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FTTH Panorama: EU36 & ME14

December 2009

FTTH Council Europe



February 2010

Understanding
the
Digital World

IDATE

Consulting & Research

www.idate.org

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▶ Study Background: Objectives, available results

▶ FTTH in Europe: Overview

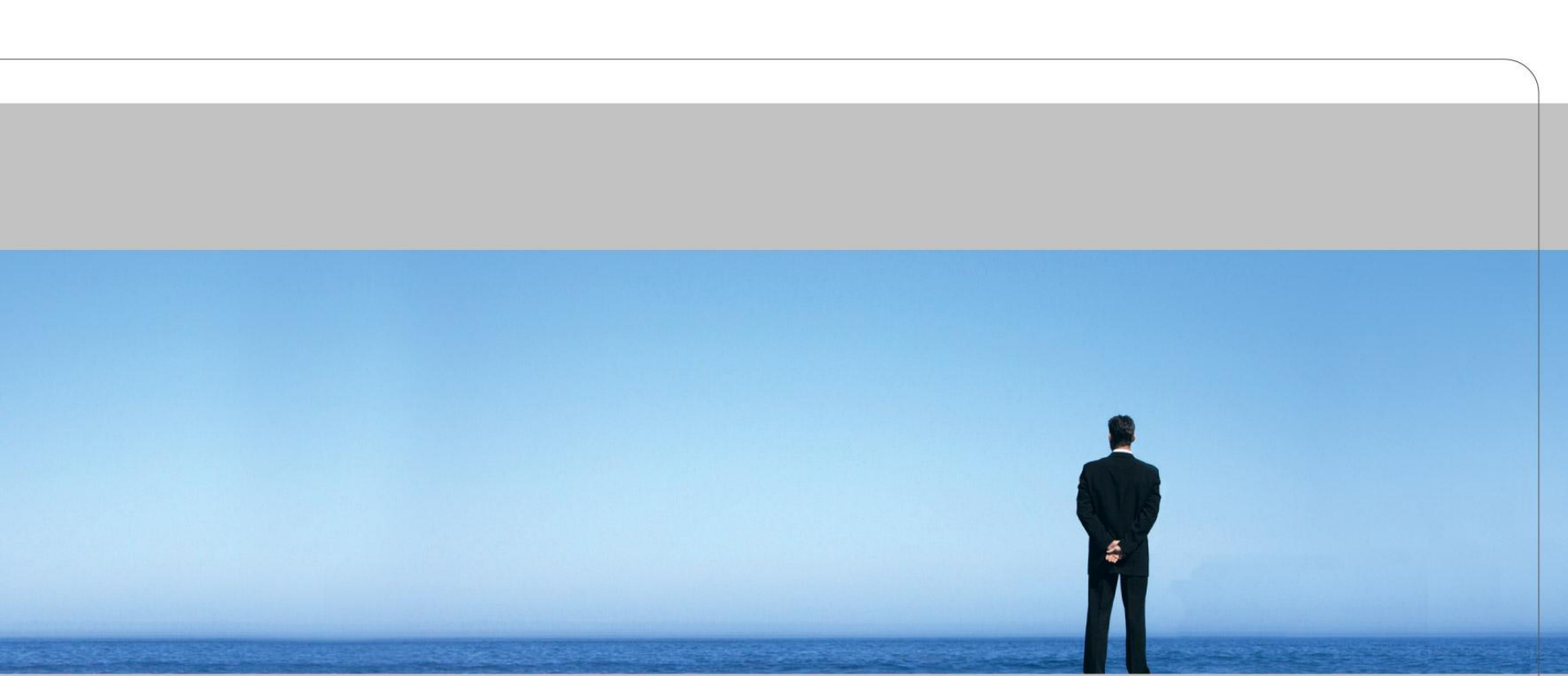
- Projects
- Global figures
- Players involved

▶ Europe's FTTH leaders

- Countries subscribers bases
- Countries Homes Passed
- Architecture & Technologies

▶ FTTH in Middle East: Overview

- Projects
- Global figures
- Players involved



Study Background

Objectives, available results

Background of the Study

- ▶ **IDATE has been commissioned by the FTTH Council Europe to provide a comprehensive overview of FTTH deployments in Europe 36 (EU 27 + Norway, Iceland, Switzerland & Andorra, as well as five countries in Eastern Europe : Russia, Ukraine, Croatia, Serbia and Turkey) and in 14 countries in Middle East (7th edition)**
- ▶ **Methodology used**
 - Desk research
 - Direct contacts with FTTH players (questionnaires, phone interviews)
 - Information exchange with FTTH Council Europe members
 - Direct contacts with IDATE's partners in several European countries
- ▶ **Objectives: to provide a complete summary of the status of FTTx in Europe and middle East**
 - Identification of new projects
 - Characterization of each project: organization initiating the project, Key parameters& Figures (Homes and Buildings passed), Technical parameters, Financing & Business model
 - We distinguished FTTH/FTTB and FTTN (FTTN/C+VDSL, FTTLA)

Available results for EU36 & ME14

- 249 projects listed in EU36
- 30 projects listed in ME14

Qualitative



Quantitative



	December 2009	
	FTTH/B subscribers (*)	FTTH/B Homes/Buildings passed
Infotech	3 100	5 000
Telekom Austria	2 000	5 000
Vienna/Vienstrom	3 100	25 000
ARGE Glasfaser Waldviertel (1)	500	1 000
24Entertainment	3 000	20 000
Others(2)	2 050	4 000
Total FTTH/B	13 750	60 000
	FTTN subscribers (**) / FTTN Homes/Buildings covered	
	FTTN subscribers (**)	FTTN Homes/Buildings covered
Telekom Austria	250	280 000
Salzburg AG	10 000	100 000
Total FTTN	10 250	380 000
Total Austria (***)	24 000	440 000

TEO

Identification Operator/Organisation

TEO is the national incumbent operator providing telecommunications, IT and TV services. The company is also the leader in the national broadband market.

The FTTH Project is one of the most important network modernisation projects of TEO. From 2007 to 2010, the company plans to invest more than LTL 100 million (38.9 million USD) in the new optical access network in the context of an Internet plan called "Zebra".

Key parameters

TEO plans to connect first the residents of the 5 biggest cities of Lithuania with FTTH, beginning with the provision of fiber-optic Internet services in Vilnius.

In January 2010, the current residential customers enjoy an Internet access at 200 Mbps. Estimations for the end of 2010 are the availability of the services for 95% residents of Vilnius and Klaipėda, 70% residents of Kaunas, 50% of Šiauliai residents, and 33,33% of Panevėžys residents, representing 100 000 subscribers.

TEO is also planning to increase the speed to the residential users by up to 10 times and to double the total speed of international Internet traffic up to 48 Gbps.

Figures

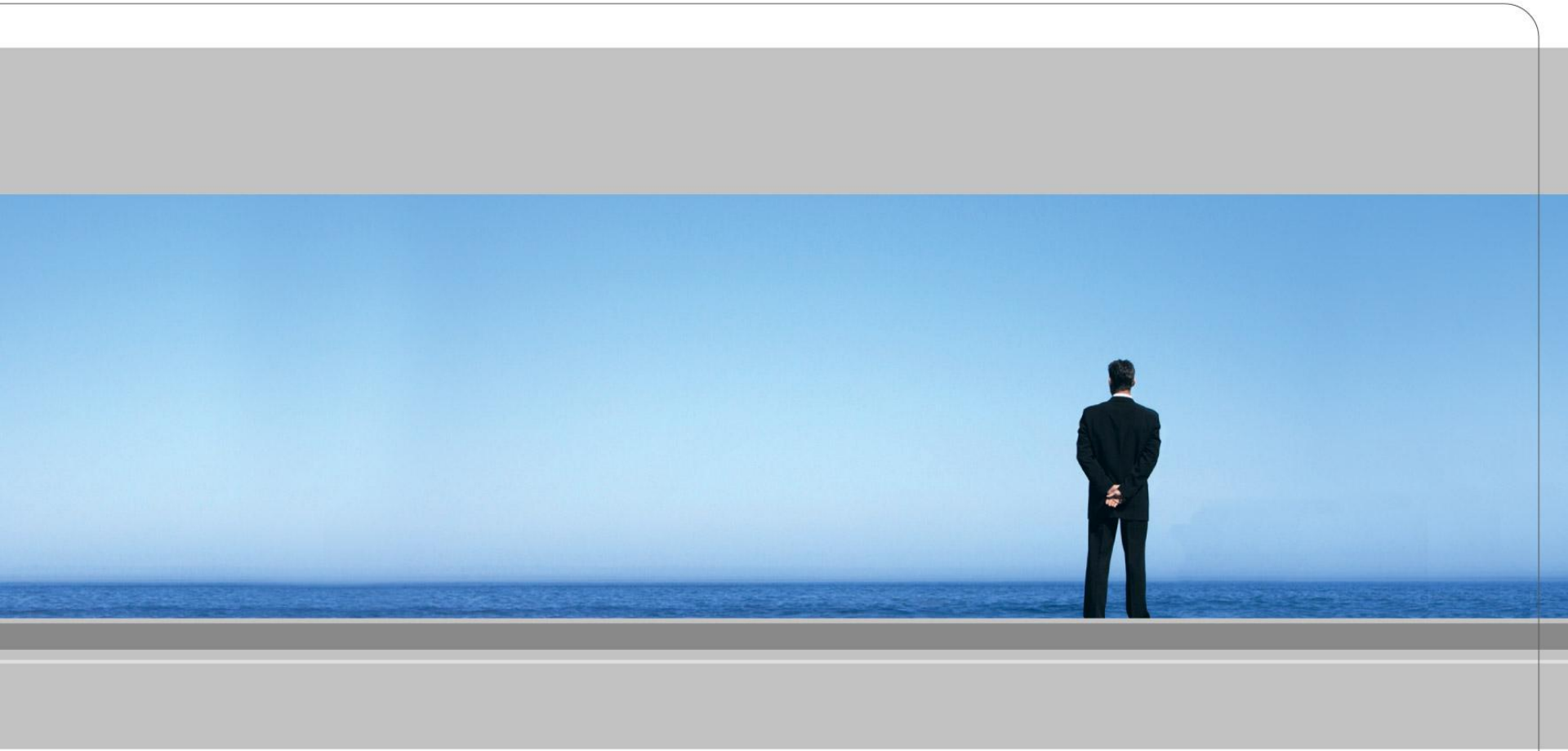
Number of Households/Business Units passed
20,000 homes passed at June 2008 (IDATE estimates)
40,000 homes passed at end 2008 (IDATE estimates)
120,000 FTTH/B homes passed at June 2009 (IDATE estimates)
340,000 FTTH/B homes passed at December 2009

FTTx subscriber base
7,500 FTTB subscribers and 5,700 FTTH subscribers at June 2008
9,100 FTTB and 12,000 FTTH subscribers at end 2008 (IDATE estimates)
10,500 FTTB and 31,200 FTTH subscribers at June 2009
11,600 FTTB and 51,000 FTTH at December 2009

Technical parameters

MDU 60% / SDU 40%

Source: IDATE for FTTH Council Europe



FTTH in Europe Overview

FTTH in Europe - Overview: Projects

- IDATE has identified 249 FTTx projects in Europe of which 136 are new initiatives since June 2005

Some significant FTTH/B European deployments at December 2009



Countries	Players		Homes/Buildings passed (December 2009)
Denmark	DONG Energy	Power utility	180 000
Finland	TeliaSonera	Incumbent	450 000
France	France Telecom	Incumbent	570 000
	Illiad/free	Alternative operator	370 000
	SFR	Alternative operator	380 000
	Numericable	Cable operator	4 400 000
Germany	Wilhelm Tel	Public	200 000
	M-Net	Public	120 000
	NetCologne	Power utility	150 000
Italy	Fastweb	Alternative operator	2 000 000
	Telecom Italia	Incumbent	100 000
Netherlands	Reggefiber	Infrastructure	500 000
Norway	Lyse / Altibox	Power utility	210 000
Russia	Beeline (Vimpelcom)	Alternative operator	8 000 000
Slovakia	T-COM	Incumbent	315 000
	Orange Slovensko	Alternative	285 000
Slovenia	T2	Alternative	310 000
	Telekom Slovenije	Incumbent	105 000
Spain	Telefonica	Incumbent	150 000
Sweden	B2	Alternative	460 000
	TeliaSonera	Incumbent	250 000
Lithuania	Elion	Incumbent	110 000
Hungary	Magyar Telecom	Incumbent	160 000
Portugal	Portugal Telecom	Incumbent	800 000
	Sonaecom	Alternative	200 000
	ZON	Cable operator	150 000

Source: IDATE for FTTH Council Europe

FTTH in Europe - Overview: Global Figures

- ▶ **In December 2009, more than 2.5 million FTTH/B subscribers and more than 17 million Homes Passed⁽¹⁾ in EU35 (excluding Russia)**
 - ▶ Nearly 3.5 million FTTH/B subscribers and more than 25 million Homes Passed including Russia
 - ▶ The potential of Russia's FTTH market is high and the impact of Russia in the European FTTH panorama might rapidly change in the coming years if players get more involved in fibre optic deployments
- ▶ **Growth in terms of subscribers and Homes Passed is accelerating: +20% from June to December 2009 compared to 18% for the previous semester**

Europe	Subscribers including Russia				
	Dec 2009	June 2009	Dec 2008	Growth Dec/June 09	Growth Dec 09/Dec 08
Total FTTH/B without FTTN	3 461 235	2 871 780	2 364 895	21%	46%
Total FTTH/B+FTTN	7 503 395	4 539 130	3 392 038	65%	121%

Source: IDATE for FTTH Council Europe

(1) Homes passed might be over estimated as 1 home can be passed by several operators in certain countries. Our figures do not take this into account at end 2009.

FTTH in Europe - Overview: Players

- There are still more Municipalities and Power utilities than any other kind of FTTH/B players in 2009

Players involved in FTTH/B						
	Dec 2009		June 2009		Dec 2008	
Incumbents	28	11,5%	26	10,8%	22	9,8%
Municipalities / Power Utilities	136	55,7%	135	56,0%	131	58,5%
Alternative operators / ISPs	70	26,7%	70	29,0%	61	27,2%
Housing companies & Other	10	4,1%	10	4,1%	10	4,5%

Source: IDATE for FTTH Council Europe

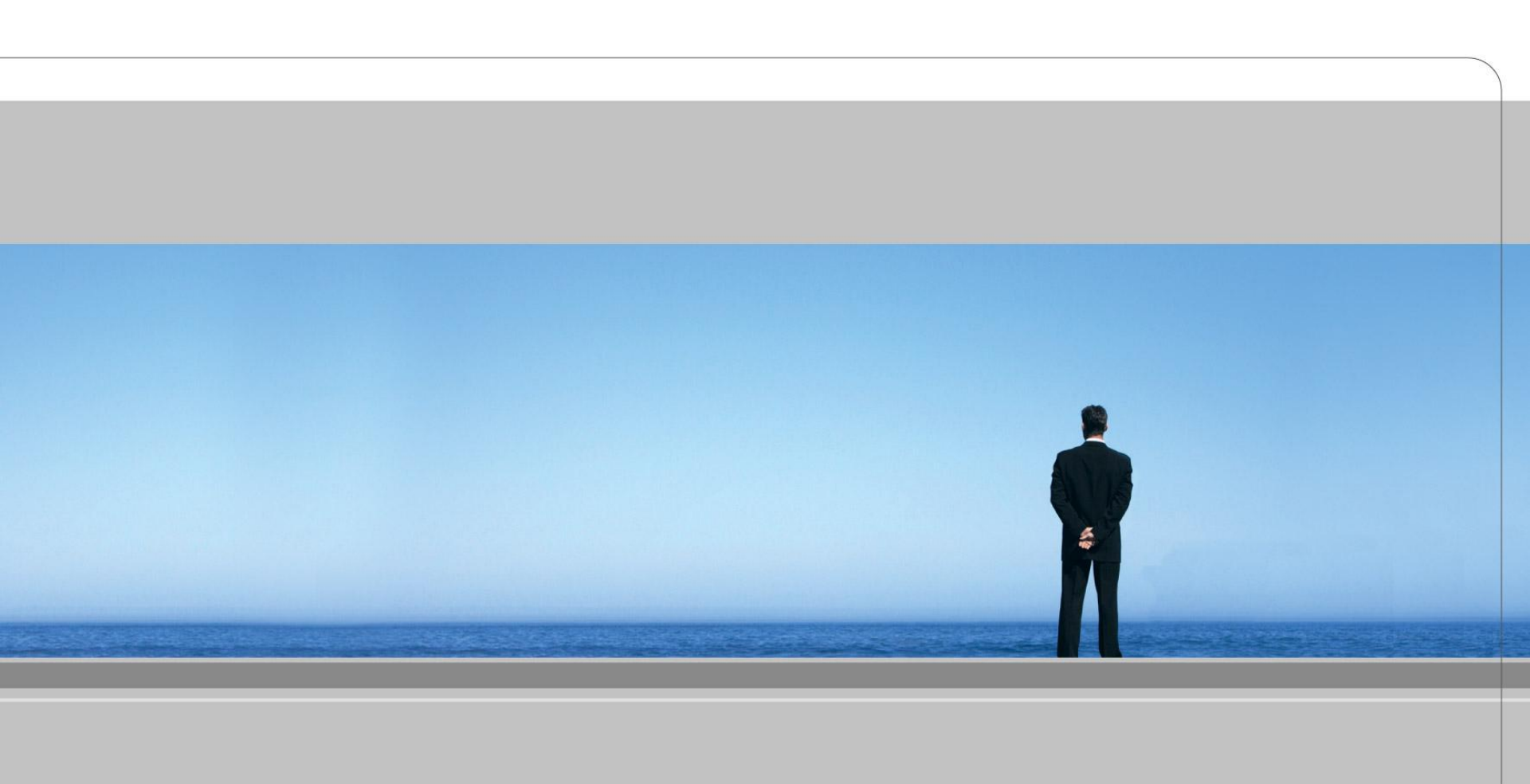
- Incumbents are getting more and more involved: they represent 15% of FTTH/B homes passed at December 2009 compared to 10% six months earlier
- Alternative operators are still the most dynamic and represent at December 2009, including Russia, 74% of total European FTTH/B subscribers base (adding among others Beeline & Comstar – Russia, Fastweb –Italy, B2 –Sweden, Numericable –France, T2 –Slovenia)

FTTH in Europe - Overview : Players

► Breakdown of homes passed for FTTH/B

Breakdown of players involved in FTTH/B (Number of homes passed as of December 2009)				
European Countries	Incumbents	Municipalities/Utilities	Alternative operators/ISPs	Housing companies and Other
Andorra	42 000			
Austria	5 000	50 000	5 000	
Belgium	950		4 000	
Bulgaria			1 000 000	
Croatia	200		16 000	
Cyprus			120	
Czech Republic			182 000	
Denmark		624 100	96 000	
Estonia	110 000			
Finland	450 000	17 700	9 000	10 000
France	570 000	6 250	5 150 000	
Germany		358 000	180 000	
Greece	na	na	na	
Hungary	160 000		na	
Iceland	4 000	28 000		
Ireland	100		19 000	
Italy	100 000	93 000	2 000 000	
Latvia	77 500		60 500	
Lithuania	340 000		386 000	
Luxembourg	30 000			
Netherlands	na	288 900	60 400	227 200
Norway	na	332 000	na	
Poland	265	70 000		
Portugal	800 000		350 000	
Romania			na	
Russia			8 075 000	
Slovakia	285 000	15 000	315 000	
Slovenia	310 000		105 000	
Spain	200 000	37 500	18 000	
Sweden	250 000	460 000	502 000	84 900
Switzerland	60 000	28 000		
The UK	2 000	4 180	80 000	
Turkey	na		na	
Ukraine			na	na
Total homes passed	3 797 015	2 412 630	18 613 020	322 100
in %	15,1%	9,6%	74,0%	1,3%

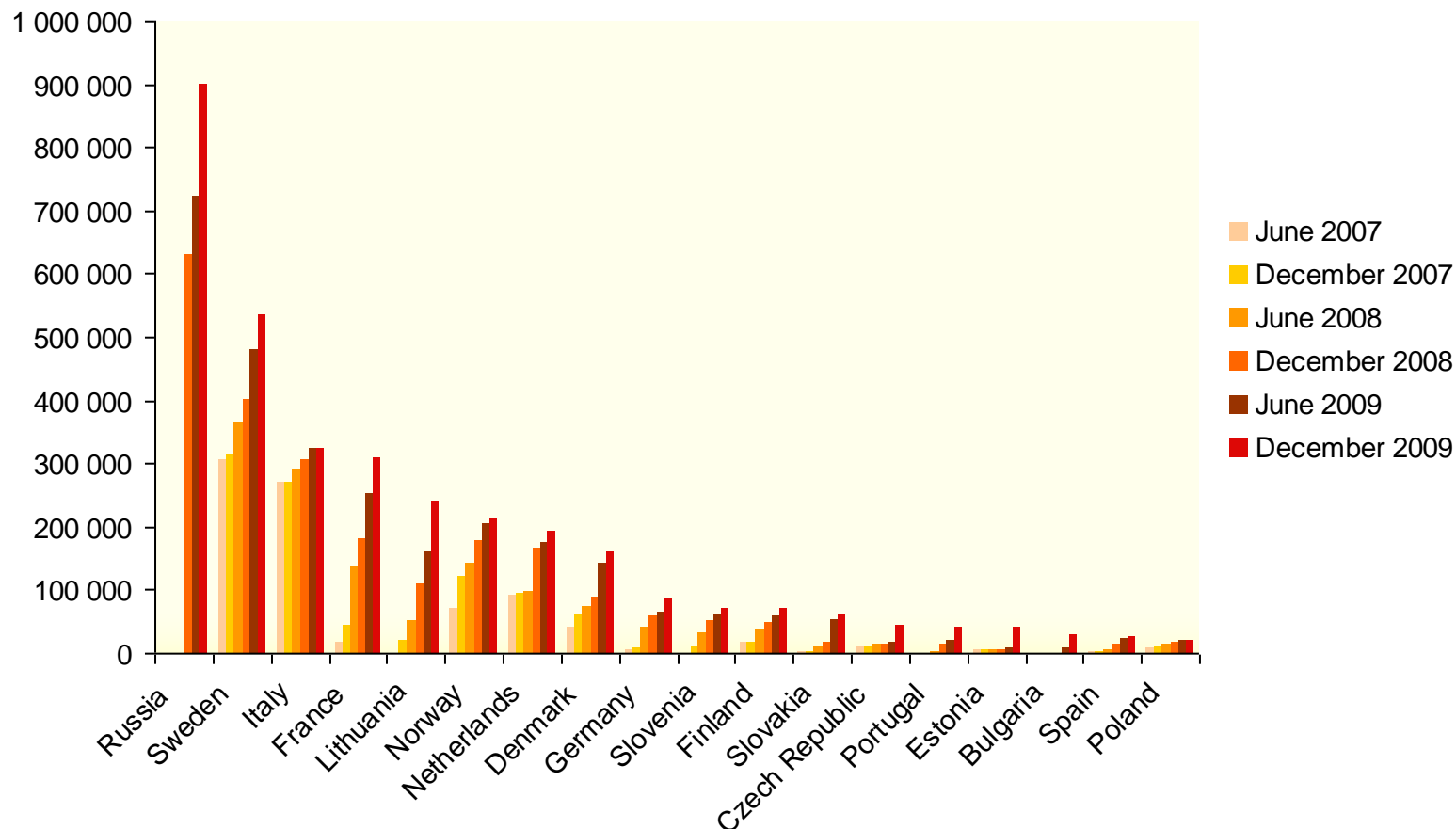
Source: IDATE for FTTH Council Europe



Europe's FTTH leaders

FTTH/B subscribers in Europe by country

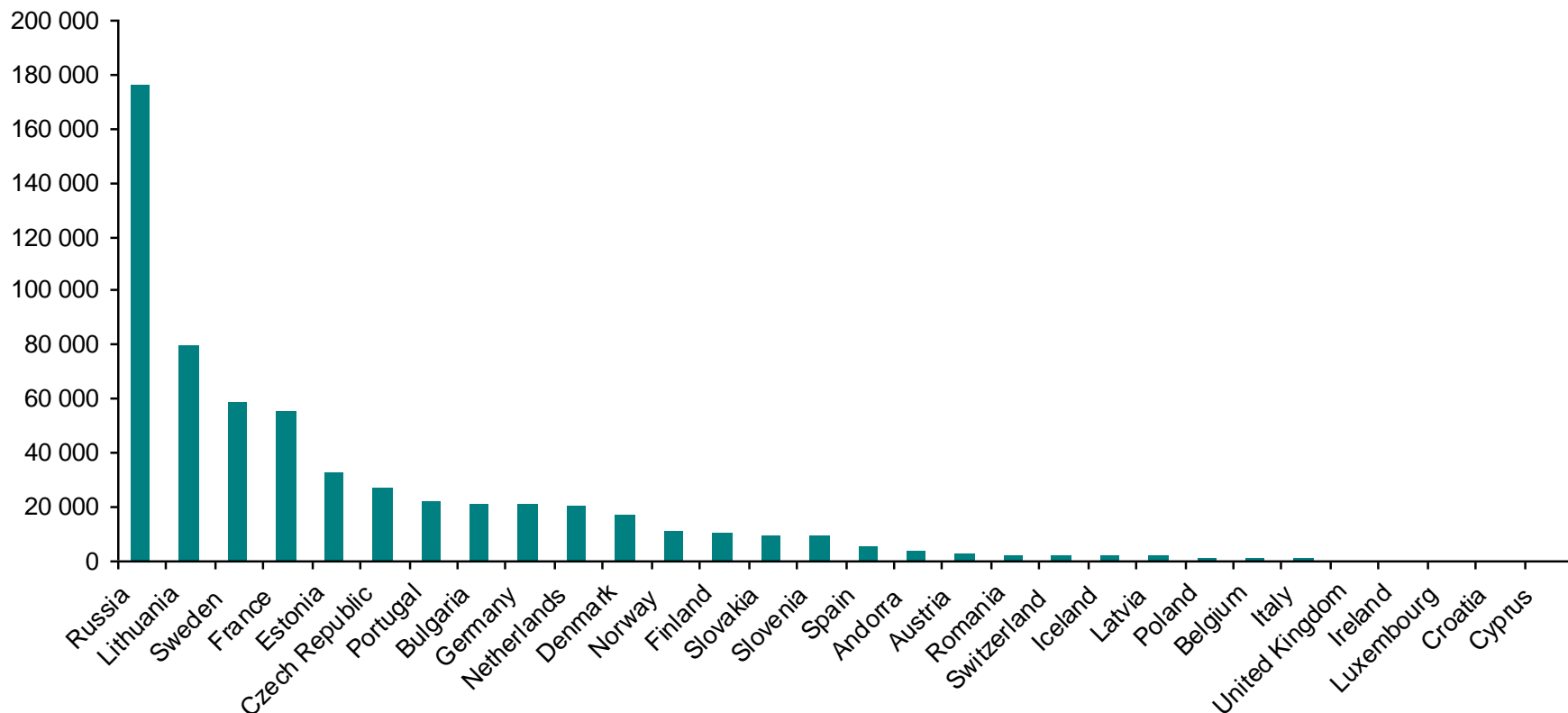
Evolution of FTTH/B (*) subscribers in Europe



(*) We refer here to the definition of FTTH/B from the FTTH Councils

New FTTH/B subscribers in Europe by country

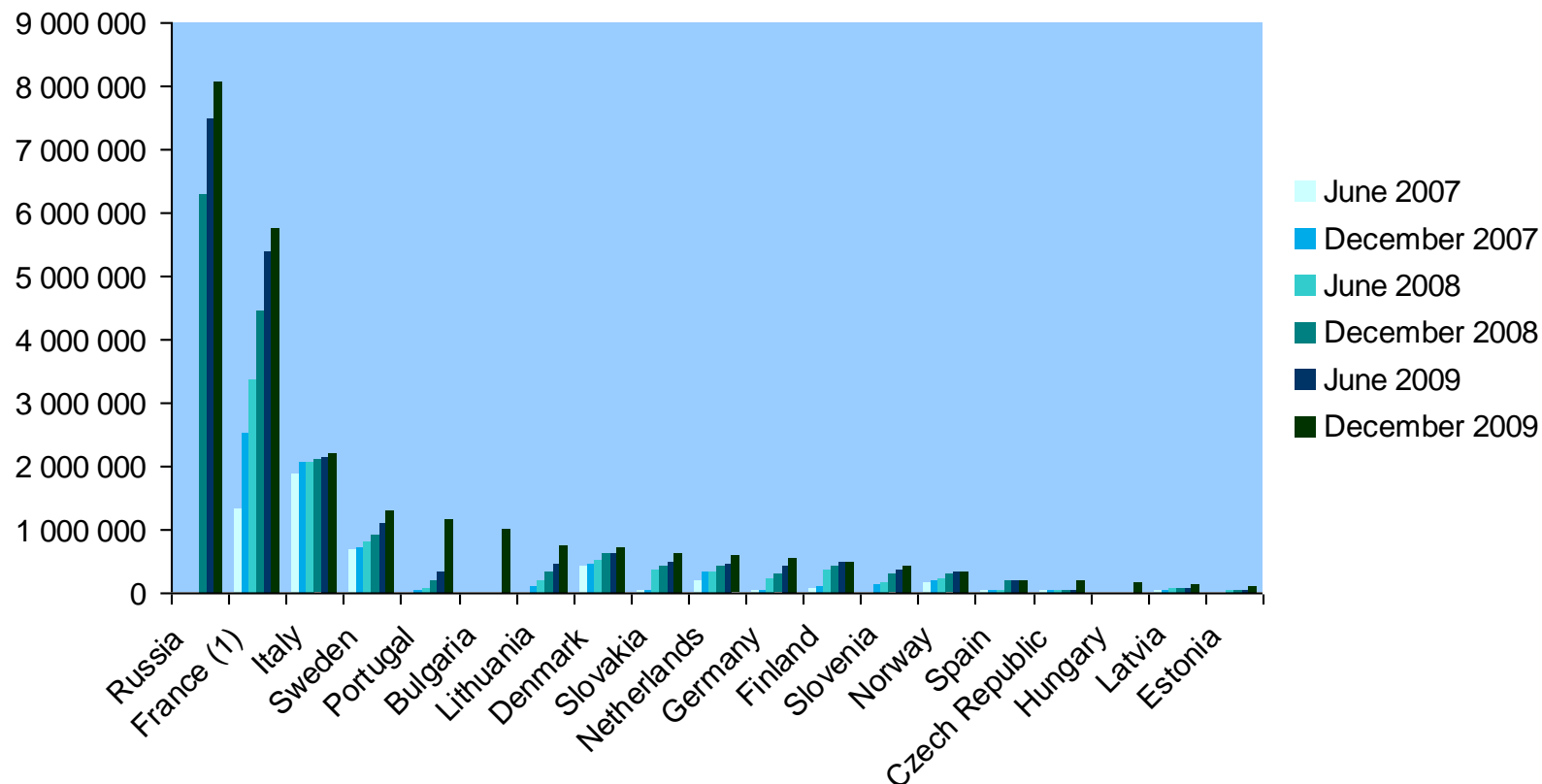
New FTTH/B subscribers between June and December 09



Source: IDATE for FTTH Council Europe

FTTH/B Homes Passed in Europe by country

Evolution of FTTH/B (*) Homes Passed in Europe



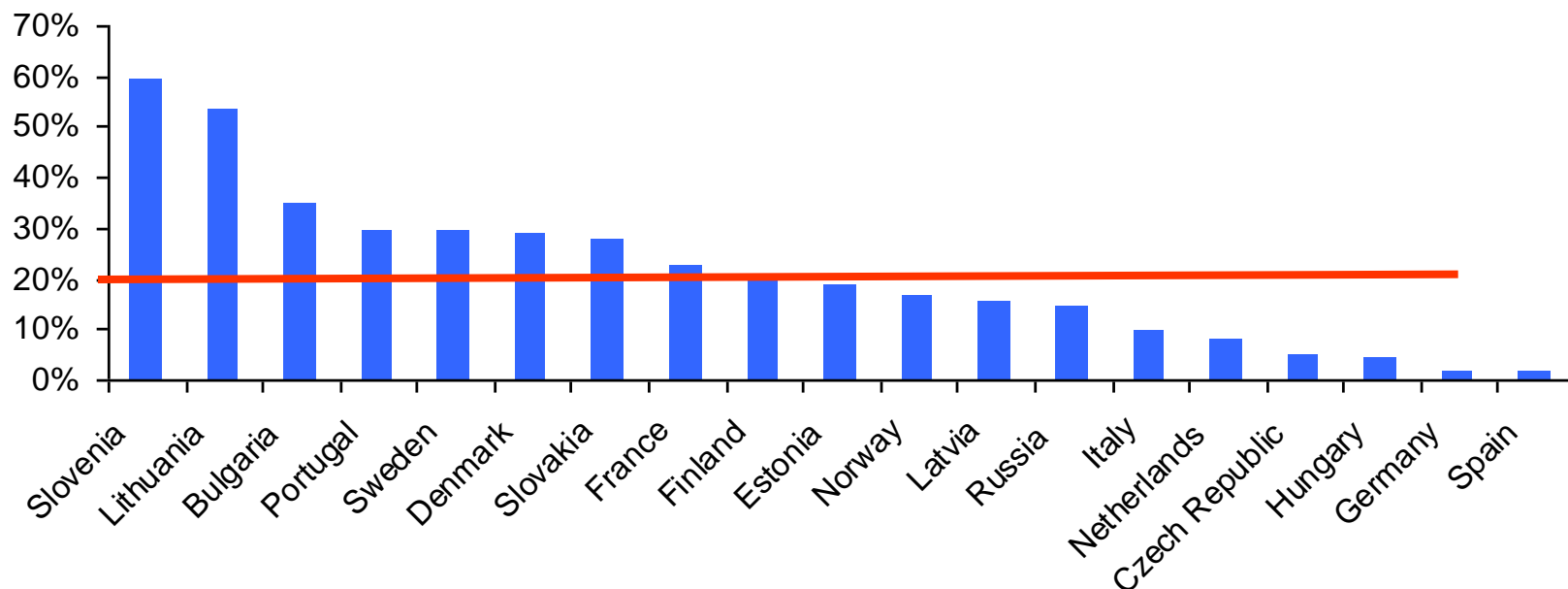
(*) We refer here to the definition of FTTH/B from the FTTH Councils

(1) In France, even if Numericable's Homes Passed are considered as FTTB Homes Passed since June 2008, data have been reintegrated from June 2007.

Source: IDATE for FTTH Council Europe

FTTH/B Homes Passed in Europe by country (end 2009)

% of FTTH/B HP in total Households (1)



(1) Taking into account countries where there are at least 100,000 FTTH/B homes passed.

Source: IDATE for FTTH Council Europe

FTTH leadership in Europe: Countries

- ▶ Russia with 900 000 FTTB subscribers and more than 8 million Homes Passed is the clear leader of EU 36 and will keep being leader in the coming years considering the huge potential of Russian market
- ▶ In EU 35, Lithuania is now part of the leading countries with nearly 240,000 subscribers at end December 2009
- ▶ Then, the majority of subscribers is still concentrated in 7 Western European and Scandinavian countries - Sweden, Italy, France, Norway, The Netherlands, Denmark and Germany (around 67% FTTH/B subscribers at December 2009)
- ▶ ... which does not mean that those countries have the higher penetration rates!!

Penetration rate subscribers/Homes
passed for European leaders
(December 2009)



Countries	Subscribers vs Homes Passed
Norway	64,9%
Sweden	41,4%
Netherlands	33,8%
Denmark	22,3%
Germany	16,2%
Italy	14,8%
France	5,4%

Source: IDATE for FTTH Council Europe

FTTH leadership in Europe: Global Ranking

- ▶ The Global Ranking includes countries where at least 1% of households are FTTH/B subscribers
- ▶ At December 2009, 18 countries are included in that Global Ranking...
- ▶ ...among which 4 new countries during second half 2009

Countries	Penetration December 2009
France	1,21%
Czech Republic	1,16%
Portugal	1,06%
Bulgaria	1,00%

Source: IDATE for FTTH Council Europe

FTTH leadership in Europe: Technologies

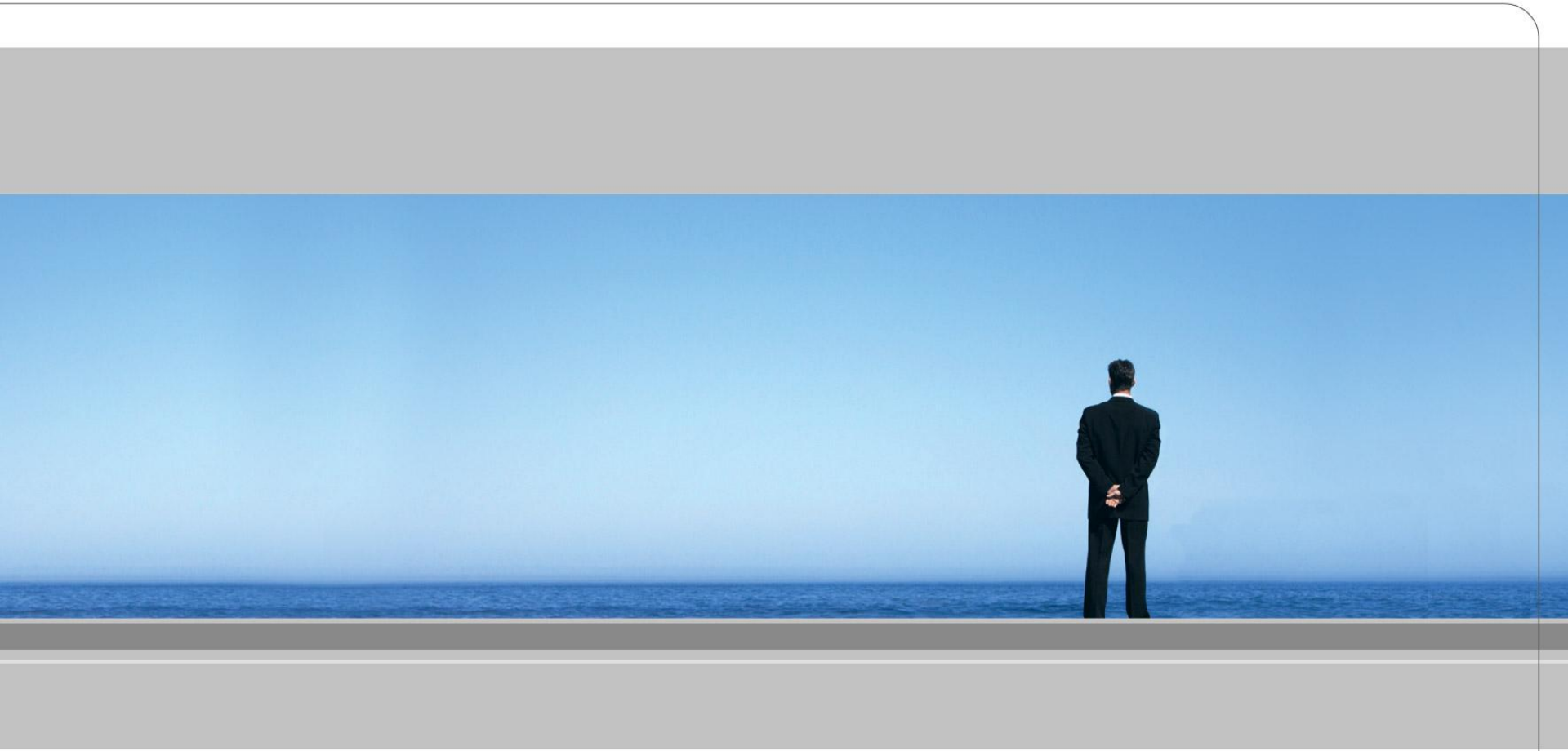
- ▶ In December 2009, the main architecture deployed is still FTTB
- ▶ Regarding technology, players have mainly chosen Ethernet
- ▶ Then, MDUs are still the principal target for NGA deployments in Europe

Main architecture deployed (subscribers segmentation)	Dec 09	June 2009
FTTH	42%	42%
FTTB	58%	58%

Main technology deployed (subscribers segmentation)	Dec 09	June 2009
PON	16%	19%
Ethernet	84%	81%

Dwellings deployed (subscribers segmentation)	Dec 2009	June 2009
MDU	73%	71%
SDU	27%	29%

Source: IDATE for FTTH Council Europe



FTTH in Middle East Overview

FTTH in Middle East - Overview: Projects

- ▶ IDATE has identified 30 FTTx projects in Middle East, among which only 7 count at least 2,000 homes passed at December 2009

Countries	Players		Homes/Buildings passed (December 2009)
Bahrain	Batelco	Incumbent	4 500
Egypt	TMG	Holding Company	30 000
Kuwait	Zajil Telecom	Incumbent	2 000
Lebanon	Solidere	Housing company	4 000
Saudi Arabia	STC	Incumbent	5 000
UAE	Etisalat	Incumbent	665 000
	DU	Alternative operator	400 000

Source: IDATE for FTTH Council Europe

FTTH in Middle East - Overview: Global Figures

- In December 2009, UAE is undoubtedly the main FTTH/B market in the region, in terms of subscribers and homes passed

Countries	Homes Passed Dec 09
UAE	1 065 000
Egypt	35 000
Saudi Arabia	11 622
Barhain	4 500
Lebanon	4 500
Kuwait	2 000

Source: IDATE for FTTH Council Europe

Countries	Subscribers Dec 09
UAE	62 700
Saudi Arabia	3 122
Barhain	1 000
Egypt	500
Kuwait	500
Lebanon	300

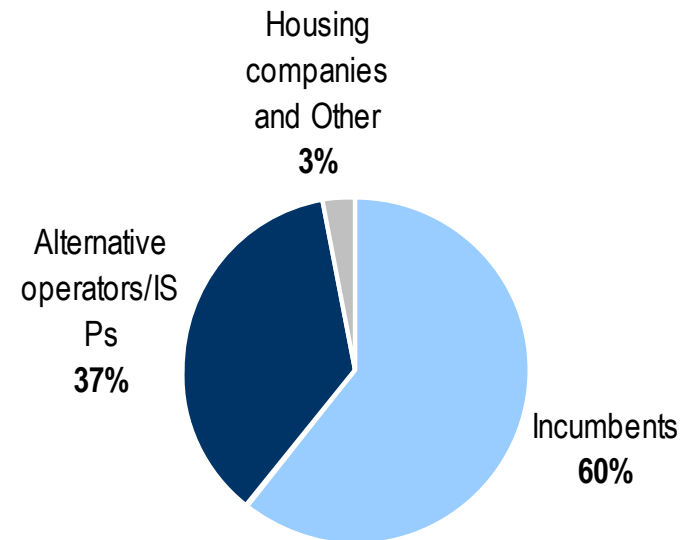
Source: IDATE for FTTH Council Europe

FTTH in Middle East - Overview: Players

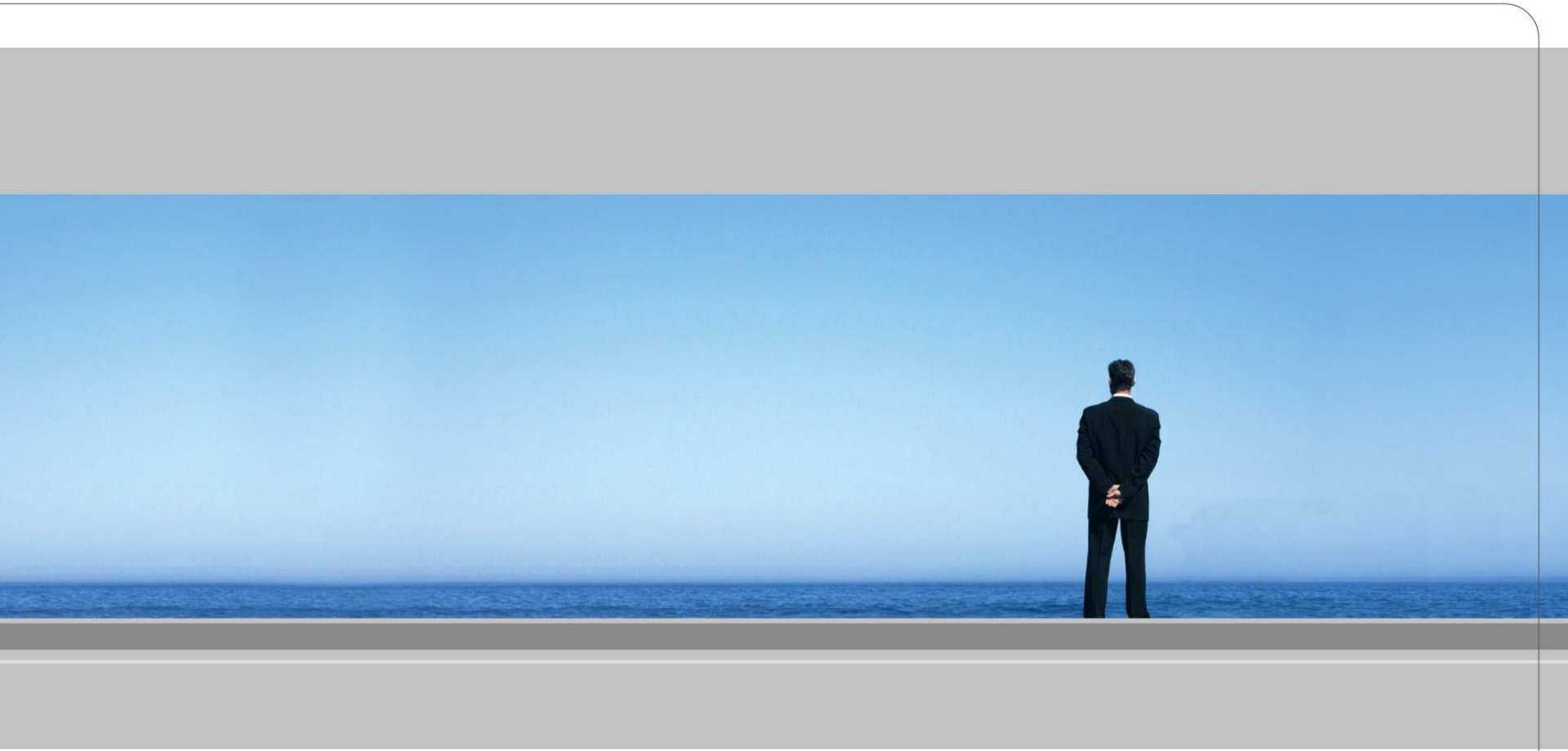
- ▶ In Middle East, alternative operators are more deeply involved in FTTH/B deployments than other categories of players
 - ▶ 14 alternative operators and 9 incumbents among 29 FTTH/B players

- ▶ Nevertheless, incumbents represent more than 60% of homes passed at end 2009

Market share per category of player
in terms of FTTH/B homes passed
(Middle East - December 2009)



Source: IDATE for FTTH Council Europe



Main conclusions

Main conclusions

- ▶ **The FTTH/B market is growing steadily in Western and Northern European countries**
- ▶ **Future growth will be led by Eastern European countries, among which Russia, which already represent the main market in terms of numbers of subscribers and homes passed**
- ▶ **Number of subscribers and homes passed are not as relevant as penetration rate**
 - ▶ This penetration rate is more significant of well targeted areas than commercial efficiency for involved players
- ▶ **A part from UAE, FTTH/B market is just beginning to get developed in Middle East**
- ▶ **FTTH/B market is mainly pushed by alternative operators initiatives**
 - ▶ in terms of coverage in Europe (74% of homes passed by alternative players FTTH/B networks)
 - ▶ in terms of number of players in Middle East (14 alternative players among 29 FTTH/B initiatives)