ITU/BDT Regional Economic and Financial Forum of Telecommunications/ICTs for Asia and Pacific

Yangon, The Republic of the Union of Myanmar, 1-2 September 2014

Monitoring broadband deployment, competition, access and adoption

Colin Oliver

Monitoring the state of broadband …

- Session three introduced the issue of good practice in monitoring broadband.
  - Good practice examples continue to emerge
- Technological trends clearly need to be monitored
  - On the user side, the main focus is on devices and services – these can change rapidly.
  - On the supply side, the main focus is on delivery technologies – these tend to change more slowly.
- In this session we look a little further at monitoring competition and broadband adoption

Broadband coverage: Basic broadband is available to everyone in the EU, while fixed technologies cover 97% leaving 6 million homes unconnected. Next Generation Access (NGA) covers 62%, up from 54% a year ago. Deployment of 4G mobile increased sharply. Rural coverage remains significantly lower, especially in NGA.

Basic broadband is available to all in the EU, when considering all major technologies (xDSL, Cable, Fibre to the Premises, WiMax, HSPA, LTE and Satellite). Taking only fixed, fixed wireless (WiMAX) and mobile wireless (HSPA and LTE) into account, the coverage goes down to 99.4%. Fixed and fixed-wireless technologies cover 97.2% of EU homes.

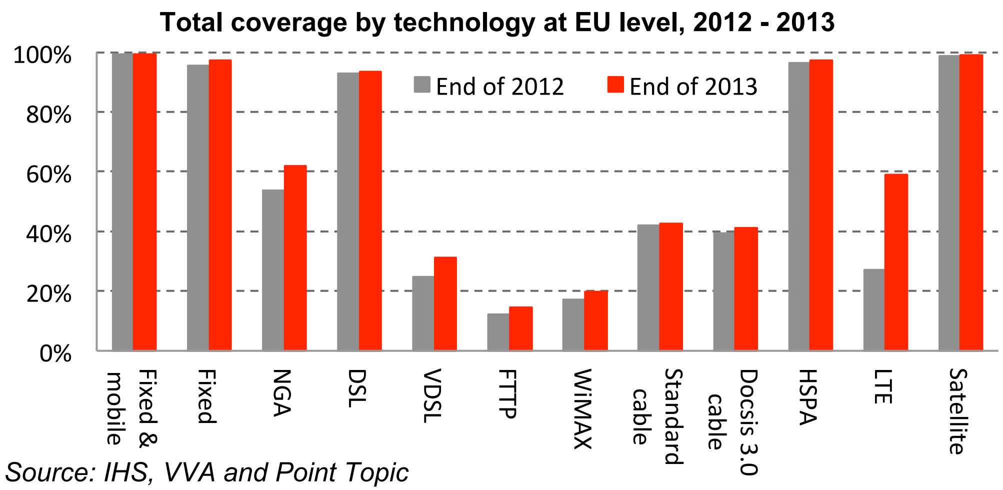
Next Generation Access technologies (VDSL, Cable Docsis 3.0 and FTTP) capable of delivering at least 30Mbps download are available to 62%.

Coverage in rural areas is substantially lower for fixed technologies (89.8%), and especially for NGA (18.1%)

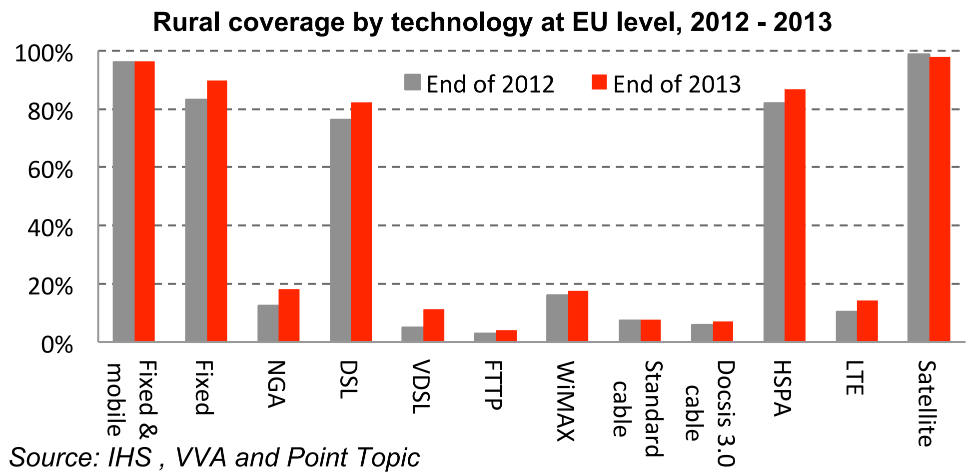
Our Target

Basic broadband for all by 2013: 100% in 2013

Fast broadband (>30Mbps) for all by 2020: 62% in 2013



Source: IHS, VVA and Point Topic

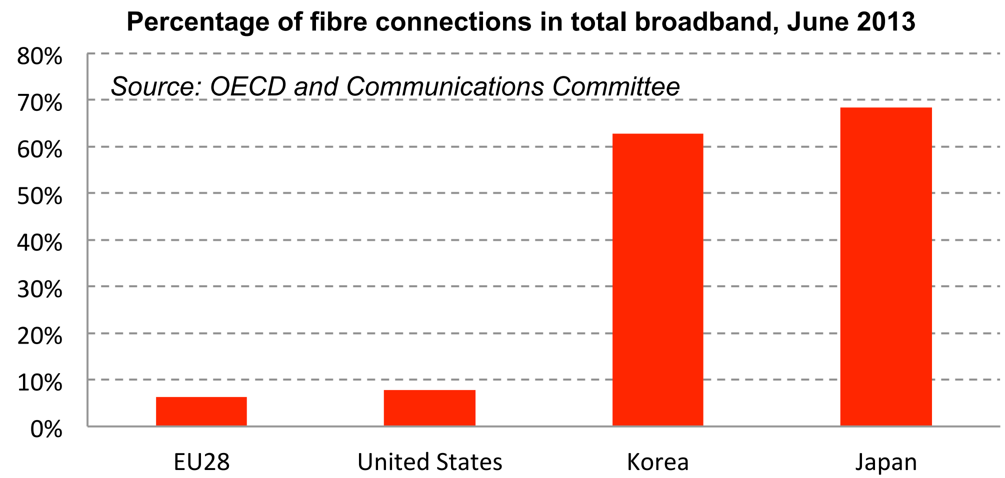


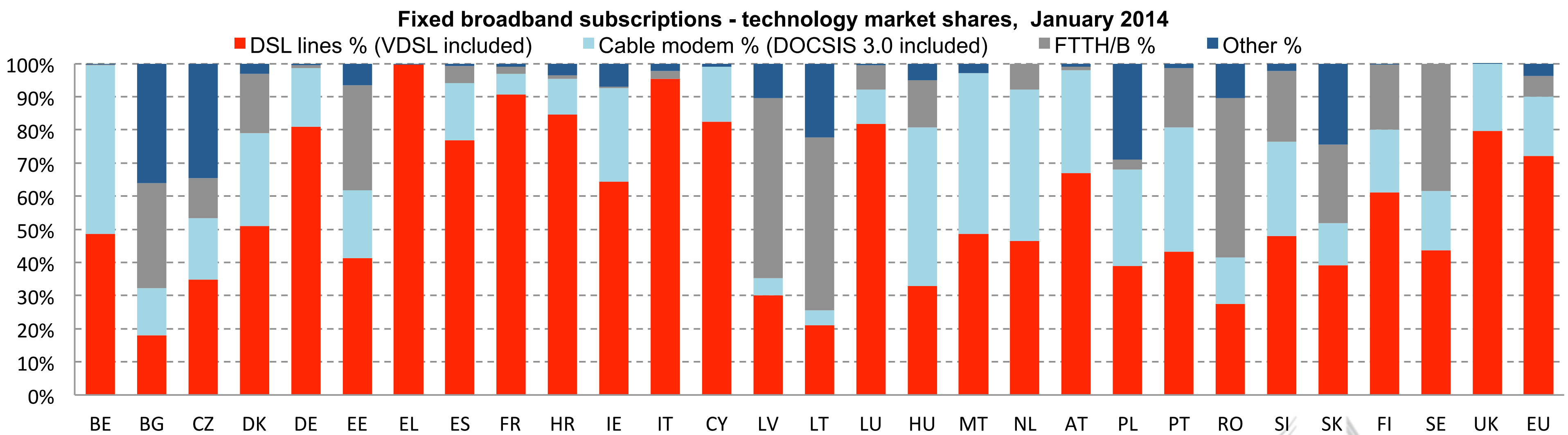
Source: IHS , VVA and Point Topic

xDSL is particularly predominant in Greece and Italy, and has the lowest share in Bulgaria, Lithuania and Romania. Cable has very high market share in Belgium, Hungary, Malta and the Netherlands. FTTH/B is the most important technology in Lithuania, Latvia and Romania.

The share of xDSL ranges from 18% in Bulgaria to 100% in Greece. DSL is generally less dominant in Eastern Europe. Looking at alternative technologies, cable is present in all but two Member States and it is the most important competitor of DSL in the majority of the Member States.

FTTH and FTTB together represent only 6% of EU broadband subscriptions. In these technologies, Europe is very much lagging behind South Korea and Japan.

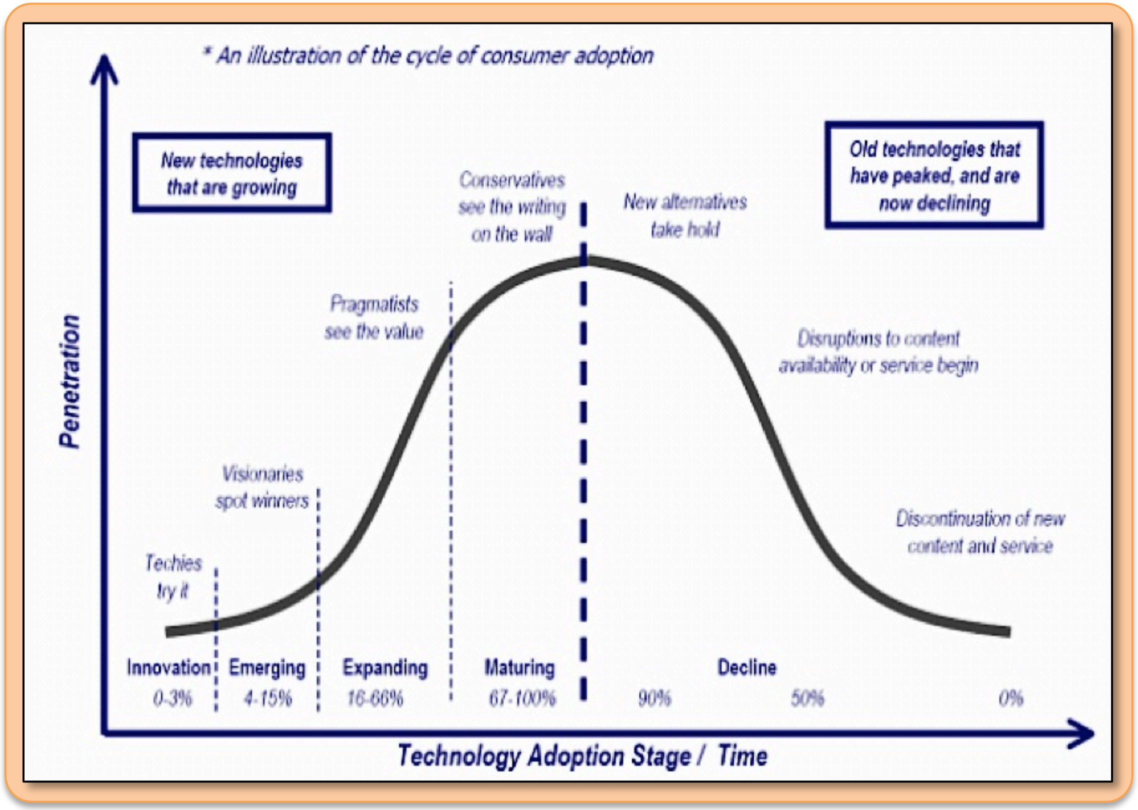




Source: Communications Committee

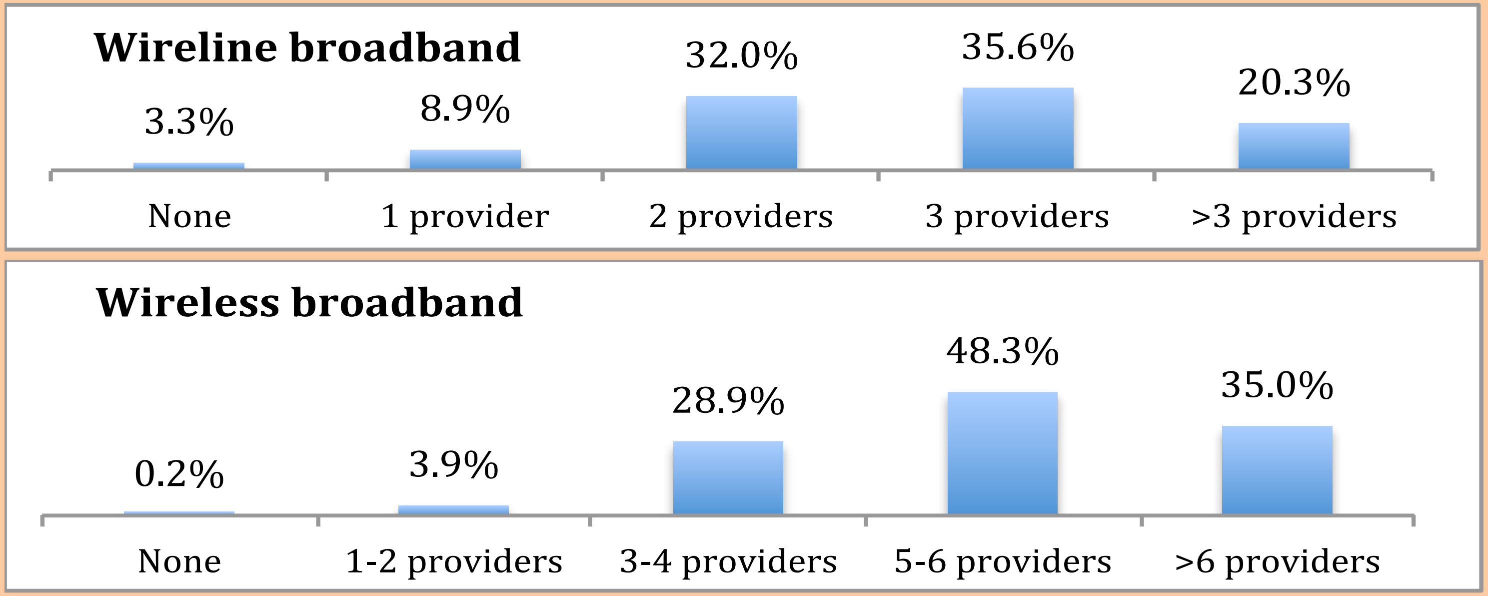
Cycle of consumer adoption/product life cycle observed in Canada

- In 2013, CRTC found a complex and evolving pattern of adoption of digital technologies, and product life cycles.
  - *Emerging* trends included online-only television viewing,
  - *expanding* trends included possession of a smartphone,
  - *maturing* trends included having a WiFi network at home, and
  - *declining* trends included listening to podcasts and subscribing to analogue cable services.
- Changing patterns of adoption & use indicate changing demand for broadband capacity and availability, both greater download capability & greater mobility.
- Monitoring adoption & use of broadband provides an information base to support reconsideration of the benchmark objectives for broadband access.



Source: MTM 2012, from CRTC Communications Monitoring Report 2013

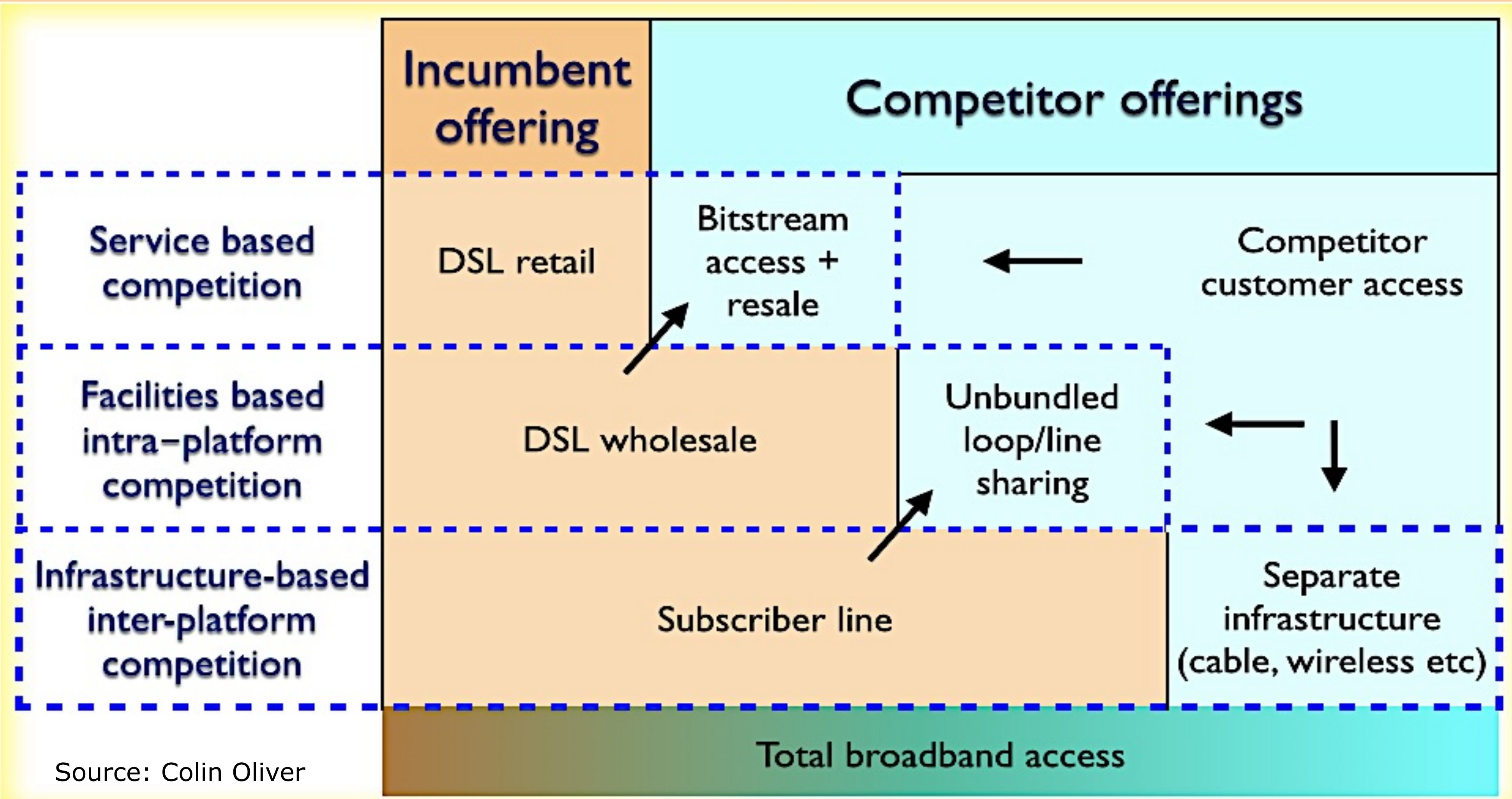
Monitoring competition



Source: Adapted from Steven Rosenberg Measuring and evaluating broadband progress, Presentation for ITU Asia Pacific Centre of Excellence Training, October 2013, based on the National Broadband Map at June 30, 2013

- Information provided by State Broadband Initiative grantees and incorporated in the National Broadband Map.
- Interactive features of the National Broadband Map enable users to obtain similar information also at state and local levels, identifying local broadband providers (and, on the demand side, local anchor tenants).

Different forms of competition



Source: Colin Oliver

Monitoring wholesale access & competition in Europe

- In Europe, there is reporting on service as well as infrastructure-based competition, and action lines in the Digital Agenda support streamlined regulatory measures for wholesale access pricing.
- The Commission monitors the extent of wholesale access from incumbents in terms of activated main lines, whether shared or fully unbundled lines, bitstream access or simple resale. This information is obtained from national regulators and is published online.
- The Commission also monitors changes in the competitive landscape over time …

Source: Digital Agenda for Europe Pillar IV: Fast and ultra-fast Internet access, actions 112-114 and European Commission Report: Fixed broadband wholesale lines & agreements, January 2014

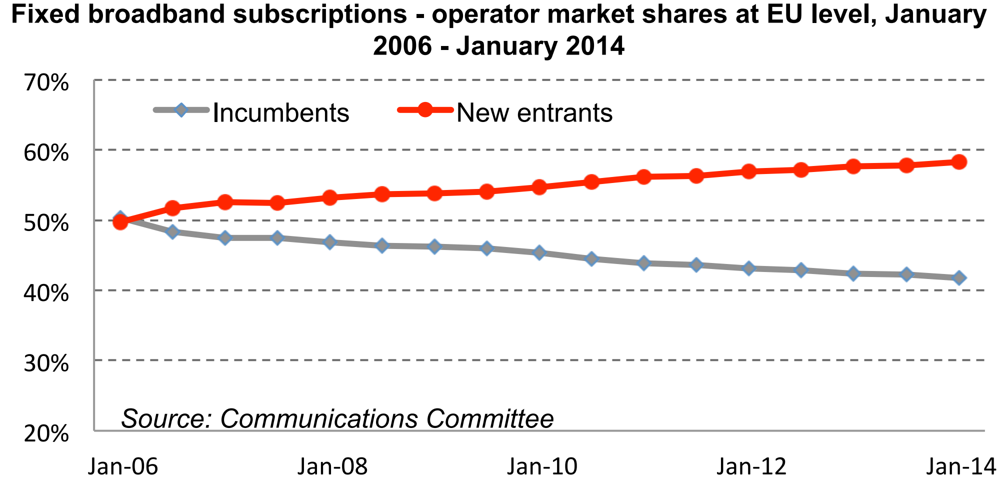
European monitoring of service and facilities-based markets:
Fixed broadband wholesale lines and agreements: January 2014

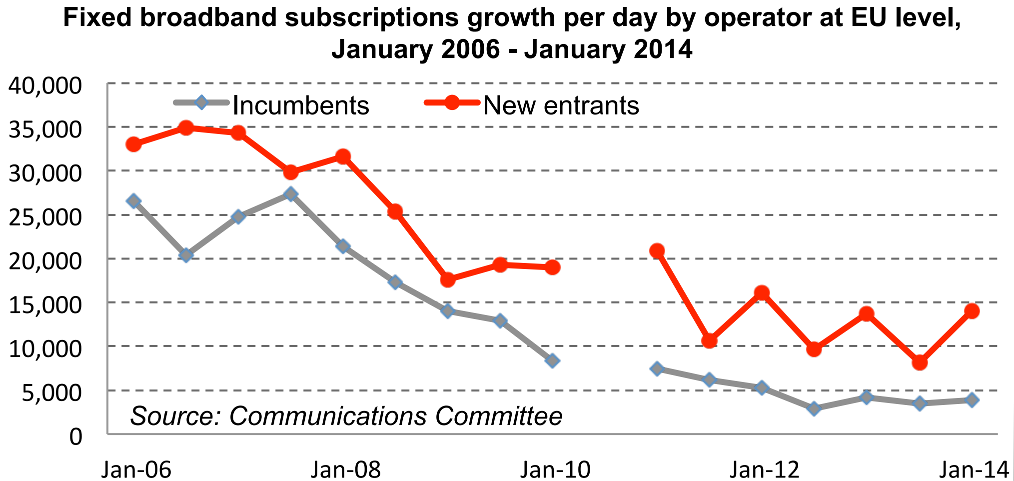
Date	Incumbent's PSTN activated main lines	Availability of wholesale access									
January 2014		Fully unbundled lines			Shared access lines supplied by the			Wholesale DSL lines supplied			
								Bitstream access		Simple resale	
Country		Unbundled lines	FUL Requested lines	FUL N. of agreements	Shared lines	SAL Requested lines	SAL N. of agreements	Bitstream N. lines	Bitstream N. agreements	Resale N. lines	Resale N. agreements
BE	2,689,804	confidential		9	6,615		6	112,000	13	35,452	19
BG	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential
CZ	1,544,601	45,645		3	743		3	117,181	22		
DK	1,064,232	149,861	N/A	14	14,621	N/A	5	89,306	33	43,374	23
DE	32,668,000	9,257,000		189	40,000		31	593,000	27	1,361,000	6
EE	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential
EL	4,787,649	1,897,195	29,998	7	10,108	11	6	25,741			
ES	16,087,066	3,656,390	29,554	18	130,555	152	10	675,995		2,055	7
FR	9,749,000	10,805,000			793,000			1,324,000			
HR		248,706		5	857		1	73,659	7		
IE	783,178	15,640	confidential	confidential	64,397	confidential	confidential	226,538	confidential		
IT	13,281,076	5,321,204	51,993	46	70,410	1,273	19	1,825,199	179		
CY	287,937	26,836		3	54		3	10,246	7		
LV	411,378			2			2	198	12		
LT	494,478	406		2	53		2	1,567	5		
LU	184,000	21,442	311	6			5			15,310	8
HU	1,750,535	12,802	14	7	1,471		7	74,316	27		
MT	161,262							369			
NL	4,734,269	536,100		6	56,000		2	177,430	20	9,463	1
AT	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential
PL	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential
PT	2,447,479	151,464		4				24,692	9	48	2
RO	2,199,053	217		8	57		8				
SI	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential
SK	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential
FI	1,585,816	246,659			6,884			26,081			
SE	2,456,868	236,690			166,507			15,310		61,205	
UK	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential	confidential

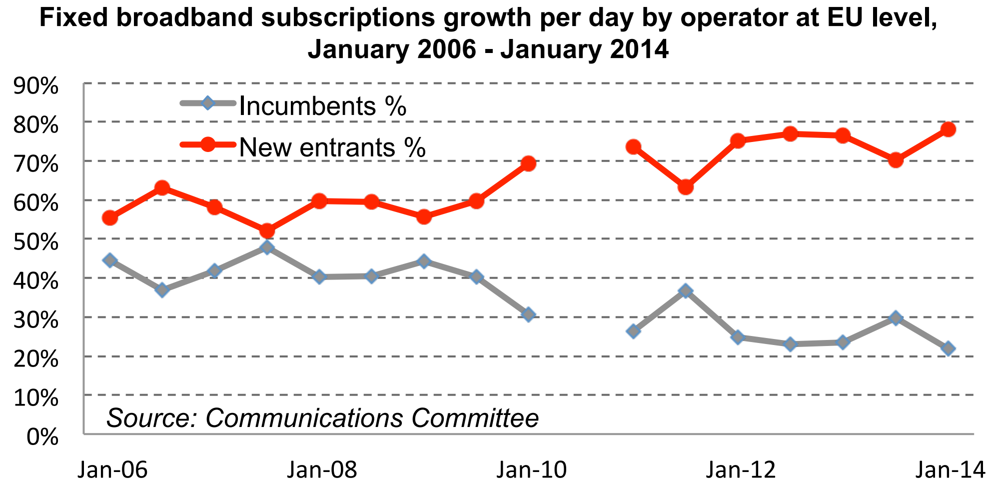
Source: https://ec.europa.eu/digital-agenda/en/pillar-4-fast-and-ultra-fast-internet-access

Competition in the fixed broadband market: new entrant operators are continuously gaining market share, but incumbents still control 42% of the subscriptions.

Incumbent operators are market leaders in almost all Member States, although their market share is decreasing. During the last eight years, new entrant operators always posted higher net gains then the incumbents. In the last six months, new entrants yielded 80% of the total net gain in the market. This, however, could not result in a large change in the overall market share of new entrants because of the low growth rate of the total market.







Monitoring vertically separated wholesale service provision

- Downstream providers rely on the wholesale network to deliver services to consumers and businesses.
- Two broad approaches to vertical separation :
  - separation of an incumbent (e.g., UK & NZ), or
  - creation of a new entity (e.g., Australia, Singapore).

- UK and Singapore monitor the wholesaler similarly:
  - Openreach in UK committed to service targets, with payments to client telcos where targets are missed.
  - In *Singapore* OpenNet's USO requires it to provide optical fibre services to any location in Singapore on request. IDA imposed a penalty of SNG $750,000 on OpenNet for failing to meet its USO from Jan to June 2013 & failing QoS standards.

Sources: Ofcom New rules for faster telecoms repairs and installation December 19, 2013, Openreach: Where and when, OpenNet, homepage and IDA, OpenNet Failed to Meet Universal Service Obligation and Quality of Service Standards 20 November 2013

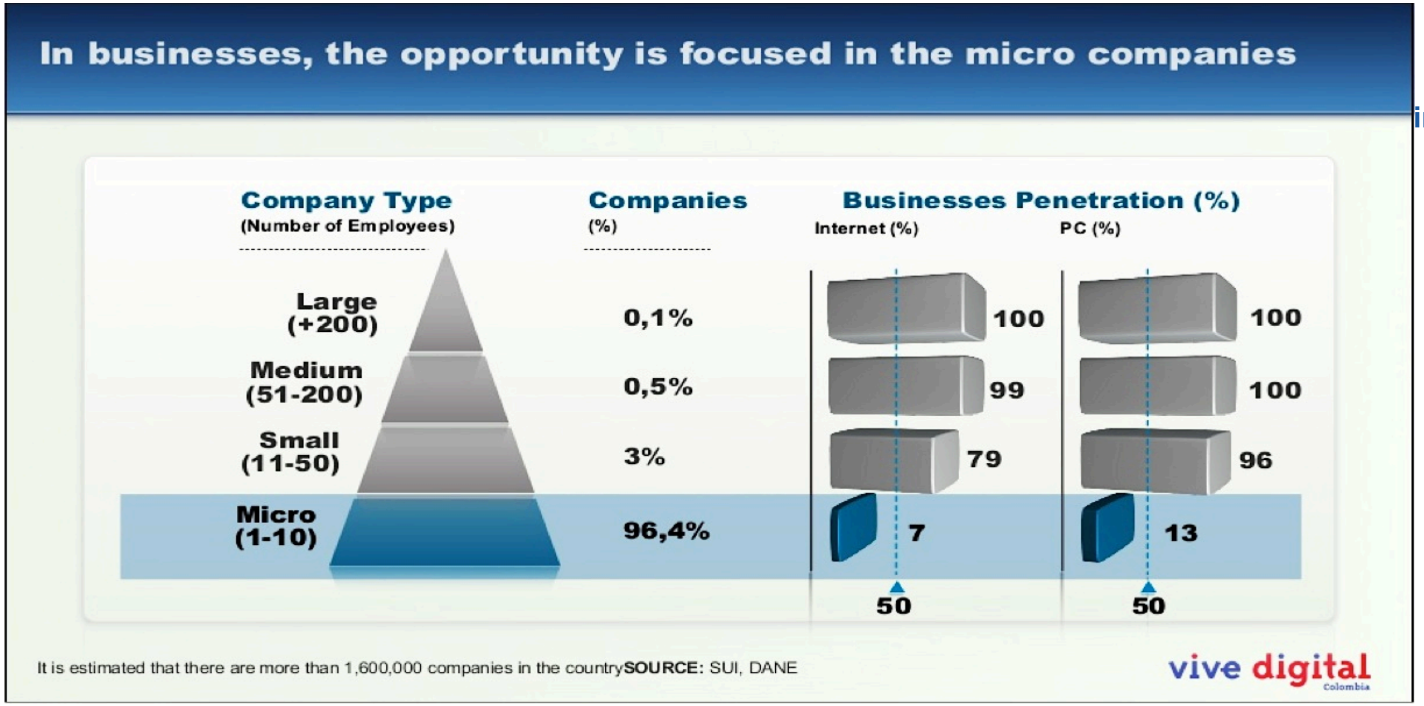
Monitoring adoption and effective use

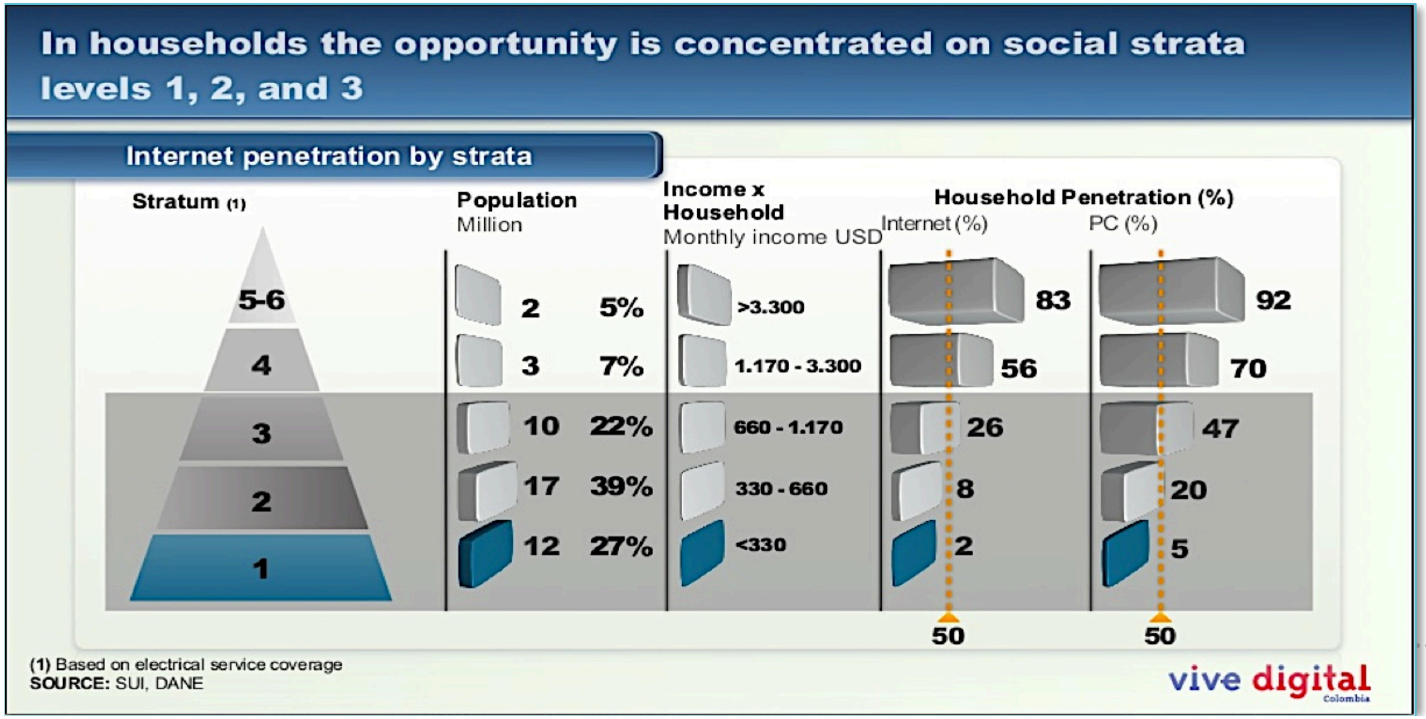
- Identify barriers and monitor progress in overcoming them:
  - Affordable access to services & equipment – basic access target (5% income)
  - Gaps in digital literacy
  - Gaps in digital inclusion
  - Identify other concerns (such as service quality, trust, privacy)

- Indicators of adoption and use are still being developed, but most countries have basic ICT statistics
  - including indicators of the number of customers - subscriptions, households, businesses and communities.
  - Additional information may need to come from other agencies, national statistical offices and from commissioned research
- Monitor uptake and use by 'anchor institutions' e.g., schools, colleges, libraries, public safety, medical and community centres
  - US Broadband Map reports take-up by key anchor institutions – including schools, libraries and health centres

Adoption and inclusion: progress, feedback and response

- Specific objectives require focussed reporting *e.g.*, with details for
  - access & uptake for target regions, social strata, micro business
  - health and education *outcomes.*
  - Important to identify information gaps
- Analysis of adoption and use provides feedback to broadband policy and planning process
  - Business users can provide feedback on important issues.
  - Trends in adoption, affordability and demand have implications for policy (*e.g.*, speed and capacity benchmarks).
- Broadband service quality – a transitional issue? – feedback will tell.
  - User complaints have driven some regulators to monitor service quality – experiences differ among countries.
  - Service quality is crucial is broadband becomes fully *integrated* in the economy and society.





Monitoring business and household penetration & adoption in Colombia

Source:
Diego Molano Vega
Minister of Information and Communication Technologies, Colombia,
Vive Digital - OECD Keynote,
December 12, 2013

Monitoring indicators and outcomes

Broadband deployment — adoption — integration				
Broadband network availability	>	**Broadband access & capacity building for effective use**	>	**Broadband integration in economy and society**
Deployment	>	**Adoption**	>	**Integration**
Examples: optical fibre cable and wireless broadband access networks		*Examples*: digital literacy programs; community access projects and programs		*Examples*: e-health, e-governance, e-education and e-commerce strategies

Telecommunications indicators

Performance indicators

Outcome measures

Indicators & outcome measures monitor achievements against targets. Performance indicators track program results, costs, benefits & progress against 'process milestones' (e.g., for regulations, agreements or contracts).

Source: Colin Oliver

Looking around and ahead …

- Large business and government should not be the only focus.
  - Small businesses (SMEs) have a larger work force in most countries, and have an essential role in driving the uptake and use of broadband.
- The Australian Communications and Media Authority (ACMA) has expanded its reporting: for example:
  - *Australian SMEs in the digital economy* examined the intensity of online activity by SMEs, and new ways of doing business with online technology.
  - ACMA found Australian businesses use mobile broadband to drive productivity, make faster decisions, improve product and service quality — increasing economic activity by about AUD$33.8 billion in 2006-2013.
- As dependence on broadband connectivity grows, regulators will continue to monitor the availability, speed, affordability and reliability of broadband services and overcome remaining barriers to the adoption and use of high speed broadband connectivity.

References: ACMA *Communications report 2012–13* and *Report 1 – Australian SMEs in the digital economy*.
Brief 'snapshot' reports cover topics such as Australians cut the cord, The mobile business, The connected business, Home is where the work is, Regional Australia in the digital economy and Aussie teens online.
Subscribe at http://www.acma.gov.au/theACMA/engage-blogs/engage-blogs/All-blogs/Subscribe-to-engage

Conclusions – issues to consider

- Monitoring broadband markets is becoming increasingly complex – with wholesale access a key concern.
- Indicators of availability, adoption and use of broadband can facilitate useful international comparisons.
- Adoption indicators may usefully target under-served socio-economic groups and regions with special needs.
- As small business and private users become more sophisticated, and online services become more pervasive, new issues may arise that call for monitoring.
- Support national and international work on impacts on social and economic life, reviewing benchmarks if necessary.