transformation assume their social responsibilities and make a fair and proportionate contribution to the costs of public goods, services and infrastructures, for the benefit of all Europeans"

Europe's Digital Decade targets for 2030



- Massive investments necessary for the development of fibre optic networks
- densification of 5G antennas (with technology cycles of 5-7 years)
- strengthening and evolution of backbone infrastructures and core platforms

The question is whether the current and prospective market structure can ensure the **economic sustainability of the necessary investments** in communication infrastructure or whether there is a need for regulatory intervention

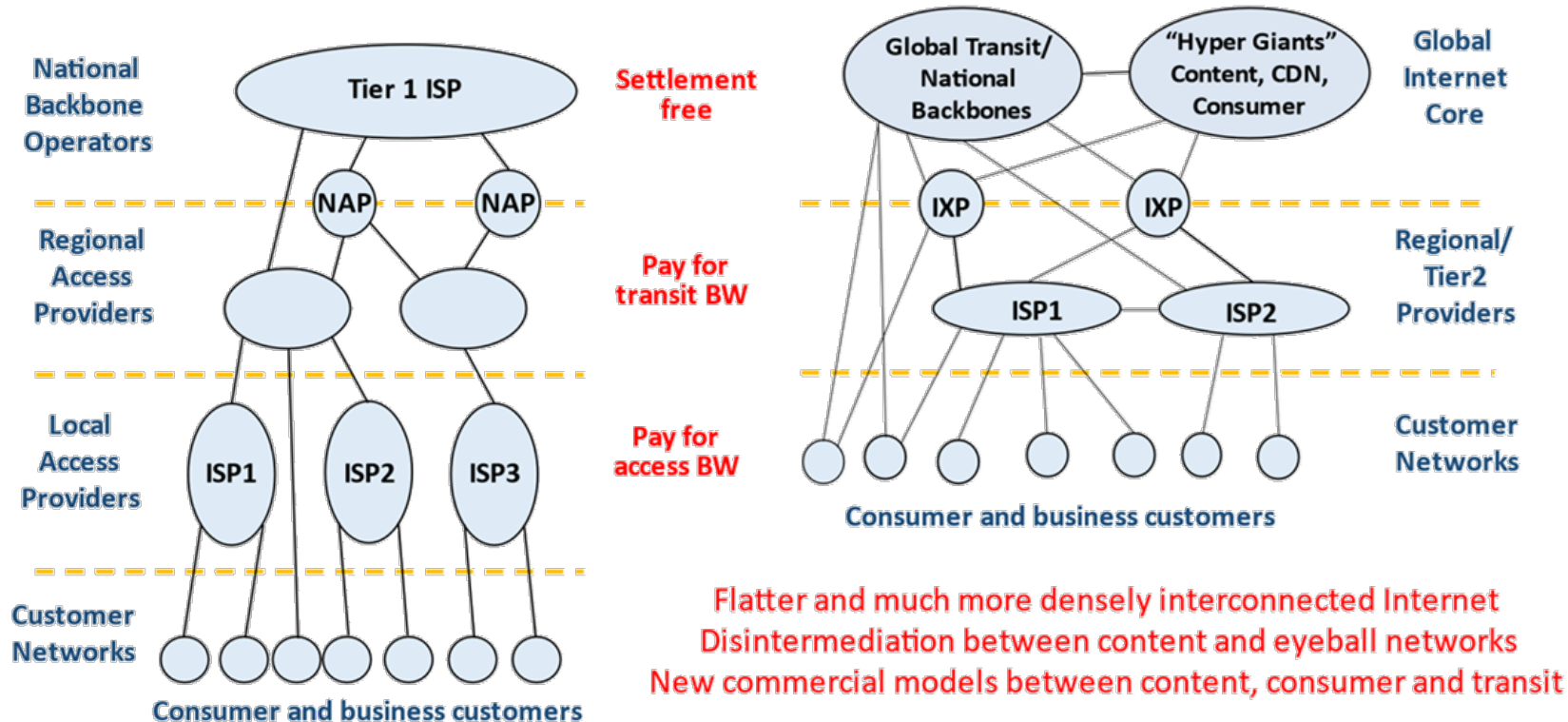
European Commission's consultation on the "future of the electronic communications sector and its infrastructure"

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The shift in the Internet paradigm

The architecture of the Internet has evolved over the years due to the transition from a web-centric to a content-centric paradigm

Old and New Internet Architectures



NAP: Neutral Access Point IXP: Internet Exchange Point

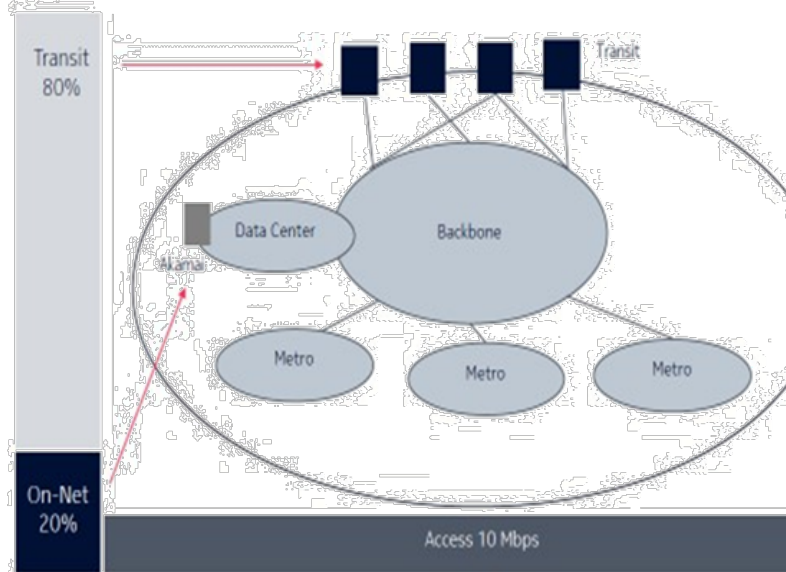
Source: Craig Labowitz, Arbor Networks , 2011

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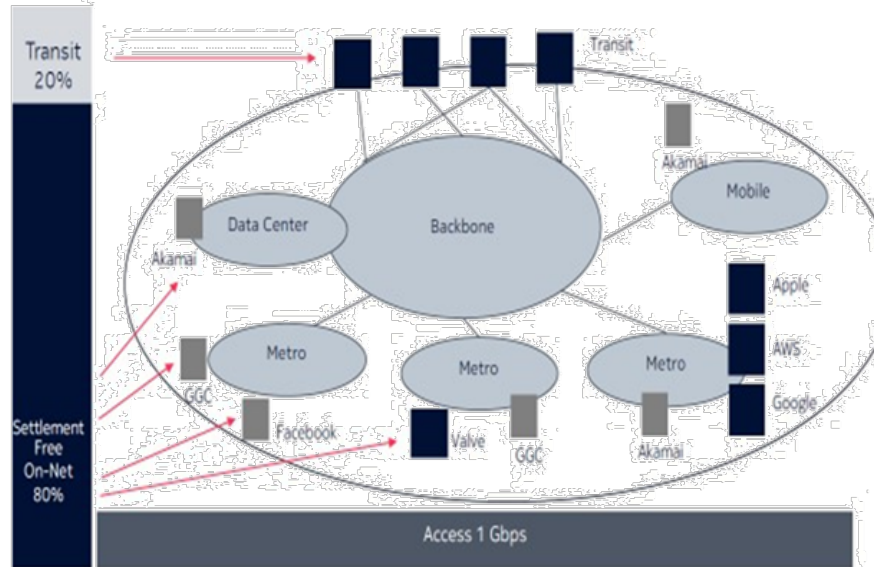
The upside-down of the interconnection model: from transit to direct interconnection

2009-2019 Internet Disruptive Evolution

2009 most Internet traffic is transit



2019 Most Internet traffic is settlement free or on-net cache



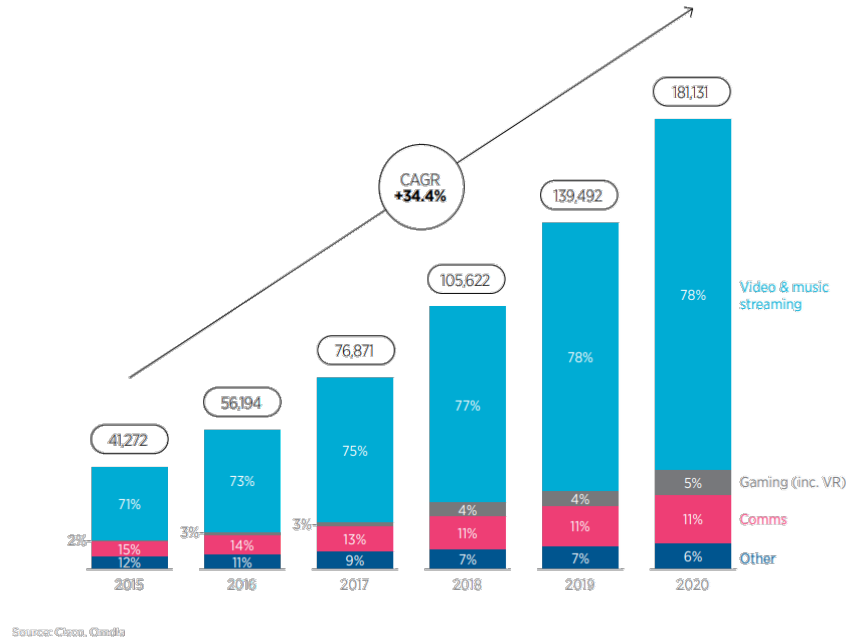
Source: Craig Labowitz, Nokia , 2020

- Large CAP/OTTs deploy their own international networks, often coupled with their own global CDNs. Transits are no longer needed
- Interconnections with national ISPs usually occur at the IXP or on-net at the core layer. However, the significant traffic volume continues to flood the backbones
- Telcos and users benefit greatly from OTT interconnections at the metro layer, but this model requires higher investments: who is going to pay?

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The need for a Fair Contribution for Telcos

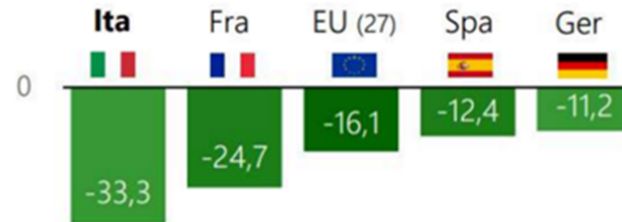
Global consumer internet traffic (average PB per month)



- Global consumer Internet traffic grew at a CAGR of 34.4% from 2015 to 2020, and according to ETNO's State of digital communications | 2023, Data traffic is expected to keep growing 20–25% per year
- Increasing demand for high-performance services, such as live streaming of sports events, live gaming services, metaverse and vertical applications

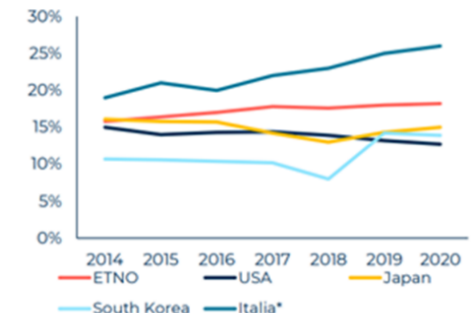
But steady and significant reduction in the return on network infrastructure investments

PRICE CHANGE BETWEEN DECEMBER 2011 AND DECEMBER 2021 (%)



AGCOM, Communication Markets Monitoring System - December 2021, March 2022

CAPEX/REVENUE RATIO, 2014 - 2020



ETNO, state of digital communications 2022

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Why Telcos ask OTT/CAPs to contribute the broadband costs

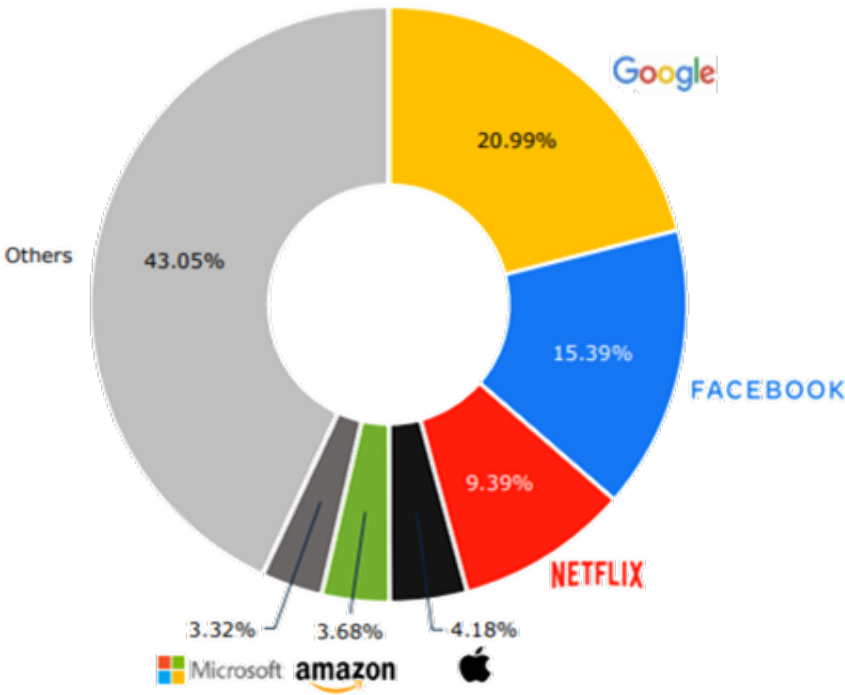
Telcos believe that the introduction of a contribution from the BigTec to support part of the network costs would be "fair", meaning that it would repay the investments and additional costs incurred by the operators themselves

- Most of the traffic is generated by the big digital players: 56% of global Internet traffic is generated by only 6 large OTT/CAPs
- The cost generated by the OTT/CAPs on European telecommunications operators has been estimated by Frontier Economics between €36 and €40 billion



ESTIMATED TOTAL COSTS ATTRIBUTABLE TO OTT TRAFFIC FOR FIXED AND MOBILE

	FIXED	MOBILE
Weighted average cost per subscriber	€40 - €47	€43 - €46
Annualised OTT costs across Europe	€8 billion - €10 billion	€28 billion - €30 billion



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The negotiation asymmetry

The Fair Contribution could be seen as nothing more than the economic recognition of the access services to network infrastructures used by the OTT/CAPs but currently not remunerated to Telcos, due to the negotiation asymmetry that exists between the OTT/CAPs and telecommunications operators

The OTT/CAPs vs Telcos negotiation asymmetry



OTT/CAPs are mostly global players with **capitalizations several orders of magnitude higher** than telecommunications operators, which are mostly national or even smaller entities



The services offered by the main **OTT/CAPs (Alphabet, Meta, etc.) are essential from the consumer's** point of view, who would not hesitate to change operator

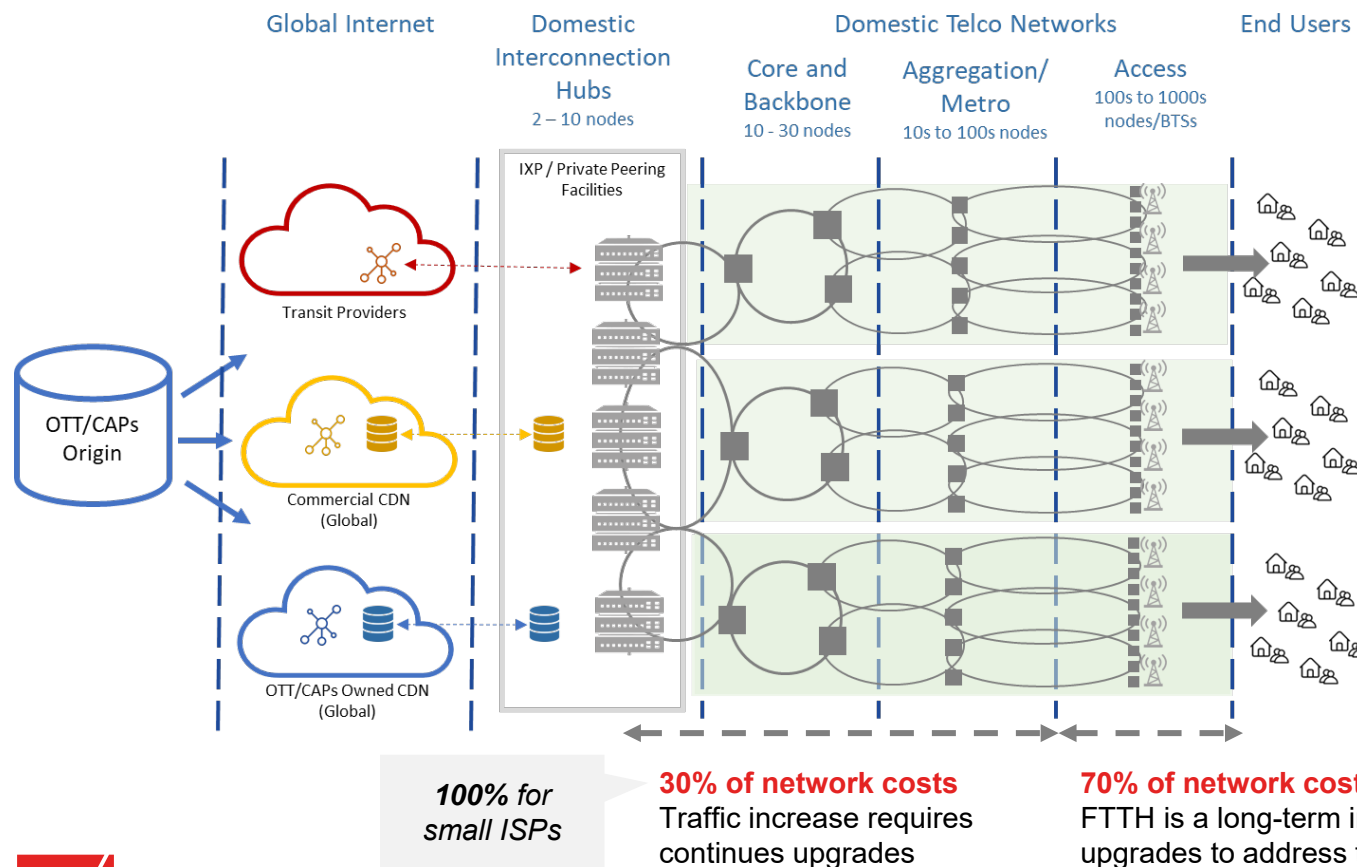


OTT/CAPs can "circumvent" direct interconnection with an operator by exploiting public peering and transit, While **Telcos have de facto Must Carry obligations** due to Net Neutrality rules

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How much the OTT traffic impact Telcos' network cost?

A common objection to the Fair Contribution is that most of the costs of network infrastructure are related to fiber access, the cost of which is independent of the increase in traffic and therefore there is no need for a Fair Contribution. However, the picture is more complex and traffic increase impact many areas of Telcos' network TCO



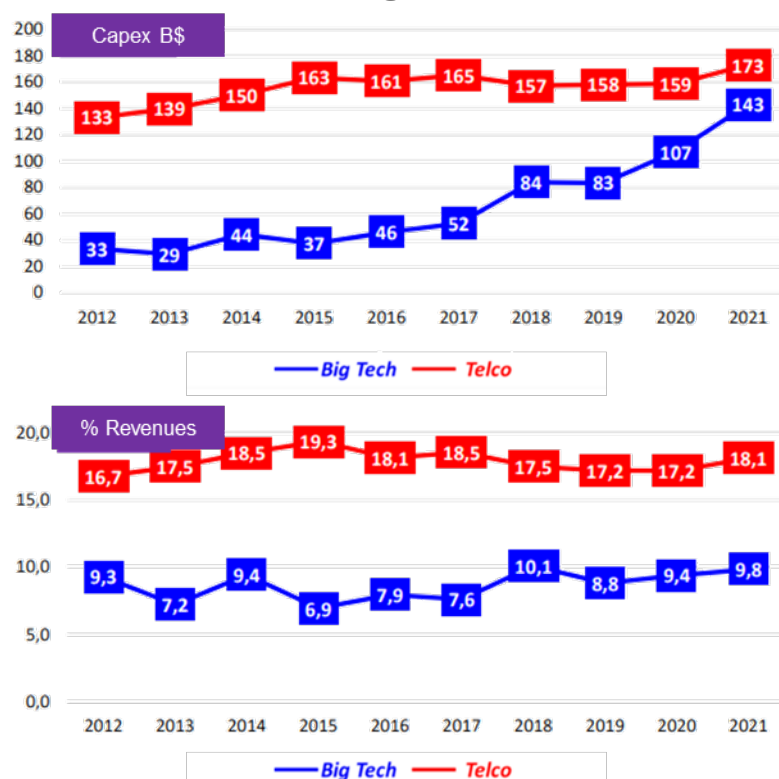
- In mobile and FWA networks the increase in traffic requires investments for **antennas densification** and **upgrades**
- Even if fixed access accounts for two-thirds of the cost of a network, the remaining third - **backhauls and backbones** – has a **significant impact on the profitability of an operator**.
- Most fixed network operators are infrastructured in the backbone only, while their operating margin is closely related to wholesale market prices for backhauling networks. If the incumbents are forced to raise backhauling prices, **smaller operators and ISPs risk seeing their margins wiped out**.

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Telcos vs OTT investment comparison

Both Telcos and OTT/CAPs invest in internet infrastructure, albeit with distinct focuses and varying levels of effort

CAPEX Telco vs Big Tech, 2012-2021



Source: AGCOM PIATTAFORME DIGITALI E TELCO «WORLDWIDE» EVIDENZE CONSOLIDATE ECONOMICHE PATRIMONIALI E REDDITUALI DINAMICHE A CONFRONTO 2012-2021, GIUGNO 2022

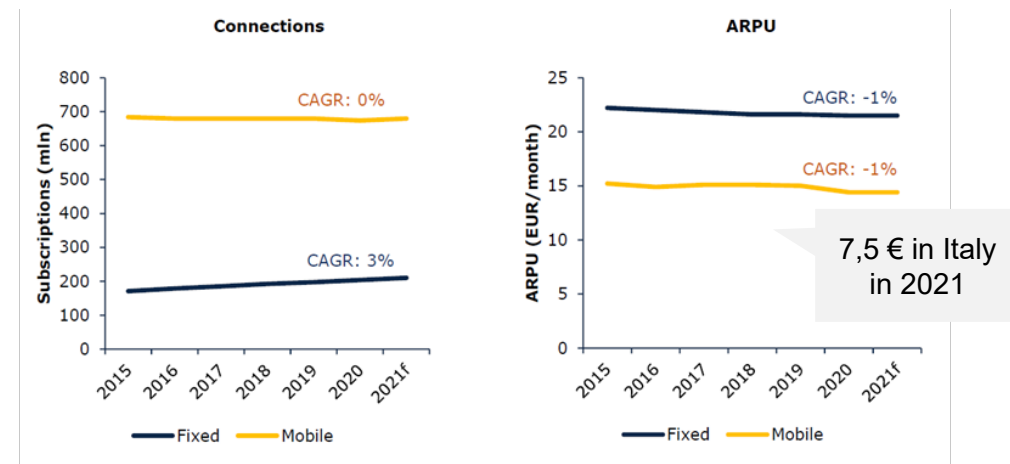
- **OTT/CAPs invest in their proprietary and dedicated infrastructure**, such as coding systems, international links (including submarine cables), data centers, and global CDNs. **These infrastructures serve exclusively for use of the OTT/CAPs**
- **OTT/CAPs total investments account for less than 10% of their revenues**, but only a small portion of it is related to network infrastructures (estimated around 1%*)
- **OTT/CAPs investments are driven solely by market opportunities**, as they are not subject to strict regulations.
- **Telcos invest in their network infrastructure, which provide benefits for both users and OTT/CAPs** delivering content to end users.
- **Telcos' investments amount to approximately 20% of their revenues**, thereby carrying a significant higher risk than OTT/CAPs.
- **A substantial portion of Telcos' investments is driven by regulatory obligations**, including billions spent on spectrum licenses

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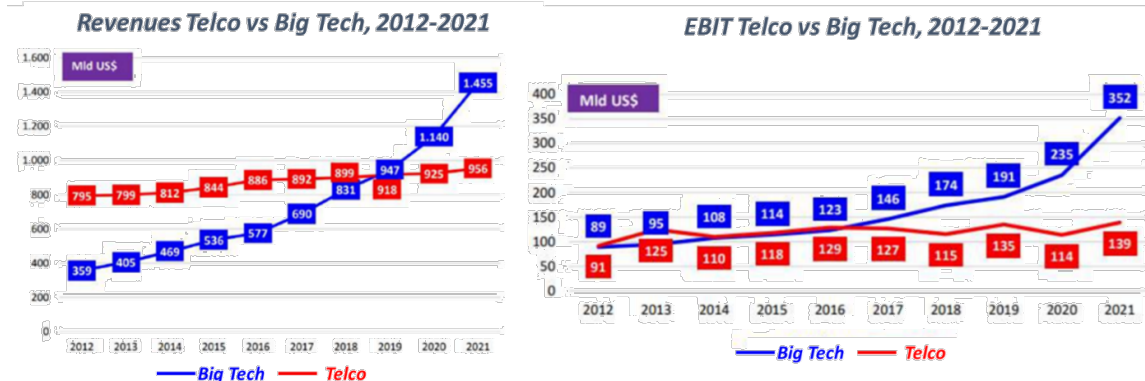
Would the Fair Contribution be detrimental to the Internet ecosystem?

OTT/CAPs consider the introduction of Fair Contribution largely unjustified, believing that the adoption of such a mechanism could be detrimental to the development of the Internet ecosystem. However, Internet is already jammed

- Internet ecosystem historical ability to self-adapt, no need for any regulatory intervention ?
- the availability of a greater amount of content that requires high-performance connectivity would drive demand for Ultra-Broadband access, giving rise to a virtuous cycle
- This concept is theoretically correct but is not reflected in the actual market trend: in the last decade connectivity services revenues has remained stagnant and sometimes declined



Evolution of EU telcos' subscriptions and ARPU since 2015 [Source: Axon based on data from ETNO and GSMA].



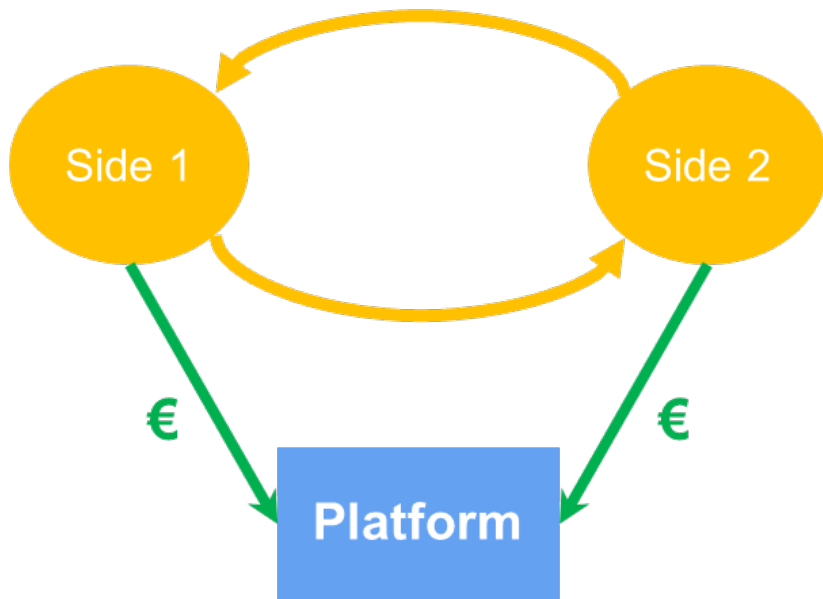
- European connectivity market is extremely saturated: FTTH and 5G services are essentially substitutes, customers are not willing to pay more for the upgrade
- Very high level of competition, there will always be at least one alternative operator ready to provide the same service at a lower price to gain market share

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Would the Fair Contribution Be a “Double Payment” ?

The traffic generated by OTT/CAPs is "requested" by end users who already pay Telcos for their connectivity to receive such traffic. From the OTT/CAPs perspective, the Fair Contribution would therefore create a sort of double payment for the same service. However, it is just a two-sided markets which is common when two agents (or users) interact through an intermediary or a platform to the benefit of both parties

Two-Sided Markets



Publishing: advertisers pay for the "capacity" of the newspaper to host their ads, and on the other hand, readers buy the newspaper.

Digital Payments: Credit card companies are paid by both merchants and consumer

Real Estate: Both buyer and seller pay the intermediary

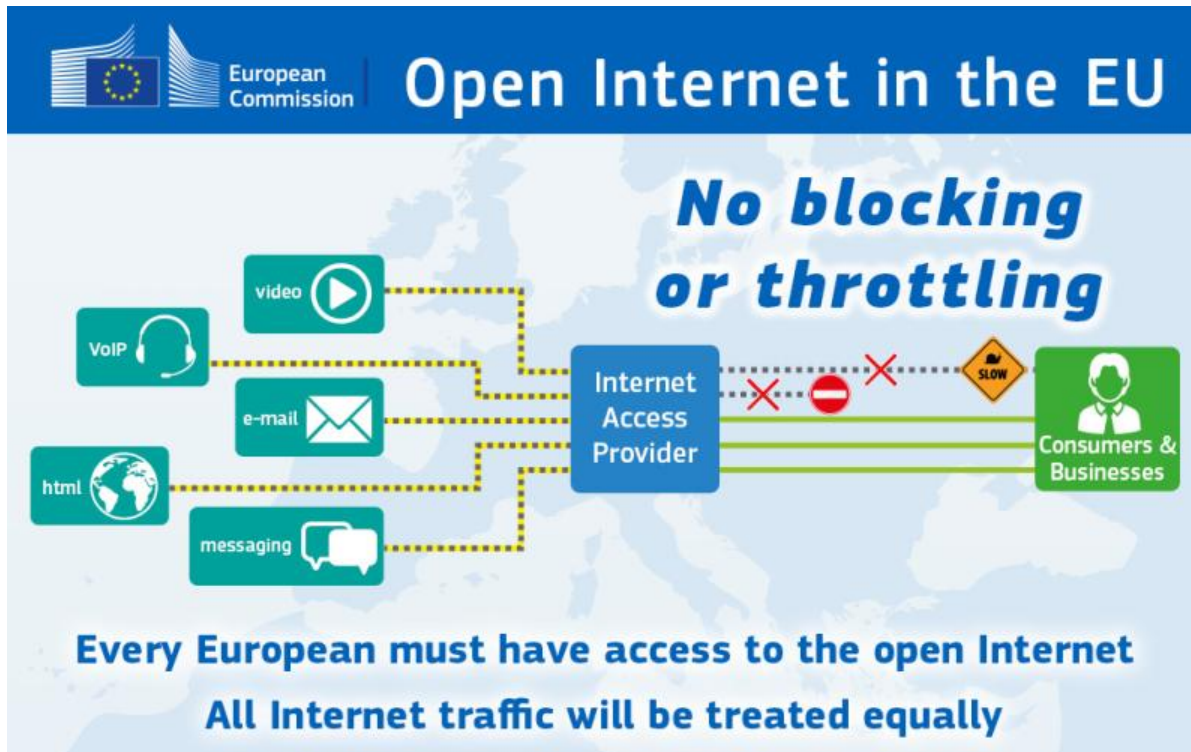


Broadband: the "end users" pay for their access to the operator's infrastructure, and through it to the Internet; likewise, through the Fair Contribution, the OTT/CAPs would pay for their access to the operator's infrastructure and, through it, to their end users.

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Would the Fair Contribution be a violation of Net Neutrality?

The most debated objection to the Fair Contribution concerns the potential infringement of network neutrality principles established in the Open Internet Regulation, but there is no such implication

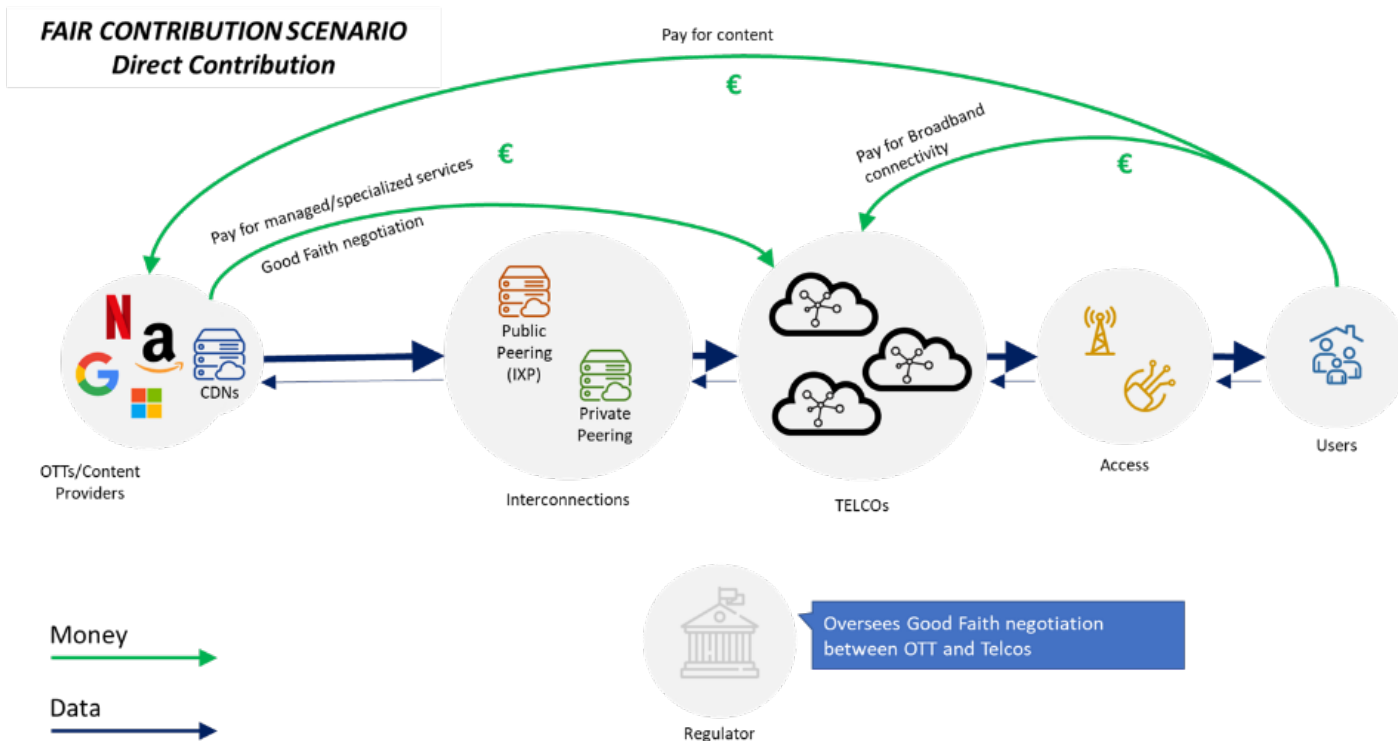


- The application of the **Fair Contribution** does not imply a violation the Open Internet principles.
- The recognition of the contribution would be nothing more than the **payment for an access or interconnection service** or a **“specialized service (SPS)”**.
- BEREC guidelines for the implementation of Net Neutrality regulation clarify that *"CAPs are protected as end-users under the Regulation in so far as CAPs use an IAS (Internet Access Service) to reach other end-users. However, some CAPs may also operate their own networks and, as part of that, have interconnection agreements with ISPs; the provision of interconnection is a distinct service from the provision of IAS"*.

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Possible models - Direct contribution

The first model, which is also widely favored by telecommunications operators, would provide for the recognition of a direct contribution from OTT/CAPs in favor of telecommunications operators



Fair Contribution: Direct Contribution Scenario [Source: ICT Consulting]

- The measure should be limited exclusively to **Large Traffic Generators (LTG)**, i.e., those OTT/CAPs that individually can generate huge amounts of traffic on an operator's network (GSMA suggests to consider as LTGs those companies that account for **more than 5%** of an operators yearly **average busy hour traffic** measured at the individual network level)
- Formal obligation for LTGs to **negotiate in good faith** direct agreements with telecommunications operators and to accept payment of a direct contribution proportional to the cost of network usage and other services possibly included
- **Supervision** (and, if necessary, the arbitration for dispute resolution) of regulatory authorities, which would have the responsibility of ensuring a balanced negotiation

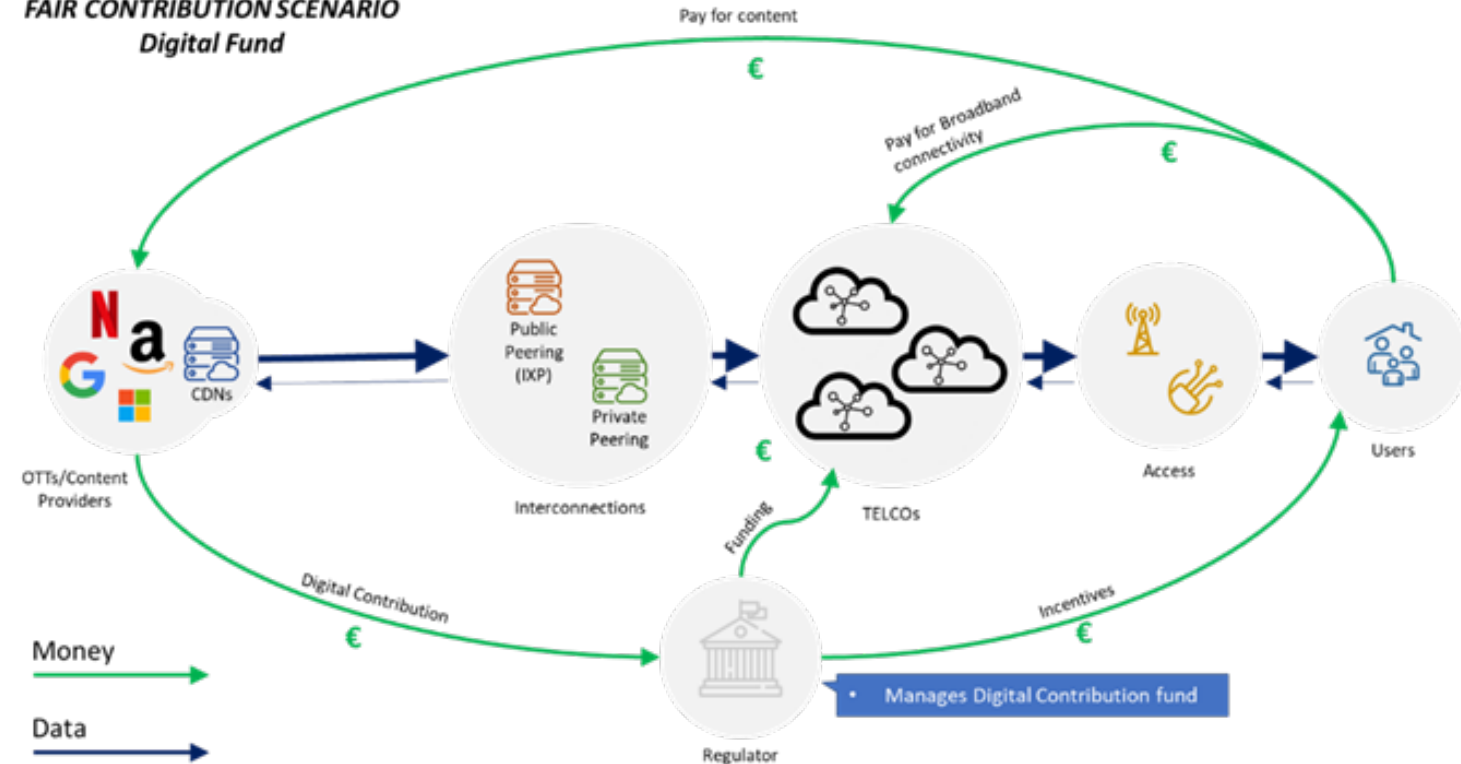
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Possible models – Digital fund

The second possible model involves using the contribution from OTT/CAPs (and more generally, players in the digital ecosystem) to establish a fund - either European or national

- The fund would be used to finance investments and costs related to the development and adoption of networks and services
- The fund could also be used to support consumers with less purchasing power
- **The most significant challenge would be to rationally determine the contributions that each party is responsible for providing and receiving**, along with the necessary bureaucratic compliance, that could generate a model that is certainly less flexible than the Direct Contribution

FAIR CONTRIBUTION SCENARIO Digital Fund



Fair Contribution: Public Fund Scenario [Source: ICT Consulting]

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The South Korean case

The South Korean model is often cited by opponents of Fair Contribution as a failed example of the Sending Party Network Pay (SPNP) model, which is an interconnection regime that involves payment by the network injecting traffic into another network. The failure would be demonstrated by the disruption caused by the behaviour of some OTT/CAPs that, to avoid paying operators, have relocated their interconnections outside the country, resulting in a degradation of service quality and thus harming consumers



- In South Korea, only interconnections between operators are regulated with an SPNP model and not those between operators and OTT/CAPs (including CDNs), which are instead left to the market
- In South Korea, the Telecommunications Business Act states that Content Application Providers and CDNs are equated with other network users, and for this reason, South Korean operators ask Content Application providers and CDNs to pay a fee for access to their networks
- The ongoing disputes between Netflix and SK Broadband (although SKB won the first stage of legal proceedings) are due to Netflix's refusal to recognize the increase in the access fee to connect to SK Broadband's network
- Criticisms of the South Korean model, therefore, appear to be off target, both because it is not transferable to the European model and considering that South Korea was the first country in the world to commercially launch 5G services, boasting the highest global adoption rate and standing among the top 4 countries in the FTTH/B Global Ranking

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Take Aways

Regardless of the outcome of the EU consultation and the possible introduction or not of a Fair Contribution mechanism, the economic and environmental sustainability issue of network infrastructure will be one of the key challenges in the European digital transition

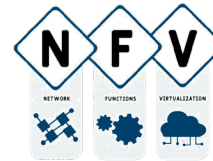
- Digital infrastructures increasingly need large investments and offer returns only in the medium and long term
- A system-wide planning effort is needed, involving the main institutions, and foreseeing the contribution of all digital actors
- Fair Contribution could be part of the plan if leveraged to sustain network investments; otherwise, the broadband cost recovery issue need to be fronted.
- The growth of traffic with annual rates exceeding 30% and the increasing demand for services with extremely stringent performance requirements can only be addressed by leveraging the sector's major innovations

Private, public, and possibly Fair Contribution-funded investments must not only focus on upgrading network capacity but should also pursuing infrastructure innovation and optimization.



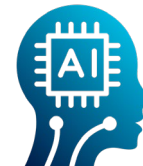
Edge Cloud platforms

pervasively deployed within operators' networks, to bring content (and applications) closer to end-users and offload traffic from the network backbones



Network Virtualization

to maximize the efficiencies achievable with infrastructure sharing and maximize service specialization within the same network



Artificial Intelligence

to reach extreme optimization levels within networks, thereby achieving operational efficiency that is currently unimaginable



Thank You