ANCOM
Autoritatea Naţională pentru Administrare şi Reglementare în Comunicaţii

A few notes on a

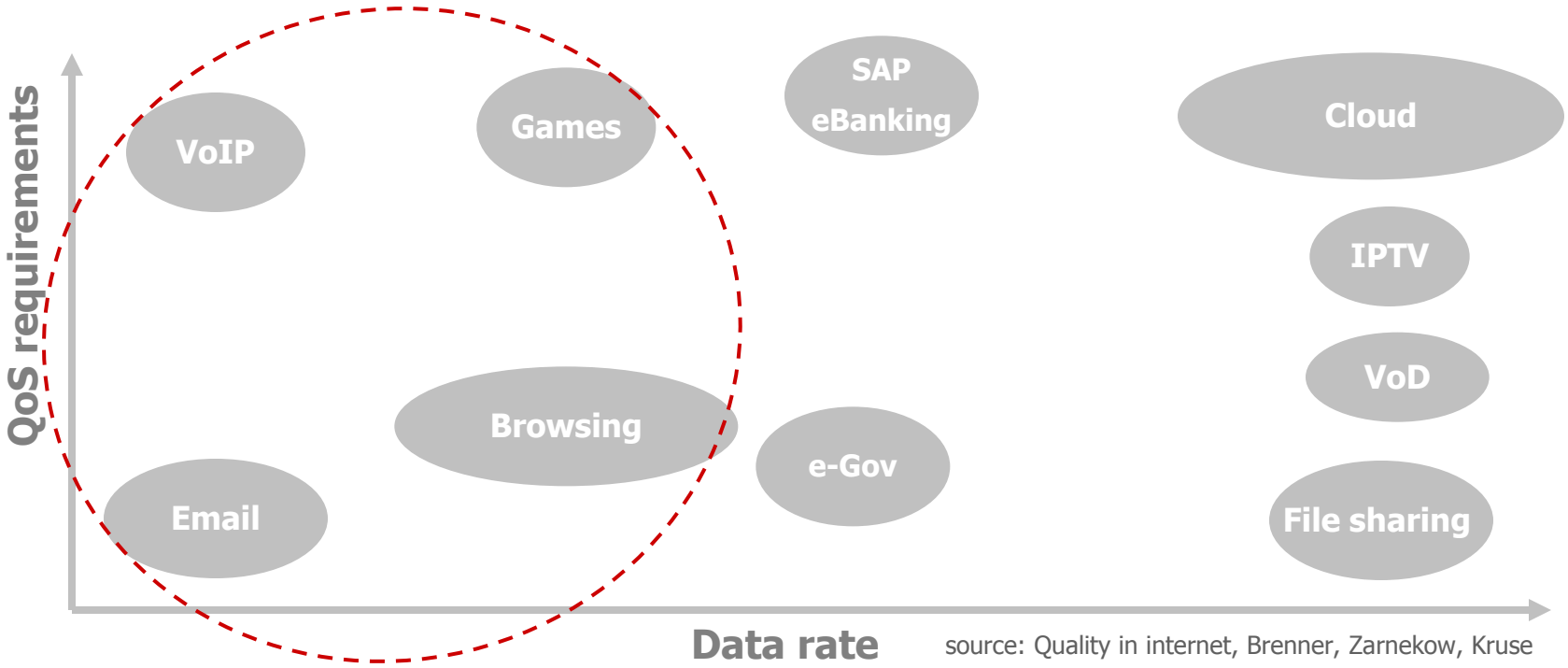
NEXT GENERATION CITY

Iosif POPA
President's Counselor for Regulatory affairs

Conference @ The Romanian Academy
27 June 2013, Bucharest

Looking into the near future

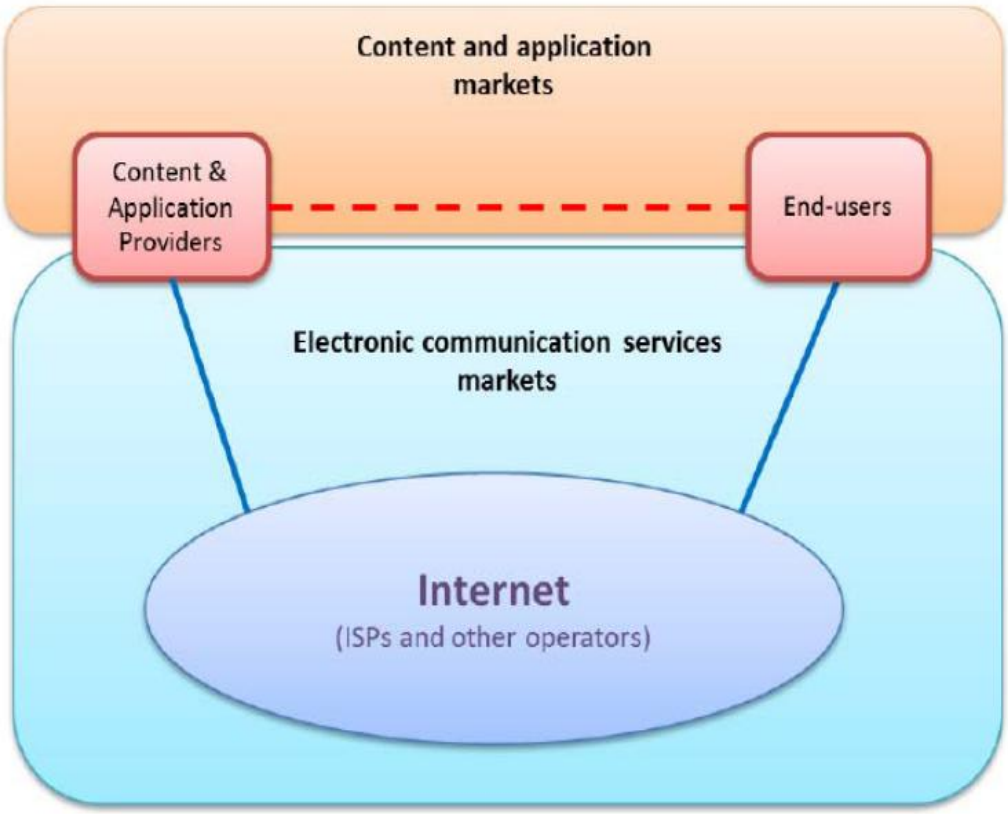
- Communication services become IP-based
- One network can transport all electronic communication services
- Various services & apps have different needs
- QoS management becomes more & more profitable as a business



source: Quality in internet, Brenner, Zarnekow, Kruse

ANCOM
Autoritatea Națională pentru Administrare și Reglementare în Comunicații

The economy of broadband networks



Source: Cullen International

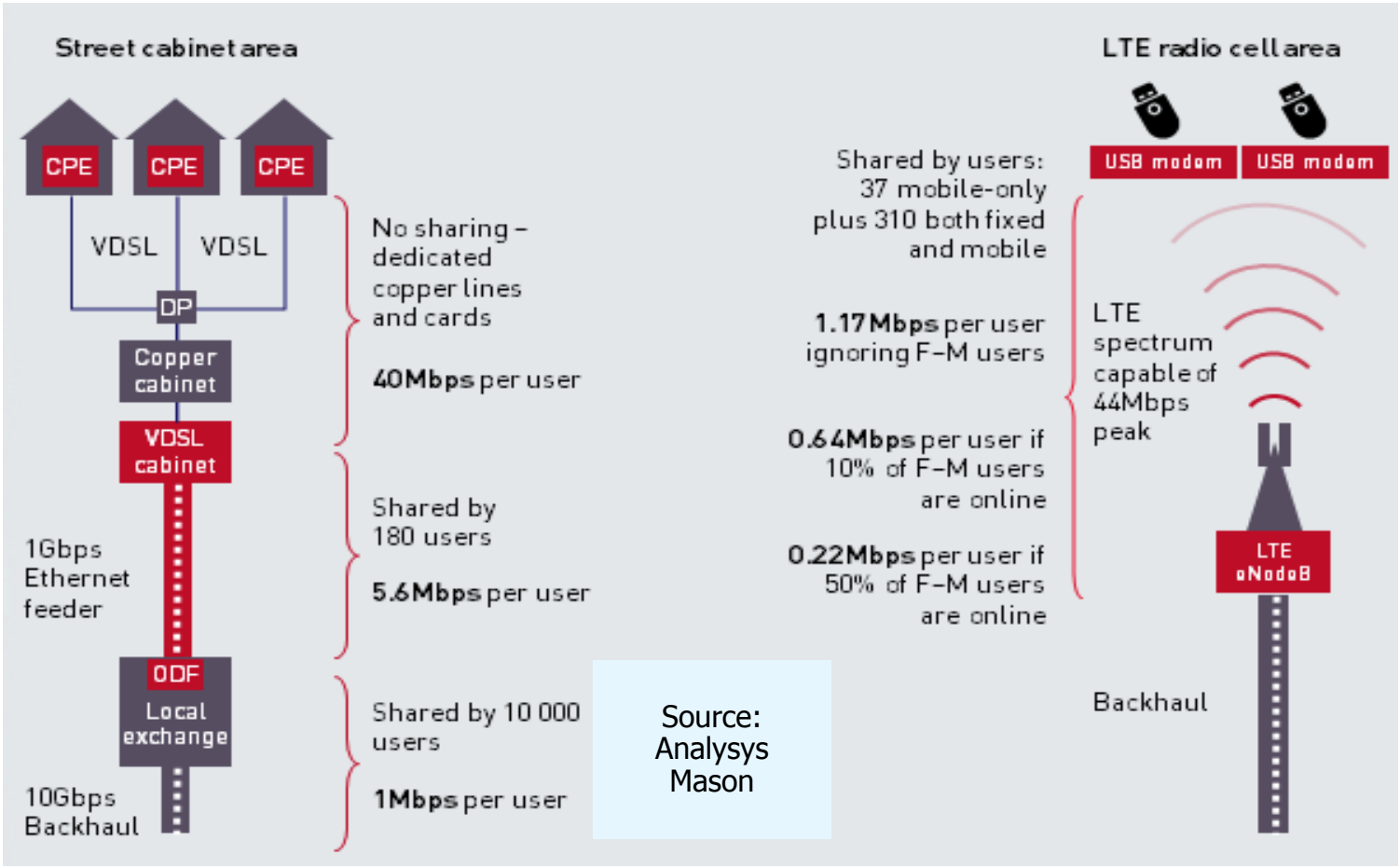
- Two-sided markets
- Economic platforms having 2 distinct groups that provide each other with network benefits:
  - ✓ Application provider
  - ✓ End-user
- Economic viability of business models rests on both parties paying for the use of the platform

- Patents & "*private_nets*" challenge open access & "*inter_net*"
- Economies of scale in the core networks, capital intensive access networks

ANCOM
Autoritatea Națională pentru Administrare și Reglementare în Comunicații

Ensuring bandwidth for end-users

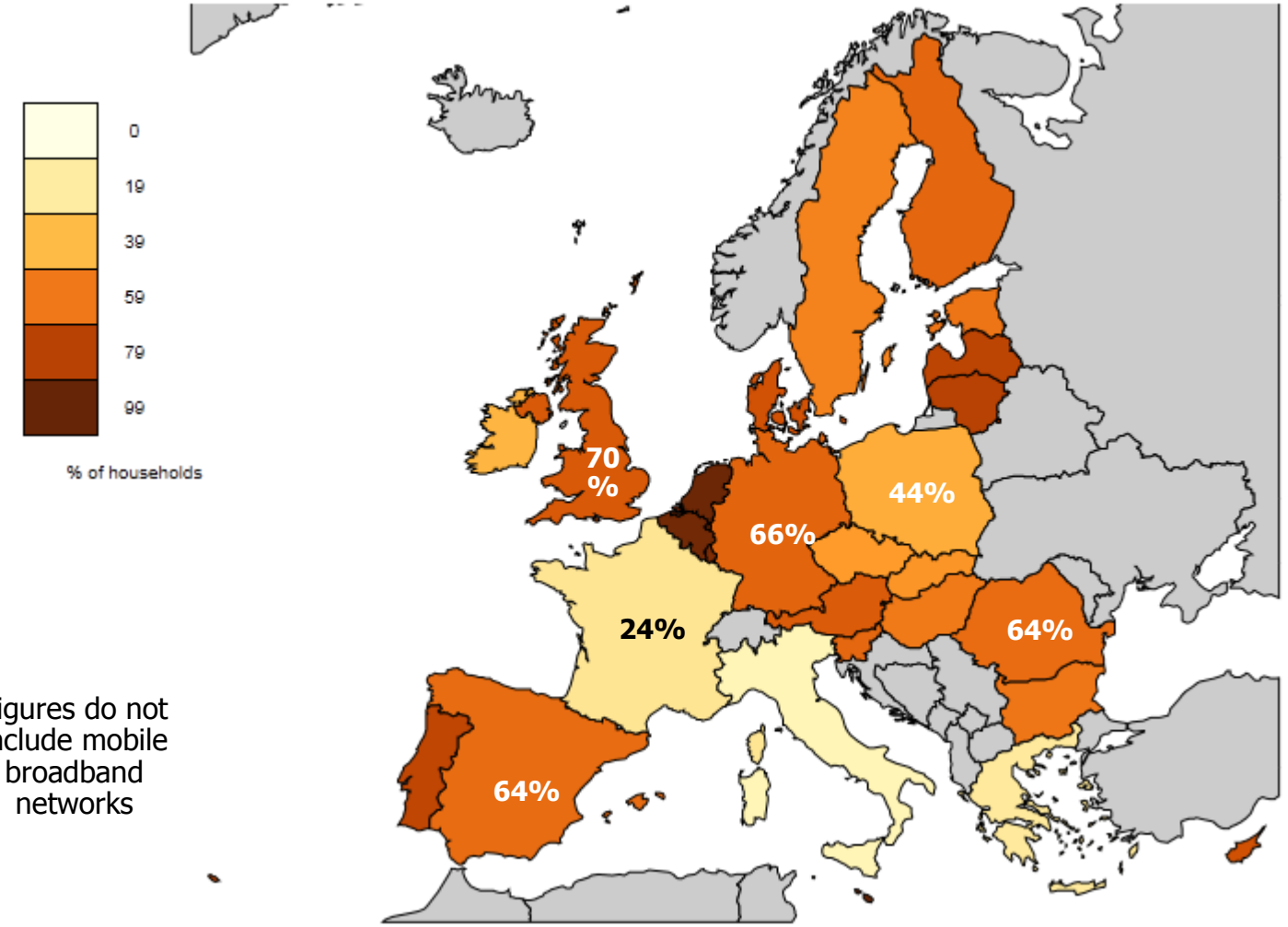
- A broadband speed of 40 Mbps is delivered in very different ways using fixed and mobile networks. Dedicated or shared environments make the difference:
  - ✓ sharing & congestion in the shared transmission (fixed)
  - ✓ shared air interface among all network users (mobile)
- In other words, doubling the speed for end-users is
  - ✓ nearly costless for fixed access networks
  - ✓ doubles the cost for mobile access networks



ANCOM
Autoritatea Națională pentru Administrare și Reglementare în Comunicații

Statistics on the supply look good

- ✓ Total NGA broadband **coverage** (as a % of households), 2012
- ✓ Next Generation Access – superfast broadband delivered through wired networks, at least 30 Mbps download



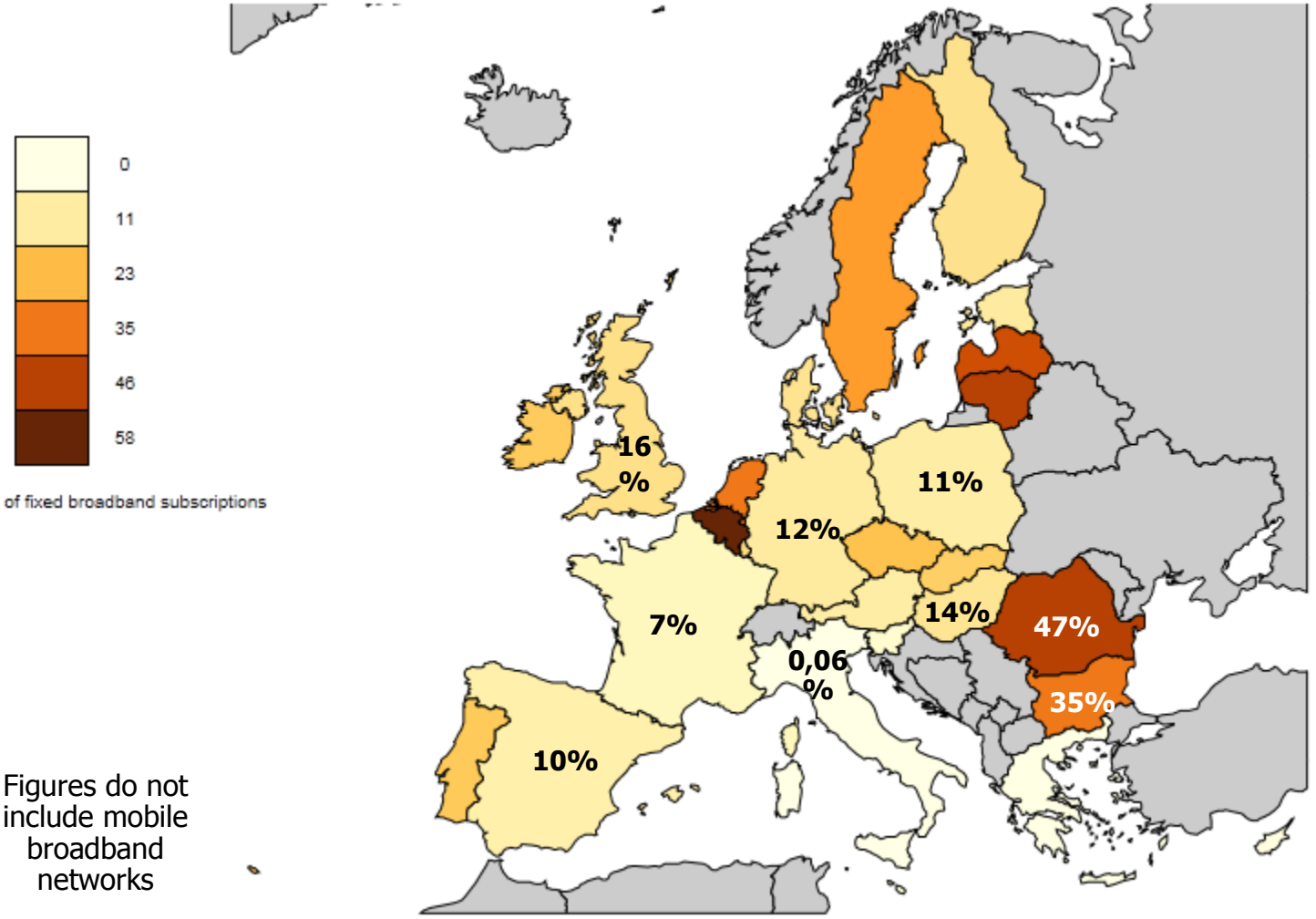
Figures do not include mobile broadband networks

Source: EC Digital Agenda Scoreboard 2013

ANCOM
Autoritatea Națională pentru Administrare și Reglementare în Comunicații

Demand for superfast broadband is reasonably robust on a comparative basis

✓ Share of fixed broadband subscriptions >= **30** Mbps, 2012



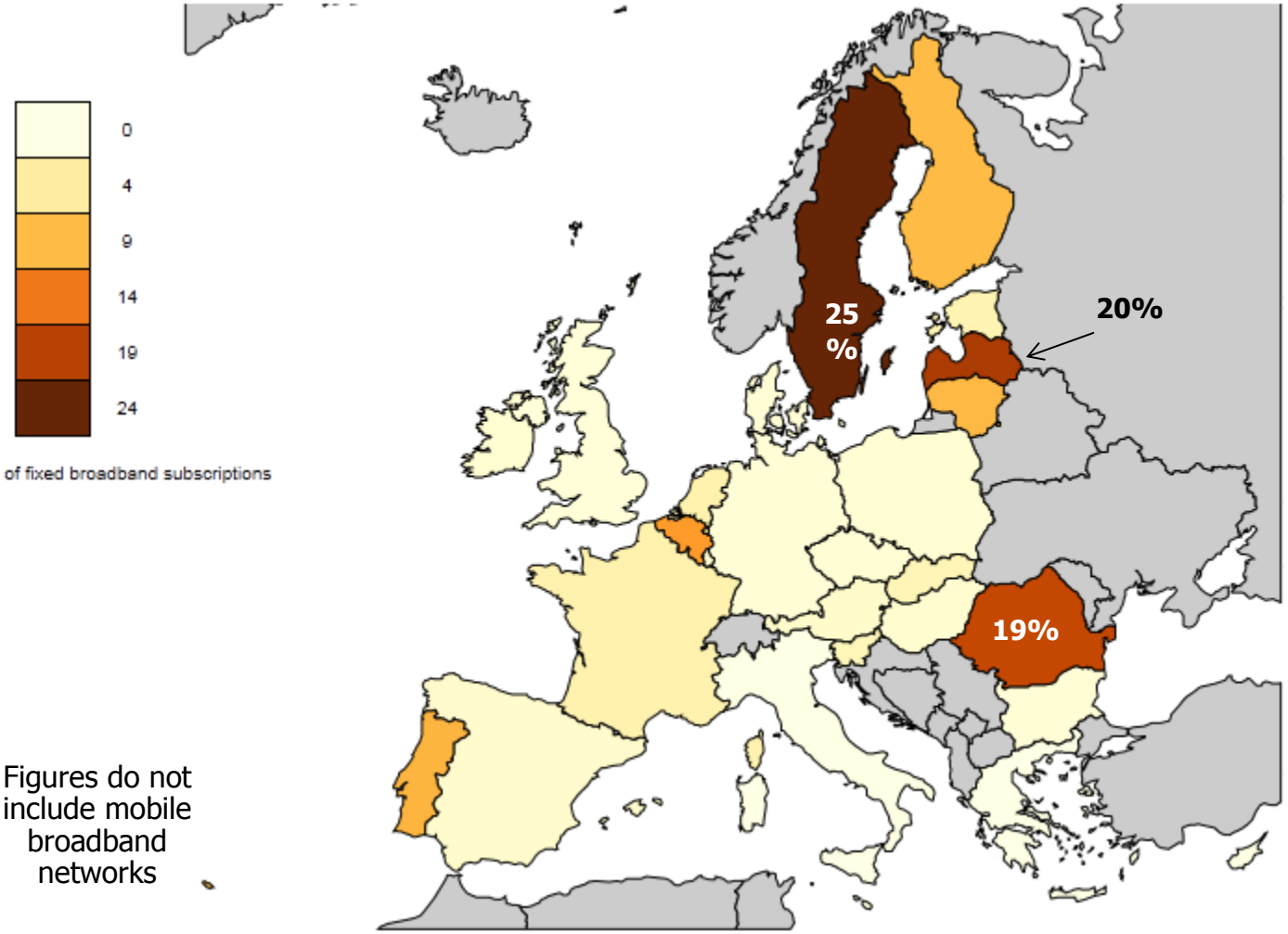
Figures do not include mobile broadband networks

Source: EC Digital Agenda Scoreboard 2013

ANCOM
Autoritatea Națională pentru Administrare și Reglementare în Comunicații

Leader in the take-up of "hyper" fast broadband

✓ Share of fixed broadband subscriptions >= **100** Mbps, 2012



Figures do not include mobile broadband networks

Source: EC Digital Agenda Scoreboard 2013

ANCOM
Autoritatea Națională pentru Administrare și Reglementare în Comunicații

Statistics on Bucharest, December 2012

- Bucharest accounts for 9% of the population and ~21% of GDP
  - ✓ Better positioned on all economic indicators, including broadband ones
  - ✓ How much better positioned ?
  - ✓ More granular statistics are usually harder and more expensive to get

At a glance, the broadband market in Bucharest

- Competitive environment characterized by a large number of players
  - ✓ 150 network providers
  - ✓ 123 networks provide services above 30 Mbps
  - ✓ progressive consolidation of small players

- Significant degree of networks' overlapping
  - ✓ 2,42 mil. homes passed
  - ✓ on average, 3 networks/home

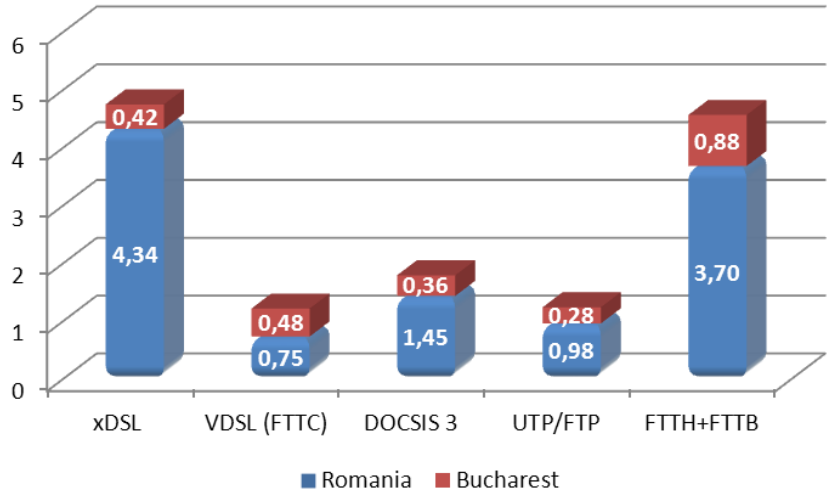
- Very robust broadband take-up rates
  - ✓ 602.000 broadband connections at 692.000 households

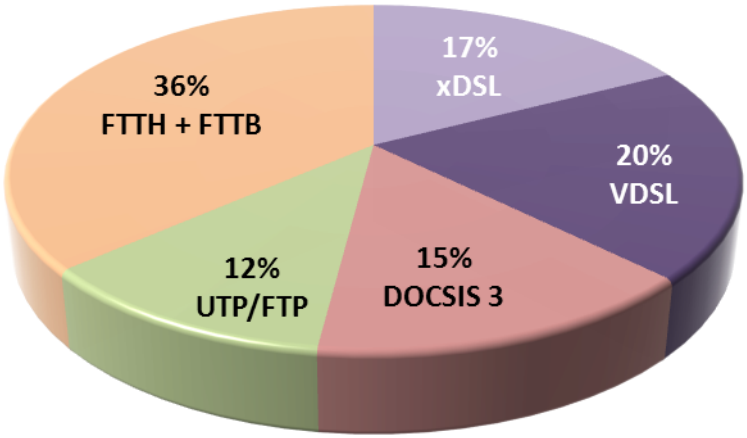
ANCOM
Autoritatea Națională pentru Administrare și Reglementare în Comunicații

Existing telecom networks in Bucharest

- capable to deliver super-fast and hyper-fast broadband nearly everywhere
- almost all broadband fixed broadband lines have incorporated some fibre elements
- DSL technologies are surpassed by more competitive FTT-H/B configurations
- all coaxial cables use DOCSIS 3

Distribution per technologies of existing fixed access networks in Bucharest & Romania
(December 2012)





can support a next generation city

ANCOM
Autoritatea Națională pentru Administrare și Reglementare în Comunicații

Thank you / Mulţumesc !