REPORT ON ERG BEST PRACTICES ON REGULATORY REGIMES IN WHOLESALE UNBUNDLED ACCESS AND BITSTREAM ACCESS

ANNEX – EVIDENCE BASED ANALYSIS AND BENCHMARK

This document annex the ERG (07) 53rev1 Best Practices on regulatory regimes document and gives an overview of practices and routines implemented in ERG member states concerning quality of service, migration & reference offers richness and pricing.

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Objective	Rationale	Best Implementation Practices
QUALITY OF SERVICE		
1. Service Level Agreement and Key Performance Index	**Best Practice 1** **Implementing SLA & KPI in WLA & WBA Reference Offers** Service level and quality problems on WLA and WBA generated multiple NRAs interventions in all ERG member states and are still an issue in many of them. NRAs interventions were needed whatever the level of development of LLU and even in countries where LLU was introduced in the beginning of 2000 (see Table 1).	
1.1. SLA on line delivery: the	**Best Practice 2**	

Table 1 : Samples of NRAs initiatives on WLA or WBA operational issues in some ERG MS

	Be	Cy	Fr	Hu	It	Pt	Ro	Sl	Sp	Se	UK
NRA initiatives or decisions on service level and quality	2006 2007	2006 2007	2001 2004 2005	2003 2004	2003 2005 2006 2007	2002 2003 2005	2004 2006	2005 2006 2007	2005 2006	2003 2004	2004 2005[1] 2006[1] 2007[1]

Source Steer - base ERG data, NRAs pulications

note(1): externalised operational follow up

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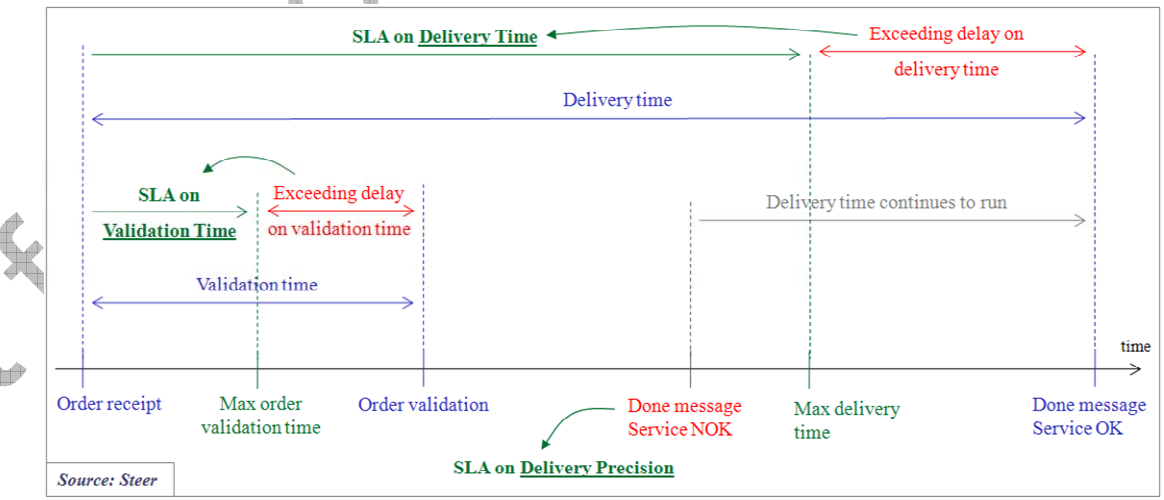
minimal set of timers (WLA & WBA)	**The minimal set of timers for SLA** After examining different access provision processes in place in different ERG member states in the light of the encountered implementation difficulties, the minimal critical timers for service provisioning are the following (see Figure 1): - Validation time; - Delivery time; - Delivery precision. **Figure 1: Minimal access delivery SLA**  	

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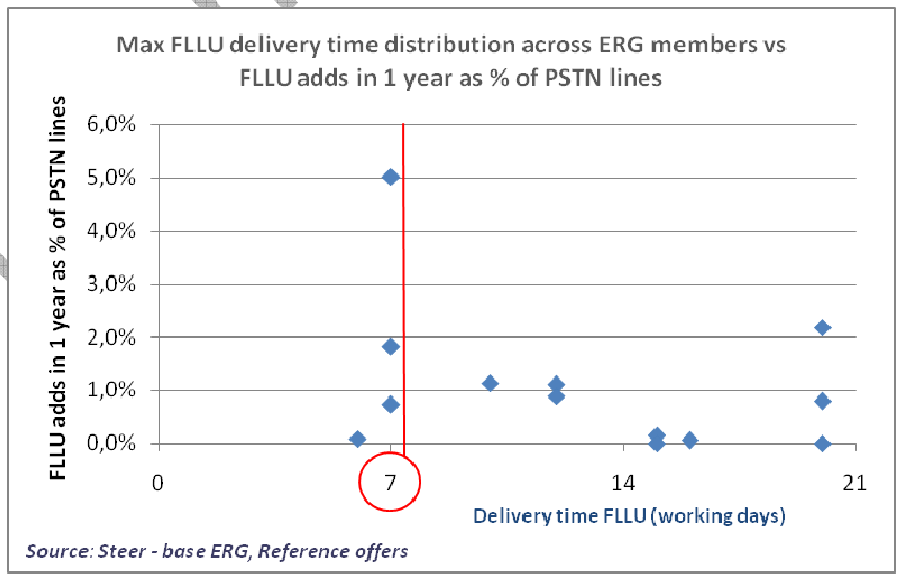
1.1.1. SLA conditions on delivery time (WLA & WBA)	**Best Practice 2a** **SLA conditions on delivery time** Countries having a maximum delivery time of 7 working days for providing full LLU are able to cope with significant access delivery volumes e.g. FLLU adds in 1 year represent up to 5% of all PSTN lines (see Figure 2).	

Figure 2: Maximum FLLU delivery time vs FLLU adds in one year as % of PSTN lines for some ERG member states



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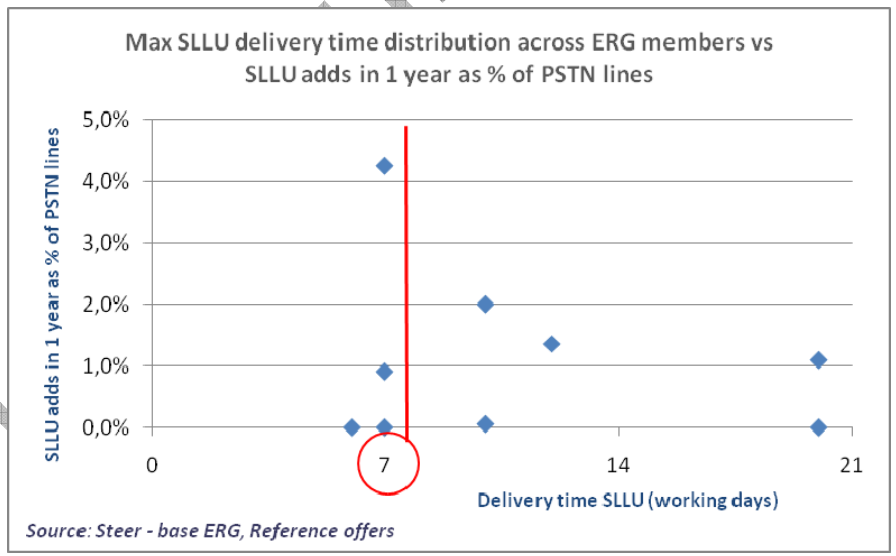
	Countries having a maximum delivery time for Shared LLU of 7 working days are able to cope with significant SLLU adds e.g. SLLU adds in 1 year represent up to 4% of all PSTN lines (see Figure 3).	
1.1.2. SLA conditions on delivery precision (WLA & WBA)	**Best Practice 2b** **SLA conditions on delivery precision**	

Figure 3: Maximum FLLU delivery time vs SLLU adds in one year as % of PSTN lines for some ERG member states



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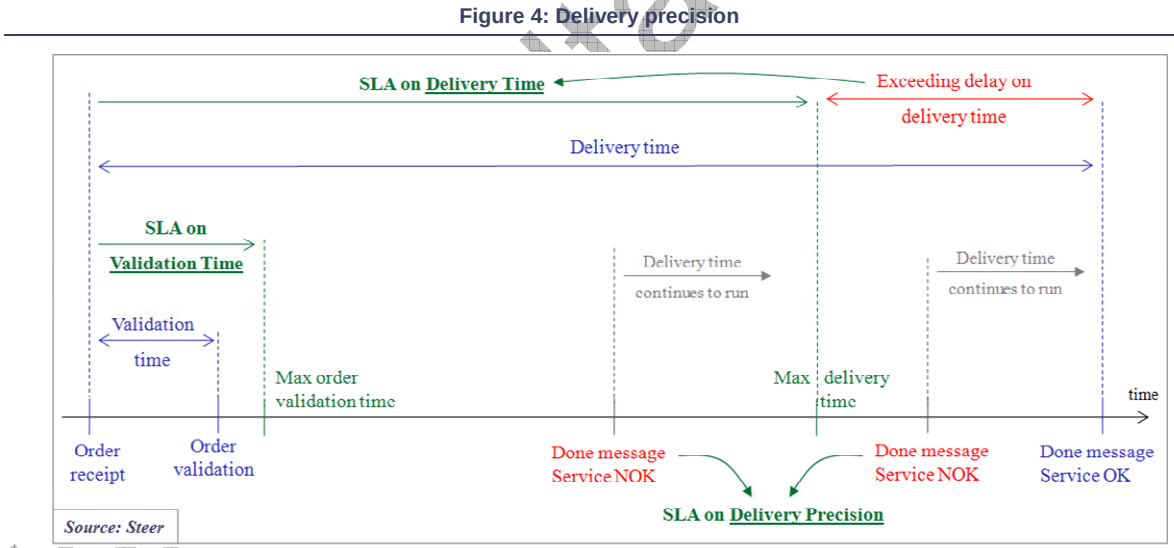
	Definition: Once the SMP player has sent the done message the service must be working (see Figure 4). **Figure 4: Delivery precision**  	
1.1.3. SLA on facilities delivery time (WLA)	**Best Practice 2c** **SLA on Facilities delivery time** Facilities provisioning was a very contentious issue in the majority of ERG members: France, Germany, Italy, Sweden, Portugal, Spain, Poland … and is still a pending issue in many countries.	

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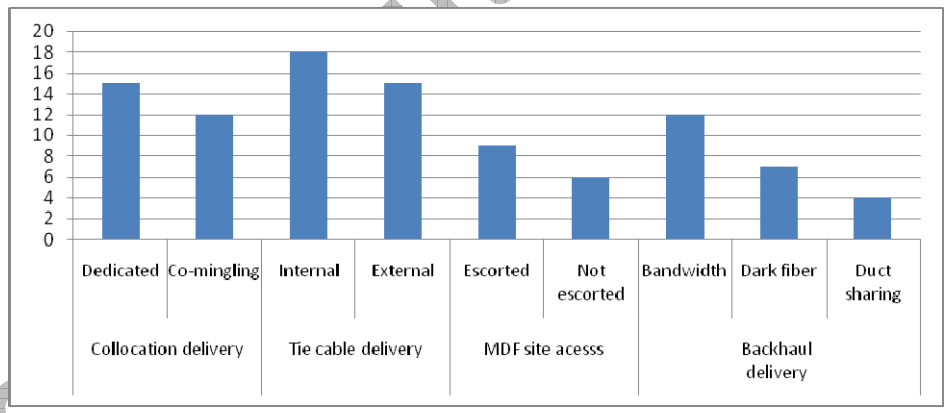
	SLA on facilities provision relevancy is illustrated by the number of countries where SLA on facilities is implemented (see Figure 5).	
1.1.4. SLA conditions on fault clearance time (WLA & WBA)	**Best Practice 2d** **SLA on Fault Clearance time** Reasonable targets can be defined on the basis of ERG member states practices: - Standard SLA: countries having an access fault clearance of less than 2 days are able to deal with significant LLU volumes e.g. up to 11% of PSTN lines (see Figure 6);	

Figure 5: Minimal number of ERG member states where SLA on facilities are implemented



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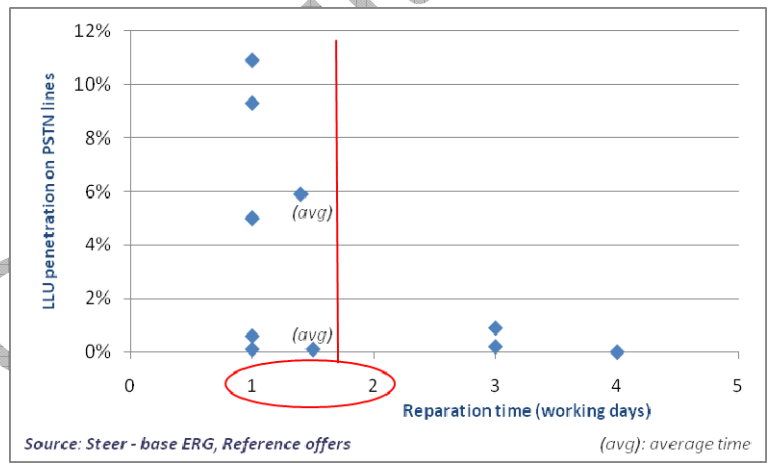
	- Premium SLA: the following options are available among ERG member states: 4 daily hours, 4 working hours, 8 working hours. **Figure 6: Line reparation time vs LLU active lines as % of PSTN lines for some ERG MS**  	
1.2. Compensation on failure to fulfill the agreed SLA (WLA & WBA)	Best Practice 3a Compensation rules Best Practice 3b Forecast	

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<table>
<tr><th>Objective</th><th>Rationale</th><th>Best Implementation Practices</th></tr>
<tr><td></td><td colspan="2">Practical experiences on failures to provide the agreed SLA strengthen this need. Indeed:
- Service level and quality was very contentious in the majority of ERG members and is still a pending issue in many countries;
- Multiple NRAs interventions on service level and quality were needed in all ERG member states (see Table 2);
- These NRAs interventions were needed whatever the stage of development of LLU even in countries where LLUs was introduced in the beginning of 2000.

Table 2 : Samples of NRAs initiatives or interventions on WLA or WBA operational issues
<table><tr><th></th><th>Be</th><th>Cy</th><th>Fr</th><th>Hu</th><th>It</th><th>Pt</th><th>Ro</th><th>Sl</th><th>Sp</th><th>Se</th><th>UK</th></tr><tr><td>NRA initiatives or decisions on service level and quality</td><td>2006
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2005[1]
2006[1]
2007[1]</td></tr></table>Source Steer - base ERG data, NRAs pulications
note(1): externalised operational follow up</td></tr>
<tr><td>1.3. Key Performance Indicators

1.3.1. KPI: The minimal set (WLA & WBA)

1.3.2. KPI: Periodicity, Comparison criteria (WBA & WBA)</td><td colspan="2">Best Practice 4a
KPI : the minimal set to be implemented

Best Practice 4b
KPI : Periodicity, Comparison criteria, Publication

NRAs feedback on KPI implementation across ERG member states (see Figure 7) shows that</td></tr>
</table>

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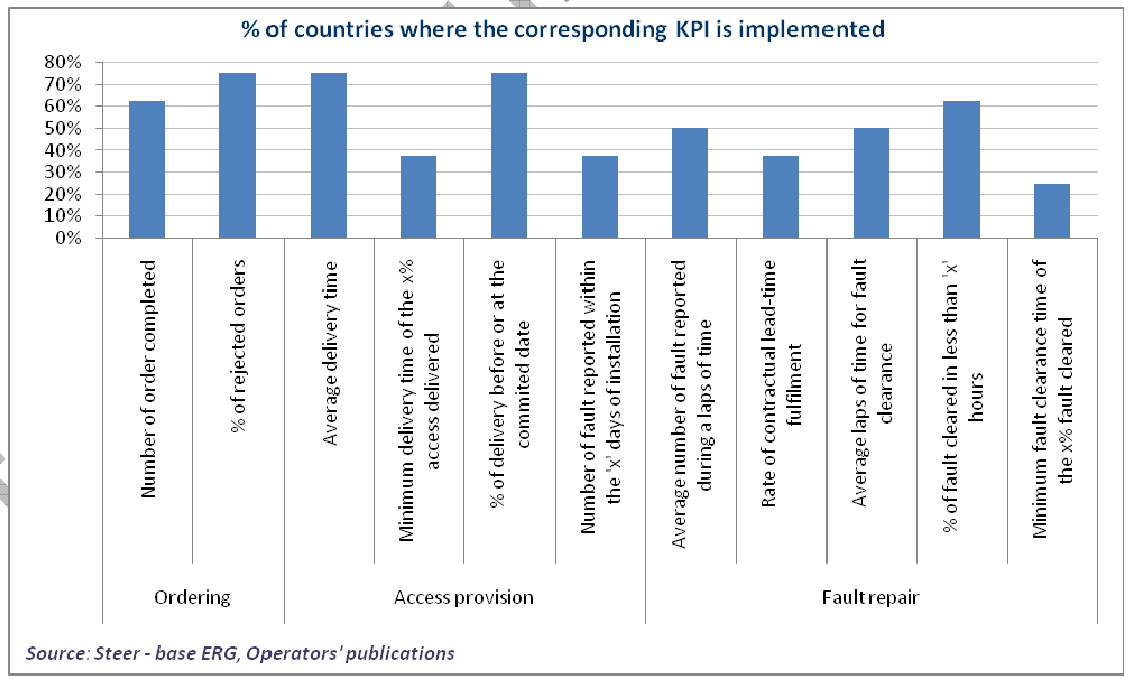
	the current minimal set of KPI needed to monitor the application of the non discrimination obligation and the effectiveness of SLA and allow the identification of any persistent or new problems is the following: ordering, delivery, fault repair.	

Figure 7: KPI implemented in ERG member states



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Objective	Rationale	Best Implementation Practices
2.1. Bulk migration	**Best Practice 5** **Bulk Migration process conditions** The French experience : tangible impacts on the ladder of investment Bulk migration was integrated in WLA and WBA offers in the beginning of 2004 following ARCEP's decision and operational monitoring. Service level agreements are associated with these migration processes. A tangible migration from downstream products to WLA has occurred (see Figure 8): - Significant decrease in resold lines due to migrations towards WBA and WLA; - Reduced growth of WBA due to migrations from WBA towards WLA. **Figure 8: Impacts of bulk migration on the ladder of investment – the French case**	

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	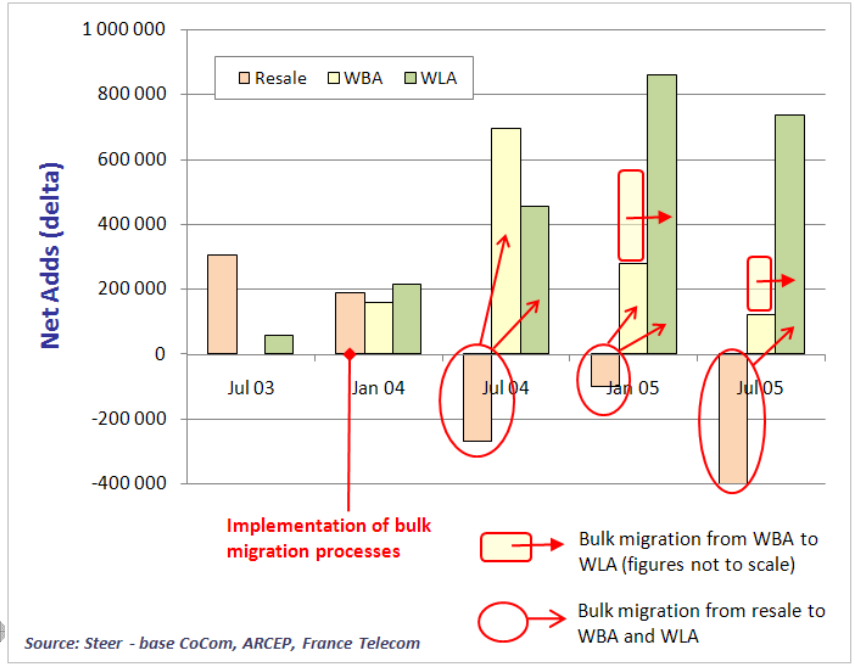	
2.2. Ground Number Portability synchronisation	**Best Practice 6** **Ground Number Portability synchronisation** In all ERG member states where FLLU penetration rate on DSL lines exceeds 10% (as of October 2006), synchronised GNP (with FLLU) is implemented: France, Italy, Portugal, Austria, Germany.	

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	Cut-off period which is a major end-user's concern, as voice service is also interrupted, must be reduced to the minimum. Otherwise, it would have significant impact on end-user's experience causing damage to competition and ultimately to the development of the market and the choice of customers by considerably restraining market fluidity. In order to avoid such drawbacks and ensure the effective implementation of GNP synchronisation, SLA on cut off period is needed. Spain : GNP role in the increase of FLLU penetration GNP synchronisation is key for the development of FLLU: the increase in the number of FLLU lines is directly linked to the increase in the number of ported numbers (see Figure 9). **Figure 9: GNP role in FLLU growth - the Spanish case**	

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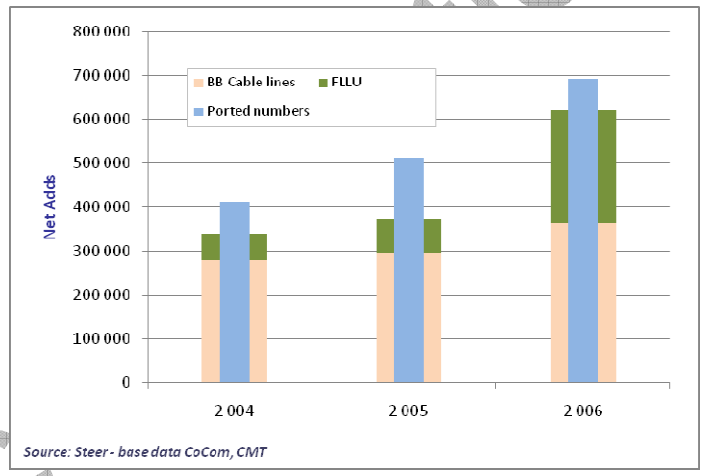

France : A concrete impact on the growth of full LLU based offers

The implementation of an efficient process for GNP synchronisation in mid 2005 initiated a significant move towards FLLU (see Figure 10).

Figure 10: Impact of GNP synchronisation on FLLU growth - the French case

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	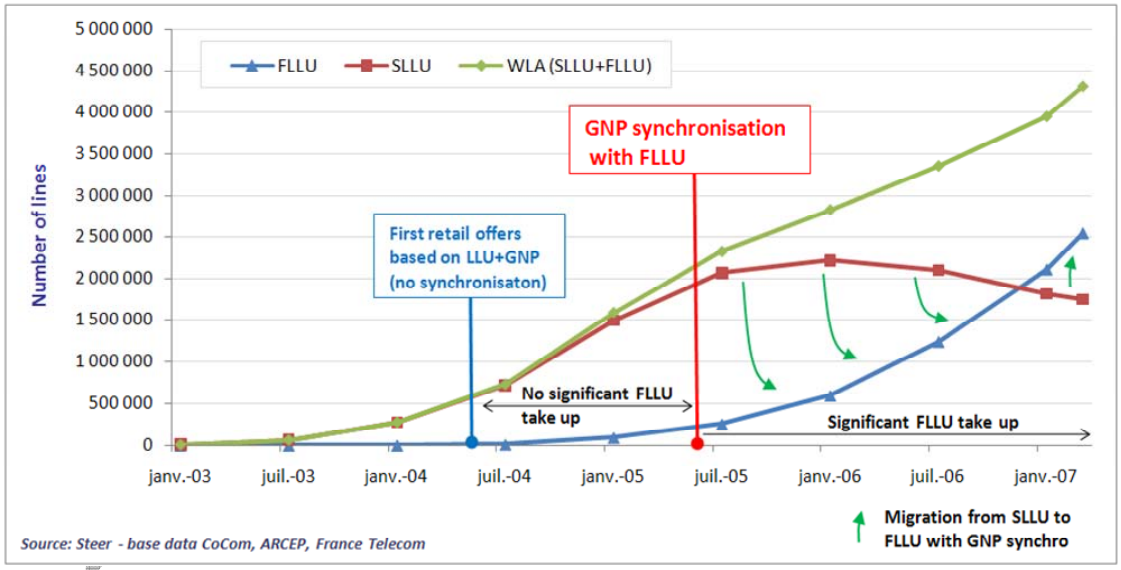	
2.3. Passive connectivity solutions	**Best Practice 7** **Passive connectivity solutions** New bandwidth consuming services like TV and Video on demand are now available in almost all of ERG member states (see Figure 11). Such high levels of bandwidth are now available on unbundled copper pair in the majority of ERG member states e.g. 90% of ERG member states have implemented technologies allowing more than 16Mbits bandwidth (see Figure 12).	

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Figure 11: TVoDSL availability in ERG member states

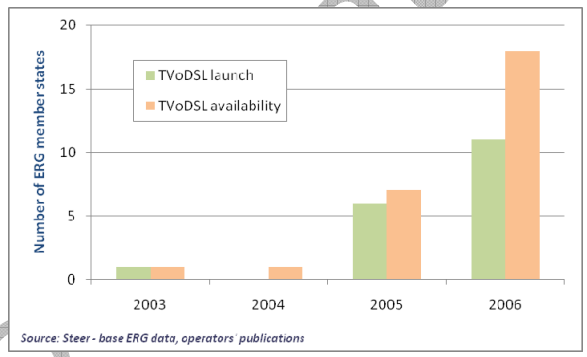
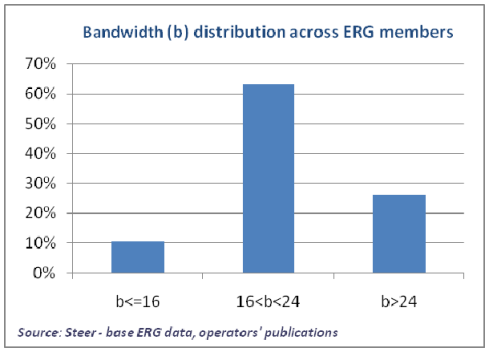


Figure 12: bandwidth available on the copper pair in ERG MS



Note for the 2 figures: Data exclude the following countries : Bu, Ge, Ir, Lu, Lv, Sk, Tk, UK

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	Availability of a passive solution for DSLAM sites connectivity is particularly critical in countries having very large territories and where the average size of the unbundled DSLAM sites is insufficient to ensure a fair return on investment.	

Figure 13: Geographic constraints in ERG member states - country size

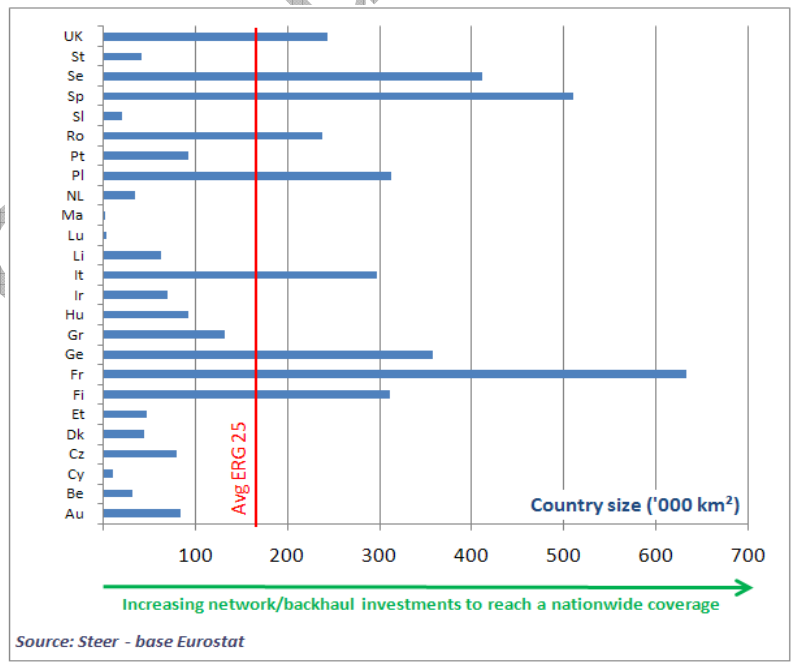

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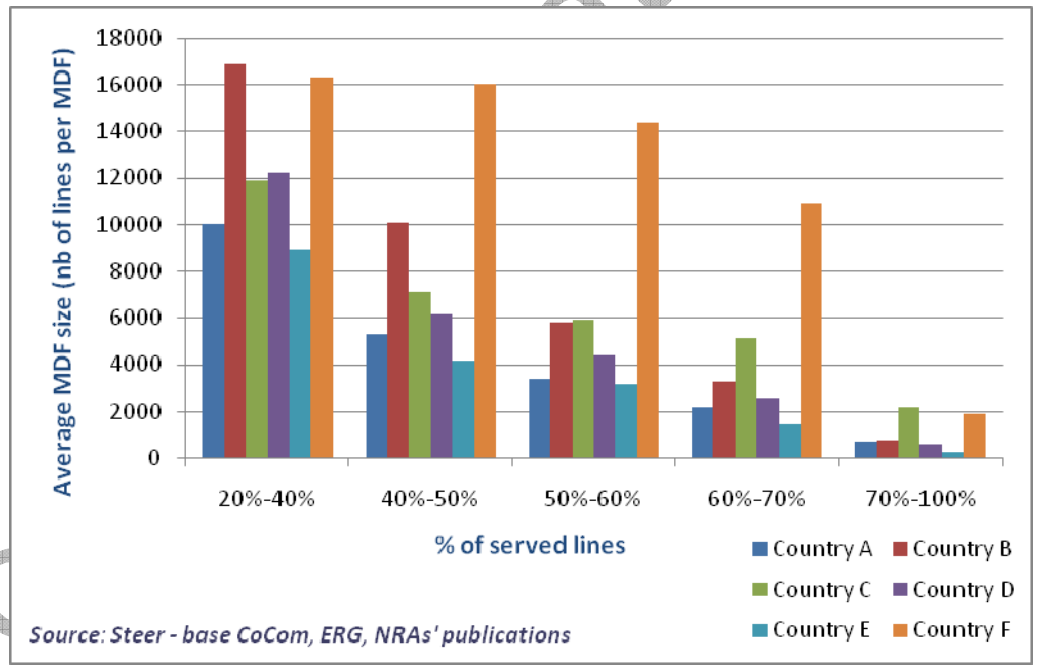
	Figure 14: Topologic constraints in some ERG member states - MDF density  Example: a competitor aiming at extending its coverage from 50% to 60% of total lines will have to unbundle MDFs with an average size of (approximately) : 3 500 lines (Country A); 6 000 lines (Country B) ; 6 000 lines (Country C) ; 4 500 lines (Country D) ; 3 000 lines (Country E) ; 11 000 lines (Country F). Consequently countries A, D and E have a crying need for passive connectivity solutions available on a wide geographic scale.	

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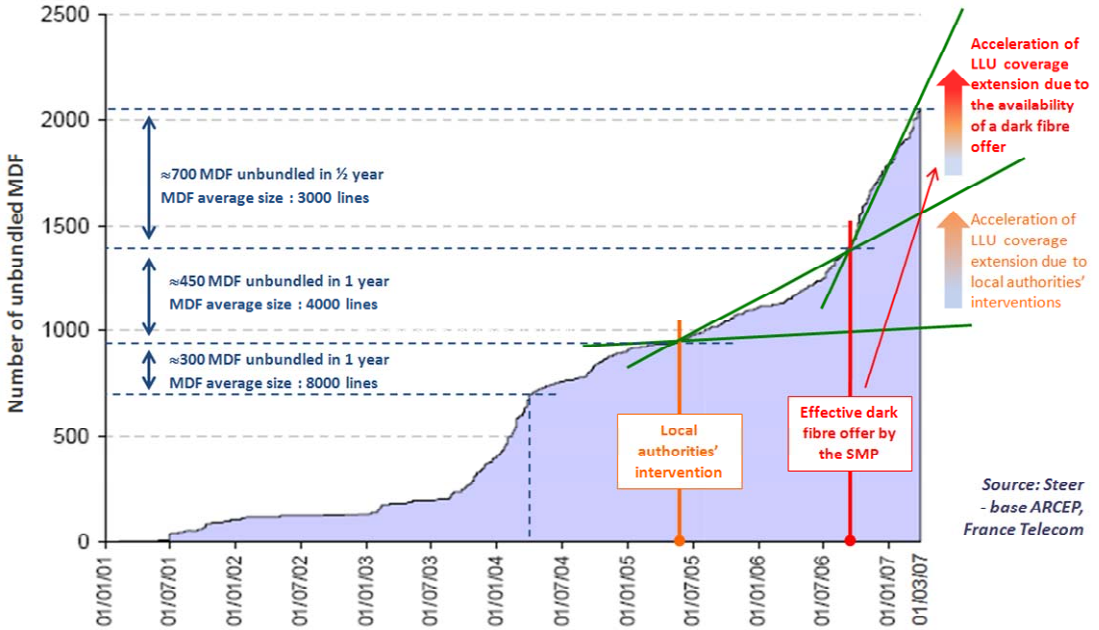
	Passive connectivity solutions – the French study case Once an effective dark fibre offer was provided by the SMP player (e.g end of 2006) a significant acceleration of LLU coverage extension was observed (see Figure 15).	

Figure 15: Impact of passive connectivity solutions on LLU extension - the French case



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2.4. Collocation of equipments (WLA)	**Best Practice 8** **Collocation of equipments** New services growth potential is particularly high in broadband markets as illustrated in the case of TV over DSL – TVoDSL (see Figure 16). Any undue delay undergone by a competitor can dissipate its first mover advantage and impair the associated potential growth. An SMP player could abuse of his dominant position by using delaying tactics. Such abuses have led national authorities to intervene in some ERG member states in order to force the SMP player to authorise installation at the MDF of the Ethernet switches needed (for some DSLAMs) to offer a TV over DSL service. **Figure 16: New service potential growth - example of TVoDSL growth in some ERG MS**	

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	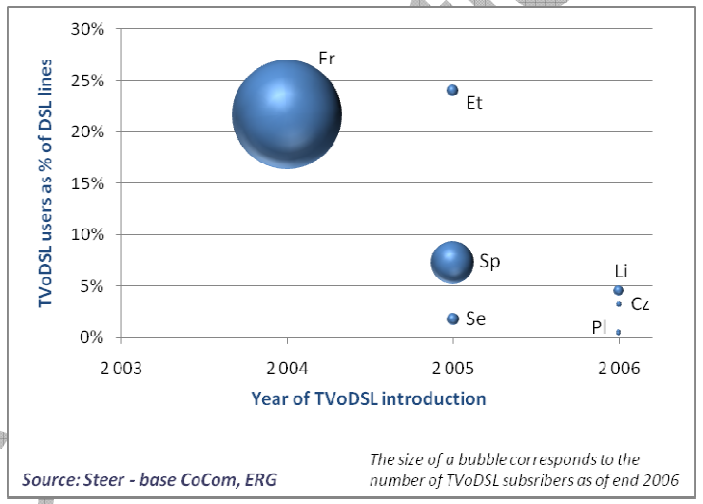	
2.5. Stand-alone bitstream access	**Best Practice 9** **Stand-alone bitstream access (St-WBA)** The aggregated results of the 2007 e-Communication household survey in Europe (TNS survey produced for DG Information Society; field work November – December 2006): - 21% of EU27 households do not have a fixed telephone line; - 47% of narrowband users are willing to change if they could buy the broadband service together with fixed telephone service without paying anymore for the monthly fixed telephony line rental charges.	

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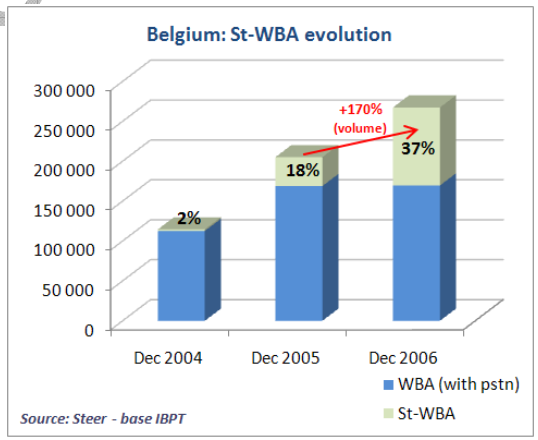
	- The significant development of St-WBA based naked DSL offers in countries where St-WBA is available (see Figure 17 and Figure 18). Belgium: - +170% volume increase in 1 year; - 37% of all WBA lines as of Dec 2006. - In 2006, WBA lines growth was based on St-WBA. **Figure 17: St-WBA evolution in Belgium (Dec. 2004 - Dec. 2006)**  France:	

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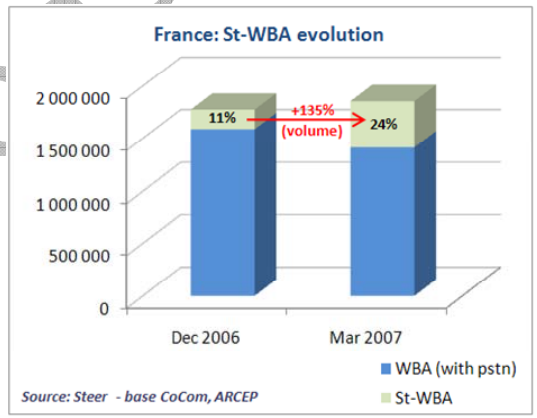
- +135% volume increase in ½ year
- 24% of all WBA lines as of March 2007 e.g. 6 months after St-WBA implementation in the WBA RO;
- Significant end-user migration from WBA with pstn towards WBA based naked DSL.

Figure 18: St-WBA evolution in France (Dec. 2006 - Mar. 2007)



Leveraging voice over IP development with St-WBA

Voice over DSL is available in the majority of ERG member states (see Figure 19) and voice over broadband (VoIP as a service of xDSL or cable line) penetration is increasing since 2004 (see Figure 20).

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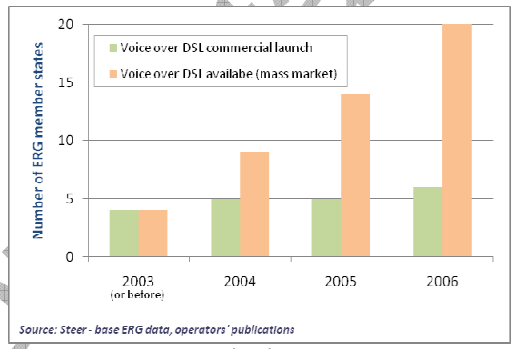
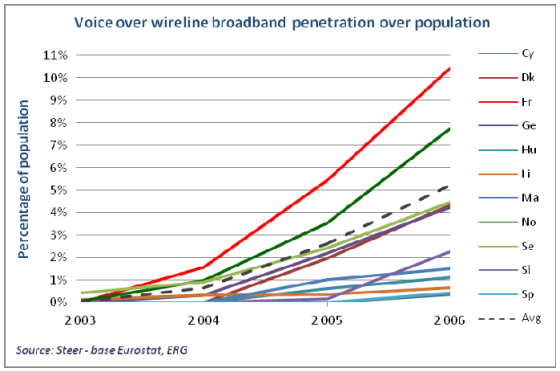
Figure 19: Voice over DSL availability across ERG MS



Note : Data exclude the following countries : Bu, Gr, Ir, Lu, Lv, NL, Sk, Tk, UK

Figure 20: Voice over broadband penetration in some ERG MS



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3.1. WLA ⇔ WBA Price Consistency **3.2. WLA⇔WBA Economic Space**		**Best Practice 10** **WLA & WBA Price Consistency** **Best Practice 11** **WLA⇔WBA Economic Space** **Best Practice 12** **Practical Scheme for WLA⇔WBA economic space monitoring** Since 2002, an extensive work on LLU prices setting up and revision has been undertaken by NRAs concerning WLA pricing – see Table 3: - Access (full access and shared access) for a large majority and to a lesser extent sub loop prices where the offer is available ; - Facilities (collocation, tie cable and backhaul) for a majority of them. **Table 3 : WLA price revisions**

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WLA price revisions		Au	Be	Cy	Cz	Dk	Et	Fi	Fr	Ge	Gr	Hu	It	Li	Ma	Nl	Pl	Pt	Ro	Sl	Sp	Se
Copper pair	Full local loop	03,06	02-06	05,06	05,06	02-06	02	03-06	02, 05, 06	02-06	02-06	02-06	02,03,05,06	03-06	Y	0206	04,06	02,03, 05,06	04	N	02,04,06	04-06
	Shared local loop							02-06	02	04-06					Y					N	Y	06
	Sub-loop				05,06	Y	N		02	05,06	n.a	06		n.a	Y	07		N		N	n.a	n.a
Facilities	Tie cable	N	02-06	05,06	06	02-06	N	N	02,05	02-06	04-06	02-06	02,03,05,06	03-06	Y	02-06	04,06	03	N	N	02,04,06	04-06
	Physical colocation	06					N	N							Y	N		03	04	N		
	Co-mingling/virtual	n.a[(a)]	02-03		N		N	N			n.a	-		06	Y	02-06		03	N			?
	Distant colocation	06			N		N	N			04-06	02-06		-	Y	02-06	N	03	N		n.a	04-06
Backhaul (transmission capacity)		06	02-06	05,06	N	02-06	N	N	06	03-06		N	-	-	N				04		02,04,06	N

note (a) : co-mingling is not yet available; prices for physical/distant colocation & tie cable are on a cost-reimbursement basis; Colocation rental has been set to 10 EUR flat/qm in 01/06

note (c) : ULL obligation put in place in 2007 in Switzerland (ex post regulation system)

Source: Steer 2007 - base ERG data

- Copper pair pricing is subject to cost orientation obligation for all countries except for one, cost standard used is either LRIC or FAC/FDC – see Table 4;
- Modelling approach varies among countries between Bottom Up (BU), Hybrid (H), Top Down (TD), Benchmark (Be) – see Table 4;
- Facilities are widely subject to cost orientation;
- Few ERG members uses cost orientation for backhaul pricing.

Table 4 : WLA pricing principles

REPORT ON ERG BEST PRACTICES ON REGULATORY REGIMES IN WHOLESALE UNBUNDLED ACCESS AND BITSTREAM ACCESS

ANNEX – EVIDENCE BASED ANALYSIS AND BENCHMARK

Objective	Rationale	Best Implementation Practices

WLA pricing principles			Au	Be	Cy	Cz	Dk	Et	Fi	Fr	Ge	Gr	Hu	It	Li	Ma	Nl	Pl	Pt	Ro	Sl	Sp	Se
Copper pair	Full local loop	Cost standard	LRIC		FAC	LRIC	LRIC	FAC	FAC	LRIC	LRIC	LRIC	FAC	FAC	FAC	LRIC	EDC		AC	(f)	FAC(h)	FAC	
		cost basis	FL		HC	CC	CC	CC	HC/CC	CC	FL	CC	HC	HC		HC			HC	(f)	CC	CC	
		modeling approach	BU	BU(f)	H	H	H	TD	TD	TD(b)	BU	TD	TD(c)	TD		TD		Be	TD	(f)		TD	LRIC
		Sub loop (Y/N)	Y	Y	Y	Y	Y		Y	Y	Y	N	Y	Y	n.a	Y	Y	Y	n.a	(f)		n.a	n.a
	Shared local loop	Cost standard		LRIC	FAC	LRIC	LRIC	FAC	FAC	LRIC	LRIC	LRIC	FAC	FAC	FAC	LRIC	EDC		AC	(f)	FAC(h)		
		cost basis		CC	HC	CC	CC	CC	HC/CC		FL	CC	HC	HC		HC			HC	(f)	CC		
		modeling approach		BU	H	H	H	TD	TD	AK = 0	Be	TD	TD(c)	TD		TD		Be	TD	(f)		?	LRIC
Facilities	Tie cable	Cost standard		LRIC	FAC	LRIC	LRIC				LRIC	LRIC	AC	FAC	FAC	LRIC	EDC		FAC		FAC(h)	FAC	
		cost basis		CC	HC	CC	CC				FL	CC	HC	HC		HC			CC		CC	EC	
		modeling approach	MP(k)	BU(i)	H	H	H			BU		BU	BU(c)	TD		TD		Be	TD(e)			BU	LRIC
	Colocation	Cost standard			FAC	LRIC	LRIC		FAC		LRIC	LRIC	AC	FAC	FAC	LRIC	EDC		FAC	(g)	FAC(h)	FAC	
		cost basis			HC	CC	CC		HC/CC		FL	CC	HC	HC		HC			CC	(g)	CC	EC	
		modeling approach	MP(k)		H	H	H		TD	BU		BU	BU(c)	TD		TD		Be	TD(e)	(g)		BU	LRIC
		Physical	Y		Y	Y	Y		Y	Y	Be(a)	Y	Y	Y		Y		Y	Y	(g)	Y	Y	Y
		Co-mingling/Virtual	n.a		Y	-	Y			Y	Y	N		Y	Y	Y		Y	Y	(g)		Y	?
		Distant	Y		Y	-				Y	Y	Y	Y	Y	-	Y			Y	(g)		Y	Y
Backhaul	Transmission capacity	Cost standard			FAC						LRIC			-								FAC	
		cost basis			HC						FL			-								EC	
		modeling approach	ST		H	-			no PC	Comm.				-	-				(e)	R-		BU	

Source: Steer 2007 - base ERG data

note (a) : For physical colocation = Benchmark based on rental cost of colocation space ; For co-mingling and distant = LRIC+FL
note (b) : 2002 : LRIC RC T
note (c) : 2002 : FAC+HC+T, 2003 : LRIC+CC+T, 2004 : change to FAC+HC+T
note (e) : Assessment of ULL prices based on cost estimations, derived from the PT Comunicações's Cost Accounting System (PTC-CAS). The PTC-CAS is a top-down, historic costs, FAC and ABC-type model. When assessing costs for new services, which were not available at the CAS, those costs were estimated based on current costs, taking into consideration equipment and manpower costs and, when applicable, mark-ups for operating, maintenance and common costs were added. International comparisons were used as an additional piece of information for reference purposes
note (f) : Tariffs based on wholesale analogue leased line-terminal segments + Benchmark
note (g) : Tariffs set for interconnection in 2002 applicable to LLU too
note (h) : 2005 : prices should be reasonable
note (i) : Approach is clearly bottom-up, but in practice some 'hybrid' elements always remain (e.g. MDF space). The fees are mainly one-time fees (no depreciated CAPEX), so basically, the LRIC indication does not provide a lot of extra information
note (k) : MP = Market Prices. Prices for physical/distant colocation & tie cable are on a cost-reimbursement basis; Colocation rental has been set to 10 EUR flat/qm in 01/06
note (l) : Switch from retail minus to cost orientation in summer 2007, draft decision launched end of April 2007
note (j) : ULL obligation put in place in 2007 in Switzerland (ex post regulation system)

- Economic spaces between LLU (WLA) and bitstream (WBA) are managed and monitored in very few member states: Austria, Czech Republic, France and Portugal - see Table 5.

Table 5 : WLA economic spaces monitoring

REPORT ON ERG BEST PRACTICES ON REGULATORY REGIMES IN WHOLESALE UNBUNDLED ACCESS AND BITSTREAM ACCESS

ANNEX – EVIDENCE BASED ANALYSIS AND BENCHMARK

Objective	Rationale	Best Implementation Practices

WLA economic spaces		Au	Be	Cy	Cz	Dk	Et	Fi	Fr	Ge	Gr	Hu	It	Li	Ma	Nl	Pl	Pt	Ro	Sl	Se	Sp
WLA vs WBA	Squeeze test	06	N	N	06	N	N	N[(a)]	02-06	n.a.	N	N	N	N	N	N	N	06	n.a		n.a	N
	Cost reference	SMP	N	N	SMP	N	N	N	OLO[(d)]	n.a.	N	N	N	N	N	N	N	SMP	n.a		n.a	N
	ex Ante/ex Post	A/P	N	N	A	N	N	N	A	n.a.	N	N	N	N	N	N	N	A	n.a		n.a	N
WLA vs retail (/resale)	Squeeze test	06	N	06,05	06	N	N	N	02-06	02-06	N	N	N	N	N	N	04-06	N	n.a	06,05	N	02-06
	Cost reference	SMP	-	OLO / SMP	SMP	-	-	-	SMP		-	-	-	-	-	-	PE[(c)]	-	n.a	SMP	-	SMP+
	ex Ante/ex Post	A/P	-	A	A	-	-	-	P		-	-	-	-	-			-	n.a	A	-	A

note (a) : Non-discriminatory pricing obligation may be applied to margin squeeze issues (in addition to gengeral competition law)

Source: Steer 2007 - base ERG data

note (c) : PE = Price-list Estimation
note (d) : efficient new entrant
note (b) : ULL obligation put in place in 2007 in Switzerland (ex post regulation system)

- NRAs intervention on WBA pricing since 2002 are less important than for WLA due to the fact that WBA was mandated in very few member states before market 12 analysis process (Belgium, Denmark, France, Spain) – see Table 6;

Table 6 : WBA price revision

WBA price revisions		Au	Be	Cy	Cz	Dk	Et	Fi	Fr	Ge	Gr	Hu	It	Li	Ma	Nl	Pl	Pt	Ro	Sl	Sp	Se
xDSL Line	WBA (+pstn)		02-06	-	04,05	02-06	N[(a)]	N[(b)]	03-06	n.a	06	04-06	02,03, 05,06	06		(d)	06	06	n.a		02,04, 06	n.a
	Stand-alone DSL		06	-	N	06	N	N[(b)]	06	n.a	n.a	n.a	N	-		(d)	06	n.a	n.a		n.a	n.a
Backhaul	DSLAM / MDF access	n.a	02-06	-	N	02-06	N	N[(b)]	n.a	n.a	n.a	04-06	-	-		(d)	n.a	n.a	n.a	N	02,04,06	n.a
	ATM parent switch	06		N	N		N	N[(b)]	03-06	n.a	n.a	n.a[(c)]	02,03, 05,06	06		(d)	06	06	n.a			n.a
	ATM distant switch	n.a		N	N		N	N[(b)]		n.a	N	n.a[(c)]				(d)	n.a		n.a	N		n.a
	IP	n.a	-	N	N	N	N	N[(b)]		n.a	N[(b)]	06	N[(b)]			(d)	n.a		n.a	N		n.a

note (a) : for the period 2002-2006 WBA prices were not regulated. Price revision will be made after referred market analysis.

Source: Steer 2007 - base ERG data

note (b) : no price regulation (Finland: non discrimination rules apply)
note (c) : the 5 incumbent operators do not use ATM for the DSL services; The alternative operators has not asked for interconnection at ATM (or equal) level
note (d) : WBA available on a comercial basis e.g. not regulated

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ANNEX – EVIDENCE BASED ANALYSIS AND BENCHMARK

Objective	Rationale	Best Implementation Practices

- Cost orientation is the preferred approach, and recent switch from Retail minus to cost orientation in Italy and Spain are to be noted – see Table 7:

Table 7: WBA pricing principles

	WBA pricing principles	Au	Be	Cy	Cz	Dk	Et	Fi	Fr	Ge	Gr	Hu	It	Li	Ma	Pl	Pt	Ro	Sl	Sp	Se
xDSL line	WBA (+pstn)		CO	_	CO	CO		(f)	CO+ST	n.a	RM	CO	CO(h)	CO		RM	ST	n.a		CO(e)	RM
	Bitstream Stand-alone DSL		CO	_	-	CO		(f)	CO+ST	n.a	n.a	-	RM	-		RM	-	n.a			n.a
	Prices geographically averaged		Y	_	Y			(f)	Y(c)	n.a	Y	Y	Y	Y		Y	Y	n.a		Y	n.a
Backhaul	DSLAM / MDF access	n.a	CO	_	-	CO		(f)		n.a	n.a	CO	CO(h)	-		-	-	n.a	CO(d)	CO(e)	RM
	ATM parent switch	RM	CO(a)	RM(b)	-	CO		(f)	CO+ST	n.a	n.a	-	CO(h)	CO		RM	CO	n.a		CO(e)	
	ATM distant switch	n.a	CO(a)	RM(b)	-	CO		(f)	CO+ST	n.a	RM(g)	-	CO(h)	CO			CO	n.a	CO(d)	CO(e)	
	IP / Ethernet	n.a	-	RM(b)	-	n.a		(f)	CO+ST	n.a	(f)	RM	CO(h)	CO		-	RM	n.a		CO(e)	
	Prices geographically averaged	Y	Y	Y	Y			(f)	Y(c)	n.a	Y	Y	Y	Y				n.a	Y	Y	Y

note (a) : the methodology for dimensioning the DSLAM-ATM and ATM-links has been revised (so there was a change, the actual charges for backhaul are still under revision).
note (b) : WBA available since 2006
note (c) : de-average in 2004 and 2005
note (d) : FAC-CCA
note (e) : Retail minus until 2006
note (f): No price regulation (Finland: non discrimination rules apply)
note (g): RM calculation will be based on a DCF model (reasonably efficient OLO). The model is currently under public consultation
note (h): Retail minus until 2007, switch to cost orientation under way (IP-Ethernet bitstream not available before 2007)

Source: Steer 2007 - base ERG data

- Squeeze test between WBA and retail recently undertaken in eleven countries, mainly during the process of wholesale broadband reference offers approval – see Table 8.

REPORT ON ERG BEST PRACTICES ON REGULATORY REGIMES IN WHOLESALE UNBUNDLED ACCESS AND BITSTREAM ACCESS

ANNEX – EVIDENCE BASED ANALYSIS AND BENCHMARK

Objective	Rationale	Best Implementation Practices

Table 8: WBA economic spaces

	WBA economic spaces		Au	Be	Cy	Cz	Dk	Et	Fi	Fr	Ge	Gr	Hu	It	Li	Ma	Pl	Pt	Ro	Sl	Sp	Se
WBA vs retail/reselle	Squeeze test		06	N	Y	06	N	N	(f)	Y	n.a	Y	N(a)	Y(h)	n.a		06	06	n.a	Y	02-06	Y
	Cost reference		SMP	-	SMP	SMP	-	-	(f)		n.a	OLO	-		n.a		06	SMP+	n.a	SMP	SMP+	SMP
	Imputation rules in case of xplay services		Y	-		N	-	-	(f)		n.a		-		n.a			-	n.a	N		N
	Timing (ex Ante/ex Post)		A/P	-	A	A	-	-	(f)		n.a	P	-	A	n.a		A	A	n.a	A	A	P
Retail minus	Minus value (% or Absolute)	ATM	varies	-	23%?	-	-	-	(f)	-	n.a	(h)	-	30%	n.a		51%	-	n.a	-	-	A
		IP		-	23%?	-	-	-	(f)	-	n.a	-	23%(b)	-	n.a		-	A(e)	n.a	-	-	
	Minus calculation (Avoidable costs, Benchmark)		A	-	A	-	-	-	(f)	-	n.a	A	A	A	n.a		A	(g)	n.a	-	-	A
	Downstream product used (reSale / reTail)		T	-	T	-	-	-	(f)	-	n.a	T	T	T	n.a		T	T	n.a	-	-	T
	Reference downstream offer (Best price, Mix, All)		M	-	B	-	-	-	(f)	-	n.a		M(c)	A	n.a			A	n.a	-	-	M
	Imputation rules in case of xplay services		Y	-	-	-	-	-	(f)	-	n.a		Y(d)	-	n.a			-	n.a	-	-	N

note (a):there is no separate squeeze test, however the R-M pricing formula with the regular recalculation of the wholesale price can be regarded as an ex ante squeeze test

Source: Steer 2007 - base ERG data

note (b) : 2006 average, main incumbent

note (c) : Avg. retail prices, by relevant parameters

note (d) : Prices or costs of extra (not BB) services are substracted from the bundled retail price

note (e) : The value depends on the specific offer

note (f): No price regulation for WBA (non discrimination rules apply)

note h : AGCOM's regulation of broadband services did not provide for a formal price squeeze test. Only in the approval process of Telecom Italia's wholesale offers economic spaces considerations were taken into account