National Authority for
Management and Regulation in
Communications of Romania

Review of market 1 2025

Wholesale local access provided at a fixed location

NATIONAL CONSULTATION

Content of the presentation

I. Current regulatory status of market 1

- Market 1 – *Wholesale local access market*: **NO REGULATION IN PLACE**
  - 2019: The main focus was on the retail market
  - **The product market was broadly defined:**
    - Includes all fixed access technologies (notably xDSL, coaxial cable, UTP/FTP cable, fibre and radio, including FWA provided over mobile networks)
    - Includes all speeds above 144 kbps

  - Absent wholesale regulation, no competition problems were identified in a forward-looking perspective

- **No need for imposing ex-ante regulation on market 1**

II. Romanian retail broadband market – Trends and developments

- Increases in download speeds of BB subscriptions: in the 4-year period to Q1 2023, the growth in BB subscriptions was concentrated primarily in the ≥ 100 Mbps category, which increased its share from 72,1% to 92,0%;
- Movement away from copper towards fiber-based BB (net migration of end users from copper and, more recently, FTTC towards FTTP);
- As of Q1 2023, BB provided over full copper constituted just 2% of the total BB subscriptions, with the largest shares accounted for by FTTP (81%), CATV (10%) and FTTC (1%);
- There has been a significant increase in the number of FTTP subscriptions, which grew from a share of just 60% of the total in Q4 2018 to 83% in Q2 2023; FTTP overtook by far FTTC, becoming the most predominant technology;
- Steady rollout and network upgrades by operators + up-take of high-speed broadband services: the continuous rollout by ORANGE Romania of its FTTP network; RCS & RDS (Digi Romania) has also announced plans to continue upgrading its existing FTTP broadband network.

II. Romanian retail broadband market – key characteristics

- **End-users** (as resulted from market research):
  - are, typically, highly satisfied with their broadband services – quality, prices etc., as well as with the operators;
  - services quality was increased by all the providers in the analyzed period;
  - high percentage of the high speed internet subscriptions;
  - face low barriers in changing providers, especially in urban areas;
  - the costs of changing the supplier are considered low;
  - evidence of some churn;
  - generally, there is a high sensitivity of end users to prices;
  - feature high loyalty -> e.g. 51% of Digi's end-users have concluded their subscription more than 5 years ago.

- **Very low retail broadband prices**
  - consumers in Romania enjoy the lowest internet prices in UE (e.g. 8 Euro – 1Gbps – Digi, FTTH; 7.5 Euro – 500 Mbps – Vodafone, DOCSIS 3.0; 5 Euro – 1 Gbps - Orange Romania, FTTH)
  - evidence of decreasing prices and increasing speeds/quality (92 % of the BB connections provided speeds above or equal to 100 Mbps, of which 35% are connections of at least 500 Mbps)

- A below EU-average penetration rate (66%) explained by the following factors: one of the lowest PC penetration rates, one of the lowest disposable incomes, late take-off of market, high % of rural areas.

III. Retail broadband market – definition and analysis
1. Market context in Romania: **end-to-end infrastructure competition (1)**

- The vast majority of BB market players rely on end-to-end connectivity

- Since 2018:
  - Vodafone has acquired UPC and is now able to offer interactive TV, BB and fixed telephony services, as well as mobile services
  - Orange Romania has acquired Telekom Romania (the incumbent) and exerts full control over Nextgen => Orange has now national coverage: FTTP, VDSL
  - DIGI Romania overtook control of Digital Cable Systems and Akta

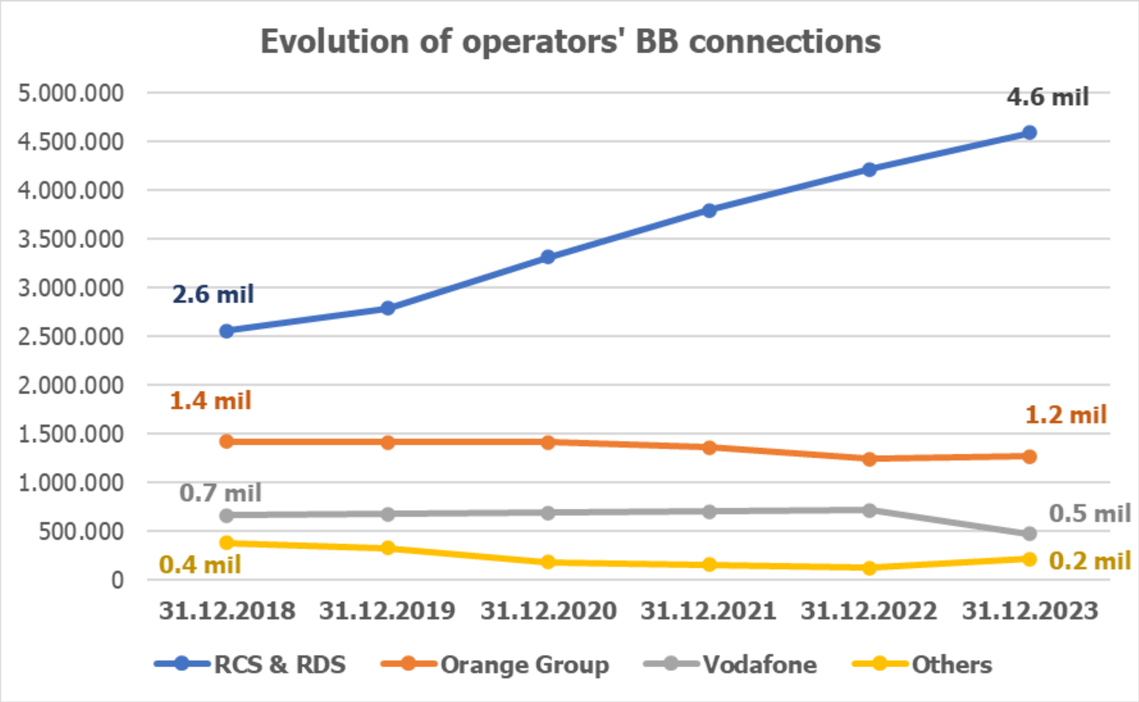
- **2023 -> 3 major operators**: DIGI Romania (coaxial cable + FTTP), Vodafone (mainly DOCSIS, but also FTTP) and Orange (mainly FTTP)
  - Other 124 local alternative operators (OLOs) providing speeds of ≥ 100 Mbps: fiber, LANs/UTP/FTP, coaxial cable

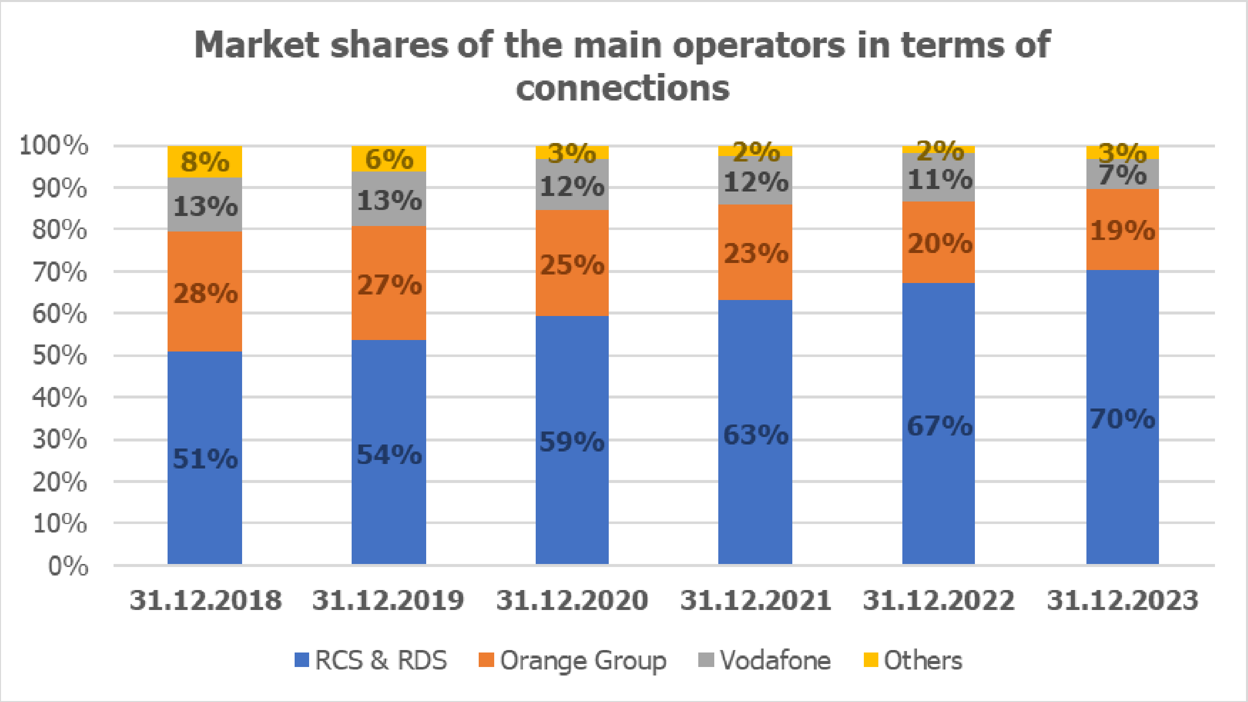
- **The main operators are present in both fixed and mobile BB internet access markets** – DIGI Romania, Orange and Vodafone

III. Retail broadband market – definition and analysis

1. Market context in Romania: **market evolution/structure (1)**

- DIGI Romania is the market leader, having grown constantly due to the significant investments in its VHCN (its VHCN coverage increased from 41% in 2019 to 91% in 2023, through direct investments & acquisitions)





III. Retail broadband market – definition and analysis

2. Product market definition - **2023 overview**

- The retail product market:
  - Includes FTTH/FTTB, VDSL, coaxial cable, UTP/FTP cable
  - Excludes radio and satellite
  - Excludes fixed internet provided over mobile technologies (SIM-based)
  - Includes all speeds above 100 Mbps
  - Includes residential and business customers
  - Includes services provided both individually and in bundles
  - Excludes symmetric access services, as well as high quality access
  - Excludes mobile access services

The retail product market comprises of asymmetric broadband fixed internet access services at speeds of at least 100 Mbps, supplied to both residential and business users, through fiber networks FTTP, VDSL and cable networks (<u>high speed internet services market</u>)

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III. Retail broadband market – definition and analysis

2. Product market definition – **substitutability analysis (1)**

- **FTTP & VDSL – the focal product (the highest percent of the BB market)**

- **ADSL is NOT part of the relevant market**
  - significantly lower performances speeds, signal strength depending on the length of the loop
  - for comparable (or even the same prices) customers can get higher speed BB
  - they will disappear in the timeframe of the market review (planned switch-off 2026)
  - DSLAMs are heavily decommissioned

- **Cable (coaxial, including DOCSIS 3.0/3.1, as well as UTP/FTP) is part of the relevant market**
  - comparable performances and tariffs
  - comparable availability (coverage)
  - => two-way substitutability with the focal product identified

- **FWA is NOT part of the relevant market**
  - the vast majority provided by small operators, with a local/regional footprint
  - mostly supplied to residential users, representing specific solutions in typically remote/difficult to access areas
  - lower usage intensity than with the wired connections (based on end-user studies)
  - typically higher tariffs, considering the specificities of the provision (e.g. lack of economies of scale), for lower speeds
  - SNR, the main national operator, holds a license due to expire at the end of 2025

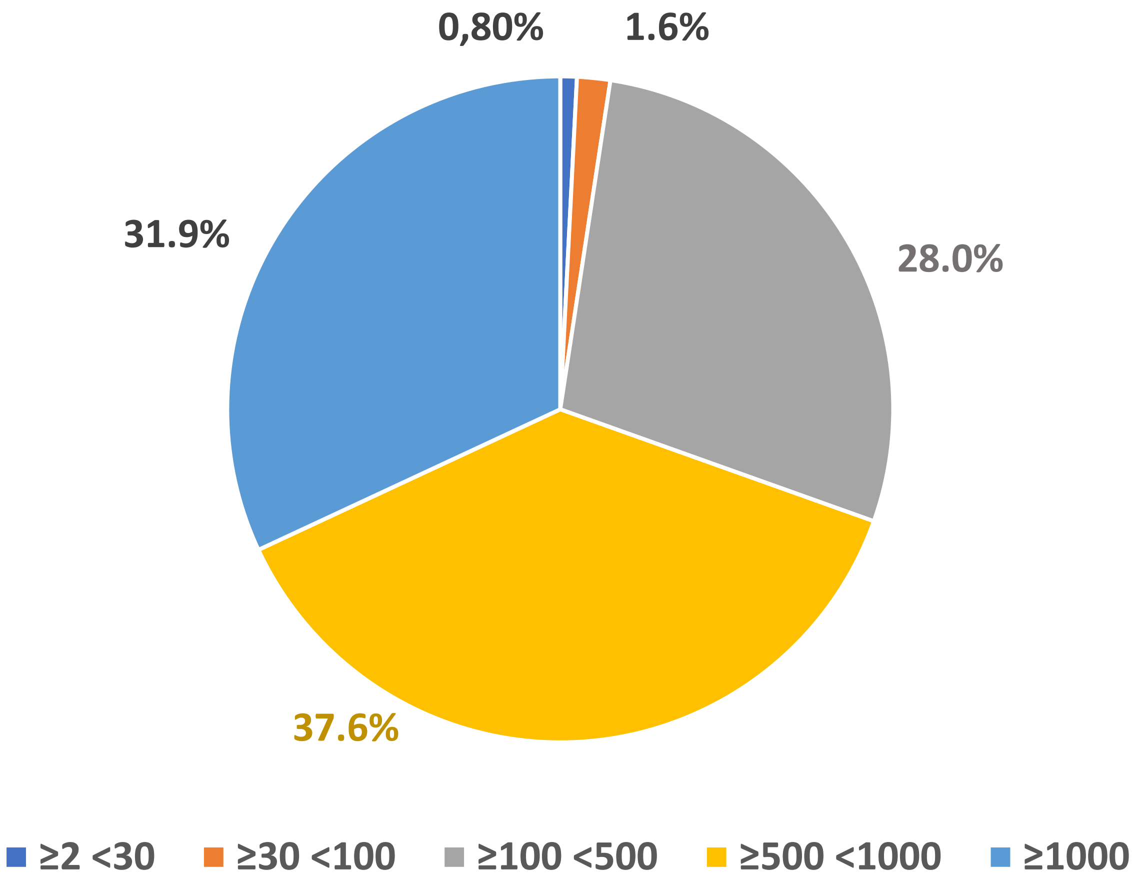
III. Retail broadband market – definition and analysis

2. Product market definition – **substitutability analysis (2)**

- **Satellite is NOT part of the relevant market**
  - significantly higher prices;
  - additional non-negligible costs with the equipment (for other services, the operators generally subsidize the costs);
  - the traffic is sometimes limited;
- **Fixed internet through mobile technologies (SIM-based) is NOT part of the relevant market;**
  - slightly different characteristics (the actual achievable speeds are much lower than the best-effort ones, limited traffic in some cases, some are not sold in bundles);
  - diverging evolution compared to fixed technology connections (steadily decreasing in the last couple of years);
  - limited substitutability with broadband offers on fixed networks (the degree of substitutability of offers at fixed location provided based on mobile networks is mainly associated with ADSL offers which were excluded from the market).
- **Symmetric internet access services are NOT part of the relevant market**
  - different product characteristics, for symmetric download = upload speeds;
  - higher tariffs for symmetric services, target businesses typically;
- **High quality services are NOT part of the relevant market;**
- **Mobile BB access is NOT part of the relevant market.**

III. Retail broadband market – definition and analysis
2. Product market definition – **substitutability analysis (3)**

- One relevant market for all the speeds over 100 Mbps (98% of the connections feature speeds of at least **100 Mbps)**



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III. Retail broadband market – definition and analysis
2. Product market definition – **substitutability analysis (4)**

- The relevant market includes **both individually supplied as well as in bundled services**
  - end-users can easily choose individual services from different operators over the bundled services in case of a price increase;
  - growing trend for both individual and bundled fixed BB, with a soar of the former (moving together)
  - additionally, the share of individual connections in the total no of connections is increasing, while, for bundled connections, it slightly decreased in the analyzed period
  - overall, the individually commercialized fixed BB services exert competitive pressure on the ones sold in bundles and vice versa

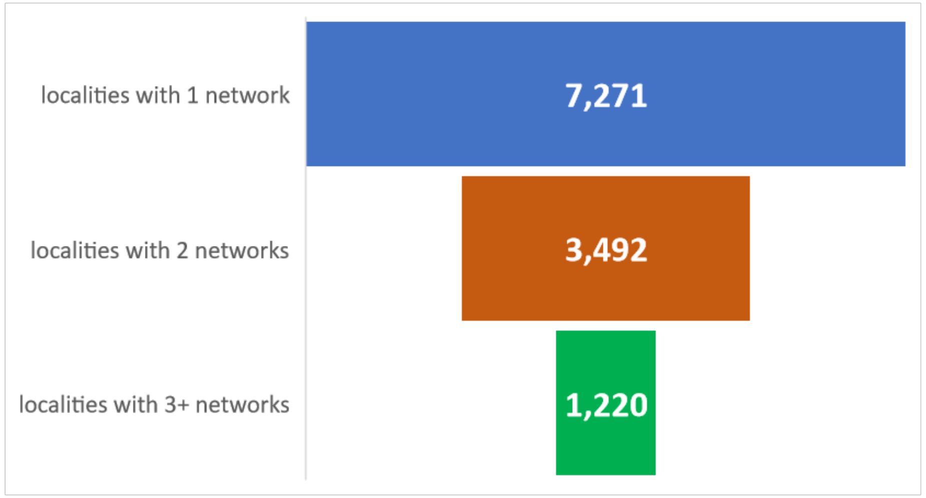
- A single market for **both business and residential users**
  - blurring border between the distinction of business users from residential ones considering that 91.5% are SME in Romania
  - several of the main operators have standard offers for both residential and small business users, especially in the context in which the quality of the asymmetric access services is increasing constantly
  - in general, big business users require specialized services, but their no. is extremely limited (0.3%)
  - the substitutability of the offer is fulfilled

III. Retail broadband market – definition and analysis
3. Definition of the geographic market

3.1. Broadband by localities: number of high-speed networks, coverage, market shares. Dynamics. (1)

- **Geographical unit: the locality (the smallest form of human settlement in Romania)**

Distribution of the number of localities taking into account the number of high-speed networks – 30.06.2023



Localities/no. of networks	addresses	households	population	connections
7,271 localities with 1 network	2,249,361	1,644,994	4,240,265	905,570
3,492 localities with 2 networks	1,784,751	1,399,347	3,898,230	957,529
1,220 localities with 3+ networks	2,077,109	4,342,599	10,690,848	4,023,680

11,983 localities covered with high-speed networks out of 13,750 localities in Romania

III. Retail broadband market – definition and analysis
3. Definition of the geographic market

3.2. Prices, local price differences and behavior patterns

- In general, there are no local price differences, but national offers.
  - Digi Romania (the market leader) has offers targeted to the whole rural area, taking into account the low income level of the population in the rural.

- There have been applied local promotional offers, but no clear differences or patterns in terms of operators behaviour can be distinghuised
  - same promotional offers have been applied irrespective of the market shares, number of the competitors within a locality or the socio-demographic characteristics of the localities

III. Retail broadband market – definition and analysis

3. Definition of the geographic market

3.3. Defining competitive and non-competitive areas (1)

1st STEP: Digi Romania identified as the high-speed internet access network with the greatest potential for expansion/coverage within a relatively short timeframe.

2nd STEP: Group localities
(a) Localities within or potentially within Digi's network: 10,594 localities = **ZONE A**.
(b) Localities outside Digi's coverage area: 41 localities = **ZONE B**.

3rd STEP: Analyze the competitive conditions and the level of homogeneity in the localities from ZONE A and ZONE B, the following structural and behavioral indicators were considered:

a) Barriers to entry;
b) The number of current and potential high-speed internet access service providers (localities with 1 provider, localities with 2 providers, and localities with at least 3 providers);
c) Market shares and their evolution;
d) The degree of network overlap;
e) The tariffs applied and the degree of differentiation among them.

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III. Retail broadband market – definition and analysis

3. Definition of the geographic market

3.3. Defining competitive and non-competitive areas (2)

4th STEP: As a result of the cumulative application of the mentioned indicators, the localities in each zone (Zone A and Zone B) were analyzed and **divided based on the following competitiveness criteria**:

Criterion I: Localities with 1 high-speed internet access service provider (market share of 100%):

a) 1 SP and no other SP with the potential for expansion or entry shortly = no competition

b) 1 SP and at least one other SP with the potential for expansion or entry shortly = competition

Criterion II: Localities with 2 high-speed internet service providers:

a) 2 SPs and a market share of the leader below 70% = competition

b) 2 SPs, a market share of the leader of at least 70%, and a network overlap of at least 30% = competition

c) 2 SPs, a market share of the leader of at least 70%, and a network overlap of less than 30% = no competition

Criterion III: Localities with at least 3 high-speed fixed internet access service providers:

a) at least 3 SPs and a market share of the leader below 50% = competition

b) at least 3 SPs, a market share of the leader of at least 50% of the market, and an overlap of at least two networks of at least 30% = competition

c) at least 3 SPs, a market share of the leader of at least 50% of the market, and an overlap of at least two networks of less than 30% = no competition

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III. Retail broadband market – definition and analysis
3. Definition of the geographic market

3.3. Defining competitive and non-competitive areas (3)

5th STEP: As a result of the criteria applied above:

11 Relevant retail BB markets

Zone A (Digi's actual or potential coverage):

AREA A1: Localities characterized by the presence of indicators suggesting a lack of competition (signal **"no competition" localities**), includes **6,290 localities**, characterized by homogeneous competitive conditions.

AREA A2: Localities characterized by the presence of indicators suggesting competition (probably **"with competition" localities**), includes **4,304 localities**, characterized by homogeneous competitive conditions.

- ✓ **Geographic Market A1:** The market for high-speed internet access services in the coverage area of Digi Romania S.A., corresponding to a number of **6,290 localities**.
- ✓ **Geographic Market A2:** The market for high-speed internet access services, corresponding to a number of **4,304 localities**.

Zone B (outside Digi's actual or potential coverage

AREA B1: 35 localities characterized by the presence of indicators suggesting a lack of competition (**"no competition" localities**)

AREA B2: 6 localities characterized by the presence of indicators suggesting competition (**"with competition" localities**).

- ✓ **8 Geographic Markets B1:** The markets for high-speed internet access services in the coverage area of Digi, within the individual coverage areas of **8 providers** corresponding to a number of **35 localities**.
- ✓ **Geographic Market B2:** The market for high-speed internet access services, corresponding to a number of **6 localities**.

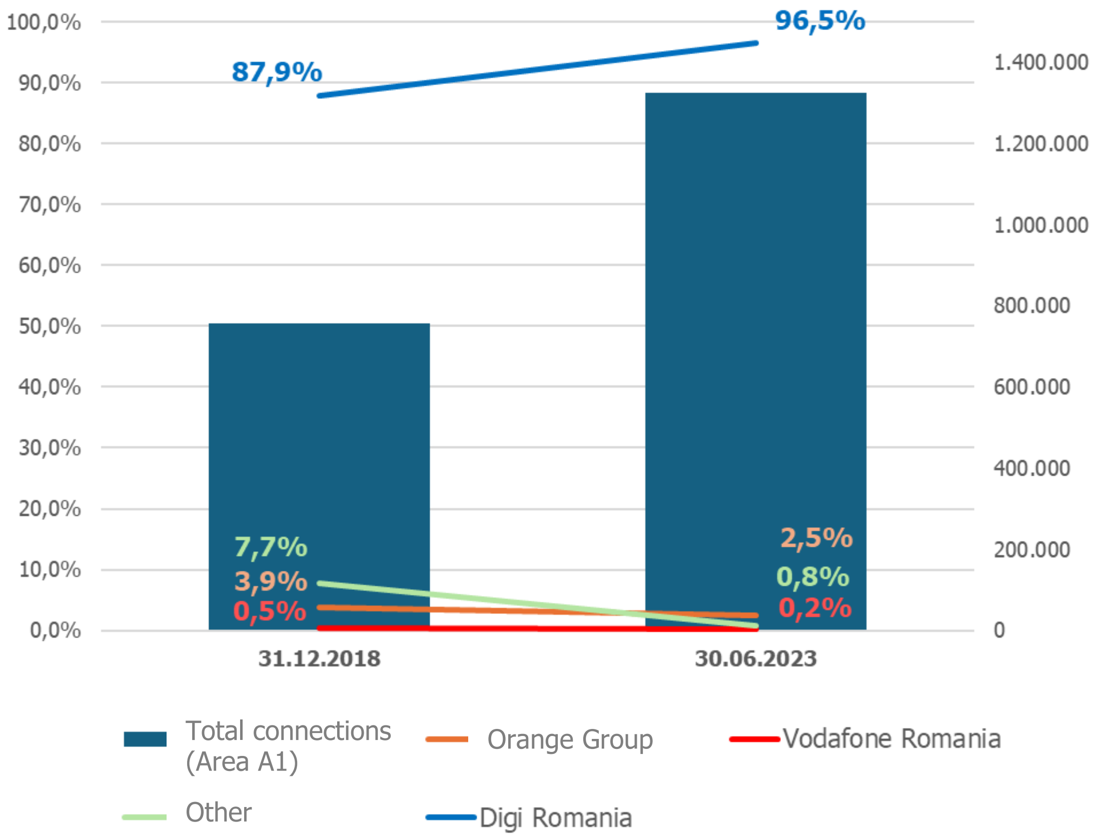
III. Retail broadband market – definition and analysis
4. Competitive analysis in the 11 relevant retail markets

➢ **Competition problems identified in the Relevant Retail Geographic Market A1:**

✓There is a risk that in the localities within the A1 area, Digi Romania could abuse of its market power and increase the prices, to the detriment of end users;

✓The inability of end users to choose between the offers of multiple fixed internet service providers;

✓The existence of barriers to market entry, thus aiming to ensure a balanced competitive framework in localities where Digi is the only provider, with no prospects of other providers entering the market within the timeframe of the market analysis.



Need for analysing the market for wholesale local access provided at fixed location in Area A1

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IV. Wholesale local access market - definition and analysis

1. The wholesale product market:

The wholesale market for local access services provided at a fixed location, corresponding to retail internet broadband services, has been determined to include:

- **physical or virtual access services (e.g., "VULA") to FTTH local loop** << covering both point-to-point and point-to-multipoint configurations >>
- **physical or virtual access services to the FTTB/C/N local loop** at buildings or street cabinets equipped with fiber optic infrastructure, when the terminal segment uses copper with VDSL technology or UTP/FTP cables,
- **self provided local loop** access services.

2. The geographic market: A1 zone

- In Romania, local access services at fixed points are self-provided (at the time of the market analysis, such services were not provided on a commercial basis), with the wholesale market structure essentially mirroring the retail market structure, thus making the market notional in nature.
- For defining the boundaries of wholesale markets, the Authority used the structure of the relevant retail market and applied the same criteria for defining and analyzing competitive characteristics at the locality level as in the case of retail geographic markets, **excluding cable networks and self-provided local access services at fixed points through these networks**.

3. The relevant wholesale market:

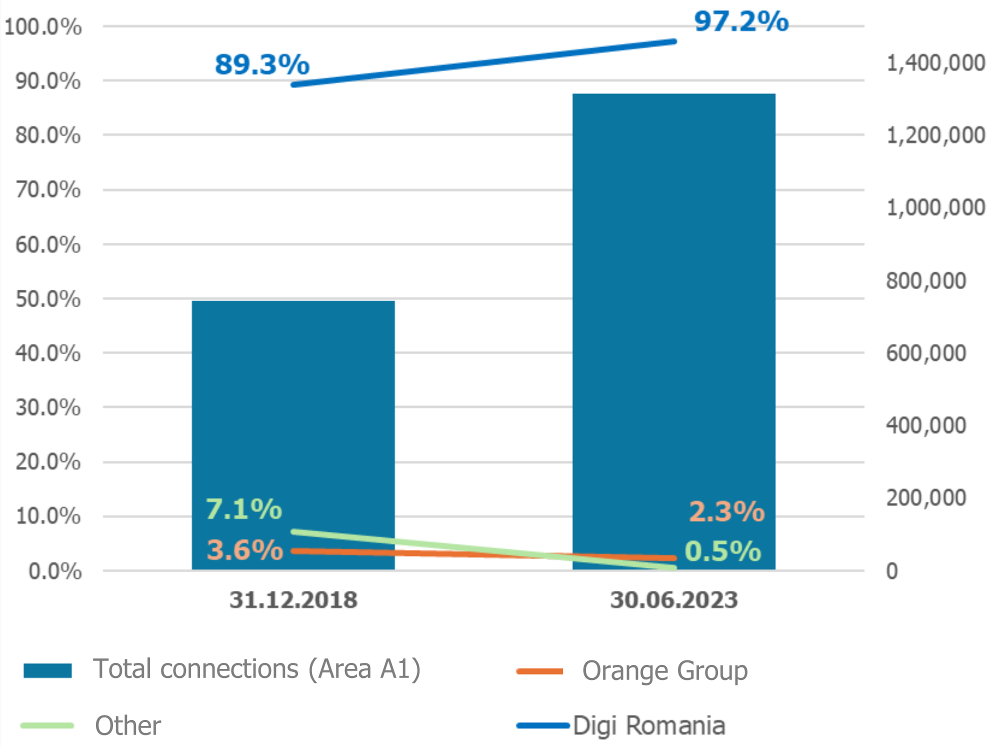
The market for local access services at fixed points corresponding to the A1 zone.

IV. Wholesale local access market - definition and analysis

4. Competitive analysis in the relevant market for local access services at fixed points corresponding to the A1 zone

- ✓ high market share of Digi Romania
- ✓ existence of significant barriers to entry - market entry/expansion limited by various factors,
  - the substantial size of the required investments,
  - high non-recoverable costs,
  - the lengthy time required to deploy a high-speed fixed-point access network

DIGI ROMANIA = SMP in the wholesale market for local access services at fixed points provided in the A1 zone.



IV. Wholesale local access market: regulatory remedies to be imposed to DIGI

Obligation to RESPOND TO REASONABLE REQUESTS FOR ACCESS to the network or specific network elements and associated facilities necessary in the localities of the A1 zone:

- ✓ Physical access (FTTH, FTTB);
- ✓ Virtual access ("VULA");
- ✓ Access to technical interfaces, protocols, or other essential technologies necessary for the interoperability of services…..

Obligation to NEGOTIATE IN GOOD FAITH with any third-party requesting access

Obligation to COMPLY WITH THE FOLLOWING MAXIMUM DEADLINES for the provision of access services (see Annex No. 2):

- ✓ Maximum deadline to respond to a request for access to local access services at fixed points: 30 calendar days from the registration of the request;
- ✓ Maximum deadline to develop technical solutions for implementing access to the local loop or equivalent access services ("VULA"), as per the order placed by the Beneficiary in the electronic system: 10 working days from the date of order registration in the electronic system;
- ✓ ………

Obligation to grant access to third parties under NON-DISCRIMINATORY CONDITIONS

Obligation to apply FAIR AND REASONABLE TARIFFS

Obligation of TRANSPARENCY by PUBLICATION of the REFERENCE OFFER (ORA) (within 4 months from the entry into force of the obligation)

Obligation to IMPLEMENT AND MONITOR KEY PERFORMANCE INDICATORS (KPIS) to measure performance in the provision of local access services at fixed points

Obligation to IMPLEMENT QUALITY CONDITIONS REGARDING THE FUNCTIONALITY OF SERVICES (SLA) AND COMPENSATIONS IN CASE OF NON-COMPLIANCE (SLG), as well as to include these in the agreements for the provision of local access services at fixed points concluded with beneficiaries

Thank you for your attention!

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