

ESTIMATING OTT TRAFFIC-RELATED COSTS ON EUROPEAN TELECOMMUNICATIONS NETWORKS

Frontier Economics has conducted a study for Deutsche Telekom, Orange, Telefonica and Vodafone, in order to estimate the costs that are associated with the 'traffic sensitive' elements of fixed and mobile telecom networks across Europe (EU+UK) that can be attributed to OTT traffic.

To guarantee compliance with competition laws, Frontier used strict information barriers to ensure that potentially sensitive data has not been shared between the operators.

Methodology used by frontier

Frontier has chosen a 'top-down' approach to cost estimation, relying on information either from the operators or in the public domain. Two types of costs (total and incremental) are calculated: the 'total costs' include some costs which network operators incur to deliver traffic but which do not vary as the level of traffic increases; the incremental costs are part of total costs varying with traffic.

To determine the network costs caused by OTT traffic growth, Frontier used the following methodology:

- Calculate the annualized total and incremental traffic-sensitive costs for each operators based on data on demand, costs and investment for fixed and mobile across different European jurisdictions.
- Identify the proportion of the traffic-sensitive costs that can be assigned to OTT based on the proportion of OTT traffic vs. total traffic
- Calculate annualized total and incremental OTT cost per subscriber for each operator/jurisdiction, to calculate a weighted average cost across all operators/jurisdictions
- Calculate the annualized Europe-wide incremental and total OTT cost per subscriber for fixed and mobile, by applying the weighted average to the total number of subscribers in Europe (EU+UK)

1. Identification of traffic-related costs

The total annualized costs are calculated as follows:

- Fixed networks: Total annualised costs in edge, aggregation and core network sections – this is sum of depreciation, OPEX and ROCE
- Mobile:
 - o Total annualised costs in active, passive, core and backhaul – this is sum of depreciation, OPEX and ROCE
 - o Total annualised spectrum costs (annual fees plus annuity of one-time amount paid)

For incremental traffic related costs, Frontier applies high-level assumptions to each asset category (e.g. ducts and cable) for fixed and each network section (e.g. active and passives) for mobile to calculate the scale of costs that vary with traffic that is carried.

2. Allocation towards OTT

- Frontier used routing factors to determine the scale of traffic within each network section
- Then allocated costs to OTT based on the proportion of OTT traffic.

Estimated incremental costs range attributable to ott traffic for fixed and mobile

	FIXED	MOBILE
Weighted average cost per subscriber	€11 - €29	€20 - €33
Annualised OTT costs across Europe	€2 billion - €6 billion	€13 billion - €22 billion

Estimated total costs range 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